Air Quality Calculations for Alternative 3

URBEMIS 2002 For Windows 8.7.0

File Name: Z:\Alan Sako\COMPLETE\032.92A Landmark Village\Alternatives\Alt 3.urb
Project Name: Alternative 3
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	96.20	20.74	31.93	0.17	0.12

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	151.58	141.89	1,549.35	0.89	133.57

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	247.78	162.63	1,581.28	1.05	133.69

URBEMIS 2002 For Windows 8.7.0

File Name: Z:\Alan Sako\COMPLETE\032.92A Landmark Village\Alternatives\Alt 3.urb
Project Name: Alternative 3
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	93.41	28.34	12.95	0.05	0.66

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10

TOTALS (lbs/day,unmitigated)	133.47	204.68	1,503.65	0.73	133.57

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	226.88	233.03	1,516.60	0.78	134.23

URBEMIS 2002 For Windows 8.7.0

File Name: Z:\Alan Sako\COMPLETE\032.92A Landmark Village\Alternatives\Alt 3.urb
Project Name: Alternative 3
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	16.00	3.78	5.83	0.03	0.02

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	26.56	29.72	279.98	0.15	24.38

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	42.56	33.50	285.80	0.18	24.40

URBEMIS 2002 For Windows 8.7.0

File Name: Z:\Alan Sako\COMPLETE\032.92A Landmark Village\Alternatives\Alt 3.urb
Project Name: Alternative 3
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.58	20.63	9.66	0	0.04
Hearth	0.45	7.71	3.28	0.05	0.62
Landscaping - No winter emissions					
Consumer Prdcts	60.51	-	-	-	-
Architectural Coatings	30.86	-	-	-	-
TOTALS(lbs/day,unmitigated)	93.41	28.34	12.95	0.05	0.66

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	40.27	63.08	462.61	0.23	41.74
Apartments low rise	21.67	33.85	248.28	0.12	22.40
Condo/townhouse general	21.93	34.30	251.59	0.12	22.70
Elementary school	8.10	11.21	83.34	0.04	7.08
City park	0.38	0.57	4.14	0.00	0.36
Commercial Center 10-30 a	17.56	24.84	186.86	0.08	15.36
Commercial Center <10 ac.	8.28	11.61	87.63	0.04	7.16
Commercial Shops	0.42	0.55	4.28	0.00	0.33
Commercial Office	14.86	24.67	174.92	0.09	16.43
TOTAL EMISSIONS (lbs/day)	133.47	204.68	1,503.65	0.73	133.57

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 50 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	158.00	9.90 trips/dwelling unit	474.00	4,692.60
Apartments low rise	22.81	6.90 trips/dwelling unit	365.00	2,518.50
Condo/townhouse general	19.94	8.00 trips/dwelling unit	319.00	2,552.00
Elementary school		1.45 trips/students	750.00	1,087.50
City park		2.60 trips/acres	20.90	54.34
Commercial Center 10-30 a		54.06 trips/1000 sq. ft.	51.40	2,778.68
Commercial Center <10 ac.		85.06 trips/1000 sq. ft.	15.50	1,318.43
Commercial Shops		37.06 trips/1000 sq. ft.	1.90	70.41
Commercial Office		11.56 trips/1000 sq. ft.	143.20	1,655.39
		Sum of Total Trips		16,727.86

Total Vehicle Miles Traveled 87,959.37

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			

% of Trips - Commercial (by land use)

Elementary school	20.0	10.0	70.0
City park	5.0	2.5	92.5
Commercial Center 10-30 ac.	2.0	1.0	97.0
Commercial Center <10 ac.	2.0	1.0	97.0
Commercial Shops	2.0	1.0	97.0
Commercial Office	48.0	24.0	28.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/158. to 9.90/158.
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/19.94 to 8.00/19.94

Changes made to the default values for Area

The natural gas residential percentage changed from 60 to 100.
The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape length of the summer period (in days) changed from 180 to 365.
The landscape year changed from 2005 to 2007.
The consumer product persons per residential unit changed from 2.861 to 3.056.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The operational emission year changed from 2005 to 2007.

URBEMIS 2002 For Windows 8.7.0

File Name: Z:\Alan Sako\COMPLETE\032.92A Landmark Village\Alternatives\Alt 3.urb
Project Name: Alternative 3
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.58	20.63	9.66	0	0.04
Hearth - No summer emissions					
Landscaping	3.24	0.11	22.27	0.17	0.08
Consumer Prdcts	60.51	-	-	-	-
Architectural Coatings	30.86	-	-	-	-
TOTALS(lbs/day,unmitigated)	96.20	20.74	31.93	0.17	0.12

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	43.11	43.63	482.80	0.28	41.74
Apartments low rise	25.00	23.42	259.12	0.15	22.40
Condo/townhouse general	24.48	23.73	262.56	0.15	22.70
Elementary school	19.29	7.81	83.85	0.05	7.08
City park	0.67	0.39	4.13	0.00	0.36
Commercial Center 10-30 a	15.84	17.37	181.54	0.10	15.36
Commercial Center <10 ac.	7.32	8.12	84.91	0.05	7.16
Commercial Shops	0.39	0.39	4.06	0.00	0.33
Commercial Office	15.48	17.03	186.38	0.11	16.43
TOTAL EMISSIONS (lbs/day)	151.58	141.89	1,549.35	0.89	133.57

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 90 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	158.00	9.90 trips/dwelling unit	474.00	4,692.60
Apartments low rise	22.81	6.90 trips/dwelling unit	365.00	2,518.50
Condo/townhouse general	19.94	8.00 trips/dwelling unit	319.00	2,552.00
Elementary school		1.45 trips/students	750.00	1,087.50
City park		2.60 trips/acres	20.90	54.34
Commercial Center 10-30 a		54.06 trips/1000 sq. ft.	51.40	2,778.68
Commercial Center <10 ac.		85.06 trips/1000 sq. ft.	15.50	1,318.43
Commercial Shops		37.06 trips/1000 sq. ft.	1.90	70.41
Commercial Office		11.56 trips/1000 sq. ft.	143.20	1,655.39
		Sum of Total Trips		16,727.86
		Total Vehicle Miles Traveled		87,959.37

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40

Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			

% of Trips - Commercial (by land use)

Elementary school	20.0	10.0	70.0
City park	5.0	2.5	92.5
Commercial Center 10-30 ac.	2.0	1.0	97.0
Commercial Center <10 ac.	2.0	1.0	97.0
Commercial Shops	2.0	1.0	97.0
Commercial Office	48.0	24.0	28.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/158. to 9.90/158.
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/19.94 to 8.00/19.94

Changes made to the default values for Area

The natural gas residential percentage changed from 60 to 100.
The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape length of the summer period (in days) changed from 180 to 365.
The landscape year changed from 2005 to 2007.
The consumer product persons per residential unit changed from 2.861 to 3.056.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The operational emission year changed from 2005 to 2007.

URBEMIS 2002 For Windows 8.7.0

File Name: Z:\Alan Sako\COMPLETE\032.92A Landmark Village\Alternatives\Alt 3.urb
Project Name: Alternative 3
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES (Tons per Year, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.29	3.77	1.76	0.00	0.01
Hearth	0.00	0.00	0.00	0.00	0.00
Landscaping	0.59	0.02	4.06	0.03	0.01
Consumer Prdcts	11.04	-	-	-	-
Architectural Coatings	4.07	-	-	-	-
TOTALS (tpy, unmitigated)	16.00	3.78	5.83	0.03	0.02

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10

Single family housing	7.70	9.15	86.88	0.05	7.62
Apartments low rise	4.36	4.91	46.63	0.03	4.09
Condo/townhouse general	4.31	4.97	47.25	0.03	4.14
Elementary school	2.84	1.63	15.27	0.01	1.29
City park	0.10	0.08	0.75	0.00	0.07
Commercial Center 10-30 a	2.99	3.62	33.45	0.02	2.80
Commercial Center <10 ac.	1.39	1.69	15.66	0.01	1.31
Commercial Shops	0.07	0.08	0.75	0.00	0.06
Commercial Office	2.79	3.57	33.32	0.02	3.00
TOTAL EMISSIONS (tons/yr)	26.56	29.72	279.98	0.15	24.38

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Season: Annual

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	158.00	9.90 trips/dwelling unit	474.00	4,692.60
Apartments low rise	22.81	6.90 trips/dwelling unit	365.00	2,518.50
Condo/townhouse general	19.94	8.00 trips/dwelling unit	319.00	2,552.00
Elementary school		1.45 trips/students	750.00	1,087.50
City park		2.60 trips/acres	20.90	54.34
Commercial Center 10-30 a		54.06 trips/1000 sq. ft.	51.40	2,778.68
Commercial Center <10 ac.		85.06 trips/1000 sq. ft.	15.50	1,318.43
Commercial Shops		37.06 trips/1000 sq. ft.	1.90	70.41
Commercial Office		11.56 trips/1000 sq. ft.	143.20	1,655.39
		Sum of Total Trips		16,727.86
		Total Vehicle Miles Traveled		87,959.37

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00

Med-Heavy	14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy	33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000	lbs	0.00	0.00	0.00	100.00
Urban Bus		0.10	0.00	0.00	100.00
Motorcycle		1.70	82.40	17.60	0.00
School Bus		0.10	0.00	0.00	100.00
Motor Home		1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			

% of Trips - Commercial (by land use)

Elementary school	20.0	10.0	70.0
City park	5.0	2.5	92.5
Commercial Center 10-30 ac.	2.0	1.0	97.0
Commercial Center <10 ac.	2.0	1.0	97.0
Commercial Shops	2.0	1.0	97.0
Commercial Office	48.0	24.0	28.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/158. to 9.90/158.
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/19.94 to 8.00/19.94

Changes made to the default values for Area

The natural gas residential percentage changed from 60 to 100.
The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.

The natural gas fireplace percentage changed from 55 to 100.
The landscape length of the summer period (in days) changed from 180 to 365.
The landscape year changed from 2005 to 2007.
The consumer product persons per residential unit changed from 2.861 to 3.056.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The operational emission year changed from 2005 to 2007.

Air Quality Calculations for Alternative 4

URBEMIS 2002 For Windows 8.7.0

File Name: Z:\Alan Sako\COMPLETE\032.92A Landmark Village\Alternatives\Alt 4.urb
Project Name: Alternative 4
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	78.67	17.18	27.26	0.14	0.10

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	133.83	124.48	1,356.76	0.78	116.92

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	212.49	141.66	1,384.01	0.91	117.02

URBEMIS 2002 For Windows 8.7.0

File Name: Z:\Alan Sako\COMPLETE\032.92A Landmark Village\Alternatives\Alt 4.urb
Project Name: Alternative 4
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	76.24	23.32	10.81	0.04	0.54

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10

TOTALS (lbs/day,unmitigated)	117.39	179.52	1,319.11	0.64	116.92

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	193.63	202.84	1,329.92	0.68	117.46

URBEMIS 2002 For Windows 8.7.0

File Name: Z:\Alan Sako\COMPLETE\032.92A Landmark Village\Alternatives\Alt 4.urb
Project Name: Alternative 4
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.31	17.08	8.15	0	0.03
Hearth	0.36	6.23	2.65	0.04	0.50
Landscaping - No winter emissions					
Consumer Prdcts	48.91	-	-	-	-
Architectural Coatings	25.65	-	-	-	-
TOTALS(lbs/day,unmitigated)	76.24	23.32	10.81	0.04	0.54

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	32.54	50.97	373.80	0.19	33.73
Apartments low rise	17.51	27.36	200.67	0.10	18.11
Condo/townhouse general	17.74	27.74	203.48	0.10	18.36
Elementary school	8.10	11.21	83.34	0.04	7.08
City park	0.38	0.57	4.14	0.00	0.36
Commercial Center 10-30 a	17.56	24.84	186.86	0.08	15.36
Commercial Center <10 ac.	8.28	11.61	87.63	0.04	7.16
Commercial Shops	0.42	0.55	4.28	0.00	0.33
Commercial Office	14.86	24.67	174.92	0.09	16.43
TOTAL EMISSIONS (lbs/day)	117.39	179.52	1,319.11	0.64	116.92

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 50 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	127.67	9.90 trips/dwelling unit	383.00	3,791.70
Apartments low rise	18.44	6.90 trips/dwelling unit	295.00	2,035.50
Condo/townhouse general	16.13	8.00 trips/dwelling unit	258.00	2,064.00
Elementary school		1.45 trips/students	750.00	1,087.50
City park		2.60 trips/acres	20.90	54.34
Commercial Center 10-30 a		54.06 trips/1000 sq. ft.	51.40	2,778.68
Commercial Center <10 ac.		85.06 trips/1000 sq. ft.	15.50	1,318.43
Commercial Shops		37.06 trips/1000 sq. ft.	1.90	70.41
Commercial Office		11.56 trips/1000 sq. ft.	143.20	1,655.39
		Sum of Total Trips		14,855.96
		Total Vehicle Miles Traveled		76,994.65

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00

Motor Home	1.20	8.30	83.30
8.40			

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			

% of Trips - Commercial (by land use)

Elementary school	20.0	10.0	70.0
City park	5.0	2.5	92.5
Commercial Center 10-30 ac.	2.0	1.0	97.0
Commercial Center <10 ac.	2.0	1.0	97.0
Commercial Shops	2.0	1.0	97.0
Commercial Office	48.0	24.0	28.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/127.67 to 9.90/127.67
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/16.13 to 8.00/16.13

Changes made to the default values for Area

The natural gas residential percentage changed from 60 to 100.
The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape length of the summer period (in days) changed from 180 to 365.
The landscape year changed from 2005 to 2007.
The consumer product persons per residential unit changed from 2.861 to 3.056.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The operational emission year changed from 2005 to 2007.

URBEMIS 2002 For Windows 8.7.0

File Name: Z:\Alan Sako\COMPLETE\032.92A Landmark Village\Alternatives\Alt 4.urb
Project Name: Alternative 4
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.31	17.08	8.15	0	0.03
Hearth - No summer emissions					
Landscaping	2.79	0.09	19.10	0.13	0.07
Consumer Prdcts	48.91	-	-	-	-
Architectural Coatings	25.65	-	-	-	-
TOTALS(lbs/day,unmitigated)	78.67	17.18	27.26	0.14	0.10

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	34.84	35.26	390.11	0.22	33.73
Apartments low rise	20.21	18.93	209.42	0.12	18.11
Condo/townhouse general	19.80	19.19	212.36	0.12	18.36
Elementary school	19.29	7.81	83.85	0.05	7.08
City park	0.67	0.39	4.13	0.00	0.36
Commercial Center 10-30 a	15.84	17.37	181.54	0.10	15.36
Commercial Center <10 ac.	7.32	8.12	84.91	0.05	7.16
Commercial Shops	0.39	0.39	4.06	0.00	0.33
Commercial Office	15.48	17.03	186.38	0.11	16.43
TOTAL EMISSIONS (lbs/day)	133.83	124.48	1,356.76	0.78	116.92

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 90 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	127.67	9.90 trips/dwelling unit	383.00	3,791.70
Apartments low rise	18.44	6.90 trips/dwelling unit	295.00	2,035.50
Condo/townhouse general	16.13	8.00 trips/dwelling unit	258.00	2,064.00
Elementary school		1.45 trips/students	750.00	1,087.50
City park		2.60 trips/acres	20.90	54.34
Commercial Center 10-30 a		54.06 trips/1000 sq. ft.	51.40	2,778.68
Commercial Center <10 ac.		85.06 trips/1000 sq. ft.	15.50	1,318.43
Commercial Shops		37.06 trips/1000 sq. ft.	1.90	70.41
Commercial Office		11.56 trips/1000 sq. ft.	143.20	1,655.39

Sum of Total Trips 14,855.96
Total Vehicle Miles Traveled 76,994.65

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0

% of Trips - Residential 20.0 37.0 43.0

% of Trips - Commercial (by land use)

Elementary school	20.0	10.0	70.0
City park	5.0	2.5	92.5
Commercial Center 10-30 ac.	2.0	1.0	97.0
Commercial Center <10 ac.	2.0	1.0	97.0
Commercial Shops	2.0	1.0	97.0
Commercial Office	48.0	24.0	28.0

Changes made to the default values for Land Use Trip Percentages

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have changed from the defaults 9.57/127.67 to 9.90/127.67
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The pass by trips option switch changed from off to on.
The operational emission year changed from 2005 to 2007.

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September 27, 2004

File No.: 104012

Mr. Mark Dillon
Counsel for Newhall Land
1921 Palomar Oaks Way, Suite 200
Carlsbad, California 92008

Reference: River Village
Tentative Tract Map No. 53108, Highway 126
Newhall Ranch, California

Subject: Report
Phase I Environmental Site Assessment

Dear Mr. Dillon:

BA Environmental is pleased to submit this Phase I Environmental Site Assessment (ESA) report regarding the above-referenced property to Newhall Land. The objective of this Phase I ESA was to assess the potential for contamination at the subject property caused by hazardous materials. To accomplish this, a reconnaissance of the subject property and vicinity was performed, available relevant regulatory records were reviewed, and the property history was researched.

The subject property consists of an approximate 280-acre parcel of land that has been graded and utilized for agricultural production; numerous dirt roads traverse the subject site. Approximately four small buildings exist on the site and are used in activities related to the on-site agricultural production. The subject site is also occupied by several irrigation wells. This project also includes the two borrow sites where fill material will be derived to be placed on the subject property. Borrow Site "A" is approximately 400 acres and Borrow Site "B" is approximately 300 acres. The two borrow sites are primarily in their native states with some dirt roads traversing them. A portion of Borrow Site "A" appears to have been used in the past for agricultural purposes. Mr. John Frye, General Manager, Agriculture and Natural Resources for Newhall Land and Farming, stated that this area was briefly used to grow hay, and that no pesticides were used in this area. There was also some evidence of past oil exploration in this area. An electrical transmission tower is located in Borrow Site "B," as well as evidence of past oil wells. Primary vehicular access to the subject site is from private driveways to the north. Primary vehicular access to Borrow Site "A" is from a dirt road to the south of the subject site or from a dirt road from Potrero Canyon to the south. Primary vehicular access to Borrow Site "B" is from a dirt road to the east of Chiquito Canyon Road.

The review of historical documents indicates that portions of the subject site have been vacant undeveloped land or used as agricultural land from prior to 1903 until the present.

From prior to 1903 until prior to 1991, Southern Pacific Railroad tracks ran along the northern boundary of the subject property. Since at least 1969, the eastern portion of the subject property has been located within the Castaic Junction Oil Field. Several small structures have been located throughout the subject property from prior to 1947 through the present. The configurations and locations of these structures have changed several times since 1947. Since 1947, at least two oil wells, possibly three, have been located near the eastern property boundary. No oil wells currently exist on-site. Sometime prior to 1952, three oil ASTs (located within a containment berm) were also located near the eastern property boundary. By 1968, these ASTs had been removed. A circular AST was located approximately 555 feet south of Highway 126 and approximately 1,000 feet east of the intersection of Walcott Way and Highway 126, from prior to 1952 until prior to 1968. The purpose of this AST is unknown. An oil well has been located in the central portion of the subject property, approximately 555 feet south of the intersection of Walcott Way and Highway 126 from prior to 1952 until prior to 1994. This area has also been occupied by an equipment storage area between 1952 and 1972, and between approximately 1994 to the present. An airstrip occupied the central portion of the subject property since prior to 1968 until prior to 1994, when it was removed. The Indian Dunes Motorcycle Park also occupied the central portion of the subject property from prior to 1972 until prior to 1994, when it was abandoned and subsequently removed. By 1994, the subject property was used for agricultural purposes.

BA Environmental performed a site reconnaissance of the subject property. The site reconnaissance addressed three areas: Subject Property (Tentative Tract Map No. 53108), Borrow Site "A" and Borrow Site "B."

Subject Property (Tentative Tract Map No. 53108)

At the time of the site visit, the subject property was used primarily for agricultural production. Crops included what was believed to be green beans, beets, carrots and other vegetables. Some land appeared to be out of production or fallow. The far western end was occupied by undeveloped land covered by native vegetation. Concrete and asphalt debris was observed scattered throughout the fields. A large pile of asphalt and concrete debris was observed along the northern property boundary. Included in this debris were concrete pipes, an old pickup truck body, old telephone poles and other miscellaneous debris. Approximately 200 feet south-southwest of this pile was a pile of wood debris. Old trash piles and construction debris piles were observed in the western portion of the subject property and along the old railroad easement. The trash observed in these piles appeared to household trash. Old piping was observed scattered in the western portion of the subject property. Some of this piping appeared to be sections of old oil pipelines and some appeared to be transite concrete pipe.

An equipment storage area was observed approximately 50 feet south of the intersection of Walcott Way and Highway 126. This storage area was observed to contain various farm equipment. Two ASTs mounted on trailers were observed in this area. These trailers appeared to be empty. Several empty and partially full 55-gallon steel drums were observed on-site. These drums appeared to contain oil or petroleum products. Staining was observed on the soil throughout this area. One sheet metal building is located in the fenced storage area, and consists of approximately 400 square feet. This building is used to store equipment and grain. This building was formerly an aircraft

hangar, which was associated with an airstrip that was formerly located on the subject site. It is likely that this area was formerly used to fuel and maintain the aircraft and may have been an area used to mix pesticides.

The eastern storage area consists of three buildings and a plastic-sheeting hothouse. The buildings are used for storage and packaging. Farm equipment was observed to be stored in this area. Several small ASTs were observed in this area, as well as agricultural chemical mixing. Several 55-gallon drums and smaller five-gallon buckets were observed. None of these containers were labeled. Some staining was observed on the dirt in this storage area.

Several ASTs containing liquid fertilizers and various other agricultural chemicals were observed in the eastern portion of the subject property. Minor staining was observed on the dirt beneath these ASTs.

One portable diesel-powered pump was observed near the eastern property boundary. Associated with this pump was a small 100-gallon AST on a trailer and an approximate 500-gallon AST sitting on a wooden pallet. The 500-gallon AST was labeled as containing diesel fuel, likely for the pump. Staining was observed on the outside of the AST, as well as on the soil beneath the AST.

An old railroad easement was observed along the northern property boundary, paralleling Highway 126. The railroad tracks have been removed; however, some ballast materials still remain. Debris and trash piles were observed along this easement.

During the site visit, evidence of underground storage tanks (USTs) or wastewater clarifiers was observed on the subject site. The only hazardous materials observed on-site were agricultural chemicals (i.e., pesticides and fertilizers) and petroleum products (i.e., diesel fuel, oil and lubricants).

Four small diameter groundwater monitoring wells (piezometers) were observed on-site. According to Newhall Land personnel, these wells are utilized by Seward Engineering for groundwater elevation data used for engineering purposes.

Several pipelines were observed crossing the subject site. The pipelines were identified visually by either marker signs, or visible piping or pipeline vents. A Southern California Gas pipeline was observed running along the northern property boundary in the railroad easement, and crossing the western end of the subject property. These pipelines are believed to be 18" to 20" in diameter and likely carry natural gas. Where visible, these pipelines appeared to be coated with a tar-like material to prevent corrosion.

A Shell Oil Company petroleum pipeline was also observed to run along the northern property boundary, parallel to the old railroad easement. The size of this pipeline is unknown; however, it is likely to contain crude oil. Approximately 250 feet southeast of the intersection of Chiquito Canyon Road and Highway 126 is a fenced enclosure. This enclosure is adjacent to the Shell Oil Company pipeline and a Shell Oil pipeline vault. A sign on the gate of the enclosure indicates that the enclosure is owned by Eouilon Pipeline Company, and is the Del Valle Booster Station. This is likely a booster station for an oil pipeline. Inside of the enclosure was a pump, a 100-gallon AST likely

containing diesel fuel and two electrical transformers. The pump and AST were observed to be in a concrete containment.

An unidentified pipeline was observed running along the southern edge of the old railroad easement. Where exposed, the pipeline appeared to be approximately 18" to 20" in diameter and was coated with a tar-like substance to prevent corrosion. Two vents, similar to those used in oil pipelines, were observed associated with this pipeline.

Damaged piping was observed on the surface in the old railroad easement. It appeared that this pipeline had been removed. It is uncertain if this pipeline was replaced or completely removed. The pipeline appeared to be 16" to 18" in diameter. Oil staining was observed in the areas where this pipeline was exposed.

A Unocal pipeline was observed to run across the western end of the subject property. The size of this pipeline is unknown; however, the pipeline likely carried oil. Reportedly, this pipeline is currently idle, and not being used.

Borrow Site "A"

This parcel was observed to be primarily undeveloped at the time of the site reconnaissance. The site is covered with native vegetation, which consists of brush, oak trees and native plants. The floor of a small valley/canyon, which runs east to west across the borrow site, appears to have been used in the past for agricultural purposes. Mr. John Frye, General Manager, Agriculture and Natural Resources for Newhall Land and Farming, stated that this area was briefly used to grow hay, and that no pesticides were used in this area. Concrete and wood debris were observed scattered in the agricultural field on the floor of the small valley/canyon. This concrete and wood debris may be the indications of either a former structure or oil exploration activities. An abandoned road was observed running along the northern boundary of this borrow site. A flat, roughly graded dirt pad was observed along this road. This is the location of what is believed to have been an exploratory oil well. At the eastern end of this small valley/canyon is a graded dirt pad with what appears to be a filled-in concrete vault. This is likely the location of a former oil well. No oil staining was observed on this graded pad.

During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

Borrow Site "B"

This parcel was observed to be primarily undeveloped at the time of the site reconnaissance. The site is covered with native vegetation, which consists of brush and native plants. A dirt road crosses the subject property and leads to a Southern California Edison (SCE) transmission tower. Along this dirt road, a concrete pad was observed. This pad had a configuration similar to that used for an oil derrick and a cable tool-drilling rig. It is believed that this was the location of a former oil exploration well. No staining was noted around the concrete pad. Approximately 500 feet up a small access road was a second flat dirt pad. Soil in this area was observed to be stained by what is

believed to be crude oil. This may have been the location of a second exploratory oil well.

During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

Four small diameter groundwater-monitoring wells (piezometers) were observed on Tentative Tract Map 53108. Reportedly, these wells are utilized for groundwater elevation data used for engineering purposes.

Three water wells were observed in the western portion of the subject property. One was observed in the central portion near the intersection of Walcott Way and Highway 126. Approximately six water wells were observed along the eastern property boundary. All of these water wells are used to supply irrigation water to the agricultural crops on the subject site.

Three oil wells have been documented on the subject property. In addition, evidence of three possibly four oil wells has been noted in Borrow Site "A." Evidence of two oil wells has also been noted in Borrow Site "B."

BA Environmental completed limited soil sampling at the above-referenced site to assess whether past use of pesticides or herbicides has impacted the shallow soils beneath the previously cultivated areas on Tentative Tract No. 53108.

Sixty-nine shallow hand auger borings were advanced to depths of between one and two feet below ground surface (bgs).

Field observations of soil samples collected from all of the borings revealed no unusual odors or discoloration. Groundwater was not encountered in any of the shallow borings.

Samples collected were composited at the laboratory in groups of four, except one sample which was composited from five samples. The composited samples were analyzed for Organochlorine Pesticides (OCP), Organophosphorous Pesticides (OPP) and Chlorinated Herbicides (CH) using Environmental Protection Agency (EPA) Method Nos. 8081 (OCP) , 8141 (OPP) and 8151 (CH).

All of the soil samples analyzed were reported not to contain detectable concentrations of OPP or CH.

Several OCPs were detected in the soil samples analyzed. Soil samples G11, G13, G14, G15 and G17 were reported to contain concentrations of alpha-chlordane ranging from 0.001 to 0.018 milligrams per kilogram (mg/kg). Samples G3, G11, and G13, G14, G15 and G17 were reported to contain concentrations of gamma-chlordane ranging from 0.001 to 0.027 mg/kg. 4,4-DDD was detected in samples G13 through G15 at a concentration of 0.001 mg/kg. Samples G11 and G13 thorough G17 were reported to contain 4,4-DDE in concentrations ranging from 0.002 to 0.034 mg/kg. 4,4-DDT was detected in samples G7 and G11 through G17 in concentrations ranging from 0.002 to 0.023 mg/kg. Dieldrin was detected in samples G6 and G14 at 0.002 and 0.003 mg/kg, respectively. Endosulfan I was detected in sample G14 at a concentration of 0.001

mg/kg. Samples G11 and G17 contained concentrations of Endosulfan II at 0.018 and 0.034 mg/kg, respectively. Endosulfan Sulfate was detected in sample G14 at a concentration of 0.005 mg/kg. Samples G9 through G17 were reported to contain Endrin at concentrations ranging from 0.001 to 0.136 mg/kg. Sample G13 was reported to contain Heptachlor Epoxide at a concentration of 0.001 mg/kg.

The concentrations of OCPs detected on the subject site were compared with the Preliminary Remediation Goals (PRGs) set up by the United States Environmental Protection Agency (EPA) for various compounds and metals. This comparison revealed that none of the OCPs detected at the subject site exceeded the residential or industrial use PRGs for those compounds.

BA Environmental performed a review of available government database records. The subject property is not listed on any of the searched databases. The closest off-site facility is located to the north across Henry Mayo Drive (Highway 126). This facility is located in an assumed cross-gradient location relative to the regional groundwater flow direction. No impact from these facilities is likely. Based on the status and distances of the remaining facilities, there is a low potential for environmental impact due to off-site sources.

BA Environmental has performed a Phase I ESA, in conformance with the scope and limitations of ASTM Practice E 1527-00, of the vacant parcel of land, which is located south of the intersection of Henry Mayo Drive (Highway 126), north of the Santa Clara River, east of the intersection of Henry Mayo Drive (Highway 126) and Chiquito Canyon Road, and west of Castaic Creek, which is referred to as River Village, Tentative Tract Map No. 53108, Highway 126, and the two borrow sites, in Newhall Ranch, California. Any exceptions to, or deletions from, this practice are described in the Introduction section of this report.

This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property, except the following:

- Up to three oil wells and associated production area may exist on the subject property, and several on Borrow Sites "A" and "B";
- Several ASTs, likely associated with oil production, existed on-site in the 1950s;
- Several pipelines cross the subject property, and one pipeline crosses Borrow Site "B";
- Scattered suspect ACM debris was observed in the central and western portions of the subject property;
- Staining was observed beneath what appeared to be an abandoned pipeline along the old railroad easement, and near what was believed to be a former oil well on Borrow Site "B." In addition, staining was observed beneath a diesel AST associated with a portable water pump located in the eastern portion of the subject property; and
- Two equipment storage areas were observed on the subject site, one located in the eastern portion of the subject property and one in the central portion. The storage area in the central portion was associated with a former airstrip. Agricultural

chemical storage and mixing was observed or may have taken place at these areas in the past. Soil staining was observed in both areas.

BA Environmental recommends the following:

- If disturbed, or if located within an area of redevelopment, all former oil wells located on the subject property or on either borrow site should be reabandoned according to all applicable local and state regulations;
- If the pipelines on the subject site and Borrow Site "B" are not to be used in the future, they should be abandoned and soils beneath them assessed for petroleum hydrocarbon leakage. If the pipelines are planned to remain in use, the pipelines should be assessed for possible hydrocarbon leakage;
- Properly dispose of scattered suspect ACMs; and
- The areas of former ASTs, current agricultural storage areas and current soil staining observed on the subject site or Borrow Site "B" should be assessed for potential impact to the subject site.

Although not a recognized environmental condition, it is recommended that all groundwater monitoring wells or production water wells be abandoned according to applicable local and state regulations, prior to redevelopment.

If you have questions regarding this project or report, please contact us at (818) 500-1898.

Respectfully submitted,
BA ENVIRONMENTAL

Russell M. Cote, M. Sc., R.G. No. 7139
Manager, Environmental Services

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Table 1:	Summary of Soil Analyses (Pesticides/Herbicides)

APPENDICES

Appendix A:	Site Photographs
Appendix B:	Historic Aerial Photographs
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PHASE I ENVIRONMENTAL SITE ASSESSMENT
River Village
Tentative Tract Map No. 53108, Highway 126
Newhall Ranch, California

INTRODUCTION

BA Environmental is pleased to submit this Phase I Environmental Site Assessment (ESA) report to Newhall Land. This report is regarding the parcel of land located south of the intersection of Henry Mayo Drive (Highway 126), north of the Santa Clara River, east of the intersection of Henry Mayo Drive (Highway 126) and Chiquito Canyon Road, and west of Castaic Creek, which is referred to as River Village, Tentative Tract Map No. 53108, Highway 126, in Newhall Ranch, California.

This report was prepared in accordance with the Proposal and Contract between BA Environmental and Newhall Land, dated January 15, 2004 and Purchase Authorization PA-PL20237.

The purpose of the ESA is to identify, to the extent feasible, recognized environmental conditions, which can be defined as, "The presence or likely presence of any hazardous substance or petroleum products under conditions that indicate an existing release, a past release or a material threat of any hazardous substances or petroleum products."

This Phase I ESA meets the general requirements of the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: E 1527-00. The ASTM standard practice defines good commercial and customary practice for conducting ESAs using reasonable inquiry. The scope of services for this Phase I ESA consisted of several tasks, including:

- A reconnaissance of the site and its vicinity;
- Interviews with current owners and occupants of the subject property, and personnel at local government agencies;
- A compilation of the property history, including the review of previous environmental reports regarding the subject property (if available);
- An agency list search of facilities with recorded environmental issues located within the radii required by ASTM; and
- A summary of our findings, conclusions and recommendations.

Additional services that were provided include:

- A visual survey of asbestos containing materials (ACMs)
- A visual survey and review of map of designated wetlands;
- A review of a survey and map of radon zones; and
- Collection of soil samples for pesticide and herbicide screening.

As per ASTM Practice E 1527-00, there are no deviations from, or deletions of, the general requirements of this standard practice contained in this report.

A Phase I ESA is a non-intrusive examination. As such, it is not a full and complete assessment of all environmental conditions. Adverse conditions may exist that could not be discovered by such an assessment. BA Environmental has made every reasonable effort to discover and interpret the information and current conditions regarding the site within the time available. We will recommend prudent additional investigations, if deemed necessary.

This report must not be regarded as a guarantee that no further contamination exists beyond that which may have been detected within the building or beneath the property. If additional relevant information about the property is brought to our attention, the conclusions and recommendations contained in the report may not be valid.

This assessment relied upon information obtained from the site reconnaissance and from relevant regulatory agencies. BA Environmental believes that the information contained herein is reliable. However, BA Environmental cannot guarantee the accuracy of information provided by others.

SITE LOCATION

The subject property is a parcel of land located south of Henry Mayo Drive (Highway 126), north of the Santa Clara River, east of the intersection of Henry Mayo Drive (Highway 126) and Chiquito Canyon Road, and west of Castaic Creek, which is referred to as River Village, Tentative Tract Map No. 53108, Highway 126, in Newhall Ranch, California. This project also includes the two borrow sites where fill material will be derived to be placed on the subject property. Borrow Site "A" is located south of the Santa Clara River and west of Interstate 5 and consists of approximately 400 acres. Borrow Site "B" is located northeast of the intersection of Chiquito Canyon Road and Henry Mayo Drive and consists of approximately 300 acres. The subject property may be reached from the Interstate Freeway 5 (Golden State Freeway), exit Highway 126. Proceed west approximately 4.2 miles to the western end of the subject property. Primary vehicular access to the subject site is from private driveways to the north.

The subject property consists of an approximate 280-acre parcel of land that has been graded and utilized for agricultural production, and numerous dirt roads traverse the subject site. Approximately four small buildings exist on the site and are used in activities related to the on-site agricultural production. The subject site is also occupied by several irrigation wells. The borrow sites are primarily in their native states with some dirt roads traversing them. A portion of Borrow Site "A" has been used in the past for agricultural purposes as well as having some evidence of past oil exploration. An electrical transmission tower is located in Borrow Site "B," as well as evidence of past oil wells.

Adjacent land use to the subject site includes agricultural land and undeveloped land to the west, Castaic Creek to the east, the Santa Clara River to the south, and Highway 126 followed by Chiquita Canyon Landfill to the north (Figures 1 and 2).

Topographic Map Review

The property is depicted on the Val Verde, California Topographic Quadrangle map of the United States Geological Survey (USGS).[1] Tentative Tract Map No. 53108 encompasses portions of Sections 14, 22 and 23 Township 4 North, Range 17 West of the San Bernardino Base and Meridian. Borrow Site "A" encompasses portions of Sections 22 and 23, Township 4 North, Range 17 West of the San Bernardino Base and Meridian. Borrow Site "B" encompasses portions of Sections 15 and 22 Township 4 North, Range 17 West of the San Bernardino Base and Meridian. The subject site is located in a valley formed by the Santa Clara River. Borrow Area "A" is located on the eastern flank of Adobe Canyon. A smaller canyon cuts across Borrow Site "A." Borrow Area "B" is located on the northeastern edge of the intersection of Chiquito Canyon and the valley formed by the Santa Clara River.

Tentative Tract Map No. 53108 is located south of Henry Mayo Drive (Highway 126), north of the Santa Clara River, east of the intersection of Henry Mayo Drive (Highway 126) and Chiquito Canyon Road, and west of Castaic Creek. The subject property is depicted as being vacant undeveloped land. Several small structures are depicted on the subject site. A landing strip is depicted on the subject property, approximately 200 feet south of Highway 126. This landing strip extends across the eastern half of the subject property. Southern Pacific Railroad tracks are also depicted, approximately 20 to 50 feet south of Highway 126.

Borrow Site "A" is located south of the Santa Clara River and west of Interstate 5 and is depicted as undeveloped land with several dirt trails traversing it. Borrow Site "B" is located northeast of the intersection of Chiquito Canyon Road and Highway 126 and is depicted as undeveloped land with several dirt trails traversing it.

A portion of Tentative Tract Map No. 53108 is part of the Castaic Union Oil Field. Borrow Site "A" is part of the Newhall-Portero Oil Field. Borrow Site "B" is located on the eastern end of the Del Valle Oil and Gas Field. Oil wells are depicted in the eastern and central portions of the subject site. Water wells are depicted in the eastern and western portions of the subject property.

The subject site is located in a valley formed by the Santa Clara River. Borrow Sites "A" and "B" are located in the hills along the flanks of this valley. The topography of the site and the surrounding area slopes toward the Santa Clara River or moderately on the flanks of the valley. The site generally slopes to the west-southwest at a gradient of approximately 50 feet per mile. The elevation at the site is approximately 420 feet above mean sea level (msl). The elevation ranges from 900 feet above msl at the west end of Tentative Tract Map No. 53108 to 1,200 feet above msl in Borrow Site "A."

The Santa Clara River is located adjacent to the south of River Village Tentative Tract Map No. 53108, and Castaic Creek is adjacent to the east. Several intermittent streams which drain into the Santa Clara River are located within a one-mile radius of the subject site and the two borrow sites. No other major bodies of surface water (i.e., oceans, lakes, rivers, streams, etc.) are located within a one-mile radius of the site.

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1 USGS Map, Newhall, California Quadrangle, 1952, photo-revised 1988.

A review of the topographic map and oil and gas maps indicates that several oil or gas wells are located on the subject site, or in the site vicinity.[2] These wells were listed as "abandoned uncompleted."

GEOLOGY AND HYDROGEOLOGY

The subject site is located on the alluvial plain of the Santa Clara River and tributaries. Underlying sediments consist of alluvial and flood plain deposits of silt, sands and gravels. Sand is medium to coarse grained, and cobbles are found to increase in size with depth. The Plio-Pleistocene Saugus Formation, a thin to moderately thick bedded non-marine deposit, ranging from reddish-brown siltstones, silty sandstones to conglomerates, underlies the Quaternary alluvial sediments and outcrops in the northern and eastern portion of the subject property. The Newhall Segment of the San Gabriel Fault, which is classified as a late Quaternary fault which cuts strata of Pleistocene age, is located within 500 feet of the subject site.[3]

According to the County of Los Angeles, Department of Public Works, Hydraulic Conservation Division, which maintains information on groundwater depth from the county-owned wells, the closest well to the subject property, listed with their department, is located approximately 1,500 feet west of the confluence of the Santa Clara River and Castaic Creek. This well is identified as #6967, and was last measured on June 19, 2003. The data indicates that from the ground surface depth to groundwater surface was 24.3 feet, and that the ground surface elevation at the well head is 949.7 feet above msl. Groundwater flow direction is expected to flow to the south/southwest following topography.[4] A groundwater monitoring well located approximately 200 feet north of the subject property, associated with the Chiquito Canyon Landfill, was reported to have groundwater at approximately 32 to 36 below ground surface (bgs).

HISTORICAL REVIEW

As part of the Historical Review, BA Environmental reviewed historical aerial photographs, historical fire insurance maps, oil and gas well maps, city records, and building department records.

Historical Aerial Photographs

Historical aerial photographs of the site were reviewed for the years 1928 (earliest photograph available), 1947, 1952, 1968, 1972, 1976, 1980, 1988, 1989, 1990, 1993, 1994, 1995 and 1999.[5] Copies are included in Appendix B.

1928
The portion of the subject site (Tentative Tract Map No. 53108) appeared to be an undeveloped river channel with native vegetation, while the eastern portion appeared to

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2 Munger Map Book of California/Alaska Oil and Gas Fields, 37th Edition, June 1993.

3 1994 Fault Activity Map of California and Adjacent Areas (1:750,000 scale), California Department of Conservation, Division of Mines and Geology.

4 County of Los Angeles Department of Public Works, Hydrologic Records, records request October 14, 2003.

5 The EDR Aerial Photograph Print Service, Inquiry No. 1108642-9, January 15, 2004 and Continental Aerial Photography, Cypress, California 1952, 1972, 1980, 1988, 1990, 1993, 1995 and 1999.

be occupied by agricultural land. Railroad tracks ran along the northern property boundary, parallel to Highway 126. Borrow Sites "A" and "B" appeared to be undeveloped land covered by native vegetation. A small valley or canyon cuts across Borrow Site "A," from east to west. Adjacent properties to the subject property include Castaic Creek to the east, the Santa Clara River Channel to the west and south, and Highway 126 to the north. Adjacent properties to Borrow Site "B" include undeveloped land covered by native vegetation to the north, east and west, and Highway 126 to the south. Adjacent properties to Borrow Site "A" include undeveloped land covered by native vegetation to the north, south, east and west.

1947

There were no significant changes in the subject property, except near the eastern property boundary. Near the eastern property boundary, four small structures and what appeared to be an oil well were observed. Borrow Site "B" was still observed to be undeveloped land; however, a dirt road was observed to traverse it. What appeared to be a concrete pad for an oil well was observed next to this road. At the end of the road was what appeared to be the location of a possible second oil well. There were no significant changes in Borrow Site "A." There were no significant changes in the properties adjacent to the subject site. There were no significant changes to the properties adjacent to Borrow Site "B," except that there appeared to be an oil field to the west. There were no significant changes to the properties adjacent to Borrow Site "A," except to the west, which was occupied by agricultural land, and to the south, which appeared to be an oil field.

1952

The subject site remained either an undeveloped river channel or agricultural land. A dirt road was observed to traverse north to south across the central portion of the subject property, in the area of the present intersection of Wolcott Way and Highway 126. In this same area, south of Highway 126, were what appeared to be a storage area and several structures. Near the eastern property boundary were what appeared to be one structure, two wells (possibly water wells), one oil well (located within a bermed containment), and three aboveground storage tanks (AST), likely wash tanks in a bermed containment. Located between the eastern property boundary and the present intersection of Wolcott Way and Highway 126 (approximately 555 feet south of Highway 126 and approximately 1,000 feet east of the intersection of Walcott Way and Highway 126) was a circular structure interpreted to be an AST. Railroad tracks were still present south of Highway 126. There appeared to be no significant changes in properties adjacent to the subject property, or the two borrow sites.

1968

There were no significant changes to the subject property, except that an airstrip was present in the central portion of the subject property. The storage area was still present in the central portion of the subject property. Two structures were observed near the eastern property boundary. These structures are believed to be related to the agricultural activities. The three ASTs and oil well observed in this area in 1952 were not present. There were no significant changes in the two borrow sites, except that a dirt road was observed to traverse west to east across Borrow Site "B." There were no significant changes in the properties adjacent to the subject site or the two borrow sites.

1972

There were no changes in the eastern or western portions of the subject property, except that the airstrip had been extended to the east. The central portion of the property was still occupied by the airstrip; however, a significant part of the central portion of the

subject property was occupied by a motorcycle park (Indian Dunes Motorcycle Park). In addition, the railroad tracks along the northern property boundary appeared to have been removed. There were no significant changes in the two borrow sites. There were no significant changes in the properties adjacent to the subject property or the two borrow sites, except that Chiquito Canyon Land Fill was located north of Highway 126.

1976, 1980, 1988, 1989 and 1990
There were no significant changes in the subject property. In 1976, there were two small structures near the airstrip. Two small structures and what was believed to be an oil well were located neat the eastern property boundary. What is believed to be four water wells were also located along the eastern property boundary. In 1980, there were four small structures near the eastern property boundary. There were no significant changes in Borrow Site "A," except that in 1989 a dirt road ending in a rectangular disturbed area (possibly an exploratory oil well) was observed in the small valley/canyon located in this borrow site. There were also no significant changes in Borrow Site "B," except that in 1976 there appeared to be an electrical transmission tower on the borrow site and a transmission line traversed from west to east across the site. There were no significant changes in the adjacent properties.

1993, 1994, 1995 and 1999
The eastern and western portions of the property show no significant changes. In 1994, the airstrip in the central portion of the subject property appears to have been removed, and the motorcycle park (Indian Dunes Motorcycle Park) appeared to have been abandoned. One small structure remains in the central portion of the property near the location of the former airstrip, and two structures are located near the eastern property boundary. By 1996, there were three small structures near the eastern property boundary, along with equipment storage. In 1993, the small valley/canyon in Borrow Site "A" was observed to have several dirt roads crossing it, as well as an area of disturbed vegetation (possible oil exploration activities). In 1994, the floor of this small valley/canyon appeared to be graded and used for agricultural purposes. There were no significant changes in Borrow Site "B." There were no significant changes in the adjacent properties.

Historical Fire Insurance Maps

Historical fire insurance maps have been primarily used by insurance underwriters to determine the risk involved in insuring individual buildings in urban areas against loss due to fire. When available, these maps can provide information regarding the historical use of a particular site and its adjacent properties. Historical fire insurance maps were not available for the subject property.[6]

Munger Map Review

A review of relevant Munger oil and gas field maps indicates that the subject site is located within Castaic Junction Oil Field on Tentative Tract Map No. 53108. Several oil wells were reported to have been drilled on the subject property or within 0.25 miles of the subject property. The approximate locations are plotted on Figure 2 and 3. No indication of oil wells was observed during the reconnaissance of the subject property or

6 EDR Sanborn® Map Report, Inquiry No. 1108642.5s, January 8, 2004.

adjacent properties.[7] Indications of two oil wells on Borrow Site "B," and possibly one on Borrow Site "A" were observed on the day of the site reconnaissance.

Historical Topographic Maps

BA Environmental reviewed the Santa Susana and Val Verde, California Topographic Quadrangle maps for the years 1903, 1916, 1941, 1943, 1947, 1952, 1969, 1988, 1991 and 1995.[8] Copies are included in Appendix C.

1903 and 1916
The subject site (Tentative Tract Map No. 53108) and Borrow Site "B" and Borrow Site "A" and surrounding areas were depicted as vacant, undeveloped land in the Santa Clara River Valley. The Southern Pacific Railroad was depicted along the northern boundary of the subject property (Tentative Tract Map No. 53108). A highway was depicted in the general vicinity of Highway 126. The Santa Clara River was depicted to the south of the subject site and Castaic Creek was depicted to the east of the subject property. The small community of Castaic was depicted to the east.

1941, 1943 and 1947
Significant changes were not observed on the subject property or adjacent properties to the north, south, east or west. In 1941, dirt trails were observed to cross the subject site. Some wooded areas are also depicted on the map. There appears to have been two oil wells located on Borrow Site "A," and two more located just north of the northern boundary of area "A." The Del Valle Oil Field was located west of Borrow Site "B," and the Newhall-Potrero Oil Field was located to the west and south of Borrow Site "A." Newhall Ranch was located near the intersection of Highway 126 and Highway 99 (Interstate Highway 5). The small community of Val Verde was visible to the north of the subject property. Chiquito Canyon Road was visible for the first time on the 1941 map. A dirt road extended from Chiquito Canyon south in the vicinity of Borrow Site "A."

1952
The subject site was still depicted as vacant land with some wooded areas. Two water wells and two small structures were depicted near the western boundary of the subject property. One oil well was depicted in the central portion of the subject property, near the current farm equipment storage area observed on the day of the site visit. Four water wells, one oil well and three oil tanks were depicted near the eastern boundary of the subject property. Significant changes were not observed on Borrow Site "A" or Borrow Site "B." Significant changes were not observed in the adjacent properties. Highway 126 was labeled "Saugus Ventura Road."

1969
Significant changes were not observed on the subject property, except that a landing strip extended across the subject property and terminated approximately 3,000 feet to the northeast. The eastern portion of the subject site is labeled as being in the Castaic Junction Oil Field. The oil tanks depicted on the 1952 topographic map were not depicted on this map. The wells and structures observed on the 1952 map were still present. Four rectangular shaped buildings were depicted near the southern boundary of the subject property on what is believed to be an adjacent property. Additional dirt trails

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7 Munger Map Book of California/Alaska Oil and Gas Fields, 37th Edition, June 1993.

8 The EDR Historical Topographic Map Report, Inquiry No. 1063369-5, October 16, 2003.

were observed in the vicinity of Borrow Sites "A" and "B." The Del Valle Oil and Gas Field is located to the west of the subject site and the Newhall-Potero Oil Field is located to the south and west of the subject site.

1988 and 1991
Significant changes were not observed on the adjacent properties to the north, south, east or west. The present day Chiquita Canyon Landfill was labeled "gravel pit" on this map.

1995
Significant changes were not observed on the subject property, except that a small structure was depicted next to the oil well located in the central portion of the subject property. This structure appears to be in the same location as the structure associated with the equipment storage area in this same area, observed on the day of the site visit. Several dirt trails are depicted traversing the subject property, and the Southern Pacific Railroad tracks were no longer depicted. There were no significant changes in the two borrow sites or the adjacent properties. The Chiquita Canyon Landfill had been expanded between 1991 and 1995. The landing strip that was first observed in 1969 had been removed by 1995.

Building Records

The Los Angeles County Department of Public Works Building and Safety Department and Tax Assessors office were contacted regarding building permits and certificates of occupancy for the site.[9] According to the Los Angeles County Department of Public Works Building and Safety Department, no permits existed for the subject property.

Historical Summary

The review of historical documents indicates that portions of the subject site have been vacant undeveloped land or used as agricultural land from prior to 1903 until present. From prior to 1903 until prior to 1991, Southern Pacific Railroad tracks ran along the northern boundary of the subject property. Since at least 1969, the eastern portion of the subject property has been located within the Castaic Junction Oil Field. Several small structures have been located throughout the subject property from prior to 1947 through present. The configurations and locations of these structures have changed several times since 1947. Since 1947, at least two oil wells, possibly three, have been located near the eastern property boundary. No oil wells currently exist on-site. Sometime prior to 1952, three oil ASTs (located within a containment berm) were also located near the eastern property boundary. By 1968, these ASTs had been removed. A circular AST was located approximately 555 feet south of Highway 126 and approximately 1,000 feet east of the intersection of Walcott Way and Highway 126, from prior to 1952 until prior to 1968. The purpose of this AST is unknown. An oil well has been located in the central portion of the subject property, approximately 555 feet south of the intersection of Walcott Way and Highway 126, from prior to 1952 until prior to 1994. This area has also been occupied by an equipment storage area between 1952 and 1972, and between approximately 1994 to the present. An airstrip occupied the central portion of the subject property since prior to 1968 until prior to 1994 when it was removed. The Indian Dunes Motorcycle Park also occupied the central portion of the subject property from

9 County of Los Angeles Public Works Department, Building and Safety Division, and http://assessor.co.la.ca.us/DataMaps/pais.asp., October 23, 2003.

prior to 1972 until prior to 1994 when it was abandoned and subsequently removed. By 1994, the subject property was used for agricultural purposes.

Borrow Sites "A" and "B" have primarily been undeveloped since prior to 1903 until the present. Two oil wells were located near the northern boundary of Borrow Site "A" in 1941. There is no evidence of production from these wells. In 1989 and in 1993, visual evidence of possible oil exploration activities were observed on the floor of a small valley/canyon located on Borrow Site "A." No oil wells currently exist on Borrow Site "A." The floor of the small valley/canyon located in Borrow Site "A" appears to have been used for agricultural purposes from around 1994 through the present.

Some time prior to 1947, a dirt road was constructed across Borrow Site "B," and what appeared to be two oil wells were drilled on this site. No evidence of production was observed. In addition, evidence of a possible oil pipeline was noted to cross Borrow Site "B," along its southern boundary. Evidence of this possible pipeline was noted as early as 1952. Sometime prior to 1976, electrical transmission lines were noted to cross from west to east across Borrow Site "B," and a transmission tower is located on the site.

SITE RECONNAISSANCE AND IMPROVEMENTS

Between January 28, 2004 to February 4, 2004, BA Environmental performed a visual reconnaissance of the subject property located south of Henry Mayo Drive (Highway 126), north of the Santa Clara River, east of the intersection of Henry Mayo Drive (Highway 126) and Chiquito Canyon Road, and west of Castaic Creek, which is referred to as River Village, Tentative Tract Map No. 53108, Highway 126, in the unincorporated portion of Los Angeles County. Planned usage for the subject property will include residential and commercial developments, parks and a school (see Figure 4). This project also includes the two borrow sites where fill material will be derived to be placed on the subject property. Borrow Site "A" is located south of the Santa Clara River and west of Interstate 5 and consists of approximately 400 acres. Borrow Site "B" is located northeast of the intersection of Chiquito Canyon Road and Henry Mayo Drive and consists of approximately 300 acres. Mr. Russell M. Cote of BA Environmental performed the site reconnaissance, unescorted.

The subject property consists of an approximate 280-acre parcel of land that has been graded and utilized for agricultural production; numerous dirt roads traverse the subject site. Approximately four small buildings exist on the site and are used in activities related to the on-site agricultural production. The subject site is also occupied by several irrigation wells. This project also includes the two borrow sites where fill material will be derived to be placed on the subject property. Borrow Site "A" is located south of the Santa Clara River and west of Interstate 5 and consists of approximately 400 acres, and Borrow Site "B" is located northeast of the intersection of Chiquito Canyon Road and Henry Mayo Drive and consists of approximately 300 acres. The two borrow sites are primarily in their native states with some dirt roads traversing them. A portion of Borrow Site "A" appears to have been used in the past for agricultural purposes. Mr. John Frye, General Manager, Agriculture and Natural Resources for Newhall Land and Farming, stated that this area was briefly used to grow hay, and that no pesticides were used in this area. There was also some evidence of past oil exploration in this area. An electrical transmission tower is located in Borrow Site "B," as well as evidence of past oil wells. Primary vehicular access to the subject site is from private driveways to the north. Primary vehicular access to Borrow Site "A" is from a dirt road to the south of the subject

site or from a dirt road from Potrero Canyon to the south. Primary vehicular access to Borrow Site "B" is from a dirt road to the east of Chiquito Canyon Road.

The site reconnaissance section is separated into three sub-sections: Subject Property (Tentative Tract Map No. 53108), Borrow Site "A" and Borrow Site "B."

Subject Property (Tentative Tract Map No. 53108)

At the time of the site visit, the subject property was used primarily for agricultural production. Crops included what was believed to be green beans, beets, carrots and other vegetables. Some land appeared to be out of production or fallow. The far western end was occupied by undeveloped land covered by native vegetation. Concrete and asphalt debris was observed scattered throughout the fields. A large pile of asphalt and concrete debris was observed along the northern property boundary. Included in this debris were concrete pipes, an old pickup truck body, old telephone poles and other miscellaneous debris. Approximately 200 feet south-southwest of this pile is a pile of wood debris. Old trash piles and construction debris piles were observed in the western portion of the subject property and along the old railroad easement. The trash observed in these piles appeared to household trash. Old piping was observed scattered in the western portion of the subject property. Some of this piping appeared to be sections of old oil pipelines and some appeared to be transite concrete pipe.

An equipment storage area was observed approximately 50 feet south of the intersection of Walcott Way and Highway 126. This storage area was observed to contain various farm equipment. Two ASTs mounted on trailers were observed in this area. These trailers appeared to be empty. Several empty and partially full 55-gallon steel drums were observed on-site. These drums appeared to contain oil or petroleum products. Staining was observed on the soil throughout this area. One sheet metal building is located in the fenced storage area, and consists of approximately 400 square feet. This building is used to store equipment and grain. This building was formerly an aircraft hangar, which was associated with an airstrip that was formerly located on the subject site. It is likely that this area was formerly used to fuel and maintain the aircraft and may have been an area used to mix pesticides.

The eastern storage area consists of three buildings and a plastic-sheeting hothouse. The buildings are used for storage and packaging. Farm equipment was observed to be stored in this area. Several small ASTs were observed in this area, as well as agricultural chemical mixing. Several 55-gallon drums and smaller five-gallon buckets were observed. None of these containers were labeled. Some staining was observed on the dirt in this storage area.

Several ASTs containing liquid fertilizers and various other agricultural chemicals were observed in the eastern portion of the subject property. Minor staining was observed on the dirt beneath these ASTs.

One portable diesel-powered pump was observed near the eastern property boundary. Associated with this pump was a small 100-gallon AST on a trailer and an approximate 500-gallon AST sitting on a wooden pallet. The 500-gallon AST was labeled as containing diesel fuel, likely for the pump. Staining was observed on the outside of the AST, as well as on the soil beneath the AST.

Several pumps were observed associated with water wells in the western and eastern portions of the subject property. These pumps are used to supply irrigation water to the

fields under cultivation. Minor staining was observed beneath the pumps.

An old railroad easement was observed along the northern property boundary, paralleling Highway 126. The railroad tracks have been removed; however, some ballast materials still remain. Debris and trash piles were observed along this easement.

During the site visit, evidence of underground storage tanks (USTs) or wastewater clarifiers were observed on the subject site. The only hazardous materials observed on-site were agricultural chemicals (i.e., pesticides and fertilizers) and petroleum products (i.e., diesel fuel, oil and lubricants).

Four small diameter groundwater monitoring wells (piezometers) were observed on-site. According to Newhall Land personnel, these wells are utilized by Seward Engineering for groundwater elevation data used for engineering purposes.

Several pipelines were observed crossing the subject site. The pipelines were identified visually by either marker signs, or visible piping or pipeline vents. A Southern California Gas pipeline was observed running along the northern property boundary in the railroad easement, and crossing the western end of the subject property. These pipelines are believed to be 18" to 20" in diameter and likely carry natural gas. Where visible, these pipelines appeared to be coated with a tar-like material to prevent corrosion.

A Shell Oil Company petroleum pipeline was also observed to run along the northern property boundary, parallel to the old railroad easement. The size of this pipeline is unknown; however, it is likely to contain crude oil. Approximately 250 feet southeast of the intersection of Chiquito Canyon Road and Highway 126 is a fenced enclosure. This enclosure is adjacent to the Shell Oil Company pipeline and a Shell Oil pipeline vault. A sign on the gate of the enclosure indicates that the enclosure is owned by Eouilon Pipeline Company, and is the Del Valle Booster station. This is likely a booster station for an oil pipeline. Inside of the enclosure was a pump, a 100-gallon AST likely containing diesel fuel and two electrical transformers. The pump and AST were observed to be in a concrete containment.

An unidentified pipeline was observed running along the southern edge of the old railroad easement. Where exposed, the pipeline appeared to be approximately 18" to 20" in diameter and was coated with a tar-like substance to prevent corrosion. Two vents, similar to those used in oil pipelines, were observed associated with this pipeline.

Damaged piping was observed on the surface in the old railroad easement. It appeared that this pipeline had been removed. It is uncertain if this pipeline was replaced or completely removed. The pipeline appeared to be 16" to 18" in diameter. Oil staining was observed in the areas where this pipeline was exposed.

A Unocal pipeline was observed to run across the western end of the subject property. The size of this pipeline is unknown; however, the pipeline likely carried oil. Reportedly, this pipeline is currently idle, and not being used.

The Santa Clara River, an intermittent seasonal stream, is located adjacent to the south of the subject property. Castaic Creek a tributary to the Santa Clara River, is located to the east of the subject property. Storm water sheet flows across the subject property to the south into the Santa Clara River and to the east into Castaic Creek.

Borrow Site "A"

This parcel was observed to be primarily undeveloped at the time of the site reconnaissance. The site is covered with native vegetation, which consists of brush, oak trees and native plants. The floor of a small valley/canyon, which runs east to west across the borrow site, appears to have been used in the past for agricultural purposes. Mr. John Frye, General Manager, Agriculture and Natural Resources for Newhall Land and Farming, stated that this area was briefly used to grow hay, and that no pesticides were used in this area. Concrete and wood debris was observed scattered in the agricultural field on the floor of the small valley/canyon. This concrete and wood debris may be the indication of either a former structure or oil exploration activities. An abandoned road was observed running along the northern boundary of this borrow site. A flat roughly graded dirt pad was observed along this road. This is the location of what is believed to have been an exploratory oil well. At the eastern end of this small valley/canyon is a graded dirt pad with what appears to be a filled-in concrete vault. This is likely the location of a former oil well. No oil staining was observed on this graded pad. Storm water sheet flows across the subject property to the west into the unnamed tributary and to the north into the Santa Clara River.

During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

Borrow Site "B"

This parcel was observed to be primarily undeveloped at the time of the site reconnaissance. The site is covered with native vegetation, which consists of brush and native plants. A dirt road crosses the subject property and leads to a Southern California Edison (SCE) transmission tower. A concrete pad was observed along this dirt road. This pad had a configuration similar to that used for an oil derrick and a cable tool-drilling rig. It is believed that this was the location of a former oil exploration well. No staining was noted around the concrete pad. Approximately 500 feet up a small access road was a second flat dirt pad. Soil in this area was observed to be stained by what is believed to be crude oil. This may have been the location of a second exploratory oil well. Chiquito Canyon Road is located adjacent to the west of this parcel. Highway 126 is located adjacent to the south. Storm water flows across the subject property to the east into Chiquito Canyon and south into the Santa Clara River.

During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

Soil Sampling for Pesticides and Herbicides

Scope of Services

The objective of the limited soil sampling was to assess whether past use of pesticides or herbicides have impacted the shallow soils beneath the previously cultivated areas on Tentative Tract No. 53108. BA Environmental proposed to collect up to 15 composite soil samples at a depth of approximately one to two feet below ground surface (bgs).

In order to complete the limited soil sampling activities, BA Environmental performed the following tasks:

a. Collected up to 69 soil samples based upon designated use (agricultural production, grazing, etc.). The locations of the soil samples from which the composites were made are included on Figure 5;

b. Submitted 69 soil samples to a State of California, Department of Health Services (DHS)-certified laboratory to be composited. These samples were composited in the laboratory into 15 composite samples. The 15 composite samples were to be analyzed for Organochlorine Pesticides (OCP), Organophosphorous Pesticides (OPP) and Chlorinated Herbicides (CH), using Environmental Protection Agency (EPA) Method Nos. 8081, 8141 and 8151, respectively;

c. Provided all of the necessary equipment and materials to perform the required services. This equipment included soil sampling equipment.

Soil Sampling Procedures

Between January 29, 2004 and February 5, 2004, BA Environmental conducted limited soil sampling investigation using hand auger equipment. Coordination and supervision of soil sampling activities were performed by a Registered Geologist from BA Environmental.

Sixty-nine shallow soil borings were advanced to a depth of between one and two feet bgs (Figure 3).

Following retrieval of the samples, the samples were labeled with the sample number, collection date and project number, placed in a cooler chilled to approximately 4° C (40° F), and retained for laboratory analyses.

Field observations of soil samples collected from all of the borings revealed no unusual odors or staining.

Decontamination

Quality assurance/quality control (QA/QC) procedures were performed to prevent cross contamination between the samples. Only clean sampling equipment was used for this drilling project. A three-stage tap water wash was used to clean equipment between boring and sampling events. New nitrile gloves were used while obtaining the samples. The soil samples were collected in clean liners.

Sample Handling and Transport

The soil samples collected from the hand auger borings to be used for chemical analyses were placed in a cooler, chilled to approximately 4° C (40° F), and transported to Enviro Chem Inc. of Pomona, California, a State of California DHS-certified laboratory, under a strict chain-of-custody prepared at the time of sampling. The samples were composited by the laboratory.

Quality Assurance/Quality Control (QA/QC)

To increase the confidence levels in the data obtained, a QA/QC program was implemented. QA refers to management of actions designed to maintain precision, accuracy and completeness of the data developed from the project. QC refers to accepted formal procedures and activities specifically designed for the purpose of collecting data that is intended to be reliable and consistent for the site conditions.

The program includes formal procedures for all field activities, including soil sampling, decontamination, instrument calibration, documentation of activities and calculations, and peer review. Routine QC procedures were performed by the laboratory, and included daily calibration of instruments, percent surrogate recoveries and analyses of matrix spikes and matrix spike duplicates (laboratory reports). The laboratory reported the results to be within acceptable percent recoveries with no results exceeding the laboratory established control limits.

Limited Soil Sampling - Laboratory Results

Samples collected were composited at the laboratory in groups of four, except one sample which was composited from five samples. The composited samples were analyzed for Organochlorine Pesticides (OCP), Organophosphorous Pesticides (OPP) and Chlorinated Herbicides (CH), using Environmental Protection Agency (EPA) Method Nos. 8081 (OCP) , 8141 (OPP) and 8151 (CH).

OCP in Soil

Composited soil samples G1 through G17 were analyzed for OCP and the data is presented in Table 1, which is included as an attachment to this report. In summary, samples G11, G13, G14, G15 and G17 were reported to contain concentrations of alpha-chlordane ranging from 0.001 to 0.018 milligrams per kilogram (mg/kg). Samples G3, G11, and G13, G14, G15 and G17 were reported to contain concentrations of gamma-chlordane ranging from 0.001 to 0.027 mg/kg. 4,4-DDD was detected in samples G13 through G15 at a concentration of 0.001 mg/kg. Samples G11 and G13 thorough G17 were reported to contain 4,4-DDE in concentrations ranging from 0.002 to 0.034 mg/kg. 4,4-DDT was detected in samples G7 and G11 through G17 in concentrations ranging from 0.002 to 0.023 mg/kg. Dieldrin was detected in samples G6 and G14 at 0.002 and 0.003 mg/kg, respectively. Endosulfan I was detected in sample G14 at a concentration of 0.001 mg/kg. Samples G11 and G17 contained concentrations of Endosulfan II at 0.018 and 0.034 mg/kg, respectively. Endosulfan Sulfate was detected in sample G14 at a concentration of 0.005 mg/kg. Samples G9 through G17 were reported to contain Endrin at concentrations ranging from 0.001 to 0.136 mg/kg. Sample G13 was reported to contain Heptachlor Epoxide at a concentration of 0.001 mg/kg. The laboratory results are summarized in Table 1. The laboratory report is included in Appendix D.

The concentrations of OCPs detected on the subject site were compared with the Preliminary Remediation Goals (PRGs) set up by the United States Environmental Protection Agency (EPA) for various compounds and metals. This comparison revealed that none of the OCPs detected at the subject site exceeded the residential or industrial use PRGs for those compounds. Based on these results, there is a low potential for threat to human health or the environment.

OPP in Soil

Composited soil samples G1 through G17 were analyzed for OPP and the data is presented in Table 1 (see attachments). In summary, all of the samples analyzed were reported not to contain detectable concentrations of OPP. The laboratory results are summarized in Table 1. The laboratory report is included in Appendix D.

CH in Soil

Composited soil samples G1 through G17 were analyzed for CH and the data is presented in Table 1 (see attachments). In summary, all of the samples analyzed were reported not to contain detectable concentrations of CH. The laboratory results are summarized in Table 1. The laboratory report is included in Appendix D.

Pits, Ponds and Lagoons

Pits, ponds and lagoons are often associated with the disposal of solid and liquid wastes, which may include hazardous materials. According to ASTM Standard E 1527-00, pits, ponds and lagoons are "man-made or natural depressions in the ground surface that are likely to hold liquids or sludges containing hazardous substances or petroleum products." Information obtained from the assessment indicated that pits, ponds and lagoons do not currently exist on the subject site. Based on the review of historical records of the subject site, it is unlikely that pits, ponds or lagoons have existed at the site in the past.

Septic Tanks and Cesspools

Septic tanks and cesspools are often associated with the disposal of wastewater from structures that are not served by public sewer systems. Septic tanks and cesspools may be associated with hazardous materials, if such materials have been inappropriately disposed of in the past via sinks. Information obtained from the site assessment indicated that septic tanks and cesspools do not currently exist on the subject property.

Wells, Cisterns and Sumps

Four small diameter groundwater-monitoring wells (piezometers) were observed on Tentative Tract Map 53108. According to Newhall Land personnel, these wells are utilized by Seward Engineering for groundwater elevation data used for engineering purposes.

Three waster wells were observed in the western portion of the subject property. One was observed in the central portion near the intersection of Walcott Way and Highway 126. Approximately six water wells were observed along the eastern property boundary. All of these water wells are used to supply irrigation water to the agricultural crops on the subject site.

Three oil wells have been documented on the subject property. In addition, evidence of three, possibly four, oil wells has been noted in Borrow Site "A." Evidence of two oil wells has also been noted in Borrow Site "B." These oil wells are further discussed in the Historical Review section above or the Agency Contacts section below.

Polychlorinated Biphenyls (PCBs)

No equipment likely to contain PCBs was observed on the subject property or adjacent properties.

On-Site Fuel Storage Tanks

According to the State of California Water Resources Control Board (SCWRCB), underground storage tanks (USTs) and/or permits do not exist for the subject property.[10] A review of Los Angeles County Department of Public Works revealed that UST files existed for 28700 Henry Mayo Drive, a site located within the limits of the subject property. One 1,000-gallon gasoline and one 1,000-gallon diesel UST were removed in 1989 by PW Environmental, in the vicinity of the central farm equipment storage area south of Wolcott Way. This UST is further discussed in the Agency Contacts Section below.

One portable diesel powered pump was observed near the eastern property boundary. Associated with this pump was a small 100-gallon AST on a trailer and an approximate 500-gallon AST sitting on a wooden pallet. The 500-gallon AST was labeled as containing diesel fuel, likely for the pump. Staining was observed on the outside of the AST, as well as on the soil beneath the AST.

Utilities

Electric service is provided by SCE. Water service is provided by the Valencia Water Company. No refuse removal service is provided to the subject property.

Visual Asbestos Survey

BA Environmental performed a visual survey of suspect friable and non-friable asbestos-containing materials (ACMs).

- Friable materials are materials which can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- Non-friable materials are materials in which the fibers have been locked in by a bonding agent, coating, or binder, and may not release fibers during normal use and handling. Improper handling, such as grinding or sanding of non-friable ACMs, will render these materials friable.

On the day of the site reconnaissance, scattered suspect ACMs were observed. These suspects ACMs included pieces of transite pipe, construction material debris along the old railroad easement, and tar-like coating observed on metal pipe sections located in the western portion of the subject site.

10 The EDR Radius Map with GeoCheck®, Inquiry No. 1108642.4s, January 8, 2004.

Radon Gas Survey

Radon is a radioactive gas that occurs naturally in the environment, and cannot be seen, smelled or tasted. The human health effect associated with exposure to elevated levels of radon is an increased risk of developing lung cancer. The US Environmental Protection Agency (EPA) and the US Center for Disease Control are concerned about the increased risk of lung cancer developing in individuals exposed to above average levels of radon in their homes or offices. In order to address these concerns, the US EPA conducted a radon survey and presented the results for various counties in 1993.[11]

The EPA's map of Radon Zones assigns each of the 3,141 counties in the United States to one of three zones. The zone designations were determined by assessing five factors that are known to be important indicators of radon potential: indoor radon measurements, geology, aerial radioactivity surveys, soil parameters and foundation types. The subject property falls within the designation of Zone 2. Zone 2 counties have a predicted average indoor radon screening level of greater than or equal to 2.0 picocuries per liter (pCi/l) and less than or equal to 4.0 pCi/l of dry air. Based on the results of the survey, the subject site appears to fall within a radon screening level below the recommended EPA Action Level of 4.0 pCi/l. It is BA Environmental's opinion, based upon these results, that it is unlikely that radon is a concern for the subject site.

ADJACENT LAND USE

During the reconnaissance of the surrounding area within a 0.25-mile radius, BA Environmental observed that the subject site is located in an area undeveloped land and agricultural land, with oil fields to the northwest and south.

Adjacent land use to the subject site (Tentative Tract Map No. 53108) include agricultural land and undeveloped land to the west, Castaic Creek to the east, the Santa Clara River to the south, and Highway 126 followed by Chiquita Canyon Landfill and vacant undeveloped land to the north. Adjacent properties to Borrow Site "A" include agricultural land to the west, and undeveloped land to the north, south and east. South of this borrow site is an oil field. Adjacent properties to Borrow Site "B" include undeveloped land to the north, Chiquito Canyon Road and an oilfield to the west, undeveloped land followed by the Chiquito Canyon Landfill to the east, and Highway 126 followed by the subject site to the south.

Wetlands and Flood Plains

During the site reconnaissance and drive-by survey of the surrounding area, BA Environmental did not observe indications that the subject property is located within known wetlands. According to the Environmental Data Resources, Inc. (EDR) report regarding the subject site and site vicinity, no wetlands per the 1994 National Wetlands Inventory are located within a one-mile radius of the subject site. According to the EDR report, portions of the subject property are located within a 100-year flood zone per the Federal Emergency Management Agency (FEMA).[12]

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11 EPA Map of Radon Zones, 1993.

12 The EDR Radius Map with GeoCheck®, Inquiry No. 1108642.4s, January 8, 2004.

AGENCY CONTACTS

California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR)

BA Environmental visited the office of the DOGGR regarding oil well abandonment records for the site vicinity. The review of well abandonment records revealed that three oil wells were drilled on the subject property and four additional wells were drilled within 500 feet of the subject property. Well records obtained from the DOGGR with the exception of 'Newhall' 1 are included as Appendix E.

Table 2
Oil Wells Located in Site Vicinity
Tentative Tract Map No. 53108
Newhall Ranch, California

Section	Township	Range	Operator	Well No.	Year Abandoned
15	4 North	17 West	Texaco E&P Inc.	'Newhall' 1	Unknown
14	4 North	17 West	Exxon Mobil Corp	'NHL&F' 50	1993
14	4 North	17 West	Exxon Mobil Corp	'NHL&F' 2	1993
14	4 North	17 West	Exxon Mobil Corp	'NHL&F' 9	1993
14	4 North	17 West	Exxon Mobil Corp	'NHL&F' 77	1993
23	4 North	17 West	Exxon Mobil Corp	'NHL&F' 54	1956
23	4 North	17 West	Exxon Mobil Corp	'NHL&F' 45	1955
23	4 North	17 West	Exxon Mobil Corp	'NHL&F' 1	1994

DOGGR also supplied requirements for well abandonment procedures. A copy of the DOGGR oil well abandonment procedures is included in Appendix F. BA Environmental spoke with Mr. Steve Mulqueen regarding well abandonment. According to Mr. Mulqueen, the abandoned oil wells need to be located, and plotted on the site plan for the project and submitted in triplicate to the DOGGR. Locating the wells is accomplished by hiring a surveyor to locate each well using "location record" for each well. After this is accomplished, the well needs to be excavated. Following excavation, the well needs to tested for gas leakage and inspected for fluid leakage by DOGGR personnel. If the well leaks or is not abandoned properly, the well may need to be reabandoned. If fill soil is to be placed over the oil well, the casing may need to be extended to within five feet of finished grade. If a structure is proposed within 10 feet of an abandoned/reabandoned well, the site plans should include an approved well-vent system designed to vent natural gases to the atmosphere. If a structure is within 25 feet of an abandoned/reabandoned well, and the permitting agency is Los Angeles County, then an approval letter would be required.

Any oil wells located within the borrow sites, as well as any unidentified oil wells encountered on the subject site should be reabandoned as noted above.

Los Angeles County Department of Public Works (LACDPW)

BA Environmental visited the office of the LACDPW regarding files for USTs and hazardous materials storage and usage. According to the LACDPW, files existed for several properties owned and operated by Newhall Land. These files included 30003 Walnut Orchard Road, 31820 Henry Mayo Drive, 28700 Henry Mayo Drive, 27230 Henry Mayo Drive. Only the 28700 Henry Mayo Drive listing appears to be within the limits of the subject property. One 1,000-gallon gasoline and one 1,000-gallon diesel UST were removed in 1989 by PW Environmental in the vicinity of the central farm equipment storage area south of Wolcott Way. One sample collected beneath the gasoline UST was reported to contain 96 milligrams per kilogram (mg/kg) of Total Petroleum Hydrocarbons as gasoline (TPH-g). LACDPW requested a description of sampling methods and manifests for the UST removal. PW Environmental submitted these documents in August and September of 1989. No closure letter was present in the file.

GOVERNMENT RECORDS REVIEW

Regulatory compliance is a primary element of an ESA. Failure to comply with governmental regulations can result in fines, and can expose businesses or individuals to liabilities from which the law would otherwise shield them. The presence of hazardous wastes or hazardous materials, on-site or at neighboring sites, may present certain liabilities. Environmental Data Resources, Inc. (EDR) provided the most recent information regarding the hazardous materials sites identified below.[13] Sites of potential environmental concern are described at the end of this section in Table 3. It should be noted that the search radii for each database has been extended beyond ASTM requirements. The referenced search radii below are minimum distances. The actual search distances are much greater.

1. The Federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as the Superfund Act, protects the victims and the environment in the event of a hazardous materials spill. This act primarily addresses cleanup of designated Superfund hazardous waste sites (HWS). To achieve its stated purpose, CERCLA established a hazardous Substances Trust Fund, the Emergency Response Trust Fund, and the Post-Closure Liability Trust Fund. These funds compensate the victims and provide money necessary for the decontamination of the environment. The EPA compiles a list of known contaminated sites that are under consideration for the Superfund List. This list is known as the CERCLIS database. According to the September 2003 version of this document, **no** CERCLIS site is located within a 0.5-mile radius of the subject property.

   The US EPA maintains the National Priority List (NPL) under CERCLA 42 U.S.C. Section 9601 (1985). Once a site has been designated on the CERCLIS, the EPA ranks it to determine the potential risk to human health and the environment. Only those CERCLIS sites which present the greatest risk are added to the NPL, which qualifies the sites to receive CERCLA remedial funding. According to the October 2003 version of this document, **no** NPL site is located within a 1.0-mile radius of the subject property.

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13 The EDR Radius Map with GeoCheck®, Inquiry No. 1108642.4s, January 8, 2004.

2. The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal, in addition to enforcing penalties against violators. The RCRA Facilities database is a compilation by the EPA of facilities that generate, store, transport, treat, or dispose of hazardous waste.

   According to the September 2003 listing of hazardous waste treatment, storage and disposal facilities (TSDs), **no** TSD facility is located within a 0.5-mile radius of the subject site.

   The Resource Conservation and Recovery Information System - TSDs CORRACTS report contains information pertaining to TSDs which have conducted, or are currently conducting, a corrective action as regulated under RCRA.

   According to the September 2003 version of the CORRACTS document, **no** CORRACTS facility is located within a 1.0-mile radius of the subject property.

   According to the September 2003 listing of hazardous waste generators, **three** large quantity generator (LQG) facilities and **four** small quantity generator (SQG) facilities are located within a 0.5-mile radius of the subject property.

3. The California Environmental Protection Agency (Cal-EPA) maintains the California Facility Inventory Database (Ca.-FID). The Ca.-FID contains an historical listing of active and inactive UST locations from the State Water Resources Control Board. According to the October 1994 version of this database, the subject property **is not listed** on the Ca.-FID database.

4. The California Department of Toxic Substance Control's (DTSC) Annual Work Plan (AWP, formerly BEP), also known as Cal-Sites, is a listing of known hazardous waste sites. According to the November 2003 version of this document, **no** AWP sites are located within a 1.0-mile radius of the subject site.

   The DTSC maintains a database (known as the Cal-Sites ASPIS list) that includes potential or confirmed hazardous substance release properties. According to the November 2003 version of this database, **no** ASPIS site is located within a 1.0-mile radius of the subject property.

   The DTSC maintains the California Hazardous Materials Incident Report System (known as CHMIRS), which contains information on reported hazardous material incidents (accidental releases or spills). According to the December 2002 version of this database, **eight** CHMIRS sites are located within a 1.0-mile radius of the subject property.

   The DTSC developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds, known as the Bond Expenditure Plan (BEP). This list is not updated. According to the January 1989 version of this database, **no** BEP site is located within a 1.0-mile radius of the subject property.

5. The Emergency Response Notification System (ERNS) is a national database used to collect information on reported releases of oil and hazardous substances. The database contains information from spill reports made to federal authorities,

including the EPA, the US Coast Guard, the National Response Center, and the Department of Transportation.

According to the December 2002 version of this document, there have been **no** reported releases of hazardous substances at the subject property.

6. The State of California State Water Resources Control Board (SWRCB) maintains the California Leaking Underground Storage Tank (LUST) list. According to the April 2003 version of this document, **five** LUST sites are listed as being within a 0.5-mile radius of the subject property.

7. The SWRCB maintains an inventory (CA UST) of registered USTs. According to the April 2003 version of this document, **three** UST sites are listed as being within a 0.5-mile radius of the subject property.

8. The SWRCB maintains the Hazardous Substance Storage Container Database which is a listing of Historic UST (Hist UST) sites. According to the October 1990 version of this database, the subject site **is not listed** as a Hist UST.

9. The SWRCB maintains an inventory (AST) of registered Above-ground Petroleum Storage Tank facilities. According to the July 2003 version of this database, **no** ASTs have been identified for the subject property.

10. The SWRCB maintains the Spills, Leaks, Investigations and Clean-up (SLIC) records. According to the July 2003 version of this database, **two** SLIC sites are located within a 0.5-mile radius of the subject property.

11. The California Governor's Office of Planning and Research annually publishes a listing of potential and confirmed HWS throughout the State of California under Government Code Section 65962.5. This list is also known as the Cortese List. According to the April 2001 version of this list, **nine** Cortese sites are located within a 1.0-mile radius of the subject site.

12. The California Integrated Waste Management Board maintains a list of permitted solid waste landfills (SWF/LF), incinerators and transfer stations. According to the November 2003 version of this database, **two** SWF/LF sites are located within a 0.5-mile radius of the subject property.

13. BA Environmental reviewed the list of "orphan" sites, which have inadequate address information and are therefore unplotted. **Nineteen (19)** "orphan" sites are listed. The "orphan" sites appear to be located at a distance greater than 0.5 miles from the subject property with the exception of the listing for Highway 126 Bridge, which is located adjacent to the east. This site is a construction site and not likely to cause an environmental impact to the subject property. Based on the distance of the remaining "orphan" sites from the subject property, there is a low potential for environmental impact to the subject property.

Table 3
GOVERNMENT-LISTED DATABASES
IDENTIFIED SITES OF ENVIRONMENTAL CONCERN
Tentative Tract Map No. 53108, Highway 126
Newhall Ranch, California

Site of Concern And Address	Distance and Direction from Subject Property	Databases	Regulatory Status	Potential Environmental Impact
Chiquita Canyon Landfill 29201 Henry Mayo Dr	500 Feet North (cross-gradient)	HMS	No Violations	Low
Laidlaw Waste Systems Inc 29201 Henry Mayo Dr	500 Feet North (cross-gradient)	HMS	No Violations	Low
Universal By-Products-Valencia 29201 Henry Mayo Dr	500 Feet North (cross-gradient)	WMUDS SWAT	No Violations	Low
Chiquita Canyon Landfill Inc 29201 Henry Mayo Dr	500 Feet North (cross-gradient)	HAZNET SWF/LF	No Violations	Low
Laidlaw Waste Systems 29201 Henry Mayo Dr	500 Feet North (cross-gradient)	CA Fid UST	No Violations	Low
Chiquita Canyon Landfill 29201 Henry Mayo Dr	500 Feet North (cross-gradient)	CA WDS EMI HAZNET SWF/LF	No Violations	Low
Chiquita Canyon Landfill 29201 Henry Mayo Dr	500 Feet North (cross-gradient)	WMUDS SWAT	No Violations	Low
Laidlaw Waste Systems 29201 Henry Mayo Dr	500 Feet North (cross-gradient)	UST	No Violations	Low
Chiquita Canyon Sanitary Landfill 29201 Henry Mayo Dr	500 Feet North (cross-gradient)	SQG FINDS	No Violations	Low
27900 Chiquito Canyon	1,000 Feet Northwest (down-gradient)	CHMIRS	Release of Petroleum February 1989	Low

Site of Concern And Address	Distance and Direction from Subject Property	Databases	Regulatory Status	Potential Environmental Impact
Newhall Land & Farming 3003 Walnut Orchard Rd	500 Feet Northwest (down-gradient)	LUST CORTESE	Soil Only Release Case Closed	Low
Travel Village 27946 Henry Mayo Drive	2,000 Feet East (cross-gradient)	Hist UST	Not on LUST list	Low
TA Manufacturing 28605 W. Franklin	2000 Feet Northeast (up-gradient)	LQG FINDS HAZNET	No Violations	Low

The subject property is not listed on any of the searched databases. The closest off-site facility is located to the north across Henry Mayo Drive (Highway 126). This facility is located in an assumed cross-gradient location relative to the regional groundwater flow direction. No impact from these facilities is likely. Based on the status and distances of the remaining facilities, there is a low potential for environmental impact due to off-site sources.

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The subject property consists of an approximate 280-acre parcel of land that has been graded and utilized for agricultural production; numerous dirt roads traverse the subject site. Approximately four small buildings exist on the site and are used in activities related to the on-site agricultural production. The subject site is also occupied by several irrigation wells. This project also includes the two borrow sites where fill material will be derived to be placed on the subject property. Borrow Site "A" is approximately 400 acres and Borrow Site "B" is approximately 300 acres. The two borrow sites are primarily in their native states with some dirt roads traversing them. A portion of Borrow Site "A" appears to have been used in the past for agricultural purposes. Mr. John Frye, General Manager, Agriculture and Natural Resources for Newhall Land and Farming, stated that this area was briefly used to grow hay, and that no pesticides were used in this area. There was also some evidence of past oil exploration in this area. An electrical transmission tower is located in Borrow Site "B," as well as evidence of past oil wells. Primary vehicular access to the subject site is from private driveways to the north. Primary vehicular access to Borrow Site "A" is from a dirt road to the south of the subject site or from a dirt road from Potrero Canyon to the south. Primary vehicular access to Borrow Site "B" is from a dirt road to the east of Chiquito Canyon Road.

The review of historical documents indicates that portions of the subject site have been vacant undeveloped land or used as agricultural land from prior to 1903 until the present. From prior to 1903 until prior to 1991, Southern Pacific Railroad tracks ran along the northern boundary of the subject property. Since at least 1969, the eastern portion of the subject property has been located within the Castaic Junction Oil Field. Several small structures have been located throughout the subject property from prior to 1947 through the present. The configurations and locations of these structures have changed several times since 1947. Since 1947, at least two oil wells, possibly three, have been located near the eastern property boundary. No oil wells currently exist on-site. Sometime prior to 1952, three oil ASTs (located within a containment berm) were also located near the

eastern property boundary. By 1968, these ASTs had been removed. A circular AST was located approximately 555 feet south of Highway 126 and approximately 1,000 feet east of the intersection of Walcott Way and Highway 126, from prior to 1952 until prior to 1968. The purpose of this AST is unknown. An oil well has been located in the central portion of the subject property, approximately 555 feet south of the intersection of Walcott Way and Highway 126 from prior to 1952 until prior to 1994. This area has also been occupied by an equipment storage area between 1952 and 1972, and between approximately 1994 to the present. An airstrip occupied the central portion of the subject property since prior to 1968 until prior to 1994, when it was removed. The Indian Dunes Motorcycle Park also occupied the central portion of the subject property from prior to 1972 until prior to 1994, when it was abandoned and subsequently removed. By 1994, the subject property was used for agricultural purposes.

BA Environmental performed a site reconnaissance of the subject property. The site reconnaissance addressed three areas: Subject Property (Tentative Tract Map No. 53108), Borrow Site "A" and Borrow Site "B."

Subject Property (Tentative Tract Map No. 53108)

At the time of the site visit, the subject property was used primarily for agricultural production. Crops included what was believed to be green beans, beets, carrots and other vegetables. Some land appeared to be out of production or fallow. The far western end was occupied by undeveloped land covered by native vegetation. Concrete and asphalt debris was observed scattered throughout the fields. A large pile of asphalt and concrete debris was observed along the northern property boundary. Included in this debris were concrete pipes, an old pickup truck body, old telephone poles and other miscellaneous debris. Approximately 200 feet south-southwest of this pile was a pile of wood debris. Old trash piles and construction debris piles were observed in the western portion of the subject property and along the old railroad easement. The trash observed in these piles appeared to household trash. Old piping was observed scattered in the western portion of the subject property. Some of this piping appeared to be sections of old oil pipelines and some appeared to be transite concrete pipe.

An equipment storage area was observed approximately 50 feet south of the intersection of Walcott Way and Highway 126. This storage area was observed to contain various farm equipment. Two ASTs mounted on trailers were observed in this area. These trailers appeared to be empty. Several empty and partially full 55-gallon steel drums were observed on-site. These drums appeared to contain oil or petroleum products. Staining was observed on the soil throughout this area. One sheet metal building is located in the fenced storage area, and consists of approximately 400 square feet. This building is used to store equipment and grain. This building was formerly an aircraft hangar, which was associated with an airstrip that was formerly located on the subject site. It is likely that this area was formerly used to fuel and maintain the aircraft and may have been an area used to mix pesticides.

The eastern storage area consists of three buildings and a plastic-sheeting hothouse. The buildings are used for storage and packaging. Farm equipment was observed to be stored in this area. Several small ASTs were observed in this area, as well as agricultural chemical mixing. Several 55-gallon drums and smaller five-gallon buckets were observed. None of these containers were labeled. Some staining was observed on the dirt in this storage area.

Several ASTs containing liquid fertilizers and various other agricultural chemicals were

observed in the eastern portion of the subject property. Minor staining was observed on the dirt beneath these ASTs.

One portable diesel-powered pump was observed near the eastern property boundary. Associated with this pump was a small 100-gallon AST on a trailer and an approximate 500-gallon AST sitting on a wooden pallet. The 500-gallon AST was labeled as containing diesel fuel, likely for the pump. Staining was observed on the outside of the AST, as well as on the soil beneath the AST.

An old railroad easement was observed along the northern property boundary, paralleling Highway 126. The railroad tracks have been removed; however, some ballast materials still remain. Debris and trash piles were observed along this easement.

During the site visit, evidence of underground storage tanks (USTs) or wastewater clarifiers was observed on the subject site. The only hazardous materials observed on-site were agricultural chemicals (i.e., pesticides and fertilizers) and petroleum products (i.e., diesel fuel, oil and lubricants).

Four small diameter groundwater monitoring wells (piezometers) were observed on-site. According to Newhall Land personnel, these wells are utilized by Seward Engineering for groundwater elevation data used for engineering purposes.

Several pipelines were observed crossing the subject site. The pipelines were identified visually by either marker signs, or visible piping or pipeline vents. A Southern California Gas pipeline was observed running along the northern property boundary in the railroad easement, and crossing the western end of the subject property. These pipelines are believed to be 18" to 20" in diameter and likely carry natural gas. Where visible, these pipelines appeared to be coated with a tar-like material to prevent corrosion.

A Shell Oil Company petroleum pipeline was also observed to run along the northern property boundary, parallel to the old railroad easement. The size of this pipeline is unknown; however, it is likely to contain crude oil. Approximately 250 feet southeast of the intersection of Chiquito Canyon Road and Highway 126 is a fenced enclosure. This enclosure is adjacent to the Shell Oil Company pipeline and a Shell Oil pipeline vault. A sign on the gate of the enclosure indicates that the enclosure is owned by Eouilon Pipeline Company, and is the Del Valle Booster Station. This is likely a booster station for an oil pipeline. Inside of the enclosure was a pump, a 100-gallon AST likely containing diesel fuel and two electrical transformers. The pump and AST were observed to be in a concrete containment.

An unidentified pipeline was observed running along the southern edge of the old railroad easement. Where exposed, the pipeline appeared to be approximately 18" to 20" in diameter and was coated with a tar-like substance to prevent corrosion. Two vents, similar to those used in oil pipelines, were observed associated with this pipeline.

Damaged piping was observed on the surface in the old railroad easement. It appeared that this pipeline had been removed. It is uncertain if this pipeline was replaced or completely removed. The pipeline appeared to be 16" to 18" in diameter. Oil staining was observed in the areas where this pipeline was exposed.

A Unocal pipeline was observed to run across the western end of the subject property. The size of this pipeline is unknown; however, the pipeline likely carried oil. Reportedly, this pipeline is currently idle, and not being used.

Borrow Site "A"

This parcel was observed to be primarily undeveloped at the time of the site reconnaissance. The site is covered with native vegetation, which consists of brush, oak trees and native plants. The floor of a small valley/canyon, which runs east to west across the borrow site, appears to have been used in the past for agricultural purposes. Mr. John Frye, General Manager, Agriculture and Natural Resources for Newhall Land and Farming, stated that this area was briefly used to grow hay, and that no pesticides were used in this area. Concrete and wood debris were observed scattered in the agricultural field on the floor of the small valley/canyon. This concrete and wood debris may be the indications of either a former structure or oil exploration activities. An abandoned road was observed running along the northern boundary of this borrow site. A flat, roughly graded dirt pad was observed along this road. This is the location of what is believed to have been an exploratory oil well. At the eastern end of this small valley/canyon is a graded dirt pad with what appears to be a filled-in concrete vault. This is likely the location of a former oil well. No oil staining was observed on this graded pad.

During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

Borrow Site "B"

This parcel was observed to be primarily undeveloped at the time of the site reconnaissance. The site is covered with native vegetation, which consists of brush and native plants. A dirt road crosses the subject property and leads to a Southern California Edison (SCE) transmission tower. Along this dirt road, a concrete pad was observed. This pad had a configuration similar to that used for an oil derrick and a cable tool-drilling rig. It is believed that this was the location of a former oil exploration well. No staining was noted around the concrete pad. Approximately 500 feet up a small access road was a second flat dirt pad. Soil in this area was observed to be stained by what is believed to be crude oil. This may have been the location of a second exploratory oil well.

During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

Four small diameter groundwater-monitoring wells (piezometers) were observed on Tentative Tract Map 53108. Reportedly, these wells are utilized for groundwater elevation data used for engineering purposes.

Three water wells were observed in the western portion of the subject property. One was observed in the central portion near the intersection of Walcott Way and Highway 126. Approximately six water wells were observed along the eastern property boundary. All of these water wells are used to supply irrigation water to the agricultural crops on the subject site.

Three oil wells have been documented on the subject property. In addition, evidence of three possibly four oil wells has been noted in Borrow Site "A." Evidence of two oil wells has also been noted in Borrow Site "B."

BA Environmental completed limited soil sampling at the above-referenced site to assess whether past use of pesticides or herbicides has impacted the shallow soils beneath the previously cultivated areas on Tentative Tract No. 53108.

Sixty-nine shallow hand auger borings were advanced to depths of between one and two feet below ground surface (bgs).

Field observations of soil samples collected from all of the borings revealed no unusual odors or discoloration. Groundwater was not encountered in any of the shallow borings.

Samples collected were composited at the laboratory in groups of four, except one sample which was composited from five samples. The composited samples were analyzed for Organochlorine Pesticides (OCP), Organophosphorous Pesticides (OPP) and Chlorinated Herbicides (CH) using Environmental Protection Agency (EPA) Method Nos. 8081 (OCP), 8141 (OPP) and 8151 (CH).

All of the soil samples analyzed were reported not to contain detectable concentrations of OPP or CH.

Several OCPs were detected in the soil samples analyzed. Soil samples G11, G13, G14, G15 and G17 were reported to contain concentrations of alpha-chlordane ranging from 0.001 to 0.018 milligrams per kilogram (mg/kg). Samples G3, G11, and G13, G14, G15 and G17 were reported to contain concentrations of gamma-chlordane ranging from 0.001 to 0.027 mg/kg. 4,4-DDD was detected in samples G13 through G15 at a concentration of 0.001 mg/kg. Samples G11 and G13 thorough G17 were reported to contain 4,4-DDE in concentrations ranging from 0.002 to 0.034 mg/kg. 4,4-DDT was detected in samples G7 and G11 through G17 in concentrations ranging from 0.002 to 0.023 mg/kg. Dieldrin was detected in samples G6 and G14 at 0.002 and 0.003 mg/kg, respectively. Endosulfan I was detected in sample G14 at a concentration of 0.001 mg/kg. Samples G11 and G17 contained concentrations of Endosulfan II at 0.018 and 0.034 mg/kg, respectively. Endosulfan Sulfate was detected in sample G14 at a concentration of 0.005 mg/kg. Samples G9 through G17 were reported to contain Endrin at concentrations ranging from 0.001 to 0.136 mg/kg. Sample G13 was reported to contain Heptachlor Epoxide at a concentration of 0.001 mg/kg.

The concentrations of OCPs detected on the subject site were compared with the Preliminary Remediation Goals (PRGs) set up by the United States Environmental Protection Agency (EPA) for various compounds and metals. This comparison revealed that none of the OCPs detected at the subject site exceeded the residential or industrial use PRGs for those compounds.

BA Environmental performed a review of available government database records. The subject property is not listed on any of the searched databases. The closest off-site facility is located to the north across Henry Mayo Drive (Highway 126). This facility is located in an assumed cross-gradient location relative to the regional groundwater flow direction. No impact from these facilities is likely. Based on the status and distances of the remaining facilities, there is a low potential for environmental impact due to off-site sources.

BA Environmental has performed a Phase I ESA, in conformance with the scope and limitations of ASTM Practice E 1527-00, of the vacant parcel of land, which is located south of the intersection of Henry Mayo Drive (Highway 126), north of the Santa Clara River, east of the intersection of Henry Mayo Drive (Highway 126) and Chiquito Canyon

Road, and west of Castaic Creek, which is referred to as River Village, Tentative Tract Map No. 53108, Highway 126, and the two borrow sites, in Newhall Ranch, California. Any exceptions to, or deletions from, this practice are described in the Introduction section of this report.

This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property, except the following:

- Up to three oil wells and associated production area may exist on the subject property, and several on Borrow Sites "A" and "B";
- Several ASTs, likely associated with oil production, existed on-site in the 1950s;
- Several pipelines cross the subject property, and one pipeline crosses Borrow Site "B";
- Scattered suspect ACM debris was observed in the central and western portions of the subject property;
- Staining was observed beneath what appeared to be an abandoned pipeline along the old railroad easement, and near what was believed to be a former oil well on Borrow Site "B." In addition, staining was observed beneath a diesel AST associated with a portable water pump located in the eastern portion of the subject property; and
- Two equipment storage areas were observed on the subject site, one located in the eastern portion of the subject property and one in the central portion. The storage area in the central portion was associated with a former airstrip. Agricultural chemical storage and mixing was observed or may have taken place at these areas in the past. Soil staining was observed in both areas.

BA Environmental recommends the following:

- If disturbed, or if located within an area of redevelopment, all former oil wells located on the subject property or on either borrow site should be reabandoned according to all applicable local and state regulations;
- If the pipelines on the subject site and Borrow Site "B" are not to be used in the future, they should be abandoned and soils beneath them assessed for petroleum hydrocarbon leakage. If the pipelines are planned to remain in use, the pipelines should be assessed for possible hydrocarbon leakage;
- Properly dispose of scattered suspect ACMs; and
- The areas of former ASTs, current agricultural storage areas and current soil staining observed on the subject site or Borrow Site "B" should be assessed for potential impact to the subject site.

Although not a recognized environmental condition, it is recommended that all groundwater monitoring wells or production water wells be abandoned according to applicable local and state regulations, prior to redevelopment.

REPORT AUTHORS

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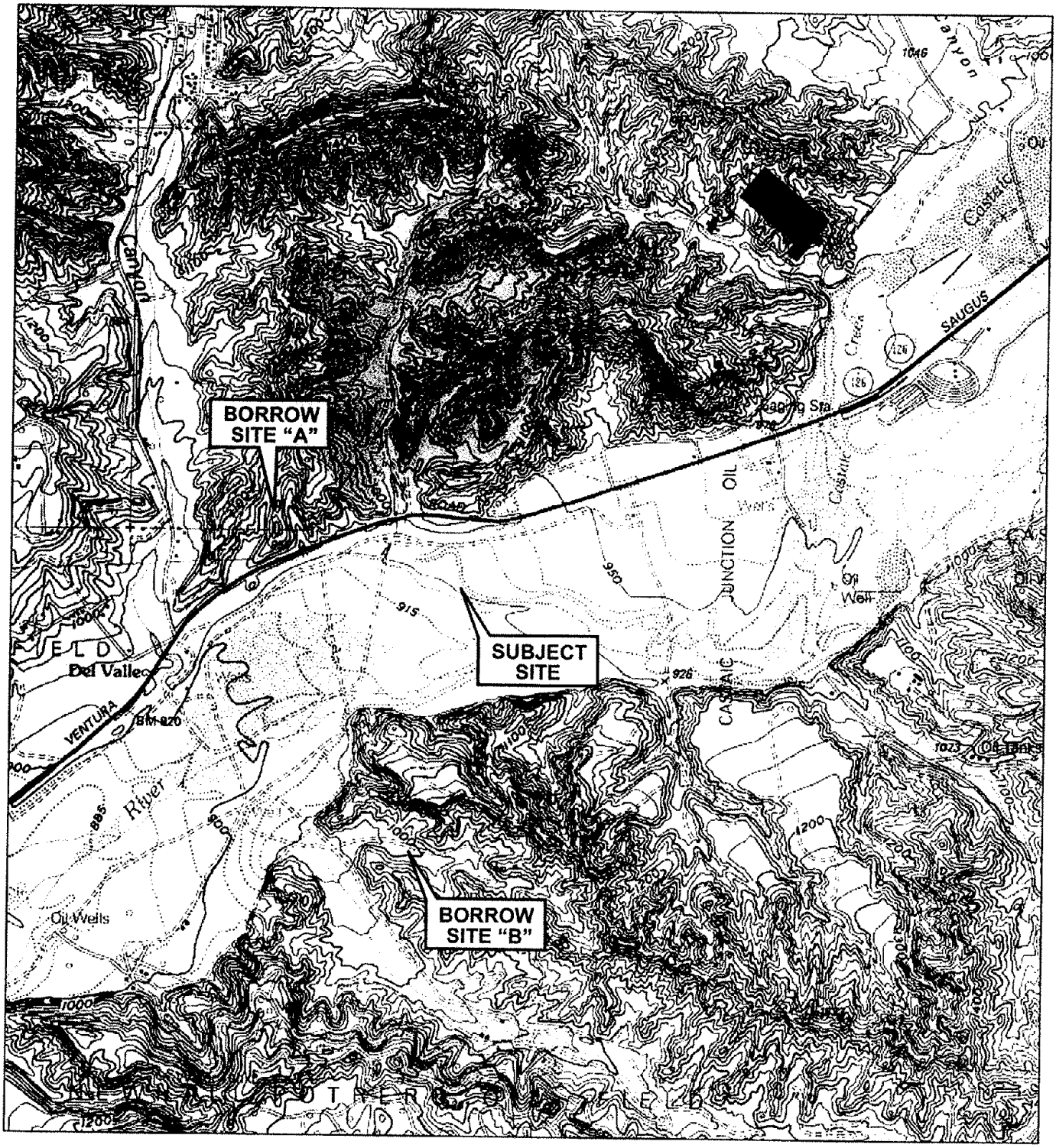
Manager, Environmental Services

Reviewed by: Andy Holmberg
Andy Holmberg
President

FIGURES



NORTH

Reference: USGS Val Verde Quadrangle, California
7.5 Minute Series

SITE VICINITY

SCALE - 1:24,000

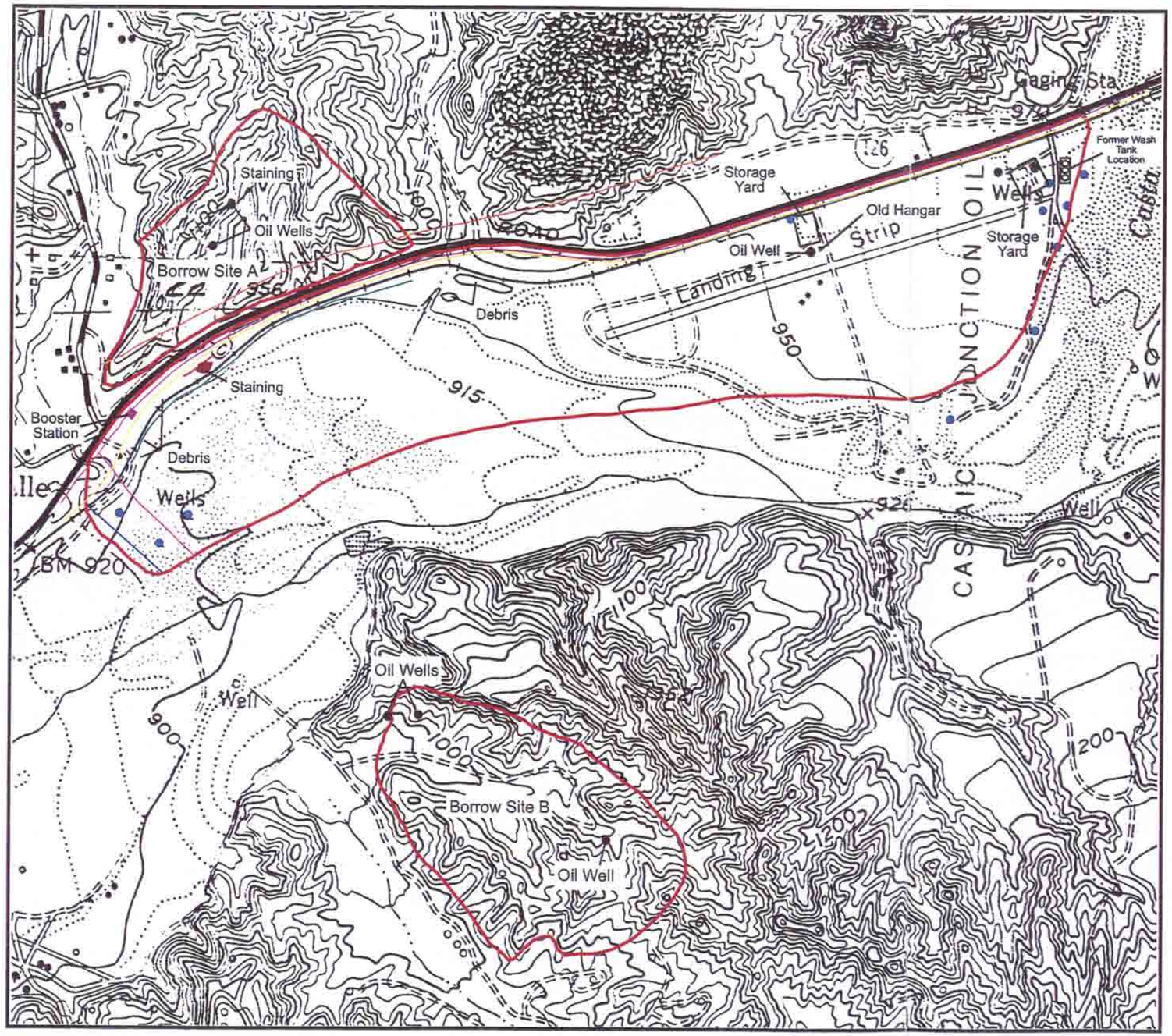
BA ENVIRONMENTAL

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PROJECT: River Village
Tentative Tract Map No. 53108, Highway 126
Newhall Ranch, California

PROJECT NO.
104012

FIGURE
1



LEGEND

- = Limits of Subject Property
- = Southern California Gas Pipeline
- = Unocal Pipeline
- = Shell Gas Pipeline
- = Mobil Oil Pipeline
- = Unidentified Pipeline
- = Exposed Abandoned Pipeline
- = Water Well
- = Former Oil Well

BA ENVIRONMENTAL

NORTH

0 505 1010
Approximate Scale, feet

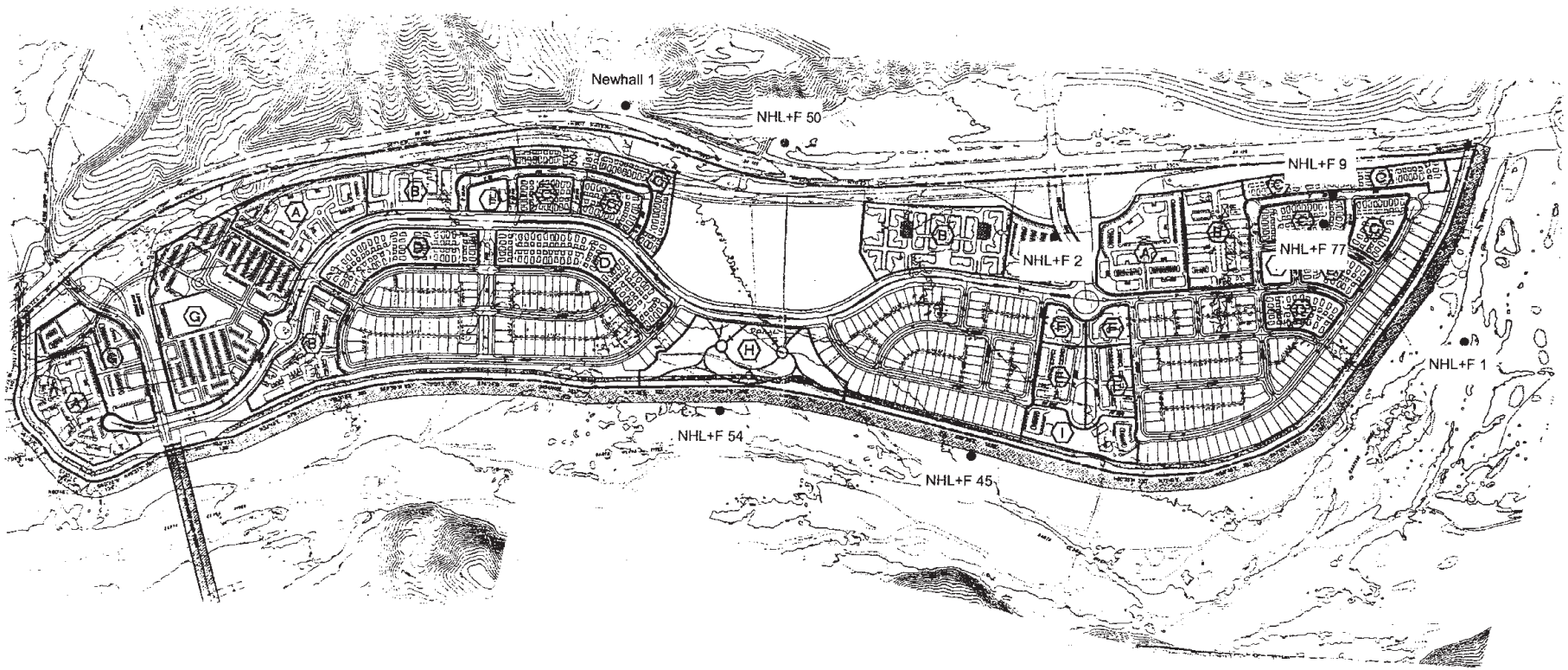
Site Plan

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PROJECT: **River Village**
Tentative Tract Map No. 53108, Highway 126
Newhall Ranch, California

PROJECT NO.
104012

FIGURE
2



Legend

● = Oil well location

NHL+F = Newhall Land and Farming

BA ENVIRONMENTAL

NORTH

0 335 670

Approximate Scale, feet

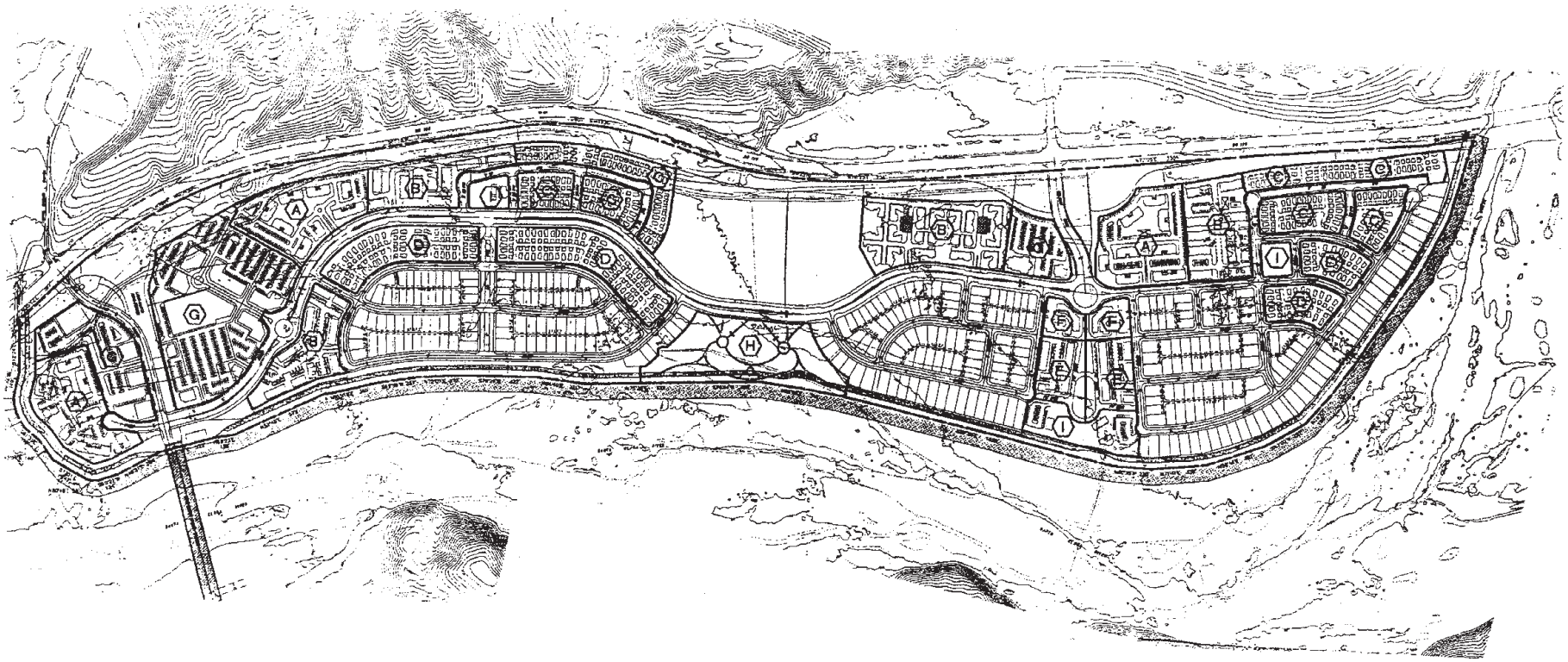
Site Plan

PHASE I ENVIRONMENTAL SITE ASSESSMENT
Oil Well Locations

PROJECT: **River Village**
Tentative Tract Map No. 53108, Highway 126
Newhall Ranch, California

PROJECT NO.
104012

FIGURE
3



BA ENVIRONMENTAL

NORTH

0 335 670
Approximate Scale, feet

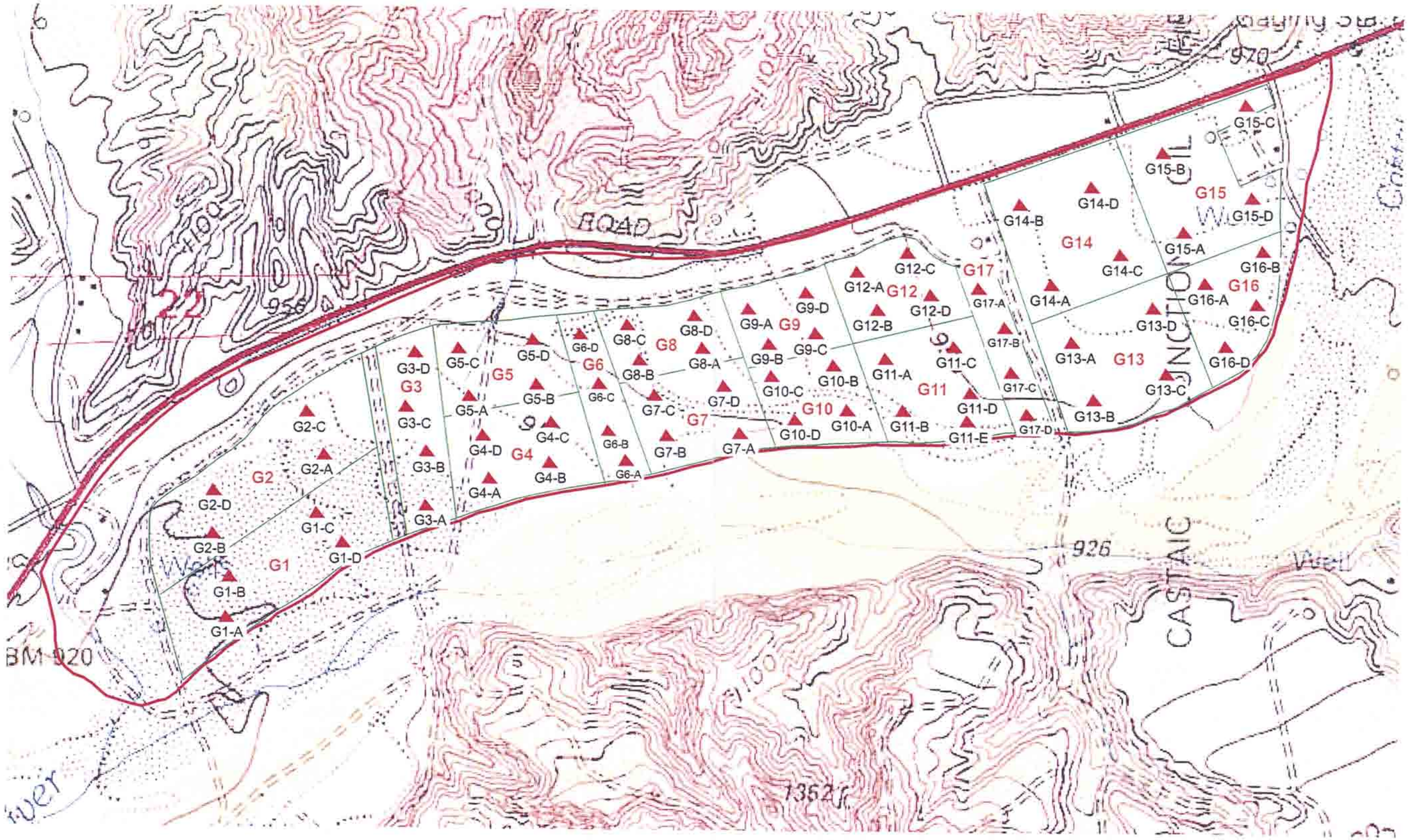
Site Plan

PHASE I ENVIRONMENTAL SITE ASSESSMENT
Development Map

PROJECT: **River Village**
Tentative Tract Map No. 53108, Highway 126
Newhall Ranch, California

PROJECT NO.
104012

FIGURE
4



Site Plan

Legend

= Limits of Subject Property

= Grid Boundary

G1 = Grid Designation

G1-A = Soil Sample Location and Designation

BA ENVIRONMENTAL

NORTH

0 340 680

Approximate Scale, feet

PHASE I ENVIRONMENTAL SITE ASSESSMENT
Soil Sample Locations
PROJECT: **River Village**
Tentative Tract Map No. 53108, Highway 126
Newhall Ranch, California

PROJECT NO.
104012

FIGURE
5

TABLES

Table 1
Soil Sample Analytical Results
OCP, OPP and Herbicides
Tentative Tract Map No. 53108
Newhall Ranch, California

Sample No.	Date	Depth bgs	OCP											OPPs (mg/kg)	CH (mg/kg)
			alpha-Chlordane (mg/kg)	gamma-Chlordane (mg/kg)	4,4-DDD (mg/kg)	4,4-DDE (mg/kg)	4,4-DDT (mg/kg)	Dieldren (mg/kg)	Endosulfan I (mg/kg)	Endosulfan II (mg/kg)	Endrin (mg/kg)	Endosulfan Sulfate (mg/kg)	Heptachlor Epoxide (mg/kg)		
G1-A,B,C,D	1-29-04	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
G2-A,B,C,D	1-29-04	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
G3-A,B,C,D	1-29-04	1.5	ND	**0.001**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
G4-A,B,C,D	1-29-04	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
G5-A,B,C,D	1-29-04	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
G6-A,B,C,D	1-29-04	1.5	ND	ND	ND	ND	ND	**0.002**	ND	ND	ND	ND	ND	ND	ND
G7-A,B,C,D	1-29-04	1.5	ND	ND	ND	ND	**0.002**	ND	ND	ND	ND	ND	ND	ND	ND
G8-A,B,C,D	1-29-04	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
G9-A,B,C,D	2-4-04	1.5	ND	ND	ND	ND	ND	ND	ND	ND	**0.001**	ND	ND	ND	ND
G10-A,B,C,D	2-4-04	1.5	ND	ND	ND	ND	ND	ND	ND	ND	**0.001**	ND	ND	ND	ND
G11-A,B,C,D,E	2-4-04	1.5	**0.012**	**0.017**	ND	**0.008**	**0.014**	ND	ND	**0.018**	**0.061**	ND	ND	ND	ND
G12-A,B,C,D	2-4-04	1.5	ND	ND	ND	ND	**0.022**	ND	ND	ND	**0.029**	ND	ND	ND	ND
G13-A,B,C,D	2-2-04	1.5	**0.001**	**0.004**	**0.001**	**0.026**	**0.006**	ND	ND	ND	**0.061**	ND	**0.001**	ND	ND
G14-A,B,C,D	2-2-04	1.5	**0.002**	**0.015**	**0.001**	**0.007**	**0.015**	**0.003**	**0.001**	ND	**0.082**	**0.005**	ND	ND	ND
G15-A,B,C,D	2-2-04	1.5	**0.003**	**0.004**	**0.001**	**0.034**	**0.007**	ND	ND	ND	**0.055**	ND	ND	ND	ND
G16-A,B,C,D	2-2-04	1.5	ND	ND	ND	**0.002**	**0.003**	ND	ND	ND	**0.004**	ND	ND	ND	ND
G17-A,B,C,D	2-4-04	1.5	**0.018**	**0.027**	ND	**0.012**	**0.023**	ND	ND	**0.034**	**0.136**	ND	ND	ND	ND
PRGs Residential			1.6 ca*	1.6 ca*	2.4 ca	1.7 ca	1.7 ca*	0.03 ca	370 nc	370 nc	18 nc	NA	0.053 ca*	NA	NA
PRGs Industrial			6.5 ca*	6.5 ca*	10 ca	7.0 ca	7.0 ca*	0.11 ca	3700 nc	3700 nc	180 nc	NA	0.19 ca*	NA	NA
Detection Limits (mg/kg)			**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.02-3.35**	**0.020-20.0**

Notes:

CH – Chlorinated Herbicides
OCP - Organochlorine Pesticides
OPP - Organophosphorous Pesticides
PRG - Primary Remediation Goal
ND – None detected above detection limits.
NA - Not applicable
MCL – Maximum Contaminant level
bgs - below ground surface
ca – Cancer PRG
ca* - Cancer PRG (where :nc<100x ca)
nc – Non-cancer PRG

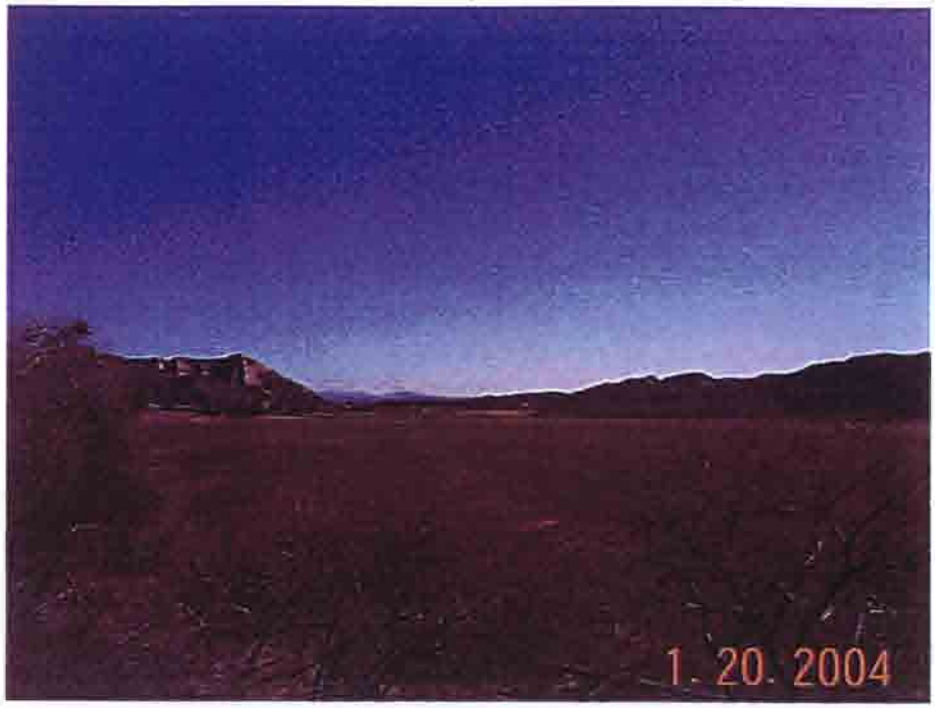
- Concentrations are reported in milligrams per kilogram (mg/kg) which is equivalent to parts per million (ppm).
- Concentrations are reported in micrograms per liter (µg/l) which is equivalent to parts per billion (ppb).
- Analyses for OCP were performed in accordance with the Environmental Protection Agency (EPA) Method No. 8081.
- Analyses for OPP were performed in accordance with the EPA Method No. 8141.
- Analyses for CH were performed in accordance with the EPA Method No. 8151.

APPENDICES

APPENDIX A:

Site Photographs

1



1. View of subject property looking east.

2

2. View of subject property looking west.

3

3. Santa Clara River along southern property boundary.

4

4. Pipeline easement along old railroad tracks,
along northern property boundary.

5

5. Booster station along pipeline easement, northern property boundary.

6

6. Close-up of booster station.

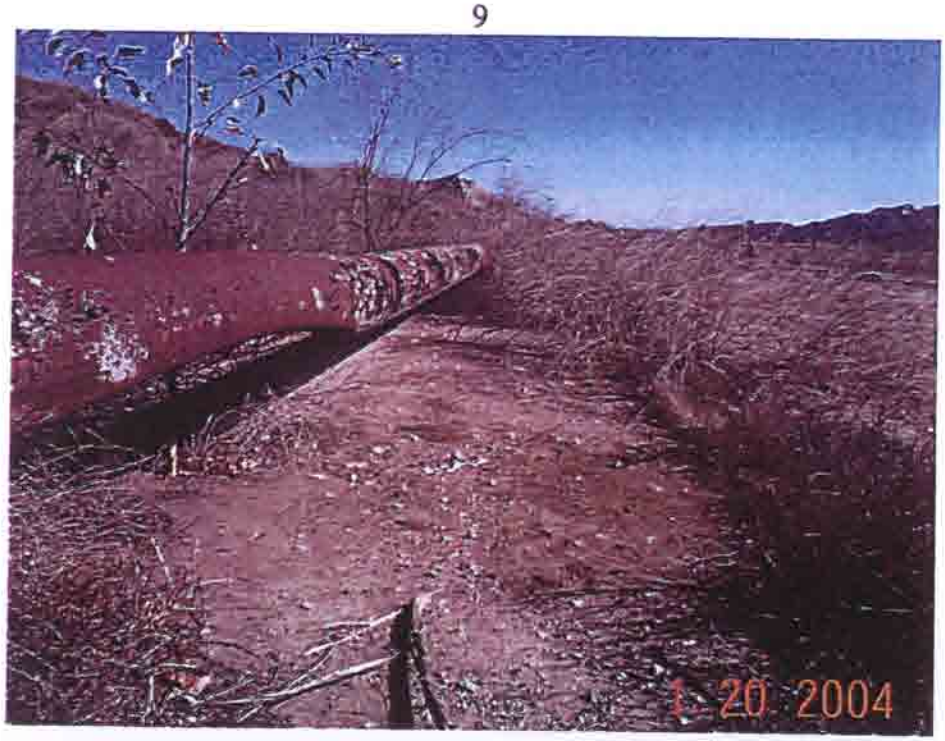
7

7. Access vault for Shell Oil pipeline.

8

8. Vent pipe for oil pipeline.

9



9. Exposed, abandoned oil pipeline. Note oil staining beneath pipe.

10

10. Construction debris in old railroad easement, possible asbestos-containing.

11

11. Construction debris in old railroad easement.

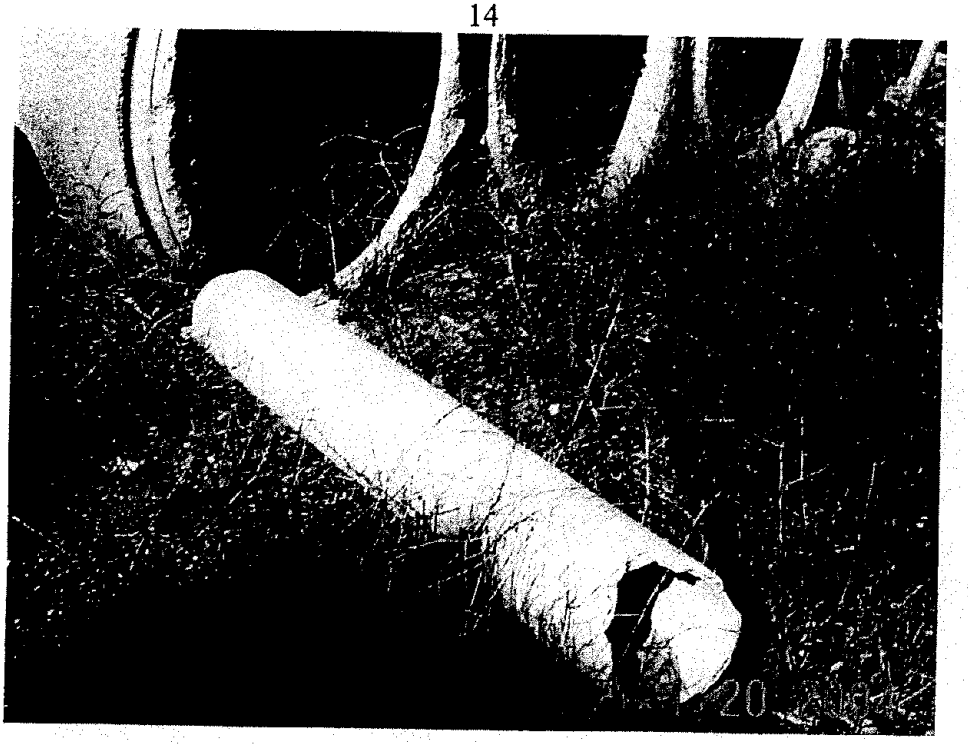
12

12. Trash along bottom slope of old railroad easement.

13

13. Metal debris in debris pile along northern property boundary.

14

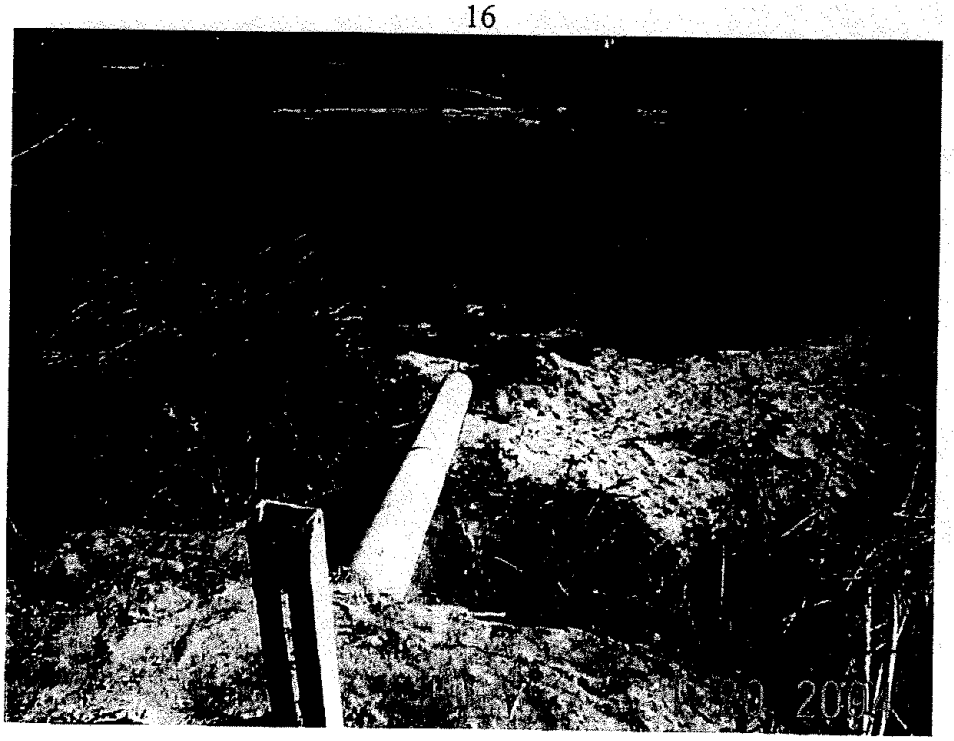


14. Transite pipe in debris pile along northern property boundary.

15

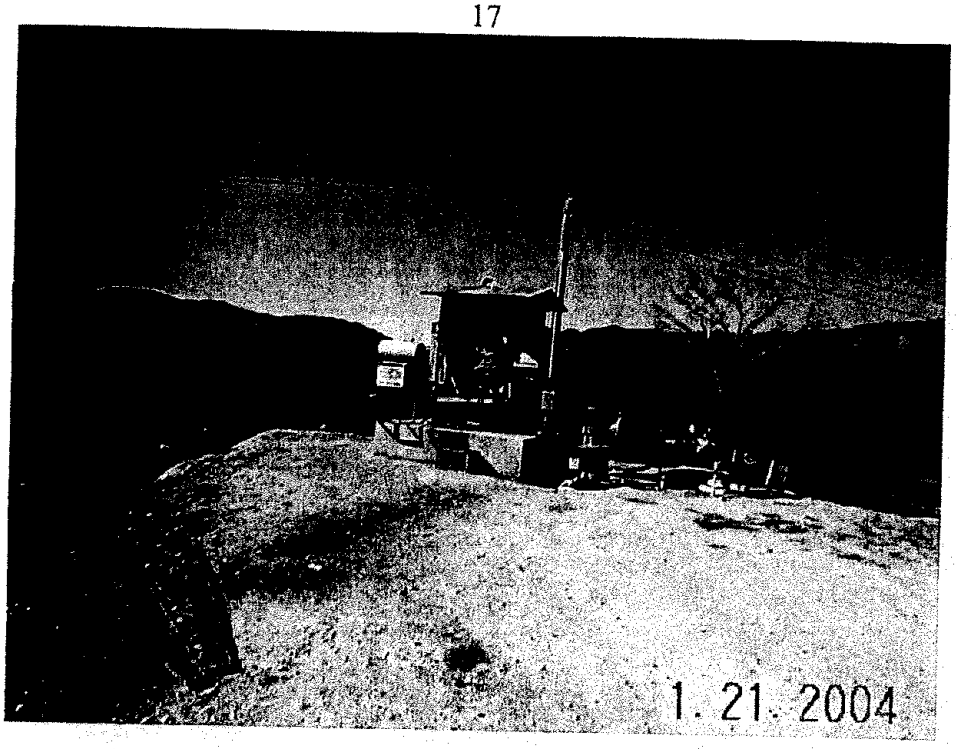
15. Asphalt debris pile along northern property boundary.

16



16. Southern California Gas pipeline in western portion of subject property.

17

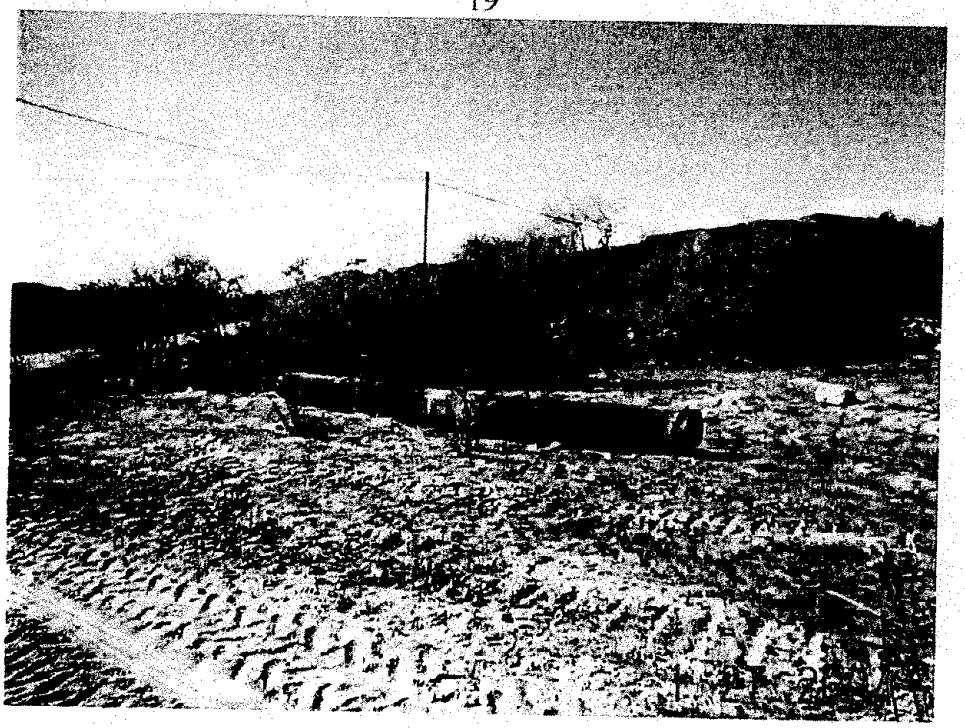


17. Water well in western portion of subject property.

18

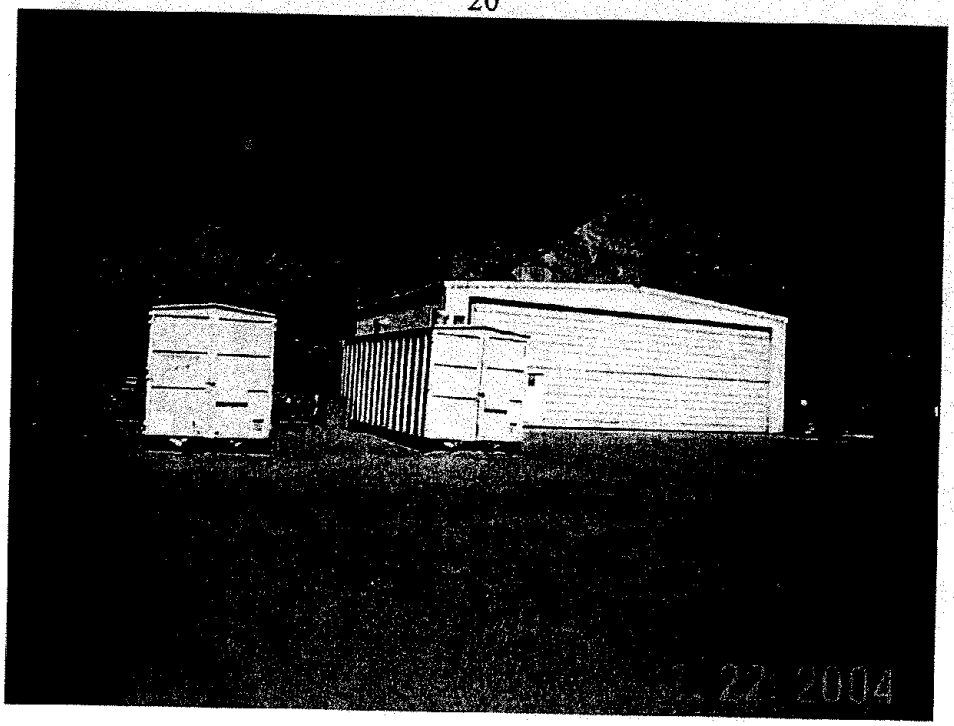
18. Wood debris in central portion of subject property.

19



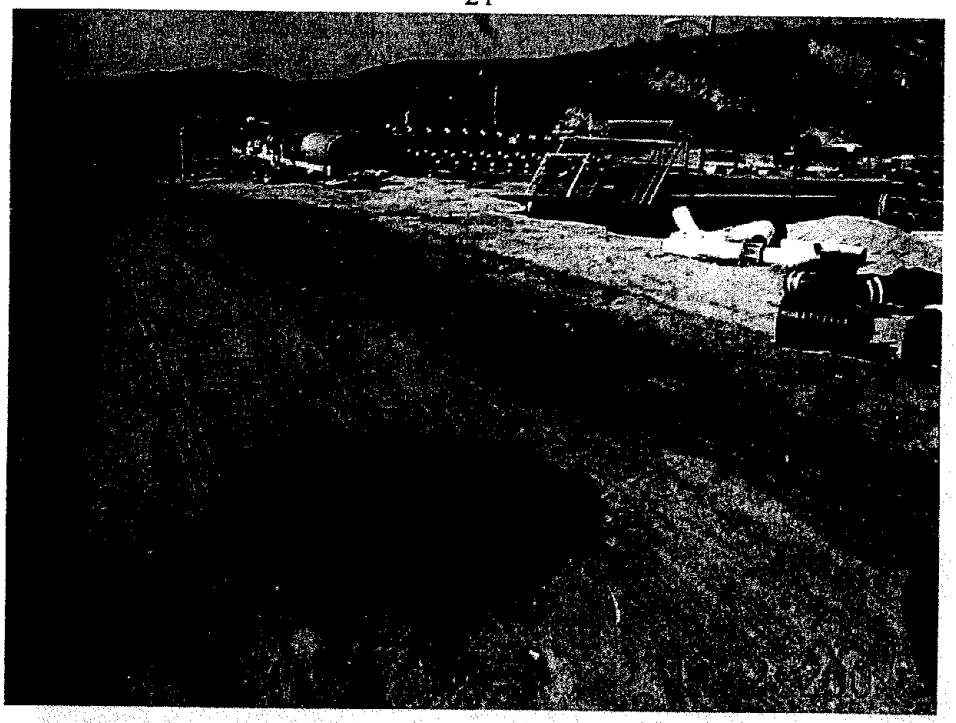
19. Section of abandoned pipe with suspect asbestos-containing tar wrap.

20



20. Old hangar building and cargo containers at storage area near Wolcott Way.

21



21. Oil staining around equipment storage yard, near Wolcott Way.

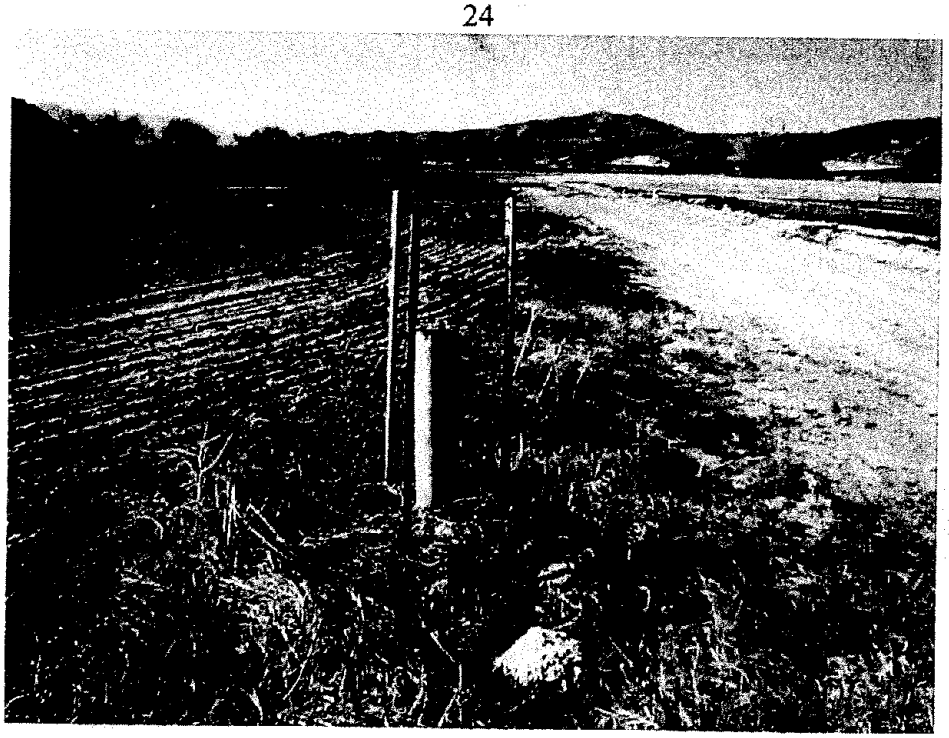
22

22. 55-gallon drum at storage area.

23

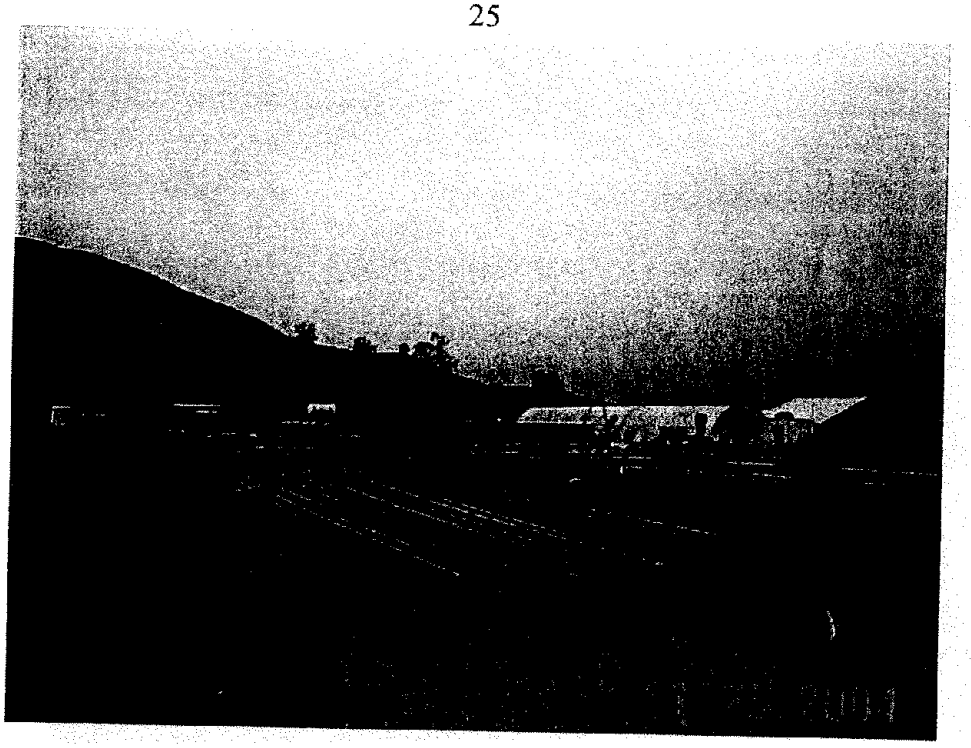
23. Oil staining within fence at equipment storage area at Wolcott Way.

24



24. Piezometer in south-central portion of subject property.

25

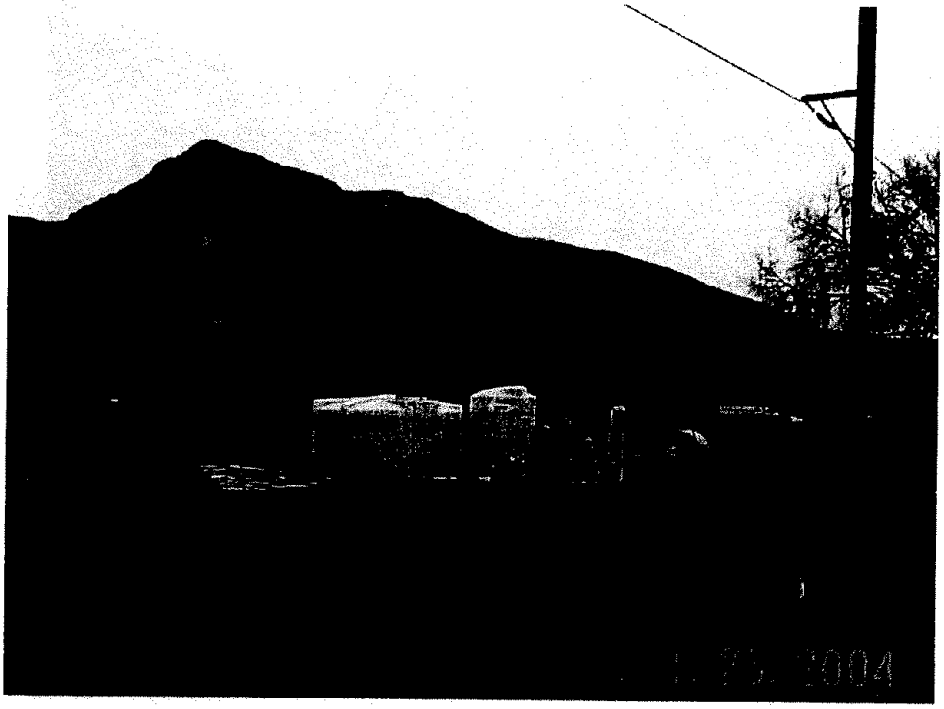


25. Equipment storage area in eastern portion of subject property.

26

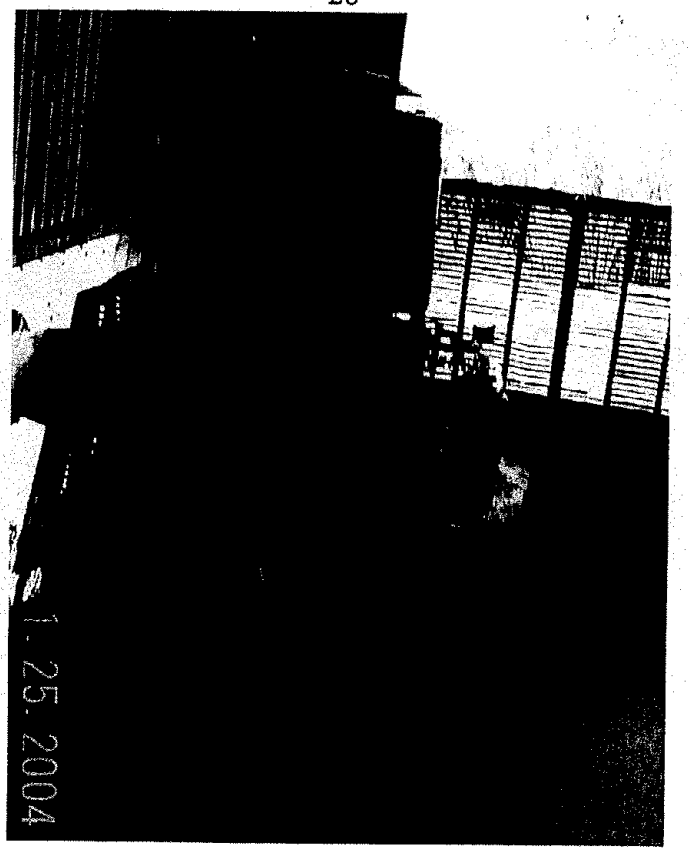
26. Buildings associated with equipment storage area in eastern portion of subject property.

27



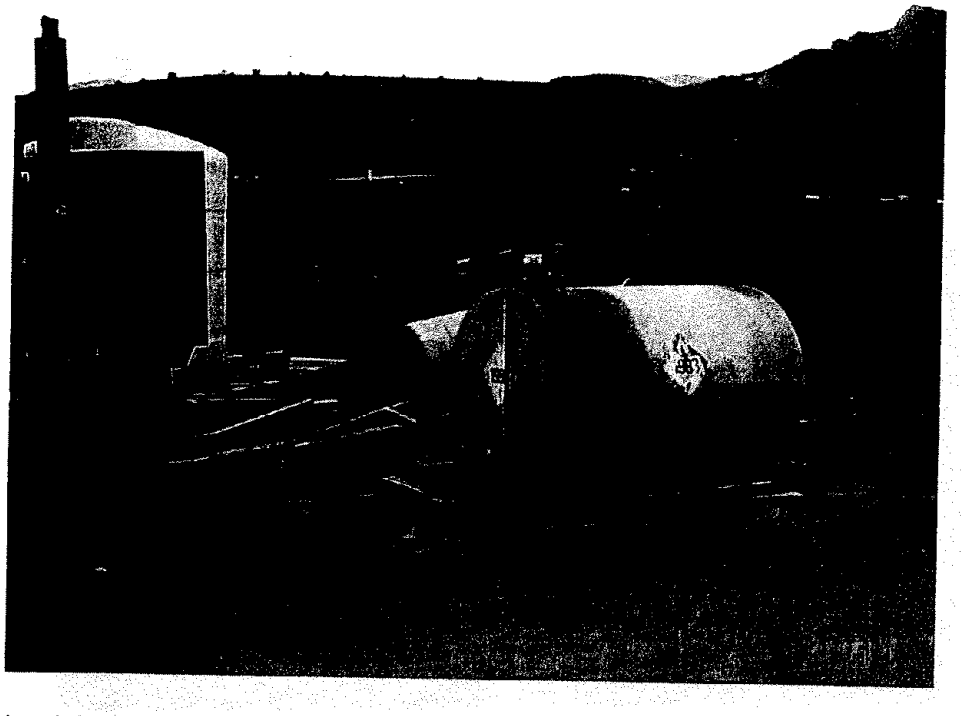
27. Agricultural ASTs in eastern portion of subject property.

28



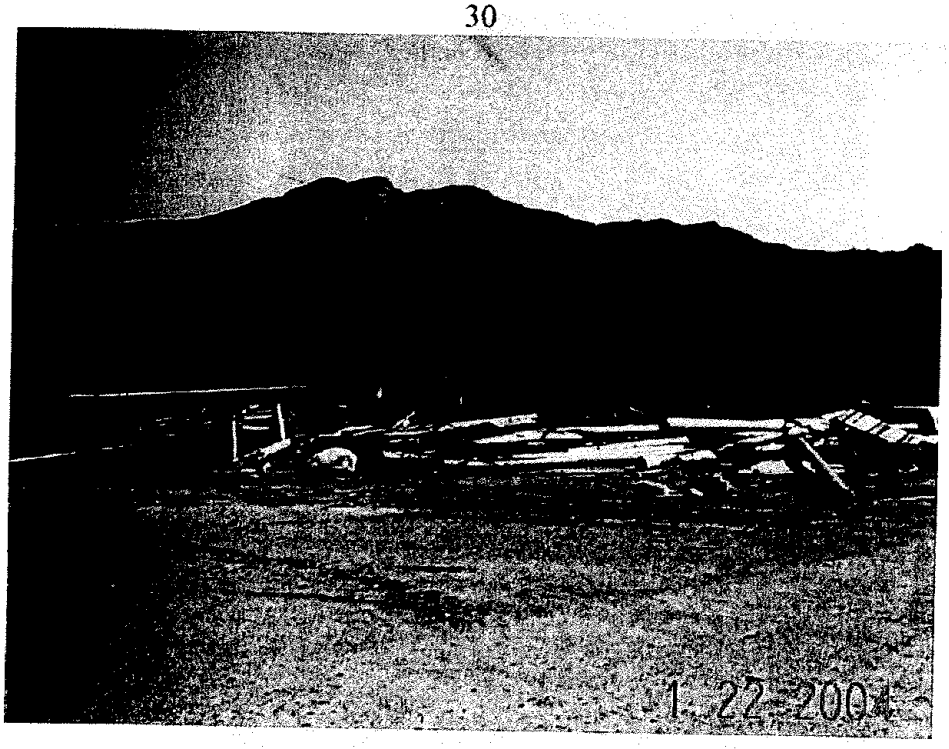
28. Water well in eastern portion of subject property.

29



29. Diesel fuel AST associated with portable water pump located in eastern portion of subject property. Note diesel fuel staining.

30



30. Debris is eastern portion of subject property near river.

31

31. View of Borrow Site "A."

32

32. Borrow Site "A."

33

33. Former oil drilling platform located in Borrow Site "A."

34

34. Possible oil well location in Borrow Site "A."

35

35. Oil staining on soil at possible oil well location in Borrow Site "A."

36

36. Borrow Site "B."

37

37. Looking west across Borrow Site "B."

38

38. Location of possible oil well in Borrow Site "B."

39

39. Location of former oil well in Borrow Site "B."

40

40. Close-up of former oil well in Borrow Site "B."

APPENDIX B:

Historic Aerial Photographs

Inquiry : 1063369.8 Year : 1928 Flyer : Fairchild Scale : 1"=500'

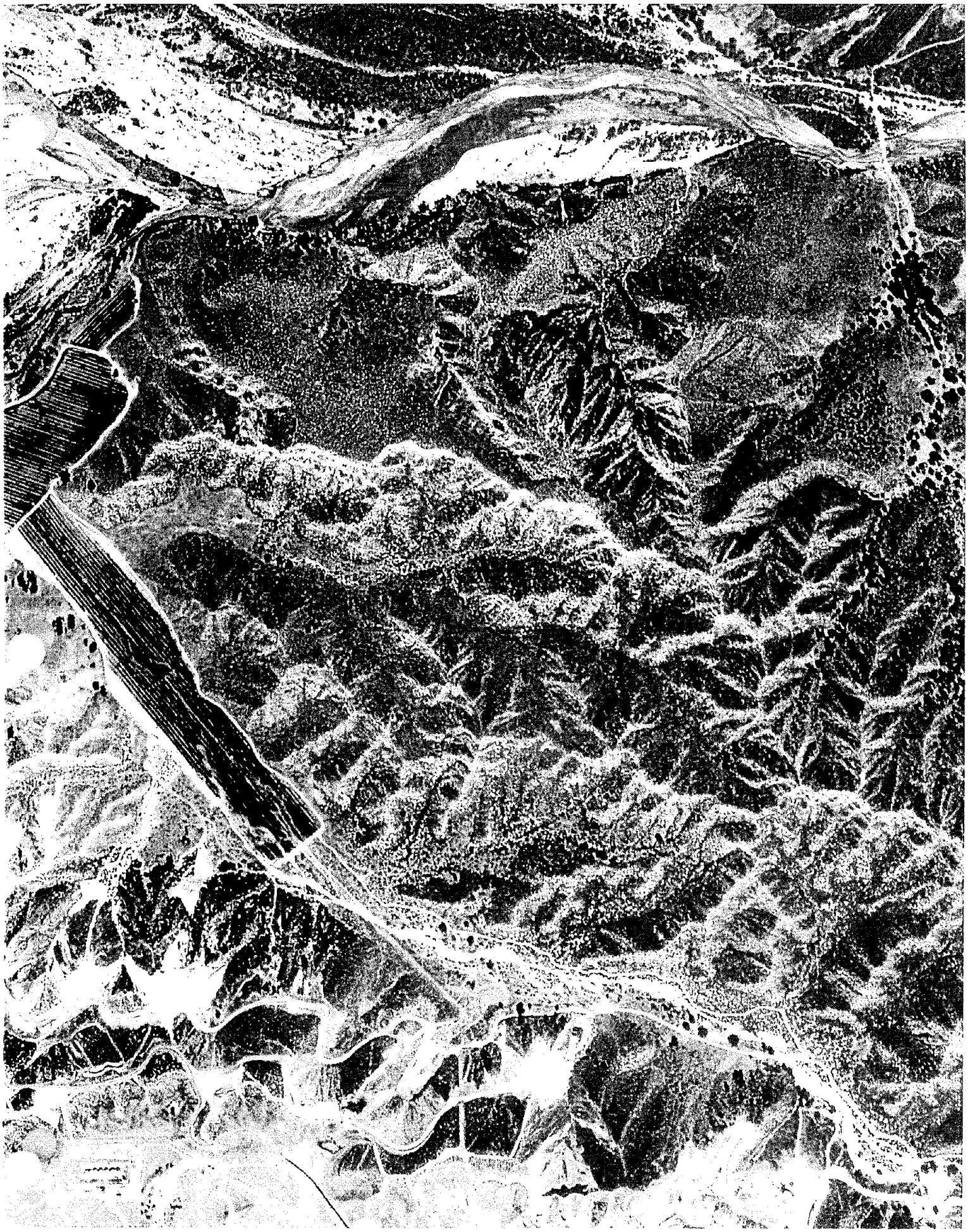
Inquiry : 1108642. Year : 1928 Flyer : Fairchild Scale : 1"=500'

Inquiry : 1108642.9 Year : 1928 Flyer : Fairchild Scale : 1"=500'

Inquiry : 1108642. Year : 1947 Flyer : Tubis Scale : 1"=666'

Inquiry : 1063369.8 Year : 1947 Flyer : Tubis Scale : 1"=666'

Inquiry : 1108642.9 Year : 1947 Flyer : Tubis Scale : 1"=666'



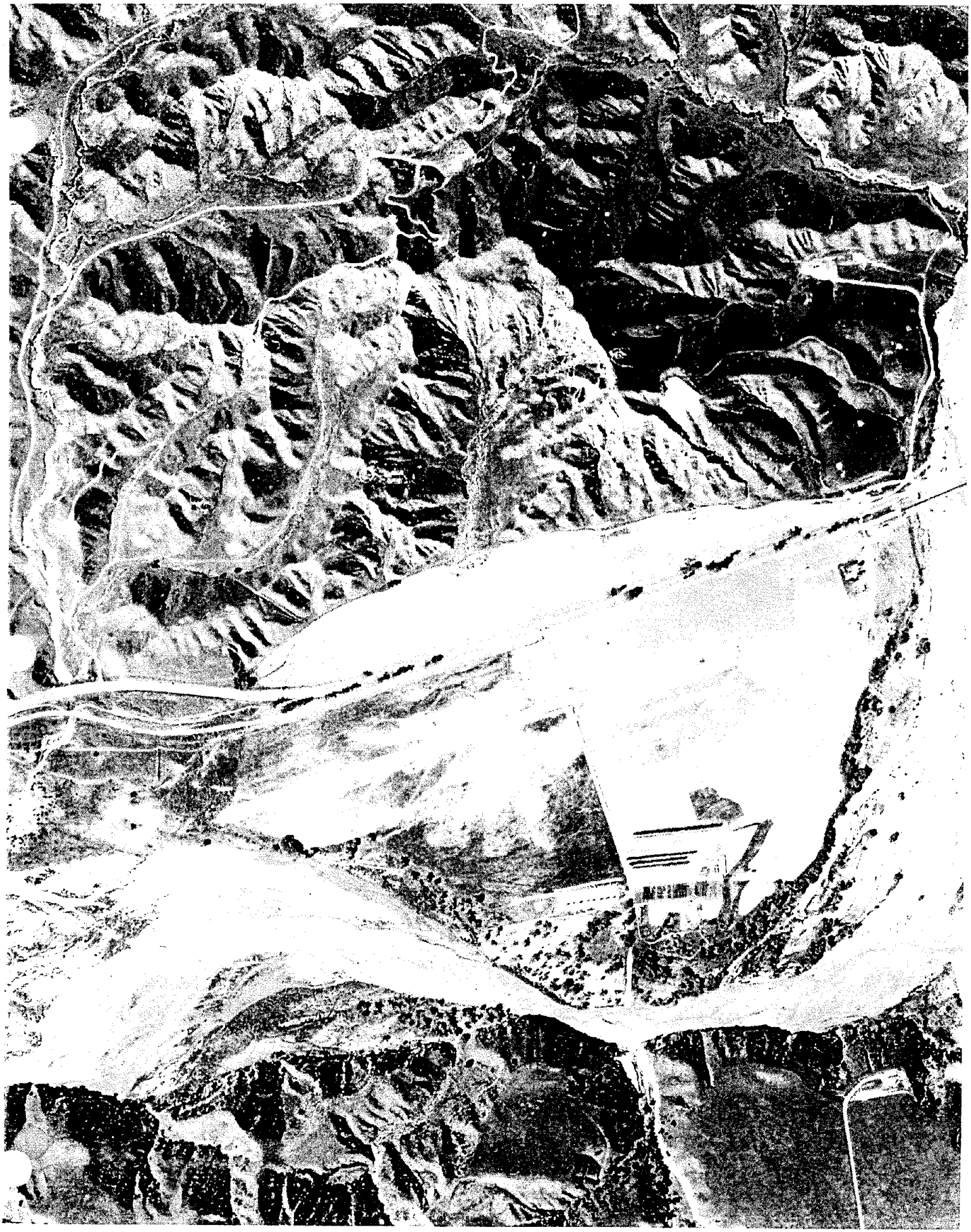
Inquiry : 1108642. Year : 1947 Flyer : Tubis Scale : 1"=666'

Inquiry : 1108642. Year : 1952 Flyer : Pacific Air Scale : 1"=555'

Inquiry : 1108642.9 Year : 1952 Flyer : Pacific Air Scale : 1"=555'

Inquiry : 1108642. Year : 1952 Flyer : Pacific Air Scale : 1"=555'

Inquiry : 1108642. Year : 1968 Flyer : Teledyne Scale : 1"=666'

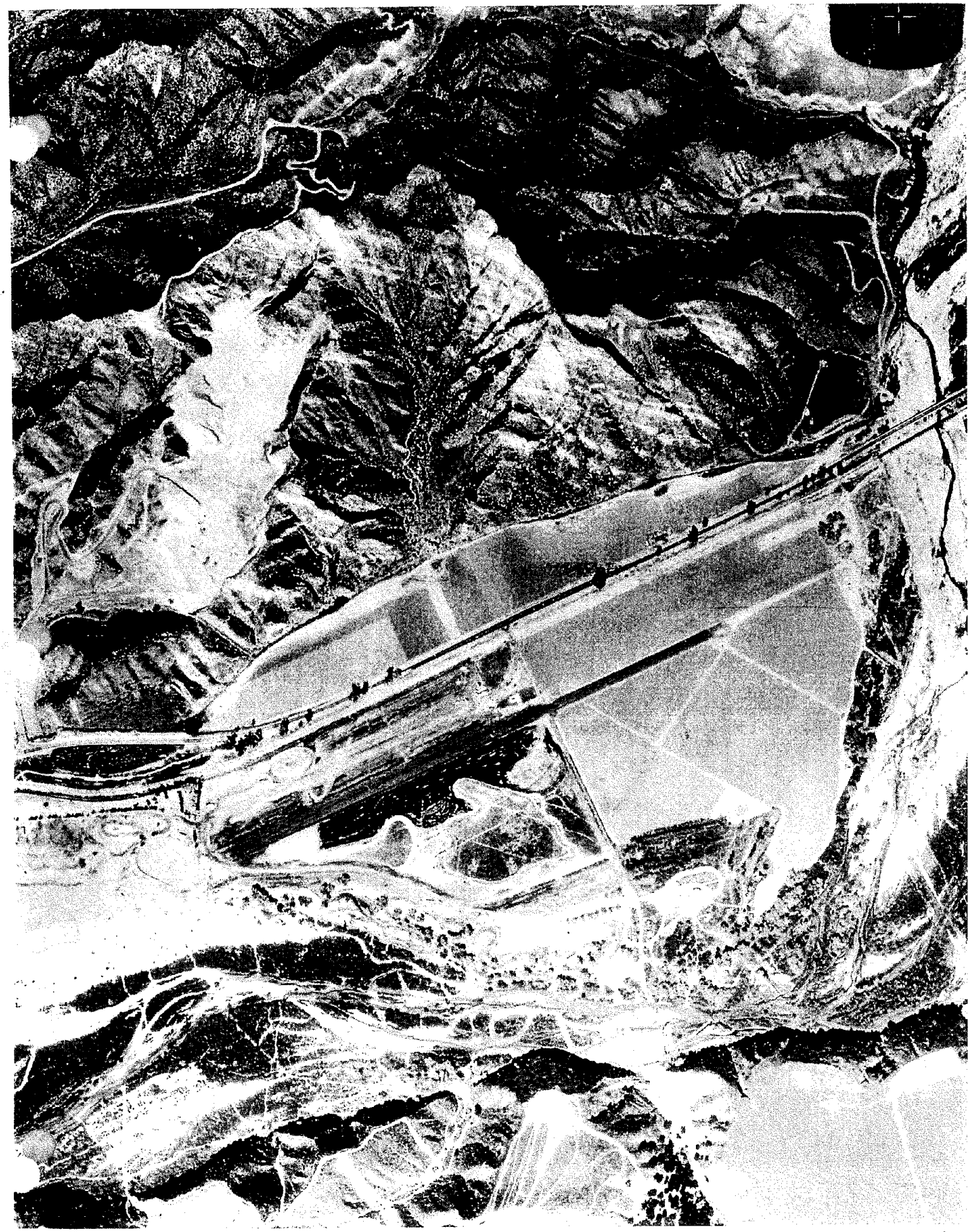


Inquiry : 1108642.9 Year : 1968 Flyer : Teledyne Scale : 1"=666'

7-28-72
AV 13-2

Inquiry : 1108642. Year : 1976 Flyer : Teledyne Scale : 1"=666'

Inquiry : 1063369.8 Year : 1976 Flyer : Teledyne Scale : 1"=666'



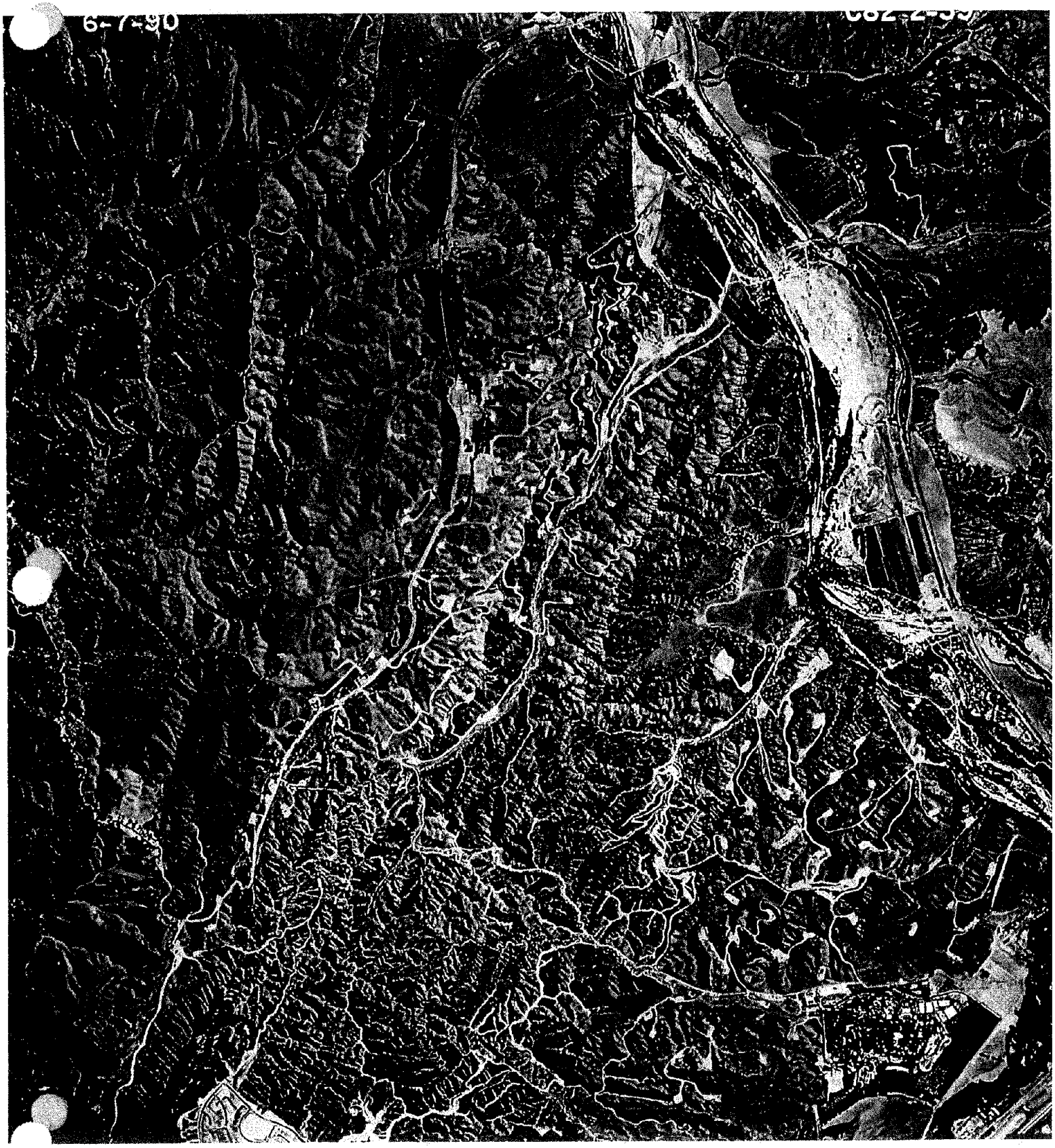
Inquiry : 1108642.9 Year : 1976 Flyer : Teledyne Scale : 1"=666'

470

8
NAS-VEN 3-22

nquiry : 1108642. Year : 1989 Flyer : USGS Scale : 1"=666'

Inquiry : 1108642.9 Year : 1989 Flyer : USGS Scale : 1"=666'


6-7-90

5-9-93
1"=2000'
C87-31-126

Inquiry : 1108642. Year : 1994 Flyer : USGS Scale : 1"=666'

Inquiry : 1063369.8 Year : 1994 Flyer : USGS Scale : 1"=666'

Inquiry : 1108642.9 Year : 1994 Flyer : USGS Scale : 1"=666'

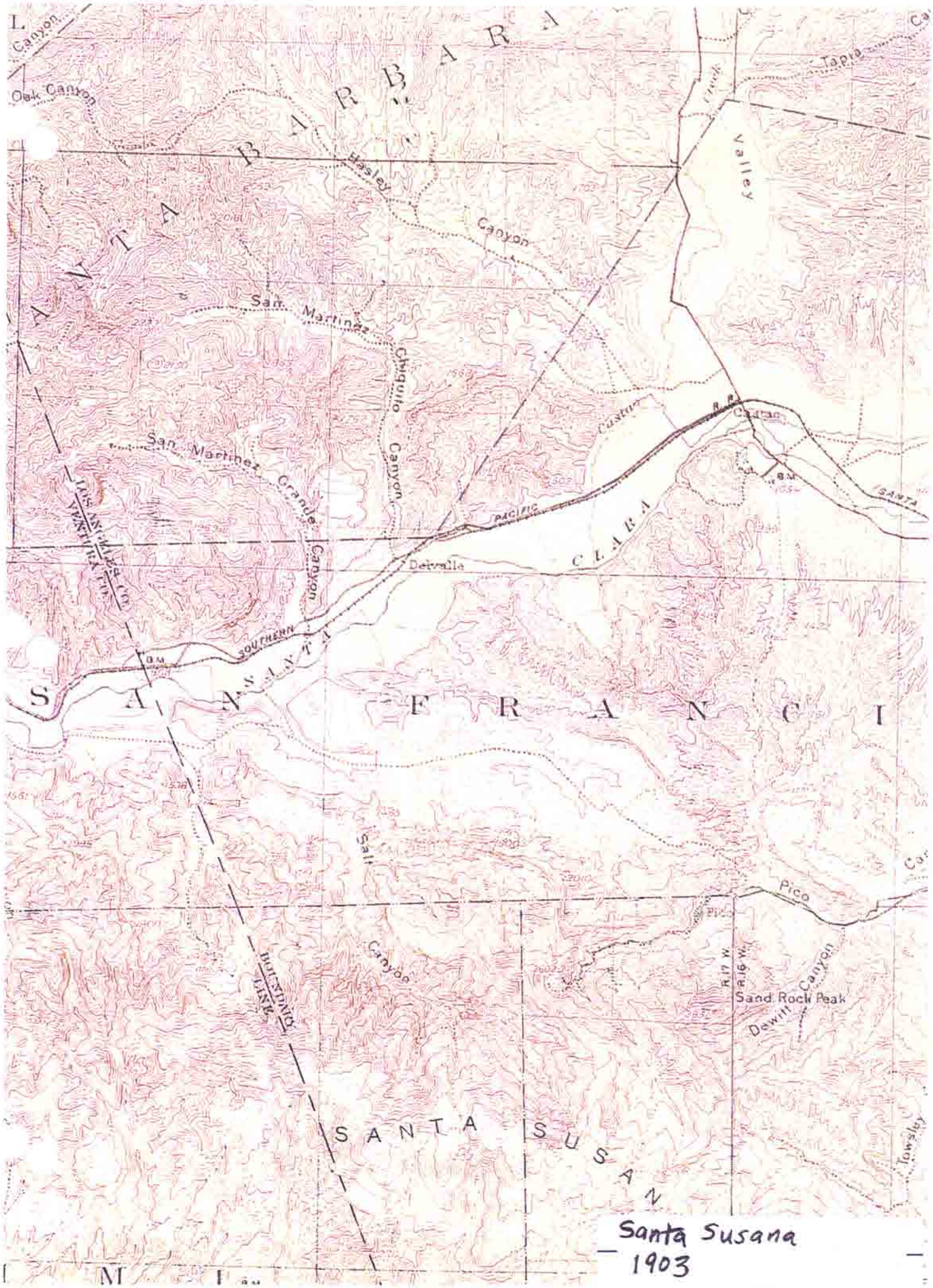
Inquiry : 1108642. Year : 1994 Flyer : USGS Scale : 1"=666'

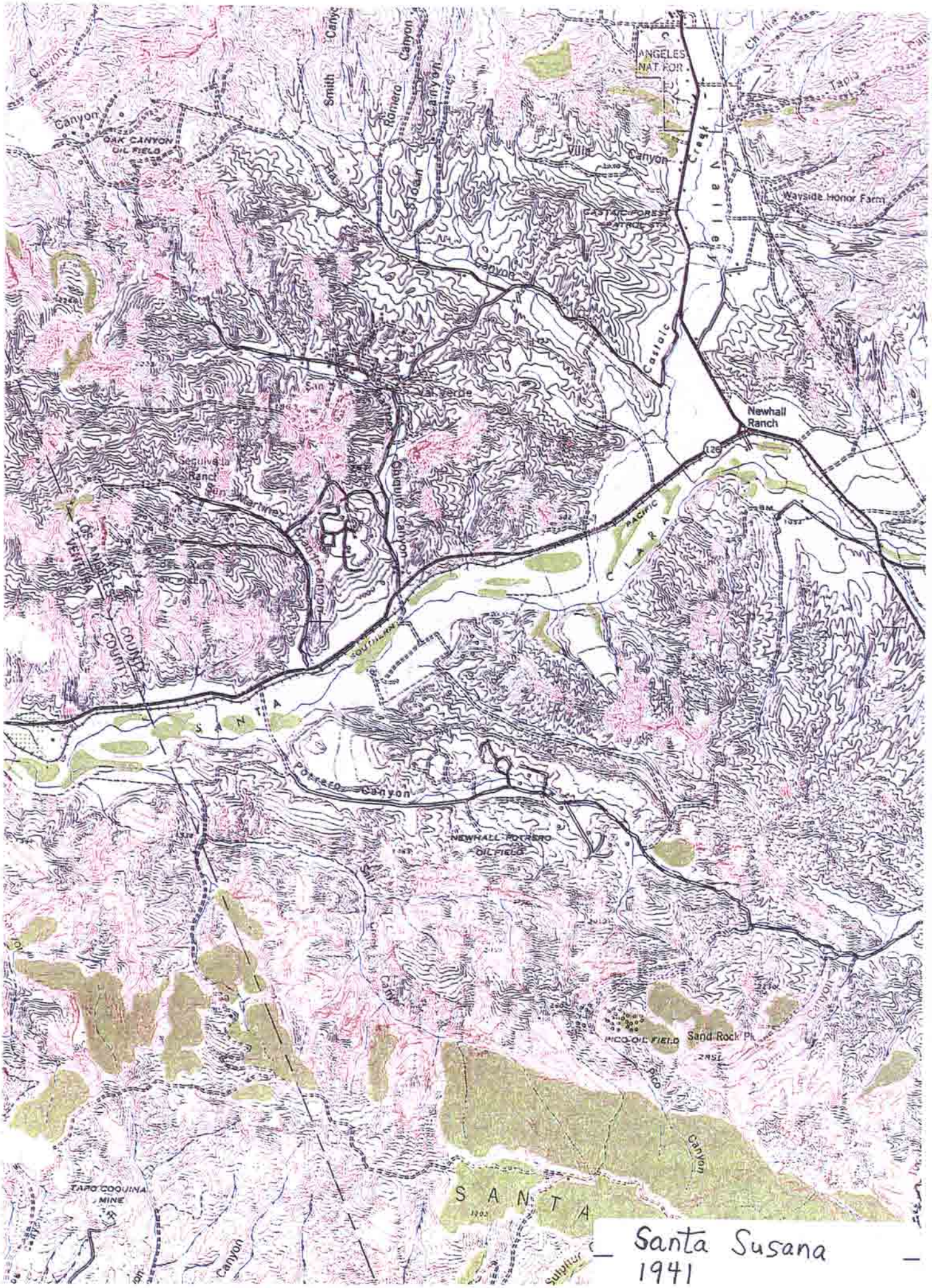
03-12-95
K-2000
CIIR-15-207

22-99
1"=2000'

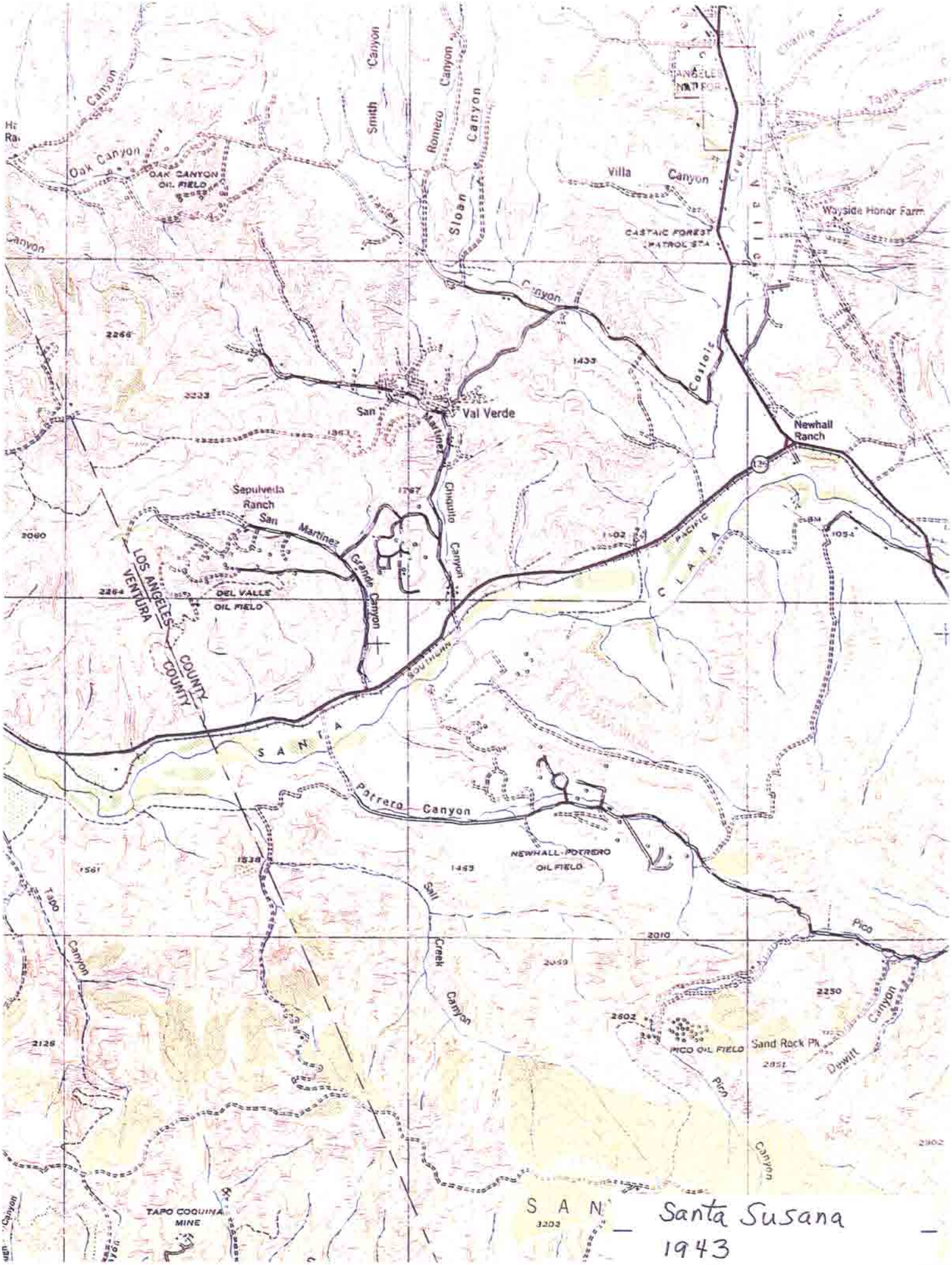
APPENDIX C:

Historic Topographic Maps

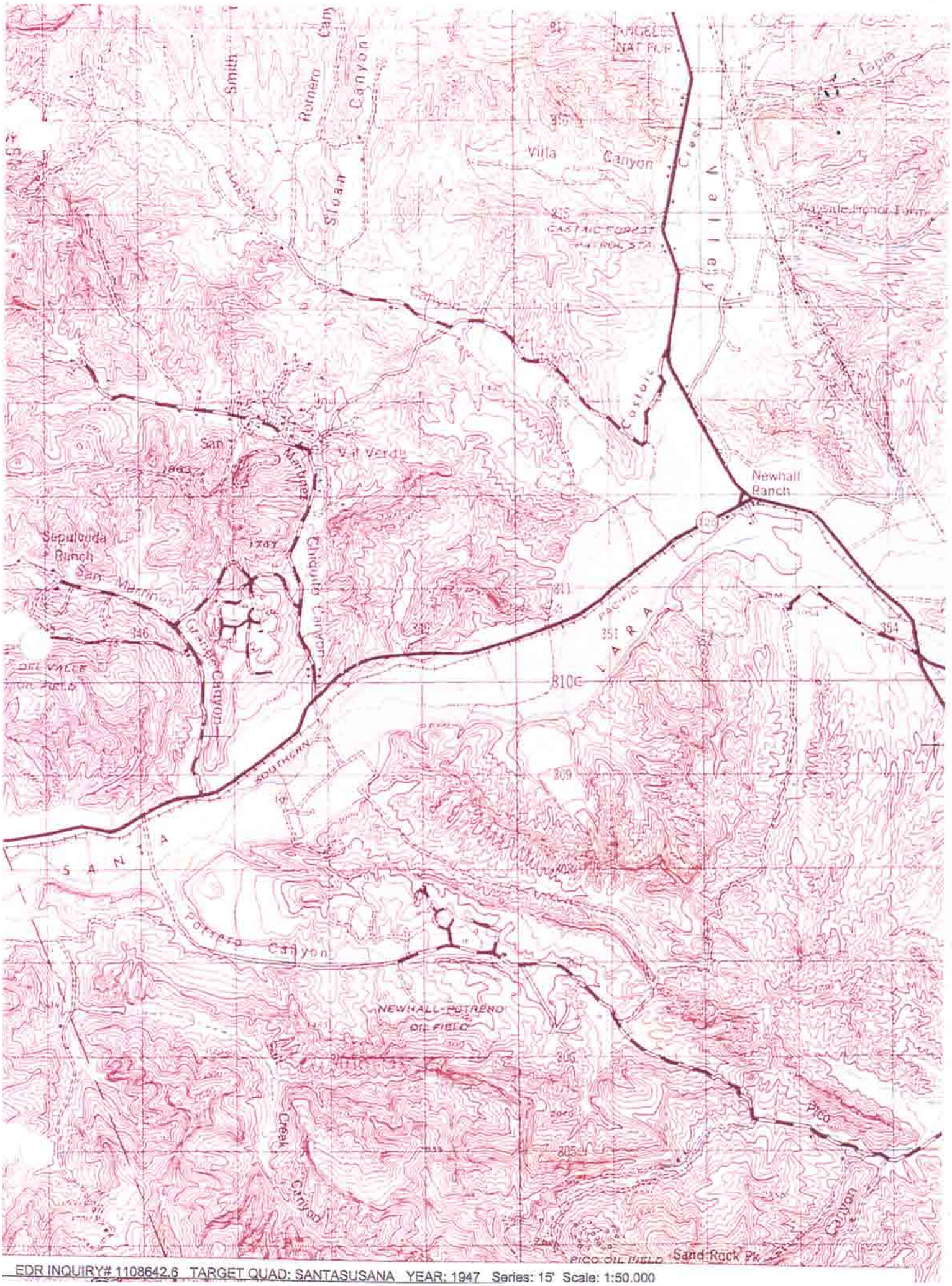

SANTA BARBARA
SANTA CLARA
SANTA FRANCISCO
SANTA SUSANA
Oak Canyon
Tapia
Valley
Hasley
Canyon
San Martinez
Chiquito
Canyon
San Martinez Grande
Canyon
Castro
Castac
Delvalle
Pacific
Southern
Salt
Canyon
Pico
Sand Rock Peak
Dewitt Canyon
Towsley
R.17 W.
R.16 W.
BOUNDARY LINE
Santa Susana
1903



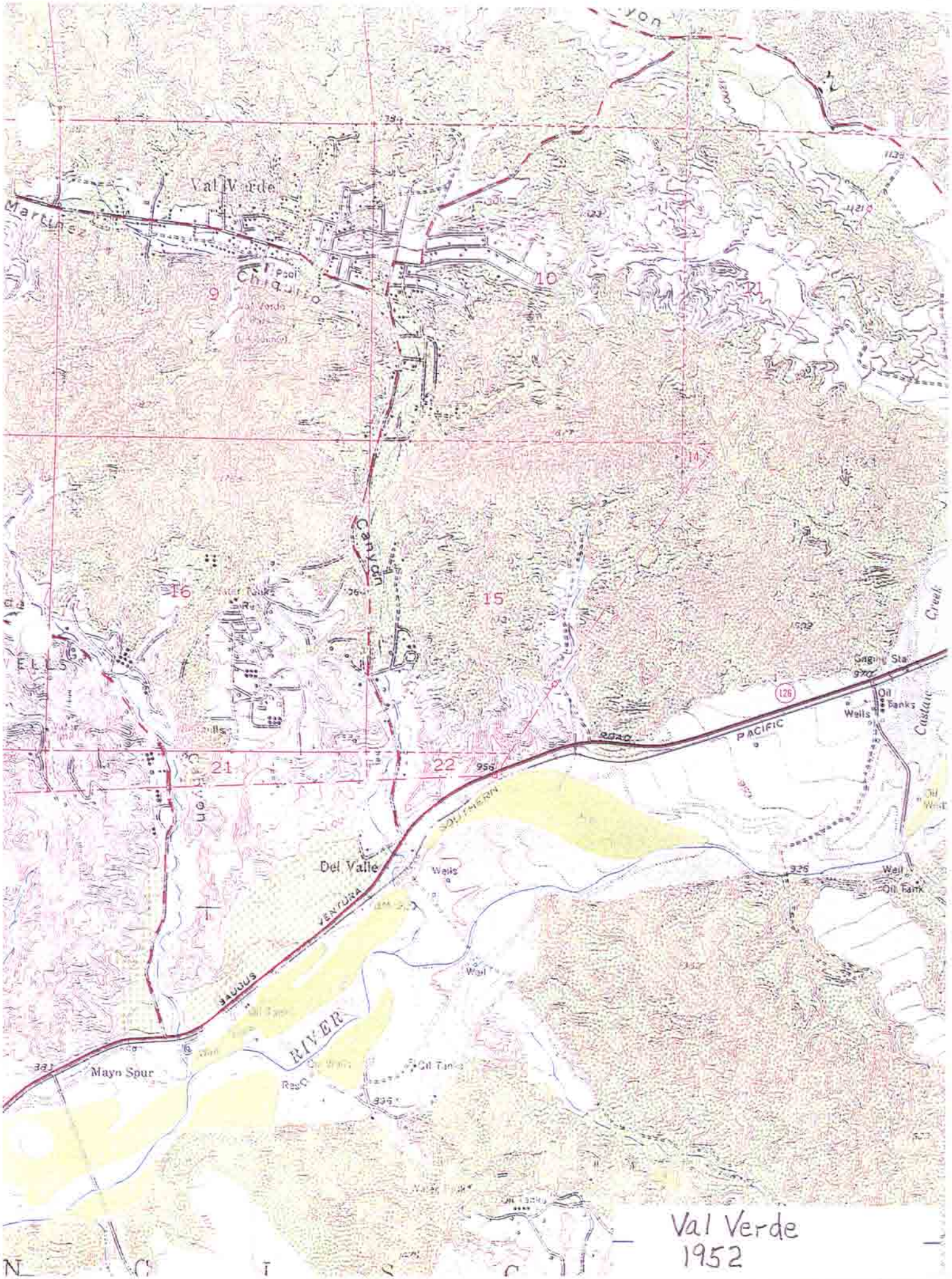
Santa Susana
1941



SAN Santa Susana
1943

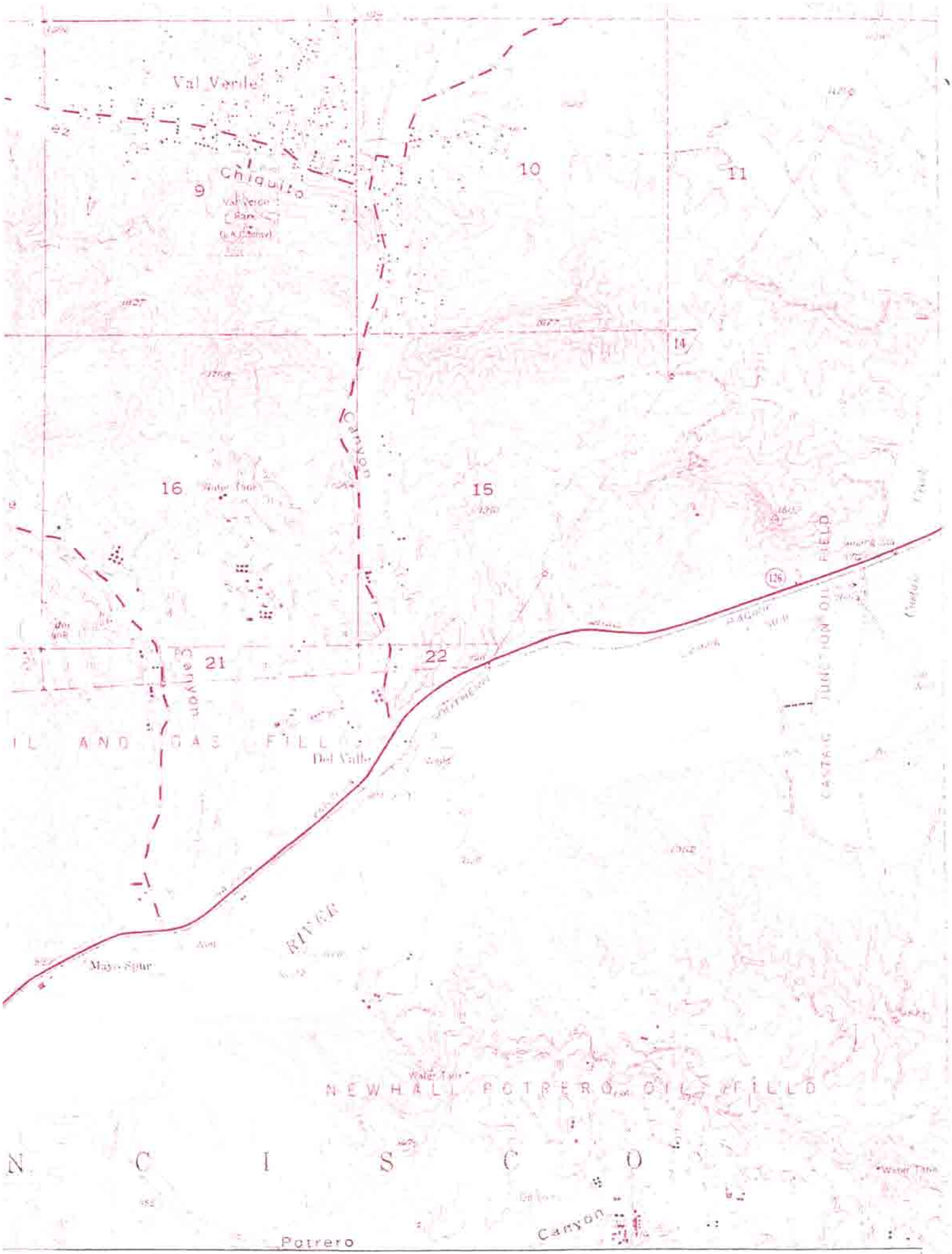


EDR INQUIRY# 1108642.6 TARGET QUAD: SANTASUSANA YEAR: 1947 Series: 15' Scale: 1:50.000

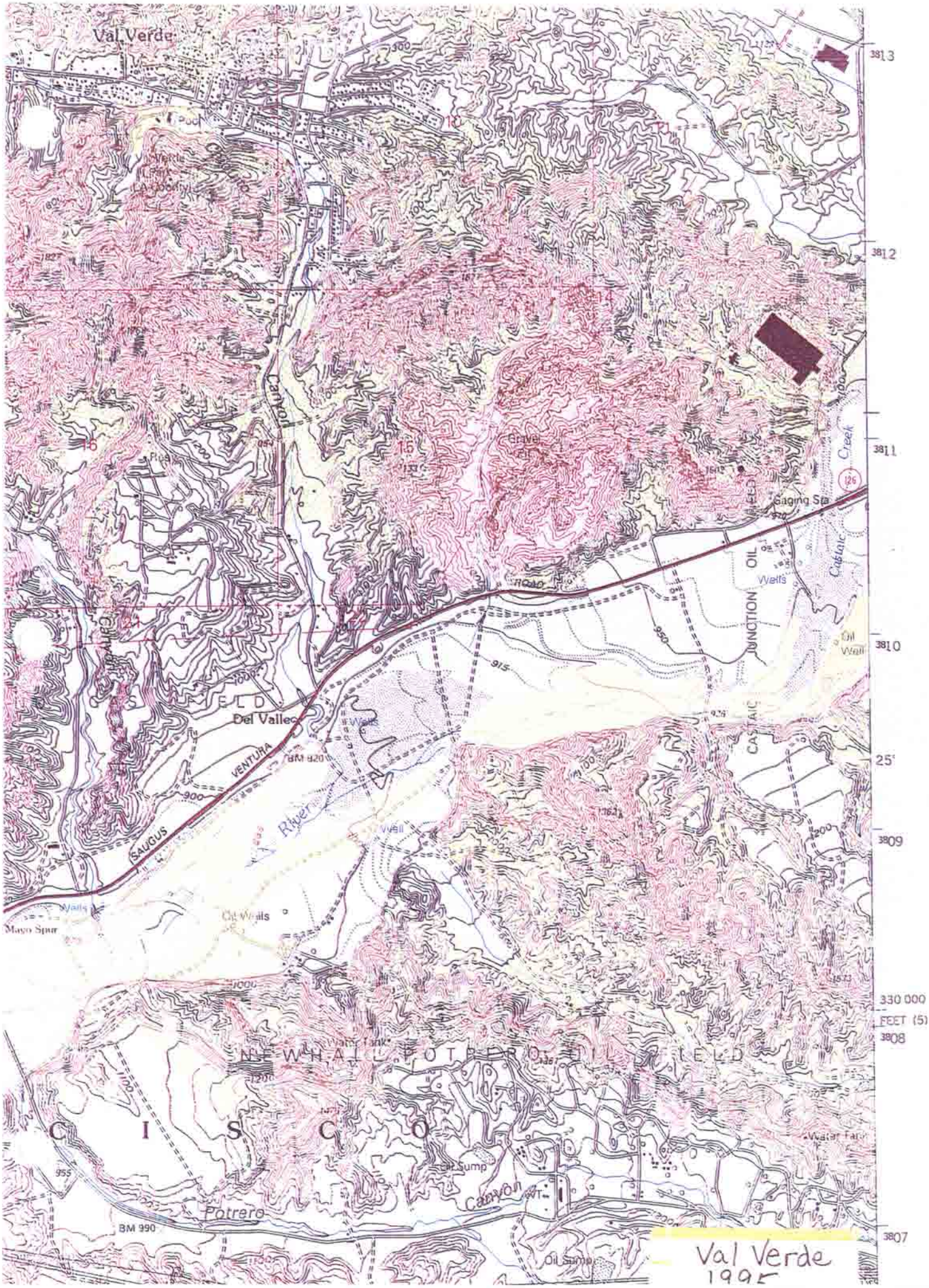


Val Verde
1952

N ^ EDR INQUIRY# 1108642.6 TARGET QUAD: VAL VERDE PHOTOREVISED: 1952-1988 Series: 7.5' Scale: 1:24,000


Val Verde
Chiquito
9
10
11
14
16
15
21
22
Canyon
Del Valle
Mayo Spur
RIVER
NEWHALL POTRERO OIL FIELD
N C I S C O
Potrero
Canyon
126

Val Verde
1991


Val Verde
Canyon
Gravel Pit
Gaging Sta
Castaic Creek
OIL FIELD
JUNCTION
Wells
Oil Well
Del Valle
VENTURA
SAUGUS
BM 820
River
Well
Oil Wells
Mayo Spur
CASTAIC
NEWHALL POTRERO OIL FIELD
Water Tank
Oil Sump
Potrero
Canyon
BM 990
Oil Sump
Water Tank
330 000
FEET (5)
3813
3812
3811
3810
3809
3808
3807
Val Verde
1995

APPENDIX D:

Laboratory Reports and Chain-of-Custody Documentation

Enviro - Chem, Inc.
1215 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: February 6, 2004

FEB 12 2004

Mr. Russell Cote
BA Environmental
528 State Street
Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

Project: **Newhall Land / 104012**

Dear Mr. Cote:

The analytical results for the soil samples, received by our Lab on January 29, 2004, are attached.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro - Chem, Inc.
1215 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G1-A/B/C/D (Composite)**
LAB I.D.: 040130-10,-11,-12,-13 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G2-A/B/C/D (Composite)**
LAB I.D.: 040130-14,-15,-16,-17 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G3-A/B/C/D (Composite)**
LAB I.D.: 040130-18,-19,-20,-21 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	0.001	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G4-A/B/C/D (Composite)**
LAB I.D.: 040130-22,-23,-24,-25 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G5-A/B/C/D (Composite)**
LAB I.D.: 040130-26,-27,-28,-29 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G6-A/B/C/D (Composite)**
LAB I.D.: 040130-30,-31,-32,-33 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	0.002	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G7-A/B/C/D (Composite)**
LAB I.D.: 040130-34,-35,-36,-37 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	0.002	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G8-A/B/C/D (Composite)**
LAB I.D.: 040130-38,-39,-40,-41 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

METHOD BLANK FOR LAB I.D.: 040130-10 TO -13 (Composite), 040130-14 TO -17 (Composite), 040130-18 TO -21 (Composite), 040130-22 TO -25 (Composite), 040130-26 TO -29 (Composite), 040130-30 TO -33 (Composite), 040130-34 TO -37 (Composite), 040130-38 TO -41 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

EPA 8081 QA/QC Report

Matrix: Soil Date Analyzed: 2/3-4/2004
Unit: mg/Kg

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 040130-120

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP %RPD	ACP %REC
Gamma-BHC	0.000	0.050	0.046	**92%**	0.047	**94%**	**2%**	**0-20%**	**70-130**
Aldrin	0.000	0.050	0.048	**95%**	0.048	**97%**	**2%**	**0-20%**	**70-130**
4,4-DDE	0.000	0.050	0.050	**99%**	0.051	**102%**	**3%**	**0-20%**	**70-130**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
Gamma-BHC	0.050	0.049	**97%**	**75-125**
Aldrin	0.050	0.049	**98%**	**75-125**
4,4-DDE	0.050	0.049	**98%**	**75-125**
Dieldrin	0.050	0.052	**104%**	**75-125**

Surrogate Recovery	ACP%	MB	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.			040130-116	040130-117	040130-118	040130-119	040130-120	0130-10~13
Tetra-chloro-meta-xylene		111%	120%	114%	116%	130%	110%	122%
Decachlorobipneyl	50-150	114%	116%	108%	121%	94%	103%	112%

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.	0130-14~17	0130-18~21	0130-22~25	0130-26~29	0130-30~33	0130-34~37	0130-38~41	
Tetra-chloro-meta-xylene	116%	129%	117%	121%	99%	113%	111%	
Decachlorobipneyl	108%	126%	106%	118%	80%	104%	96%	

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.						
Tetra-chloro-meta-xylene						
Decachlorobipneyl						

S.R. = Sample Result
spk conc = Spike Concentration
%REC = Percent Recovery
ACP %RPD = Acceptable Percent RPD Range
ACP %REC = Acceptable Percent Recovery Range

** = Surrogate fail due to matrix interference*

Note: ***LCS, MS, MSD are in control therefore results are in control.***

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: G1-A/B/C/D (Composite)
LAB I.D.: 040130-10,-11,-12,-13 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G2-A/B/C/D (Composite)**
LAB I.D.: 040130-14,-15,-16,-17 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G3-A/B/C/D (Composite)**
LAB I.D.: 040130-18,-19,-20,-21 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G4-A/B/C/D (Composite)**
LAB I.D.: 040130-22,-23,-24,-25 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G5-A/B/C/D (Composite)**
LAB I.D.: 040130-26,-27,-28,-29 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G6-A/B/C/D (Composite)**
LAB I.D.: 040130-30,-31,-32,-33 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G7-A/B/C/D (Composite)**
LAB I.D.: 040130-34,-35,-36,-37 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G8-A/B/C/D (Composite)**
LAB I.D.: 040130-38,-39,-40,-41 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

METHOD BLANK FOR LAB I.D.: 040130-10 TO -13 (Composite), 040130-14 TO -17 (Composite), 040130-18 TO -21 (Composite), 040130-22 TO -25 (Composite), 040130-26 TO -29 (Composite), 040130-30 TO -33 (Composite), 040130-34 TO -37 (Composite), 040130-38 TO -41 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

QA/QC Report

Analysis: EPA 8151A

Matrix: **SOIL** Date Analyzed: **2/4/2004**

Unit: **mg/Kg (PPM)**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 040130-38~41

Analyte	S.R.	spk conc	MS	% REC	MSD	% REC	%RPD	ACP %RPD	ACP %REC
2,4,5-T	0	1.0	1.03	**103%**	1.06	**106%**	**3%**	**0-20%**	**50-150**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
2,4,5-T	0.100	0.105	**105%**	**70-130**
2,4,5-TP	0.100	0.094	**94%**	**70-130**
2,4-DB	1.00	1.12	**112%**	**70-130**

Surrogate Recovery:

Analyte	spk conc	ACP %	M-BLK	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:				040130-10~13	040130-14~17	040130-18~21	040130-22~25	040130-26~29	040130-30~33
DCAA	0.20	50-150	59%	57%	66%	75%	66%	86%	85%

Analyte	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:	040130-34~37	040130-38~41							
DCAA	68%	75%							

Analyte	%REC	%REC	%REC	%REC	%REC
Sample ID:					
DCAA					

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: February 9, 2004

Mr. Russell Cote
BA Environmental
528 State Street
Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

Project: **Newhall Land / 104012; 8141A**

Dear Mr. Cote:

The analytical results for the soil samples, received by our Lab on January 29, 2004, are attached.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/03/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/09/04

SAMPLE I.D.: **G1-A/B/C/D (Composite)**
LAB I.D.: 040130-10,-11,-12,-13 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/03/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/09/04

SAMPLE I.D.: **G3-A/B/C/D (Composite)**
LAB I.D.: 040130-18,-19,-20,-21 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: **BA Environmental**
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PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/03/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/09/04

SAMPLE I.D.: **G4-A/B/C/D (Composite)**
LAB I.D.: 040130-22,-23,-24,-25 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

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Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/03/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/09/04

SAMPLE I.D.: **G5-A/B/C/D (Composite)**
LAB I.D.: 040130-26,-27,-28,-29 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/03/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/09/04

SAMPLE I.D.: **G6-A/B/C/D (Composite)**
LAB I.D.: 040130-30,-31,-32,-33 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/03/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/09/04

SAMPLE I.D.: **G7-A/B/C/D (Composite)**
LAB I.D.: 040130-34,-35,-36,-37 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/03/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/09/04

SAMPLE I.D.: **G8-A/B/C/D (Composite)**
LAB I.D.: 040130-38,-39,-40,-41 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/03/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/09/04

METHOD BLANK FOR LAB I.D.: 040130-10 TO -13 (Composite), 040130-14 TO -17 (Composite), 040130-18 TO -21 (Composite), 040130-22 TO -25 (Composite), 040130-26 TO -29 (Composite), 040130-30 TO -33 (Composite), 040130-34 TO -37 (Composite), 040130-38 TO -41 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900

FAX 714/538-1209

CLIENT Enviro-Chem Laboratories, Inc. (7420)
ATTN: Curtis Desilets
1214 E. Lexington Avenue
Pomona, CA 91766

LAB REQUEST 123712

REPORTED 02/09/2004
RECEIVED 01/30/2004

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
494471	040130/10-13
494472	040130/14-17
494473	040130/18-21
494474	040130/22-25
494475	040130/26-29
494476	040130/30-33
494477	040130/34-37
494478	040130/38-41
494479	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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TESTING & CONSULTING
Chemical
Microbiological
Environmental

FEB-10-2004 09:17 FROM-Associated Laboratories 714-538-1209 T-535 P.001/012 F-665

Order #: 494471
Matrix: SOLID
Date Sampled: 01/29/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040130/10-13

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD
Surrogates				**Units**	**Control Limits**	
TBP (sur)	71			%	50 - 145	
TPP (sur)	60			%	50 - 145	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES Analytical Results Report

FEB-10-2004 09:18 FROM-Associated Laboratories 714-538-1209 T-535 P 002/012 F-665

Order #: 494472
Matrix: SOLID
Date Sampled: 01/29/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040130/14-17

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD

Surrogates

		Units	Control Limits
TBP (sur)	61	%	50 - 145
TPP (sur)	50	%	50 - 145

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit. DF = Dilution Factor

FEB-10-2004 09:18 FROM-Associated Laboratories 714-538-1209 T-535 P.003/012 F-665

Order #: 494473
Matrix: SOLID
Date Sampled: 01/29/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040130/18-21

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD

Surrogates

		Units	Control Limits
TBP (sur)	80	%	50 - 145
TPP (sur)	83	%	50 - 145

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

FEB-10-2004 09:18 FROM-Associated Laboratories 714-538-1209 T-535 P 004/012 F-665

Order #: 494474 **Client:** Enviro-Chem Laboratories, Inc.
Matrix: SOLID **Client Sample ID:** 040130/22-25
Date Sampled: 01/29/2004
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD

Surrogates		Units	Control Limits
TBP (sur)	77	%	50 - 145
TPP (sur)	74	%	50 - 145

DLR = Detection limit for reporting purposes. ND = Not Detected below indicated detection limit, DF = Dilution Factor

FEB-10-2004 09:18 FROM-Associated Laboratories 714-538-1209 T-535 P.005/012 F-665

Order #: 494475 **Client:** Enviro-Chem Laboratories, Inc.
Matrix: SOLID **Client Sample ID:** 040130/26-29
Date Sampled: 01/29/2004
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD

Surrogates		**Units**	**Control Limits**
TBP (sur)	78	%	50 - 145
TPP (sur)	68	%	50 - 145

DLR = Detection limit for reporting purposes. ND = Not Detected below indicated detection limit, DF = Dilution Factor

FEB-10-2004 09:19 FROM-Associated Laboratories 714-538-1209 T-535 P.006/012 F-665

Order #: 494476 **Client:** Enviro-Chem Laboratories, Inc.
Matrix: SOLID **Client Sample ID:** 040130/30-33
Date Sampled: 01/29/2004
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD
Surrogates				**Units**	**Control Limits**	
TBP (sur)	80			%	50 - 145	
TPP (sur)	68			%	50 - 145	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

FEB-10-2004 09:19 FROM-Associated Laboratories 714-538-1209 T-535 P.007/012 F-665

Order #: 494477
Matrix: SOLID
Date Sampled: 01/29/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040130/34-37

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD

Surrogates

		Units	Control Limits
TBP (sur)	85	%	50 - 145
TPP (sur)	70	%	50 - 145

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

FEB-10-2004 09:18 FROM-Associated Laboratories 714-538-1209 T-535 P.008/012 F-665

Order #: 494478
Matrix: SOLID
Date Sampled: 01/29/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040130/38-41

8141 Organophosphate Pesticides

Analyte	Result	DF	DLR	Units	Date/Analyst	
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD

Surrogates		Units	Control Limits
TBP (sur)	85	%	50 - 145
TPP (sur)	70	%	50 - 145

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 494479 **Client:** Enviro-Chem Laboratories, Inc.

Matrix: SOLID **Client Sample ID:** Laboratory Method Blank

Date Sampled:

Time Sampled:

Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD

Surrogates		Units	Control Limits
TBP (sur)	77	%	50 - 145
TPP (sur)	85	%	50 - 145

DLR = Detection limit for reporting purposes. ND = Not Detected below indicated detection limit, DF = Dilution Factor

FEB-10-2004 09:20 FROM-Associated Laboratories 714-538-1209 T-535 P 010/012 F-665

ASSOCIATED LABORATORIES
QA REPORT FORM

Determinative Method : EPA 8141 Preparative Method: EPA 3545

QC Sample: 123712-494473

Matrix: SOLID

Analysis Date: 2/7/04

Batch Date: 02/03/04 (op 020304s)

Applies to: LR 123712 and LR 123536

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS
REPORTING UNITS = mg/Kg

Test	Sample Result	Spike Added	Spike Recovered		% Rec		RPD	QC Limits	
			MS	MSD	MS	MSD		RPD	% Rec
Demeton-O	ND	0.400	0.237	0.254	59	64	7	35	45-140
Ethoprop	ND	0.400	0.369	0.346	92	86	7	35	45-140
Naled	ND	0.400	0.381	0.374	95	93	2	35	45-140
Diazinon	ND	0.400	0.325	0.324	81	81	0	35	45-140
Stirophos	ND	0.400	0.315	0.329	79	82	4	35	45-140
Fensulfothion	ND	0.400	0.411	0.391	103	98	5	35	45-140
Azinophos, Methyl-	ND	0.400	0.341	0.349	85	87	2	35	45-140
Coumaphos	ND	0.400	0.191	0.206	48	52	8	35	45-140

ND = Not Detected
% Rec - MS & MSD = Percent Recovery from Matrix Spike & Matrix Spike Duplicate
RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate recoveries

LAB CONTROL SPIKE / LAB CONTROL SPIKE DUPLICATE RECOVERIES
REPORTING UNITS = mg/Kg

Test	Spike Added	Spike Recovered	% Rec LCS	QC Limits
Demeton-O	0.400	0.344	86	55-130
Ethoprop	0.400	0.371	93	55-130
Naled	0.400	0.389	97	55-130
Diazinon	0.400	0.381	95	55-130
Stirophos	0.400	0.371	93	55-130
Fensulfothion	0.400	0.399	100	55-130
Azinophos, Methyl-	0.400	0.375	94	55-130
Coumaphos	0.400	0.333	83	55-130

Method Blank = All ND
% Rec - LCS & LCSD = Percent Recovery from Lab Control Spike & Lab Control Spike Duplicate
RPD = Relative Percent Difference of Lab Control Spike and Lab Control Spike Duplicate recoveries

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/03/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/09/04

SAMPLE I.D.: **G2-A/B/C/D (Composite)**
LAB I.D.: 040130-14,-15,-16,-17 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

123712

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
1 Week (Standard)
Other:

ASSOCIATE

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	8141								COMMENTS
040130-10→13		1/29/04		Soil	1			X								
-14→17		↓		↓	↓			↓								DANIELLE:
-18→21																REFER TO
-22→25																PREVIOUS
-26→29																QUOTE.
-30→33																-CURTIS
-34→37																
-38→41																

Company Name:

Address: Enviro-Chem, Inc. 1214 E. Lexington Avenue Pomona, CA 91766-5519

City/State/Zip:

Project Contact: Curtis B. Desilets

Tel: (909) 590-5905

Fax: (909) 590-5907

Sampler's Signature:

Project Name/ID: 040130-10-B, 14→17, 18, 22→25, 26→29, 30→33, 34→37, 38→41

Relinquished by:	Received by:	Date & Time: 1/30/04 1105	Instructions for Sample Storage After Analys
Relinquished by:	Received by:	Date & Time: 1/30/04 1145	O Dispose of O Return to Client O Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

Date: 1/30/04

1-30-04 3:20

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	8081	8141	8151							COMMENTS
G1-A	040130-10	1-29-04		Soil	1 X 4oz		Ice	X	X	X							Composite Samples
G1-B	-11							X	X	X							
G1-C	-12							X	X	X							
G1-D	-13							X	X	X							
G2-A	-14							X	X	X							Composite Samples
G2-B	-15							X	X	X							
G2-C	-16							X	X	X							
G2-D	-17							X	X	X							
G3-A	-18							X	X	X							Composite Samples
G3-B	-19							X	X	X							
G3-C	-20							X	X	X							
G3-D	-21							X	X	X							

Analysis Required

Company Name: Building Analytics
Address: 528 State St.
City/State/Zip: Glendale CA 91203

Project Contact: Russell Cole
Tel: (818) 500-1898
Fax: (818) 246-895

Sampler's Signature: Russell Cole
Project Name/ID: Newhall Land 104012

Relinquished by: Russell Cole	Received by: [illegible]	Date & Time: 1/29/04 1525	Instructions for Sample Storage After Analysis:
Relinquished by: [illegible]	Received by: [illegible]	Date & Time: 1/30/04 0905	O Dispose of O Return to Client O Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

Date:

WHITE WITH SAMPLE, YELLOW TO CLIENT

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	8081	8141	8151							COMMENTS
G4-A	040130-22	1-29-04		Soil	1 X 4oz		TCE	X	X	X							Composite Samples
G4-B	-23							X	X	X							
G4-C	-24							X	X	X							
G4-D	-25							X	X	X							
G5-A	-26							X	X	X							Composite Samples
G5-B	-27							X	X	X							
G5-C	-28							X	X	X							
G5-D	-29							X	X	X							
G6-A	-30							X	X	X							Composite Samples
G6-B	-31							X	X	X							
G6-C	-32							X	X	X							
G6-D	-33							X	X	X							

Analysis Required

Company Name: Building Analytics
Address: 528 State St
City/State/Zip: Glendale CA 91203

Project Contact: Russell Cate
Tel: (818) 500-1898
Fax: (818) 246-8195

Sampler's Signature: Russell Cate
Project Name/ID: 104012 Newhall Land

Relinquished by: Russell Cate
Relinquished by: [illegible]
Relinquished by:

Received by: [illegible]
Received by: [illegible]
Received by:

Date & Time: 1/29/04 1525
Date & Time: 1/30/04 0905
Date & Time:

Instructions for Sample Storage After Analysis:
O Dispose of O Return to Client O Store (30 Days)
O Other:

CHAIN OF CUSTODY RECORD

Date: _____

WHITE WITH SAMPLE - YELLOW TO CLIENT

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	8081	8141	8151							COMMENTS
G7-A	040130-34	1-29-04		Soil	1x4oz		ICE	X	X	X							Composite Samples
G7-B	-35							X	X	X							
G7-C	-36							X	X	X							
G7-D	-37							X	X	X							
G8-A	-38							X	X	X							Composite Samples
G8-B	-39							X	X	X							
G8-C	-40							X	X	X							
G8-D	-41							X	X	X							

Analysis Required

Company Name: Building Analytics
Address: 528 State St.
City/State/Zip: Glendale CA 91203

Project Contact: Russell Cole
Tel: (818) 500-1888
Fax: (818) 246-8155

Sampler's Signature: Russell Cole
Project Name/ID: Newhall Land 104012

Relinquished by: Russell Cole
Relinquished by: [illegible]
Relinquished by:

Received by: [illegible]
Received by: [illegible]
Received by:

Date & Time: 1/29/04 1525
Date & Time: 1/29/04 0905
Date & Time:

Instructions for Sample Storage After Analysis:
O Dispose of O Return to Client O Store (30 Days)
O Other:

CHAIN OF CUSTODY RECORD

Date: _____

WHITE WITH SAMPLE - YELLOW TO CLIENT

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: February 12, 2004

Mr. Russell Cote
BA Environmental
528 State Street
Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

Project: **Newhall Land / 104012**

Dear Mr. Cote:

The analytical results for the soil samples, received by our Lab on February 5, 2004, are attached.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 02/04/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/09/04
DATE ANALYZED: 02/10-11/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: G9-A/B/C/D (Composite)
LAB I.D.: 040205-1,-2,-3,-4 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	0.001	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/04/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/09/04
DATE ANALYZED: 02/10-11/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G10-A/B/C/D (Composite)**
LAB I.D.: 040205-5,-6,-7,-8 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	0.001	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/04/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/09/04
DATE ANALYZED: 02/10-11/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G11-A/B/C/D/E (Composite)**
LAB I.D.: 040205-9,-10,-11,-12,-13 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X10)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	0.012	0.001
gamma-Chlordane	0.017	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	0.008J	0.001
4,4'-DDT	0.014	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	0.018	0.001
Endosulfan Sulfate	ND	0.001
Endrin	0.061	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
MDL = MINIMUM DETECTION LIMIT
PQL = PRACTICAL QUANTITATION LIMIT
J = TRACE CONCENTRATION BETWEEN MDL AND PQL
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

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528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/04/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/09/04
DATE ANALYZED: 02/10-11/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G12-A/B/C/D (Composite)**
LAB I.D.: 040205-14,-15,-16,-17 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X10)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	0.022	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	0.029	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
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LABORATORY REPORT

CUSTOMER: BA Environmental
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Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 02/04/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
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DATE ANALYZED: 02/10-11/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: G17-A/B/C/D (Composite)
LAB I.D.: 040205-18,-19,-20,-21 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X10)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	0.018	0.001
gamma-Chlordane	0.027	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	0.012	0.001
4,4'-DDT	0.023	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	0.034	0.001
Endosulfan Sulfate	ND	0.001
Endrin	0.136	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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METHOD BLANK REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 02/04/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/09/04
DATE ANALYZED: 02/10-11/04
DATE REPORTED: 02/12/04

METHOD BLANK FOR LAB I.D.: 040205-1 TO -4 (Composite), 040205-5 TO -8 (Composite), 040205-9 TO -13 (Composite), 040205-14 TO -17 (Composite), 040205-18 TO -21(Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

EPA 8081 QA/QC Report

Matrix: Soil

Unit: mg/Kg

Date Analyzed: 2/10/2004

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 040206-15

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP %RPD	ACP %REC
Gamma-BHC	0.000	0.050	0.044	**89%**	0.046	**91%**	**3%**	**0-20%**	**70-130**
Aldrin	0.000	0.050	0.045	**91%**	0.046	**92%**	**1%**	**0-20%**	**70-130**
4,4-DDE	0.000	0.050	0.048	**97%**	0.049	**97%**	**1%**	**0-20%**	**70-130**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
Gamma-BHC	0.050	0.048	**97%**	**75-125**
Aldrin	0.050	0.047	**94%**	**75-125**
4,4-DDE	0.050	0.051	**102%**	**75-125**
Dieldrin	0.050	0.050	**100%**	**75-125**

Surrogate Recovery	ACP%	MB	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.			040206-14	040206-15	040205-1~4	040205-5~8	040205-9~13	040205-14~17
Tetra-chloro-meta-xylene	50-150	119%	99%	97%	101%	105%	101%	101%
Decachlorobipneyl	50-150	143%	116%	110%	114%	119%	114%	114%

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.	040205-18~21							
Tetra-chloro-meta-xylene	106%							
Decachlorobipneyl	115%							

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.						
Tetra-chloro-meta-xylene						
Decachlorobipneyl						

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

** = Surrogate fail due to matrix interference (If Marked)*

Note: ***LCS, MS, MSD are in control therefore results are in control.***

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro – Chem, Inc.
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LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 02/04/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/06-07/04
DATE ANALYZED: 02/09/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: G9-A/B/C/D (Composite)
LAB I.D.: 040205-1,-2,-3,-4 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: **BA Environmental**
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PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/04/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
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DATE ANALYZED: 02/09/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G10-A/B/C/D (Composite)**
LAB I.D.: 040205-5,-6,-7,-8 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/04/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/06-07/04
DATE ANALYZED: 02/09/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G11-A/B/C/D/E (Composite)**
LAB I.D.: 040205-9,-10,-11,-12,-13 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
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DATE ANALYZED: 02/09/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: G12-A/B/C/D (Composite)
LAB I.D.: 040205-14,-15,-16,-17 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
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LABORATORY REPORT

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PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/04/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/06-07/04
DATE ANALYZED: 02/09/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G17-A/B/C/D (Composite)**
LAB I.D.: 040205-18,-19,-20,-21 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

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METHOD BLANK REPORT

CUSTOMER: BA Environmental
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PROJECT: Newhall Land / 104012
MATRIX: SOIL
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DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/06-07/04
DATE ANALYZED: 02/09/04
DATE REPORTED: 02/12/04

METHOD BLANK FOR LAB I.D.: 040205-1 TO -4 (Composite), 040205-5 TO -8 (Composite), 040205-9 TO -13 (Composite), 040205-14 TO -17 (Composite), 040205-18 TO -21(Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.
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QA/QC Report

Analysis: EPA 8151A

Matrix: **SOIL** Date Analyzed: **2/8-9/2004**

Unit: **mg/Kg (PPM)**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 040206-15

Analyte	S.R.	spk conc	MS	% REC	MSD	% REC	%RPD	ACP %RPD	ACP %REC
2,4,5-T	0	1.0	1.18	**118%**	1.19	**119%**	**1%**	**0-20%**	**50-150**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
2,4,5-T	0.100	0.115	115%	**70-130**
2,4,5-TP	0.100	0.114	114%	**70-130**
2,4-DB	1.00	1.08	108%	**70-130**

Surrogate Recovery:

Analyte	spk conc	ACP %	M-BLK	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:				040205-58	040205-59	040205-60	040205-61	040204-53~56	040204-57~60
DCAA	0.20	50-150	73%	79%	78%	81%	81%	97%	97%

Analyte	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:	040204-61~64	040204-65~68	040205-1~4	040205-5~8	040205-9~13	040205-14~17	040205-18~21	040206-14	040206-15
DCAA	95%	89%	108%	88%	127%	99%	118%	100%	107%

Analyte	%REC	%REC	%REC	%REC	%REC
Sample ID:	040204-29				
DCAA	76%				

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/12/04

METHOD BLANK FOR LAB I.D.: 040205-1 TO -4 (Composite), 040205-5 TO -8 (Composite), 040205-9 TO -13 (Composite), 040205-14 TO -17 (Composite), 040205-18 TO -21 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: February 12, 2004

Mr. Russell Cote
BA Environmental
528 State Street
Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

Project: **Newhall Land / 104012; 8141A**

Dear Mr. Cote:

The analytical results for the soil samples, received by our Lab on February 5, 2004, are attached.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G9-A/B/C/D (Composite)**
LAB I.D.: 040205-1,-2,-3,-4 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G10-A/B/C/D (Composite)**
LAB I.D.: 040205-5,-6,-7,-8 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G11-A/B/C/D/E (Composite)**
LAB I.D.: 040205-9,-10,-11,-12,-13 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
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LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: G12-A/B/C/D (Composite)
LAB I.D.: 040205-14,-15,-16,-17 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/05/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G17-A/B/C/D (Composite)**
LAB I.D.: 040205-18,-19,-20,-21 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 *FAX 714/538-1209*

CLIENT Enviro-Chem Laboratories, Inc. (7420)
ATTN: Curtis Desilets
1214 E. Lexington Avenue
Pomona, CA 91766

LAB REQUEST 124124
REPORTED 02/09/2004
RECEIVED 02/05/2004

PROJECT #040205-1 to 4, 5 to 8, 9 to 13, 14 to 17, 18 to 21

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
496119	040205-1 to 4
496120	040205-5 to 8
496121	040205-9 to 13
496122	040205-14 to 17
496123	040205-18 to 21
496124	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported

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TESTING & CONSULTING
Chemical
Microbiological
Environmental

Order # 496119
Matrix: SOLID
Date Sampled: 02/04/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040205-1 to 4

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD
Surrogates				**Units**	**Control Limits**	
TBP (sur)	78			%	50 - 145	
TPP (sur)	61			%	50 - 145	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Fac

ASSOCIATED LABORATORIES Analytical Results Report

Order # 496120
Matrix: SOLID
Date Sampled: 02/04/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040205-5 to 8

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/08/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/08/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/08/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/08/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/08/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/08/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/08/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/08/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/08/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/08/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/08/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/08/04	SD
Malathion	ND	1	0.02	mg/Kg	02/08/04	SD
Merphos	ND	1	0.17	mg/Kg	02/08/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/08/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/08/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/08/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/08/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/08/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/08/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/08/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/08/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/08/04	SD

Surrogates		Units	Control Limits
TBP (sur)	81	%	50 - 145
TPP (sur)	57	%	50 - 145

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Fac

Order # 496121
Matrix: SOLID
Date Sampled: 02/04/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040205-9 to 13

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/08/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/08/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/08/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/08/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/08/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/08/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/08/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/08/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/08/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/08/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/08/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/08/04	SD
Malathion	ND	1	0.02	mg/Kg	02/08/04	SD
Merphos	ND	1	0.17	mg/Kg	02/08/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/08/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/08/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/08/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/08/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/08/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/08/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/08/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/08/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/08/04	SD

Surrogates		Units	Control Limits
TBP (sur)	81	%	50 - 145
TPP (sur)	59	%	50 - 145

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Fac

Order # 496122
Matrix: SOLID
Date Sampled: 02/04/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040205-14 to 17

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/08/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/08/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/08/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/08/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/08/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/08/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/08/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/08/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/08/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/08/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/08/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/08/04	SD
Malathion	ND	1	0.02	mg/Kg	02/08/04	SD
Merphos	ND	1	0.17	mg/Kg	02/08/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/08/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/08/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/08/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/08/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/08/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/08/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/08/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/08/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/08/04	SD

Surrogates		Units	Control Limits
TBP (sur)	86	%	50 - 145
TPP (sur)	59	%	50 - 145

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Fac

ASSOCIATED LABORATORIES Analytical Results Report

Order # 496123 **Client:** Enviro-Chem Laboratories, Inc.
Matrix: SOLID **Client Sample ID:** 040205-18 to 21
Date Sampled: 02/04/2004
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/08/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/08/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/08/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/08/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/08/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/08/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/08/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/08/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/08/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/08/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/08/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/08/04	SD
Malathion	ND	1	0.02	mg/Kg	02/08/04	SD
Merphos	ND	1	0.17	mg/Kg	02/08/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/08/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/08/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/08/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/08/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/08/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/08/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/08/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/08/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/08/04	SD
Surrogates				**Units**	**Control Limits**	
TBP (sur)	84			%	50 - 145	
TPP (sur)	59			%	50 - 145	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Fac

ASSOCIATED LABORATORIES Analytical Results Report

Order # 496124 **Client:** Enviro-Chem Laboratories, Inc.
Matrix: SOLID **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD

Surrogates		Units	Control Limits
TBP (sur)	79	%	50 - 145
TPP (sur)	68	%	50 - 145

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Fac

ASSOCIATED LABORATORIES Analytical Results Report

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
✓ 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	8081	8141	8151							COMMENTS
G9-A	040205-1	2-4-04		Soil	1	4°	ICE	X	X	X							Composite Samples
G9-B	-2							X	X	X							
G9-C	-3							X	X	X							
G9-D	-4							X	X	X							
G10-A	-5							X	X	X							Composite Samples
G10-B	-6							X	X	X							
G10-C	-7							X	X	X							
G10-D	-8							X	X	X							
G11-A	-9							X	X	X							Composite Samples
G11-B	-10							X	X	X							
G11-C	-11							X	X	X							
G11-D	-12							X	X	X							
G11-E	-13							X	X	X							

Analysis Required

Company Name: Building Analytic	Project Contact: Russell Cote	Sampler's Signature: Russell Cote	
Address: 528 State St	Tel: (818) 500-1878	Project Name/ID: River Village 104012	
City/State/Zip: Glendale CA 91203	Fax: (818) 246-8195		
Relinquished by: Russell Cote	Received by: [signature]	Date & Time: 2/5/04 0820	Instructions for Sample Storage After Analysis:
Relinquished by: [signature]	Received by: [signature]	Date & Time: 2/5/04 1005	O Dispose of O Return to Client O Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

Date: _____

WHITE WITH SAMPLE - YELLOW TO CLIENT

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	8081	8141	8151							Misc. COMMENTS
G12-A	040205-14	2-4-04		Soil	1	4°C	ICE	X	X	X							Composite Samples
G12-B	-15							X	X	X							
G12-C	-16							X	X	X							
G12-D	-17							X	X	X							
G17-A	-18							X	X	X							Composite Samples
G17-B	-19							X	X	X							
G17-C	-20							X	X	X							
G17-D	-21							X	X	X							

Analysis Required

Company Name: Building Analytics
Address: 528 State St.
City/State/Zip: Glendale CA 91203

Project Contact: Russell Cole
Tel: (818) 500-1898
Fax: (818) 246-8195

Sampler's Signature: Russell Cole
Project Name/ID: Riverviewlage 101012

Relinquished by:	Received by:	Date & Time:
Russell Cole		2/5/04 0820
		2/5/04 1005

Instructions for Sample Storage After Analysis:
O Dispose of O Return to Client O Store (30 Days)
O Other:

CHAIN OF CUSTODY RECORD

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: February 11, 2004

FEB 17 2004

Mr. Russell Cote
BA Environmental
528 State Street
Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

Project: **Newhall Land / 104012**

Dear Mr. Cote:

The analytical results for the soil samples, received by our Lab on February 4, 2004, are attached.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/11/04

SAMPLE I.D.: **G13-A/B/C/D (Composite)**
LAB I.D.: 040204-53,-54,-55,-56 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	0.001	0.001
gamma-Chlordane	0.004	0.001
4,4'-DDD	0.001	0.001
4,4'-DDE	0.026	0.001
4,4'-DDT	0.006	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	0.061	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	0.001	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/11/04

SAMPLE I.D.: **G14-A/B/C/D (Composite)**
LAB I.D.: 040204-57,-58,-59,-60 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	0.002	0.001
gamma-Chlordane	0.015	0.001
4,4'-DDD	0.001	0.001
4,4'-DDE	0.007	0.001
4,4'-DDT	0.015	0.001
Dieldrin	0.003	0.001
Endosulfan I	0.001	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	0.005	0.001
Endrin	0.082	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/11/04

SAMPLE I.D.: **G15-A/B/C/D (Composite)**
LAB I.D.: 040204-61,-62,-63,-64 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	0.003	0.001
gamma-Chlordane	0.004	0.001
4,4'-DDD	0.001	0.001
4,4'-DDE	0.034	0.001
4,4'-DDT	0.007	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	0.055	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/11/04

SAMPLE I.D.: **G16-A/B/C/D (Composite)**
LAB I.D.: 040204-65,-66,-67,-68 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	0.002	0.001
4,4'-DDT	0.003	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	0.004	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/11/04

METHOD BLANK FOR LAB I.D.: 040204-53 TO -56 (Composite), 040204-57 TO -60 (Composite), 040204-61 TO -64 (Composite), 040204-65 TO -68 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

EPA 8081 QA/QC Report

Matrix: **Soil** Date Analyzed: 2/8/2004
Unit: mg/Kg

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 040205-58

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP %RPD	ACP %REC
Gamma-BHC	0.000	0.050	0.044	**87%**	0.043	**86%**	**1%**	**0-20%**	**70-130**
Aldrin	0.000	0.050	0.044	**87%**	0.044	**88%**	**1%**	**0-20%**	**70-130**
4,4-DDE	0.000	0.050	0.044	**89%**	0.045	**89%**	**1%**	**0-20%**	**70-130**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
Gamma-BHC	0.050	0.051	**103%**	**75-125**
Aldrin	0.050	0.048	**97%**	**75-125**
4,4-DDE	0.050	0.053	**107%**	**75-125**
Dieldrin	0.050	0.052	**103%**	**75-125**

Surrogate Recovery	ACP%	MB	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.			040205-58	040205-59	040205-60	040205-61	040204-53~56	040204-57~60
Tetra-chloro-meta-xylene		118%	102%	103%	89%	105%	119%	106%
Decachlorobipneyl	50-150	118%	101%	110%	108%	109%	108%	105%

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.	040204-61~64	040204-65~68						
Tetra-chloro-meta-xylene	104%	115%						
Decachlorobipneyl	98%	119%						

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.						
Tetra-chloro-meta-xylene						
Decachlorobipneyl						

S.R. = Sample Result
spk conc = Spike Concentration
%REC = Percent Recovery
ACP %RPD = Acceptable Percent RPD Range
ACP %REC = Acceptable Percent Recovery Range

** = Surrogate fail due to matrix interference*

Note: ***LCS, MS, MSD are in control therefore results are in control.***

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06-07/04
DATE ANALYZED: 02/09/04
DATE REPORTED: 02/11/04

SAMPLE I.D.: **G13-A/B/C/D (Composite)**
LAB I.D.: 040204-53,-54,-55,-56 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06-07/04
DATE ANALYZED: 02/09/04
DATE REPORTED: 02/11/04

SAMPLE I.D.: **G14-A/B/C/D (Composite)**
LAB I.D.: 040204-57,-58,-59,-60 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06-07/04
DATE ANALYZED: 02/09/04
DATE REPORTED: 02/11/04

SAMPLE I.D.: G15-A/B/C/D (Composite)
LAB I.D.: 040204-61,-62,-63,-64 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06-07/04
DATE ANALYZED: 02/09/04
DATE REPORTED: 02/11/04

SAMPLE I.D.: **G16-A/B/C/D (Composite)**
LAB I.D.: 040204-65,-66,-67,-68 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: BA Environmental
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: Newhall Land / 104012
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06-07/04
DATE ANALYZED: 02/09/04
DATE REPORTED: 02/11/04

METHOD BLANK FOR LAB I.D.: 040204-53 TO -56 (Composite), 040204-57 TO -60 (Composite), 040204-61 TO -64 (Composite), 040204-65 TO -68 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

QA/QC Report

Analysis: EPA 8151A

Matrix: **SOIL** Date Analyzed: **2/8-9/2004**

Unit: **mg/Kg (PPM)**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 040206-15

Analyte	S.R.	spk conc	MS	% REC	MSD	% REC	%RPD	ACP %RPD	ACP %REC
2,4,5-T	0	1.0	1.18	118%	1.19	119%	1%	0-20%	50-150

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
2,4,5-T	0.100	0.115	115%	70-130
2,4,5-TP	0.100	0.114	114%	70-130
2,4-DB	1.00	1.08	108%	70-130

Surrogate Recovery:

Analyte	spk conc	ACP %	M-BLK	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:				040205-58	040205-59	040205-60	040205-61	040204-53~56	040204-57~60
DCAA	0.20	50-150	73%	79%	78%	81%	81%	97%	97%

Analyte	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:	040204-61~64	040204-65~68	040205-1~4	040205-5~8	040205-9~13	040205-14~17	040205-18~21	040206-14	040206-15
DCAA	95%	89%	108%	88%	127%	99%	118%	100%	107%

Analyte	%REC	%REC	%REC	%REC	%REC
Sample ID:	040204-29				
DCAA	76%				

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: February 12, 2004

Mr. Russell Cote
BA Environmental
528 State Street
Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

Project: **Newhall Land / 104012; 8141A**

Dear Mr. Cote:

The analytical results for the soil samples, received by our Lab on February 4, 2004, are attached.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: G13-A/B/C/D (Composite)
LAB I.D.: 040204-53,-54,-55,-56 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G14-A/B/C/D (Composite)**
LAB I.D.: 040204-57,-58,-59,-60 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G15-A/B/C/D (Composite)**
LAB I.D.: 040204-61,-62,-63,-64 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/08/04
DATE REPORTED: 02/12/04

SAMPLE I.D.: **G16-A/B/C/D (Composite)**
LAB I.D.: 040204-65,-66,-67,-68 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 02/02/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 02/04/04
DATE EXTRACTED: 02/06/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/12/04

METHOD BLANK FOR LAB I.D.: 040204-53 TO -56 (Composite), 040204-57 TO -60 (Composite), 040204-61 TO -64 (Composite), 040204-65 TO -68 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900
FAX 714/538-1209

CLIENT Enviro-Chem Laboratories, Inc. (7420)
ATTN: Curtis Desilets
1214 E. Lexington Avenue
Pomona, CA 91766

LAB REQUEST 124125
REPORTED 02/09/2004
RECEIVED 02/05/2004

PROJECT 040204-53 to 56, 57 to 60, 61 to 64, 65 to 68

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
496125	040204-53 to 56
496126	040204-57 to 60
496127	040204-61 to 64
496128	040204-65 to 68
496129	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING
Chemical
Microbiological
Environmental

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FEB-12-2004 15:57 FROM-Associated Laboratories 714-538-1209 T-538 P.001/008 F-814

Order #: 496125
Matrix: SOLID
Date Sampled: 02/02/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040204-53 to 56

8141 Organophosphate Pesticides

Analyte	Result	DF	DLR	Units	Date/Analyst	
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/08/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/08/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/08/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/08/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/08/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/08/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/08/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/08/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/08/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/08/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/08/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/08/04	SD
Malathion	ND	1	0.02	mg/Kg	02/08/04	SD
Merphos	ND	1	0.17	mg/Kg	02/08/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/08/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/08/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/08/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/08/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/08/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/08/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/08/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/08/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/08/04	SD

Surrogates		Units	Control Limits
TBP (sur)	82	%	50 - 145
TPP (sur)	66	%	50 - 145

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES Analytical Results Report

FEB-12-2004 15:58 FROM-Associated Laboratories 714-529-1209 T-659 P.002/008 F-814

Order #: 496126 **Client:** Enviro-Chem Laboratories, Inc.
Matrix: SOLID **Client Sample ID:** 040204-57 to 60
Sampled: 02/02/2004
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/08/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/08/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/08/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/08/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/08/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/08/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/08/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/08/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/08/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/08/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/08/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/08/04	SD
Malathion	ND	1	0.02	mg/Kg	02/08/04	SD
Merphos	ND	1	0.17	mg/Kg	02/08/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/08/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/08/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/08/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/08/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/08/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/08/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/08/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/08/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/08/04	SD
Surrogates				**Units**	**Control Limits**	
TBP (sur)	81			%	50 - 145	
TPP (sur)	59			%	50 - 145	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES Analytical Results Report

FEB-12-2004 15:58 FROM-Associated Laboratories 714-538-1209 T-638 P.003/008 F-814

Order #: 496127
Matrix: SOLID
Sampled: 02/02/2004
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: 040204-61 to 64

8141 Organophosphate Pesticides

Analyte	Result	DF	DLR	Units	Date/Analyst	
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/08/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/08/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/08/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/08/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/08/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/08/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/08/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/08/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/08/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/08/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/08/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/08/04	SD
Malathion	ND	1	0.02	mg/Kg	02/08/04	SD
Merphos	ND	1	0.17	mg/Kg	02/08/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/08/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/08/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/08/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/08/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/08/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/08/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/08/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/08/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/08/04	SD

Surrogates		Units	Control Limits
TBP (sur)	83	%	50 - 145
TPP (sur)	57	%	50 - 145

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES Analytical Results Report

FEB-12-2004 15:58 FROM-Associated Laboratories 714-538-1209 T-638 P.004/008 F-814

Order #: 496128 **Client:** Enviro-Chem Laboratories, Inc.
Matrix: SOLID **Client Sample ID:** 040204-65 to 68
Sampled: 02/02/2004
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8141 Organophosphate Pesticides						
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/08/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/08/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/08/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/08/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/08/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/08/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/08/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/08/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/08/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/08/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/08/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/08/04	SD
Malathion	ND	1	0.02	mg/Kg	02/08/04	SD
Merphos	ND	1	0.17	mg/Kg	02/08/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/08/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/08/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/08/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/08/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/08/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/08/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/08/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/08/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/08/04	SD
Surrogates				**Units**	**Control Limits**	
TBP (sur)	79			%	50 - 145	
TPP (sur)	54			%	50 - 145	

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES Analytical Results Report

FEB-12-2004 15:58 FROM-Associated Laboratories 714-538-1209 T-538 P.005/008 F-814

Order #: 496129
Matrix: SOLID
Sampled:
Time Sampled:
Sampled By:

Client: Enviro-Chem Laboratories, Inc.
Client Sample ID: Laboratory Method Blank

8141 Organophosphate Pesticides

Analyte	Result	DF	DLR	Units	Date/Analyst	
Azinophos Methyl (Guthion)	ND	1	1.0	mg/Kg	02/07/04	SD
Bolstar	ND	1	0.1	mg/Kg	02/07/04	SD
Chlorpyrifos(Dursban)	ND	1	0.2	mg/Kg	02/07/04	SD
Coumaphos	ND	1	1.0	mg/Kg	02/07/04	SD
Demeton(Systox)-O	ND	1	0.17	mg/Kg	02/07/04	SD
Demeton(Systox)-S	ND	1	0.17	mg/Kg	02/07/04	SD
Diazinon	ND	1	0.4	mg/Kg	02/07/04	SD
Dichlorvos	ND	1	0.07	mg/Kg	02/07/04	SD
Disulfoton (Disyston)	ND	1	0.13	mg/Kg	02/07/04	SD
Ethoprop	ND	1	0.17	mg/Kg	02/07/04	SD
Fensulfothion	ND	1	1.0	mg/Kg	02/07/04	SD
Fenthion	ND	1	0.07	mg/Kg	02/07/04	SD
Malathion	ND	1	0.02	mg/Kg	02/07/04	SD
Merphos	ND	1	0.17	mg/Kg	02/07/04	SD
Mevinphos (Phosdrin)	ND	1	0.2	mg/Kg	02/07/04	SD
Naled (Dibrom)	ND	1	0.07	mg/Kg	02/07/04	SD
Parathion Ethyl	ND	1	0.02	mg/Kg	02/07/04	SD
Parathion Methyl	ND	1	0.02	mg/Kg	02/07/04	SD
Phorate (Thimet)	ND	1	0.1	mg/Kg	02/07/04	SD
Ronnel	ND	1	0.2	mg/Kg	02/07/04	SD
Stirophos (Tetrachlorvinphos)	ND	1	3.35	mg/Kg	02/07/04	SD
Tokuthion (Protothiofos)	ND	1	0.33	mg/Kg	02/07/04	SD
Trichloronate	ND	1	0.1	mg/Kg	02/07/04	SD

Surrogates		Units	Control Limits
TBP (sur)	79	%	50 - 145
TPP (sur)	68	%	50 - 145

DLR = Detection limit for reporting purposes. ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES
QA REPORT FORM

Determinative Method : EPA 8141

Preparative Method: EPA 3545

QC Sample: 124124-496119

Matrix: SOLID

Analysis Date: 2/8/04

Batch Date: 02/06/04 (op 020604s)

Applies to: LR 124124 and LR 124125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS
REPORTING UNITS = mg/Kg

Test	Sample Result	Spike Added	Spike Recovered		% Rec		RPD	QC Limits	
			MS	MSD	MS	MSD		RPD	% Rec
Demeton-O	ND	0.400	0.336	0.334	84	84	1	35	45-140
Ethoprop	ND	0.400	0.340	0.335	85	84	1	35	45-140
Naled	ND	0.400	0.374	0.350	93	87	7	35	45-140
Diazinon	ND	0.400	0.340	0.340	85	85	0	35	45-140
[illegible]phos	ND	0.400	0.329	0.322	82	80	2	35	45-140
Fensulfothion	ND	0.400	0.390	0.394	98	99	1	35	45-140
Azinophos, Methyl-	ND	0.400	0.297	0.286	74	72	4	35	45-140
Coumaphos	ND	0.400	0.196	0.187	49	47	5	35	45-140

ND - Not Detected
% Rec - MS & MSD = Percent Recovery from Matrix Spike & Matrix Spike Duplicate
RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate recoveries

LAB CONTROL SPIKE / LAB CONTROL SPIKE DUPLICATE RECOVERIES
REPORTING UNITS = mg/Kg

Test	Spike Added	Spike Recovered	% Rec LCS	QC Limits
Demeton-O	0.400	0.341	85	55-130
Ethoprop	0.400	0.356	89	55-130
Naled	0.400	0.394	99	55-130
Diazinon	0.400	0.352	88	55-130
Stirophos	0.400	0.353	88	55-130
Fensulfothion	0.400	0.400	100	55-130
[illegible]inophos, Methyl-	0.400	0.346	86	55-130
[illegible]umaphos	0.400	0.278	69	55-130

Method Blank = All ND
% Rec - LCS & LCSD = Percent Recovery from Lab Control Spike & Lab Control Spike Duplicate
RPD = Relative Percent Difference of Lab Control Spike and Lab Control Spike Duplicate recoveries

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

124125

Turnaround Time
- 0 Same Day
- 0 24 Hours
- 0 48 Hours
- 0 ~~72 Hours~~
- 1 Week (Standard)
- Other:

Associates

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	8141	COMMENTS
040204-53→56		2/2/04		Soil	1		1	X	DANIELLE - PLEASE REFER TO QUOTE
-57→60		↓		↓	↓		↓	↓	
-61→64									
-65→68									

Analysis Required

Company Name: ~~Enviro Chem, Inc.~~ 1214 E. Lexington Avenue Pomona, CA 91766-5519

Address:

City/State/Zip:

Project Contact: Curtis B. Desilets

Tel: (909) 590-5905

Fax: (909) 590-5907

Sampler's Signature:

Project Name/ID: 040204-53→56, 57→60, 61-65→68

Relinquished by: X [signature]

Relinquished by: Steve [signature]

Relinquished by:

Received by: Steve [signature]

Received by: [signature] 2/5/04

Received by:

Date & Time: 2/5/04 1420

Date & Time: 2/5/04 1705

Date & Time:

Instructions for Sample Storage After Analysis
- Dispose of
- O Return to Client
- O Store (30 Days)
- O Other:

CHAIN OF CUSTODY RECORD

Page 1 of 1

WHITE WITH SAMPLE, YELLOW TO CLIENT

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	8051	8141	8151							COMMENTS
G13-A	040204-53	2-2-04		Soil	1		ICE	X	X	X							Composite Samples
G13-B	-54							X	X	X							
G13-C	-55							X	X	X							
G13-D	-56							X	X	X							
G14-A	-57							X	X	X							Composite Samples
G14-B	-58							X	X	X							
G14-C	-59							X	X	X							
G14-D	-60							X	X	X							
G15-A	-61							X	X	X							Composite Samples
G15-B	-62							X	X	X							
G15-C	-63							X	X	X							
G15-D	-64							X	X	X							

Analysis Required

Company Name: Building Analytics
Address: 528 State St.
City/State/Zip: Glendale CA 91203

Project Contact: Russell Cole
Tel: (818) 500-1888
Fax: (818) 246-8155

Sampler's Signature: Russell Cole
Project Name/ID: Rivervillage 104012

Relinquished by: Russell Cole
Relinquished by: [illegible]
Relinquished by:

Received by: [illegible]
Received by: [illegible]
Received by:

Date & Time: 2/4/04 1130
Date & Time: 2/4/04 1500
Date & Time:

Instructions for Sample Storage After Analysis:
O Dispose of O Return to Client O Store (30 Days)
O Other:

CHAIN OF CUSTODY RECORD

Date: _____

WHITE WITH SAMPLE - YELLOW TO CLIENT

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	8081	8141	8151							COMMENTS
G16-A	040204-65	2-2-04		Soil	1		ICE	X	X	X							Composite into one sample
G16-B	-66							X	X	X							
G16-C	-67							X	X	X							
G16-D	-68							X	X	X							

Analysis Required

Company Name: Building Analytics	Project Contact: Russell Cole	Sampler's Signature: Russell Cole	
Address: 528 State St	Tel: (818) 500-1558	Project Name/ID: River village	
City/State/Zip: Glendale CA 91203	Fax: (818) 246-8195	104012	

Relinquished by: Russell Cole	Received by: [illegible]	Date & Time: 2/4/04 1130	Instructions for Sample Storage After Analysis:
Relinquished by: [illegible]	Received by: [illegible]	Date & Time: 2/4/04 1600	O Dispose of O Return to Client O Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

APPENDIX E:

Oil Well Records

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

September 21, 1994

EXXON Corporation
Attn: Env. & Reg. Affairs
P.O. Box 1600
Midland, TX 79702

Your report of the plugging and abandonment of well "Newhall Land & Farming Co." 2, A.P.I. No. 037-16473, Section 14, T. 4N, R. 17W, S.B. B.& M., Castaic Junction field, Los Angeles County, dated 10-28-93, received 11-05-93, has been examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and the filing of well records.

svl

William F. Guerard, Jr
State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear
Deputy Supervisor

cc: Conservation Committee
Update

Modified OG159 (4/94)

OPERATOR EXXON
WELL NO. "N.C. & F Co." 2
MAP

A.P.I. 037- 16473
SECTION 14, T. 4 N, R. 17 W

INTENTION	ABANDON					
NOTICE DATED	5-7-93					
P-REPORT NUMBER	293-146					
CHECKED BY/DATE						
MAP LETTER DATED	12/25/93					
SYMBOL						

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEFD	REC'D	NEED
NOTICE	5-12-93											
HISTORY	11-5-93											
SUMMARY												
E-LOG												
MUD LOG												
DIPMETER												
DIRECTIONAL												
CORE/SWS												
CBL												

ENGINEERING CHECK

T-REPORTS	✓					
OPERATOR'S NAME	✓					
WELL NO.	✓					
LOC & ELEV	✓					
SIGNATURE	✓					
SURFACE INSP.	✓					
DRILL CARD						

RECORD'S COMPLETE ✓ SP

FINAL LETTER OK
MAILED
RELEASED BOND

INJECTION BOOK
IDLE WELL LIST
SURFACE INSP. CARD

REMARKS: See insp. OK 4-12-94 MW

OK TO RELEASE FROM CONFIDENTIAL
ABANDONED-REMOVED FROM E.D.P.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. T293-311

Report on Operations

EXXON Corporation
Attn: Env. & Req. Affairs
P.O. Box 1600
Midland, Texas 79702

Ventura, California
December 20, 1993

Your operations at well "Newhall Land & Farming Co." 2, API No. 037-16473, Sec. 14, T. 3N, R. 17W, S.B. B.&M. Castaic Junction Field, in Los Angeles County, were witnessed on 10-21-93. Steve Mulqueen, representative of the supervisor, was present from 0700 to 0800. There were also present Ken Kennedy

Present condition of well: 13 3/8" cem 1493'; 7" cem 11,641', perf 10,254' WSO, cp 100' cp 1472'-1492' & cp 10,252', perfs @ int 10,270'-10,475' (cem off) & perfs @ int 11,200'-11,370'. Junk below 11,133'. TD 11,855'. Plugged w/ 65 sx cem below retainer @ 11,480', plugged w/cem 11,388'-10,054', 1500'-1224', and 124' - sfc.

The operations were performed for the purpose of abandonment.

DECISION:

The plugging operations as witnessed and reported are approved.

SCV

William F. Guerard, Jr.
State Oil and Gas Supervisor

By

Patrick J. Kinnear
Deputy Supervisor

OG109 (Modified 1993)

T293 - 311

DIVISION OF OIL AND GAS
Cementing/Plugging Memo

Operator EXXON CORP. Well No. "N.L.& F." 2
API No. 037 - 16473 Sec. 14, T. 04N, R. 17W, SB B&M
Field CASTAIC JUNCTION, County LOS ANGELES. On 10-21-93,
Mr. ~~Mrs.~~ S. MULQUEEN, representative of the supervisor, was present from 0700 to 0800.
There were also present KEN KENNEDY

Casing record of well: 13 3/8" cem 1493'; 7" cem 11641', perf 10254' WSO, cp 100' cp 1472' - 1492' & cp 10252', perfs @ int 10270' - 10475' (cem off) & perfs @ int 11200' - 11370'. Junk below 11133'. TD 11855'. Plugged w/ 65sx

The operations were performed for the purpose of ABANDONMENT
cem below retainer @ 11480', plugged w/ cem 11388' - 10054', 1500' - 1224', AND 124' - s/c.

☒ The plugging/~~cementing~~ operations as witnessed ~~and reported~~ AND reported are approved.

☐ The location and hardness of the cement plug @ _____' is approved.

Hole size: _____" fr. _____' to _____', _____" to _____' & _____" to _____'

	Casing				Cemented			Top of Fill		Squeezed Away	Final Press.	Perfs.
	Size	Wt.	Top	Bottom	Date	MO-Depth	Volume	Annulus (TBG/F)	Casing			
A	7"	23 26 29	0	11641'	10-20	TBG @ 1500' BRAINEN MEH.	162 cf	1326'±	1224'	104 cf	700 PSI	1472' - 1492'

Casing/tubing recovered: _____" shot/cut at 1492' (PERFORATE), 1472' (TO), _____' pulled fr. ——';
_____" shot/cut at 100' (PERFORATE), 102' (TO), _____' pulled fr. _____'.

Junk (in hole): PACKER @ 11133

Hole fluid (bailed to) at _____'. Witnessed by _____

Mudding	Date	Bbls.	Displaced	Poured	Fill	Engr.
9.7#/g CLAY GEL	10-19-93	3/6 BBL	TBG @ 10050	—	1500' ±	S. MULQUEEN
"	10-20-93	176 BBL*	TBG @ 1500	—	SURFACE	"
		*128 BBL IN ANNULUS				

FILL @ 11300', CLEAN OUT TO 11400'.

Cement Plugs		Placing	Placing Witnessed		Top Witnessed			
Date	Sx./cf	MO & Depth	Time	Engr.	Depth	Wt/Sample	Date & Time	Engr.
10/14	146 cf	TBG @ 11388'	—	REPORTED	10726'	5K#	10/18 0830	S. MULQUEEN
10/18	145 cf	TBG @ 10720'	—	"	10054'	10K#	10/19 0920	"
A 10/20	162 cf	TBG @ 1500'	—	"	1224'	ALL TBG WEIGHT	10/21 0800	"

TESTED CASING TO 500# FOR 10 MIN.

OGD10 (10/90/GSR1/5M)

Dist. 1

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Exxon Corporation **Field** Castaic Junction **County** Los Angeles
Well Newhall Land & Farming Co. #2 **Sec.** 14, **T** 4N, **R** 17W, **S.B.B. & M.**
A.P.I. No. 037-16473 **Name** Julie H. Mitchell (Person submitting report) **Title** Staff Office Assist. (President, Secretary or Agent)
Date October 28, 19 93

Signature Julie H. Mitchell

Environmental & Regulatory Affairs, PO Box 1600, Midland, TX 79702 (Address) 915/688-7888 (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date

(see attached)

DIVISION OF OIL AND GAS
RECEIVED
NOV 5 1993
VENTURA, CALIFORNIA

OG103 (6/91/GSR1/5M)

NEWHALL LAND & FARMING CO - 0002 Lease# 061590 Job# 60008760
Field Supt R. O. Storey CMP# 4037164730001 AFE# 00039454
PLUG AND ABANDON

Expected Buildup oil/gas /
Estimated PI

Mix & pump 146 cuft, 90 sx, class G cement. Displace with 62 bbls lease water @ 2500 psi max. Pull out with 15+0 stand of tbg. Reverse out 35 min. Pull 10+0 stands to 9839 ft. Close in well, eot. Estimated top of cement @ 10688 ft.
Div of Oil & Gas, Steve Mulqueen, gave verbal ok to pump cement from 11,388 to 10,688 at 9:00 am.

--- 10/13/93
20 Min safety mtg. Check well (tbg 0, csg 0 psi). Bleed well. Cont rih with 2-7/8 N-80 tbg, 110 stands. Pick up and measure 101 jts. Tag top of fill @ 11,119 ft. Circulate well. Clean out from 1119 - 11121 ft, top of pkr. Stab thru pkr. Rih to 11300 ft. Pooh w/40 jt to 10100. Close in well. eot.

--- 10/12/93
Held 15 in safety mtg. Check well, tbg 0 psi, csg 60 psi. Bleed well. Fill well with 5 bbls lease water. Cont pooh, found heavey scale on out side of tbg. Lay down 118 jt N-80 tbg. Haul in 22 jts 1-3/4in tbg. Meas and pick up 1-3/4in tbg. Run 10+0 2-7/8 tbg, 600 ft. Close in well. eot

--- 10/11/93
Hold 20 min safety mtg. Check well (tbg 0 psi, csg 250 psi). Bleed csg circ 100 bbl lease water. Rig up Coast Wireline. RIH set btg plug @ 60 ft, ok. Rig out Coast. ND production Tree. Nipple up class III BOP and BOE, test ok. Rig up working floor and tbg equip. Rig up Coast slick line. Rih, retrieve tbg. plug from 60 ft well dead. Rig out Coast. Pooh with 2-7/8in N-80 tbg. Fill hole every 1200 ft, no flow. No loss of fluid. Pull 100 stands, 6200 ft. Close in well. eot.

--- 10/07/93
20 min safety mtg. Check out well. Tbg 450 psi, csg 540 psi. Remove 3in flange and gate valve. Well secure with bottom master valve. Rig up Coast Slickline and lubricator. RIH w/2-1/2in camco type B tbg plug. Set @ 60 ft. Pooh, attempt to bleed csg. Would not bleed off. Pump 100 bbl lease water. Csg flowing. Pull tbg plug form 60 ft. Circulate 300 bbl down tbg to kill well.

--- 10/06/93
MIRU. eot

10/27/93 MORNING REPORT 5:38PM

NEWHALL LAND & FARMING CO - 0002 Lease# 061590 Job# 60008760
Field Supt R. O. Storey CMP# 4037164730001 AFE# 00039454
PLUG AND ABANDON

Expected Buildup oil/gas /
Estimated PI

--- 10/21/93
Hold safety mtg. Open well (no pressure). RIH, tag top of cement @ 1224 ft. Pooh laying down 47 jts. Rig up Halliburton. Test lines. Mix & Pump 66 cuft, 58 sx, neat cement down 2-7/8in tbg (tail @ 124 ft), up 7 in and 13-3/8 casings to surface @ 300 psi max. Rig out Halliburton. Pooh lay down 4 jts 2-7/8 tbg. Clean BOPE and tbg equip. Rig down work floor RDMO
Div of Oil & Gas, Stephen Mulqueen, approved tag of cement @ 1224 ft. OK. pumping cement from 124 ft to surface.

--- 10/20/93
Hold 10 min safety mtg. Open well (no pressure). Cont pooh, laying down 2-3/8 N-80 tbg. Lay down 131 jts. POOH standing back in derrick 48 jts Fill well with 20 bbls lease water. Rig up MMI perforators. Rig up Lubricator. Held safety mtg. Rih w/20 ft strip shot Dyna Jet Perforator 4 HPF. Locate collar @ 1493 ft. Shoot holes from 1492-1472. Pooh, rig out MMI. Rih with 50 jts 2-7/8in tbg to 1500 ft. Circulate 175 bbls 9.7 ppg mud in 7in & 13-7/8in csg. Rig up Halliburton. Test lines 200# and 2000#, ok. Mix and Pump 141 sx neat cement with 3% Calcium Chloride. Displace with 8 bbls 9.7 ppg mud. Rig out Halliburton. Pooh with 2-7/8 tbg. Rig up MMI Rih w/2 ft strip shot Dyna Jet Perforator. 4 hpf. Shoot holes from 100 - 102 ft. Pooh, rig out MMI. Close in well, eot.

--- 10/19/93
Hold 20 min safety mtg. Open well (no pressure) RIH. tag top of cement @ 10054. Test csg 0-10054 @ 500# for 10 min, ok. POOH lay down 22 jts. Rih with 11 stands out of derrick with tbg tail @ 10050 ft, pump 316 bbls 9.7 ppg mud down well. Displace with 10 bbls lease water. Pooh, laying down 2-7/8in tbg. Close in well, eot.
Div of Oil & Gas, Steve Mulqueen, witnessed and approved: Mudding of hole from 10050-1500 ft. Tag of bottom hole plug @ 10054 as reported.

--- 10/18/93
Held 20 min safety mtg. Open well (tbg 0 psi, csg 70 psi). Rih, tag top of cement @ 10,726 ft. Circulate well. Rig up Halliburton with tail at 10720 ft. Test lines, ok.
Mix & Pump 145 cuft, 90 sx class G cement and displace with 56 bbls lease water @ 3000# max. Pull out with 40 jts to 8780 ft. Reverse out 35 min. Change tbg line. POOH laying down 2-7/8 tbg out of derrick. Close in well. eot.
Div of Oil & Gas, Steve Mulqueen, witnessed tag of cement @ 10726 and okayed placing of cement from 10726 to 10026.
Note: Cement mix: class G cement with 40% Silica Flour, .5% hr-7, and .5% R-3.

--- 10/14/93
Held 20 min safety mtg. Open well (No pressure). RIH w/2-7/8 in tbg. Work thru packer. Tag fill @ 11300 ft. Clean out to 11400 ft. Tbg is plugging. Pull to 11388, circulate well. Rig up Halliburton lines hold safety mtg.

DIVISION OF OIL AND GAS
RECEIVED
NOV 5 199
VENTURA, CALIFORNIA

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS
AND GEOTHERMAL RESOURCES

No. P293-146
Field Code 126
Area Code 00
New Pool Code --
Old Pool Code 20

PERMIT TO CONDUCT WELL OPERATIONS

EXXON Corporation
Attn: Env. & Reg. Affairs
P.O. Box 1600
Midland, Texas 79702

Ventura, California
May 13, 1993

Your proposal to abandon well Newhall Land & Farming Co." 2, A.P.I. No. 037-16473, Section 14, T. 4 N, R. 17W, S.B. B.&M., Castaic Junction field, --- area, 21 Del Valle pool, Los Angeles County, dated 5-7-93, received 5-12-93, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class IIB 2M requirements shall be installed and maintained in operating condition at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 11,480'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72 lbs./cu. ft. and a minimum gel-shear strength (10 min.) of 25 lbs./100 sq. ft.
5. This office shall be consulted before deviating from the proposed abandonment program.

Continued on Page 2

Blanket Bond
PK:SF:nr

Engineer Steve Fields

Phone (805) 654-4761

WILLIAM F. GUERARD, Jr.
Acting State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.
OG111

6. THIS DIVISION SHALL BE NOTIFIED:
   a. To witness the location and hardness of the cement plug at 10,152'.
   b. To witness the mudding of the well.
   c. To witness the squeeze-cementing of the 7" casing through the perforations at 1483'.
   d. To witness the location and hardness of the cement plug at 1383'.
   e. To witness the placing of the surface plug inside the 7" casing and the plug in the 7" x 13 3/8" casing annulus.
   f. To inspect and approve the cleanup of the well site before approval of abandonment will be issued.

KEN KENNEDY / S. MULQUEEN CLEAN-OUT TO 11400' 10-14-93

DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

NOTICE OF INTENTION TO ABANDON WELL

DIVISION OF OIL AND GAS
RECEIVED
MAY 12 1993
VENTURA, CALIFORNIA

FOR DIVISION USE ONLY			
CARDS	BOND	FORMS	
		OGD114	OGD121
✓	BB	5-12-93 ✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3229, Division 3, Public Resources Code, notice is hereby given that it is our intention to abandon well No. Newhall Land & Farming Co. #2 (Well designation), API No. 037-16473

Sec. 14, T. 4N, R. 17W, S.B. B. & M., Castaic Junction Field, Los Angeles County.

commencing work on 5/29, 1993.

The present condition of the well is:

1. Total depth 11,641
2. Complete casing record, including plugs and perforations
   13 3/8" 54.5# casing @ 0'-1493'
   7" 23/26/29# casing @ 0'-11,641' perfs:11,200'-11,370'
3. Last produced 06/86 2 8 47
   (Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)

   OR

4. Last injected _____
   (Date) (Water, B/D) (Gas, Mcf/D) (Surface pressure)

Addtional Data for dry hole (show depths)

5. Uppermost oil or gas shows

   Zone 21: 10,270'-10,430'

6. Stratigraphic markers:

7. Formation and age at total depth:

8. Base of fresh water sands: 1490'

5. Is this a critical well according to Section 1720(a), California Code of Regulations? Yes [X] No [ ]

The proposed work is as follows:

1 MIRU. Install and test a DOG class II 5M BOPE.
2. Clean to bottom of 7" casing @ 11,641'.
3. Place class "G" cement plug from 11,641'-10,152', pumping plug in three stages, cementing the 7" casing prefs and to 100' above WSO at 10,252', TOC at 10,152'. Dog to witness.
4. Shoot 4 SPF in the 7" casing @ 1493'to 1983 and place a class "G" cement plug from 1493' to 1373',squeezing the 7" x 13 3/8" annulus. DOG to witness.
5. Shoot 4 holes in the 7" casing @ 100' and circulate a class "G" cement plug from 100' to the surface getting returns in the casing/conductor annulus. DOG to witness.
6. Cut of casing @ 5' and weld plate with well identifier.
7. Clean location. DOG will inspect.

It is understood that if changes in this plan become necessary, we are to notify you immediately

Address 25 Desta Drive P.O. Box 1600
(Street)
Midland, Tx. 79702
(City) (State) (Zip)
Telephone Number 915-688-7888

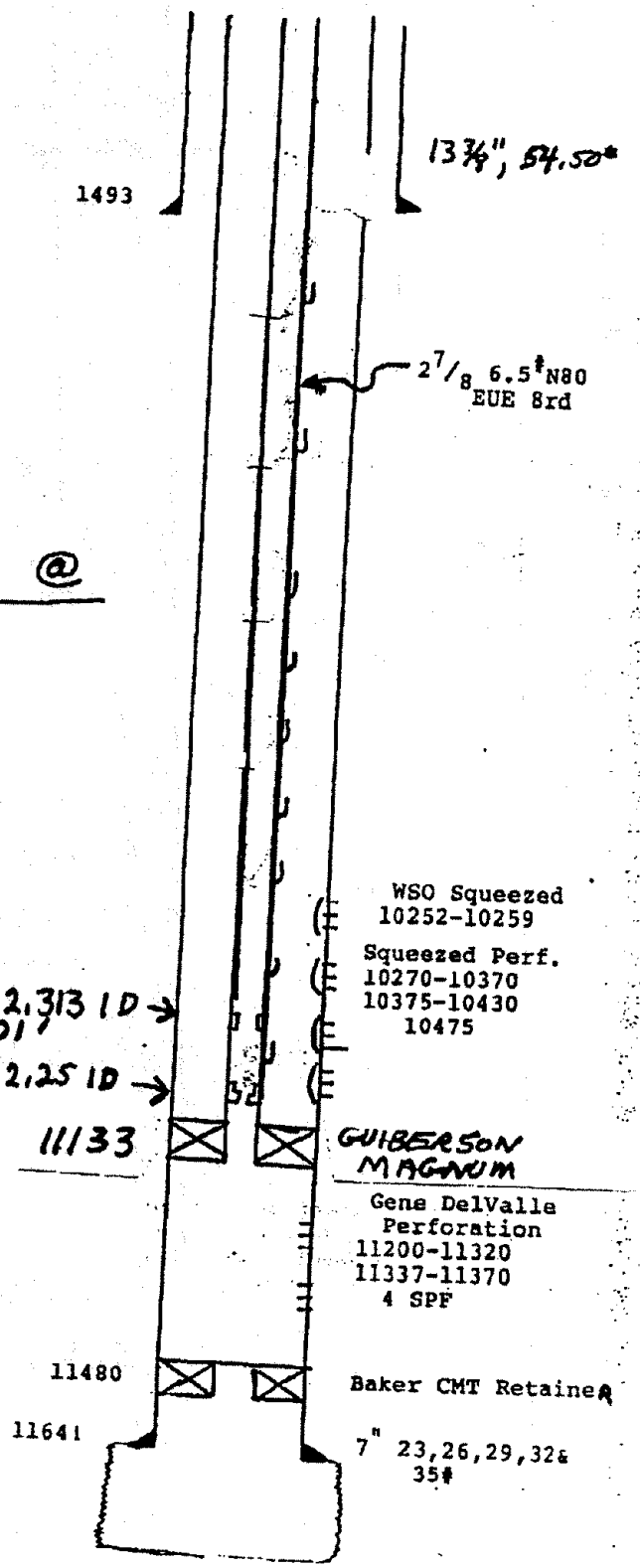
Exxon Corporation
(Name of Operator)
By Judy M. Bagwell
(Name-Printed)
Judy Bagwell 5-7-93
(Name-Signature) (Date)
Type of Organization Corporation

OG108

N.L.&F. 2

BEFORE P+A

KB is 14.15' above csg hd flange



7" CSG Detail	9-GLM's @
35# 0-407	
32# 407-1453	2394
29# 1453-2621	4245
26# 2621-3406	6099
23# 3406-5535	7110
26# 5535-6059	8113
29# 6059-8771	9111
32# 8771-10649	10108
35#10649-11641	10987
	11062

all N-80 grade
excpt 23# S-95

"X" nipple 2.313 ID
11101'

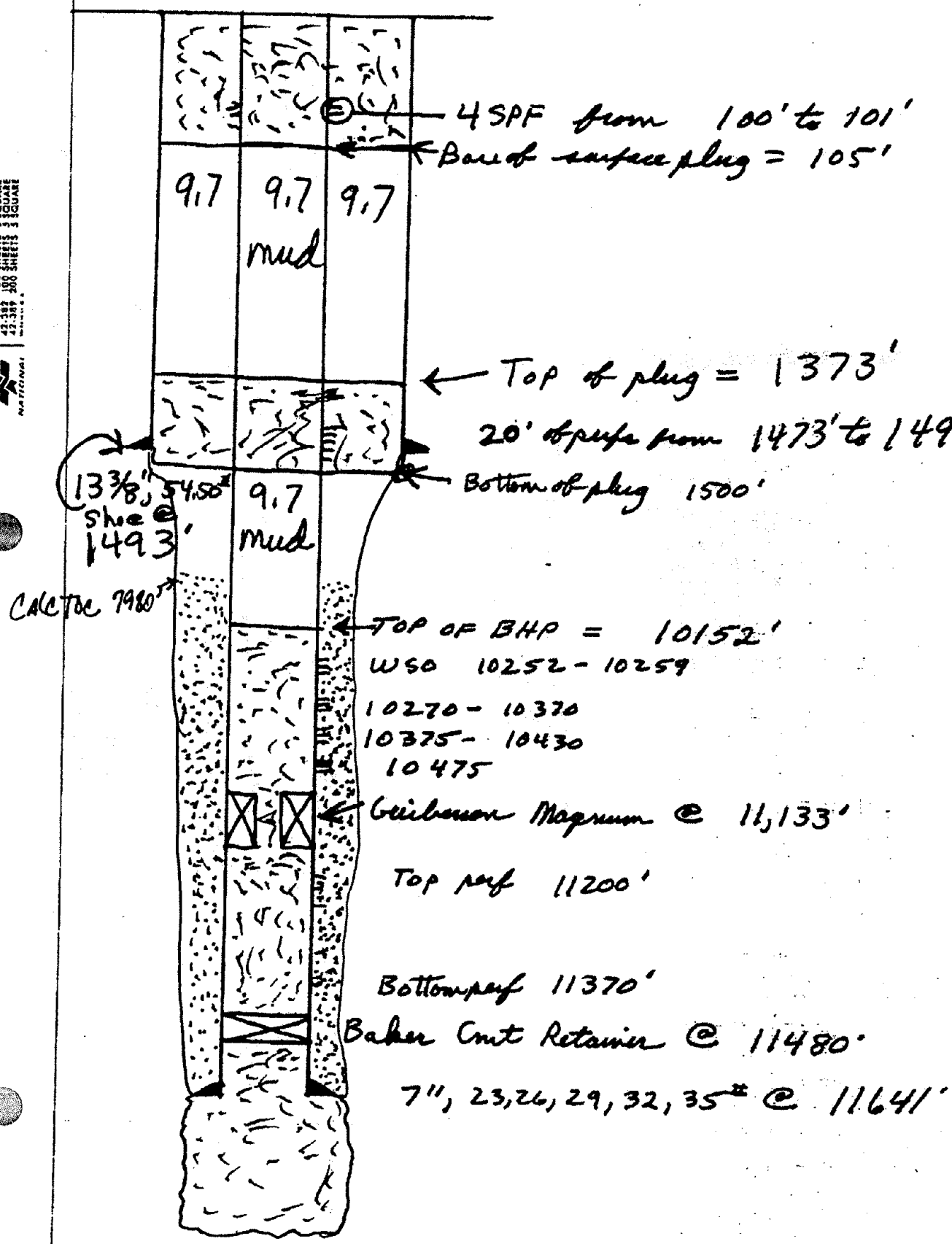
"A" nipple, 2.25 ID
11131'

11133

DIVISION OF OIL AND GAS
RECEIVED
MAY 12 1993
VENTURA, CALIFORNIA

NL+F #2 DM 9-8-92

AFTER P+A



13 3/8", 54.5# casing @ 0'-1493'
7" 26/29/32# casing @ 0'-11,641' slots:11,200'-11370'

SAFETY
Conduct a safety meeting to instruct all personnel on possible hazards in the area. At least 20# of dry chemical is to be on location, as a minumum, for fire fighting equipment. No smoking is to be allowed on location and all personnel are required to wear safety glasses, boots, and hard hats.

OBJECTIVE
Permanently plug and abandon the well.

FAX MORNING REPORTS TO:

KEN SHAFTO	915-688-6162	MIDLAND RES/SUBSURFACE
SHARON TOMLIN	915-688-6199	MIDLAND REGULATORY AFFAIRS
RICK STOREY	805-762-7284	HILL PROPERTY SR.SUPT

NOTE: DOG VENTURA REPRESENTATIVES ARE TO WITNESS ALL PLUG SETTINGS. NOTIFY AGENCY OF INTENT TO PLUG AT LEAST 24 HRS BEFORE COMMENCING PLUGGING OPERATIONS. RECORD THE DOG REPRESENTATIVES' NAME ON THE MORNING REPORT THAT WITNESSES OR WAIVES A PART OF AN ABANDONMENT. VENTURA OFFICE 805-656-4761

MECHANICAL CONSIDERATIONS: During a workover in 11/85 a tight spot in the 7"casing from 7962'-7968' was swedged to 5 1/2". A Guiberson Magnum type "H" packer was set on a wireline @ 11,133, 2 7/8" N-80, 8rd tubing was set w/10,000# on packer and no latch.

PROCEDURE

1. Ensure that the DOG "Permit to Conduct Well Operations" (Abandonment) and the program and the AFE are available prior to the commencement of any work.

2. BEFORE RIG-UP: Prepare location, remove debris, repair roads, install/inspect rig anchors, flush flow line and remove to the edge of the location.

3. MIRU WSU. Bleed off any pressure on the well (casing and tubing). Load or kill the well if necessary. Set tubing plug.

4. N/D tree. NU an Exxon Class III 5M (DOG Class II 5M) BOP with a hydraulic actuating system. Test the BOP to 250/5000 psi.

5. Pull out of Guiberson Magnum type "H" permanent packer @ 11,133', max pull is 77% of tubing yield. Circulate B/U.

6. POOH L/D GLM's, X nipple, "A" nipple, seal assembly etc. Check condition of tubing. P/U workstring.

8. Clean out to bottom @ 11,480' PBTD in 7" liner. Notify DOG of top of fill and clean out depth if unable to clean out to TD.

9. RU cementers and test lines to 250/5000 psi. Mix and pump the following slurry to spot a balanced plug from 11480' to 10152'.

10. 11480'-10152'=328' X .2210 = 73 cu. ft. X 2 = 146 cu.ft.

Cement type	Class "G" + Silica Flour
Retarder	0.03%
Friction Retarder	0.02%
Fluid loss additive	1.0%
Weight	15.7 PPG
Amount	92 sx (146 cu/ft=100% excess)
Yield	1.585 CU.FT/SK
Water required	6.54 GAL/SK
TTT @ 180 Deg F BHCT	3.30 Hrs.
Compressive strengths @	230 Deg F BHST
8 HOURS 1750 psi	
24 HOURS 4800 psi	

11. POOH 5 stands above calculated TOC and reverse out tubing. POOH 3 stands and WOC 8 hrs. Tag top of plug (10152') and have DOG witness.

12. Test casing integrity to 500 psi for 10 minutes.

13. Displace fluid in the hole with approximately 558 bbls of 9.7 ppg mud.

    7", 23# = 10152' x .0393 = 400 BBLS
    7"x 13 3/8"= 1480' x .1070 = 158 BBLS

14. POOH lay down excess pipe .

15. Perforate 20' of 4 1/2" SPF centered at 1483' @ the base of fresh water. RIH with tubing open ended to 1483' circulate mud up the 7" X 13 3/8" annulus to the surface.

16. NOTIFY THE DOG TO WITNESS PUMPING THE FRESHWATER PLUG: R/U cementers & test lines 250/2000 psi. pump and squeeze cement slurry to place cement plug in the 7" and the 7"x10 3/4" annulus so the TOC will be 100' above the BFW.

    100' of 7", 23# X .2210 = 22 cu.ft.
    100' of 7" X 13 3/8" = .6007 = 60 cu.ft.

Cement type	Class "G" + 2% CaCl2
Weight	15.7 PPG
Amount	143 sx (164 cu/ft= 100% excess)
Yield	1.15 CU.FT/SK
Water required	4.96 GAL/SK
TTT @ 180 Deg F BHCT	4.45 Hrs.

Compressive strengths @ 90 Deg F BHST
8 HOURS 155 psi
24 HOURS 1523psi

17. R/U wireline and shoot 4 SPF (90 degrees phasing) in the 7" csg @ 100' (or deeper if required by Newhall grading plan).

18. RIH to 100' and establish circulation in the 7" X 13 3/8" annulus. R/U cementers and pump/squeeze 82 sxs of "G" neat cement to fill the 7" and the 7" X 13 3/8" annulus to surface. DOG TO WITNESS SURFACE PLUG.

19. Complete the following: Remove surface equipment and flow lines back to the header. Restore the site to its pre-drill condition. Complete removal of surface equipment and flowlines within 30 days of FRR. DOG requires all work to be completed, documented, and submitted within 60 days of FRR.

DIVISION OF OIL AND GAS
RECEIVED
MAY 12 1993
VENTURA, CALIFORNIA

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

RECEIVED
OCT 25 1993
DIVISION OF OIL & GAS
BAKERSFIELD

Operator Exxon Corporation **Field** Castaic Junction **County** Kern
Well Newhall Land & Farming Co. 50, **Sec.** 14, **T.** 4N, **R.** 17W, **S.B. B.&M.**
A.P.I. No. 037-16515 **Name** Julie H. Mitchell (Person submitting report) **Title** Staff Office Assist. (President, Secretary or Agent)
Date October 18, 19 93

Signature Julie H. Mitchell

Environmental & Regulatory Affairs, P.O. Box 1600, Midland, TX 79702 915/688/7888
(Address) (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date	
09/01/93	MIRU. Spot tanks & mud pump. Rig up choke manifold & kill lines. Check well. Tbg 0 psi, csg 130 psi. Close in well.
09/02/93	Open well (tbg 0 psi, csg 130 psi). Circulate well 2 hrs. Rig up Lee Archer (slickline). RIH w/2-1/2 slip type tbg plug set @ 278'. Rig out slickline (well dead). Nipple down production tree. Nipple up class III BOP & BOE. Rig up working floor & tbg equip. Rig up slick line. Retrieve plug @ 278'. Rig out slickline. RIH w/2-7/8" tbg (work string). Tag @ 8196'. Circulate out fill & mud. POOH w/20+0. Secure well.
09/07/93	Service rig & equipment. Open well (no psi). Fill well w/2 bbl lease water. Continue measuring out w/2.785 N-80 tbg. Fill hole every 20 stands (not losing or gaining fluid). Pull 131+0 stands total. Makeup 180' 4.5 wash pipe & 6 3-1/8 in D. C. w/ B-S & Jars. RIH w/81+0 2 7/8" N-80 tbg. Rig transmission out 9/8/93. Well secure. Repairs being done.
09/09/93	Open well (no psi). RIH with 50+0 2-7/8" tbg. Tag fill or fish @ 8197. Reverse circulate @ 1000#, 1.61 BPM. Rig up power swivel and stripping cage. Clean out f/8197' to 8200'. Reverse out clean. Swivel broke, secure well.

DIVISION OF OIL AND GAS
RECEIVED
OCT 27 1993
VENTURA, CALIFORNIA

OG103 (8/91/GSR1/5M)

09/13/93 Open well (no psi). RIH, tag top of fish @ 8197'. Reverse circulate f/8197-8352'. Cutting show dried mud. Losing fluid while cleaning out. POOH w/10+0, 300'. Secure well.

09/14/93 Open well (no psi). RIH w/4-1/2" W.P. Tag top of fish @ 8197'. RIH to 8352', no fill. POOH w/131+0 stands. Back wash pipe. Makeup 2-7/8X4-1/2" overshot. RIH w/6 3 1/8" drill collars. RIH w/121+0 2-7/8 tbg. Secure well.

09/15/93 Open well (no psi). RIH, latch on fish @ 8197'. Jarring on fish @ 100,000#, no movement, 2 hrs. Rig up Dia-Log. Attempt to run 5/8" free point tools. Would not go in hole. Make up 5/8" sinker bars. RIH, work thru, excelerator. Tag fill @8654'. POOH, rig up free point tool. RIH to top of excelerator. Could not work thru. POOH. Rig out Dia-Log. POOH with 10+0 2-7/8" tbg. Secure well.

09/17/93 Open well (no psi). Cont POOH w/2-7/8" N-80 tbg. Pull 129+0 stand back 3-1/8" Drill Collars. Make up overshot w/2-7/8" grapple and pack off. Make up BS and tbg jars. RIH w/120+0. Secure well.

09/20/93 Open well (no psi). RIH w/90 jts 2-7/8" N-80 tbg. Latch on fish @ 8196'. Rig up Dia-Log. RIH w/1-11/16" chemical cutter. Tag fill @ 8627'. Cut tbg @ 8612'. POOH. Jar on fish @ 100,000#. Rig up pump. Pump down tbg. Pack off in fishing tool leaking. RIH w/1-11/16" chemical cutter. Cut tbg @ 8337'. POOH, rig out Dia-Log. Jar fish loose. POOH w/100 jts 2-7/8" tbg. Secure well.

09/21/93 Open well (no psi). POOH w/120 jts 2-7/8" tbg. Pull 3-1/8" and 4-3/4" fishing tools. Lay down 152' 2-7/8" tbg. Found hole in first jt @ approx. 8220'. Showed possible csg holes. RIH w/3-1/8" D.C.s and 4-1/2" wash pipe. POOH, lay down all tools. Make up Halliburton 5-1/2" 19-20# cement retainer. RIH w/15o jts 2-7/8" N-80 tbg. Secure well.

09/22/93 Open well (no psi). Continue RIH to 8089'. Set 5-1/2" 17# Halliburton EZSX retainer @ 8089'. Attempt to break down. Rig up Halliburton, test lines 250# and 5000#. Pump 3 bbl pm @ 1000# circulating around cement retainer. (Csg holes above retainer). DOG okayed pump 62 sx cement. Mix & pump 62 sx, 100 cubic ft class G cement w/40% Silica Flour + .15% HR-7 +.15% CFR-3, displace w/43 bbls lease water @ 1600#. Rig out Halliburton. POOH with 30 jts, 930'. Reverse circulate 35 min. Pull 10+0, 600'. Close in.

Note: Lost 30 bbls while reversing out cement.

Note: Peter Wygle of Div Oil & Gas witnessed placement of 62 sx, 98 cubic ft cement thru retainer @ 8089' and squeeze of 400 level foot @ 100 psi.

09/23/93 Open well (no psi). RIH w/2-7/8" N-80 tbg. Tag top of cement @ 7593'. POOH w/265 jts 2-7/8" N-80 tbg. Lay down stinger f/cement retainer. Make up 5-1/2" 17# full bore packer. RIH to 2000'. Test 5-1/2" csg from surface to 2000' @ 500 psi. Release packer. Secure well.

Note: Peter R. Wygle, Div Gas & Oil, witnessed tag @ 7593. Tag ok, wants to test to find location of hole.

09/27/93 Open well (no psi). Continue RIH w/5 1/2" full bore packer. Set @ 4000'. Leaking f/2000-4000'. Pull up. Testing csg every 300'. Locate hole @ 2593'. POOH w/packer & tbg. RIH w/265 jts to 7590'. Secure well.

10/01/93 Open well (no psi). Pickup 2 jts 2 7/8" tbg. Rig up pump & mud tank/ Pump 110 bbls 9.7 ppg mud f/7593 to 2700'. Displace w/15 bbls lse water. POOH lay down 165 jts 2 7/8" tbg. Close in well with 86 jt in hole, 2700'.

10/04/93 Open well (no psi). POOH w/86 jts. Fill well w/30 bbls lse water. Rig up MMI electric line. RIH w/10' perforator gun Dyna Jet 4 spf. Locate collar at 2389'. Shoot holes f/ 2399 to 2409'. POOH circulate well down 5 1/2" csg up 8 5/8" csg @ 300#. RIH w/88 jts 2 7/8" tbg w/tail at 2703'. Rig up Halliburton. Test lines 250# low. 4000# high,. Mix & pump 102 cubic ft 89.5 sx neat cement. Displace w/13 bbls lease water @ 400 psi max. Returns coming up 5 1/2" and 8 5/8" csg. Rig out Halliburton. Pull 30 jts to 1773'. Reverse circulate well clean 30 min. POOH, rig up MMI. RIH w/10' Dyna Jet perforator gun 4 spf. Locate collar @ 802'. Shoot holes @ 782-792'. POOH, rig out MMI. Estimated top of cement @ 2209'. Close in well.
NOTE: Called DOG. Steve Fields okayed, phone, pumping cement f/2700-2309' @ 8:00a.

10/05/93 Open well (no psi). RIH, tag cement plug @ 2063'. Displace 28 bbls 9.7 P.P.G. mud w/5 bbls water from 2063 to 806'. POOH w/40 jt 2 7/8" tbg. Tbg tail @ 806'. Rig up Halliburton, test lines 250# @ 2000#. Mix & pump 65 cubic feet, 57 sx neat cement down 2 7/8" tbg up 8 3/8" csg. Displace w/3.5 bbls lse water. Let cement gravitate in 5 1/2" csg. Pull 5 stand. lay down remaining tbg while waiting on cement. Rig up MMI. RIH w/2 ft link jt shoot 8 holes f/100-98'. POOH. RIH w/ 2 7/8" tbg. Cement still wet. POOH, close in well. Estimated top of cement @ 606'. DOG, Peter Wygle, witness tag @ 2063 top of cement at 9:30a.

10/06/93 Open well (no psi). RIH , tag cement plug @ 553'. POOH, laying down 22 jts 2 7/8" tbg. With tbg tail @ 124' rig up Halliburton. Mix and pump 30 sx in 5 1/2" & 8 5/8" csg to surface. Rig out Halliburton. Clean BOPE, lay down 4 jts. ND BOP. DRMO. DOG, Peter Wygle, witness tag @ 553' & placement of cement f/100' to surface 5 1/2 and 8 5/8" csg - 30 sx=34.2 cubic feet.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

September 21, 1994

EXXON Corporation
Attn: Env. & Req. Affairs
P.O. Box 1600
Midland, TX 79702

Your report of the plugging and abandonment of well "Newhall Land & Farming Co." 50, A.P.I. No. 037-16515, Section 14, T. 4N, R. 17W, S.B. B.& M., Castaic Junction field, Los Angeles County, dated 10-18-93, received 10-27-93, has been examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and the filing of well records.

svl

William F. Guerard, Jr
State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear
Deputy Supervisor

cc: Conservation Committee
Update

Modified OG159 (4/94)

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. T293-267

Report on Operations

EXXON Corporation
Attn: Env. & Reg. Affairs
P.O. Box 1600
Midland, Texas 79702

Ventura, California
November 22, 1993

Your operations at well "Newhall Land & Farming Co." 50, API No. 037-16515, Sec. 14, T. 4N, R. 17W, S.B. B.&M. Castaic Junction Field, in Los Angeles County, were witnessed on 10-6-93. Pete Wygle, representative of the supervisor, was present from 0800 to 1000. There were also present C. Ballard, Operator's Rep.

Present condition of well: 10 3/4" cem 792'; 8 5/8" cem 2409'; 5 1/2" cem 11,235, perf 10,970' WSO, perf 99' - 101', 2399' - 2409', & @ ints 11,010' - 11,155', holes at 2593', damaged @ 8220' & 10,600'. TD 11,365'. Junk: 2 7/8" tbg 8340' - 10,960' w/pkr @ 10,960'. Plugged w/cem 11,365' - 11,215', w/approx 50 cf of cem below ret @ 8089' - 7593', 2703' - 2063', 806' - 553', & 126' - 5'.

The operations were performed for the purpose of abandonment.

DECISION:

The plugging operations as witnessed and reported are approved.

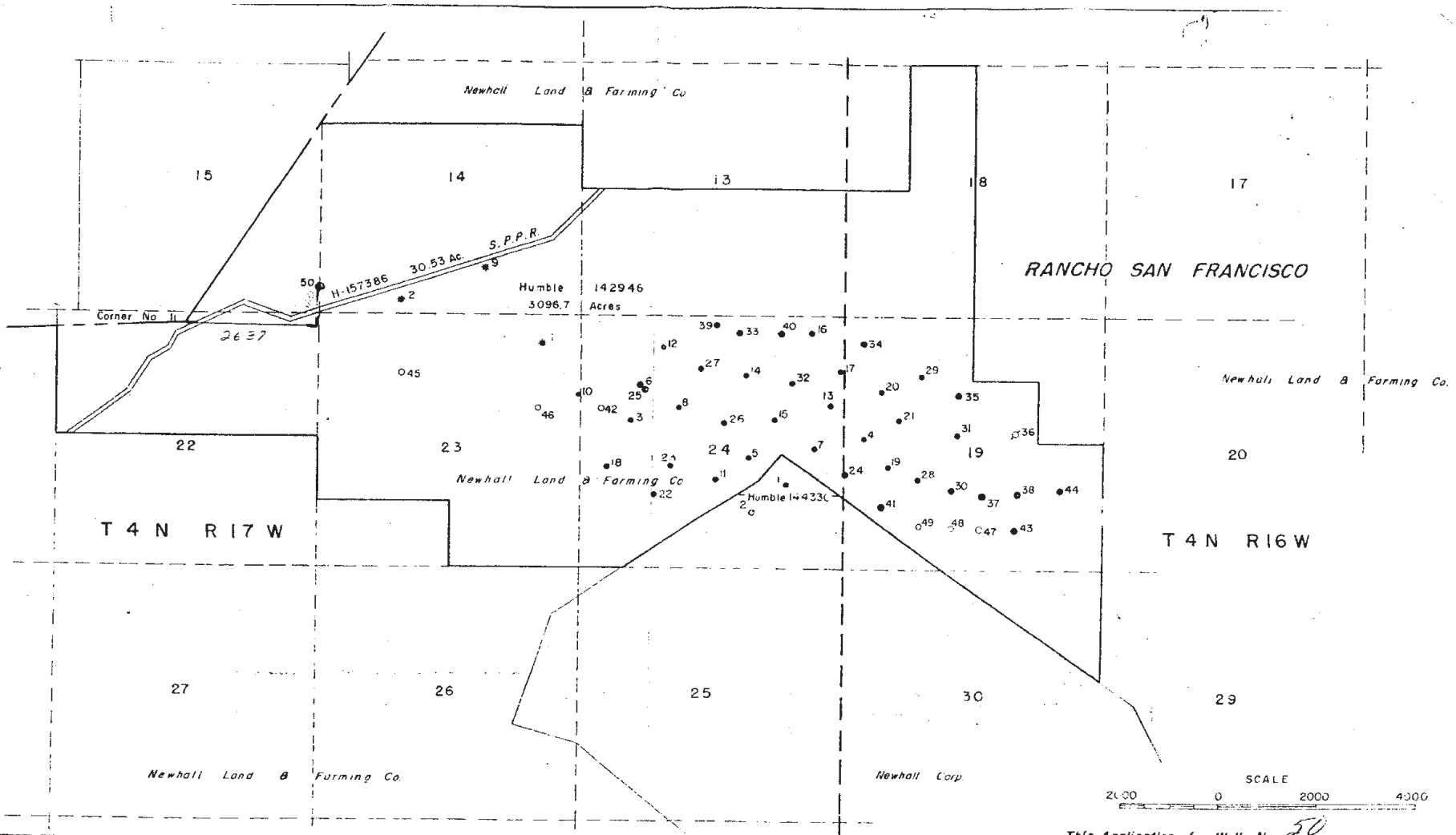
SCV

William F. Guerard, Jr.
State Oil and Gas Supervisor

By Patrick J. Kinnear

Patrick J. Kinnear
Deputy Supervisor

OG109 (Modified 1993)



This Application for Well No. 50

REVISIONS					
NO	DATE	DESCRIPTION	BY	CHK	APPR

REVISIONS					
NO	DATE	DESCRIPTION	BY	CHK	APPR
7	1-28-55	ADD WELL NO 45	KDS		
8	2-2-55	" " " 46	"		
9	3-2-55	" " " 47	"		
10	3-7-55	" " " 48	"		
11	3-7-55	" " " 49	"		
12	4-25-55	" " " 50	"		

REVISIONS					
NO	DATE	DESCRIPTION	BY	CHK	APPR
1	8-18-54	ADD WELL NO 40	KDS		
2	8-30-54	" " " 38	NDC		
3	9-2-54	" " " 41	NDC		
4	9-28-54	" " " 42	KDS		
5	12-14-54	" " " 43	KDS		
6	12-21-54	" " " 44	KDS		

NEWHALL LAND & FARMING CO.
LEASE NO 142946
CASTAIC JUNCTION DIST. LOS ANGELES CO.

HUMBLE OIL & REFINING COMPANY
CIVIL ENGINEERING DIVISION
CALIFORNIA AREA

DRAWN KDS
CHECKED
APPR.
SCALE 1" = 2000'
DATE 8-18-54
REVISED
FILE NO. CAB 44

SUPERSEDES DRWG NO CAB 23

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

September 21, 1994

EXXON Corporation
Attn: Env. & Req. Affairs
P.O. Box 1600
Midland, TX 79702

Your report of the plugging and abandonment of well "Newhall Land & Farming Co." 9, A.P.I. No. 037-16480, Section 14, T. 4N, R. 17W, S.B. B.& M., Castaic Junction field, Los Angeles County, dated 10-28-93, received 11-05-93, has been examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and the filing of well records.

svl

William F. Guerard, Jr
State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear
Deputy Supervisor

cc: Conservation Committee
Update

Modified OG159 (4/94)

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
RBDMS- RECORDS ENTERED

COMPANY Exxon WELL NO. Newhall Land & Farms B. 9
API NO. 037-16780 SEC. 14, T. 4N, R. 17W, SB B.&M.
COUNTY LA FIELD Castaic Jct

RBDMS DATA ENTERED: 3/24/98
(DATE)

BY: KP
(NAME)

RBDMS DATA MUST BE UPDATED FOR ALL DATA THAT IS RECEIVED AFTER THE DATE INDICATED ABOVE.

WELL CONSTRUCTION DATA ONLY

OPERATOR Exxon Corp
LSE & NO "Newhall Ldg Farm Co" 9
MAP

	(/)	( )	( )	( )	( )	( )
ENTION	Reperforate	ABANDON				
NOTICE DATED	12-15-77	5-7-93				
P-REPORT NUMBER	277-465	P293-147				
CHECKED BY/DATE	PV/7-28-78					
MAP LETTER DATED	Idle 8/5/78	2-19-94 SPM				
SYMBOL	⊕ New	⊕ 11/12/57				

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
NOTICE	12-21-78		5-12-93									
HISTORY	7-26-78		11-5-93									
SUMMARY	—		—									
IES/ELECTRIC LOG	—		—									
ECTIONAL SURV	—		—									
CORE/SWS DESCRIP	—		—									
OTHER	—											
RECORDS COMPLETE	7/28/78		4-14-94									

ENGINEERING CHECK

T-REPORTS	✓
OPERATOR'S NAME	✓
WELL DESIGNATION	✓
LOC & ELEV	✓
SIGNATURE	✓
SURFACE INSPECTION	✓
FINAL LETTER OK	

CLERICAL CHECK

POSTED TO 121 _____ 170 MAILED _____ FINAL LETTER MAILED _____

RELEASED BOND _____

REMARKS: Sfc insp OK 4-12-94 FRW

1991. 1

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Exxon Corporation **Field** Castaic Junctio **County** Los Angeles
Well Newhall Land & Farming Co. #9, **Sec.** 14, **T** 4N, **R** 17W, S.B. B. & M.
A.P.I. No. 037-16480 **Name** Julie H. Mitchell (Person submitting report) **Title** Staff Office Assist. (President, Secretary or Agent)
Date October 28, 19 93.

Signature Julie H. Mitchell

Environmental & Regulatory Affairs, P.O. Box 1600, Midland, TX 79702 (Address) 915/688-7888 (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date

(see attached)

DIVISION OF OIL AND GAS
RECEIVED
NOV 5 1993
VENTURA, CALIFORNIA

OG103 (6/91/GSR1/5M)

10/27/93 MORNING REPORT 5:38PM

NEWHALL LAND & FARMING CO - 0009 Lease# 061590 Job# 60007687
Field Supt R. O. Storey CMP# 4037164800001 AFE# 00039455
PLUG AND ABANDON

Expected Buildup oil/gas /
Estimated PI

--- 10/26/93
Safety mtg. Open well. Rih, tag cement @ 615 ft. Ran to 120 ft. Rig up Halliburton, test lines. Mix and Pump 50 sx class G neat cement from 120 to surface. 10-3/4 and 7 in csg. Rig out Halliburton. Rig out all equipment.
Div of Oil & Gas, Peter R. Wygle witnessed and approved tag of top of cement at 615 ft. Also witnessed pumping of surface plug from 120 ft to surface in 10-3/4 and 7 in casings.

--- 10/21/93
Attend safety mtg. Rih tag cement @ 3476. 37 ft above holes. Rig up Halliburton with tbg hung at 3470. Mix and pump 20 sx, of class G neat cement 1.15 yield = 103 cuft displaced with 19 bbls water. Rig out Halliburton. Pull and lay down 86 Jts. Stood back 760 ft of tbg. Rig up MMI shot 80 holes between 7 and 10-3/4 in csg from 740 - 760 ft. Rig out MMI. Mud up down 7 in and up 10-3/4. Rih with tbg to 760 ft. Rig up Halliburton. Mix and Pump 87 sx, 100 cuft, Class G cement with 2% CACL2 displaced with 3.7 bbls. Rig out Halliburton. Calculated top of cement at 560 ft, 10-3/4 and 7 in. Pull tbg. Rig up MMI. shot 8 holes from 100 -102 ft. Secure well. eot.
Div of Oil & Gas, Stephen Mulqueen: Tag of cement @ 3476 ft is low. Ok to place 100 linear ft (15 sx) on top of plut @ 3476 ft without having to tag plug.
Div. of Oil & Gas, Stephen Mulqueen gave permission to squeeze fresh water without having to witness.

--- 10/20/93
Safety mtg. Open well. Pull and lay down 99 jts of tbg. Rig up Hallibur ton. Test lines with tbg hung at 3600 ft. Mix and pump 33 sx cement blended with 40% SSA-1, .3% CFR3 and .5% HR7 with a yield of 54 cuft. Displaced with 18.5 bbls. Pulled to 300 ft. Filled hole. Squeezed 20 cuft away at 300 psi, 1/2 bbls per min. Pulled to 2700 ft. Secure well eot.

--- 10/19/93
Safety mtg. Open well. Continue testing for holes in csg. Located holes between 3513 and 3534 ft. Pull out of hole with test packer. Ran tbg openended to 10400 ft. Pull and lay down 133 jts of tbg. Secure well eot.
Notified Div of Oil & Gas of location of holes. Got DOG approval to lay a cement plug from 3645 to 3413.

--- 10/18/93
Safety mtg. Open well. Rih . tag cement @ 10447. Pressured csg to 500 psi. Bleed to 0 psi in 45 seconds. Pulled tbg.-Made up Robinson test pkr. Rih to 1000 ft. Test csg ok. Ran to 2200 ft, ok. Ran to 332, test ok. Secure well, eot
Div of Oil & Gas, Steve Mulqueen, witnessed and approved tag @ 10447.

--- 10/14/93

DIVISION OF OIL AND GAS
RECEIVED
NOV 5 1993
VENTURA, CALIFORNIA

NEWHALL LAND & FARMING CO - 0009 Lease# 061590 Job# 60007687
Field Supt R. O. Storey CMP# 4037164800001 AFE# 00039455
PLUG AND ABANDON

Expected Buildup oil/gas /
Estimated PI

Attend safety mtg. Open well. With tbg hung open ended at 10790 rig up Halliburton. Test lines. Mix and pump 53 sx, 110.42 cuft cement blened with 40% SSA-1, .3% CFR-3, -5% HR-7, displaced with 58 bbls mud Calculated top of cement @ 10390 ft. Pulled to 10090, reversed around twice. Pulled to 9490, secure well. eot.

--- 10/13/93
Attend safety mtg. Open well. Sting into retainer at 10793 ft. Rig up Halliburton. Unable to squeeze thru retainer. Rig out Halliburton. Got DOG approval to cement above retainer. Pooh with setting tool. RIH w/ openended tbg to 10790. Secure well, ready to cement in am.
Div of Oil & Gas, Peter Wygle, gave approval to lay 300 ft cement plug on top of retainer. Also approved change over to 9.3 ppg mud.

--- 10/12/93
Attend safety mtg. Pooh with kill string. Rih with wash pipe and drill collars. Pull and lay down drill collars and wah pipe. Notified DOG of new fish depth. Top of fish at 10809 ft. Make up Halliburton EZ Drill Retainer. Set retainer @ 10793 ft. Secure well, eot.
Div of Oil & Gas, Peter R. Wygle, waived witness, and approved by phone the setting of retainer ant 10809 feet.

--- 10/11/93
Attend safety mtg. Changed well over to 9.2 mud, 400 bbls. Well stopped flowing. Pull all tbg and fishing tools, 10600 ft. Recovered 114 ft of fish. Ran 720 ft kill string, secure well. Eot.

--- 10/09/93

--- 10/07/93
Attend safety mtg. Open well, circulate bottoms up cont pulling tbg. After pulling 10 stands well started flowing our tbg and csg. Hook up Kelly line, circulated around twice, well still flowing. INstall gauge in tbg. Got shut in surface pressure of 17 psi. Notified foreman of conditions. Decided to run back to top of fish at 10665 ft. and change over to mud. Ran tbg to 10170 ft. Secure well, shut down until am.

--- 10/06/93
Attend safety mtg. Open well, RIH circulate bottoms up from 9645 - washed over fish at 10665 to 10878. Stacked out to drive sub. Pulled to 10853. While attempting to cut, cutter let loose. Tried 3 times at 10853. Cutter kept releasing. PUlled to 10821. Attempted to cut. No success. Release cutter, pulled 8000 ft. Secure well. eot

--- 10/05/93
Attend safety mtg. Open well, ran tbg to 9645 ft. Circulate bottoms Clean out heavy contaminated mud to 10636 ft. Circulate clean. REady to make washover and first cut in am.

--- 10/04/93
Attend safety mtg. Open well, ran 72oo ft OE tbg. Tbg tail at 9625 ft.

NEWHALL LAND & FARMING CO - 0009 Lease# 061590 Job# 60007687
Field Supt R. O. Storey CMP# 4037164800001 AFE# 00039455
PLUG AND ABANDON

Expected Buildup oil/gas /
Estimated PI

Rig up to reverse tbg. Unable to reverse. Pulled to 9300 ft. Circulated bottoms up. Got heavy mud returns. Ran to 9625, circulated, pulled to 8881, Secure well, eot.

--- 10/01/93
Attend safety mtg. Start up job. Cont pulling tb. Last 49 jts were gaulded. Had trouble breaking out. Laying down last 49 jts. Made up 250 ft of wash pipe with drill collars and outside cutter. RIH with wash pipe and tbg until eot. Secure well, eot

--- 09/27/93
Attend safety mtg. Open well. Reversed bottoms up form 10500 ft. Pull @ measure tbg. Unload wash pipe and fishing tools. Tbg seat @ 2400 ft, kill string in hole. Secure well, eot.

--- 09/23/93
Attend safety mtg. Open well work stuck packer to 7780 max yield for 2-7/8in N-80 tbg, 111,000 pull. Couldnot get loose. Rig up Dia-Log. Ran free point & collar locator to 11748. Logged collars and packer top at 11727. First collar above packer at 11696, log second collar up at 11665. Determined free point at 10700. Pulled collar locator and free point. Made up chemical cutter. RIH, cut at 11710 ft, 18 ft above pkr Pulled cutter, worked tbg to 11100. Would not come free. Pump fluid away at 500 psi. No returns. RIH with second cut. Cut at 10700 ft. Pipe came free. Rig out Dia-Log. Pull 5 stands. Secure well. eot.

--- 09/22/93
Attend safety mtg. Open well. Rig up Nowcam coil tbg unit. Tested BOP ran in hole with 1-1/2in coil tbg. Clean out mud from 10750 to 11747 ft Pull coil tbg. Rig out Nowcam. Secure well. eot.

--- 09/21/93
Drove to location. Attend safety mtg. Open well. Rig up Dia-Log, test lubricator. Made up 1in sinker bars and 1 in collar locator. Rih, went throug heavy fluid, like mud, to 11,090 ft. Hit fluid @ 10,809. Rig out Dia-Log. Secure well, shut down until am pending arrival of coiled tbg unit.

--- 09/20/93
Attend safety mtg. Open well. Attempt to release Lane Wells Packer at 11,700 ft. Worked at 110,000 pull 77% factor. Could not get loose. Rig up Dia-Log. Test Lubricator. RIH with free point and 1-5/8in sinker bars, Hit heavy fluid at 10,968 ft. Worked down to 10,809 ft. Could not go further. Tbg still free at this point. POOH and secure well. Ready to run 1 in sinker bars and free point in am.

--- 09/17/93
Attend safety mtg. Open well. Attempt to pump through bypass ports on Baker TBS tbg plug. Went to 200 psi with rig pump. Rig up Halliburton Pump truck. Rig up slickline & test lubricator. Held 3410 psi on tbg. Worked tsb plug loose. Pulled plug. Lay down lubricator. Bleed tbg to 0

NEWHALL LAND & FARMING CO - 0009 Lease# 061590 Job# 60007687
Field Supt R. O. Storey CMP# 4037164800001 AFE# 00039455
PLUG AND ABANDON

Expected Buildup oil/gas /
Estimated PI
psi. Rig out Halliburton. Secure well. eot.

--- 09/15/93
Safety mtg. Move all equipment from well 7 to 9. Rig up, guy mast, bleed csg from 250 psi to 0 psi in 10 min. Remove tree, install and test Class III BOP. Secure well, eot.

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. T293-266

Report on Operations

EXXON Corporation
Attn: Env. & Req. Affairs
P.O. Box 1600
Midland, Texas 79702

Ventura, California
November 19, 1993

Your operations at well "Newhall Land & Farming Co." 9, API No. 037-16480, Sec. 14, T. 4N, R. 17W, S.B. B.&M. Castaic Junction Field, in Los Angeles County, were witnessed on 11-4-93. Pete Wygle, representative of the supervisor, was present from 1015 to 1030. There were also present

Present condition of well: 10 3/4" cem 760'. 7" cem 11,785, perf 11,055' WSO, cp 11,054', perfs 100', 740'- 760' 11,120' - 11,150' holes 3513' - 3545'; 5 1/2" ld 11,753' - 12,156', perfs @ int. 11,780' - 12,155'. Junk below 10,818'. TD 12,157'. Retainer @ 10,793'. Plugged w/ cem 10,790' - 10,447', 3600' - 3272'+/-, 760' - 615', & 100' - 5'.

The operations were performed for the purpose of abandonment.

DECISION:

The plugging operations as witnessed and reported are approved.

SCV

William F. Guerard, Jr.
State Oil and Gas Supervisor

By Patrick J. Kinnear

Patrick J. Kinnear
Deputy Supervisor

OG109 (Modified 1993)

E3500 T 2666

DIVISION OF OIL AND GAS
Cementing/Plugging Memo

Operator EXXON CORP. Well No. "Newhall Land + Farming Co."
API No. 037 - 16480 Sec. 14, T. 04N, R. 17W, SB B&M
Field CASTAIC JUNCTION, County LOS ANGELES. On 11-4-93,
Mr./Ms. P. Wygle, representative of the supervisor, was present from 1015 to 1030.
There were also present

Casing record of well: 10 3/4" cem 760'. 7" cem 11,785, perf 11,055' WSO, cp 11054' perfs 100', 740'-760', 11,120'-11,150', holes 3513'-3545', 5 1/2" TB 11,753'-12,156', perfs @ INT 11,780'-12,155'. Junk below 10818'. TD 12157'. RETAINER @ 10793'.

The operations were performed for the purpose of ABANDONMENT
Plugged w/ cem 10790'-10447', 3600'-3272'±, 760'-615', & 100'-5

☑ The plugging/~~cementing~~ operations as witnessed and reported are approved.

☐ The location and hardness of the cement plug @ _____' is approved.

Hole size: _____" fr. _____' to _____', _____" to _____' & _____" to _____'

	Casing				Cemented			Top of Fill		Squeezed Away	Final Press.	Perfs.
	Size	Wt.	Top	Bottom	Date	MO-Depth	Volume	Annulus	Casing			
A	7"	23# -35#	0	11785'	10-14	RETAINER @ 10793' *	53 sx	0	10447'	0	—	THRU. JU @ 10818
B	"	"	"	"	10-20	TBG @ 3600' BRADEN HEAD	54 cf	—	3476'	20 cf	300 psi	3513'-3545' HOLES

* NO BREAK-DOWN PLACED PLUG ON TOP OF RETAINER ONLY (33 sx)

Casing/~~tubing~~ ~~recovered~~ perf 4 hpf: 7" shot/~~cut~~ at 760', 100', 740'-', _____' pulled fr. _____';
_____" shot/cut at _____', _____', _____' pulled fr. _____'.

Junk (in hole): 10818' TBG STUB, PACKER BELOW @ 11708'

Hole fluid (bailed to) at _____'. Witnessed by _____

Mudding	Date	Bbls.	Displaced	Poured	Fill	Engr.
9.3#/g CLAY GEL	10-18-93	430	TBG @ 10447'	—	SURFACE	S. MULQUEEN

FOUND HOLES 3513'-3545' IN 7" CASING

	Cement Plugs		Placing	Placing Witnessed		Top Witnessed				
	Date	Sx./cf	MO & Depth	Time	Engr.	Depth	Wt/Sample	Date & Time		Engr.
A'	10/14	53 sx	RETAINER @ 10793' TBG @ 10790' *	—	REPORTED	10447'	5K#	10/18	0930	S. MULQUEEN
B'	10/20	54 cf	TBG @ 3600'	—	"	3476'	10K#	10/21	0830	"
	10/21	20 sx	TBG @ 3470'	—	"	3272'±	CALC.	10/21	—	REPORTED
	10/25	100 cf	Equalized thru perfs 740'-760', Thru 760'	—	"	615'	Wt of Slurry	10/26	0730	PRW
	10/26	60 cf	Fill 7" csg & 10 3/4 annulus thru perf 100'	0900	PRW	5	VISUAL	11/4		

OGD10 (10/90/GSR1/5M)

Form 136

MEMORANDUM OF TELEPHONE OR PERSONAL CONVERSATION

_____, Calif.

_____ 19____

Operator EXXON Well No. "Newhall Land and Farming Co." 9

Field Castaic Junction Sec. 14 T. 4N R. 17W SB B&M

A ~~XXXXXXX~~ personal telephone conversation was held, concerning above well, with Mr. Ken Kennedy

_____ for above operator on 10-12 19 93 at 1130A M.

Details of the conversation were as follows:

Fishing attempts for the tubing and packer at 11,708' have been unsuccessful. Exxon has attempted to fish with almost the entire budgeted amount of the abandonment of the well. Tubing has been cut at 10,818' and washed over and recut at 11,693'. Unable to recover the second piece of tubing. Top of tubing fish is at 10,818'. Want to set a retainer as close to the top of fish as possible (cem outside of casing is at 10,778') and squeeze cem past fish. OK to proceed.

Wygle visited wellsite at 0700 on Oct 13 to witness squeeze cem operations. Unable to squeeze below ret at 10,800'. No breakdown. Pressure test no good above retainer. OKd 300'+/- plug on top of retainer. 9.3 ppg mud in hole to surface. OK for abandonment mud.

(Signed) Peter R Wygle

Title EMRE

New File

F-31 Rev. D24264

HUMBLE OIL & REFINING COMPANY
WELL RECORD

FIELD: Castaic Junction — LEASE: Newhall Land & Farming Co. — WELL NO. 9

COUNTY: Los Angeles — SURVEY: Sec. 14, T 4 N, R 17 W, S.B.B.& M.

JOB ORDER NO. CAL-109 — LOCATION OF WELL: 1306' N and 5968' E of Corner 11, Rancho San Francisco

OPERATOR: Humble Oil & Refining Company — ADDRESS: Box 2180, Houston, Texas

WELL DATA

ELEV. OF ~~Rotary Table~~ R.D.B. 976 977' ; ELEV. OF TOP FLG. OF OIL STRING CASINGHEAD 963'

DISTANCE BETWEEN TOP OF RTY. DR. BUSHING AND TOP OF TOP FLG. OF OIL STRING CASINGHEAD 14.2'

DISTANCE BETWEEN TOP OF RTY. DR. BUSHING AND TOP OF DERRICK FLOOR 2.6'

COMPLETION FLUID: Oil Emulsion Mud ; TOTAL DEPTH: 12,157' ; TYPE WELL: Potential G Well Standi

FORMATION: Miocene ; RESERVOIR: Mohnian 21 ; COMPLETION DEPTH: (See Note)

COMPLETION DATE: 6-26-52 ; HOLE SIZE BEHIND OIL STRING CSG. 9-7/8" ; SIZE OF OPEN HOLE BELOW CSG. 9-7/8" ; PRODUCING FROM - TO -

PRODUCTION TESTS

INTL OR POT	DATE	SIZE CHOKE OR PLUNGER	HOURS TESTED	BBLS/DAY FLUID	BBLS/DAY OIL	% BS & W	GAS M C F /DAY	GAS OIL RATIO	TBG PR OR S P M	CSG PR OR L STROKE	COR GRAV
NONE											

DRILL STEM TESTS

DATE	TYPE OF TEST OPEN HOLE OR PERF CSG	FORMATION TESTED FROM	FORMATION TESTED TO	SIZE CHOKE TOP	SIZE CHOKE BOTTOM	TOOL OPEN MIN.	FORMATION PRESSURE FLOWING	FORMATION PRESSURE SHUT-IN	RECOVERY - FEET OIL	RECOVERY - FEET WATER	RECOVERY - FEET MUD	RECOVERY - FEET OTHER	W.C.	WAS TEST SATIS.
4-5-52	OH	10437	10452	1"	1/4"	60	1460	5015	-			2500		Yes
4-17-52	OH	11119	11139	1	1/4	60	1250	4980	30	123	60	2500		Yes
4-18-52	OH	11136	11159	1	1/4	60	1235	5015	10	140	60	2500		Yes
4-20-52	OH	11149	11189	1	1/4	Tool failed to open								Yes
4-21-52	OH	11149	11189	1	1/4	Packer failed								No
4-22-52	OH	11158	11189	1	1/4	60	1240	4660	30	183	30	2500		No

CASING, SCREEN AND LINER RECORD

(Continued on page 2)

SIZE	GRADE AND KIND	WT/FT	NO. AND FORM THREADS	CLASS	MANUFACTURER	JOINTS	AMOUNT SET FEET	DEPTH SET AT
10-3/4"	B	40.5	8	1	J & L	28	743.85*	760.3
*Includes guide shoe and float collar.								
7" O.D.	N-80 LJ	26	8R	1	J&L	22	791.39	
7	N-80 LJ	23	8R	1	J&L	72	2793.60	
7	N-80	26	8R	1	J&L	82	3231.49	
7	N-80	29	8R	1	National	54	2199.54	9030.65
7	N-80	32	8R	1	National	56	2021.53	11,052.18
7	N-80	35	8R	1	National	16	687.59	
7 Float Collar			8R	1	HOWCO		1.23	11741.0
7	N-80	35	8R	1	National	1	42.85	
7 Guide Shoe			8R	1	HOWCO		1.63	
							11770.85	11785.0

NOTE: 7" Baker "E" Magnesium retainer set @ 11091' with cement plug in casing to bottom of perforations @ 11120-50'. Float Collar and assembly has not been drilled out.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

September 21, 1994

EXXON Corporation
Attn: Env. & Reg. Affairs
P.O. Box 1600
Midland, TX 79702

Your report of the plugging and abandonment of well "Newhall Land & Farming Co." 77, A.P.I. No. 037-22047, Section 14, T. 4N, R. 17W, S.B. B.& M., Castaic Junction field, Los Angeles County, dated 09-28-93, received 10-06-93, has been examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and the filing of well records.

svl

William F. Guerard, Jr
State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear
Deputy Supervisor

cc: Conservation Committee
Update

Modified OG159 (4/94)

OPERATOR Cotton
LSE & NO Nk+F 77
MAP 253

	(1)	(2)	( )	( )	( )	( )
INTENTION	Drill & Supp	Supp. to drill C	after casing	ABANDON		
NOTICE DATED	10-10-79	1-21-80	9-11-81	5-10-93		
P-REPORT NUMBER	279-317	280-24	281-371	293-158		
CHECKED BY/DATE		4/14/80				
MAP LETTER DATED	→			12/25/93		
SYMBOL	→			80-12002		

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
NOTICE	10-12-79		1-23-80				5-13-93					
HISTORY	→	→	2-20-81				10-6-93					
SUMMARY	→	→	2-20-81									
DISFL IES/ELECTRIC LOG			2-20-81									
DIRECTIONAL SURV			2-20-81									
CORE/SWS DESCRIP			2-20-81									
OTHER												
RECORDS COMPLETE	→		Done 4/14/80				FMN 2/28/94					

ENGINEERING CHECK

T-REPORTS	✓
OPERATOR'S NAME	✓
WELL DESIGNATION	✓
LOC & ELEV	✓
SIGNATURE	✓
SURFACE INSPECTION	2/17/94 FMN
FINAL LETTER OK	

CLERICAL CHECK

POSTED TO 121 _____ 170 MAILED _____ FINAL LETTER MAILED _____

RELEASED BOND _____

REMARKS: _____

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Exxon Corporation **Field** Castaic Junction **County** Los Angeles
Well Newhall Land & Farming Co. #77, **Sec.** 14, **T** 4 N., **R** 17W, S.B. **B. & M.**
A.P.I. No. 037-22047 **Name** Donna R. Devience (Person submitting report) **Title** Sr. Geological Asst (President, Secretary or Agent)
Date September 28, 19 93.

Signature Donna R. Devience

Environmental & Regulatory Affairs P.O. Box 1600 Midland, Tx. 79702 (915) 688-7882
(Address) (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date

(See Attachment)

DIVISION OF OIL AND GAS
RECEIVED
OCT 6 1993
VENTURA, CALIFORNIA

OG103 (6/91/GSR1/5M)

NEWHALL LAND & FARMING CO - 0077 Lease# 061590 Job# 60008763
Field Supt R. O. Storey CMP# 4037220470003 AFE# 00039513
PLUG AND ABANDON

Expected Buildup oil/gas /
Estimated PI

--- 09/14/93 Daily
Attend safety mtg. Open well, Tag fresh water plug @ 403 ft. Pulled and layed down tbg. Ran tbg to 125 ft. Attempt to circulate down 7 in and up 9-5/8in and 13-3/8 in. Unable to get good enough circulating rate for total anulus top plug. Mix and pump 25 sx class G cement with 2% CACL2. Got DOG approval, Peter R. Wygle, on tag of plug @ 403 ft and cmt in 7in from 130 feet to surface.
Note: DOG approved cementing down in tbg between csg strings after well head cut off

--- 09/13/93 Daily
Attend safety mtg. Open well. Pull and lay down all tbg. Filled tbg displacement with 9.8 mud. Rig up MMI wireline. Shot 80 holes from 488 feet to 508 feet. Rig out wireline. Rig up Halliburton. Ran 2-7/8in tbg tail to 514 ft. Tested lines. Mix & pump balanced plug between 7 in and 9-5/8in anules using class G cement with 2% CACL2 as per program. Calculated top of plug 403ft. Rig out Halliburton. Pull tbg. Rig up shooters. Shot 8 holes between all 3 string from 121-123 ft. Rig out shooters. Secure well. eot.

--- 09/10/93 Daily
Drove to job, attend safety mtg. Open well, ran tbg. Tag top of cement at 10423 ft. Performed csg test @ 500 psi. Changed well over ot 9.8 lb mud, pumped 388 bbls. Pulled and layed down 175 jts. Secure well, eot..
* Steve Mulqueen, Div of Oil & Gas, witnessed and approved:
Csg test to 500 psi.
Tag cement plug at 10,423 feet.
388 bbls mud, 9.8 change over.

--- 09/09/93 Daily
Attend safety mtg. Open well, run tbg, tag TOC @ 10900 ft. Rig up Halliburton. Test lines. Mix & pump 68 sx blended cement with 40% SSA-1 + .5% HR7 and .75% CFR-3. Displaced with 60 bbls water. Pulled 5 stds above calculated top of cement at 10400 ft. Reversed around twice. Pulled 5 more stands. Rig out Halliburton. Secure well, rig up to lay down tbg in am, shut down.

--- 09/08/93 Daily
Drove to job, attend safety mtg. Open well (25 psi, csg & tbg). Ran tbg tag fill at 11570. Notified DOG. Got approval to cement with tbg hung @ 11500. Rig up Halliburton. Test lines. Mix & pump 80 sx cement, blended with 40% SSA-1, .5% HR7, and .75% CFR-3, displaced with 63.6 bbls water. Max psi 3500. Pulled 5 stands above calculated TOC at 10900 feet. Reversed around twice. Pull 5 more stds. Secure well, rig out cementers. shut down until am.

--- 09/07/93 Daily
Drove to job, attend safety mtg. Open well, 25 psi on csg & tbg. Pulled and measured all tbg. Measure and pick up 1.9 string 702 ft. Ran tbg until eot. Secure well, shut down.

MORNING REPORT

NEWHALL LAND & FARMING CO - 0077 Lease# 061590 Job# 60008763
Field Supt R. O. Storey CMP# 4037220470003 AFE# 00039513
PLUG AND ABANDON

Expected Buildup oil/gas /
Estimated PI

--- 09/02/93 Daily
Drove to job. Attend safety mtg. Open well (0 psi csg & tbg). Remove tree, install and test class III BOP, Rig up working floor. Spot lay down trailers. PUlled ot of seal assembly. Rig up slickline. Tested lubricator to 3000 psi. RIH with slickline, latch onto plug @ 325 ft. Could not get loose, due to bottom hole pressure. Rig up pump to lubricator, pressured to 500 psi, got loose. Pulled tbg plug. Rig out slickline & circulated, bottoms up, with lease water. Changed completely over. Secure well. eot

--- 09/01/93 Daily
Drove to job. Attend safety mtg. Open well, 50 psi csg. Bleed to 0 in 2 min. 2150 psi on tbg. Rig up slick line. Test lubricator with 2300 psi on tbg with pump. RIH to 5260 ft with slickline. Hit heavy fluid, could go no further. Rig out slickline. Bleed well to 0 psi into blow down tank. Loaded tbg backside with lease water. Set DD plug at 325 ft Secure well. EOT

--- 08/31/93 Daily
Attend safety mtg. Move equipment from well # 8 to well # 77. Rig up guy mast, spot & rig up pump & manifold. Open well to manifold. Tbg side 2000# psi. Pumped 66 bbls lease water down tbg. Pressure still 2000# psi. Closed tbg in. Bled csg from 100 psi to 0 psi in 10 min. Close well in, eot.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T293-314

DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

Report on Operations

EXXON Corporation
Attn: Env. & Req. Affairs
P.O. Box 1600
Midland, Texas 79702

Ventura, California
December 21, 1993

Your operations at well "Newhall Land & Farming Co." 77, API No. 037-22047, Sec. 14, T. 4N, R. 17W, S.B. B.&M. Castaic Junction Field, in Los Angeles County, were witnessed on 9-14-93. Pete Wygle, representative of the supervisor, was present from 1100 to 1200. There were also present Dan Mullins

Present condition of well: 20" ld 40'; 13 3/8" cem 503'; 9 5/8" cem 4015'; 7" cem 11,895', perf & sqz 121'-123', 488'-508', & 10,550;, perf @ ints 10,630'-10,710' (sqz off), perf @ ints 11,272'-11,490'. TD 12,000'. Plugged w/cem 11,500'-10,423', 514'-403', & 130'-5'.

The operations were performed for the purpose of abandonment.

DECISION:

The plugging operations as witnessed and reported are approved.

scv

William F. Guerard, Jr.
State Oil and Gas Supervisor

By

Patrick J. Kinnear
Deputy Supervisor

OG109 (Modified 1993)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS
AND GEOTHERMAL RESOURCES

No. P293-158
Field Code 126
Area Code 00
New Pool Code --
Old Pool Code 20

PERMIT TO CONDUCT WELL OPERATIONS

EXXON Corporation
Attn: Env. & Reg. Affairs
P.O. Box 1600
Midland, Texas 79702

Ventura, California
May 28, 1993

Your proposal to abandon well "Newhall Land & Farming Co." 77, A.P.I. No. 037-22047, Section 14, T. 4 N, R. 17W, S.B. B.&M., Castaic Junction field, --- area, 21 Del Valle pool, Los Angeles County, dated 5-10-93, received 5-13-93, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class II 2M requirements shall be installed and maintained in operating condition at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 11,486'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72 lbs./cu. ft. and a minimum gel-shear strength (10 min.) of 25 lbs./100 sq. ft.
5. This office shall be consulted before deviating from the proposed abandonment program.

Continued on Page 2

Blanket Bond
PK:SF:nr

Engineer Steve Fields

Phone (805) 654-4761

WILLIAM F. GUERARD, Jr.
Acting State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.
OG111

6. THIS DIVISION SHALL BE NOTIFIED:
   a. To witness the location and hardness of the cement plug at 10,450'.
   b. To witness the mudding of the well.
   c. To witness the location and hardness of the cement plug at 403'.
   d. To witness the placing of cement inside the 7" casing and all annuli.
   e. To inspect and approve the cleanup of the well-site before approval of abandonment will be issued.

STATE OF CALIFORNIA-RESOURCES AGENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS
SOUTH OJAI STREET, P. O. BOX 67
SANTA PAULA, CALIFORNIA 93060
(805) 525-2105

May 21, 1984

Mr. L. M. Smedley, Agent
Exxon Corporation
P.O. Box DO
Ventura, CA 93002

Re: "NEWHALL LAND & FARMING CO."77
CASTAIC JUNCTION FIELD

Records on file with this office indicate that the above mentioned well has been suspended since 10-11-80 . Please respond by 6-29-84 , in writting any reasons why the well should not be immediately ordered abandoned pursuant to Section 3237 of the Public Resources Code.

Mike Kratovil

MIKE KRATOVIL
Division Engineer

cc: Newhall Land & Farming Co.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

REPORT OF CORRECTION OR CANCELLATION

Santa Paula, California

Oct. 18, 1983

Mr. L. M. Smedley, Agent
Exxon Corporation
P.O. Box DO
Ventura, CA 93002

In accordance with Sec. 3203, Div. 3, of the PRC requiring proposed operations commence within one year

the following change pertaining to your well No. "Newhall Land & Farming Co." 77, Sec. 14, T. 4N, R. 17W, SB B. & M., Castaic Junction field, Los Angeles County, District No. 2, is being made in our records:

☐ The corrected location is

☐ The corrected elevation is

☐ Report No. , dated , has been corrected as follows:

☒ Your notice to alter casing (Drill, abandon, etc.) dated Sept. 11, 1981, and our report No. P281-336, issued in answer thereto, are hereby cancelled inasmuch as the work will not be done. If you have a drilling bond on file covering this notice it will be returned. No request for such return is necessary.

☐ Other:

MAP	MAP BOOK	CARDS	BOND	FORMS	
				~~414~~	121
				EDP	✓
				N/A	

MS/b

State Oil and Gas Supervisor

For By Michael Stettner
Murray W. Dosch, Deputy Supervisor

OCD165 (8-75 CSPI-3M)

FORM OG111 (11/80/DWRR/5M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

No. P 281-336

126 (field code)
00 (area code)
20 (new pool code)
30 (old pool code)

REPORT ON PROPOSED OPERATIONS

E. C. Hutchinson, Agent
Exxon Corporation
P.O. Box DO
Ventura, CA 93002

Santa Paula, California
Sept. 29, 1981

Your _____ proposal to alter casing well "Newhall Land & Farming Co." 77, A.P.I. No. 037-22047, Section 14, T. 4N, R. 17W, SB B. & M., Castaic Junction field, any area, 21 Del Valle pool, Los Angeles County, dated 9/11/81, received 9/15/81 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Hole fluid of sufficient quality and quantity shall be maintained in the hole to control any subsurface condition, and a reserve supply shall be on hand for emergencies.
2. Unlined sumps, if they contain harmful waters, shall not be located over fresh water bearing aquifers.
3. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
4. Blowout prevention equipment of at least DOG Class II 3M, with a hydraulic actuating system, shall be installed and maintained in operating condition at all times.

Blanket Bond
MD:b

M. G. MEFFERD, State Oil and Gas Supervisor

By John L. Hardoin, Deputy Supervisor

A copy of this report and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

RECEIVED
SEP 15 1981
DIVISION OF OIL & GAS
BAKERSFIELD

DIVISION OF OIL AND GAS

Notice of Intention to Rework Well

This notice and indemnity or cash bond shall be filed and approval given, before rework begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled.

DIVISION OF OIL AND GAS
SEP 21 1981
SANTA PAULA, CALIFORNIA

FOR DIVISION USE ONLY		
BOND	OGD114	OGD121
BB	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well No. "Newhall Land & Farming Co; "77, API No. 037-22047, Sec. 14, T. 4N, R. 17W, S.B. B. & M., Castaic Junction Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth. 12,000'
   Casing shoe @ 11,895'. PBTD @ 11,816'.
2. Complete casing record, including plugs and perforations:
   See Attached.

3. Present producing zone name 21 DelValle Zone in which well is to be recompleted Same
4. Present zone pressure 3850 psi @ 10400 s.s New zone pressure same
5. Last produced 31 Jul 80 (Date) ---- (Oil, B/D) ----- (Water, B/D) 115 (Gas, Mcf/D)

   or

6. Last injected N/A (Date) (Water, B/D) (Gas, Mcf) (Surface pressure, psig.)

The proposed work is as follows:

See Attached

Cancelled

Dry Mountain

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address P.O. Box D.O. (Street)
Ventura, (City) CA (State) 93002 (Zip)
Telephone Number (805) 654-6800

Exxon Company, U.S.A. (Name of Operator)
By J.E. Garrison (Name) 9-11-81 (Date)
Type of Organization Corporation (Corporation, Partnership, Individual, etc.)

(1-78-GSRI-15M)

Attchment I
"Newhall Land & Farming Co." 77
API NO. 037-22047

2. Complete casing record, including plugs and perforations:

1. 13-3/8", 54.5# K-55 Buttress to 503'. Cemented to surface.

2. 9-5/8", 40# K-55 LT&C to 4015' cemented w/715 sacks in 12¼" open hole. Calculated TOC @ 230'±.

3. 7", 29# & 32# K-55 LT&C to 11895' cemented w/984 sacks in 8½" open hole. Calculated TOC @ 9500'±. PBTD @ 11816'. Selectively perfed 10,630' - 10,710 @ 2 spf (sqzd). Reperfed selectively 11,272' - 11,490' @ 2 spf.

4. 2-7/8", 6.5 tubing to 11,149'. Packer @ 11,149'.

The proposed work is as follows:

1. Run baseline temperature survey.

2. Install and test Class III 5,000 psi BOP for DOG.

3. Kill well and POH with tubing and packer.

4. Resqueeze cement perforations at 10,630' - 10,710'.

5. Drill out cement.

6. Set permanent packer @ 11,200'± and RIH with 3½" frac string. Test string to 15,000 psi.

7. Pump 85,000 gallons fracturing fluid with 135,000 lbs. of ceramic proppant at 11,000 psi±.

8. Run temperature logs to determine fracture height and proppant placement.

9. Drill out permanent packer.

10. RIH with production tubing and packer to 11,200'±.

11. Unload well with coiled tubing and nitrogen.

12. Put well on production. Run pressure buildup test.

DIVISION OF OIL AND GAS
RECEIVED
FEB 20 1981
SANTA PAULA, CALIFORNIA

ORIGINAL

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

API No. 037-22047

WELL SUMMARY REPORT

Operator: Exxon Corporation	Well: Newhall Land & Farming #77
Field: Castaic Junction	County: Los Angeles; Sec. 14; T. 4N; R. 17N; B.&M. SB
Location (Give surface location from property or section corner, street center line and/or California coordinates): 1228' North along section line and 5977' East at right angles from Corner 11, RSF of Section 14.	Elevation of ground above sea level: 964'
Commenced drilling (date): 1-8-80	Total depth (1st hole): 12,000'; (2nd): ; (3rd):
Completed drilling (date): 3-4-80	Present effective depth: 11,816'
Commenced producing (date): 5-6-80	Junk:
[X] Flowing [ ] Pumping [ ] Gas lift	
Name of producing zone(s): 21 Zone	
Depth measurements taken from top of: [ ] Derrick Floor [ ] Rotary Table [X] Kelly Bushing	Which is 15 feet above ground

GEOLOGICAL MARKERS	DEPTH
15 Zone	10,037'
21 Zone	11,270'

Formation and age at total depth: 21 Zone - Miocene

	Clean Oil (bbl per day)	Gravity Clean Oil	Percent Water including emulsion	Gas (Mcf per day)	Tubing Pressure	Casing Pressure
Initial Production	0			125	325	
Production After 30 days	6 bbls of fluid			282	370	

CASING RECORD (Present Hole)

Size of Casing (API)	Top of Casing	Depth of Shoe	Weight of Casing	Grade and Type of Casing	New or Second Hand	Size of Hole Drilled	Number of Sacks or Cubic Feet of Cement	Depth of Cementin (if through perforations)
20"	Surface	40'		Conductor	New	Driven		
13 3/8"	Surface	503'	54.5#	K-55 BT	New	17 1/2"	630 sx	
9 5/8"	Surface	4015'	40.0#	K-55 LT&C	New	12 1/4"	1200 sx	
7"	Surface	11,895'	29#, 32#	N-80 LT&C	New	8 1/2"	984 sx	

PERFORATED CASING (Size, top, bottom, perforated intervals, size and spacing of perforation and method.)

Perfed: 2 SPF: 11,486'-11,466'; 11466'-11,450'; 11,441'-11,424'; 11420'-11,400'; 11,394'-11,374'; 11,374'-11,362'; 11,352'-11,332'; 11,332'-11,313'; 11,308'-11,299'; 11,292'-11,284'; 10,710'-10,680'; 10,655'-10,630'

Was the well directionally drilled? If yes, show coordinates at total depth
[X] Yes [ ] No 633.66' S and 430.87' W

Electrical log depths: Compensated Density: 11,888'-4015'. Formation Factor: 11,888'-4015'. DISFL: 11,993'-510'. Shale Density: 12,000'-9940'. Dipmeter: 11,883'-4015'. Cement Log: 11,700'-9000'.

Other surveys: Deviation Survey, Direction 1 Survey, Core Analysis.

In compliance with Sec. 3215, Division 3 of the Public Resources Code, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Name: D. Daly	Title: Revenue & Regulatory Acctg. Section Head
Address: 1800 Ave. of the Stars	City: Los Angeles, Ca; Zip Code: 90067
Telephone Number: (213) 552-5400	Signature: D. Daly; Date: 2/13/81

SUBMIT IN DUPLICATE

DIVISION OF OIL AND GAS
Cementing/Plugging Memo

Operator EXXON CORPORATION Well No. "N.L.&.F" 77
API No. 037 - 22047 Sec. 14, T. 04N, R. 17W, SB B&M
Field CASTAIC JUNCTION, County LOS ANGELES. On 9-14-93,
Mr./Ms. P Wyale, representative of the supervisor, was present from 1100 to 1200.
There were also present DAN MULLINS

CASING RECORD OF WELL: 20" ld 40': 13-3/8" cem 503': 9-5/8" cem 4015': 7" cem 11,895', perf & sqz 121'-123', 488'-508', & 10,550', perf @ ints 10,630'-10,710' (sqz off), perf @ ints 11,272-11,490'. TD 12,000'. Plugged w/cem 11,500'-10,423', 514'-403', & 130'-5'.

The operations were performed for the purpose of ABANDONMENT

☐ The plugging/~~cementing~~ operations as witnessed and reported are approved.

☐ The location and hardness of the cement plug @_____' is approved.

Hole size:_____" fr._____' to_____', _____" to_____' & _____" to_____'

Casing				Cemented			Top of Fill		Squeezed Away	Final Press.	Perfs.
Size	Wt.	Top	Bottom	Date	MO-Depth	Volume	Annulus	Casing			

Casing/~~tubing~~ ~~recovered~~ perf 4 hpf: 7" shot/~~cut~~ at 488-508', 121-123', _____' pulled fr._____';
_____" shot/cut at_____', _____', _____' pulled fr._____'.

Junk (in hole):

Hole fluid (bailed to) at_____'. Witnessed by_____

Mudding	Date	Bbls.	Displaced	Poured	Fill	Engr.
CLAY-GEL 9.8 #/g	9-10-93	388±	TBG @ 10423'	—	SURFACE	S. MULQUEEN

CLEAN OUT @ 11570'

Cement Plugs		Placing	Placing Witnessed		Top Witnessed			
Date	Sx./cf	MO & Depth	Time	Engr.	Depth	Wt/Sample	Date & Time	Engr.
9/9	148 sx	TBG @ 11500'	—	REPORTED	10,423'	5K#	9/10 0800	S. MULQUEEN
9/13	148 cf	✓ 514	—	✓	403	wt of tbg	9/14 0750	PRW
9/14	30 cf	✓ 130	1200	PRW	5ft	WITNESS	9/14 1100	PRW
9/15	50 cf	Pump to annulus thru 7" tbg hg 397'	—	RPW	5'	✓	9/23 1000	[illegible]

OGD10 (10/90/GSR1/5M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California
May 19, 1994

EXXON Corporation
Attn: Env. & Reg. Affairs
P.O. Box 1600
Midland, Texas 79702

Your report of plugging and abandonment of well "Newhall Land & Farming Co." 1, A.P.I. No. 037-16472, Section 23, T. 4N, R. 17W, SB B.&M., Castaic Junction field, Los Angeles County, dated October 15, 1993, received October 22, 1993, has been examined in conjunction with operations witnessed and records filed in this office. We have determined that all of the requirements of this Division have been fulfilled.

tkc
cc: Conservation Committee
Update

WILLIAM F. GUERARD, Jr.
State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear, Deputy Supervisor

OGD159 (6/92)

OPERATOR Exxon Corp.
WELL NO. "Newhall Land & Farming Co." 1
MAP

TENTION	ABANDON	Supp. Add.				
NOTICE DATED	10-29-92	10-15-93				
P-REPORT NUMBER	292-319	293-393				
CHECKED BY/DATE		9M				
MAP LETTER DATED		2-19-94				
SYMBOL						

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
NOTICE	11-4-92		10-22-93									
HISTORY			1-21-94									
SUMMARY												
E-LOG												
MUD LOG												
DIPMETER												
DIRECTIONAL												
CORE/SWS												
CBL												

ENGINEERING CHECK

T-REPORTS						
OPERATOR'S NAME		✓				
WELL NO.		✓				
LOC & ELEV		✓				
SIGNATURE		✓				
SURFACE INSP.		✓				
DRILL CARD		✓				

RECORD'S COMPLETE 2-15-94 SAM

FINAL LETTER OK
MAILED
RELEASED BOND

INJECTION BOOK
IDLE WELL LIST
SURFACE INSP. CARD

REMARKS: Sfc insp OK 4-12-92 PBW

TO RELEASE FROM CONFIDENTIAL
ANDONED-REMOVED FROM E.D.P.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. T294-43

Report on Operations

EXXON Corporation
Attn: Env. & Req. Affairs
P.O. Box 1600
Midland, Texas 79702

Ventura, California
February 15, 1994

Your operations at well "Newhall Land & Farming Co." 1, API No. 037-16472, Sec. 23, T. 4N, R. 17W, S.B. B.&M. Castaic Juncion Field, in Los Angeles County, were witnessed on 12-28-93. Steve Mulqueen, representative of the supervisor, was present from 0800 to 1100. There were also present C. Ballard, Operator's Rep.

Present condition of well: 20" cem 70'; 13 3/8" cem 1591'; 7" cem 11,792', perf 11,608' WSO, cp 100' & 1570', perfs 11,636'-11,778'. TD 11,952'. Plugged w/ cem 11,952'-11,783', 11,634'- 10,702', 1617'-1452' & 124'-5'.

The operations were performed for the purpose of abandonment.

DECISION:

The plugging operations as witnessed and reported are approved.

SCV

William F. Guerard, Jr.
State Oil and Gas Supervisor

By Patrick J. Kinnear

Patrick J. Kinnear
Deputy Supervisor

OG109 (Modified 1993)

T

DIVISION OF OIL AND GAS
Cementing/Plugging Memo

T294-43

Operator Exxon Corp. Well No. "Newhall Land & Farming Co" 1
API No. 037-16472 Sec. 23, T. 4N, R. 17W, SB B&M
Field Castaic Jct, County LA. On 12-28-93,
Mr./~~Ms.~~ S. MULQUEEN, representative of the supervisor, was present from 0800 to 1100.
There were also present C. Ballard, operator's rep.

Casing record of well: 20" cem 70'; 13 3/8" cem 1591'; 7" cem 11792', perf 11608' WSO, cp 100' & 1570', perfs 11636'-11778'. TD 11952'. Plugged w/ cem 11952'-11783', 11634'-10702', 1617'-1452' & 124'-5'.

The operations were performed for the purpose of abandonment

☒ The plugging/~~cementing~~ operations as witnessed and reported are approved.

☐ The location and hardness of the cement plug @_____' is approved.

Hole size:_____" fr._____' to_____', _____" to_____' & _____" to_____'

Casing				Cemented			Top of Fill		Squeezed Away	Final Press.	Perfs.
Size	Wt.	Top	Bottom	Date	MO-Depth	Volume	Annulus	Casing			
7"				12-27	TBG @ 1617' BRADEN HD.	99 sx	—	1452'	78 cf		1570'-1590'
7"				12-28	TBG @ 124'	113 cf	5'	5'	—		100'-102'

Casing/tubing recovered: 7" shot/cut at 1570' PERFORATE TO 1590', _____' pulled fr._____';
7" shot/cut at 100 TO 102', _____' pulled fr._____'.

Junk (in hole):

Hole fluid (bailed to) at_____'. Witnessed by

Mudding	Date	Bbls.	Displaced	Poured	Fill	Engr.
10 # mud	12-22-93	345	to 10,702	—	to 1590	PRW

CO 11,686'

Cement Plugs		Placing	Placing Witnessed		Top Witnessed			
Date	Sx./cf	MO & Depth	Time	Engr.	Depth	Wt/Sample	Date & Time	Engr.
12/22	128 cf	tbg 11,634	~	PRW	10,702	6k tbg	12-23 1800	PRW
12/27	99 sx	TBG @ 1617'	—	"	1452	ALL TBG WEIGHT	12/28 0830	S. MULQUEEN
12/28	113 cf	TBG @ 124'	1030	S. MULQUEEN	5'	VISUAL	12/28 1100	"

Pressure tested csg 10,702'-sf. to 750 psi, 10 min.

OGD10 (10/90/GSR1/5M)

DISTRICT 2

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

RECEIVED
JAN 21 1994
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
VENTURA, CALIFORNIA

23-4-17

History of Oil or Gas Well

Operator Exxon Corporation **Field** Castaic Junction **County** Los Angeles
Well Newhall Land & Farming Co. 1, **Sec.** 8, **T.** 4N, **R.** 16W, **S.B. & M.**
A.P.I. No. 037-16472 **Name** Julie H. Mitchell (Person submitting report) **Title** Staff Office Assist. (President, Secretary or Agent)
Date January 14, 19 94.

Signature Julie H. Mitchell

Environmental and Regulatory Affairs, PO Box 1600, Midland, TX 79702 (Address) 915/688-7888 (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date

12/09/93 Move in rig up. Guy rig out, rig up tubing racking platform, rig up blow down line.

12/10/93 Rig up hard line, pump hoses to rig pump. Rig up plate steel on tubing platform and weld tubing basket to platform. Make stand from outrigger and weld on well. Hook up pump hoses to line coil tubing and 2-7/8 inch tubing. Pump down line coil tubing (plug). Pump down 2-7/8 inch tubing. Pump 2 barrels (pressure up). Rig up pump hose to 7 inch casing. Casing pressure 950 psi. Bled down 7 inch casing to blow down tank. Fill 7 inch casing with 150 barrels water. Latch on liner coil tubing. Remove packer, pull coil tubing, found cut at master valve. Recover 4 foot piece. Ran in hole with 1-3/4 inch jars on sand line. Tag up @ 13 feet. Pull out of hole, close in well.

12/11/93 Check well, tubing 0 psi, casing 250 psi. Bleed casing, fill well with 5 barrels fresh water. Fill tubing with 1 barrel fresh water. Well dead. Nipple down production tree. Nipple up Class III BOP and BOE, tested okay. Rig up working floor and tubing equipment. Close well in due to bad weather.

RECEIVED
JAN 21 1994
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
VENTURA, CALIFORNIA

12/13/93 Open well, no pressure. Work stuck tubing. Rotate and work to 110,000#. Tubing parted after 20 minutes @ 110,000 approximately 90 feet down 2-7/8 tubing. Make up line grapple on 1-3/16 overshot. Ran in hole to 29 feet latch on 1 inch coil tubing. Pull up. Wait on coil tubing unit. Pull up on coil tubing. Parted @ 11000#. Fish tubing with comb overshots 4 times. Parted all 4 times - 1 inch to 4 inch. Lay down fishing tool and rod subs. Raise floor and haul in 3500 feet 1-1/4 inch tubing. Close well in.

12/14/93 Open well (no psi). Make up 1-5/16 inch overshot with line grapple. Ran in hole with 6 joints 1-1/4 inch tubing. Pull coil tubing. Parted. Pull out of hole standing back 1-1/4 inch tubing. Pull line tubing out bottom of stand, cutting tubing. Recovered about 240 feet. Make up 5-3/4 X 3-1/16 inch overshot on 2-7/8 inch tubing. Ran in hole to 180 feet. Latch on fish. Rig up for 1-1/4 BOP. Make up overshot with line grapple. Ran in hole to 180 feet. Could not get 2-7/8 inch tubing. Pull out of hole, close in well.

12/15/93 Open well, no pressure. Rig up Dia-Log. Ran in hole with 1-11/16 sinker bars and 2-1/8 chemical cutter to 178 feet. Could not get in fish. Pull out of hole. Ran in hole with 1-3/8 sinker bars, could not get in fish. Pull out of hole. Ran in hole with line sinker bar. Could get in fish. Rig out Dia-Log. Work 2-7/8 tubing, tubing moved 20 feet. Work tubing free - 2 hours @ 10000#. String weight 94000#. Pull out of hole to 5-3/4 inch fishing tool. Lay down tools. Lay down 6 joints 1-1/4 inch in derrick. Fill casing with 1 barrel fresh water. Rig up plastic around working floor. Pull out of hole, wet with 2-7/8 inch and 1 inch tubing. Lay down 60 feet in ct and 2 joints 2-7/8 inch tubing. Close in well.

12/16/93 Open well, no pressure. Continue laying down and cutting line coil tubing while pulling out of hole with 2-7/8 inch N-80 tubing, wet with water. Pull 35+0 stands. Came to mud. Rig up tubing basket and skid to lay down all tubing. Lay down 3 joints in H&H tank. Close in well.

12/17/93 Open well, no pressure. Continue pulling out of hole laying down 2-7/8 N-80 tubing with 1 inch coil tubing inside, wet with mud inside H&H tubing transfer tank. Fill casing with 30 barrels fresh water. Displace for 3937 feet, tubing is 24-1/2 barrel, well took 5 barrels. Lay down 62 joints, haul trailer to pipe yard. Unload tubing on racks.

12/18/93 Open well, no pressure. Continue pulling out of hole laying down 2-7/8 inch tubing with line coil tubing inside wet with mud. Lay down 80 joints. Fill well with 20 barrels tubing displacement 16 barrels. Close in well.

12/19/93 Open well, no pressure. Continue pulling out of hole with 2-7/8 inch N-80 tubing with line coil tubing inside and wet with mud. Stand back 26+0 laying down line out bottom. Came to heavy mud, start laying down singles in tubing bagkit on trailer. Lay down 25 joints. Fill well with 20 barrels displacement of tubing is 17 barrels. Close in well.

12/20/93 Open well, no pressure. Continue pulling out of hole with 2-7/8 inch N-80 tubing with line coil tubing inside and wet with mud. Lay down 53 joints and stand back 40+0. Pipe very tight. Lay down packer and perforated stub. Ran in hole with 10+0 stand kill string. Close in well.

12/21/93 Open well, no pressure. Lower working floor. Clean floor and working area. Measure in hole with 67 stands, 134 joints out of derrick. Circulate out mud every 40 joints. Due to heavy mud in tubing, lay down 18 joints bad tubing. Measure and pick up 382 joints tubing (work string). With tubing tail @ 10800 feet, reverse circulate well. Ran in hole, tag @ 11686 feet. Pull to 11364 - 300. Break circulation @ 2700# @ 1.3 barrels per minute. Ran in hole back to 11674. Rig up Halliburton. Circulate well @ 2500# @ 1.5 barrels per minute. Formation taking water. Close well in.

12/22/93 Continue pumping well with Halliburton. Circulate heavy mud out of casing. Surface equipment plugging up with mud. Pumped 1000 barrels fresh water. Recover 375 barrels mud and water due to weak zone. Well cleaned up. Mix and pump 128 cubic feet, 91 sacks class G cement @ 1400# maximum. Displace with 61 barrels fresh water. Pull 40 joints to 10434 feet. Cement from 11674 to 10674 estimated. Reverse out 40 minutes. Wait on cement for 5 hours. Ran in hole tag cement @ 10702 feet, okay. Test 7 inch casing from 10702 t surface @ 500# for 5 minutes, okay. Rig to pump 9.7 ppg P&H mud. Circulate 400 barrels mud. Pull out of hole with 11+0 stands. Close in well. Steve Field, Div of Oil and Gas, gave verbal approval to pump 1000# cement plug from 11674 to 10674. Peter R. Wygle, Div of Oil and Gas, witnessed and approved tag of plug @ 10702 feet, pressure test casing and mud operations from 10702 to 1590 feet.

12/23/93 Open well, no pressure. Continue laying down 2-7/8 inch N-80 workstring. Lay down 170 joints. Close in well.

12/27/93 Open well, no pressure. Continue laying down 2-7/8 inch N-80 work string. Lay down 40 joints. Had to lay down 134 joints 2-7/8 inch N-80 junk pipe. Had to lay down 40 joints in doubles because of tight pipe. Fill hole with 30 barrels 9.7 ppg P&A mud. Rig up kill line to 10-3/4 inch casing. Bleed casing 10-3/4 inch. Rig up MMI, ran in hole with 20 feet perf gun, 4 shots per foot. Shoot hole from 1570 to 1590 feet. Pull out of hole circulate 60 barrels mud down 7 inch and up 10-3/4 casing. Ran in hole with 54 joints 2-7/8 inch tubing. With tubing tail @ 1617 feet, rig up Halliburton. Test lines. Mix and pump 114 cubic feet, 99 sacks neat cement down 2-7/8 inch tubing and up 10-3/4 casing. Displace with 8 barrels lease water. Open 7 inch casing to gravitate in cement. Pull out of hole with 2-7/8 tubing. Rig up MMI, ran in hole with 2 inch perf gun 4 shots per foot to 100 feet. Shoot from 100 to 102 feet, pull out of hole. Close in well.

12/28/93 Open well. Ran in hole, tag cement @ 1452 feet. Pull out of hole laying down 50 joints 2-7/8 tubing. Rig up Halliburton with tubing tail @ 124 feet. Mix and pump 109 cubic feet, 95 sacks, neat cement down 2-7/8, up 7 & 10-3/4 inch casing to surface. Pull out of hole laying down 4 joints. Clean up BOPE and working floor and tubing equipment. Nipple down BOP, load out BOP. Rig out pump and miscellaneous equipment. Load out BOE. Load out 100 joints junk tubing. Cut 30 stands of tubing in half. Clean out Baker tank and mud pit. Stephen Mulqueen, Div of Oil and Gas, witnessed tag of bfw plug @ 1452 feet and approved placement of surface plug from 124 to surface in 7 inch and 10-3/4 inch annulus.

12/29/93 Rig down move out. Load out junk 2-7/8 tubing. Haul rig and tubing to upper lease. Off load tubing, return to location, load up flow lines and miscellaneous equipment. Load up rig mats.

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. P293-393

PERMIT TO CONDUCT WELL OPERATIONS

126
(field code)
00
(area code)
--
(new pool code
00
(old pool code)

EXXON Corporation
Attn: Env. & Req. Affairs
P.O. Box 1600
Midland, Texas 79702

Ventura, California
October 25, 1993

Your supplementary proposal to abandon well "Newhall Land & Farming Co." 1, A.P.I. No. 037-16472, Section 23, T. 4N, R. 17W, S.B. B.&M., Castaic Junction field, ---- area, Main pool, Los Angeles County, dated 10/15/93, received 10/22/93, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Requirements specified in permit No. P292-319 dated November, 1993 shall apply.

Fields/Kennard
c/o 10 11,674
OK

Blanket Bond
SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

William F. Guerard, Jr.
State Oil and Gas Supervisor

By

Patrick J. Kinnear
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111 (Modified 1993)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

SUPPLEMENTARY NOTICE

FOR DIVISION USE ONLY			
BOND	FORMS		EDP WELL FILE
	OGD114	OGD121	
BB	—	✓	

A notice to the Division of Oil and Gas dated October 29, 19 92, stating the intention to abandon (Drill, rework, abandon) well "Newhall Land & Farming Co." 1 (Well designation), API No. 037-16472,

Sec. 23, T. 4N, R. 17W, S.B. B.& M., Castaic Junction Field,

Kern County, should be amended because of changed conditions.

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:

2. The total depth is: _____ feet. The effective depth is: _____ feet.

3. Present completion zone (s): _____ (Name). Anticipated completion zone (s): _____ (Name).

4. Present zone pressure: _____ psi. Anticipated/existing new zone pressure: _____ psi.

We now propose: *(A complete program is preferred and may be attached.)*

Please extend P292-319 dated November 6, 1992 for one year.

RECEIVED
OCT 20 1993
DIVISION OF OIL & GAS
BAKERSFIELD

DIVISION OF OIL AND GAS
RECEIVED
OCT 2 2 1993
VENTURA, CALIFORNIA

Note: If the well is to be redrilled, show proposed bottom-hole coordinates and estimated true vertical depth.
The Division must be notified if changes to this plan become necessary.

Name of Operator	Telephone Number	
Exxon Corporation	915/688-7888	
Address	**City**	**Zip Code**
P.O. Box 1600 ML 14	Midland, TX	79702
Name of Person Filing Notice	**Signature**	**Date**
Julie H. Mitchell	Julie H. Mitchell	10/15/93

File In Duplicate

OG123 (3/90/GSR1/5M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

No. P292-319
Field Code 126
Area Code 00
New Pool Code —
Old Pool Code 25

PERMIT TO CONDUCT WELL OPERATIONS

EXXON Corporation
Attn: Env. & Reg. Affairs
P.O. Box 1600
Midland, Texas 79702

Ventura, California
November 6, 1992

Your proposal to abandon well "Newhall Land & Farming Co." 1, A.P.I. No. 037-16472, Section 23, T. 4 N, R. 17W, S.B. B.&M., Castaic Junction field, --- area, Main pool, Los Angeles County, dated 10-29-92, received 11-04-92, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class II 2M requirements shall be installed and maintained in operating condition at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 11,778'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72 lbs./cu. ft. and a minimum gel-shear strength (10 min.) of 25 lbs./100 sq. ft.
5. The cement plug proposed to be placed from 11,783' to 11,783' extends from 11,783' to at least 11,508'
6. The well shall be plugged with cement from 324' to 224' to cover a high pressure water zone encountered during drilling.

Blanket Bond
SF:nr

Engineer Steve Fields

Phone (805) 654-4761

WILLIAM F. GUERARD, Jr.
Acting State Oil and Gas Supervisor

By Patrick J. Kinnear
Patrick J. Kinnear
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.
OG111

7. This office shall be consulted before deviating from the proposed abandonment program.
8. THIS DIVISION SHALL BE NOTIFIED:
   a. To witness the location and hardness of the cement plug at 11,508' and 1470'.
   b. To witness the mudding of the well.
   c. To witness the placing of the surface plug or to verify its location.
   d. To inspect and approve the cleanup of the well site before approval of abandonment will be issued.

DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

NOTICE OF INTENTION TO ABANDON WELL

This notice must be given at least five days before work is to begin.

DIVISION OF OIL AND GAS
RECEIVED
NOV 0 4 1992
VENTURA, CALIFORNIA

FOR DIVISION USE ONLY			
CARDS	BOND	FORMS	
		OGD114	OGD121
	BB	11-4-92	✓

DIVISION OF OIL AND GAS

In compliance with Section 3229, Division 3, Public Resources Code, notice is hereby given that it is our intention to abandon well No. Newhall Land & Farming Co 1 (Well designation), API No. 037-16472

Sec. 8, T. 4N, R. 16W, S.B. B. & M., Castaic Junction Field, Los Angeles County.

commencing work on 10/26, 19 92.

The present condition of the well is:

1. Total depth 11952'

2. Complete casing record, including plugs and perforations
   20" 48# conductor 0'-70'
   13 3/8" 54.5# csg 0'-1591'
   7" 23/26/29/32# csg 0'-11952'
   perfs: 11636'-11744' (4 SPF)
   11670'-11778' (8 SPF)

   Botttom Hole Plug 11,952'-11,783'

3. Last produced 1986 (Date) 1 (Oil, B/D) 60 (Water, B/D) 5 (Gas, Mcf/D)

OR

4. Last injected _____ (Date) (Water, B/D) (Gas, Mcf/D) (Surface pressure)

Additional Data for dry hole (show depths)

5. Uppermost productive zone:

   Top of 10 Sand: 10,630'

6. Stratigraphic markers:

7. Formation and age at total depth:

8. Base of fresh water sands: 1580'

The proposed work is as follows:

1. MIRU. Install and test a DOG class III 5M BOPE.
2. Clean out to the bottom of the 7" casing 11,783'.
3. Place a Class "G" cement plug from 11783'-11536'. DOG to witness.
4. Shoot 20'of 4 SPF @ 1590-1570', place class "G" cement plug from 1590' to 1470' to cover fresh water base. DOG to witness.
5. Shoot 4 holes @ 100'. Circulate cement plug from 100' to surface getting returns in casing/conductor annulus.
6. Cut off casing @ 5' and weld plate with well identifier.
8. Clean location. DOG will inspect.

It is understood that if changes in this plan become necessary, we are to notify you immediately

Address 25 Desta Drive P.O. Box 1600 (Street)
Midland, TX 79702 (City) (State) (Zip)
Telephone Number 915-688-7888

Exxon Corp. (Name of Operator)
By Judy M. Bagwell (Name-Printed)
Judy Bagwell (Name-Signature) 10-29-92 (Date)
Type of Organization Corporation

Forms\Abandon.DOG

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
NOV - 1 1978
SANTA PAULA, CALIFORNIA

History of Oil or Gas Well

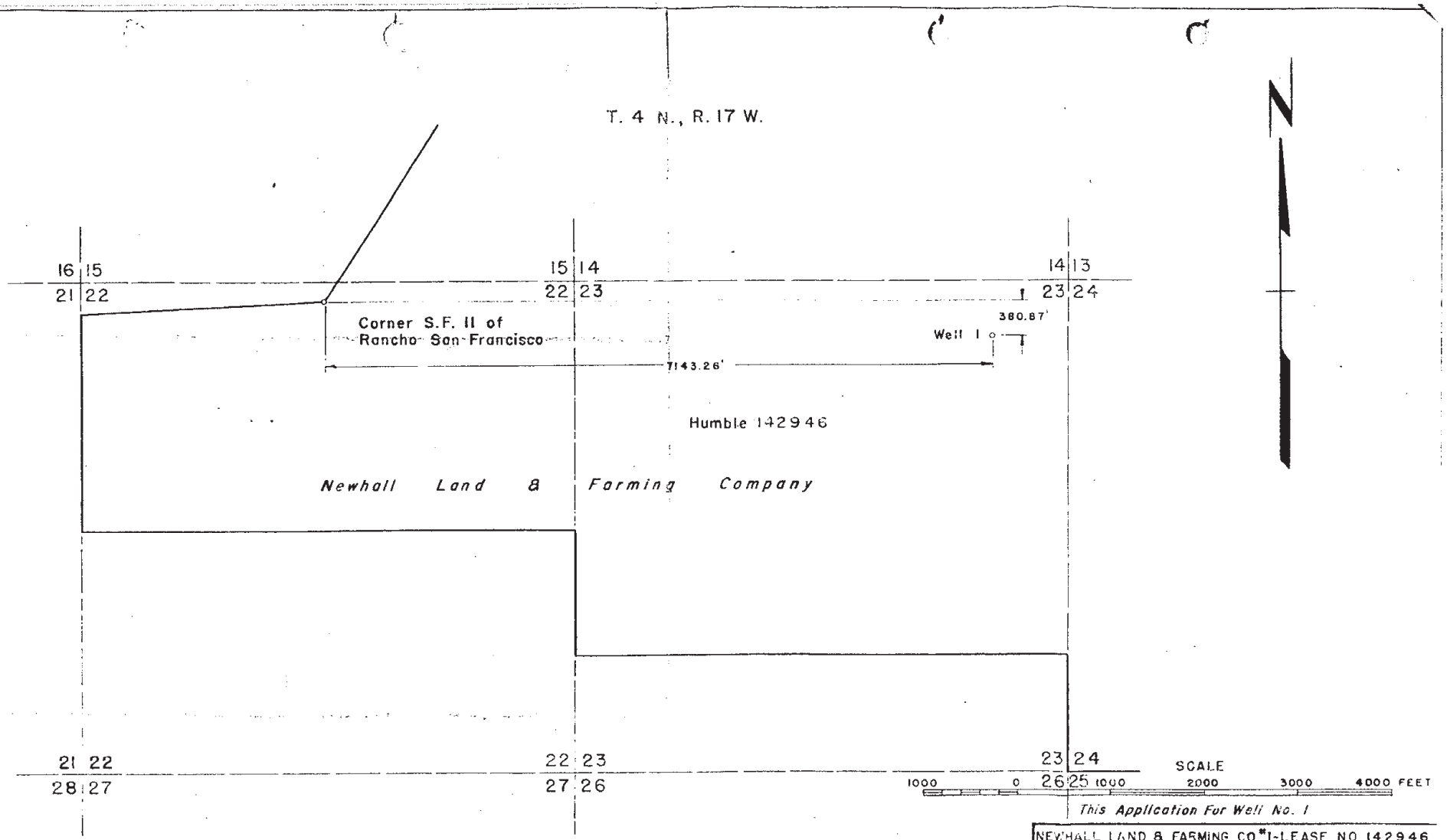
Operator EXXON CORPORATION Field or County Castaic Junction
Well "Newhall Land & Farming Co." 1, Sec. 23, T 4N, R 17W, S.BB. & M.
A.P.I. No. 037-16472 Name E. L. McBee (Person submitting report) Title Operations Supt. (President, Secretary or Agent)
Date October 20, 19 78

Signature M. Ferrell for E.L.M. 10/27

2755 Orange Avenue, Long Beach, CA 90807 (Address) (213) 426-8844 (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date	
9-1-76	MIRU. Installed lubricator and perforated with 2 spf from 11,744' to 11,636' using 2-1/8" link jet gun. Tagged bottom at 11,764' prior to perforating. Hit fluid at 6300' on first perf run and fluid at 3500' on last run. Had no pressure on tbg.
9-2-76	Well shut-in for 12 hrs with 250# tbg pressure. Opened well to tank. Flowed 1 Bbl of oil to tank in 30 min then died. Shut-in to pressure back up.
-76	Shut in for 20 hrs. Tbg pressure 450#. Opened to tank and bled to zero in 15 min (no fluid).
9-4-76	Pressured up with gas lift gas to 1,425#. Shut in for 20 hrs. Opened well to tank and bled to zero in 22 min (no fluid). Shut-in pressure 550#.
9-5-76	Well shut-in.



NEWHALL LAND & FARMING CO. #1-LEASE NO. 142946
LOS ANGELES COUNTY, CALIFORNIA
CALIFORNIA DISTRICT

HUMBLE OIL & REFINING COMPANY
CIVIL ENGINEERING DIVISION
GULF COAST DIVISION

DRAWN Bomb	SCALE 1" = 1000'	FILE NO.
CHECKED	DATE 7-7-49	STB-1445
APPR.	REVISED	

FORM 159 (9-49)

(17)

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS

REPORT OF WELL ABANDONMENT

Los Angeles California

April 9 1956

Mr. J E Cox Agent
Humble Oil & Refining Co
613 San Fernando Road
Newhall California

Dear Sir

Your report of abandonment of Well No. "Newhall Land & Farming Co." 54, Sec. 23, T. 4 N, R. 17 W, S B B. & M., Castaic Junction field, Los Angeles County, dated April 2, 1956, has been examined in conjunction with records filed in this office.

A review of the reports and records shows that the requirements of this Division, which are based on all information filed with it, have been fulfilled.

MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
18A N.W. cor of Sec. 23	ok		[illegible]		[illegible]

Orig - Company, L.A.
cc - Mr E H Musser
Company, Newhall (2)
Newhall Land & Farming Co
Conservation Committee
Mr L A Dutton
Fire Prevention Bureau
es

E. H. MUSSER
State Oil and Gas Supervisor

By R. W. Walling
Deputy Supervisor

17401 8-55 11,200 SPC

WORK PERFORMED:

Drill_____ Redrill_____ Deepen_____

Plug_____ Alter casing_____

Water flood_____ Water disposal_____

Abandon_____

Other_____

STATUS: (Date)

Producing_____

Recomp. prod._____

Water flood_____

Water disposal_____

Abandoned_____

Other_____

MAP AND BOOK_____

RECORDS FILED & DATE: Clerk_____

Summary (dup.)_____

Log & Core (dup.)_____

History (dup.)_____

E-log_____

Radio log_____

✓D. Survey Surf-12077 7/5/4 OK

Other_____

(Check records for signature and correct name of operator or well, S.T.R. and field.)

Location_____ Notice states_____

Elevation_____ Notice states_____

Production Reports_____

(If production reports not received, make notation and inform Sr. Steno. when rec'd.)

If stimulation or disposal well:
Form 121_____ Folder_____

RECORDS & REQUIREMENTS CHECKED: Eng.____

Surface inspection_____

Data needed_____

Request records_____

Correct records_____
(Specify)

CARDS_____

BOND: Ok 1.7

Hold___ Reason_____

Release____ Date elig._____

End premium year____
Release requested___ (Check one)
Bond superseded____
Well abandoned_____

FINAL LETTER_____
and
FILE CLEARED_____

Clerk:

F 170____

F 165____
165A___

F 150b

F 159____

F 121____

Form 100.

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

DIVISION OF OIL AND GAS
APR 9 1956
LOS ANGELES, CALIFORNIA

Operator Humble Oil & Refining Company

Well No. "Newhall Land & Farming Co." #54

Location 969' South and 3727' East from Corner 11, Rancho San Francisco, Los Angeles County.

Date April 9, 1956

Geologist Roy M. Smith

Field Castaic Junction Proj.

Sec. 23, T. 4-N, R. 17-W, S.B. B.&M.
Elevation above sea level 929 feet.
All depth measurements taken from top of Rotary Drive Bushing, which is 12.70 feet above ground.

Signed S. D. McCarty

Title District Superintendent (Agent)

Commenced drilling 12-19-55 Completed drilling 2-29-56 Drilling tools-Rotary

Total depth 12077 Plugged depth --

Junk None

Commenced producing - Dry Hole

GEOLOGICAL MARKERS	DEPTH
Top of Miocene (E. Log)	7600'

Initial Production - None

CASING RECORD

Size of Casing	Depth of Shoe	Top Csg	Weight	New Used	Seamless Lapweld	Grade	Size Hole	Sacks Cemt.	Depth Perfs.
10-3/4	831'	17	40.5	New	SS	J-55	16"	500	-

PERFORATIONS

None

Electrical Log Depths 10648, 10941, 11960, 12062, 12077'.

Form 103.

DIVISION OF OIL AND GAS

HISTORY OF OIL OR GAS WELL

Operator Humble Oil & Refining Company

Field Castaic Junction

Proj.

Well No. Newhall Land & Farming Co. #54

Sec. 23, T. 4-N, R. 17-W, S.B. B.&M.

Signed S. D. McCarty

Date April 2, 1956

Title District Superintendent (Agent)

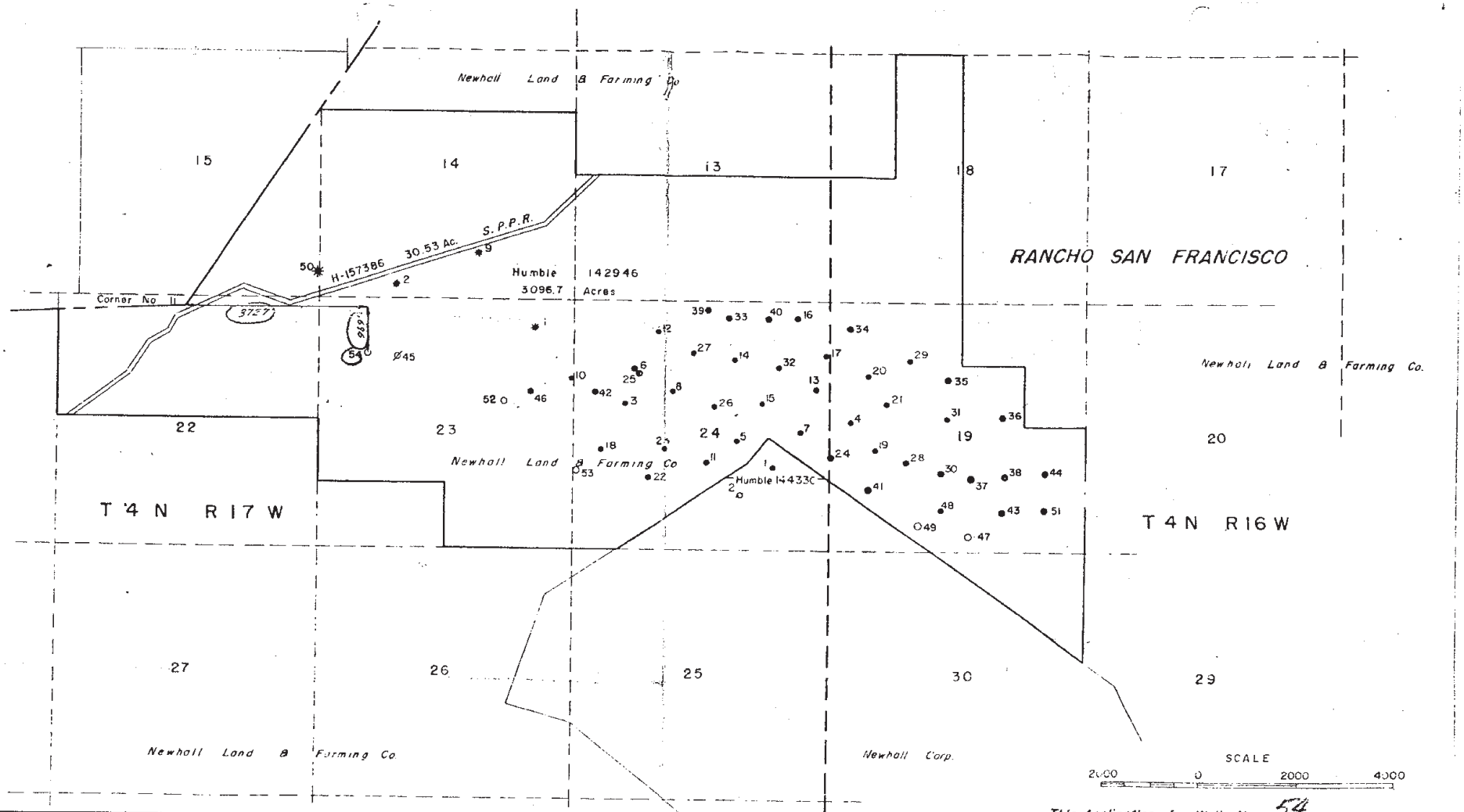
Date	Depth	Description
12-19-55	-	Moving in and rigging up.
12-20 thru 12-21	852	Spudded 11" hole at 12:01 AM, 12-20-56 and drilled to 852'. Opened 11" hole to 16" to 840'. Ran and set 814' of 10 3/4" casing at 831'. Cemented with 500 sacks of cement. Waiting on cement.
12-22 thru 12-23	2560	Drilled 9 7/8" hole to 1931' and twisted off. Ran fishing tools and recovered fish. Drilling 9 7/8" hole.
12-24 thru 1-13-56	8886	Drilled to 2563' and twisted off. Ran fishing tools and recovered fish. Drilling 9 7/8" hole.
1-14 thru 1-17	8942	Drilled 9 7/8" hole to 8921'. Circulated and cleaned hole. Ran and set whipstock at 8921'. Drilled off face of whipstock from 8921' to 8932' with 7 5/8" bit. Opened 7 5/8" hole to 9 7/8" from 8921 to 8932'. Drilling 9 7/8" hole.
1-18 thru 1-19	8999	Drilled 9 7/8" hole to 8972'. Ran and set whipstock at 8972'. Drilled off face of whipstock from 8972' to 8984' with 7 1/2" bit. Opened 7 1/2" hole to 9 7/8" from 8972' to 8984'. Drilling 9 7/8" hole.
1-20 thru 1-22	9032	Drilled 9 7/8" hole to 9016' and ran and set whipstock. Drilled off face of whipstock from 9016' to 9022' with 7 1/2" bit. Opened 7 1/2" hole to 9 7/8" from 9016' to 9022'. Ran and set whipstock at 9022' and drilled off face to 9032' with 7 1/2" bit.
1-23 thru 1-24	9077	Opened 7 1/2" hole to 9 7/8" from 9022' to 9032' and drilled to 9067'. Ran and set whipstock at 9067'. Drilled off face of whipstock to 9077' with 7 1/2" bit. Opened 7 1/2" hole to 9 7/8" from 9067' to 9077'.
1-25 thru 1-27	9160	Drilled 9 7/8" hole to 9106' and ran and set whipstock. Drilled off face of whipstock to 9116' with 7 1/2" bit. Opened 7 1/2" hole to 9 7/8" from 9106' to 9116'. Drilling 9 7/8" hole.
1-28	9184	Drilled 9 7/8" hole to 9174' and ran and set whipstock. Drilled off face of whipstock from 9174' to 9184' with 7 1/2" bit.

Form 103.

DIVISION OF OIL AND GAS
RECEIVED
APR 6 1956
LOS ANGELES, CALIFORNIA

WELL HISTORY (Cont'd)
Humble Oil & Refining Co.
Newhall Land & Farming Co. #54

Date	Depth	Description
1-29 thru 2-10	10348	Opened 7 1/2" hole to 9 7/8" from 9174' to 9184'. Drilled 9 7/8" hole to 9204' and ran and set whipstock. Drilled off face of whipstock to 9212' with 7 1/2" bit. Opened 7 1/2" hole to 9 7/8" from 9204' to 9212'. Drilled 9 7/8" hole to 10348'.
2-11 thru 2-12	10564	Reduced 9 7/8" hole to 8 3/4" at 10348'. Drilling 8 3/4" hole.
2-13 thru 2-17	10940	Drilled to 10650' and ran electric log to 10648'. Drilling 8 3/4" hole.
2-18 thru 2-23	11883	Ran electric log to 10941'. Drilling 9 7/8" hole.
2-24	11960	Drilled to 11960' and ran electric log to 11960'.
2-25	12020	Drilled 8 3/4" hole to 12000'. Cored from 12000' to 12020' with 6 1/4" core head.
2-26	12077	Opened 6 1/4" hole to 8 3/4" from 12000' to 12020' and drilled to 12077'. Ran electric log to 12062'.
2-27	12077 TD	Placed cement plug #1 from 11998' to 11798' with 75 sacks of cement. Placed plug #2 from 10967' to 10767' with 75 sacks of cement. Placed plug #3 from 3400' to 3170' with 100 sacks of cement. Top of plug #3 witnessed by the Division of Oil and Gas.
2-28	12077	Placed plug #4 from 930' to 730' with 100 sacks of cement. Released rig at 12:00 Noon, 2-28-56. Tearing out rig.
2-29		Placed plug #5 from 20' to surface with 20 sacks of cement. Welded steel plate on top of 10 3/4" casing. Finished tearing out rig. Well dry and abandoned. Final report for rig and well.



REVISIONS				
DATE	DESCRIPTION	BY	CHK	APPR
5-20-55	ADD WELL NO. 51	KDS		
8-25-55	" " " 52	"		
10-12-55	" " " 53	"		
[illegible]55	" " " 54	"		

REVISIONS					
NO	DATE	DESCRIPTION	BY	CHK	APPR
7	1-28-55	ADD WELL NO 45	K.D.S.		
8	2-2-55	" " " 46	"		
9	3-29-55	" " " 47	N.D.C.		
10	3-7-55	" " " 48	K.D.S.		
11	11-21-55	" " " 49	"		
12	4-25-55	" " " 50	"		

REVISIONS					
NO	DATE	DESCRIPTION	BY	CHK	APPR
1	8-18-54	ADD WELL NO 40	KDS		
2	8-30-54	" " " 38	NDC		
3	9-2-54	" " " 41	NDC		
4	9-28-54	" " " 42	KDS		
5	12-14-54	" " " 43	KDS		
6	12-21-54	" " " 44	KDS		

This Application for Well No. 54

NEWHALL LAND & FARMING CO.
LEASE NO 142946
CASTAIC JUNCTION DIST. LOS ANGELES CO.

HUMBLE OIL & REFINING COMPANY
CIVIL ENGINEERING DIVISION
CALIFORNIA AREA

DRAWN KDS
CHECKED
APPR
SCALE 1" = 2000'
DATE 8-18-54
REVISED
FILE NO. CAB 44

SUPERCEDES DRWG NO CAB 23

FORM 105

037-16511

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

3

(D)

DIVISION OF OIL AND GAS
RECEIVED
FEB 1 1955

Notice of Intention to Drill New Well

This notice and surety bond must be filed before drilling begins

Los Angeles Calif. Los Angeles, California January 27, 1955

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence the work of drilling well No. Newhall Land & Farming Co. ~~No.~~ 45, Sec. 23, T. 4-N, R. 17-W, SB B. & M., Castaic Junction Field, Los Angeles, County.

Legal description of lease See attached Plat.
(Attach map or plat to scale)

Location of Well: 835 feet South (Direction) ~~[illegible]~~ and 4269 feet East (Direction) at right angles to said line from ~~[illegible]~~ corner ~~[illegible]~~ 11, Rancho San Francisco, Los Angeles, County, California. Also located 1,020 feet South and 3,698 feet West from the Northeast corner of Projected Section 23, T-4-N, R-17-W, SBB&M.

Elevation of ground above sea level feet To be submitted Later datum.

All depth measurements taken from top of Kelly Bushing (Derrick Floor, Rotary Table or Kelly Bushing) which is 12 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
10-3/4"	40.5#	J-55	0	800	Cemented to surface
5-1/2"	17 -20 & 23#	N-80	0	12000	Cemented 1000 feet above shoe

Intended zone or zones of completion: Zone 21, Upper Miocene, 12000'

MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
9X-18A	WHP	EB	Blanket	EB	EB

It is understood that if changes in this plan become necessary we are to notify you before running casing.

Address 612 South Flower Street
Los Angeles 17, California
Telephone Number MA 6-7701

Humble Oil & Refining Co.
(Name of Operator)
By James R. Cox

SEND ONE COPY OF NOTICE TO DIVISION OFFICE IN DISTRICT WHERE WELL IS LOCATED

FORM 111 (1-49)

D

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS

No. P 155-198

Mr. J E Cox
Newhall
California
Agent for HUMBLE OIL & REFINING CO

Los Angeles 15 California
February 7 1955

121

DEAR SIR:

Your "Newhall Land & Farming Co." proposal to drill Well No. 45,

Section 23, T. 4 N, R. 17 W, S B B. & M., Castaic Junction Field, Los Angeles County,

dated Jan. 27 1955, received Feb. 1 1955, has been examined in conjunction with records filed in this office.

Present conditions as shown by the records and the proposal are as follows:

THE NOTICE STATES
"Legal description of lease See attached Plat.
Location of Well: 835 feet South and 4269 feet East at right angles to said line from corner 11, Rancho San Francisco, Los Angeles, County, California. Also located 1,020 feet South and 3,698 feet West from the Northeast corner of Projected Section 23, T-4-N, R-17-W, SBB&M
Elevation of ground above sea level To be submitted Later
All depth measurements taken from top of Kelly Bushing which is 12 feet above ground."

PROPOSAL
"PROPOSED CASING PROGRAM

Size of Casing Inches A.P.I.	Weight	Grade and Type	Top	Bottom	Cementing Depths
10-3/4"	40.5#	J-55	0	800	Cemented to surface
5-1/2"	17 -20 & 23#	N-80	0	12000	Cemented 1000 feet above shoe

Intended zone or zones of completion: Zone 21, Upper Miocene, 12000'
It is understood that if changes in this plan become necessary we are to notify you before running casing."

DECISION
THE PROPOSAL IS APPROVED PROVIDED THAT

1. Mud fluid consistent with good drilling practice shall be used and the column of mud fluid maintained at all times to the surface, particularly while pulling the drill pipe.
2. Adequate blowout prevention equipment shall be installed and maintained in operating condition at all times.
3. THIS DIVISION SHALL BE NOTIFIED AS FOLLOWS:
   (a) To inspect the installed blowout prevention equipment before drilling below 2000'.
   (b) To witness a test of the effectiveness of the 5½" shut-off.

FEK:OH

cc Company (2)
Newhall Land & Farming Co

Orig Company Los Angeles

Blanket bond.

E. H. MUSSER
State Oil and Gas Supervisor

By R. N. Walling Deputy

98406 5-54 25M SPO

FORM 109-D

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Special Report on Operations Witnessed

No. T 155-682

Mr. J E Cox
613 San Fernando Road
Newhall California
Agent for HUMBLE OIL & REFINING CO

Los Angeles 15 Calif.
March 29 1955

DEAR SIR:

Operations at your well No. "Newhall Land & Farming Co." 45 Sec. 23, T. 4 N, R. 17 W, S B B. & M., Castaic Junction Field, in Los Angeles County, were witnessed on March 21, 1955. Mr. G. Y. Lee, Engineer, representative of the supervisor was present from 9:30 A.M. to 10:00 A.M. There were also present J. Ortega, Drilling Foreman G. Micheli, Driller

Present condition of well: 10 3/4" cem. 824'; T.D. 7435'

The operations were performed for the purpose of inspecting blowout prevention equipment and installation

Mr. Ortega reported:

1. A 16" rotary hole was drilled from the surface to 824'.
2. On March 6, 1955, 10 3/4", 40 lb. casing was cemented at 824' with 450 sacks of cement.
3. Cement returned to the surface.
4. A 9 7/8" rotary hole was drilled from 824' to 7435'.

THE ENGINEER NOTED THAT the well was equipped with the following blowout prevention equipment:

1. A Shaffer double cellar control gate for closing in the well with the drill pipe out of the hole, and for closing around the 4 1/2" drill pipe.
2. A G. K. Hydril Blowout Preventer for closing around the 4 1/2" drill pipe.
3. The controls for the above equipment were located outside the derrick.
4. A 2" mud fill-up line with a 2" high pressure Nordstrom stopcock into the 10 3/4" casing below the above equipment.
5. A high pressure stopcock on the kelly.

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

GYL:lg

cc Company (2)
Newhall Land & Farming Co.

Orig Company Los Angeles

E. H. MUSSER
State Oil and Gas Supervisor

By R. N. Nelling Deputy

12362 2-55 16,100 SPO

FORM 108. 57613 2-52 20M ⓢ SFO

DIVISION OF OIL AND GAS
RECEIVED
MAY 4 1955
LOS ANGELES, CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Notice of Intention to Abandon Well

This notice must be given at least five days before work is to begin; one copy only

Newhall, Calif. May 2, 19 55

DIVISION OF OIL AND GAS
1015 West Olympic Blvd.
Los Angeles 15, Calif.

In compliance with Secs. 3228, 3229, 3230, 3231 and 3232, Ch. 93, Stat. 1939, notice is hereby given that it is our intention to abandon well No. Newhall Land & Farming Co. #45

Sec. 23, T. 4-N, R. 17-W, S.B. B. & M. Castaic Junction Field,

Los Angeles County, commencing work on the 2nd day

of May 19 55.

The present condition of the well is as follows:

1. Total depth. 11,947' - Drilled 9-7/8" hole to TD without encountering any commercial oil or gas shows. Approximate top of 21-zone - 11,700', top of 15-zone - 10,690', base of fresh water sand 3300'.
2. Complete casing record.

10-3/4" 40.50 J-55 Casing set at 824'.

3. Last produced. Dry Hole

Date	Net oil	Gravity	Cut

The proposed work is as follows: Place cement plugs as follows:

#1 - from 11,800 to 11,600, using 100 sacks cement
#2 - from 10,750 to 10,550, using 100 sacks cement
#3 - from 3,300 to 3,100, using 100 sacks cement
DOG will be notified to witness location and hardness of plug #3 which is at base of fresh water sand.
#4 - from 925 to 725 using 100 sacks cement
#5 - from 20 to 0 using 10 sacks cement
and weld steel plate on top of casing.

abandon

MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
		EB	Blanket	EB	EB

HUMBLE OIL & REFINING COMPANY
(Name of Operator)

By James E. Cox
James E. Cox

ADDRESS ONE COPY OF NOTICE TO DIVISION OF OIL AND GAS IN DISTRICT WHERE WELL IS LOCATED

FORM 111 (1-49)

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS

No. P 155-800

Mr J E Cox
613 San Fernando Road
Newhall California
Agent for HUMBLE OIL & REFINING CO

Los Angeles 15, Calif.
May 5, 19 55

DEAR SIR:

Your "Newhall Land & Farming Co." proposal to abandon Well No. 45, Section 23, T. 4 N, R. 17 W, S B B. & M., Castaic Junction Field, Los Angeles County, dated May 2 19 55, received May 4 19 55, has been examined in conjunction with records filed in this office.

Present conditions as shown by the records and the proposal are as follows:

THE NOTICE STATES

"The present condition of the well is as follows:

1. Total depth. 11,947' - Drilled 9-7/8" hole to TD without encountering any commercial oil or gas shows. Approximate top of 21-zone - 11,700', top of 15-zone - 10,690', base of fresh water sand 3300'.
2. Complete casing record.
   10-3/4" 40.50 J-55 Casing set at 824'.
3. Last produced. Dry Hole."

PROPOSAL

"The proposed work is as follows: Place cement plugs as follows:

#1 - from 11,800 to 11,600, using 100 sacks cement
#2 - from 10,750 to 10,550, using 100 sacks cement
#3 - from 3,300 to 3,100, using 100 sacks cement
DOG will be notified to witness location and hardness of plug #3 which is at base of fresh water sand.
#4 - from 925 to 725 using 100 sacks cement
#5 - from 20 to 0 using 10 sacks cement and weld steel plate on top of casing."

DECISION

THE PROPOSAL, COVERING WORK ALREADY COMPLETED IN ACCORDANCE WITH PRIOR AGREEMENT, IS APPROVED.

FEK:OH

2 cc Humble Oil & Refining Co
P O Box 1196
Newhall California

Newhall Land & Farming Co
Route 3 Box 77
Saugus California

Orig. Humble Oil & Refining Co
612 South Flower Street
LOS ANGELES 17

Blanket bond.

E. H. MUSSER, State Oil and Gas Supervisor

By R. H. Walling, Deputy

FORM 109-D

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Special Report on Operations Witnessed

No. T 155-1146

Mr. J E Cox
613 San Fernando Road
Newhall California
Agent for HUMBLE OIL & REFINING CO

Los Angeles 15 Calif.
May 20 1955

DEAR SIR: "Newhall Land & Farming Co."

Operations at your well No. 45 Sec. 23, T. 4 N, R. 17 W, S B B. & M., Castaic Junction Field, in Los Angeles County, were witnessed on May 4, 1955. Mr. R. Ybarra, Engineer, representative of the supervisor was present from 1:00 to 2:00 p.m. There were also present J. Walvoord, Engineer; J. Ortega, Drilling Foreman.

Present condition of well: 10-3/4" cem. 824'. T.D. 11,947', plugged with cement 11,800'-11,600', 10,750'-10,550', 3300'-3095', 914'-714'±, and 27'-7'.

The operations were performed for the purpose of witnessing the plugging operations in the process of abandonment.

Mr. xxxxxx reported:

ENGINEER YBARRA VISITED THE WELL FROM 8:30 - 9:30 A.M., MAY 4, 1955, AND MR. WALVOORD REPORTED: 1. A 9-7/8" rotary hole was drilled from 824' to 11,947'.

2. No commercial showings of oil or gas were encountered.
3. On May 2, 1955, 100 sacks of cement was pumped into the hole through 4½" drill pipe hanging at 11,800', filling to 11,600'.
4. On May 2, 1955, 100 sacks of cement was pumped into the hole through 4½" drill pipe hanging at 10,750', filling to 10,550'.
5. On May 3, 1955, 100 sacks of cement was pumped into the hole through 4½" drill pipe hanging at 3,300', filling to 3,095'.

THE ENGINEER NOTED THAT the cement plug at the reported depth of 3,095' supported 15 point of the weight of the 4½" drill pipe.

THE ENGINEER ARRIVED AT THE WELL AT 1:00 P.M. AND MR. ORTEGA REPORTED:

1. On May 4, 1955, 100 sacks of cement was pumped into the hole through 4½" drill pipe hanging at 914', calculated to fill to 714'.
2. A wooden plug was driven to 27'.
3. Seven sacks of cement was poured into the hole.

THE ENGINEER NOTED THAT the top of the cement in the 10-3/4" casing was at the cellar floc 7' below the ground level.

THE PLUGGING OPERATIONS AS WITNESSED AND REPORTED ARE APPROVED.

RY:OH

(2) cc Humble Oil & Refining Co.
P O Box 1196
Newhall California

Newhall Land & Farming Co.
Route 3 Box 77
Saugus California

E. H. MUSSER
State Oil and Gas Supervisor

By R. N. Nelling Deputy

Orig. Humble Oil & Refining Co.
612 South Flower Street
LOS ANGELES 17

123502 2-55 18,100 SPO

FORM 159 (9-49)

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS

(25)

REPORT OF WELL ABANDONMENT

Los Angeles 15 California

June 27, 1955

Mr J E Cox Agent
Humble Oil & Refining Co
613 San Fernando Road
Newhall California

Dear Sir

Your report of abandonment of Well No. "Newhall Land & Farming Co." 45 Sec. 23, T. 4 N, R. 17 W, S B B. & M., Castaic Junction field, Los Angeles County, dated May 31, 1955, has been examined in conjunction with records filed in this office.

A review of the reports and records shows that the requirements of this Division, which are based on all information filed with it, have been fulfilled.

MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
Cal 18A	WDP		Blanket		M.J.

Yours truly

E. H. MUSSER
State Oil and Gas Supervisor

By R. W. Walling
Deputy Supervisor

cc Mr E H Musser
Company
Newhall Land & Farming Co
Mr L A Dutton
Fire Prevention Bureau
Conservation Committee

es

88061 4-54 11,200 SPO

Form 100.

RECEIVED JUN 24 1955 LOS ANGELES, CALIFORNIA

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

Operator Humble Oil & Refining Company

Field Castaic Junction

Well No. Newhall Land & Farming Co. #45

Sec. 23, T. 4-N, R. 17-W, S. B. B.&M.

Location 835' South and 4269' East at right angles to said line from corner 11, Rancho San Francisco, Los Angeles County.

Elevation above sea level 943 feet. All depth measurements taken from top of Rotary Drive Bushing, which is 955 feet above ground.

Date May 31, 1955

Signed James E. Cox

Geologist Paul H Dudley Jr

Title James E. Cox, District Superintendent

Commenced drilling 3-4-55 Completed drilling 5-5-55 Rotary Drilling tools

Total depth 11947' Plugged depth -

Junk None

~~Commenced producing~~ Dry Hole

Initial production None

GEOLOGICAL MARKERS	DEPTH
Top of Miocene(E.Log)	7700(?)

CASING RECORD

Size of Casing	Depth Shoe	Top Csg	Weight	New Used	Seamless Lapweld	Grade	Size Hole	Cemt.	Depth Perfs.
10-3/4"	824'	16'	40.5#	New	SS	J-55	16"	450	-

PERFORATIONS - None

Plug To Abandon:

No. 1	11800-11600	Using 100 sacks Hi-Temp Cement
No. 2	10750-10550	Using 100 sacks Hi-Temp Cement
No. 3	3300- 3100	Using 100 sacks Construction Cement
No. 4	914- 714	Using 100 sacks Construction Cement

Top plug from bottom of cellar down 20'.

Electrical Log Depths 10737' and 11947'

Form 103.

DIVISION OF OIL AND GAS

HISTORY OF OIL OR GAS WELL

Operator Humble Oil & Refining Company

Field Castaic Junction

Well No. Newhall Land & Farming Co. #45

Sec. 23, T. 4-N, R. 17-W, S. B. B.&M.

Signed James E. Cox

Date May 31, 1955

Title James E. Cox, District Superintendent

Date	Depth	Description
3-4-55	-	Moved in and rigged up.
3-5-55	811	Spudded 11" hole @ 12:01 A.M. and drilled to 811'.
3-6-55	871	Drilled 11" hole to 871'. Opened 11" hole to 16" from 0 to 835'. Ran and set 807' of 10-3/4" casing at 824'. Cemented with 450 sacks of construction cement mixed with 8% gel. Waiting on cement to set.
3-7-55	1153	Tested surface casing w/500 lbs. for 1/2 hour. Drilled 9-7/8" hole to 1153'.
3-8-55 thru 3-9-55	2433	Drilling 9-7/8" hole.
3-10-55	2937	Drilled 9-7/8" hole to 2514'. Twisted off, leaving 3 drill collars in hole. Ran in with socket, bumper sub, and jars. Recovered fish. Drilled 9-7/8" hole to 2937'.
3-11-55 thru 4-12-55	10701	Drilling 9-7/8" hole. Placed Baroid mud logging unit on well on 3-16-55 and ran to total depth (11947').
4-13-55	10726	Coring 7-5/8" hole.
4-14-55	10726	Ran 9-7/8" string reamer and reamed tight hole from 4150' to 4658'.
4-15-55	10726	Reamed 9-7/8" hole to bottom. Set pipe on bottom and backed off at 5223'.
4-16-55	10726	Screwed into fish and pulled same out of hole. Preparing to run drill stem test.
4-17-55	10736	Ran in hole for HOWCO DST #1 to test from 10706' to 10726'. Packer failed - no test resulted. Cored 7-5/8" hole to 10736'. Preparing to run drill stem test.
4-18-55	10737	Ran HOWCO DST #2 from 10711' to 10736' using 1" top and 1/4" bottom chokes. Tool open 80 minutes with flowing pressure of 1435#. Shut-in pressure 3760#. Recovered 350' salt water, 8500 ppm chloride, and 100' drilling fluid. Open 7-5/8" hole to 9-7/8" and drilled one foot to 10737'.

Form 103.

RECEIVED
JUN 24 1955
LOS ANGELES, CALIFORNIA

WELL HISTORY (Cont'd)
Humble Oil & Refining Company
Newhall Land & Farming Co. #45

Date	Depth	Description
4-19-55	10814	Ran electric log to 10737'. Drilled 9-7/8" hole to 10814".
4-20-55	10844	Cored 7-5/8" hole to 10844'.
4-21-55	10903	Ran HOWCO DST #3 from 10819' to 10844' using 1" top and 1/4" bottom chokes. Tool open 60 minutes with flowing pressure of 1470#. Shut-in pressure 5105#. Recovered 315' salt water, 1200 ppm chloride, 30' drilling fluid, and 15' thin black oil. Opened 7-5/8" hole to 9-7/8" and drilled to 10903'.
4-22-55 thru 4-29-55	11879	Drilling 9-7/8" hole.
4-30-55	11947	Completed drilling 9-7/8" hole. Ran Caliper Log from 6993' to 11947', Contact Log from 10500' to 11947', Dipmeter from 7000' to 11947', and Electric Log to 11947'.
5-1-55		Preparing to run drill stem test.
5-2-55		Planned to test from 10718' to 10765' but packers failed to hold. Placed Plug No. 1 from 11800' to 11600' using 100 sacks Colton Hi-Temp Cement. Placed Plug No. 2 from 10750' to 10550' using 100 sacks Colton Hi-Temp Cement.
5-3-55		Placed Plug No. 3 from 3300' to 3100' using 100 sacks Construction Cement. Found top at 3095'. Witnessed and approved by representative from Division of Oil and Gas. Placed Plug No. 4 from 914' to 714' using 100 sacks Construction Cement.
5-4-55		Placed top plug from bottom of cellar down 20'. Witnessed and approved by representative from Division of Oil and Gas. Tearing down and moving out rig.
5-5-55		Finished moving out. Well abandoned as dry hole.

Form 101.

RECEIVED
JUL 24 1955
LOS ANGELES, CALIFORNIA

(75)

DIVISION OF OIL AND GAS

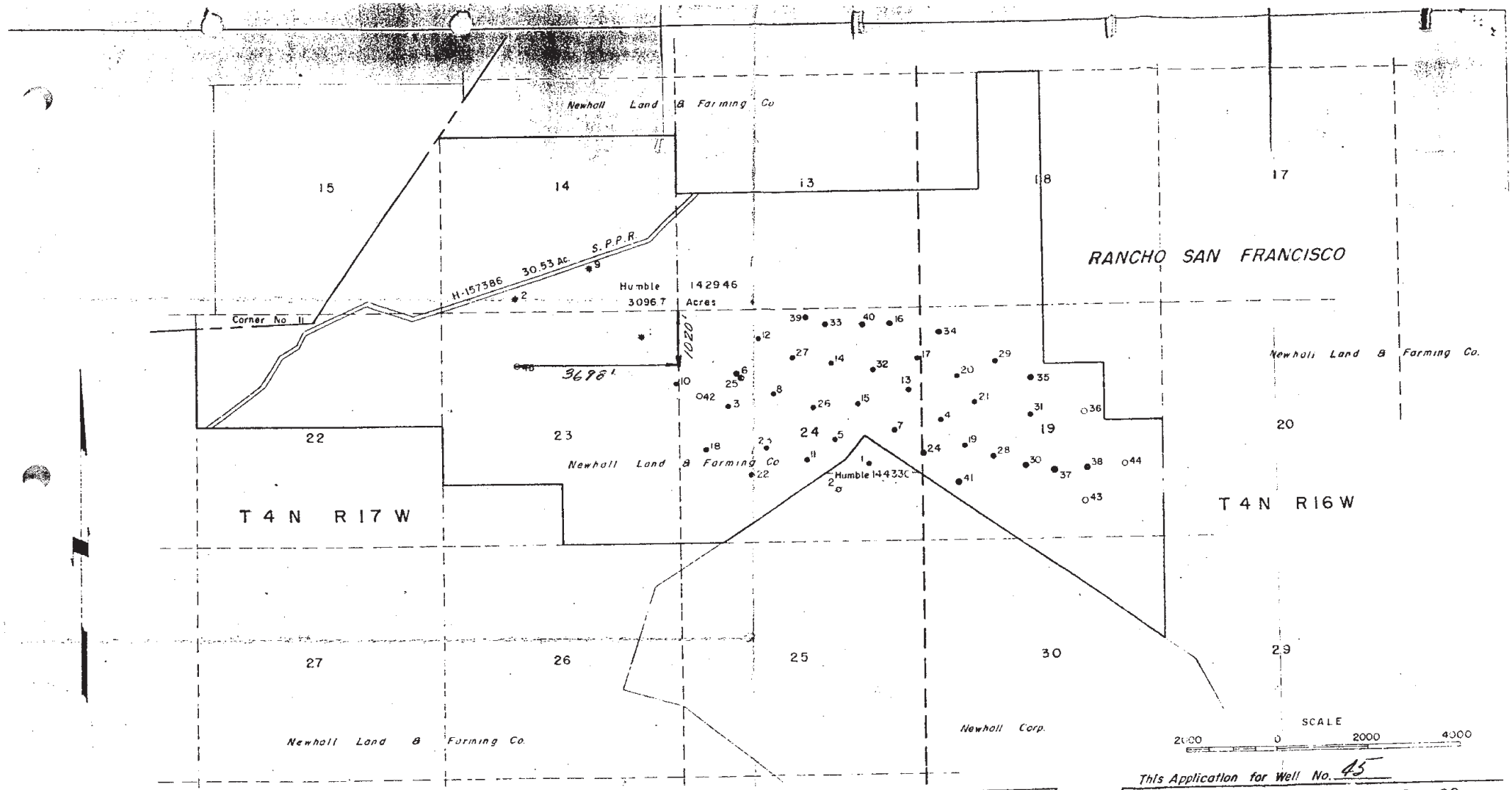
LOG AND CORE RECORD OF OIL OR GAS WELL

Operator Humble Oil & Refining Company Field Castaic Junction

Well No. Newhall Land & Farming Co. #45 Sec. 23, T. 4-N, R. 17-W, S. B. B.&M.

FORMATIONS PENETRATED BY WELL

Depth To			
Top of Formation	Bottom of Formation	Drilled or Cored	Description
0	871	D	Sand, boulders, and gravel
871	3655	D	Sand
3655	5478	D	Shale
5478	7714	D	Shale and sand
7714	10701	D	Shale
10701	10736	C	See core description attached
10736	10814	D	Shale
10814	10844	C	See core description attached
10844	11947	D	Shale



This Application for Well No. 45

NEWHALL LAND & FARMING CO.
LEASE NO 142946
CASTAIC JUNCTION DIST. LOS ANGELES CO.

HUMBLE OIL & REFINING COMPANY
CIVIL ENGINEERING DIVISION
CALIFORNIA AREA

DRAWN KDS
CHECKED
APPR
SCALE 1" = 2000'
DATE 8-18-54
REVISED
FILE NO. CAB 44

SUPERCEDES DRWG NO CAB 23

REVISIONS

NO	DATE	DESCRIPTION	BY	CHK	APPR

REVISIONS

NO	DATE	DESCRIPTION	BY	CHK	APPR
7	1-28-55	ADD WELL NO 45	K.D.S		

REVISIONS

NO	DATE	DESCRIPTION	BY	CHK	APPR
1	8-18-54	ADD WELL NO 40	KDS		
2	8-30-54	" " " 38	NDC		
3	9-2-54	" " " 41	NDC		
4	9-28-54	" " " 42	KDS		
5	12-14-54	" " " 43	KDS		
6	12-21-54	" " " 44	KDS		

APPENDIX F:

DOGGR Well Abandonment Procedures

DEPARTMENT OF CONSERVATION'S

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

District 2-Ventura

CONSTRUCTION PROJECT SITE REVIEW

AND

WELL ABANDONMENT PROCEDURE

12-9-03

CALIFORNIA CONSERVATION

OIL AND GAS WELL REVIEW PROCEDURE

Applicant	Permitting Office
Address	
City Zip	Mailing Address
Date	City Zip

Plan Check No. _____

Plan Checker _____
Print or Type Name Signature Phone Number

The proposed construction site is located at _____

_____

_____

There is/are _____ active, idle, or abandoned well(s) located on or adjacent to the site; (number)

therefore, before a building/grading permit should be issued, The Division of Oil and Gas (Division) recommends that a site-plan review be obtained. The Division will determine if affected wells have been abandoned to current standards. Wells that are not abandoned to current standards may require abandonment/reabandonment. Cost of the required abandonment/reabandonment shall be the responsibility of the landowner or developer. (PRC Section 3208.1)

THE DIVISION OF OIL AND GAS RECOMMENDS THAT A DILIGENT EFFORT BE MADE TO AVOID BUILDING NEAR ANY WELL.

SITE REVIEW PROCEDURE TO BE FOLLOWED BY PROJECT APPLICANT

1. Contact and make an appointment with the Division at:

   California Department of Conservation
   Division of Oil, Gas, and Geothermal Resources
   1000 S. Hill Road Suite 116
   Ventura, CA. 93003-4458

2. Provide the following information: (EXAMPLE)

   a. Area, location.....Section, Township, and Range
   b. Oil field/County.....Placerita Oil Field, L.A. County
   c. Company/Operator.....XYZ Oil Company
   d. Well Designation....."Gusher" 1
   e. Section-Township-Range: 35-T5N-R17W
   f. Major Cross streets..Main Street and X street
      (or other identifier)

3. The Division will provide you with the location or record for each well. Using this information, uncover the well(s) and have the well locations(s) surveyed by a licensed surveyor. If any well cannot be located using the original description on file, a diligent effort, including excavation, must be made to locate it.

4. The following procedures are to be used to locate wells on site plans and to verify that an adequate search was completed.

Step 1. The developer/landowner shall survey the well locations using the "location of record". If the well cannot be found then excavate at least 15 feet long, 15 feet wide, and 12 feet dig. If any indications of an oil well (i.e. cellar, oilfield debris, oil- saturated soil) are observed, or if any information available that original conditions have changed since "location of record" was determined, a larger hole may be required.

Step 2. If the well is not located using the procedures listed in step #1, a metal detector should be used to survey the area (inside and outside the excavation).

Step 3. The developer/landowner shall excavate all indicated metal detector locations by digging a hole that is at least 10 feet long, 10 feet wide, and 12 feet deep, if necessary. If any indications of an oil well are observed upon completion of the excavation, or if there is any information available that original conditions have changed since the well was drilled, a larger hole may be required.

Step 4. The developer/landowner shall notify the Division to witness all completed excavations before they are refilled. Pictures shall be taken of all excavations. The survey of the well shall be available to the Division engineer for review.

Step 5. If the well search efforts prove unsuccessful, the Division engineer and the developer shall prepare written report describing the search procedures and attach the excavation pictures.

5. **All accessible previously plugged and abandoned wells located on the project site shall be tested for gas leakage and inspected for fluid leakage.** The testing/inspection shall be done by Division personnel or the developer. If the developer performs the test, the Division shall be notified to witness the test.

   If there is any indication of fluid or gas leakage, the well condition shall be remedied, even if the well will not be located nearby a structure. The cost of the reabandonment shall be the responsibility of the landowner or developer. (PRC Section 3208.1)

6. The location of each well must be plotted on the site plan. The well survey description must reference a point on the site plan which in turn must reference a point on existing Division maps. (Section corner, Rancho corner, latitude/longitude, etc.) Identify each well with the name of the company/operator and well designation. Submit <u>THREE</u> copies of the site plan and three copies of each well-location survey to the Division.

   If a developer/landowner locates a well within a 4-foot radius of the wells "location of record", there is no need to survey the actual well location. However, the developer/landowner must verify that the well was found within 4 feet of the "location of record".

   The site plans should indicate the property boundaries, an area of at least 25 feet outward from the perimeter of the property, any proposed or existing structures, and any existing or proposed roads or streets that pass through or are immediately adjacent to the property. The site plan should also include a plot (to scale) of all existing and proposed oilfield facilities (tanks, processing equipment, pipelines, etc.) that will be operating on the site after completion of the proposed development and include a description of the existing type and height of all oilfield enclosures and list any facility modifications that are part of the development plans.

   If a structure is proposed within 10 feet of an abandoned/reabandoned well, the site plans should include an approved well-vent system designed to vent natural gases to the atmosphere. If a structure is within 25 feet of a structure and the permitting agency is Los Angeles County then an approval letter from Los Angeles County Environmental Programs Division must be submitted.

7. A Division engineer will review the submitted plans. The Division will prepare a "Plan Review" (Form OG190), which will indicate the wells on the project site and our recommendations with respect to the wells.

After the review is complete, the reviewing engineer will affix the Division certification stamp to the three copies of the site plans and three copies of the FORM OG190. One copy will be returned to the applicant and one copy will be forwarded to the permitting agency. The remaining copy will be retained by the Division.

PLUGGING AND ABANDONMENT PERMIT PROCESS

1. Before any well operations are commenced, an application to plug and abandon or reabandon or extend casing for each well must be filed with the Division. (FORM OG108 or FORM OG123) This application must be outline the work proposed to upgrade the well to current requirements.

2. The Division will respond with a "Permit to Conduct Well Operations" that sets forth the conditions and requirements to be met.

3. When the well work is completed and all records received the Report of Well Plugging and Abandonment or Reabanonment will be issued.

IF, DURING THE CONSTRUCTION/GRADING PROCESS, ANY PREVIOUSLY UNKNOWN WELL IS DISCOVERED, THE DIVISION MUST BE NOTIFIED IMMEDIATELY, SO PLUGGING AND ABANDONMENT REQUIREMENTS CAN BE DETERMINED.

ONSHORE ABANDONMENT/REABANDONMENT REQUIREMENTS
DISTRICT 2

General

Plugging is required to protect life, health, property, deposits of oil, gas, or fresh water from loss or damage. A written notice (OG108) stating in detail the proposed method of abandonment, must be filed. For reabandonments, a written notice (OG1123) stating in detail, the proposed method of reabandonment, must be filed. All required downhole cement plugs shall use cement that has a minimum compressive strength of 1000 psi and a maximum liquid permeability of .1 md. No more than a 4% gel mixture shall be allowed. The sand/cement ratio for downhole muds is limited to 2:1.

Mudding

All portions of the hole not occupied by cement shall be filled with good quality, water-base mud fluid having proper weight and consistency to prevent movement of other fluids into the wellbore. Under "normal" conditions, proper weight and consistency is 72 lbs./cf with a minimum gel-shear strength (10 min.) 25 lbs./100 sq. ft.

Surface Pour

No aggregate concrete (NO ROCKS) may be used for surface plugs. The maximum sand/cement ration that is acceptable is 4:1. When there is more than one string of casing at the surface, cement shall be placed between. The preferred alliterative is to cut and pull all inside strings before the surface plug is placed. A surface cement-pour is permitted only in an empty hole with a diameter of not less than 5 inches. Depth limitations shall be determined on an individual well basis.

Bailers

Bailer placed cement plugs are limited to 3000' or less.

Junk in Hole

Diligent effort shall be made to recover junk when such junk may prevent proper abandonment. In the event that the junk cannot be removed and fresh-water or oil and gas zones penetrated below cannot therefore be properly abandoned, cement shall be down-squeezed through or past the junk and a 100-foot cement plug shall be placed on top of the junk. In the event that a retainer is used, then 100 foot plug shall be placed on top of the retainer.

Recovery of Casing

Approval to recover all casing possible will be given in the abandonment of wells where subsurface plugging can be done to the satisfaction of the Division.

Extending Casing

The final grade of the well shall be no greater than 5 feet below ground. In the event that the casing is to be extended, it shall be extended with adequate casing of the same size of the casing that is found at the surface. In addition, the casing shall be filled with cement.

Open Hole

Oil and Gas Zones- Cement plug shall be place from total depth or at least 100 feet below the bottom of each oil and gas zone, whichever is less, to at least 100 feet above the top of each zone.

Freshwater Zones- A minimum 200 foot cement plug shall be placed across all fresh-saltwater interfaces. An interface plug may be placed wholly within a thick shale if such a shale separates the freshwater sands from the brackish or saltwater sands.

Cased Hole

Oil and Gas zones- All perforations shall be plugged with cement and the plug shall extend at least 100 feet above the top of a landed liner, the uppermost perforations, the casing cementing point or the water shut-off holes, whichever is highest. (See CCR for special requirements)

Bridge plugs- A bridge plug above the lowermost zone in a multiple-zone completion my be allowed in lieu of cement through the lowermost zone if such lowermost zone is isolated from the upper zone by cement behind casing.

Fresh water zones- a 100 feet cement plug across the fresh water interface opposite cemented casing; in un-cemented casing, squeeze cementing sufficient cement to fill 200 feet behind casing and plug 100 feet above the perforations; or cavity shot immediately below the fresh water and cemented to 100 feet above the shot.

Surface Plugging

The well and all annuli shall be plugged from 30 feet to 5 feet. All casing shall be cut off 5 feet below the surface or the ground. In urban areas, a steel plate shall be welded on top of all casings.

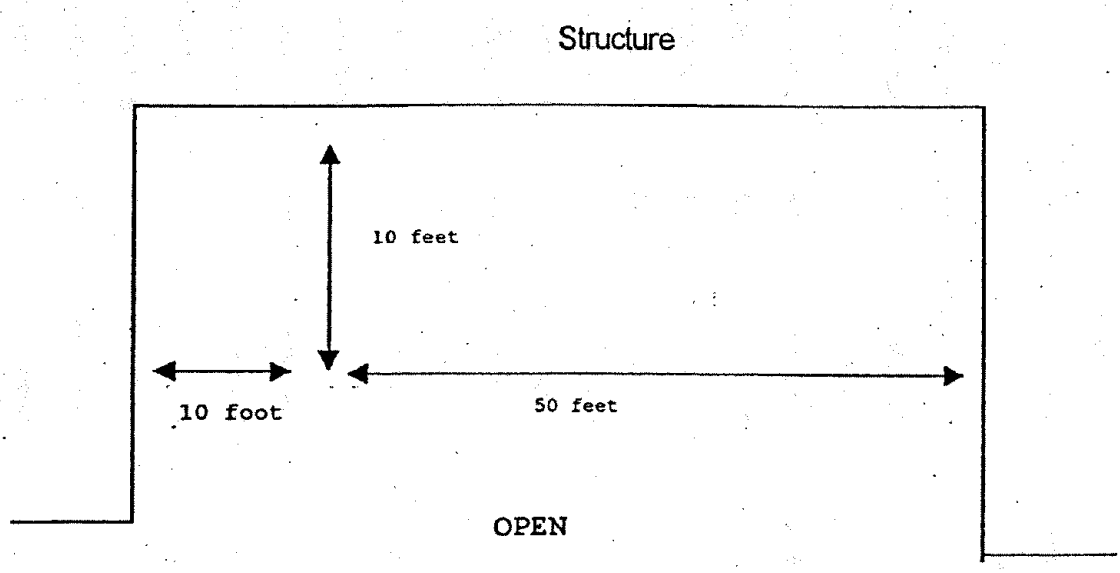
In the event that fill is proposed over the well, then the casing may have to be extended to have the top of the casing 5 feet below ground level.

Cleanup

Return surface to original condition as practical. Property owner with good reason may apply for exceptions. Contact Regional Water Quality Control Board for ground contamination problems. The cleanup must be performed within 60 days after the completion of the work.

NEARBY

Nearby is defined as being within 10 feet from the structure and/or property line, limited to any two adjacent sides of the well, and within 50 feet from the property line and/or structure on the third side of the well. The fourth side of the well shall always have open access.



Well Abandonment Contractors--District 2

Company Name	Contact	Address	City	State	Phone #	License Number
AATR Entertprises	Willie Smith	3249 South La Clenega Blvd	Los Angeles	CA	(213) 752-0055	629460
ACCES	Hamid Assadi	2034 Cotner Avenue 2nd Floor	Los Angeles	CA		557581
Access Drilling	E. Abili	2893 E La Palma Avenue	Anaheim	CA	(714)237-1187	763494
Accurate Excavating Inc	Kevin Hodges	27241 Burbank	Foothill Ranch	CA	(949) 598-7311	654063
Allan Walker Inc	Ed Levin	P O Box 82531	Bakersfield	CA	(661) 391-9152	493118
Allwaste Transportation & Remediation Inc	Jeff Bertoni	P O Box 431	San Ardo	CA	(831) 627-2595	534002
Arbor Services	Jim Staley	9155 Brown Deer Road Suite 1	San Diego	CA	(619) 687-5475	688532
Bud's Equipment Inc	Joe Lowry	P O Box 558	Coalinga	CA	(559) 935-2672	422391
CEDA Mechnical Services	Chris Davis	2756 St Louis Avenue	Signal Hill	CA	(562) 989-3650	722902
Clark Engineering Construction	Don Clark	2235 N Ventura Avenue	Ventura	CA	(805) 643-8119	627891
CMH Environmental Group Inc	Property Valuation	2501 E Chapman Avenue Suite 100	Fullerton	CA	(714) 447-4345	678295
DPH Contracting Services	Daniel Hencey	28101 Langside Avenue	Canyon Country	CA	(805) 298-4540	730421
Ecology Control Industries	Larry Hartzell	19500 Normandie Avenue	Torrance	CA	(310) 320-2555	741611
El Capitan Environmental Services Inc		722 W Wilson Avenue	Glendale	CA	(818) 265-1222	640045
Engineering Remediation Resource Group Inc	Randy Randall	4070 Nelson Avenue Suite B	Concord	CA	(925) 969-0750	743750
Env America Incorporated	Jim Larwood	16 Technology Drive Suite 154	Irvine	CA	(949) 453-9191	648559
EPS Engineering Services	Patrick Mbaba	P O Box 64365	Los Angeles	CA	(310) 826-9733	597765
First Energy Services	Mark Sterbenk	3143 Petrol Road	Bakersfield	CA	(661) 387-9300	756192
Fleet Cementers Inc	Ken Moon	1355 West Kern Street	Taft	CA	(661) 763-1859	727918
Foss Environmental Services	Robert Russell	909 East Harbor Drive	San Diego	CA	(619) 234-3677	716581
Frost Equipment Rentals L.P.	Owen Clark	250 South Hallock Drive	Santa Paula	CA	(805) 933-3334	763960
Gary Drilling Company	Troy Azlin	7001 Charity Avenue	Bakersfield	CA	(800) 443-5925	222619

Company Name	Contact	Address	City	State	Phone #	License Number
GCE Technologies	Sharon Bison	17244 Darwin Suite J	Hesperia	CA	(714) 632-9969	724889
Gradient Engineers Inc	Nick Berzins	17781 Cowan Suite 140	Irvine	CA	(949) 477-0555	734297
Grayson Service Inc	Bob Grayson	4004 South Enos Lane	Bakersfield	CA	(661) 399-6300	287659
Halliburton Energy Services Inc	Kyle Holden	5500 Ming Avenue Suite 365	Bakersfield	CA	(661) 837-2971	256183
Jensen Drilling Co	Nancy Butler	1775 Henderson Avenue	Eugene	OR	(541) 726-7435	340115
KM Scrivner Inc	Jerry Deverick	P O Box 1075	Coalinga	CA	(559) 935-0815	485655
Minco Construction	Refaat Mina	P O Box 1273	Redondo Beach	CA	(310) 376-2929	612429
MMI Services Inc	David Knoeb	6400 Price Way	Bakersfield	CA	(661) 589-9366	684884
Oil Well Service Company	Paul Braden	1241 E Burnett Street	Long Beach	CA	(562) 595-4501	178480
PC Exploration Inc	Parris Baker	1780 Vernon Street Suite 3	Roseville	CA	(916) 783-9733	265556
Pool California Energy Services Inc	Tim Barman	1025 Earthmover Court	Bakersfield	CA	(661) 588-6140	115753
Protec Engineering Services Inc	Kay Akinrele	11288 Ventura Blvd Suite 284	Studio City	CA	(818) 704-6331	716350
QST Environmental	Tom Gibbons	235 East Clark Ave	Orcutt	CA	(805) 938-7952	658022
Randoph Construction	Don Randolph	P O Box 430	Santa Maria	CA	(805) 349-1275	693014
Redi Rental and Leasing	Thurman Rock	841 E. Washington Avenue	Santa Ana	CA	(714) 547-9012	630433
RMR Inc	Mario Perea	P O Box 1715	Santa Maria	CA	(805) 928-4013	535800
SI Nor Inc	Silas Ugorji	1345 Fitzgerald Avenue Suite F	Rialto	CA	(909) 820-4010	717123
Suma Pacific Corp	Rich Steward	P O Box 1251	Grants Pass	OR	(541) 479-1461	461280
Tetra Tech Inc	Dennis Zafuto	3201 Airpark Drive Suite 108	Santa Maria	CA	(805) 739-2600	551555
The Reynolds Group		250 El Camino Real Suite 204	Tustin	CA	(714) 730-5397	659765
Tidelands Oil Production Company	Mark Kapelke	P O Box 1330	Long Beach	CA	(562) 436-9918	681859
Trak Environmental Group Inc	Bradford Newman	4125 Market Street Suite 19	Ventura	CA	(805) 650-5333	709623
Wayne Perry Inc	Richard Kreis	11230 Gold Express Drive, Suite 31	Gold Rive	CA	(916) 635-6719	300345
Western Colima Corporation	David Nowel	1780 E McFadden Avenue Suite 11	Santa Ana	CA	(714) 542-2644	638004
WZI Inc.	Tom Gibbons	235 E. Clark Avenue, Suite C	Orcutt	CA	(805) 937-2040	629898

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CARDS ☐
BOND ☐
OGD114 ☐
OGD121 ☐

Notice of Intention to Abandon Well

File in Duplicate

In compliance with Section 3229, Division 3, Public Resources Code, notice is hereby given that it is our intention to abandon

Well _____ **API No.** _____ **Sec.** _____ **T.** _____ **R.** _____ _____ **B.&M.**

_____ **Field** _____ **County, starting work on** _____

The present condition of the well is

1. Total depth:

2. Complete casing record, with plugs and perforations (present hole):

3. Date last produced or injected:

Additional data for dry hole (show depths)

1. Oil or gas shows:

2. Stratigraphic markers:

3. Formation and age at total depth:

4. Base of freshwater sands:

Is this a critical well according to the definition on the reverse side of this form (or on page 2 if you are using the Internet)?

☐ Yes ☐ No

The proposed work is as follows:

It is understood that if changes in this plan become necessary, we are to notify you immediately.

Address _____ (Street)

_____ (City) (State) (Zip)

Telephone Number _____ (Area Code) (Number)

_____ (Name of Operator)

By _____ (Print Name)

_____ (Signature) (Date)

OG108 (9/00)

CRITICAL WELL

As defined in the California Administrative Code, Title 14, Section 1720 (a), "Critical well" means a well within:

(1) 300 feet of the following:
   (A) Any building intended for human occupancy that is not necessary to the operation of the well; or
   (B) Any airport runway.

(2) 100 feet of the following:
   (A) Any dedicated public street, highway, or nearest rail of an operating railway that is in general use;
   (B) Any navigable body of water or watercourse perennially covered by water;
   (C) Any public recreational facility such as a golf course, amusement park, picnic ground, campground, or any other area of periodic high-density population; or
   (D) Any officially recognized wildlife preserve.

Exceptions or additions to this definition may be established by the supervisor upon his own judgment or upon written request of an operator. This written request shall contain justification for such an exception.

APPENDIX G:

Government Records Report

The EDR Radius Map
with GeoCheck®

Tentative Tract Map No. 53108
Wolcott Way/Henry Mayo Drive
Valencia, CA 91355

Inquiry Number: 1108642.4s

January 08, 2004

Environmental Data Resources, Inc.

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06890

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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FEDERAL ASTM STANDARD

RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRIS-LQG list, as provided by EDR, and dated 09/10/2003 has revealed that there are 3 RCRIS-LQG sites within approximately 1.75 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
T A MANUFACTURING CO	*28065 W FRANKLIN PKWY*	*1/2 - 1*	*NE*	*10*	*15*
DEL WEST ENGINEERING	*28128 W LIVINGSTON AVE*	*1 - 2*	*NNE*	*E28*	*31*
PHARMAVITE LLC	*28305 W LIVINGSTON AVE*	*1 - 2*	*NNE*	*G35*	*36*

RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRIS-SQG list, as provided by EDR, and dated 09/10/2003 has revealed that there are 4 RCRIS-SQG sites within approximately 1.75 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON SANITARY LANDF	*29201 HENRY MAYO DRIVE*	*1/2 - 1*	*W*	*B9*	*15*
R A H INDUSTRIES	*28035 HARRISON PKWY*	*1 - 2*	*NNE*	*E25*	*29*
TIME AVIATION SERVICES INC	*28402 W LIVINGSTON AVE*	*1 - 2*	*N*	*F32*	*34*
KIMBALL MICROELECTRONICS	*28575 LIVINGSTON AVE*	*1 - 2*	*N*	*37*	*39*

STATE ASTM STANDARD

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 12/31/2002 has revealed that there are 8

CHMIRS sites within approximately 2.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
Not reported	27900 CHIQUITO CANYON R	1 - 2	W	13	17
Not reported	*28201 FRANKLIN PARKWAY*	*1 - 2*	*NE*	*D23*	*25*
Not reported	28201 FRANKLIN PKWY, B	1 - 2	NE	D24	28
Not reported	27353 SAN MARTINEZ GRAN	1 - 2	W	53	53
Not reported	*29300 THE OLD ROAD*	*>2*	*NE*	*K54*	*54*
Not reported	29300 THE OLD ROAD	>2	NE	K55	59
Not reported	N/B I-5, CASTAIC INSP F	>2	NE	59	67
Not reported	HASELY CYN 1MI NORTH OF	>2	NNE	61	68

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there are 9 Cortese sites within approximately 2.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
LA CO FD FIRE TRAINING CN	28101 CHIQUITO CNYN	1 - 2	W	C19	24
SCHWARTZ OIL CO.	*27241 HENRY MAYO DR*	*1 - 2*	*NE*	*I44*	*44*
LA CO FD FIRE STA #076	*27223 W HENRY MAYO DR*	*1 - 2*	*NE*	*I47*	*47*
NEWHALL LAND & FARMING	*27230 HENRY MAYO RD*	*1 - 2*	*ENE*	*J52*	*51*
DIXIE DIESEL STATION	*29471 THE OLD ROAD*	*>2*	*NE*	*56*	*60*
NEWHALL LAND & FARMING CO	*28760 N CASTAIC CANYON*	*>2*	*ENE*	*L57*	*62*
TRI-R-TRUCKING	*28748 CASTAIC CANYON RD*	*>2*	*ENE*	*L58*	*65*
CHEVRON STATION 9 1899	*28805 THE OLD RD*	*>2*	*ENE*	*60*	*68*

Lower Elevation	Address	Dist / Dir		Map ID	Page
NEWHALL LAND & FARMING	*3003 WALNUT ORCHARD RD*	*1 - 2*	*WSW*	*14*	*18*

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, has revealed that there are 2 SWF/LF sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON LANDFILL INC	*29201 HENRY MAYO DRIVE*	*1/2 - 1*	*W*	*B4*	*7*
CHIQUITA CANYON LANDFILL	*29201 HENRY MAYO DR*	*1/2 - 1*	*W*	*B6*	*10*

WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, has revealed that there are 2 WMUDS/SWAT sites

EXECUTIVE SUMMARY

WDS: California Water Resources Control Board - Waste Discharge System.

A review of the CA WDS list, as provided by EDR, and dated 09/22/2003 has revealed that there is 1 CA WDS site within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON LANDFILL	***29201 HENRY MAYO DR***	***1/2 - 1***	***W***	***B6***	***10***

Emissions Inventory Data: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the EMI list, as provided by EDR, and dated 12/31/2001 has revealed that there are 3 EMI sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON LANDFILL	***29201 HENRY MAYO DR***	***1/2 - 1***	***W***	***B6***	***10***
US POSTAL SERVICE, SANTA CLARI	28201 FRANKLIN PKY	1 - 2	NE	D21	25
SCHWARTZ OIL CO	***27241 HENRY MAYO DR***	***1 - 2***	***NE***	***I43***	***43***

CA SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the CA SLIC list, as provided by EDR, has revealed that there are 2 CA SLIC sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
UNOCAL - LINCOLN LEASE	28101 CHIQUITO CYN	1 - 2	W	C18	24
PROPOSED SCHOOL BUS STOP	28300 LIVINGSTON	1 - 2	NNE	G34	36

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, has revealed that there are 19 HAZNET sites within approximately 1.75 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON LANDFILL INC	***29201 HENRY MAYO DRIVE***	***1/2 - 1***	***W***	***B4***	***7***
CHIQUITA CANYON LANDFILL	***29201 HENRY MAYO DR***	***1/2 - 1***	***W***	***B6***	***10***
T A MANUFACTURING CO	***28065 W FRANKLIN PKWY***	***1/2 - 1***	***NE***	***10***	***15***
BLOOMERS METAL STAMPINGS INC	28615 BRAXTON AVE	1 - 2	NE	12	17
LA CTY FIRE DEPT/DELVAL TRG CT	28101 CHIQUITO CANYON R	1 - 2	W	C16	21
Not reported	***28201 FRANKLIN PARKWAY***	***1 - 2***	***NE***	***D23***	***25***
R A H INDUSTRIES	***28035 HARRISON PKWY***	***1 - 2***	***NNE***	***E25***	***29***
EMCO	28045 W HARRISON PKWY	1 - 2	NNE	E26	30
JERRY AVALOS TRUCKING	28459 CHIQUITO CANYON R	1 - 2	WNW	27	30
DEL WEST ENGINEERING	***28128 W LIVINGSTON AVE***	***1 - 2***	***NNE***	***E28***	***31***
20TH CENTURY FOX,PAPI CHULO	28455 LIVINGSTON AVE	1 - 2	N	30	32
REGENT AEROSPACE INC	28110 HARRISON PKWY	1 - 2	NNE	E31	33
TIME AVIATION SERVICES	28402 W LIVINGSTON AVE	1 - 2	N	F33	34
PHARMAVITE LLC	***28305 W LIVINGSTON AVE***	***1 - 2***	***NNE***	***G35***	***36***

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
PHARMAVITE LLC	***28310 W LIVINGSTON AVE***	***1 - 2***	***NNE***	***G36***	***37***
KIMBALL MICROELECTRONICS	***28575 LIVINGSTON AVE***	***1 - 2***	***N***	***37***	***39***
WALT DISNEY PICTURES & TELEVIS	28150 W HARRISON PARKWA	1 - 2	NNE	38	40
THE VALENCIA TRAVEL VILLAGE	27946 HENRY MAYO ROAD,	1 - 2	NE	H41	42
SCHWARTZ OIL CO	***27241 HENRY MAYO DR***	***1 - 2***	***NE***	***I43***	***43***

HMS: Los Angeles County Industrial Waste and Underground Storage Tank Sites.

A review of the LOS ANGELES CO. HMS list, as provided by EDR, has revealed that there are 8 LOS ANGELES CO. HMS sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON LANDFILL	29201 W HENRY MAYO DR	1/4 - 1/2	WNW	A1	6
LAIDLAW WASTE SYSTEMS INC	29201 W HENRY MAYO DR	1/4 - 1/2	WNW	A2	6
L A COUNTY FIRE DEPT	***28101 N CHIQUITO CANYON***	***1 - 2***	***W***	***C17***	***22***
DEL WEST ENGINEERING	28128 W LIVINGSTON AVE	1 - 2	NNE	E29	32
PHARMAVITE LLC	***28310 W LIVINGSTON AVE***	***1 - 2***	***NNE***	***G36***	***37***
FIESTA RESORTS	27946 W HENRY MAYO DR	1 - 2	ENE	H39	41
VALENCIA TRAVEL VILLAGE	27946 W HENRY MAYO DR	1 - 2	ENE	H40	41
LA CO FD FIRE STA #076	***27223 W HENRY MAYO DR***	***1 - 2***	***NE***	***I47***	***47***

Site Mitigation Complaint Control Log: The Los Angeles County Site Mitigation Log comes from Community Health Services.

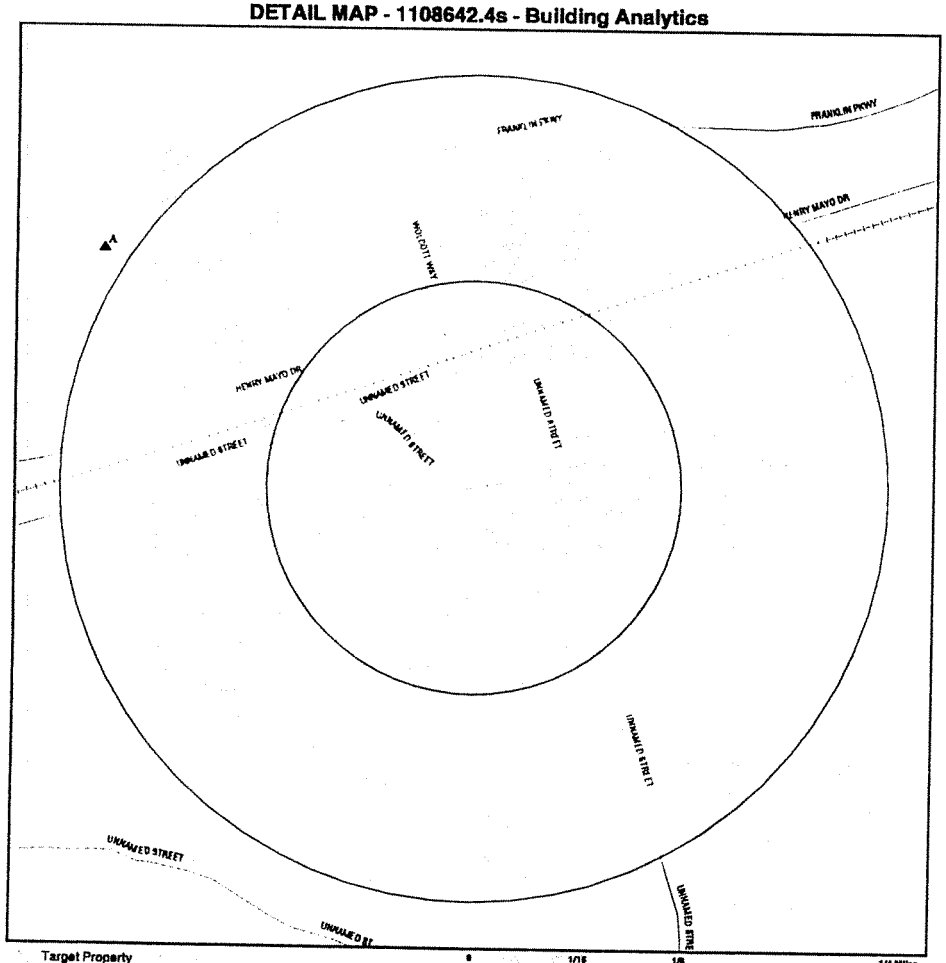
A review of the LA Co. Site Mitigation list, as provided by EDR, has revealed that there is 1 LA Co. Site Mitigation site within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
DEL VALLE TRAINING CENTER	28101 CHIQUITO CANYON R	1 - 2	W	C15	21

EDR PROPRIETARY HISTORICAL DATABASES

See the EDR Proprietary Historical Database Section for details

DETAIL MAP - 1108642.4s - Building Analytics



Target Property
Sites at elevations higher than or equal to the target property
Sites at elevations lower than the target property
Coal Gasification Sites
Historical Gas Stations / Historical Dry Cleaners
See the EDR Proprietary Historical Map Findings
Sensitive Receptors
National Priority List Sites
Landfill Sites
Dept. Defense Sites

County Boundary
Oil & Gas pipelines
100-year flood zone
500-year flood zone

Areas of Concern

0 1/16 1/8 1/4 Miles

TARGET PROPERTY:	Tentative Tract Map No. 53108	CUSTOMER:	Building Analytics
ADDRESS:	Wolcott Way/Henry Mayo Drive	CONTACT:	Joe Montoya
CITY/STATE/ZIP:	Valencia CA 91355	INQUIRY #:	1108642.4s
LAT/LONG:	34.4243 / 118.6373	DATE:	January 08, 2004 12:47 pm

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MAP FINDINGS SUMMARY

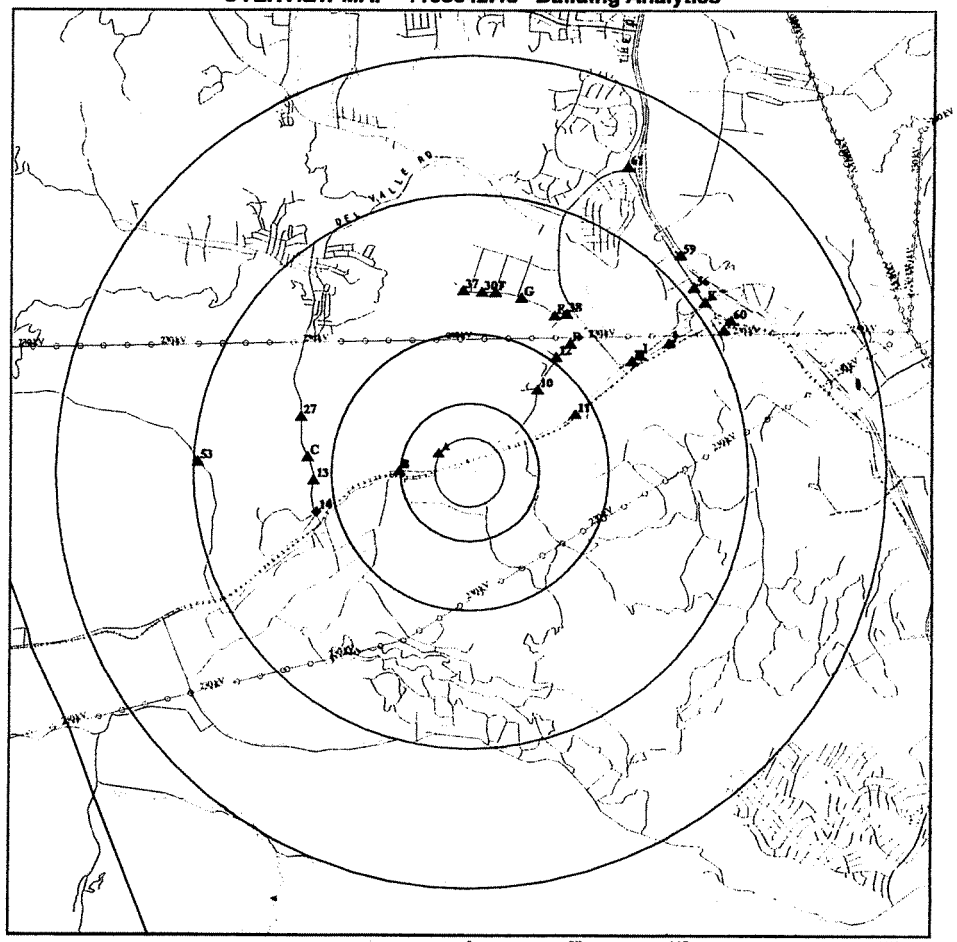
Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		2.500	0	0	0	0	0	0
Proposed NPL		2.500	0	0	0	0	0	0
CERCLIS		2.000	0	0	0	0	0	0
CERC-NFRAP		1.750	0	0	0	0	0	0
CORRACTS		2.500	0	0	0	0	0	0
RCRIS-TSD		2.000	0	0	0	0	0	0
RCRIS Lg. Quan. Gen.		1.750	0	0	0	1	2	3
RCRIS Sm. Quan. Gen.		1.750	0	0	0	1	3	4
ERNS		1.500	0	0	0	0	0	0
STATE ASTM STANDARD								
AWP		2.500	0	0	0	0	0	0
Cal-Sites		2.500	0	0	0	0	0	0
CHMIRS		2.500	0	0	0	0	8	8
Cortese		2.500	0	0	0	0	9	9
Notify 65		2.500	0	0	0	0	0	0
Toxic Pits		2.500	0	0	0	0	0	0
State Landfill		2.000	0	0	0	2	0	2
WMUDS/SWAT		2.000	0	0	1	1	0	2
LUST		2.000	0	0	0	0	5	5
CA Bond Exp. Plan		2.500	0	0	0	0	0	0
UST		1.750	0	0	0	1	2	3
VCP		2.000	0	0	0	0	0	0
INDIAN UST		1.750	0	0	0	0	0	0
CA FID UST		1.750	0	0	0	1	3	4
HIST UST		1.750	0	0	0	1	3	4
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		2.500	0	0	0	0	0	0
ROD		2.500	0	0	0	0	0	0
Delisted NPL		2.500	0	0	0	0	0	0
FINDS		1.500	0	0	0	2	6	8
HMIRS		1.500	0	0	0	0	0	0
MLTS		1.500	0	0	0	0	0	0
MINES		1.750	0	0	0	0	0	0
NPL Liens		1.500	0	0	0	0	0	0
PADS		1.500	0	0	0	0	0	0
DOD		2.500	0	0	0	0	0	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
RAATS		1.500	0	0	0	0	0	0
TRIS		1.500	0	0	0	0	0	0
TSCA		1.500	0	0	0	0	0	0
SSTS		1.500	0	0	0	0	0	0
FTTS		1.500	0	0	0	0	0	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
AST		1.500	0	0	0	0	2	2

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
PPG INDUSTRIES INC WORKS 24	RCRIS-SQG, RCRIS-TSD, FINDS, CORRACTS, CERC-NFRAP, LOS ANGELES CO. HMS
BERTH 70, LONG BEACH HARBOUR	CHMIRS, HAZNET
BERTH 30 LONG BEACH HARBOUR	CHMIRS, HAZNET
FLORENCE AVE / TELEGRAPH RD WHITTIER	CHMIRS, LUST
CSI CRIME SCENE INVESTIGATION	HAZNET
CALIFORNIA INSTITUTE OF THE ARTS	HAZNET
PRODUCTION GOODBYE LOVER	HAZNET
LOS ANGELES COUNTY FIRE DEPT	HAZNET
TECHNICAL TROUBLE SHOOTING	HAZNET
HOWARD CUSTOM BOATS INCORPORATED	FINDS, EMI, HAZNET
DEPARTMENT OF TRANSPORTATION	RCRIS-SQG, FINDS
TWO WATER WELLS RESTORATION	CA WDS
COMMERCE CENTER BRIDGE	CA WDS
CASTAIC CREEK CHANNEL LINING	CA WDS
HWY. 126 BRIDGE	CA WDS
GOLDEN VALLEY ROAD EXTENSION	CA WDS
WATER WELL NO. W-11	CA WDS
GRUBER SYSTEMS, INC	REF
SCHOOL ON 18 ACRE SITE	SCH

OVERVIEW MAP - 1108642.4s - Building Analytics



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	Tentative Tract Map No. 53108	CUSTOMER:	Building Analytics
ADDRESS:	Wolcott Way/Henry Mayo Drive	CONTACT:	Joe Montoya
CITY/STATE/ZIP:	Valencia CA 91355	INQUIRY #:	1108642.4s
LAT/LONG:	34.4243 / 118.6373	DATE:	January 08, 2004 12:46 pm

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CLEANERS		1.750	0	0	0	0	0	0
CA WDS		1.500	0	0	0	1	0	1
DEED		1.500	0	0	0	0	0	0
SCH		1.750	0	0	0	0	0	0
NFA		1.750	0	0	0	0	0	0
EMI		1.500	0	0	0	1	2	3
REF		1.750	0	0	0	0	0	0
NFE		1.750	0	0	0	0	0	0
CA SLIC		2.000	0	0	0	0	2	2
HAZNET		1.750	0	0	0	3	16	19
Los Angeles Co. HMS		1.500	0	0	2	0	6	8
LA Co. Site Mitigation		1.500	0	0	0	0	1	1
AOCONCERN		2.500	0	0	0	0	0	0
EDR PROPRIETARY HISTORICAL DATABASES								
Gas Stations/Dry Cleaners		0.250	0	0	NR	NR	NR	0
Coal Gas		2.500	0	0	0	0	0	0
BROWNFIELDS DATABASES								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
VCP		2.000	0	0	0	0	0	0

NOTES:

See the EDR Proprietary Historical Database Section for details

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
A1 **WNW** **1/4-1/2** **1402 ft.**	**CHIQUITA CANYON LANDFILL** **29201 W HENRY MAYO DR** **UNINCORPORATED, CA**	**LOS ANGELES CO. HMS**	**1001865073** **N/A**

Site 1 of 3 in cluster A

Relative: Higher

Actual: 1034 ft.

HMS:

Facility Id:	005897-I06111		
Area:	7		
Facility Type:	I08		
Permit Number:	174	Permit Status:	Closed
Facility Status:	Permit		
Region:	Los Angeles County:		
Facility Id:	005897-037921		
Area:	7		
Facility Type:	I09		
Permit Number:	174	Permit Status:	Permit
Facility Status:	Permit		
Region:	Los Angeles County:		
Facility Id:	005897-037920		
Area:	7		
Facility Type:	T0		
Permit Number:	174	Permit Status:	Permit
Facility Status:	Permit		
Region:	Los Angeles County:		

A2 **WNW** **1/4-1/2** **1402 ft.**	**LAIDLAW WASTE SYSTEMS INC** **29201 W HENRY MAYO DR** **UNINCORPORATED, CA**	**LOS ANGELES CO. HMS**	**S102064584** **N/A**

Site 2 of 3 in cluster A

Relative: Higher

Actual: 1034 ft.

HMS:

Facility Id:	005897-006111		
Area:	7		
Facility Type:	T0		
Permit Number:	174	Permit Status:	Closed
Facility Status:	Permit		
Region:	Los Angeles County:		

A3 **WNW** **1/4-1/2** **1402 ft.**	**UNIVERSAL BY-PRODUCTS-VALENCIA** **29201 SAUGUS-VENTURA ROAD** **VALENCIA, CA**	**WMUDS/SWAT**	**S103441396** **N/A**

Site 3 of 3 in cluster A

Relative: Higher

Actual: 1034 ft.

WMUDS:

Region:	4
Date of Last Facility Edit:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System ID:	4 190133NUR
Solid Waste Information ID:	Not reported
Waste Discharge System:	False
Solid Waste Assessment Test Program:	True
Facility Name:	Not reported
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act Program:	False
Department of Defense:	False

UNIVERSAL BY-PRODUCTS-VALENCIA (Continued) — **S103441396**

Open to Public:	False
Number of WMUDS at Facility:	1
Facility Telephone:	Not reported
Primary Standard Industrial Classification:	Not reported
Secondary Standard Industrial Classification:	Not reported
Solid Waste Assessment Test Program Name:	UNIVERSAL BY-PRODUCTS
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Sub Chapter 15:	False
Reg. Board Project Officer:	LT
Section Range:	Not reported
RCRA Facility:	Not reported
Waste Discharge Requirements:	Not reported
Base Meridian:	Not reported
Waste List:	False
Facility Description:	Not reported
Self-Monitoring Rept. Frequency:	Not reported

Threat to Water Quality:Not reported

Agency:	UNIVERSAL BY-PRODUCTS
Address:	Not reported
Department:	Not reported
Contact:	Not reported
Telephone:	Not reported
Landowner:	Not reported
Address:	CA
Telephone:	Not reported
Contact:	Not reported

B4
West
1/2-1
2690 ft.

Relative: Higher

Actual: 974 ft.

CHIQUITA CANYON LANDFILL INC
29201 HENRY MAYO DRIVE
VALENCIA, CA 91355

HAZNET **S100932492**
SWF/LF **N/A**

Site 1 of 6 in cluster B

LF:

Facility ID:	19-AA-0052
Operator:	Republic Services Of California I, L.L.C
Operator Phone:	(661) 257-3655
Operator Addr:	29201 Henry Mayo Drive Valencia, CA 91355
Owner:	Republic Services Of California I, L.L.C
Owner Address:	Not reported 29201 Henry Mayo Drive Valencia, CA 91355
Owner Telephone:	(661) 257-3655
Activity:	Solid Waste Landfill
Operator's Status:	Active
Regulation Status:	Permitted
Region:	STATE
Lat/Long:	34 / -119
Permit Date:	Not reported
Accepted Waste:	Construction/demolition,Green Materials,Industrial,Inert,Mixed municipal
Restrictions:	
Status :	Not reported
Swisnumber :	Not reported
Site Type :	Not reported

CHIQUITA CANYON LANDFILL INC (Continued) — **S100932492**

Aka :	Not reported
Type Of Waste :	Not reported
Disposal Area :	Not reported
SWFP Date :	Not reported
WDR Number :	Not reported
Dates Of Operation :	Not reported
Closure Approved :	Not reported
Date Of Field Units :	Not reported
Surface Condition :	Not reported
Landfill Gas :	Not reported
Leachate :	Not reported
Emergency Response :	Not reported
Other Recommendation :	Not reported
Reassess Site :	Not reported
Priority For Site Assessment :	Not reported
Lea Date :	Not reported
Explanation:	Not Reported
No Further Action:	Not Reported
Permitted Throughput with Units:	6000
Permitted Throughput with Units:	6000
Permitted Throughput with Units:	6000
Actual Throughput with Units:	Tons/day
Actual Capacity with Units:	45889550
Permitted Capacity with Units:	45889550
Remaining Capacity with Units:	Cubic Yards
Permitted Total Acreage:	592
Inspection Frequency:	Monthly
Landuse Name:	Residential,Recreational,Industrial,Agricultural
GIS Source:	Map
Permit Status:	Permitted
Category:	Disposal
Unit Number:	01
Last Waste Tire Inspection Count :	Not reported
Last Waste Tire Inspection Date:	Not reported
Original Waste Tire Count:	Not reported
Original Waste Tire Count Date:	Not reported
Closure Date:	11/24/2019
Closure Type:	Estimated
Disposal Acreage:	257
Remaining Capacity:	26024360

HAZNET:

Gepaid:	CAL000035857
TSD EPA ID:	AZD049318009
Gen County:	Los Angeles
Tsd County:	99
Tons:	.4250
Waste Category:	Laboratory waste chemicals
Disposal Method:	Transfer Station
Contact:	CHIQUITA CANYON LANDFILL INC
Telephone:	(805) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Los Angeles

CHIQUITA CANYON LANDFILL INC (Continued) — **S100932492**

Gepaid: CAL000035857
TSD EPA ID: AZD049318009
Gen County: Los Angeles
Tsd County: 99
Tons: .5000
Waste Category: Unspecified organic liquid mixture
Disposal Method: Transfer Station
Contact: CHIQUITA CANYON LANDFILL INC
Telephone: (805) 257-3655
Mailing Address: 29201 HENRY MAYO DR
VALENCIA, CA 91355
County Los Angeles

Gepaid: CAL000035857
TSD EPA ID: CAT000613893
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .2400
Waste Category: Unspecified organic liquid mixture
Disposal Method: Transfer Station
Contact: CHIQUITA CANYON LANDFILL INC
Telephone: (805) 257-3655
Mailing Address: 29201 HENRY MAYO DR
VALENCIA, CA 91355
County Los Angeles

Gepaid: CAL000035857
TSD EPA ID: CAT000613893
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .1542
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Contact: CHIQUITA CANYON LANDFILL INC
Telephone: (805) 257-3655
Mailing Address: 29201 HENRY MAYO DR
VALENCIA, CA 91355
County Los Angeles

Gepaid: CAL000035857
TSD EPA ID: CAD099452708
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 2.0850
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: CHIQUITA CANYON LANDFILL INC
Telephone: (805) 257-3655
Mailing Address: 29201 HENRY MAYO DR
VALENCIA, CA 91355
County Los Angeles

The CA HAZNET database contains 16 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

CHIQUITA CANYON LANDFILL INC (Continued) — **S100932492**

B5 West 1/2-1 2690 ft. — **LAIDLAW WASTE SYSTEMS INC**, **29201 HENRY MAYO DR**, **VALENCIA, CA 91355** — **CA FID UST** — **S101586012**, **N/A**

Site 2 of 6 in cluster B

Relative: Higher
Actual: 974 ft.

FID:
Facility ID: 19036223 — Regulate ID: Not reported
Reg By: Active Underground Storage Tank Location
Cortese Code: Not reported — SIC Code: Not reported
Status: Active — Facility Tel: (805) 257-3655
Mail To: Not reported
29201 HENRY MAYO DR
VALENCIA, CA 91355
Contact: Not reported — Contact Tel: Not reported
DUNs No: Not reported — NPDES No: Not reported
Creation: 10/22/93 — Modified: 00/00/00
EPA ID: Not reported
Comments: Not reported

B6 West 1/2-1 2690 ft. — **CHIQUITA CANYON LANDFILL**, **29201 HENRY MAYO DR**, **VALENCIA, CA 91310** — **CA WDS**, **EMI**, **HAZNET**, **SWF/LF** — **1002687338**, **N/A**

Site 3 of 6 in cluster B

Relative: Higher
Actual: 974 ft.

LF:
Facility ID: Not reported
Operator: Not reported
Operator Phone: Not reported
Operator Addr:
Owner: Not reported
Owner Address: Not reported
Not reported
Owner Telephone: Not reported
Activity: Not reported
Operator's Status: Not reported
Regulation Status: Not reported
Region: LOS ANGELES
Lat/Long: Not reported
Permit Date: Not reported
Accepted Waste:
Restrictions:
Status : Not reported
Swisnumber : Not reported
Site Type : Not reported
Aka : Not reported
Type Of Waste : Not reported
Disposal Area : Not reported
SWFP Date : Not reported
WDR Number : Not reported
Dates Of Operation : Not reported
Closure Approved : Not reported
Date Of Field Units : Not reported
Surface Condition : Not reported
Landfill Gas : Not reported
Leachate : Not reported

CHIQUITA CANYON LANDFILL (Continued) 1002687338

Emergency Response :	Not reported
Other Recommendation :	Not reported
Reassess Site :	Not reported
Priority For Site Assessment :	Not reported
Lea Date :	Not reported
Explanation:	Not Reported
No Further Action:	Not Reported
Permitted Throughput with Units:	Not reported
Permitted Throughput with Units:	Not reported
Permitted Throughput with Units:	Not reported
Actual Throughput with Units:	Not reported
Actual Capacity with Units:	Not reported
Permitted Capacity with Units:	Not reported
Remaining Capacity with Units:	Not reported
Permitted Total Acreage:	Not reported
Inspection Frequency:	Not reported
Landuse Name:	Not reported
GIS Source:	Not reported
Permit Status:	Not reported
Category:	Not reported
Unit Number:	Not reported
Last Waste Tire Inspection Count :	Not reported
Last Waste Tire Inspection Date:	Not reported
Original Waste Tire Count:	Not reported
Original Waste Tire Count Date:	Not reported
Closure Date:	/ /
Closure Type:	Not reported
Disposal Acreage:	Not reported
Remaining Capacity:	Not reported

HAZNET:

Gepaid:	CAL000196316
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.00
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Transfer Station
Contact:	MATT TERRELL
Telephone:	(661) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Not reported

Gepaid:	CAL000196316
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.14
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Recycler
Contact:	MATT TERRELL
Telephone:	(661) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Not reported

CHIQUITA CANYON LANDFILL (Continued) 1002687338

Gepaid:	CAL000196316
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	1.66
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Contact:	MATT TERRELL
Telephone:	(661) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Not reported

Gepaid:	CAL000196316
TSD EPA ID:	CAD008252405
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.0166
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Recycler
Contact:	REPUBLIC SERVICES OF CA I LLC
Telephone:	(661) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Los Angeles

Gepaid:	CAL000196316
TSD EPA ID:	CAT000613893
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.0625
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Not reported
Contact:	REPUBLIC SERVICES OF CA I LLC
Telephone:	(661) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Los Angeles

The CA HAZNET database contains 8 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

WDS:

Facility ID:	0		
Facility Contact	Mike Dean (General manager)	Facility Telephone	(661) 257-3655
SIC Code:	4953	SIC Code 2:	Not reported
Agency Name:	A REPUBLIC WASTE SERVICES CO.		
Agency Address:	0		
Agency Contact:	Not reported	Agency Phone:	Not reported
Design Flow:	0 Million Gal/Day	Baseline Flow:	0 Million Gal/Day
Facility Type:	Solid Waste Site-Class III - Landfills for non hazardous solid wastes.		
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.		
Agency Type:	Private		
Waste Type:	Solid Wastes - Nonhazardous Solid Wastes/Influent or Solid Wastes that contain nonhazardous putrescible and non putrescible solid, semisolid, and liquid wastes (E.G., garbage, trash, refuse, paper, demolition and construction wastes, manure, vegetable or animal solid and semisolid waste).		

CHIQUITA CANYON LANDFILL (Continued) 1002687338

Threat to Water: Not reported
Complexity: Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.
Reclamation: No reclamation requirements associated with this facility.
POTW: The facility is not a POTW.
NPDES Number: Not reported
Subregion: 4

EMISSIONS :

Facility ID :	61029
Air District Code :	SC
SIC Code :	4959
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	2
Reactive Organic Gases :	1
Carbon Monoxide Emissions :	6
NOX Gas Emissions (Nitrogen - Oxygen) :	5
SOX Gas Emissions (Sulphur - Oxygen) :	3

Facility ID :	61029
Air District Code :	SC
SIC Code :	4959
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	Not reported
Reactive Organic Gases :	Not reported
Carbon Monoxide Emissions :	Not reported
NOX Gas Emissions (Nitrogen - Oxygen) :	Not reported
SOX Gas Emissions (Sulphur - Oxygen) :	Not reported

B7 West 1/2-1 2690 ft. — **CHIQUITA CANYON LANDFILL** — WMUDS/SWAT — 1001526767 / N/A
29201 HENRY MAYO DR
VALENCIA CA, CA 91310

Site 4 of 6 in cluster B

Relative: Higher — **Actual: 974 ft.**

WMUDS:

Region:	4
Date of Last Facility Edit:	11/22/1996
Last Facility Editors:	JHM, JHM, JHM
Waste Discharge System ID:	4A190359001
Solid Waste Information ID:	19-AA-0052
Waste Discharge System:	True
Solid Waste Assessment Test Program:	True

CHIQUITA CANYON LANDFILL (Continued) 1001526767

Facility Name:	LAIDLAW WASTE SYSTEMS CHIQUITA, INC.
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act Program:	False
Department of Defense:	False
Open to Public:	False
Number of WMUDS at Facility:	5
Facility Telephone:	(805) 257-3655
Primary Standard Industrial Classification:	4953
Secondary Standard Industrial Classification:	Not reported
Solid Waste Assessment Test Program Name:	LAIDLAW WASTE SYSTEMS CHIQUITA, INC
NPID:	Not reported
Tonnage:	5000
Regional Board ID:	67-20
Municipal Solid Waste:	True
Superorder:	True
Sub Chapter 15:	True
Reg. Board Project Officer:	Not reported
Section Range:	04N17W14
RCRA Facility:	No
Waste Discharge Requirements:	A
Base Meridian:	SB
Waste List:	True
Facility Description:	Not reported
Self-Monitoring Rept. Frequency:	Quarterly Submittal

Threat to Water Quality: Major Threat to Water Quality. A violation could render unusable a ground water or surface water resource used as a significant drink water supply, require closure of an area used for contact recreation, result in long-term deleterious effects on shell fish spawning or growth areas of aquatic resources, or directly expose the public to toxic substances.
Facility Type: Solid Waste Site-Class III - Landfills for non hazardous solid wastes.
Complexity: Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.
Prime Waste: Solid Wastes - Nonhazardous Solid Wastes/Influent or Solid Wastes that contain nonhazardous putrescible and non putrescible solid, semisolid, and liquid wastes (E.G., garbage, trash, refuse, paper, demolition and construction wastes, manure, vegetable or animal solid and semisolid waste).
Agency: USA WASTE
Address: 29201 HENRY MAYO DRIVE
VALENCIA CA 91310
Department: REGIONAL ENGINEER
Contact: RYAN WURGLER
Telephone: (805) 257-3655
Type: Private
Landowner: NEWHALL LAND & FARMING
Address: 27050 HENRY MAYO DR.
CASTAIC, CA 91310
Telephone: (805) 255-4000
Contact: Not reported
Comments: REGIONAL BOARD SAYS 3500 TONS PER DAY...

CHIQUITA CANYON LANDFILL (Continued) — **1001526767**

B8 — **LAIDLAW WASTE SYSTEMS INC** — **UST** — **U003776127**
West — **29201 HENRY MAYO DR** — **N/A**
1/2-1 — **CASTAIC, CA 91384**
2690 ft.

Site 5 of 6 in cluster B

Relative: Higher
Actual: 974 ft.

State UST:
Facility ID: 6111
Region: STATE
Local Agency: 19000

B9 — **CHIQUITA CANYON SANITARY LANDFILL** — **RCRIS-SQG** — **1000820545**
West — **29201 HENRY MAYO DRIVE** — **FINDS** — **CAD983666041**
1/2-1 — **CASTAIC, CA 91384**
2690 ft.

Site 6 of 6 in cluster B

Relative: Higher
Actual: 974 ft.

RCRIS:
Owner: LAIDLAW WASTE SYSTEMS INC
(805) 257-3655
EPA ID: CAD983666041
Contact: SONNY STAATS
(805) 257-3655
Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
AIRS/AIRS Facility Subystem (AIRS/AFS)
National Emissions Inventory (NEI)
National Emissions Trends (NET)
National Toxics Inventory (NTI)
Resource Conservation and Recovery Act Information system (RCRAINFO)
Solid Waste Inventory System (California sub-system of landfills) (SWIS)

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10 — **T A MANUFACTURING CO** — **RCRIS-LQG** — **1001231332**
NE — **28065 W FRANKLIN PKWY** — **FINDS** — **CAR000039230**
1/2-1 — **VALENCIA, CA 91355** — **HAZNET**
4090 ft.

Relative: Higher
Actual: 983 ft.

RCRIS:
Owner: T A MANUFACTURING CO
(805) 775-1100
EPA ID: CAR000039230
Contact: DAVID SCHMIDT
(805) 775-1100
Classification: Large Quantity Generator
TSDF Activities: Not reported

T A MANUFACTURING CO (Continued) — **1001231332**

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:

Gepaid:	CAR000039230
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	99
Tons:	0.00
Waste Category:	Other inorganic solid waste
Disposal Method:	Treatment, Incineration
Contact:	ERIC BENFORD
Telephone:	(661) 775-1100
Mailing Address:	28065 W FRANKLIN PKWY VALENCIA, CA 91355
County	Not reported

Gepaid:	CAR000039230
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	99
Tons:	0.10
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Disposal, Land Fill
Contact:	ERIC BENFORD
Telephone:	(661) 775-1100
Mailing Address:	28065 W FRANKLIN PKWY VALENCIA, CA 91355
County	Not reported

Gepaid:	CAR000039230
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	99
Tons:	0.04
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Recycler
Contact:	ERIC BENFORD
Telephone:	(661) 775-1100
Mailing Address:	28065 W FRANKLIN PKWY VALENCIA, CA 91355
County	Not reported

Gepaid:	CAR000039230
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	3.62
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Contact:	ERIC BENFORD
Telephone:	(661) 775-1100
Mailing Address:	28065 W FRANKLIN PKWY VALENCIA, CA 91355
County	Not reported

T A MANUFACTURING CO (Continued) — 1001231332

Gepaid: CAR000039230
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.40
Waste Category: Unspecified organic liquid mixture
Disposal Method: Recycler
Contact: ERIC BENFORD
Telephone: (661) 775-1100
Mailing Address: 28065 W FRANKLIN PKWY
VALENCIA, CA 91355
County: Not reported

The CA HAZNET database contains 55 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

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11 ENE 1/2-1 4583 ft. — **TRAVEL VILLAGE**, **27946 HENRY MAYO DR**, **CASTAIC, CA 91355** — HIST UST — U001567876 / N/A

Relative: Higher
Actual: 984 ft.

UST HIST:
Facility ID: 41379
Total Tanks: 1
Owner Name: NEWHALL INVESTMENT PROPERTIES
Owner Address: 23823 VALENCIA BOULEVARD
VALENCIA, CA 91355
Facility Status: Not reported
Region: STATE
Box Number: Not reported

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12 NE > 1 5500 ft. — **BLOOMERS METAL STAMPINGS INC**, **28615 BRAXTON AVE**, **VALENCIA, CA 91355** — HAZNET — S105724739 / N/A

Relative: Higher
Actual: 1020 ft.

HAZNET:
Gepaid: CAL000214634
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Kings
Tons: 4.21
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Contact: PERRY BLOOMER / VICE PRESIDENT
Telephone: (661) 257-2955
Mailing Address: 28615 BRAXTON AVE
VALENCIA, CA 91355
County: Not reported

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13 West > 1 5954 ft. — **27900 CHIQUITO CANYON ROAD**, **UNINC, CA** — CHMIRS — S100216887 / N/A

Relative: Higher
Actual: 962 ft.

CHMIRS:
OES Control Number: 8904996
Chemical Name: Not reported
Extent of Release: Not reported
Property Use: Petroleum Refinery

(Continued) — S100216887

Incident Date: 23-FEB-89
Date Completed: 23-FEB-89
Time Completed: 2035
Agency Id Number: 19110
Agency Incident Number: 52
OES Incident Number: 8904996
Time Notified: 1915
Surrounding Area: 946
Estimated Temperature: Not reported
Property Management: P
More Than Two Substances Involved?: N
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
Responding Agency Personel # Of Injuries: 0
Responding Agency Personel # Of Fatalities: 0
Resp Agncy Personel # Of Decontaminated: 0
Others Number Of Decontaminated: 0
Others Number Of Injuries: 0
Others Number Of Fatalities: 0
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: CAPT. JOHN W. EVERETT
Report Date: 26-FEB-89
Comments: Not reported
Facility Telephone Number: 213 267-2485
Waterway Involved: Not reported
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Not reported
Containment: Not reported
What Happened: Not reported
Type: Not reported
Other: Not reported
Chemical 1: Not Reported
Chemical 2: Not Reported
Chemical 3: Not Reported
Date/Time: Not reported
Evacuations: Not reported

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14 WSW > 1 6031 ft. — **NEWHALL LAND & FARMING**, **3003 WALNUT ORCHARD RD**, **VALENCIA, CA 91350** — Cortese, LUST — S102434348 / N/A

Relative: Lower
Actual: 949 ft.

State LUST:
Cross Street: HENRY MAYO DRIVE
Qty Leaked: Not reported
Case Number: I-14101
Reg Board: 4
Chemical: Gasoline
Lead Agency: Regional Board

NEWHALL LAND & FARMING (Continued) S102434348

Local Agency : 19000
Case Type: Soil only
Status: Case Closed
Review Date: Not reported
Workplan: 3/9/90
Pollution Char: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 06/27/1996
Release Date: 03/09/1990
Cleanup Fund Id : Not reported
Discover Date : 01/25/1989
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 03/05/1990
Funding: Federal Funds
Staff Initials: Not reported
How Discovered: Tank Closure
How Stopped: Not reported
Interim : Not reported
Leak Cause: UNK
Leak Source: UNK
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : JONES, ROGER ALSO SEE I-14100
Oversight Prgm: RB Lead Underground Storage Tank
Oversight Prgm : UST
Review Date : 07/22/1998
Stop Date : 01/25/1989
Work Suspended : Not reported
Responsible Party: NEWHALL LAND AND FARM
RP Address: 23823 VALENCIA BLVD., VAKENCIA, 91355 C
Global Id: T0603704137
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

Confirm Leak: Not reported
Prelim Assess: 3/9/90
Remed Plan: Not reported

LUST Region 4:
Report Date: 3/9/1990
Lead Agency: Regional Board
Local Agency: 19000
Case Number: I-14101
Substance: Gasoline

NEWHALL LAND & FARMING (Continued) S102434348

Case Type: Soil
Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Federal Funds
Date the Leak was Discovered: 1/25/1989
How the Leak was Discovered: Tank Closure
How the Leak was Stopped: Close Tank
Cause of Leak: Unknown
Leak Source: Unknown
Date The Leak was Stopped: 1/25/1989
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: 3/9/1990
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 6/27/1996
Date Case Last Changed on Database: 7/22/1998
Enforcement Action Date: Not reported
Date Leak First Reported: 3/9/1990
Enforcement Type: Not reported
Global ID : T0603704137
Organization : Not reported
Historical Max MTBE Data: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported
County: Los Angeles
Regional Board: 04
Owner Contact: Not reported
Responsible Party: NEWHALL LAND AND FARM
RP Address: 23823 VALENCIA BLVD., VAKENCIA, 91355 C
Significant Interim Remedial Action Taken: Not reported
Program : UST
Lat / Long : 34.4200613 / -118.6567124
MTBE Counts : 0
MTBE Fuel : 1
MTBE Tested : NT
Local Agency Staff: UNK
Summary : Not reported
Hydrologic Basin # : Not reported
Beneficial Use : Not reported
Priority : Not reported
Cleanup Fund Id : Not reported
Suspended : Not reported
Local Case No : Not reported
Substance Quantity : Not reported
Abatement Method Used at the Site: Not reported
Operator : JONES, ROGER ALSO SEE I-14100
Water System : WALNUT HILL
Well Name : WELL C-6
Approx. Dist To Production Well (ft) : 8339.4141756642599077889829 5
W Global ID : W0603709014
Assigned Name : 04N/17W-14Q07 S

NEWHALL LAND & FARMING (Continued) — S102434346

MTBE Class : Not reported

CORTESE:
Region: CORTESE
Fac Address 2: 3003 WALNUT ORCHARD RD

C15 West > 1 6207 ft. — **DEL VALLE TRAINING CENTER** — LA Co. Site Mitigation — S103697023 / N/A
28101 CHIQUITO CANYON RD
SCV, CA 91350

Relative: Higher
Actual: 994 ft.

Site 1 of 6 in cluster C

Site Mitigation Log:
Case Number: 91S259
Abatement Date: 08/12/97
Thomas Guide Page Numbers: 4549C2

C16 West > 1 6207 ft. — **LA CTY FIRE DEPT/DELVAL TRG CTR** — HAZNET — S103649248 / N/A
28101 CHIQUITO CANYON ROAD
CASTAIC, CA 91384

Relative: Higher
Actual: 994 ft.

Site 2 of 6 in cluster C

HAZNET:
Gepaid: CAL000100193
TSD EPA ID: CAT080013352
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .6255
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: COUNTY OF LOS ANGELES-FIRE DEP
Telephone: (818) 448-0161
Mailing Address: 1320 N EASTERN AVE
LOS ANGELES, CA 90063 - 3294
County Los Angeles

Gepaid: CAL000100193
TSD EPA ID: CAD000088252
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .5293
Waste Category: Other inorganic solid waste
Disposal Method: Transfer Station
Contact: COUNTY OF LOS ANGELES-FIRE DEP
Telephone: (818) 448-0161
Mailing Address: 1320 N EASTERN AVE
LOS ANGELES, CA 90063 - 3294
County Los Angeles

Gepaid: CAL000100193
TSD EPA ID: CAD000088252
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .3880
Waste Category: Other inorganic solid waste
Disposal Method: Transfer Station
Contact: COUNTY OF LOS ANGELES-FIRE DEP
Telephone: (818) 448-0161
Mailing Address: 1320 N EASTERN AVE

LA CTY FIRE DEPT/DELVAL TRG CTR (Continued) — S103649248

LOS ANGELES, CA 90063 - 3294
County Los Angeles

C17 West > 1 6207 ft. — **L A COUNTY FIRE DEPT** — LOS ANGELES CO. HMS, LUST — S102064540 / N/A
28101 N CHIQUITO CANYON RD
CASTAIC, CA 91384

Relative: Higher
Actual: 994 ft.

Site 3 of 6 in cluster C

State LUST:
Cross Street: SAN MARTINEZ CYN RD
Qty Leaked: Not reported
Case Number R-00003
Reg Board: 4
Chemical: Hydrocarbons
Lead Agency: Local Agency
Local Agency : 19000
Case Type: Soil only
Status: Leak being confirmed
Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site
Review Date: 04/10/1991 — Confirm Leak: 04/10/1991
Workplan: Not reported — Prelim Assess: Not reported
Pollution Char: Not reported — Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: Not reported
Release Date: 12/03/1997
Cleanup Fund Id : Not reported
Discover Date : 04/10/1991
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 02/18/1998
Funding: Not reported
Staff Initials: Not reported
How Discovered: OM
How Stopped: Not reported
Interim : Not reported
Leak Cause: Not reported
Leak Source: Tank
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Not Required to be Tested.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)
Oversight Prgm : LIA
Review Date : 12/03/1997
Stop Date : / /
Work Suspended :Not reported
Responsible PartyUNOCAL CORP

L A COUNTY FIRE DEPT (Continued) S102064540

RP Address: 2125 KNOLL DR., P.O. BOX 6176, VENTURA, CA 93003
Global Id: T0603704507
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 12/3/1997
Lead Agency: Local Agency
Local Agency: 19000
Case Number: R-00003
Substance: Hydrocarbons
Case Type: Soil
Status: Leak being confirmed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Not reported
Date the Leak was Discovered: 4/10/1991
How the Leak was Discovered: Other Means
How the Leak was Stopped: Close Tank
Cause of Leak: Not reported
Leak Source: Tank
Date The Leak was Stopped: Not reported
Date Confirmation Leak Began: 4/10/1991
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: Not reported
Date Case Last Changed on Database: 12/3/1997
Enforcement Action Date: Not reported
Date Leak First Reported: 12/3/1997
Enforcement Type: Not reported
Global ID : T0603704507
Organization : Not reported
Historical Max MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported
County: Los Angeles
Regional Board: 04
Owner Contact: Not reported
Responsible Party: UNOCAL CORP
RP Address: 2125 KNOLL DR., P.O. BOX 6176, VENTURA, CA 93003
Significant Interim Remedial Action Taken: Not reported
Program : LIA
Lat / Long : 34.4358266 / -118.6591324
MTBE Counts : 0
MTBE Fuel : 0

L A COUNTY FIRE DEPT (Continued) S102064540

MTBE Tested : NRQ
Local Agency Staff: UNK
Summary : TPH 17000 PPM, 36000 PPM & 20000 PPM IN SOIL DEPTH TO GW 300 FT BGS.
Hydrologic Basin # : Not reported
Beneficial Use : Not reported
Priority : Not reported
Cleanup Fund Id : Not reported
Suspended : Not reported
Local Case No : Not reported
Substance Quantity : Not reported
Abatement Method Used at the Site: Excavate and Dispose
Operator : Not reported
Water System : WALNUT HILL
Well Name : WELL C-6
Approx. Dist To Production Well (ft) : 9199.3148241037374240915100 48
W Global ID : W0603709014
Assigned Name : 04N/17W-14Q07 S
MTBE Class : Not reported

HMS:
Facility Id: 000003-I00003
Area: 7
Facility Type: I09
Permit Number: 174 Permit Status: Removed
Facility Status: Removed
Region: Los Angeles County:

Facility Id: 000003-000003
Area: 7
Facility Type: T0
Permit Number: 174 Permit Status: Removed
Facility Status: Removed
Region: Los Angeles County:

C18 **UNOCAL - LINCOLN LEASE** **CA SLIC** **S104404774**
West **28101 CHIQUITO CYN** **N/A**
> 1 **CASTAIC, CA 91384**
6207 ft.

Site 4 of 6 in cluster C

Relative: Higher

SLIC Region 4:
Facility Status: Closure
Region: 4
SLIC 0520B
Staff: Manjulika Chakarbarti
Substance: TPH

Actual: 994 ft.

C19 **LA CO FD FIRE TRAINING CN** **Cortese** **S105023127**
West **28101 CHIQUITO CNYN** **N/A**
> 1 **CASTAIC, CA 91384**
6212 ft.

Site 5 of 6 in cluster C

Relative: Higher

CORTESE:
Region: CORTESE
Fac Address 2: Not reported

Actual: 994 ft.

LA CO FD FIRE TRAINING CN (Continued) — **S105023127**

C20 West > 1 6212 ft. — **DEL VALLE REGIONAL EMERGENCY TRAINING CTR**, **28101 CHIQUITO CANYON RD**, **CASTAIC, CA 91384** — AST — A100210954 / N/A

Site 6 of 6 in cluster C

Relative: Higher — Actual: 994 ft.

AST:
- Owner: LOS ANGELES COUNTY FIRE DEPT
- Total Gallons: 2000

D21 NE > 1 6222 ft. — **US POSTAL SERVICE, SANTA CLARI**, **28201 FRANKLIN PKY**, **SANTA CLARITA, CA 91383** — EMI — S105940246 / N/A

Site 1 of 4 in cluster D

Relative: Higher — Actual: 1022 ft.

EMISSIONS :

Facility ID :	100544
Air District Code :	SC
SIC Code :	4300
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	Not reported
Reactive Organic Gases :	Not reported
Carbon Monoxide Emissions :	Not reported
NOX Gas Emissions (Nitrogen - Oxygen) :	Not reported
SOX Gas Emissions (Sulphur - Oxygen) :	Not reported

D22 NE > 1 6222 ft. — **US POSTAL - SANTA CLARITA P&DC**, **28201 FRANKLIN PKWY**, **SANTA CLARITA, CA 91383** — UST — U003777338 / N/A

Site 2 of 4 in cluster D

Relative: Higher — Actual: 1022 ft.

State UST:
- Facility ID: 17066
- Region: STATE
- Local Agency: 19000

D23 NE > 1 6222 ft. — **28201 FRANKLIN PARKWAY**, **SANTA CLARITA, CA 02584** — CHMIRS, HAZNET — S103993337 / N/A

Site 3 of 4 in cluster D

Relative: Higher — Actual: 1022 ft.

(Continued) — **S103993337**

HAZNET:

Gepaid:	CAL000157107
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Not reported
Tons:	0.33
Waste Category:	Polychlorinated biphenyls and material containing PCB's
Disposal Method:	Recycler
Contact:	KEN GONZALES/MAINT ENG SP
Telephone:	(661) 775-7975
Mailing Address:	28201 FRANKLIN PKWY SANTA CLARITA, CA 91383 - 9735
County	Not reported

Gepaid:	CAL000157107
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.04
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Contact:	KEN GONZALES/MAINT ENG SP
Telephone:	(661) 775-7975
Mailing Address:	28201 FRANKLIN PKWY SANTA CLARITA, CA 91383 - 9735
County	Not reported

Gepaid:	CAL000157107
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	San Bernardino
Tons:	3.28
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Transfer Station
Contact:	KEN GONZALES/MAINT ENG SP
Telephone:	(661) 775-7975
Mailing Address:	28201 FRANKLIN PKWY SANTA CLARITA, CA 91383 - 9735
County	Not reported

Gepaid:	CAL000157107
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	San Bernardino
Tons:	0.22
Waste Category:	Waste oil and mixed oil
Disposal Method:	Transfer Station
Contact:	KEN GONZALES/MAINT ENG SP
Telephone:	(661) 775-7975
Mailing Address:	28201 FRANKLIN PKWY SANTA CLARITA, CA 91383 - 9735
County	Not reported

(Continued) S103993337

Gepaid:	CAL000157107
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	San Bernardino
Tons:	0.20
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Transfer Station
Contact:	KEN GONZALES/MAINT ENG SP
Telephone:	(661) 775-7975
Mailing Address:	28201 FRANKLIN PKWY SANTA CLARITA, CA 91383 - 9735
County	Not reported

The CA HAZNET database contains 39 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

CHMIRS:

OES Control Number:	97-2033
Chemical Name:	Ink
Extent of Release:	Not reported
Property Use:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Time Completed :	Not reported
Agency Id Number :	Not reported
Agency Incident Number :	Not reported
OES Incident Number :	97-2033
Time Notified :	Not reported
Surrounding Area :	Not reported
Estimated Temperature :	Not reported
Property Management :	Not reported
More Than Two Substances Involved? :	Not reported
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	Not reported
Others Number Of Decontaminated :	Not reported
Others Number Of Injuries :	Not reported
Others Number Of Fatalities :	Not reported
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	Not reported
Report Date :	Not reported
Comments :	Not reported
Facility Telephone Number :	Not reported
Waterway Involved :	Yes
Waterway :	Drain
Spill Site :	Other

(Continued) S103993337

Cleanup By :	Not being accomplished
Containment :	Unknown
What Happened :	Dumped by employees, weekley into drain
Type :	OTHER, CHEMICAL
Other :	Ink
Chemical 1 :	Solvent
Quantity Released :	15 Gal(s)
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	5/21/97
Evacuations :	0

D24
NE
> 1
6222 ft.

28201 FRANKLIN PKWY, BMF
SANTA CLARITA, CA 91387

CHMIRS **S105882989**
N/A

Site 4 of 4 in cluster D

Relative:
Higher

Actual:
1022 ft.

CHMIRS:

OES Control Number:	02-1417
Chemical Name:	Motor Oil
Extent of Release:	Not reported
Property Use:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Time Completed :	Not reported
Agency Id Number :	Not reported
Agency Incident Number :	Not reported
OES Incident Number :	02-1417
Time Notified :	Not reported
Surrounding Area :	Not reported
Estimated Temperature :	Not reported
Property Management :	Not reported
More Than Two Substances Involved? :	Not reported
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	Not reported
Others Number Of Decontaminated :	Not reported
Others Number Of Injuries :	Not reported
Others Number Of Fatalities :	Not reported
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	Not reported
Report Date :	Not reported
Comments :	Not reported
Facility Telephone Number :	Not reported
Waterway Involved :	Yes
Waterway :	storm drain
Spill Site :	Other

(Continued) S105882989

Cleanup By :	Reporting Party
Containment :	Unknown
What Happened :	A vehicle leaked oil into a storm drain
Type :	Qt.(s)
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	3/14/2002 1330
Evacuations :	0

E25 NNE > 1 6527 ft. — **R A H INDUSTRIES**, **28035 HARRISON PKWY**, **VALENCIA, CA 91355** — RCRIS-SQG, FINDS, HAZNET — 1004677606, CAR000099523

Relative: Higher **Actual: 1054 ft.**

Site 1 of 5 in cluster E

RCRIS:
Owner: R A H INDUSTRIES INC
(661) 295-5190
EPA ID: CAR000099523
Contact: RICHARD CRESPO
(661) 295-5190
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:

Gepaid:	CAR000099523
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	1.27
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Contact:	Richard Crespo
Telephone:	(661) 295-5190
Mailing Address:	28035 Harrison Pkwy Valencia, CA 91355
County	Not reported

Gepaid:	CAR000099523
TSD EPA ID:	Not reported
Gen County:	Not reported
Tsd County:	Not reported
Tons:	0.69
Waste Category:	Waste oil and mixed oil
Disposal Method:	Not reported
Contact:	Richard Crespo
Telephone:	(661) 295-5190
Mailing Address:	28035 Harrison Pkwy Valencia, CA 91355
County	Not reported

R A H INDUSTRIES (Continued) 1004677606

Gepaid:	CAR000099523
TSD EPA ID:	Not reported
Gen County:	Not reported
Tsd County:	Not reported
Tons:	0.69
Waste Category:	Waste oil and mixed oil
Disposal Method:	Transfer Station
Contact:	Richard Crespo
Telephone:	(661) 295-5190
Mailing Address:	28035 Harrison Pkwy Valencia, CA 91355
County	Not reported

E26 NNE > 1 6578 ft. — **EMCO**, **28045 W HARRISON PKWY**, **VALENCIA, CA 91355** — HAZNET — S106092383, N/A

Relative: Higher **Actual: 1053 ft.**

Site 2 of 5 in cluster E

HAZNET:

Gepaid:	CAL000229937
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.34
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Transfer Station
Contact:	MATT HAY
Telephone:	(661) 294-9966
Mailing Address:	28045 W HARRISON PKWY VALENCIA, CA 91355
County	Not reported

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27 WNW > 1 6784 ft. — **JERRY AVALOS TRUCKING**, **28459 CHIQUITO CANYON RD**, **VAL VERDE, CA 91350** — HAZNET — S105724410, N/A

Relative: Higher **Actual: 1046 ft.**

HAZNET:

Gepaid:	CAL000207708
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.02
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Not reported
Contact:	ROBERT AVALOS
Telephone:	(818) 367-8415
Mailing Address:	28459 CHIQUITO CANYON RD VAL VERDE, CA 91350
County	Not reported

E28 NNE > 1 6790 ft. — **DEL WEST ENGINEERING**, **28128 W LIVINGSTON AVE**, **VALENCIA, CA 91355** — **RCRIS-LQG, FINDS, HAZNET** — **1001459707 / CAR000048694**

Relative: Higher — **Actual: 1063 ft.**

Site 3 of 5 in cluster E

RCRIS:
Owner: DEL WEST ENGINEERING
(805) 295-5700
EPA ID: CAR000048694
Contact: BEN MC CABE
(805) 295-5700
Classification: Large Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:
Gepaid: CAR000048694
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 5.00
Waste Category: Unspecified oil-containing waste
Disposal Method: Not reported
Contact: R J SOUKUP/FACILITIES MGR
Telephone: (661) 295-5700
Mailing Address: 28128 W LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

Gepaid: CAR000048694
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 4.17
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Contact: R J SOUKUP/FACILITIES MGR
Telephone: (661) 295-5700
Mailing Address: 28128 W LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

Gepaid: CAR000048694
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.01
Waste Category: Liquids with pH <UN-> 2
Disposal Method: Recycler
Contact: R J SOUKUP/FACILITIES MGR
Telephone: (661) 295-5700
Mailing Address: 28128 W LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

DEL WEST ENGINEERING (Continued) — **1001459707**

Gepaid: CAR000048694
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: San Bernardino
Tons: 7.50
Waste Category: Other inorganic solid waste
Disposal Method: Transfer Station
Contact: R J SOUKUP/FACILITIES MGR
Telephone: (661) 295-5700
Mailing Address: 28128 W LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

Gepaid: CAR000048694
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: San Bernardino
Tons: 14.63
Waste Category: Other organic solids
Disposal Method: Transfer Station
Contact: R J SOUKUP/FACILITIES MGR
Telephone: (661) 295-5700
Mailing Address: 28128 W LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

The CA HAZNET database contains 41 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

E29 NNE > 1 6795 ft. — **DEL WEST ENGINEERING**, **28128 W LIVINGSTON AVE**, **UNINCORPORATED, CA** — **LOS ANGELES CO. HMS** — **1001472911 / N/A**

Relative: Higher — **Actual: 1063 ft.**

Site 4 of 5 in cluster E

HMS:
Facility Id: 017610-024096
Area: 7
Facility Type: I09
Permit Number: 174 — Permit Status: Permit
Facility Status: Permit
Region: Los Angeles County:

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30 North > 1 6873 ft. — **20TH CENTURY FOX,PAPI CHULO**, **28455 LIVINGSTON AVE**, **VALENCIA, CA 91355** — **HAZNET** — **S106088596 / N/A**

Relative: Higher — **Actual: 1173 ft.**

HAZNET:
Gepaid: CAC002555271
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.31
Waste Category: Latex waste
Disposal Method: Recycler
Contact: ORLANDO PEREZ, PAINTER
Telephone: (818) 800-0454

20TH CENTURY FOX,PAPI CHULO (Continued) — S106088596

Mailing Address: 805 S SAN FERNANDO RD
BURBANK, CA 91502
County: Not reported

E31 NNE > 1 6895 ft. — **REGENT AEROSPACE INC** — HAZNET — S105725099 / N/A
28110 HARRISON PKWY
VALENCIA, CA 91355

Relative: Higher
Actual: 1042 ft.

Site 5 of 5 in cluster E

HAZNET:
Gepaid: CAL000220147
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.02
Waste Category: Halogenated solvents (chloroform, methyl chloride, perchloroethylene, etc.)
Disposal Method: Recycler
Contact: MIKE VARGAS
Telephone: (661) 257-3000
Mailing Address: 28110 HARRISON PKWY
VALENCIA, CA 91355
County: Not reported

Gepaid: CAL000220147
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.24
Waste Category: Unspecified solvent mixture Waste
Disposal Method: Treatment, Tank
Contact: MIKE VARGAS
Telephone: (661) 257-3000
Mailing Address: 28110 HARRISON PKWY
VALENCIA, CA 91355
County: Not reported

Gepaid: CAL000220147
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.06
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Transfer Station
Contact: MIKE VARGAS
Telephone: (661) 257-3000
Mailing Address: 28110 HARRISON PKWY
VALENCIA, CA 91355
County: Not reported

Gepaid: CAL000220147
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.91
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: MIKE VARGAS
Telephone: (661) 257-3000
Mailing Address: 28110 HARRISON PKWY

REGENT AEROSPACE INC (Continued) — S105725099

VALENCIA, CA 91355
County: Not reported

Gepaid: CAL000220147
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Sacramento
Tons: 1.17
Waste Category: Other organic solids
Disposal Method: Disposal, Other
Contact: MIKE VARGAS
Telephone: (661) 257-3000
Mailing Address: 28110 HARRISON PKWY
VALENCIA, CA 91355
County: Not reported

The CA HAZNET database contains 4 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

F32 North > 1 6913 ft. — **TIME AVIATION SERVICES INC** — RCRIS-SQG / FINDS — 1001967326 / CAR000067363
28402 W LIVINGSTON AVE
VALENCIA, CA 91355

Relative: Higher
Actual: 1151 ft.

Site 1 of 2 in cluster F

RCRIS:
Owner: JOHN W BUTLER
(661) 702-0800
EPA ID: CAR000067363
Contact: LARRY COLLINS
(661) 702-7311
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

F33 North > 1 6913 ft. — **TIME AVIATION SERVICES** — HAZNET — S105094017 / N/A
28402 W LIVINGSTON AVE
VALENCIA, CA 91355

Relative: Higher
Actual: 1151 ft.

Site 2 of 2 in cluster F

HAZNET:
Gepaid: CAR000067363
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.42
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Contact: LARRY COLLINGS - DIR OF QUALIT
Telephone: (661) 702-7311
Mailing Address: 28402 W LIVINGSTON AVE
VALENCIA, CA 91355 - 1415

TIME AVIATION SERVICES (Continued) — **S105094017**

County: Not reported

Gepaid: CAR000067363
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.12
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Transfer Station
Contact: LARRY COLLINGS - DIR OF QUALIT
Telephone: (661) 702-7311
Mailing Address: 28402 W LIVINGSTON AVE
VALENCIA, CA 91355 - 1415
County: Not reported

Gepaid: CAR000067363
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.06
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Transfer Station
Contact: LARRY COLLINGS - DIR OF QUALIT
Telephone: (661) 702-7311
Mailing Address: 28402 W LIVINGSTON AVE
VALENCIA, CA 91355 - 1415
County: Not reported

Gepaid: CAR000067363
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: San Bernardino
Tons: 1.04
Waste Category: Unspecified organic liquid mixture
Disposal Method: Transfer Station
Contact: LARRY COLLINGS - DIR OF QUALIT
Telephone: (661) 702-7311
Mailing Address: 28402 W LIVINGSTON AVE
VALENCIA, CA 91355 - 1415
County: Not reported

Gepaid: CAR000067363
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.8
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Contact: LARRY COLLINGS - DIR OF QUALIT
Telephone: (661) 702-7311
Mailing Address: 28402 W LIVINGSTON AVE
VALENCIA, CA 91355 - 1415
County: Not reported

The CA HAZNET database contains 4 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

TIME AVIATION SERVICES (Continued) — **S105094017**

G34 — **PROPOSED SCHOOL BUS STOP** — **CA SLIC** — **S103878798**, N/A
NNE — **28300 LIVINGSTON**
> 1 — **CASTAIC, CA 91384**
6923 ft.

Site 1 of 3 in cluster G

Relative: **Higher**
Actual: **1102 ft.**

SLIC Region 4:
Facility Status: Closure
Region: 4
SLIC: 0834
Staff: Jenny Au
Substance: TPH

G35 — **PHARMAVITE LLC** — **RCRIS-LQG** — **1001815586**
NNE — **28305 W LIVINGSTON AVE** — **FINDS** — **CAR000057190**
> 1 — **VALENCIA, CA 91355** — **HAZNET**
6924 ft.

Site 2 of 3 in cluster G

Relative: **Higher**
Actual: **1103 ft.**

RCRIS:
Owner: OTSUKA AMERICA INC
(415) 986-5300
EPA ID: CAR000057190
Contact: TIM COFFMAN
(818) 837-3633
Classification: Large Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:
Gepaid: CAR000057190
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 1.08
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County: Not reported

Gepaid: CAR000057190
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: 99
Tons: 107.84
Waste Category: Baghouse waste
Disposal Method: Disposal, Land Fill
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200

PHARMAVITE LLC (Continued) 1001815586

Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

Gepaid: CAR000057190
TSD EPA ID: NVT330010000
Gen County: Los Angeles
Tsd County: 99
Tons: 17.6988
Waste Category: Baghouse waste
Disposal Method: Disposal, Land Fill
Contact: OTSUKA AMERICA INC
Telephone: (000) 000-0000
Mailing Address: 15451 SAN FERNANDO MISSION BLV
MISSION HILLS, CA 91345
County Los Angeles

Gepaid: CAR000057190
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: 99
Tons: 143.69
Waste Category: Baghouse waste
Disposal Method: Disposal, Land Fill
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

Gepaid: CAR000057190
TSD EPA ID: NVT330010000
Gen County: Los Angeles
Tsd County: 99
Tons: 18.5416
Waste Category: Baghouse waste
Disposal Method: Not reported
Contact: OTSUKA AMERICA INC
Telephone: (000) 000-0000
Mailing Address: 15451 SAN FERNANDO MISSION BLV
MISSION HILLS, CA 91345
County Los Angeles

The CA HAZNET database contains 1 additional record for this site.
Please click here or contact your EDR Account Executive for more information.

G36 NNE > 1 6927 ft. | **PHARMAVITE LLC**
28310 W LIVINGSTON AVE
VALENCIA, CA 91355

Site 3 of 3 in cluster G

Relative: Higher

Actual: 1106 ft.

LOS ANGELES CO. HMS 1001959798
HAZNET N/A

PHARMAVITE LLC (Continued) 1001959798

HAZNET:
Gepaid: CAR000064444
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.62
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

Gepaid: CAR000064444
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.54
Waste Category: Unspecified solvent mixture Waste
Disposal Method: Recycler
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

Gepaid: CAR000064444
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: San Bernardino
Tons: 0.03
Waste Category: Other organic solids
Disposal Method: Not reported
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

Gepaid: CAR000064444
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 12.50
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Recycler
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

PHARMAVITE LLC (Continued) 1001959798

Gepaid: CAR000064444
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: 99
Tons: 8.42
Waste Category: Baghouse waste
Disposal Method: Disposal, Land Fill
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

The CA HAZNET database contains 9 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

HMS:
Facility Id: 020797-037829
Area: 7
Facility Type: I01
Permit Number: 174 Permit Status: Permit
Facility Status: Permit
Region: Los Angeles County:

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37 North > 1 6928 ft. **KIMBALL MICROELECTRONICS** RCRIS-SQG 1004677121
28575 LIVINGSTON AVE FINDS CAR000093468
VALENCIA, CA 91355 HAZNET

Relative: Higher **Actual: 1252 ft.**

RCRIS:
Owner: KIMBALL INTL INC
(812) 482-1600
EPA ID: CAR000093468
Contact: FRANK FABIANO
(661) 775-3500
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:
Gepaid: CAR000093468
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.44
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Contact: KENT DAVIS
Telephone: (661) 775-3500
Mailing Address: 28575 LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

KIMBALL MICROELECTRONICS (Continued) 1004677121

Gepaid: CAR000093468
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.67
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Contact: KENT DAVIS
Telephone: (661) 775-3500
Mailing Address: 28575 LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

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38 NNE > 1 7080 ft. **WALT DISNEY PICTURES & TELEVISION** HAZNET S104581097
28150 W HARRISON PARKWAY N/A
VALENCIA, CA 91355

Relative: Higher **Actual: 1046 ft.**

HAZNET:
Gepaid: CAL000180976
TSD EPA ID: CAD050806850
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.2085
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Transfer Station
Contact: WALT DISNEY PICTURES & TV
Telephone: (000) 000-0000
Mailing Address: 500 S. BUENA VISTA ST.
BURBANK, CA 91521 - 2663
County Los Angeles

Gepaid: CAL000180976
TSD EPA ID: CAD050806850
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.9875
Waste Category: Other organic solids
Disposal Method: Transfer Station
Contact: WALT DISNEY PICTURES & TV
Telephone: (000) 000-0000
Mailing Address: 500 S. BUENA VISTA ST.
BURBANK, CA 91521 - 2663
County Los Angeles

Gepaid: CAL000180976
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.86
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Transfer Station
Contact: DEBBIE GONZALEZ ENVIRONMENTAL
Telephone: (818) 553-4061
Mailing Address: 500 S. BUENA VISTA ST.
BURBANK, CA 91521 - 6015
County Not reported

WALT DISNEY PICTURES & TELEVISION (Continued) — S104581097

Gepaid: CAL000180976
TSD EPA ID: CAD050806850
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .6255
Waste Category: Waste oil and mixed oil
Disposal Method: Transfer Station
Contact: WALT DISNEY PICTURES & TV
Telephone: (000) 000-0000
Mailing Address: 500 S. BUENA VISTA ST.
BURBANK, CA 91521 - 2663
County Los Angeles

Gepaid: CAL000180976
TSD EPA ID: CAD050806850
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .3000
Waste Category: Other organic solids
Disposal Method: Transfer Station
Contact: WALT DISNEY PICTURES & TV
Telephone: (000) 000-0000
Mailing Address: 500 S. BUENA VISTA ST.
BURBANK, CA 91521 - 2663
County Los Angeles

The CA HAZNET database contains 1 additional record for this site.
Please click here or contact your EDR Account Executive for more information.

H39 ENE > 1 7331 ft. — **FIESTA RESORTS** — LOS ANGELES CO. HMS — S102064533 / N/A
27946 W HENRY MAYO DR
UNINCORPORATED, CA

Relative: Higher
Actual: 1001 ft.

Site 1 of 4 in cluster H

HMS:
Facility Id: 014852-015631
Area: 7
Facility Type: T0
Permit Number: 174 — Permit Status: Closed
Facility Status: Closed
Region: Los Angeles County:

H40 ENE > 1 7331 ft. — **VALENCIA TRAVEL VILLAGE** — LOS ANGELES CO. HMS — S102064534 / N/A
27946 W HENRY MAYO DR
UNINCORPORATED, CA

Relative: Higher
Actual: 1001 ft.

Site 2 of 4 in cluster H

HMS:
Facility Id: 014852-021889
Area: 7
Facility Type: T0
Permit Number: 174 — Permit Status: Removed
Facility Status: Removed
Region: Los Angeles County:

VALENCIA TRAVEL VILLAGE (Continued) — S102064534

H41 NE > 1 7485 ft. — **THE VALENCIA TRAVEL VILLAGE** — HAZNET — S103991139 / N/A
27946 HENRY MAYO ROAD, RTE 126
VALENCIA, CA 91384

Relative: Higher
Actual: 998 ft.

Site 3 of 4 in cluster H

HAZNET:
Gepaid: CAC001485192
TSD EPA ID: CAD982484933
Gen County: Los Angeles
Tsd County: 7
Tons: .2500
Waste Category: Other empty containers 30 gallons or more
Disposal Method: Recycler
Contact: STEWART BLAIR
Telephone: (805) 257-3333
Mailing Address: 27946 HENRY MAYO ROAD, RTE 126
VALENCIA, CA 91384
County Los Angeles

Gepaid: CAC001485192
TSD EPA ID: CAD028409019
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .4170
Waste Category: Aqueous solution with 10% or more total organic residues
Disposal Method: Treatment, Tank
Contact: STEWART BLAIR
Telephone: (805) 257-3333
Mailing Address: 27946 HENRY MAYO ROAD, RTE 126
VALENCIA, CA 91384
County Los Angeles

H42 NE > 1 7485 ft. — **FIESTA RESORT TRAVEL VILLAGE** — CA FID UST — S101584732 / N/A
27946 HENRY MAYO RD
VALENCIA, CA 91384

Relative: Higher
Actual: 998 ft.

Site 4 of 4 in cluster H

FID:
Facility ID: 19014937 — Regulate ID: Not reported
Reg By: Active Underground Storage Tank Location
Cortese Code: Not reported — SIC Code: Not reported
Status: Active — Facility Tel: (805) 257-1135
Mail To: Not reported
27946 HENRY MAYO DR
VALENCIA, CA 91384
Contact: Not reported — Contact Tel: Not reported
DUNs No: Not reported — NPDES No: Not reported
Creation: 10/22/93 — Modified: 00/00/00
EPA ID: Not reported
Comments: Not reported

I43 NE > 1 7816 ft. — **SCHWARTZ OIL CO**, **27241 HENRY MAYO DR**, **VALENCIA, CA 91355** — **UST, EMI, HIST UST, HAZNET** — **U001567874**, **N/A**

Relative: Higher — **Actual: 996 ft.**

Site 1 of 8 in cluster I

HAZNET:

Gepaid: CAL000171310
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 1.14
Waste Category: Tank bottom waste
Disposal Method: Recycler
Contact: GINNY OSTROVE-OFFICE MGR
Telephone: (661) 259-4000
Mailing Address: 27241 HENRY MAYO DR
VALENCIA, CA 91355
County Not reported

Gepaid: CAL000171310
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 15.01
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Recycler
Contact: GINNY OSTROVE-OFFICE MGR
Telephone: (661) 259-4000
Mailing Address: 27241 HENRY MAYO DR
VALENCIA, CA 91355
County Not reported

Gepaid: CAL000171310
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 10.42
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: GINNY OSTROVE-OFFICE MGR
Telephone: (661) 259-4000
Mailing Address: 27241 HENRY MAYO DR
VALENCIA, CA 91355
County Not reported

Gepaid: CAC001421632
TSD EPA ID: CAD028409019
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 1.8556
Waste Category: Unspecified oil-containing waste
Disposal Method: Treatment, Tank
Contact: TRUDY EMETERIO
Telephone: (000) 000-0000
Mailing Address: 27241 HENRY MAYO
VALENCIA, CA 00000
County Los Angeles

SCHWARTZ OIL CO (Continued) — **U001567874**

Gepaid: CAC001421632
TSD EPA ID: CAD982484933
Gen County: Los Angeles
Tsd County: 7
Tons: .5000
Waste Category: Empty containers less than 30 gallons
Disposal Method: Disposal, Other
Contact: TRUDY EMETERIO
Telephone: (000) 000-0000
Mailing Address: 27241 HENRY MAYO
VALENCIA, CA 00000
County Los Angeles

The CA HAZNET database contains 1 additional record for this site.
Please click here or contact your EDR Account Executive for more information.

UST HIST:

Facility ID: 5275 — Facility Status: Not reported
Total Tanks: 4 — Region: STATE
Owner Name: SCHWARTZ OIL COMPANY INC. — Box Number: Not reported
Owner Address: 27241 HENRY MAYO RD.
VALENCIA, CA 91355

EMISSIONS :

Facility ID : 35743
Air District Code : SC
SIC Code : 5171
Total Priority Score : Not reported
Health Risk Assessment : Not reported
Non-cancer Chronic Haz Index : Not reported
Non-cancer Acute Haz Index : Not reported
Air Basin : SC
Air District Name : SOUTH COAST AQMD
Community Health Air Pollution Info System : Not reported
Consolidated Emission Reporting Rule : Not reported
Total Organic Hydrocarbon Gases : Not reported
Reactive Organic Gases : Not reported
Carbon Monoxide Emissions : Not reported
NOX Gas Emissions (Nitrogen - Oxygen) : Not reported
SOX Gas Emissions (Sulphur - Oxygen) : Not reported

State UST:

Facility ID: 16425
Region: STATE
Local Agency: 19000

I44 NE > 1 7816 ft. — **SCHWARTZ OIL CO.**, **27241 HENRY MAYO DR**, **VALENCIA, CA 91355** — **Cortese, LUST** — **S104160064**, **N/A**

Relative: Higher — **Actual: 996 ft.**

Site 2 of 8 in cluster I

State LUST:

Cross Street: THE OLD ROAD
Qty Leaked: Not reported
Case Number I-16425
Reg Board: 4
Chemical: Gasoline
Lead Agency: Regional Board
Local Agency : 19000

SCHWARTZ OIL CO. (Continued) S104160064

Case Type: Other ground water affected
Status: Case Closed
Review Date: Not reported Confirm Leak: Not reported
Workplan: 4/14/92 Prelim Assess: 4/14/92
Pollution Char: Not reported Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 08/30/1996
Release Date: 04/14/1992
Cleanup Fund Id : Not reported
Discover Date : 01/23/1992
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 05/26/1992
Funding: Federal Funds
Staff Initials: Not reported
How Discovered: OM
How Stopped: Not reported
Interim : Not reported
Leak Cause: UNK
Leak Source: Tank
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: RB Lead Underground Storage Tank
Oversight Prgm : UST
Review Date : 09/24/1996
Stop Date : / /
Work Suspended Not reported
Responsible PartySCHWARTZ OIL CO.
RP Address: 2615 NUTMEG ST., MORRO BAY, 93442 D
Global Id: T0603704411
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 4/14/1992
Lead Agency: Regional Board
Local Agency: 19000
Case Number: I-16425
Substance: Gasoline
Case Type: Groundwater

SCHWARTZ OIL CO. (Continued) S104160064

Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Federal Funds
Date the Leak was Discovered: 1/23/1992
How the Leak was Discovered: Other Means
How the Leak was Stopped: Not reported
Cause of Leak: Unknown
Leak Source: Tank
Date The Leak was Stopped: Not reported
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: 4/14/1992
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 8/30/1996
Date Case Last Changed on Database: 9/24/1996
Enforcement Action Date: Not reported
Date Leak First Reported: 4/14/1992
Enforcement Type: Not reported
Global ID : T0603704411
Organization : Not reported
Historical Max MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported
County: Los Angeles
Regional Board: 04
Owner Contact: Not reported
Responsible Party: SCHWARTZ OIL CO.
RP Address: 2615 NUTMEG ST., MORRO BAY, 93442 D
Significant Interim Remedial Action Taken: Not reported
Program : UST
Lat / Long : 34.4391864 / -118.609307
MTBE Counts : 0
MTBE Fuel : 1
MTBE Tested : NT
Local Agency Staff: UNK
Summary : Not reported
Hydrologic Basin # : Not reported
Beneficial Use : Not reported
Priority : Not reported
Cleanup Fund Id : Not reported
Suspended : Not reported
Local Case No : Not reported
Substance Quantity : Not reported
Abatement Method Used at the Site: Not reported
Operator : Not reported
Water System : PETER PITCHESS HONOR RANCHO, LAC SHERIFF
Well Name : WELL 01A - INACTIVE
Approx. Dist To Production Well (ft) : 4770.98173265197454216571728 31
W Global ID : W0603700046
Assigned Name : 1900046-008
MTBE Class : Not reported

SCHWARTZ OIL CO. (Continued) — S104160064

CORTESE:
Region: CORTESE
Fac Address 2: 27241 HENRY MAYO DR

I45 NE > 1 7816 ft. — **SCHWARTZ OIL CO INC** — FINDS — 1006306954 / 110012435551
27241 HENRY MAYO DR
VALENCIA, CA 91355

Relative: Higher
Actual: 996 ft.

Site 3 of 8 in cluster I

FINDS:
Other Pertinent Environmental Activity Identified at Site:
National Emissions Inventory (NEI)
National Toxics Inventory (NTI)

I46 NE > 1 7839 ft. — **LA COUNTY FIRE DEPT STATION 75** — AST — A100211166 / N/A
27223 HENRY MAYO DR
VALENCIA, CA 91355

Relative: Higher
Actual: 996 ft.

Site 4 of 8 in cluster I

AST:
Owner: LOS ANGELES COUNTY FIRE DEPT
Total Gallons: 1000

I47 NE > 1 7839 ft. — **LA CO FD FIRE STA #076** — LOS ANGELES CO. HMS, Cortese, LUST — S102064489 / N/A
27223 W HENRY MAYO DR
VALENCIA, CA 91355

Relative: Higher
Actual: 996 ft.

Site 5 of 8 in cluster I

State LUST:
Cross Street: CASTAIC CANYON RD
Qty Leaked: Not reported
Case Number: R-12547
Reg Board: 4
Chemical: Hydrocarbons
Lead Agency: Local Agency
Local Agency: 19000
Case Type: Soil only
Status: Case Closed
Abate Method: Other Means
Review Date: Not reported
Workplan: Not reported
Pollution Char: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 08/13/1997
Release Date: 06/26/1997
Cleanup Fund Id: Not reported
Discover Date: 06/04/1997
Enforcement Dt: Not reported
Enf Type: Not reported
Enter Date: 07/17/1997
Funding: Not reported
Staff Initials: Not reported
How Discovered: Tank Closure
Confirm Leak: Not reported
Prelim Assess: Not reported
Remed Plan: Not reported

LA CO FD FIRE STA #076 (Continued) — S102064489

How Stopped: Not reported
Interim: Not reported
Leak Cause: UNK
Leak Source: Tank
MTBE Date: / /
Max MTBE GW: 0 Parts per Billion
MTBE Tested: Not Required to be Tested.
Priority: Not reported
Local Case #: Not reported
Beneficial: Not reported
Staff: JLC
GW Qualifier: Not reported
Max MTBE Soil: Not reported
Soil Qualifier: Not reported
Hydr Basin #: Not reported
Operator: Not reported
Oversight Prgm: Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)
Oversight Prgm: LIA
Review Date: 08/13/1997
Stop Date: / /
Work Suspended: Not reported
Responsible Party: LA COUNTY FIRE DEPARTMENT
RP Address: 1320 N. EASTERN AVE., LOS ANGELES CA 90063-3294
Global Id: T0603705143
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 6/26/1997
Lead Agency: Local Agency
Local Agency: 19000
Case Number: R-12547
Substance: Hydrocarbons
Case Type: Soil
Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Not reported
Date the Leak was Discovered: 6/4/1997
How the Leak was Discovered: Tank Closure
How the Leak was Stopped: Close Tank
Cause of Leak: Unknown
Leak Source: Tank
Date The Leak was Stopped: Not reported
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported

LA CO FD FIRE STA #076 (Continued) — **S102064489**

Post Remedial Action Monitoring Began:	Not reported
Date the Case was Closed:	8/13/1997
Date Case Last Changed on Database:	8/13/1997
Enforcement Action Date:	Not reported
Date Leak First Reported:	6/26/1997
Enforcement Type:	Not reported
Global ID :	T0603705143
Organization :	Not reported
Historical Max MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil :	Not reported
County:	Los Angeles
Regional Board:	04
Owner Contact: Not reported	
Responsible Party:	LA COUNTY FIRE DEPARTMENT
RP Address:	1320 N. EASTERN AVE., LOS ANGELES CA 90063-3294
Significant Interim Remedial Action Taken:	Not reported
Program :	LIA
Lat / Long :	34.4391864 / -118.609307
MTBE Counts :	0
MTBE Fuel :	0
MTBE Tested :	NRQ
Local Agency Staff:	UNK
Summary :	DEPTH TO G.W. 25TH. BGS. FURTHER ASSESSMENT REQ'D. POTENTIAL G.W. CONTAMINATION.
Hydrologic Basin # :	Not reported
Beneficial Use :	Not reported
Priority :	Not reported
Cleanup Fund Id :	Not reported
Suspended :	Not reported
Local Case No :	Not reported
Substance Quantity :	Not reported
Abatement Method Used at the Site:	OT
Operator :	Not reported
Water System :	PETER PITCHESS HONOR RANCHO, LAC SHERIFF
Well Name :	WELL 01A - INACTIVE
Approx. Dist To Production Well (ft) :	4770.9817326519745421657172831
W Global ID :	W0603700046
Assigned Name :	1900046-008
MTBE Class :	Not reported

CORTESE:

Region:	CORTESE
Fac Address 2:	27223 HENRY MAYO DR

HMS:

Facility Id:	012416-012547		
Area:	7		
Facility Type:	TO		
Permit Number:	174	Permit Status:	Removed
Facility Status:	Removed		
Region:	Los Angeles County:		

LA CO FD FIRE STA #076 (Continued) — **S102064489**

I48 — **FIRE STATION #76** — **HIST UST** — **U001562296** / **N/A**
NE — **27223 HENRY MAYO DR**
> 1 — **VALENCIA, CA 90063**
7839 ft.

Site 6 of 8 in cluster I

Relative: Higher / **Actual: 996 ft.**

UST HIST:

Facility ID:	20631	Facility Status:	Not reported
Total Tanks:	2	Region:	STATE
Owner Name:	LOS ANGELES COUNTY MECHANICAL	Box Number:	Not reported
Owner Address:	1100 N. EASTERN AVE. LOS ANGELES, CA 90063		

I49 — **LA CO FD FIRE STA #076** — **CA FID UST** — **S101587195** / **N/A**
NE — **27223 HENRY MAYO DR**
> 1 — **NEWHALL, CA 91321**
7839 ft.

Site 7 of 8 in cluster I

Relative: Higher / **Actual: 996 ft.**

FID:

Facility ID:	19055062	Regulate ID:	00020631
Reg By:	Active Underground Storage Tank Location		
Cortese Code:	Not reported	SIC Code:	Not reported
Status:	Active	Facility Tel:	(818) 000-0000
Mail To:	Not reported 1320 N EASTERN AVE NEWHALL, CA 91321		
Contact:	Not reported	Contact Tel:	Not reported
DUNs No:	Not reported	NPDES No:	Not reported
Creation:	10/22/93	Modified:	00/00/00
EPA ID:	Not reported		
Comments:	Not reported		

I50 — **R.M. PYLES BOYS CAMP, INC.** — **HIST UST** — **U001567871** / **N/A**
NE — **27211 HENRY MAYO DR**
> 1 — **VALENCIA, CA 91355**
7857 ft.

Site 8 of 8 in cluster I

Relative: Higher / **Actual: 996 ft.**

UST HIST:

Facility ID:	55879	Facility Status:	Not reported
Total Tanks:	1	Region:	STATE
Owner Name:	R.M. PYLES BOYS CAMP, INC.	Box Number:	Not reported
Owner Address:	27211 HENRY MAYO DRIVE VALENCIA, CA 91355		

J51 — **SCHUARTI OIL CO. INC.** — **CA FID UST** — **S101583389** / **N/A**
ENE — **27241 HENRY MAYO RD**
> 1 — **VALENCIA, CA 91355**
8897 ft.

Site 1 of 2 in cluster J

Relative: Higher

Actual: 1009 ft.

SCHUARTI OIL CO. INC. (Continued) S101583389

FID:
Facility ID: 19003595 Regulate ID: Not reported
Reg By: Active Underground Storage Tank Location
Cortese Code: Not reported SIC Code: Not reported
Status: Active Facility Tel: (805) 259-4000
Mail To: Not reported
6215 NUTMEG ST
VALENCIA, CA 91355
Contact: Not reported Contact Tel: Not reported
DUNs No: Not reported NPDES No: Not reported
Creation: 10/22/93 Modified: 00/00/00
EPA ID: Not reported
Comments: Not reported

J52
ENE
> 1
9015 ft.

NEWHALL LAND & FARMING
27230 HENRY MAYO RD
VALENCIA, CA 91355

Cortese S102064490
LUST N/A

Site 2 of 2 in cluster J

Relative:
Higher

Actual:
1010 ft.

State LUST:
Cross Street: Not reported
Qty Leaked: Not reported
Case Number I-14698
Reg Board: 4
Chemical: Gasoline
Lead Agency: Local Agency
Local Agency : 19000
Case Type: Soil only
Status: Case Closed
Review Date: Not reported Confirm Leak: Not reported
Workplan: Not reported Prelim Assess: Not reported
Pollution Char: Not reported Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 01/29/1990
Release Date: 01/29/1990
Cleanup Fund Id : Not reported
Discover Date : / /
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 01/22/1990
Funding: Not reported
Staff Initials: Not reported
How Discovered: Not reported
How Stopped: Not reported
Interim : Not reported
Leak Cause: Not reported
Leak Source: Not reported
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported

NEWHALL LAND & FARMING (Continued) S102064490

Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)
Oversight Prgm : LIA
Review Date : 01/29/1990
Stop Date : / /
Work Suspended : Not reported
Responsible Party NEWHALL LAND & FARMING CO.
RP Address: 23823 VALENCIA BOULEVARD, VALENCIA, 91355
Global Id: T0603704197
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 1/29/1990
Lead Agency: Local Agency
Local Agency: 19000
Case Number: I-14698
Substance: Gasoline
Case Type: Soil
Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Not reported
Date the Leak was Discovered: Not reported
How the Leak was Discovered: Not reported
How the Leak was Stopped: Not reported
Cause of Leak: Not reported
Leak Source: Not reported
Date The Leak was Stopped: Not reported
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 1/29/1990
Date Case Last Changed on Database: 1/29/1990
Enforcement Action Date: Not reported
Date Leak First Reported: 1/29/1990
Enforcement Type: Not reported
Global ID : T0603704197
Organization : Not reported
Historical Max MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported

NEWHALL LAND & FARMING (Continued) — **S102064490**

County:	Los Angeles
Regional Board:	04
Owner Contact: Not reported	
Responsible Party:	NEWHALL LAND & FARMING CO.
RP Address:	23823 VALENCIA BOULEVARD, VALENCIA, 91355
Significant Interim Remedial Action Taken:	Not reported
Program :	LIA
Lat / Long :	34.4391864 / -118.609307
MTBE Counts :	0
MTBE Fuel :	1
MTBE Tested :	NT
Local Agency Staff:	UNK
Summary :	Not reported
Hydrologic Basin # :	Not reported
Beneficial Use :	Not reported
Priority :	Not reported
Cleanup Fund Id :	Not reported
Suspended :	Not reported
Local Case No :	Not reported
Substance Quantity :	Not reported
Abatement Method Used at the Site:	Not reported
Operator :	Not reported
Water System :	PETER PITCHESS HONOR RANCHO, LAC SHERIFF
Well Name :	WELL 01A - INACTIVE
Approx. Dist To Production Well (ft) :	4770.98173265197454216571728 31
W Global ID :	W0603700046
Assigned Name :	1900046-008
MTBE Class :	Not reported

CORTESE:

Region:	CORTESE
Fac Address 2:	27230 HENRY MAYO RD

53
West
> 1
10396 ft.

27353 SAN MARTINEZ GRANDE CANYON
SANTA CLARITA, CA 0

CHMIRS — **S105648719** / **N/A**

Relative: Higher

Actual: 1030 ft.

CHMIRS:

OES Control Number:	97-4284
Chemical Name:	crude oil
Extent of Release:	Not reported
Property Use:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Time Completed :	Not reported
Agency Id Number :	Not reported
Agency Incident Number :	Not reported
OES Incident Number :	97-4284
Time Notified :	Not reported
Surrounding Area :	Not reported
Estimated Temperature :	Not reported
Property Management :	Not reported
More Than Two Substances Involved? :	Not reported
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported

(Continued) — **S105648719**

Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	Not reported
Others Number Of Decontaminated :	Not reported
Others Number Of Injuries :	Not reported
Others Number Of Fatalities :	Not reported
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	Not reported
Report Date :	Not reported
Comments :	Not reported
Facility Telephone Number :	Not reported
Waterway Involved :	Yes
Waterway :	River Bed
Spill Site :	Road
Cleanup By :	To be determined
Containment :	No
What Happened :	A tanker truck loaded with 1,000 gals of crude oil was involved in a traffic accident an unknown amount of the crude oil was released. The release is ongoing. The substance going into the Santa Clarita River Bed, No flowing water in the riverbed at this
Type :	PETROLEUM
Other :	1,000 Potential
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	10/27/97
Evacuations :	0

K54
NE
> 1
11010 ft.

29300 THE OLD ROAD
SAUGUS, CA 91384

CHMIRS — **S100279945**
EMI — **N/A**
HAZNET
SWF/LF

Site 1 of 2 in cluster K

Relative: Higher

Actual: 1018 ft.

LF:

Facility ID:	19-AA-0057
Operator:	County Of Los Angeles Sheriff's Dept
Operator Phone:	(213) 974-4528
Operator Addr:	293000 The Old Road Saugus, CA 90012
Owner:	County Of Los Angeles Sheriff's Dept
Owner Address:	Not reported 293000 The Old Road Saugus, CA 90012
Owner Telephone:	(213) 974-4528
Activity:	Solid Waste Landfill
Operator's Status:	Closed
Regulation Status:	Permitted
Region:	STATE
Lat/Long:	34 / -118
Permit Date:	Not reported
Accepted Waste:	Agricultural,Construction/demolition,Mixed municipal,Other hazardous,Tires

(Continued) **S100279945**

Restrictions:

Status :	Not reported
Swisnumber :	Not reported
Site Type :	Not reported
Aka :	Not reported
Type Of Waste :	Not reported
Disposal Area :	Not reported
SWFP Date :	Not reported
WDR Number :	Not reported
Dates Of Operation :	Not reported
Closure Approved :	Not reported
Date Of Field Units :	Not reported
Surface Condition :	Not reported
Landfill Gas :	Not reported
Leachate :	Not reported
Emergency Response :	Not reported
Other Recommendation :	Not reported
Reassess Site :	Not reported
Priority For Site Assessment :	Not reported
Lea Date :	Not reported
Explanation:	Not Reported
No Further Action:	Not Reported
Permitted Throughput with Units:	154
Permitted Throughput with Units:	154
Permitted Throughput with Units:	154
Actual Throughput with Units:	Cu Yards/day
Actual Capacity with Units:	Not reported
Permitted Capacity with Units:	Not reported
Remaining Capacity with Units:	Not reported
Permitted Total Acreage:	54
Inspection Frequency:	Quarterly
Landuse Name:	Not reported
GIS Source:	External
Permit Status:	Permitted
Category:	Disposal
Unit Number:	01
Last Waste Tire Inspection Count :	Not reported
Last Waste Tire Inspection Date:	Not reported
Original Waste Tire Count:	Not reported
Original Waste Tire Count Date:	Not reported
Closure Date:	01/01/1992
Closure Type:	Actual
Disposal Acreage:	0
Remaining Capacity:	Not reported

HAZNET:

Gepaid:	CAL000022055
TSD EPA ID:	CAD000088252
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	.6000
Waste Category:	Contaminated soil from site clean-ups
Disposal Method:	Transfer Station
Contact:	LA CNTY SHERIFFS DEPT
Telephone:	(213) 526-5541
Mailing Address:	4700 RAMONA BLVD MONTEREY PARK, CA 91754 - 2169
County	Los Angeles

(Continued) **S100279945**

Gepaid:	CAL000022055
TSD EPA ID:	CAD008252405
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	6.1090
Waste Category:	Paint sludge
Disposal Method:	Recycler
Contact:	LA CNTY SHERIFFS DEPT
Telephone:	(213) 526-5541
Mailing Address:	4700 RAMONA BLVD MONTEREY PARK, CA 91754 - 2169
County	Los Angeles

Gepaid:	CAL000022055
TSD EPA ID:	CAD008252405
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	2.2935
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Contact:	LA CNTY SHERIFFS DEPT
Telephone:	(213) 526-5541
Mailing Address:	4700 RAMONA BLVD MONTEREY PARK, CA 91754 - 2169
County	Los Angeles

Gepaid:	CAL000022055
TSD EPA ID:	CAD008252405
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	1.0425
Waste Category:	Unspecified solvent mixture Waste
Disposal Method:	Recycler
Contact:	LA CNTY SHERIFFS DEPT
Telephone:	(213) 526-5541
Mailing Address:	4700 RAMONA BLVD MONTEREY PARK, CA 91754 - 2169
County	Los Angeles

Gepaid:	CAL000022055
TSD EPA ID:	CAD099452708
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	.3335
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Contact:	LA CNTY SHERIFFS DEPT
Telephone:	(213) 526-5541
Mailing Address:	4700 RAMONA BLVD MONTEREY PARK, CA 91754 - 2169
County	Los Angeles

The CA HAZNET database contains 131 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

CHMIRS:

OES Control Number:	9014303
Chemical Name:	Not reported
Extent of Release:	Not reported

(Continued) S100279945

Property Use:	Industrial, Utility
Incident Date:	05-DEC-90
Date Completed:	05-DEC-90
Time Completed :	1935
Agency Id Number :	19110
Agency Incident Number :	51
OES Incident Number :	9014303
Time Notified :	1835
Surrounding Area :	099
Estimated Temperature :	60
Property Management :	C
More Than Two Substances Involved? :	N
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	0
Others Number Of Decontaminated :	0
Others Number Of Injuries :	0
Others Number Of Fatalities :	0
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	CAPT. LYNN MOHR #124351
Report Date :	05-DEC-90
Comments :	Yes
Facility Telephone Number :	213 267-2401
Waterway Involved :	Not reported
Waterway :	Not reported
Spill Site :	Not reported
Cleanup By :	Not reported
Containment :	Not reported
What Happened :	Not reported
Type :	Not reported
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	Not reported
Evacuations :	Not reported

EMISSIONS :

Facility ID :	6488
Air District Code :	SC
SIC Code :	9223
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD

(Continued) S100279945

Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	1
Reactive Organic Gases :	1
Carbon Monoxide Emissions :	1
NOX Gas Emissions (Nitrogen - Oxygen) :	4
SOX Gas Emissions (Sulphur - Oxygen) :	0

Facility ID :	58949
Air District Code :	SC
SIC Code :	9223
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Y
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	65
Reactive Organic Gases :	6
Carbon Monoxide Emissions :	5
NOX Gas Emissions (Nitrogen - Oxygen) :	28
SOX Gas Emissions (Sulphur - Oxygen) :	1

Facility ID :	6488
Air District Code :	SC
SIC Code :	9223
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	Not reported
Reactive Organic Gases :	Not reported
Carbon Monoxide Emissions :	Not reported
NOX Gas Emissions (Nitrogen - Oxygen) :	Not reported
SOX Gas Emissions (Sulphur - Oxygen) :	Not reported

Facility ID :	58949
Air District Code :	SC
SIC Code :	9223
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Y
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	Not reported
Reactive Organic Gases :	Not reported
Carbon Monoxide Emissions :	Not reported
NOX Gas Emissions (Nitrogen - Oxygen) :	Not reported

(Continued) S100279945

SOX Gas Emissions (Sulphur - Oxygen) : Not reported

K55
NE
> 1
11010 ft.

29300 THE OLD ROAD
VALENCIA, CA 91384

CHMIRS **S100279260**
N/A

Site 2 of 2 in cluster K

Relative:
Higher

Actual:
1016 ft.

CHMIRS:

OES Control Number:	8905392
Chemical Name:	Not reported
Extent of Release:	Not reported
Property Use:	099
Incident Date:	29-MAR-89
Date Completed:	29-MAR-89
Time Completed :	1606
Agency Id Number :	19110
Agency Incident Number :	27
OES Incident Number :	8905392
Time Notified :	1446
Surrounding Area :	099
Estimated Temperature :	Not reported
Property Management :	Not reported
More Than Two Substances Involved? :	N
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	0
Others Number Of Decontaminated :	0
Others Number Of Injuries :	0
Others Number Of Fatalities :	0
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	CAPT. JOHN W. EVERETT
Report Date :	29-MAR-89
Comments :	Not reported
Facility Telephone Number :	213 267-2485
Waterway Involved :	Not reported
Waterway :	Not reported
Spill Site :	Not reported
Cleanup By :	Not reported
Containment :	Not reported
What Happened :	Not reported
Type :	Not reported
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	Not reported
Evacuations :	Not reported

(Continued) S100279260

56
NE
> 1
11020 ft.

DIXIE DIESEL STATION
29471 THE OLD ROAD
SAUGUS, CA 91350

Cortese LUST **S102428845**
N/A

Relative:
Higher

Actual:
1020 ft.

State LUST:

Cross Street:	Not reported		
Qty Leaked:	Not reported		
Case Number	I-12830		
Reg Board:	4		
Chemical:	Diesel		
Lead Agency:	Local Agency		
Local Agency :	19000		
Case Type:	Other ground water affected		
Status:	Case Closed		
Abate Method:	Excavate and Dispose - remove contaminated soil and dispose in approved site		
Review Date:	Not reported	Confirm Leak:	Not reported
Workplan:	2/3/87	Prelim Assess:	2/3/87
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	6/20/30		
Monitoring:	Not reported		
Close Date:	11/30/1993		
Release Date:	04/06/1987		
Cleanup Fund Id :	Not reported		
Discover Date :	/ /		
Enforcement Dt :	1/1/65		
Enf Type:	Informal Enforcement Actions,including Notices of Violations and Staff Enforcement Letters		
Enter Date :	/ /		
Funding:	Federal Funds		
Staff Initials:	Not reported		
How Discovered:	Subsurface Monitoring		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	UNK		
Leak Source:	UNK		
MTBE Date :	/ /		
Max MTBE GW :	0 Parts per Billion		
MTBE Tested:	Not Required to be Tested.		
Priority:	Not reported		
Local Case # :	Not reported		
Beneficial:	Not reported		
Staff :	JLC		
GW Qualifier :	Not reported		
Max MTBE Soil :	Not reported		
Soil Qualifier :	Not reported		
Hydr Basin #:	Not reported		
Operator :	Not reported		
Oversight Prgm:	Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)		
Oversight Prgm :	LIA		
Review Date :	11/30/1993		
Stop Date :	/ /		
Work Suspended :	Not reported		
Responsible Party	GORTIKOV/HASLEY PARTNERS, LTD		
RP Address:	15165 VENTURA BLVD, #230, SHERMAN OAKS, 91403		
Global Id:	T0603704004		
Org Name:	Not reported		

DIXIE DIESEL STATION (Continued) S102428845

Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 4/6/1987
Lead Agency: Local Agency
Local Agency: 19000
Case Number: I-12830
Substance: Diesel
Case Type: Groundwater
Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Federal Funds
Date the Leak was Discovered: Not reported
How the Leak was Discovered: Subsurface Monitoring
How the Leak was Stopped: Not reported
Cause of Leak: Unknown
Leak Source: Unknown
Date The Leak was Stopped: Not reported
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: 2/3/1987
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: 6/20/1930
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 11/30/1993
Date Case Last Changed on Database: 11/30/1993
Enforcement Action Date: Not reported
Date Leak First Reported: 4/6/1987
Enforcement Type: IEA
Global ID : T0603704004
Organization : Not reported
Historical Max MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported
County: Los Angeles
Regional Board: 04
Owner Contact: Not reported
Responsible Party: GORTIKOV/HASLEY PARTNERS, LTD
RP Address: 15165 VENTURA BLVD, #230, SHERMAN OAKS, 91403
Significant Interim Remedial Action Taken: Not reported
Program : LIA
Lat / Long : 34.4680232 / -118.4689948
MTBE Counts : 0
MTBE Fuel : 0
MTBE Tested : NRQ
Local Agency Staff: UNK
Summary : 2215 MG/KG TPH IN SOIL AT 10'. 5 MG/L TPH IN WATER

DIXIE DIESEL STATION (Continued) S102428845

2ND LEAK REPORTED 1/29/91

OLD CASE #021089-08

Hydrologic Basin # : Not reported
Beneficial Use : Not reported
Priority : Not reported
Cleanup Fund Id : Not reported
Suspended : Not reported
Local Case No : Not reported
Substance Quantity : Not reported
Abatement Method Used at the Site: Excavate and Dispose
Operator : Not reported
Water System : CLEVELAND NATIONAL FOREST
Well Name : LPA REPORTED PRIMARY SOURCE
Approx. Dist To Production Well (ft) : 1452.033932136087145347103034 2
W Global ID : W0607300028
Assigned Name : 3700028-001GEN
MTBE Class : Not reported

CORTESE:
Region: CORTESE
Fac Address 2: 29471 THE OLD ROAD

L57 ENE > 1 11058 ft. **NEWHALL LAND & FARMING CO**
28760 N CASTAIC CANYON RD
VALENCIA, CA 91355

LOS ANGELES CO. HMS **S102064571**
Cortese **N/A**
LUST

Relative: Higher
Actual: 1016 ft.

Site 1 of 2 in cluster L

State LUST:
Cross Street: Not reported
Qty Leaked: Not reported
Case Number I-05310
Reg Board: 4
Chemical: Gasoline
Lead Agency: Local Agency
Local Agency : 19000
Case Type: Soil only
Status: Case Closed
Review Date: Not reported
Workplan: Not reported
Pollution Char: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 01/10/1990
Release Date: 01/10/1990
Cleanup Fund Id : Not reported
Discover Date : / /
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 01/22/1990
Funding: Not reported
Staff Initials: Not reported
How Discovered: Not reported
How Stopped: Not reported
Interim : Not reported
Leak Cause: Not reported
Leak Source: Not reported
MTBE Date : / /

Confirm Leak: Not reported
Prelim Assess: Not reported
Remed Plan: Not reported

NEWHALL LAND & FARMING CO (Continued) S102064571

Max MTBE GW : 0 Parts per Billion
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Implementing Agency UST (Includes non-LOP cases within LOP jurisdiction)
Oversight Prgm : LIA
Review Date : 01/29/1990
Stop Date : / /
Work Suspended :Not reported
Responsible PartyNEWHALL LAND & FARMING
RP Address: 23823 VALENCIA BOULEVARD, VALENCIA, 91355
Global Id: T0603703062
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 1/10/1990
Lead Agency: Local Agency
Local Agency: 19000
Case Number: I-05310
Substance: Gasoline
Case Type: Soil
Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Not reported
Date the Leak was Discovered: Not reported
How the Leak was Discovered: Not reported
How the Leak was Stopped: Not reported
Cause of Leak: Not reported
Leak Source: Not reported
Date The Leak was Stopped: Not reported
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 1/10/1990
Date Case Last Changed on Database: 1/29/1990
Enforcement Action Date: Not reported
Date Leak First Reported: 1/10/1990

NEWHALL LAND & FARMING CO (Continued) S102064571

Enforcement Type: Not reported
Global ID : T0603703062
Organization : Not reported
Historical Max MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported
County: Los Angeles
Regional Board: 04
Owner Contact: Not reported
Responsible Party: NEWHALL LAND & FARMING
RP Address: 23823 VALENCIA BOULEVARD, VALENCIA, 91355
Significant Interim Remedial Action Taken: Not reported
Program : LIA
Lat / Long : 34.4392614 / -118.6062849
MTBE Counts : 0
MTBE Fuel : 1
MTBE Tested : NT
Local Agency Staff: UNK
Summary : Not reported
Hydrologic Basin # : Not reported
Beneficial Use : Not reported
Priority : Not reported
Cleanup Fund Id : Not reported
Suspended : Not reported
Local Case No : Not reported
Substance Quantity : Not reported
Abatement Method Used at the Site: Not reported
Operator : Not reported
Water System : PETER PITCHESS HONOR RANCHO, LAC SHERIFF
Well Name : WELL 01A - INACTIVE
Approx. Dist To Production Well (ft) : 5154.170056466850371916246237 5
W Global ID : W0603700046
Assigned Name : 1900046-008
MTBE Class : Not reported

CORTESE:
Region: CORTESE
Fac Address 2: 28760 CASTAIC CANYON RD

HMS:
Facility Id: 005116-005310
Area: 7
Facility Type: Not reported
Permit Number: 174 Permit Status: Not reported
Facility Status: Removed
Region: Los Angeles County:

Facility Id: 014173-014696
Area: 7
Facility Type: Not reported
Permit Number: 174 Permit Status: Not reported
Facility Status: Removed
Region: Los Angeles County:

NEWHALL LAND & FARMING CO (Continued) S102064571

L58 ENE > 1 11175 ft. Relative: Higher Actual: 1016 ft.

TRI-R-TRUCKING Cortese S101298311
28748 CASTAIC CANYON RD LUST N/A
VALENCIA, CA 91355

Site 2 of 2 in cluster L

State LUST:
Cross Street: THE OLD RD
Qty Leaked: Not reported
Case Number I-15245
Reg Board: 4
Chemical: Diesel
Lead Agency: Local Agency
Local Agency : 19000
Case Type: Soil only
Status: Case Closed
Review Date: Not reported — Confirm Leak: Not reported
Workplan: Not reported — Prelim Assess: Not reported
Pollution Char: Not reported — Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 10/11/1994
Release Date: 10/29/1990
Cleanup Fund Id : Not reported
Discover Date : 12/08/1989
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 12/05/1990
Funding: Federal Funds
Staff Initials: Not reported
How Discovered: Tank Closure
How Stopped: Not reported
Interim : Not reported
Leak Cause: UNK
Leak Source: UNK
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Not Required to be Tested.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : JAMES, ED OLD CASE#120690-17
Oversight Prgm: Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)
Oversight Prgm : LIA
Review Date : 10/11/1994
Stop Date : 12/08/1989
Work Suspended : Not reported
Responsible Party TRI-R TRUCKING
RP Address: 28748 CASTIAC CYN RD, VALENCIA CA 91355
Global Id: T0603704280
Org Name: Not reported
Contact Person: Not reported

TRI-R-TRUCKING (Continued) S101298311

MTBE Conc: 0
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 10/29/1990
Lead Agency: Local Agency
Local Agency: 19000
Case Number: I-15245
Substance: Diesel
Case Type: Soil
Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Federal Funds
Date the Leak was Discovered: 12/8/1989
How the Leak was Discovered: Tank Closure
How the Leak was Stopped: Close Tank
Cause of Leak: Unknown
Leak Source: Unknown
Date The Leak was Stopped: 12/8/1989
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 10/11/1994
Date Case Last Changed on Database: 10/11/1994
Enforcement Action Date: Not reported
Date Leak First Reported: 10/29/1990
Enforcement Type: Not reported
Global ID : T0603704280
Organization : Not reported
Historical Max MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported
County: Los Angeles
Regional Board: 04
Owner Contact: Not reported
Responsible Party: TRI-R TRUCKING
RP Address: 28748 CASTIAC CYN RD, VALENCIA CA 91355
Significant Interim Remedial Action Taken: Not reported
Program : LIA
Lat / Long : 34.4389004 / -118.6060599
MTBE Counts : 0
MTBE Fuel : 0
MTBE Tested : NRQ
Local Agency Staff: UNK
Summary : Not reported
Hydrologic Basin # : Not reported

TRI-R-TRUCKING (Continued) — S101298311

Beneficial Use :	Not reported
Priority :	Not reported
Cleanup Fund Id :	Not reported
Suspended :	Not reported
Local Case No :	Not reported
Substance Quantity :	Not reported
Abatement Method Used at the Site:	Not reported
Operator :	JAMES, ED OLD CASE#120890-17
Water System :	PETER PITCHESS HONOR RANCHO, LAC SHERIFF
Well Name :	WELL 01A - INACTIVE
Approx. Dist To Production Well (ft) :	5301.736465194323767948137824 3
W Global ID :	W0603700046
Assigned Name :	1900046-008
MTBE Class :	Not reported

CORTESE:
Region: CORTESE
Fac Address 2: 28748 CASTAIC CANYON RD

59
NE
> 1
11470 ft.

N/B I-5, CASTAIC INSP FACILITY
SANTA CLARITA, CA

CHMIRS — S100279769 / N/A

Relative: Higher
Actual: 1039 ft.

CHMIRS:

OES Control Number:	9010073
Chemical Name:	Not reported
Extent of Release:	Not reported
Property Use:	099
Incident Date:	09-FEB-90
Date Completed:	09-FEB-90
Time Completed :	645
Agency Id Number :	66
Agency Incident Number :	90-027
OES Incident Number :	9010073
Time Notified :	15
Surrounding Area :	099
Estimated Temperature :	Not reported
Property Management :	S
More Than Two Substances Involved? :	N
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	0
Others Number Of Decontaminated :	0
Others Number Of Injuries :	0
Others Number Of Fatalities :	0
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	L. ACEVEDO #8721

(Continued) — S100279769

Report Date :	20-MAR-90
Comments :	Not reported
Facility Telephone Number :	916 327-3310
Waterway Involved :	Not reported
Waterway :	Not reported
Spill Site :	Not reported
Cleanup By :	Not reported
Containment :	Not reported
What Happened :	Not reported
Type :	Not reported
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	Not reported
Evacuations :	Not reported

60
ENE
> 1
11471 ft.

CHEVRON STATION 9 1899
28805 THE OLD RD
VALENCIA, CA 91355

RCRIS-SQG — 1000886345
FINDS — CA0000138552
Cortese

Relative: Higher
Actual: 1019 ft.

RCRIS:
Owner: CHEVRON U S A PRODUCTS CO
(310) 694-7452
EPA ID: CA0000138552
Contact: RAMON J CRESSALL
(805) 257-2584
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

CORTESE:
Region: CORTESE
Fac Address 2: Not reported

61
NNE
> 1
13061 ft.

HASELY CYN 1MI NORTH OF THE OLD ROAD
CASTAIC, CA 91355

CHMIRS — S100275931 / N/A

Relative: Higher
Actual: 1047 ft.

CHMIRS:

OES Control Number:	9012379
Chemical Name:	Not reported
Extent of Release:	Not reported
Property Use:	Vacant Lot
Incident Date:	13-AUG-90
Date Completed:	13-AUG-90
Time Completed :	2115
Agency Id Number :	19110
Agency Incident Number :	A-65
OES Incident Number :	9012379
Time Notified :	1956

(Continued) S100275931

Surrounding Area :	936
Estimated Temperature :	80
Property Management :	P
More Than Two Substances Involved? :	Y
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Y
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	0
Others Number Of Decontaminated :	0
Others Number Of Injuries :	0
Others Number Of Fatalities :	0
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	MARTIN L. SCOTT #081235
Report Date :	13-AUG-90
Comments :	Yes
Facility Telephone Number :	213 267-2401
Waterway Involved :	Not reported
Waterway :	Not reported
Spill Site :	Not reported
Cleanup By :	Not reported
Containment :	Not reported
What Happened :	Not reported
Type :	Not reported
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	Not reported
Evacuations :	Not reported

MAP FINDINGS - EDR PROPRIETARY HISTORICAL DATABASES

YEAR	NAME	ADDRESS	CITY	ST	DIR.	DIST.	ELEV.	TYPE

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

EDR Historical Gas Station & Dry Cleaner Search: No mapped sites were found in EDR's search of the EDR Historical Gas Station & Dry Cleaner Database within 0.250 mile of the Target Property.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CANYON COUNTRY	S105774538	TWO WATER WELLS RESTORATION	SIERRA HWY. / ARLINE ST.	91355	CA WDS
CASTAIC	S105628449	SCHOOL ON 18 ACRE SITE	RIDGE ROUTE ROAD	91384	SCH
LOS ANGELES COUNTY	S105637568		BERTH 70, LONG BEACH HARBOUR		CHMIRS, HAZNET
LOS ANGELES COUNTY	S105641187		BERTH 30 LONG BEACH HARBOUR		CHMIRS, HAZNET
LOS ANGELES COUNTY	S105630661		FLORENCE AVE / TELEGRAPH RD WHITTIER		CHMIRS, LUST
SANTA CLARITA	S105774545	COMMERCE CENTER BRIDGE	HWY 126 / THE OLD ROAD	91355	CA WDS
SANTA CLARITA	S105774543	CASTAIC CREEK CHANNEL LINING	HWY. 126 / THE OLD ROAD	91355	CA WDS
SANTA CLARITA	S105774544	HWY. 126 BRIDGE	HWY. 126 / CASTAIC CREEK	91355	CA WDS
SANTA CLARITA	1005441285	DEPARTMENT OF TRANSPORTATION	RTE 5 MAGIC MOUNTAIN PKWY EXIT	91355	RCRIS-SQG, FINDS
SANTA CLARITA	S105774535	GOLDEN VALLEY ROAD EXTENSION	BETWEEN SIERRA HWY / SOLEDAD CYN RD	91355	CA WDS
SANTA CLARITA	S106085278	CSI CRIME SCENE INVESTIGATION	3 MILES N OF TEMPLIN HWY ON	91355	HAZNET
VALENCIA	S106089351	CALIFORNIA INSTITUTE OF THE ARTS	VY #147 MCBEAN PRKWY / HWY 5	91355	HAZNET
VALENCIA	1000119892	PPG INDUSTRIES INC WORKS 24	25663 W AVE STANFORD	91355	RCRIS-SQG, RCRIS-TSD, FINDS, CORRACTS, CERC-NFRAP, LOS ANGELES CO. HMS
VALENCIA	S103646510	PRODUCTION GOODBYE LOVER	25135 AVENUE ANZA	91355	HAZNET
VALENCIA	S103648520	LOS ANGELES COUNTY FIRE DEPT	27223 HENRY MAYO DR- STATION 76	91355	HAZNET
VALENCIA	S105090242	TECHNICAL TROUBLE SHOOTING	24932 KEARNY AVENUE	91355	HAZNET
VALENCIA	S105774562	WATER WELL NO. W-11	S MCBEAN / COPPERHILL DR	91355	CA WDS
VALENCIA	1006839028	HOWARD CUSTOM BOATS INCORPORATED	28113 STANFORD AVENUE	91355	FINDS, EMI, HAZNET
VALENCIA	S101480564	GRUBER SYSTEMS, INC	25636 STANFORD AVENUE	91355	REF

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/21/03
Date Made Active at EDR: 12/08/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 11/03/03
Elapsed ASTM days: 35
Date of Last EDR Contact: 11/03/03

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 10/14/03
Date Made Active at EDR: 12/08/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 11/03/03

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 09/11/03
Date Made Active at EDR: 10/29/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 09/24/03
Elapsed ASTM days: 35
Date of Last EDR Contact: 12/22/03

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 09/11/03
Date Made Active at EDR: 10/29/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 09/24/03
Elapsed ASTM days: 35
Date of Last EDR Contact: 12/22/03

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/17/03
Date Made Active at EDR: 11/11/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 10/01/03
Elapsed ASTM days: 41
Date of Last EDR Contact: 12/08/03

RCRIS: Resource Conservation and Recovery Information System
Source: EPA
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/10/03
Date Made Active at EDR: 10/01/03
Database Release Frequency: Varies

Date of Data Arrival at EDR: 09/11/03
Elapsed ASTM days: 20
Date of Last EDR Contact: 11/18/03

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/02
Date Made Active at EDR: 02/03/03
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/27/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 10/27/03

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/01/01
Database Release Frequency: Biennially

Date of Last EDR Contact: 12/16/03
Date of Next Scheduled EDR Contact: 03/15/04

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/09/03
Database Release Frequency: Annually

Date of Last EDR Contact: 10/08/03
Date of Next Scheduled EDR Contact: 01/05/04

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/21/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/23/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/07/03
Date of Next Scheduled EDR Contact: 01/05/04

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 08/11/03
Database Release Frequency: Annually

Date of Last EDR Contact: 10/23/03
Date of Next Scheduled EDR Contact: 01/19/04

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/16/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/07/03
Date of Next Scheduled EDR Contact: 01/05/04

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 08/27/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/29/03
Date of Next Scheduled EDR Contact: 03/29/04

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/23/04

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/30/03
Database Release Frequency: Annually
Date of Last EDR Contact: 11/12/03
Date of Next Scheduled EDR Contact: 02/09/04

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-648-5920
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/12/03
Date of Next Scheduled EDR Contact: 02/09/04

STORMWATER: Storm Water General Permits
Source: Environmental Protection Agency
Telephone: 202 564-0746
A listing of all facilities with Storm Water General Permits.

Date of Government Version: N/A
Database Release Frequency: Quarterly
Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 07/15/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/17/03
Date of Next Scheduled EDR Contact: 03/15/04

RMP: Risk Management Plans
Source: Environmental Protection Agency
Telephone: 202-564-8600
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: N/A
Database Release Frequency: N/A
Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-260-1531
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/01
Database Release Frequency: Annually
Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02
Database Release Frequency: Every 4 Years
Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-564-2501

Date of Government Version: 10/16/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-5008
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/01
Database Release Frequency: Annually
Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-564-2501
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/16/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 11/30/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Annually

Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 38
Date of Last EDR Contact: 12/01/03

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 11/30/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 38
Date of Last EDR Contact: 12/01/03

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/02
Date Made Active at EDR: 08/07/03
Database Release Frequency: Varies

Date of Data Arrival at EDR: 07/11/03
Elapsed ASTM days: 27
Date of Last EDR Contact: 11/24/03

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 04/01/01
Date Made Active at EDR: 07/26/01
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 05/29/01
Elapsed ASTM days: 58
Date of Last EDR Contact: 10/27/03

NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Made Active at EDR: 11/19/93
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 10/20/03

TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95
Date Made Active at EDR: 09/26/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 08/30/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 11/03/03

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/14/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/16/03
Elapsed ASTM days: 23
Date of Last EDR Contact: 12/16/03

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00
Date Made Active at EDR: 05/10/00
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/10/00
Elapsed ASTM days: 30
Date of Last EDR Contact: 12/09/03

LUST: Leaking Underground Storage Tank Information System
Source: State Water Resources Control Board
Telephone: 916-341-5740
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/02/03
Date Made Active at EDR: 04/25/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/16/03
Elapsed ASTM days: 9
Date of Last EDR Contact: 10/14/03

CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89
Date Made Active at EDR: 08/02/94
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Telephone: 916-341-5700
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 04/02/03
Date Made Active at EDR: 04/30/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 04/16/03
Elapsed ASTM days: 14
Date of Last EDR Contact: 10/14/03

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/30/03
Date Made Active at EDR: 12/23/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 22
Date of Last EDR Contact: 12/01/03

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 9
Telephone: 415-972-3368

Date of Government Version: 12/05/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 12/05/03
Elapsed ASTM days: 34
Date of Last EDR Contact: 11/24/03

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-445-6532
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5700
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/26/01

STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-341-5712
Registered Aboveground Storage Tanks.

Date of Government Version: 07/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

CLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-225-0873
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 11/26/03
Database Release Frequency: Annually
Date of Last EDR Contact: 01/07/04
Date of Next Scheduled EDR Contact: 04/05/04

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-657-1571
Sites which have been issued waste discharge requirements.

Date of Government Version: 09/22/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

DEED: List of Deed Restrictions
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes.

Date of Government Version: 10/07/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 10/08/03
Date of Next Scheduled EDR Contact: 01/05/04

NFA: No Further Action Determination
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

EMI: Emissions Inventory Data
Source: California Air Resources Board
Telephone: 916-322-2990
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/01
Database Release Frequency: Varies
Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

REF: Unconfirmed Properties Referred to Another Agency
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

NFE: Properties Needing Further Evaluation
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA In Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 11/30/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/01/04

HAZNET: Hazardous Waste Information System
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/02 — Date of Last EDR Contact: 11/11/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 02/09/04

LOCAL RECORDS

ALAMEDA COUNTY:

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 12/09/03 — Date of Last EDR Contact: 10/27/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/26/04

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 07/03/03 — Date of Last EDR Contact: 10/27/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/26/04

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 12/01/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 03/01/04

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/07/03 — Date of Last EDR Contact: 10/08/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/09/04

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Kern County Sites and Tanks Listing.

Date of Government Version: 07/25/03 — Date of Last EDR Contact: 12/22/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/08/04

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 06/03/03 — Date of Last EDR Contact: 11/21/03
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 02/16/04

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-524-2236

Date of Government Version: 09/11/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/16/04

City of Long Beach Underground Storage Tank
Source: City of Long Beach Fire Department
Telephone: 562-570-2543

Date of Government Version: 03/28/03 — Date of Last EDR Contact: 11/24/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 02/23/04

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 09/03/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/16/04

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 03/01/02 — Date of Last EDR Contact: 12/16/03
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 03/15/04

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/30/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/16/04

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/07/03
Database Release Frequency: Annually
Date of Last EDR Contact: 11/17/03
Date of Next Scheduled EDR Contact: 02/16/04

San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 07/06/99
Date of Next Scheduled EDR Contact: N/A

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 08/19/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/02/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/29/03
Date of Next Scheduled EDR Contact: 03/29/04

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/02/03
Database Release Frequency: Annually
Date of Last EDR Contact: 12/29/03
Date of Next Scheduled EDR Contact: 03/29/04

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/25/03
Date of Next Scheduled EDR Contact: 03/08/04

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 09/02/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/19/03
Date of Next Scheduled EDR Contact: 03/08/04

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 10/24/00
Database Release Frequency: Annually
Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

PLACER COUNTY:

Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 10/16/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/03/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 05/30/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 07/17/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 07/17/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 09/30/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00
Database Release Frequency: Varies
Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/23/04

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 10/31/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/07/03
Date of Next Scheduled EDR Contact: 01/05/04

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 12/09/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 09/11/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 11/24/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 10/27/03
Date of Next Scheduled EDR Contact: 01/26/04

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 11/13/03
Database Release Frequency: Annually
Date of Last EDR Contact: 10/13/03
Date of Next Scheduled EDR Contact: 01/12/04

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 07/02/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/29/03
Date of Next Scheduled EDR Contact: 03/29/04

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 10/01/03
Database Release Frequency: Annually
Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 08/21/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/16/03
Date of Next Scheduled EDR Contact: 03/15/04

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 08/21/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/18/03
Date of Next Scheduled EDR Contact: 03/15/04

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-565-6565

Date of Government Version: 10/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/27/03
Date of Next Scheduled EDR Contact: 01/26/04

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 07/01/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 01/05/04

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 09/01/02 — Date of Last EDR Contact: 11/26/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 02/23/04

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 09/26/03 — Date of Last EDR Contact: 12/16/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/15/04

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 07/30/03 — Date of Last EDR Contact: 10/16/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/12/04

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/02/03 — Date of Last EDR Contact: 12/16/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/15/04

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 10/29/03 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 01/19/04

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01 — Date of Last EDR Contact: 11/21/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 02/23/04

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 03/28/03 — Date of Last EDR Contact: 10/14/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/12/04

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 05/19/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 02/16/04

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 08/09/01 — Date of Last EDR Contact: 12/31/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 03/29/04

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-255-3125

Date of Government Version: 07/01/03 — Date of Last EDR Contact: 10/16/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/05/04

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/03 — Date of Last EDR Contact: 12/08/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 03/08/04

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 11/13/03 — Date of Last EDR Contact: 10/07/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/05/04

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 07/02/02 — Date of Last EDR Contact: 12/29/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 03/29/04

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4498
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/16/03 — Date of Last EDR Contact: 11/12/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 02/09/04

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 01/19/04

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 04/03/03 — Date of Last EDR Contact: 11/21/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/23/04

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 03/28/03 — Date of Last EDR Contact: 10/14/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/12/04

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 09/16/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/16/04

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 10/01/03 — Date of Last EDR Contact: 10/27/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/26/04

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-855-3075
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 10/20/03 — Date of Last EDR Contact: 10/07/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/05/04

SLIC REG 6L: SLIC Sites
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574

Date of Government Version: 09/09/03 — Date of Last EDR Contact: 12/08/03
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 03/08/04

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 05/08/03 — Date of Last EDR Contact: 10/07/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/05/04

SLIC REG 7: SLIC List
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491

Date of Government Version: 05/29/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 02/23/04

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-3298

Date of Government Version: 04/01/03 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/05/04

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 12/01/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 03/04/04

EDR PROPRIETARY HISTORICAL DATABASES

EDR Historical Gas Station and Dry Cleaners: EDR has searched select national collections of business directories and has collected listings of potential dry cleaner and gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning and gas station/filling station/service station establishments. The categories reviewed included, but were not limited to: *gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, dry cleaner, cleaners, laundry, laundromat, cleaning/laundry, wash & dry, etc.*

This information is meant to assist and complement environmental professionals in their conduct of environmental site assessments, and is not meant to be a substitute for a full historical investigation as defined in ASTM E1527. The information provided in this proprietary database may or may not be complete; i.e., the absence of a dry cleaner or gas station/filling station/service station site does not necessarily mean that such a site did not exist in the area covered by this report.

(A note on "dry cleaning" sites: it is not possible for EDR to differentiate between establishments that use PERC on-site as a cleaning solvent and sites that function simply as drop-off and pick-up locations or that are traditional wet cleaning/laundry facilities. Therefore, it is essential for environmental professionals to incorporate professional judgment in the evaluation of each site.)

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

BROWNFIELDS DATABASES

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: N/A
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

TENTATIVE TRACT MAP NO. 53108
WOLCOTT WAY/HENRY MAYO DRIVE
VALENCIA, CA 91355

TARGET PROPERTY COORDINATES

Latitude (North):	34.424301 - 34' 25' 27.5"
Longitude (West):	118.637299 - 118' 38' 14.3"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	349543.9
UTM Y (Meters):	3810222.8
Elevation:	958 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

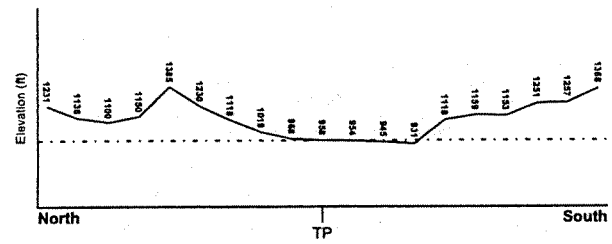
TOPOGRAPHIC INFORMATION

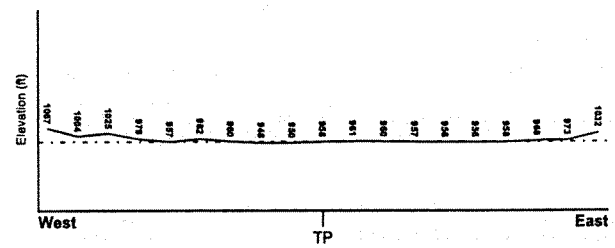
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	34118-D6 VAL VERDE, CA
General Topographic Gradient:	General South
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 958 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
LOS ANGELES, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0650430340B

Additional Panels in search area: 0650430475B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
VAL VERDE	Not Available

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era: Cenozoic
System: Tertiary
Series: Pliocene
Code: Tpc *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Continental Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	PICO
Soil Surface Texture:	sandy loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	HIGH
Depth to Bedrock Min:	> 60 inches
Depth to Bedrock Max:	> 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	14 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 8.40 Min: 7.90
2	14 inches	54 inches	stratified	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 8.40 Min: 7.90
3	54 inches	60 inches	stratified	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 20.00 Min: 6.00	Max: 8.40 Min: 7.90

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: clay loam
sand
gravelly - sand
gravelly - sandy loam
loamy sand
loam
silty clay loam

Surficial Soil Types: clay loam
sand
gravelly - sand
gravelly - sandy loam
loamy sand
loam
silty clay loam

Shallow Soil Types: loamy fine sand

Deeper Soil Types: loam
coarse sand

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	4565	1/4 - 1/2 Mile ENE

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles NNW	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles NNW
2 - 3 Miles NNW	2 - 3 Miles NW
2 - 3 Miles NNE	2 - 3 Miles NNW
1 - 2 Miles North	2 - 3 Miles NNW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)
2 - 3 Miles NNW
2 - 3 Miles NE
1 - 2 Miles NNW
1 - 2 Miles NNW
1 - 2 Miles NNW
1 - 2 Miles North
1 - 2 Miles North
1 - 2 Miles NNE
1 - 2 Miles NNW
1 - 2 Miles NW
1 - 2 Miles WNW
1 - 2 Miles WNW
2 - 3 Miles WNW
2 - 3 Miles WNW
1/2 - 1 Mile NNW
1 - 2 Miles WNW
1 - 2 Miles ENE
1 - 2 Miles WNW
1 - 2 Miles WNW
1 - 2 Miles WNW
1 - 2 Miles ENE
2 - 3 Miles East
1 - 2 Miles East
2 - 3 Miles West
1 - 2 Miles West
1 - 2 Miles West
2 - 3 Miles West
2 - 3 Miles West
2 - 3 Miles West
1/2 - 1 Mile ENE
1 - 2 Miles West
2 - 3 Miles West
2 - 3 Miles West
2 - 3 Miles West
2 - 3 Miles West
1 - 2 Miles West
2 - 3 Miles West
1 - 2 Miles West
2 - 3 Miles West
1 - 2 Miles West
2 - 3 Miles West
1 - 2 Miles West
2 - 3 Miles West
1 - 2 Miles East
1 - 2 Miles West
1 - 2 Miles West
1 - 2 Miles West
1/4 - 1/2 Mile East
2 - 3 Miles East
2 - 3 Miles West
1 - 2 Miles East
2 - 3 Miles West
1 - 2 Miles West
1 - 2 Miles West
1/4 - 1/2 Mile West

DISTANCE FROM TP (Miles)
2 - 3 Miles NNW
2 - 3 Miles NW
1 - 2 Miles NNW
2 - 3 Miles NNW
1 - 2 Miles NNW
2 - 3 Miles NE
1 - 2 Miles North
2 - 3 Miles WNW
2 - 3 Miles ENE
1 - 2 Miles NE
1 - 2 Miles WNW
1 - 2 Miles WNW
1/2 - 1 Mile NNW
1 - 2 Miles WNW
1 - 2 Miles ENE
2 - 3 Miles WNW
1 - 2 Miles WNW
1 - 2 Miles WNW
1/2 - 1 Mile NE
2 - 3 Miles West
1 - 2 Miles WNW
1/2 - 1 Mile ENE
1 - 2 Miles West
1 - 2 Miles East
2 - 3 Miles West
1 - 2 Miles West
1 - 2 Miles West
1 - 2 Miles West
1 - 2 Miles East
1 - 2 Miles West
1 - 2 Miles West
2 - 3 Miles West
2 - 3 Miles West
1 - 2 Miles West
2 - 3 Miles West
1 - 2 Miles West
1 - 2 Miles East
1 - 2 Miles West
1 - 2 Miles East
1 - 2 Miles West
1 - 2 Miles East
2 - 3 Miles West
1/4 - 1/2 Mile ENE
1 - 2 Miles West
1 - 2 Miles West
2 - 3 Miles West
1 - 2 Miles West
2 - 3 Miles West
1 - 2 Miles West
2 - 3 Miles West
1/2 - 1 Mile East
2 - 3 Miles West
2 - 3 Miles West
2 - 3 Miles West
1/2 - 1 Mile West

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)
1/2 - 1 Mile West
1 - 2 Miles West
1 - 2 Miles West
2 - 3 Miles West
1 - 2 Miles West
2 - 3 Miles West
2 - 3 Miles West
2 - 3 Miles West
1 - 2 Miles East
1 - 2 Miles East
1 - 2 Miles ESE
2 - 3 Miles East
1/4 - 1/2 Mile South
1 - 2 Miles ESE
1 - 2 Miles ESE
1 - 2 Miles ESE
2 - 3 Miles West
1 - 2 Miles ESE
2 - 3 Miles ESE
1 - 2 Miles ESE
2 - 3 Miles WSW
1/2 - 1 Mile SE
1 - 2 Miles ESE
1/2 - 1 Mile SE
1 - 2 Miles ESE
1 - 2 Miles ESE
1 - 2 Miles ESE
2 - 3 Miles ESE
1 - 2 Miles ESE
1 - 2 Miles ESE
1 - 2 Miles SE
1 - 2 Miles SE
2 - 3 Miles ESE
1 - 2 Miles SE
2 - 3 Miles ESE
1 - 2 Miles SE
1 - 2 Miles ESE
1 - 2 Miles ESE
2 - 3 Miles ESE
2 - 3 Miles ESE
1 - 2 Miles SW
1 - 2 Miles SSW
1 - 2 Miles SSW
1 - 2 Miles SW
1 - 2 Miles SW
1 - 2 Miles SW
1 - 2 Miles SSW
1 - 2 Miles SSW
1 - 2 Miles SW
1 - 2 Miles SW
1 - 2 Miles SW
1 - 2 Miles South
1 - 2 Miles SSW
1 - 2 Miles SW
1 - 2 Miles SSW

DISTANCE FROM TP (Miles)
2 - 3 Miles West
0 - 1/8 Mile SSW
2 - 3 Miles West
1 - 2 Miles West
2 - 3 Miles West
2 - 3 Miles West
1 - 2 Miles East
1 - 2 Miles East
1 - 2 Miles East
1/2 - 1 Mile ESE
2 - 3 Miles West
2 - 3 Miles West
2 - 3 Miles West
1 - 2 Miles East
1/4 - 1/2 Mile SSW
2 - 3 Miles West
1/2 - 1 Mile ESE
1 - 2 Miles ESE
1/2 - 1 Mile SE
1 - 2 Miles ESE
2 - 3 Miles WSW
2 - 3 Miles WSW
1/2 - 1 Mile SE
1 - 2 Miles ESE
1/2 - 1 Mile SE
1/2 - 1 Mile SSE
1 - 2 Miles ESE
2 - 3 Miles ESE
1 - 2 Miles SW
1 - 2 Miles ESE
2 - 3 Miles WSW
1 - 2 Miles ESE
1 - 2 Miles ESE
1 - 2 Miles SE
2 - 3 Miles ESE
1 - 2 Miles SE
1 - 2 Miles SE
1 - 2 Miles SSW
1 - 2 Miles WSW
1 - 2 Miles WSW
1 - 2 Miles South
1 - 2 Miles SW
1 - 2 Miles SW
1 - 2 Miles SSW
1 - 2 Miles SW
1 - 2 Miles South
1 - 2 Miles South
1 - 2 Miles SE
1 - 2 Miles SW
1 - 2 Miles SSE
1 - 2 Miles SW
1 - 2 Miles SSW
1 - 2 Miles South
1 - 2 Miles SSW
1 - 2 Miles SSW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

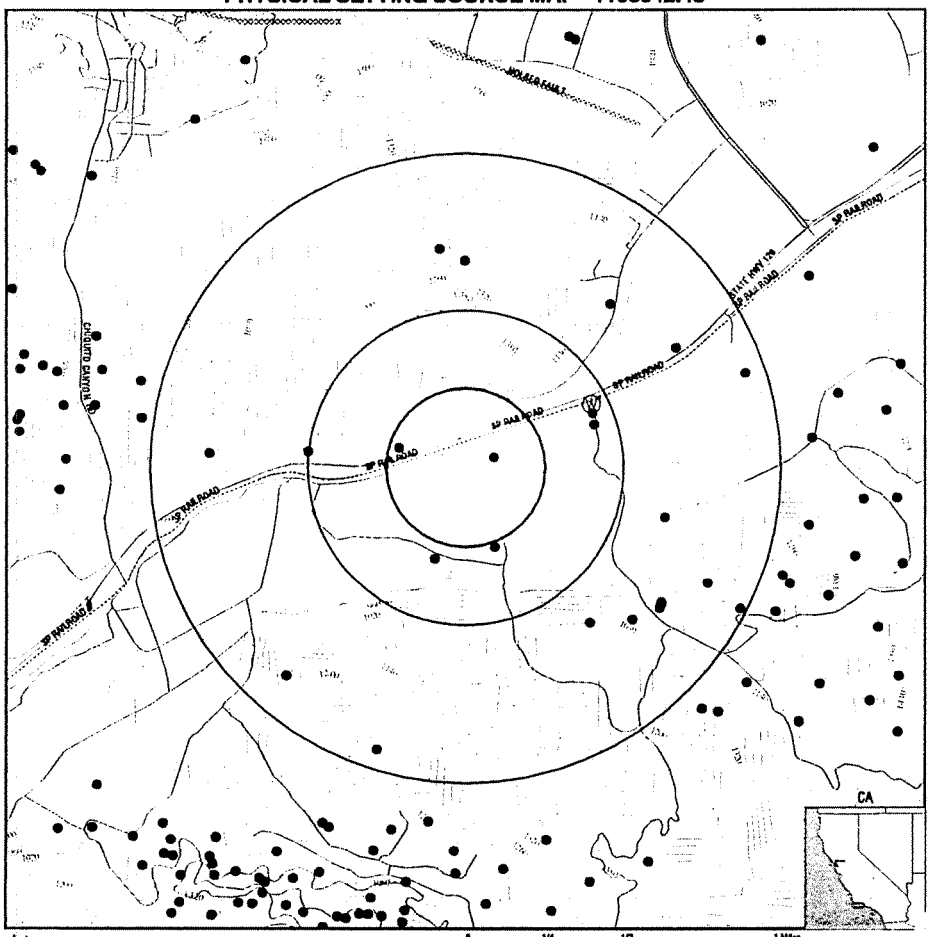
DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1 - 2 Miles SSE	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles SSW
1 - 2 Miles SE	1 - 2 Miles SSW
1 - 2 Miles SW	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles South
1 - 2 Miles SSW	1 - 2 Miles SSW
1 - 2 Miles South	1 - 2 Miles SSW
1 - 2 Miles SW	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles South
1 - 2 Miles SSE	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles South
1 - 2 Miles SSW	1 - 2 Miles SSE
1 - 2 Miles South	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles SSW
1 - 2 Miles South	1 - 2 Miles SSW
1 - 2 Miles South	1 - 2 Miles South
1 - 2 Miles SSW	1 - 2 Miles South
1 - 2 Miles South	2 - 3 Miles SW
1 - 2 Miles South	1 - 2 Miles SSW
1 - 2 Miles South	1 - 2 Miles SSW
1 - 2 Miles SSE	1 - 2 Miles SSW
1 - 2 Miles South	1 - 2 Miles South
1 - 2 Miles SSW	1 - 2 Miles South
1 - 2 Miles South	1 - 2 Miles SSW
1 - 2 Miles South	1 - 2 Miles South
1 - 2 Miles South	1 - 2 Miles South
1 - 2 Miles SSW	1 - 2 Miles SSE
1 - 2 Miles South	1 - 2 Miles South
1 - 2 Miles SSE	1 - 2 Miles South
1 - 2 Miles South	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles South
1 - 2 Miles South	1 - 2 Miles South
1 - 2 Miles South	1 - 2 Miles South
1 - 2 Miles South	1 - 2 Miles South
1 - 2 Miles South	1 - 2 Miles South
2 - 3 Miles SSE	1 - 2 Miles SSE
1 - 2 Miles South	1 - 2 Miles South
1 - 2 Miles South	2 - 3 Miles SSW
2 - 3 Miles South	1 - 2 Miles South
1 - 2 Miles South	2 - 3 Miles South
2 - 3 Miles SSE	2 - 3 Miles South
2 - 3 Miles South	2 - 3 Miles SSE
2 - 3 Miles SSE	2 - 3 Miles SSE
2 - 3 Miles South	2 - 3 Miles South
2 - 3 Miles South	2 - 3 Miles South
2 - 3 Miles SSE	2 - 3 Miles South
2 - 3 Miles South	2 - 3 Miles SSE
2 - 3 Miles South	2 - 3 Miles SSE
2 - 3 Miles SSE	2 - 3 Miles South
2 - 3 Miles South	2 - 3 Miles South
2 - 3 Miles SSE	2 - 3 Miles South

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
2 - 3 Miles SSE	2 - 3 Miles South
2 - 3 Miles South	2 - 3 Miles SSE
2 - 3 Miles South	2 - 3 Miles SSE
2 - 3 Miles South	2 - 3 Miles South
2 - 3 Miles South	2 - 3 Miles SSW
2 - 3 Miles SSE	2 - 3 Miles SSE
2 - 3 Miles SSE	2 - 3 Miles SSE

PHYSICAL SETTING SOURCE MAP - 1108642.4s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

0 1/4 1/2 1 Miles

TARGET PROPERTY:	Tentative Tract Map No. 53108	CUSTOMER:	Building Analytics
ADDRESS:	Wolcott Way/Henry Mayo Drive	CONTACT:	Joe Montoya
CITY/STATE/ZIP:	Valencia CA 91355	INQUIRY #:	1108642.4s
LAT/LONG:	34.4243 / 118.6373	DATE:	January 08, 2004 12:47 pm

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GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation	Database	EDR ID Number
1 ENE 1/4 - 1/2 Mile Higher	CA WELLS	4565

Water System Information:

Prime Station Code:	04N/17W-14Q07 S	User ID:	19C
FRDS Number:	1909014001	County:	Los Angeles
District Number:	49	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	342538.0 1183746.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL C-6		
System Number:	1909014		
System Name:	WALNUT HILL		
Organization That Operates System:	23823 VALENCIA VALENCIA, CA 91355		
Pop Served:	50	Connections:	10
Area Served:	Not Reported		

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

North
2 - 3 Miles — OIL_GAS — CA00010927

Well Number:	5	Status:	Completed oil- directional
API Number:	03722953	Operator:	Petrominerals Corporation
Latitude:	34.459921	Longitude:	-118.636642
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles — OIL_GAS — CA00010926

Well Number:	4	Status:	Completed oil- directional
API Number:	03722948	Operator:	Petrominerals Corporation
Latitude:	34.459793	Longitude:	-118.636673
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles — OIL_GAS — CA00011006

Well Number:	7	Status:	Completed oil
API Number:	03722750	Operator:	Petrominerals Corporation
Latitude:	34.459727	Longitude:	-118.640970
Region:	2	Lease:	Burns Crist
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles — OIL_GAS — CA00011004

Well Number:	5	Status:	001
API Number:	03724193	Operator:	Petrominerals Corporation
Latitude:	34.459573	Longitude:	-118.640939
Region:	2	Lease:	Burns Crist
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

North
2 - 3 Miles — OIL_GAS — CA00010953

Well Number:	1	Status:	Completed oil- directional
API Number:	03722739	Operator:	Petrominerals Corporation
Latitude:	34.458657	Longitude:	-118.639917
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles — OIL_GAS — CA00011005

Well Number:	6	Status:	Completed oil
API Number:	03722740	Operator:	Petrominerals Corporation
Latitude:	34.458523	Longitude:	-118.641679
Region:	2	Lease:	Burns Crist
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles — OIL_GAS — CA00010925

Well Number:	2	Status:	Completed oil
API Number:	03722940	Operator:	Petrominerals Corporation
Latitude:	34.458479	Longitude:	-118.639731
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles — OIL_GAS — CA00010950

Well Number:	3	Status:	Completed oil- directional
API Number:	03722747	Operator:	Petrominerals Corporation
Latitude:	34.457277	Longitude:	-118.639759
Region:	2	Lease:	McGillivrae
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number
North 2 - 3 Miles	**OIL_GAS**	**CA00010948**

Well Number:	9	Status:	001
API Number:	03724195	Operator:	Petrominerals Corporation
Latitude:	34.456633	Longitude:	-118.641273
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North 2 - 3 Miles	**OIL_GAS**	**CA00010941**

Well Number:	10	Status:	001
API Number:	03724196	Operator:	Petrominerals Corporation
Latitude:	34.456607	Longitude:	-118.641520
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North 2 - 3 Miles	**OIL_GAS**	**CA00010946**

Well Number:	7	Status:	Completed oil
API Number:	03722727	Operator:	Petrominerals Corporation
Latitude:	34.456428	Longitude:	-118.641365
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North 2 - 3 Miles	**OIL_GAS**	**CA00010947**

Well Number:	8	Status:	001
API Number:	03724194	Operator:	Petrominerals Corporation
Latitude:	34.456353	Longitude:	-118.641056
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number
NNW 2 - 3 Miles	**OIL_GAS**	**CA00013454**

Well Number:	17	Status:	Plugged and abandoned oil
API Number:	03707260	Operator:	G. R. Nance Co., Inc
Latitude:	34.456041	Longitude:	-118.656948
Region:	2	Lease:	Towle
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North 2 - 3 Miles	**OIL_GAS**	**CA00010949**

Well Number:	2	Status:	Completed oil
API Number:	03722349	Operator:	Petrominerals Corporation
Latitude:	34.455897	Longitude:	-118.639788
Region:	2	Lease:	McGillivrae
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North 2 - 3 Miles	**OIL_GAS**	**CA00010945**

Well Number:	6	Status:	Completed oil
API Number:	03722340	Operator:	Petrominerals Corporation
Latitude:	34.455253	Longitude:	-118.641239
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW 2 - 3 Miles	**OIL_GAS**	**CA00010966**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03721689	Operator:	Petrominerals Corporation
Latitude:	34.455147	Longitude:	-118.656791
Region:	2	Lease:	Hilgenfeld
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

NNW
2 - 3 Miles | **OIL_GAS** | **CA00013495**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03707259	Operator:	Federal Oil Company
Latitude:	34.454320	Longitude:	-118.652337
Region:	2	Lease:	Federal-Towle
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NW
2 - 3 Miles | **OIL_GAS** | **CA00010784**

Well Number:	88-4	Status:	Plugged and abandoned oil
API Number:	03707261	Operator:	Porsco Operating Company
Latitude:	34.454295	Longitude:	-118.659325
Region:	2	Lease:	Claiborne
Section:	04	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNE
2 - 3 Miles | **OIL_GAS** | **CA00015458**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03707262	Operator:	British-American Oil Prod Co
Latitude:	34.454254	Longitude:	-118.613133
Region:	2	Lease:	Wayside Honor Farm
Section:	01	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | **OIL_GAS** | **CA00010943**

Well Number:	4	Status:	Completed oil
API Number:	03722060	Operator:	Petrominerals Corporation
Latitude:	34.454010	Longitude:	-118.645937
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

North
1 - 2 Miles | **OIL_GAS** | **CA00010967**

Well Number:	1	Status:	Completed oil
API Number:	03707258	Operator:	Petrominerals Corporation
Latitude:	34.453848	Longitude:	-118.641113
Region:	2	Lease:	Mabel E. Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | **OIL_GAS** | **CA00010944**

Well Number:	5	Status:	Plugged and abandoned-dry hole
API Number:	03722072	Operator:	Petrominerals Corporation
Latitude:	34.453826	Longitude:	-118.647420
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | **OIL_GAS** | **CA00010940**

Well Number:	2	Status:	Completed oil
API Number:	03721715	Operator:	Petrominerals Corporation
Latitude:	34.453634	Longitude:	-118.643833
Region:	2	Lease:	Mabel E. Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | **OIL_GAS** | **CA00010942**

Well Number:	3	Status:	Completed oil- directional
API Number:	03721805	Operator:	Petrominerals Corporation
Latitude:	34.453607	Longitude:	-118.644112
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

NE
2 - 3 Miles | OIL_GAS | CA00007344

Well Number:	27	Status:	Plugged and abandoned-dry hole
API Number:	03707281	Operator:	Vintage Petroleum Inc
Latitude:	34.453190	Longitude:	-118.610317
Region:	2	Lease:	Honor Rancho 'A' (NCT-1)
Section:	01	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NW
2 - 3 Miles | OIL_GAS | CA00013497

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705395	Operator:	Fernando Oil Company
Latitude:	34.452872	Longitude:	-118.657065
Region:	2	Lease:	Wel No.
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1 - 2 Miles | OIL_GAS | CA00012074

Well Number:	81X	Status:	Plugged and abandoned-dry hole
API Number:	03721466	Operator:	Montara Petroleum Company
Latitude:	34.452826	Longitude:	-118.641111
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1 - 2 Miles | OIL_GAS | CA00010933

Well Number:	2-10	Status:	Completed oil
API Number:	03721816	Operator:	Petrominerals Corporation
Latitude:	34.452744	Longitude:	-118.642502
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

NNW
1 - 2 Miles | OIL_GAS | CA00010932

Well Number:	1-10	Status:	Completed oil
API Number:	03721801	Operator:	Petrominerals Corporation
Latitude:	34.452663	Longitude:	-118.643893
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | OIL_GAS | CA00008486

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706205	Operator:	U. S. Natural Gas C & Manning
Latitude:	34.452622	Longitude:	-118.648222
Region:	2	Lease:	Strawn
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1 - 2 Miles | OIL_GAS | CA00015649

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705148	Operator:	Atlantic Oil Company
Latitude:	34.452428	Longitude:	-118.645253
Region:	2	Lease:	Strawn
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1 - 2 Miles | OIL_GAS | CA00013952

Well Number:	3-10	Status:	Plugged and abandoned oil
API Number:	03721871	Operator:	Decalta International Corp
Latitude:	34.450949	Longitude:	-118.644354
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

North
1 - 2 Miles | OIL_GAS | CA00009001

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706082	Operator:	Texaco E & P Inc
Latitude:	34.450430	Longitude:	-118.639127
Region:	2	Lease:	Fernando
Section:	11	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NE
2 - 3 Miles | OIL_GAS | CA00008942

Well Number:	D-3	Status:	Plugged and abandoned-dry hole
API Number:	03707300	Operator:	Texaco E & P Inc
Latitude:	34.447757	Longitude:	-118.604933
Region:	2	Lease:	Newhall
Section:	07	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
1 - 2 Miles | OIL_GAS | CA00008939

Well Number:	B-1	Status:	Plugged and abandoned-dry hole
API Number:	03706107	Operator:	Texaco E & P Inc
Latitude:	34.444225	Longitude:	-118.630643
Region:	2	Lease:	Newhall
Section:	11	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
1 - 2 Miles | OIL_GAS | CA00008940

Well Number:	D-1	Status:	Plugged and abandoned-dry hole
API Number:	03706108	Operator:	Texaco E & P Inc
Latitude:	34.444098	Longitude:	-118.630303
Region:	2	Lease:	Newhall
Section:	11	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

NNE
1 - 2 Miles | OIL_GAS | CA00008941

Well Number:	D-2	Status:	Plugged and abandoned-dry hole
API Number:	03706109	Operator:	Texaco E & P Inc
Latitude:	34.444058	Longitude:	-118.619976
Region:	2	Lease:	Newhall
Section:	12	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
2 - 3 Miles | OIL_GAS | CA00009857

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705882	Operator:	Shell Western E. & P. Inc.
Latitude:	34.443227	Longitude:	-118.667094
Region:	2	Lease:	Daugherty
Section:	09	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1 - 2 Miles | OIL_GAS | CA00008973

Well Number:	1	Status:	Plugged and abandoned-dry hole-directional
API Number:	03706091	Operator:	Texaco E & P Inc
Latitude:	34.443164	Longitude:	-118.648605
Region:	2	Lease:	Malis
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
2 - 3 Miles | OIL_GAS | CA00008944

Well Number:	F-1	Status:	Plugged and abandoned-dry hole
API Number:	03706111	Operator:	Texaco E & P Inc
Latitude:	34.440622	Longitude:	-118.601451
Region:	2	Lease:	Newhall
Section:	07	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

NW
1 - 2 Miles — **OIL_GAS** — **CA00012519**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705621	Operator:	Marathon Oil Co
Latitude:	34.440369	Longitude:	-118.651382
Region:	2	Lease:	Mabel S. Henderson
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NE
1 - 2 Miles — **OIL_GAS** — **CA00013561**

Well Number:	B-1	Status:	Plugged and abandoned-dry hole
API Number:	03705490	Operator:	Exxon Corp
Latitude:	34.439071	Longitude:	-118.613720
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	12	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles — **OIL_GAS** — **CA00008923**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706117	Operator:	Texaco E & P Inc
Latitude:	34.438953	Longitude:	-118.661520
Region:	2	Lease:	Seaboard-So Cal Pet. Daugherty
Section:	09	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles — **OIL_GAS** — **CA00010509**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706664	Operator:	Rothschild Oil Company
Latitude:	34.438293	Longitude:	-118.660282
Region:	2	Lease:	Barbour
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

WNW
1 - 2 Miles — **OIL_GAS** — **CA00011095**

Well Number:	1-16	Status:	Plugged and abandoned-dry hole-directional
API Number:	03722947	Operator:	Pancandian Petroleum Co
Latitude:	34.437987	Longitude:	-118.659972
Region:	2	Lease:	N. L. & F.
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles — **OIL_GAS** — **CA00014987**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706671	Operator:	Chevron USA, Inc.
Latitude:	34.437767	Longitude:	-118.657127
Region:	2	Lease:	Boobier
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
2 - 3 Miles — **OIL_GAS** — **CA00008754**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706631	Operator:	The British American Oil Prod
Latitude:	34.437578	Longitude:	-118.667330
Region:	2	Lease:	Kinler-So. Cal
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1/2 - 1 Mile — **OIL_GAS** — **CA00010300**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03722056	Operator:	Santa Fe Energy Resources
Latitude:	34.434360	Longitude:	-118.637827
Region:	2	Lease:	N. L. & F.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

WNW
2 - 3 Miles — OIL_GAS — CA00010278

Well Number:	16-1	Status:	Plugged and abandoned-dry hole
API Number:	03706666	Operator:	Scope Industries
Latitude:	34.434221	Longitude:	-118.669889
Region:	2	Lease:	Kinler
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles — OIL_GAS — CA00016378

Well Number:	1	Status:	Plugged and abandoned oil-directional
API Number:	03706629	Operator:	Amax Petroleum Corporation
Latitude:	34.434002	Longitude:	-118.666890
Region:	2	Lease:	Kinler
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1/2 - 1 Mile — OIL_GAS — CA00013589

Well Number:	55	Status:	Plugged and abandoned-dry hole
API Number:	03716518	Operator:	Exxon Corp
Latitude:	34.433828	Longitude:	-118.636435
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
1 - 2 Miles — OIL_GAS — CA00013576

Well Number:	69	Status:	135
API Number:	03716528	Operator:	Exxon Corp
Latitude:	34.433372	Longitude:	-118.605058
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

WNW
1 - 2 Miles — OIL_GAS — CA00016403

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706626	Operator:	Amax Petroleum Corporation
Latitude:	34.433315	Longitude:	-118.665961
Region:	2	Lease:	Barbour
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
2 - 3 Miles — OIL_GAS — CA00013452

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03721365	Operator:	G. R. Nance Co., Inc
Latitude:	34.433214	Longitude:	-118.672732
Region:	2	Lease:	Gallagher
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
1 - 2 Miles — OIL_GAS — CA00013538

Well Number:	2	Status:	230
API Number:	03716535	Operator:	Exxon Corp
Latitude:	34.433129	Longitude:	-118.617295
Region:	2	Lease:	Newhall Land & Farming Co. 12
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles — OIL_GAS — CA00016404

Well Number:	2	Status:	Plugged and abandoned oil
API Number:	03706627	Operator:	Amax Petroleum Corporation
Latitude:	34.432941	Longitude:	-118.663301
Region:	2	Lease:	Barbour
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

WNW
1 - 2 Miles — **OIL_GAS** — **CA00016405**

Well Number:	3	Status:	Plugged and abandoned oil
API Number:	03706628	Operator:	Amax Petroleum Corporation
Latitude:	34.432538	Longitude:	-118.661569
Region:	2	Lease:	Barbour
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles — **OIL_GAS** — **CA00015495**

Well Number:	1-16	Status:	Plugged and abandoned-dry hole-directional
API Number:	03722707	Operator:	Black Hawk Resources Corp
Latitude:	34.432378	Longitude:	-118.663455
Region:	2	Lease:	N. L. & F.
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles — **OIL_GAS** — **CA00016379**

Well Number:	2	Status:	Plugged and abandoned-dry hole
API Number:	03706630	Operator:	Amax Petroleum Corporation
Latitude:	34.432286	Longitude:	-118.667690
Region:	2	Lease:	Kinler
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NE
1/2 - 1 Mile — **OIL_GAS** — **CA00013578**

Well Number:	70	Status:	Plugged and abandoned oil-directional
API Number:	03716529	Operator:	Exxon Corp
Latitude:	34.431838	Longitude:	-118.628381
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

WNW
1 - 2 Miles — **OIL_GAS** — **CA00011714**

Well Number:	10	Status:	Completed oil
API Number:	03706728	Operator:	Nuevo Energy Company
Latitude:	34.430692	Longitude:	-118.663235
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — **OIL_GAS** — **CA00014523**

Well Number:	5	Status:	Plugged and abandoned-dry hole
API Number:	03706681	Operator:	Chevron USA, Inc.
Latitude:	34.430390	Longitude:	-118.676467
Region:	2	Lease:	Sepulveda
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
1 - 2 Miles — **OIL_GAS** — **CA00013556**

Well Number:	76	Status:	Plugged and abandoned oil-directional
API Number:	03716534	Operator:	Exxon Corp
Latitude:	34.430373	Longitude:	-118.608880
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles — **OIL_GAS** — **CA00014985**

Well Number:	5	Status:	Plugged and abandoned-dry hole
API Number:	03706668	Operator:	Chevron USA, Inc.
Latitude:	34.430357	Longitude:	-118.656865
Region:	2	Lease:	Blair
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

East
2 - 3 Miles | OIL_GAS | CA00013553

Well Number:	73	Status:	137
API Number:	03716531	Operator:	Exxon Corp
Latitude:	34.429852	Longitude:	-118.596595
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
1/2 - 1 Mile | OIL_GAS | CA00013575

Well Number:	68	Status:	Plugged and abandoned oil
API Number:	03716527	Operator:	Exxon Corp
Latitude:	34.429832	Longitude:	-118.624709
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | OIL_GAS | CA00013573

Well Number:	66	Status:	Plugged and abandoned oil
API Number:	03701977	Operator:	Exxon Corp
Latitude:	34.429748	Longitude:	-118.604609
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | OIL_GAS | CA00011698

Well Number:	4	Status:	Completed oil
API Number:	03706722	Operator:	Nuevo Energy Company
Latitude:	34.429525	Longitude:	-118.660914
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles | OIL_GAS | CA00012525

Well Number:	20	Status:	Completed gas
API Number:	03722026	Operator:	Marathon Oil Co
Latitude:	34.429188	Longitude:	-118.676589
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | OIL_GAS | CA00013580

Well Number:	72	Status:	Plugged and abandoned oil
API Number:	03716530	Operator:	Exxon Corp
Latitude:	34.429084	Longitude:	-118.612185
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | OIL_GAS | CA00011687

Well Number:	13	Status:	Completed oil
API Number:	03706731	Operator:	Nuevo Energy Company
Latitude:	34.429017	Longitude:	-118.659861
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | OIL_GAS | CA00011929

Well Number:	3	Status:	Completed oil
API Number:	03706698	Operator:	Nuevo Energy Company
Latitude:	34.428991	Longitude:	-118.674486
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | OIL_GAS | CA00011700

Well Number:	6	Status:	Completed oil
API Number:	03706724	Operator:	Nuevo Energy Company
Latitude:	34.428895	Longitude:	-118.665581
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | OIL_GAS | CA00011691

Well Number:	17	Status:	Completed oil
API Number:	03706735	Operator:	Nuevo Energy Company
Latitude:	34.428859	Longitude:	-118.661129
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | OIL_GAS | CA00011906

Well Number:	9	Status:	Completed oil
API Number:	03706704	Operator:	Nuevo Energy Company
Latitude:	34.428846	Longitude:	-118.672105
Region:	2	Lease:	Barnes
Section:	18	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | OIL_GAS | CA00008178

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706717	Operator:	Union Oil Company, Operator
Latitude:	34.428825	Longitude:	-118.656553
Region:	2	Lease:	Liebhart
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles | OIL_GAS | CA00012669

Well Number:	4-17	Status:	Completed oil
API Number:	03706643	Operator:	LBth Inc
Latitude:	34.428772	Longitude:	-118.678721
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | OIL_GAS | CA00011672

Well Number:	7	Status:	Completed oil
API Number:	03706725	Operator:	Nuevo Energy Company
Latitude:	34.428739	Longitude:	-118.659057
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | OIL_GAS | CA00012675

Well Number:	8-17	Status:	Completed oil
API Number:	03706647	Operator:	LBth Inc
Latitude:	34.428703	Longitude:	-118.676495
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | OIL_GAS | CA00013579

Well Number:	71	Status:	169
API Number:	03706299	Operator:	Exxon Corp
Latitude:	34.428699	Longitude:	-118.601974
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ENE
1/2 - 1 Mile | **OIL_GAS** | **CA00013574**

Well Number:	67	Status:	Plugged and abandoned oil
API Number:	03716526	Operator:	Exxon Corp
Latitude:	34.428670	Longitude:	-118.620842
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011945**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706696	Operator:	Nuevo Energy Company
Latitude:	34.428605	Longitude:	-118.668116
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011713**

Well Number:	1	Status:	Completed oil
API Number:	03706719	Operator:	Nuevo Energy Company
Latitude:	34.428597	Longitude:	-118.663200
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011686**

Well Number:	12	Status:	Completed oil
API Number:	03706730	Operator:	Nuevo Energy Company
Latitude:	34.428564	Longitude:	-118.665148
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles | **OIL_GAS** | **CA00012691**

Well Number:	12-17	Status:	Completed oil
API Number:	03706651	Operator:	LBth Inc
Latitude:	34.428471	Longitude:	-118.677020
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011946**

Well Number:	10	Status:	Plugged and abandoned-dry hole
API Number:	03706705	Operator:	Nuevo Energy Company
Latitude:	34.428430	Longitude:	-118.674083
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011925**

Well Number:	19	Status:	Completed oil- directional
API Number:	03706714	Operator:	Nuevo Energy Company
Latitude:	34.428406	Longitude:	-118.673743
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011920**

Well Number:	14	Status:	Completed oil- directional
API Number:	03706709	Operator:	Nuevo Energy Company
Latitude:	34.428353	Longitude:	-118.674392
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles — OIL_GAS — CA00011923

Well Number:	17	Status:	Completed oil
API Number:	03706712	Operator:	Nuevo Energy Company
Latitude:	34.428316	Longitude:	-118.670310
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles — OIL_GAS — CA00008179

Well Number:	2	Status:	Plugged and abandoned-dry hole
API Number:	03706718	Operator:	Union Oil Company, Operator
Latitude:	34.428295	Longitude:	-118.654387
Region:	2	Lease:	Liebhart
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00011931

Well Number:	5	Status:	Completed oil- directional
API Number:	03706700	Operator:	Nuevo Energy Company
Latitude:	34.428251	Longitude:	-118.674051
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00011947

Well Number:	11	Status:	026
API Number:	03706706	Operator:	Nuevo Energy Company
Latitude:	34.428225	Longitude:	-118.674299
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles — OIL_GAS — CA00011696

Well Number:	21	Status:	Completed oil
API Number:	03706739	Operator:	Nuevo Energy Company
Latitude:	34.428035	Longitude:	-118.663044
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles — OIL_GAS — CA00011690

Well Number:	16	Status:	Completed oil
API Number:	03706734	Operator:	Nuevo Energy Company
Latitude:	34.427951	Longitude:	-118.665115
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00011927

Well Number:	20	Status:	Completed oil- directional
API Number:	03706715	Operator:	Nuevo Energy Company
Latitude:	34.427846	Longitude:	-118.673216
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — OIL_GAS — CA00013572

Well Number:	65	Status:	Plugged and abandoned oil-directional
API Number:	03716470	Operator:	Exxon Corp
Latitude:	34.427717	Longitude:	-118.615676
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles — **OIL_GAS** — **CA00011689**

Well Number:	15	Status:	Completed oil
API Number:	03706733	Operator:	Nuevo Energy Company
Latitude:	34.427627	Longitude:	-118.662672
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles — **OIL_GAS** — **CA00011928**

Well Number:	21	Status:	Completed oil- directional
API Number:	03706716	Operator:	Nuevo Energy Company
Latitude:	34.427530	Longitude:	-118.668454
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — **OIL_GAS** — **CA00011924**

Well Number:	18	Status:	Completed oil
API Number:	03706713	Operator:	Nuevo Energy Company
Latitude:	34.427495	Longitude:	-118.671113
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — **OIL_GAS** — **CA00013570**

Well Number:	63	Status:	Plugged and abandoned oil-directional
API Number:	03700147	Operator:	Exxon Corp
Latitude:	34.427306	Longitude:	-118.609028
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles — **OIL_GAS** — **CA00012728**

Well Number:	7	Status:	Completed oil
API Number:	03706669	Operator:	LBth Inc
Latitude:	34.427187	Longitude:	-118.656951
Region:	2	Lease:	Blair
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles — **OIL_GAS** — **CA00011692**

Well Number:	18	Status:	Completed oil
API Number:	03706736	Operator:	Nuevo Energy Company
Latitude:	34.427181	Longitude:	-118.658714
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — **OIL_GAS** — **CA00012694**

Well Number:	15-17	Status:	Completed gas
API Number:	03706654	Operator:	LBth Inc
Latitude:	34.427042	Longitude:	-118.676337
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — **OIL_GAS** — **CA00013571**

Well Number:	64	Status:	Plugged and abandoned oil
API Number:	03716525	Operator:	Exxon Corp
Latitude:	34.426960	Longitude:	-118.612985
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00011673**

Well Number:	8	Status:	Completed oil
API Number:	03706726	Operator:	Nuevo Energy Company
Latitude:	34.426952	Longitude:	-118.665577
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011930**

Well Number:	4	Status:	Completed oil
API Number:	03706699	Operator:	Nuevo Energy Company
Latitude:	34.426911	Longitude:	-118.670122
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012671**

Well Number:	5-17	Status:	Plugged and abandoned oil
API Number:	03706644	Operator:	LBth Inc
Latitude:	34.426888	Longitude:	-118.676553
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
1/4 - 1/2 Mile | **OIL_GAS** | **CA00013560**

Well Number:	9	Status:	Plugged and abandoned-dry hole
API Number:	03716480	Operator:	Exxon Corp
Latitude:	34.426825	Longitude:	-118.629340
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

East
1 - 2 Miles | **OIL_GAS** | **CA00013567**

Well Number:	60	Status:	Plugged and abandoned oil
API Number:	03705101	Operator:	Exxon Corp
Latitude:	34.426786	Longitude:	-118.600438
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011688**

Well Number:	14	Status:	Completed oil
API Number:	03706732	Operator:	Nuevo Energy Company
Latitude:	34.426778	Longitude:	-118.664989
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011699**

Well Number:	5	Status:	Completed oil
API Number:	03706723	Operator:	Nuevo Energy Company
Latitude:	34.426782	Longitude:	-118.663227
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011694**

Well Number:	2	Status:	Completed oil
API Number:	03706720	Operator:	Nuevo Energy Company
Latitude:	34.426764	Longitude:	-118.661155
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles — OIL_GAS — CA00011926

Well Number:	2	Status:	036
API Number:	03706697	Operator:	Nuevo Energy Company
Latitude:	34.426740	Longitude:	-118.667741
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00012698

Well Number:	19-17	Status:	Completed oil
API Number:	03706658	Operator:	LBth Inc
Latitude:	34.426701	Longitude:	-118.678872
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles — OIL_GAS — CA00012727

Well Number:	27	Status:	Completed oil
API Number:	03706670	Operator:	LBth Inc
Latitude:	34.426609	Longitude:	-118.654353
Region:	2	Lease:	Blair
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles — OIL_GAS — CA00011715

Well Number:	11	Status:	Completed oil
API Number:	03706729	Operator:	Nuevo Energy Company
Latitude:	34.426508	Longitude:	-118.661309
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

East
1/4 - 1/2 Mile — OIL_GAS — CA00013557

Well Number:	77	Status:	Plugged and abandoned-dry hole-directional
API Number:	03722047	Operator:	Exxon Corp
Latitude:	34.426314	Longitude:	-118.629247
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00011949

Well Number:	13	Status:	Completed oil
API Number:	03706708	Operator:	Nuevo Energy Company
Latitude:	34.426170	Longitude:	-118.670028
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
2 - 3 Miles — OIL_GAS — CA00013568

Well Number:	61	Status:	Plugged and abandoned oil-directional
API Number:	03716523	Operator:	Exxon Corp
Latitude:	34.425995	Longitude:	-118.595433
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles — OIL_GAS — CA00011693

Well Number:	19	Status:	Completed oil
API Number:	03706737	Operator:	Nuevo Energy Company
Latitude:	34.425971	Longitude:	-118.661185
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

West
2 - 3 Miles — OIL_GAS — CA00011933

Well Number:	7	Status:	Completed oil- directional
API Number:	03706702	Operator:	Nuevo Energy Company
Latitude:	34.425940	Longitude:	-118.669904
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00011921

Well Number:	15	Status:	Completed oil- directional
API Number:	03706710	Operator:	Nuevo Energy Company
Latitude:	34.425719	Longitude:	-118.674696
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — OIL_GAS — CA00013593

Well Number:	59	Status:	Plugged and abandoned oil
API Number:	03716522	Operator:	Exxon Corp
Latitude:	34.425718	Longitude:	-118.603938
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1/2 - 1 Mile — OIL_GAS — CA00013592

Well Number:	58	Status:	Plugged and abandoned oil-directional
API Number:	03716521	Operator:	Exxon Corp
Latitude:	34.425693	Longitude:	-118.617125
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

West
2 - 3 Miles — OIL_GAS — CA00011932

Well Number:	6	Status:	Completed oil
API Number:	03706701	Operator:	Nuevo Energy Company
Latitude:	34.425592	Longitude:	-118.674510
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00012676

Well Number:	9-17	Status:	Completed oil
API Number:	03706648	Operator:	LBth Inc
Latitude:	34.425577	Longitude:	-118.678622
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles — OIL_GAS — CA00011695

Well Number:	20	Status:	Completed oil
API Number:	03706738	Operator:	Nuevo Energy Company
Latitude:	34.425524	Longitude:	-118.664770
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00012692

Well Number:	13-17	Status:	Completed oil- directional
API Number:	03706652	Operator:	LBth Inc
Latitude:	34.425457	Longitude:	-118.676674
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles — OIL_GAS — CA00011934

Well Number:	8	Status:	036
API Number:	03706703	Operator:	Nuevo Energy Company
Latitude:	34.425331	Longitude:	-118.668913
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00012693

Well Number:	14-17	Status:	Plugged and abandoned oil
API Number:	03706653	Operator:	LBth Inc
Latitude:	34.425278	Longitude:	-118.676673
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1/4 - 1/2 Mile — OIL_GAS — CA00013584

Well Number:	50	Status:	Plugged and abandoned oil
API Number:	03716515	Operator:	Exxon Corp
Latitude:	34.425228	Longitude:	-118.640066
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1/2 - 1 Mile — OIL_GAS — CA00008933

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706695	Operator:	Texaco E & P Inc
Latitude:	34.425057	Longitude:	-118.645105
Region:	2	Lease:	Newhall
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1/2 - 1 Mile — OIL_GAS — CA00013672

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706638	Operator:	Exxon Corp
Latitude:	34.424987	Longitude:	-118.650578
Region:	2	Lease:	Castaic Junction Gas Unit #1
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00011948

Well Number:	12	Status:	Completed oil
API Number:	03706707	Operator:	Nuevo Energy Company
Latitude:	34.424829	Longitude:	-118.673426
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles — OIL_GAS — CA00011674

Well Number:	9	Status:	Plugged and abandoned oil
API Number:	03706727	Operator:	Nuevo Energy Company
Latitude:	34.424807	Longitude:	-118.665325
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
0 - 1/8 Mile — OIL_GAS — CA00013634

Well Number:	2	Status:	Plugged and abandoned oil-directional
API Number:	03716473	Operator:	Exxon Corp
Latitude:	34.424787	Longitude:	-118.634809
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00011697**

Well Number:	3	Status:	Plugged and abandoned-dry hole
API Number:	03706721	Operator:	Nuevo Energy Company
Latitude:	34.424703	Longitude:	-118.658585
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012695**

Well Number:	16-17	Status:	Completed oil
API Number:	03706655	Operator:	LBth Inc
Latitude:	34.424691	Longitude:	-118.676394
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011922**

Well Number:	16	Status:	Oil well converted to water disposal
API Number:	03706711	Operator:	Nuevo Energy Company
Latitude:	34.424482	Longitude:	-118.670519
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00012672**

Well Number:	6	Status:	Completed oil
API Number:	03706694	Operator:	LBth Inc
Latitude:	34.423361	Longitude:	-118.668513
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00013236**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706634	Operator:	Havenstrite Oil Co
Latitude:	34.423300	Longitude:	-118.658934
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012700**

Well Number:	3	Status:	Completed oil
API Number:	03706691	Operator:	LBth Inc
Latitude:	34.423283	Longitude:	-118.671345
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00008995**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706633	Operator:	Texaco E & P Inc
Latitude:	34.423258	Longitude:	-118.676515
Region:	2	Lease:	Encinas Fee
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00014377**

Well Number:	4	Status:	Plugged and abandoned oil-directional
API Number:	03706692	Operator:	Chevron USA, Inc.
Latitude:	34.423186	Longitude:	-118.671558
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance — Database — EDR ID Number

West
2 - 3 Miles — OIL_GAS — CA00012699

Well Number:	2-17	Status:	Completed oil
API Number:	03706690	Operator:	LBth Inc
Latitude:	34.422999	Longitude:	-118.673648
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — OIL_GAS — CA00013621

Well Number:	33	Status:	Plugged and abandoned oil
API Number:	03716503	Operator:	Exxon Corp
Latitude:	34.422943	Longitude:	-118.612414
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00012670

Well Number:	5	Status:	Completed oil- directional
API Number:	03706693	Operator:	LBth Inc
Latitude:	34.422886	Longitude:	-118.673919
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — OIL_GAS — CA00013599

Well Number:	39	Status:	136
API Number:	03706409	Operator:	Exxon Corp
Latitude:	34.422889	Longitude:	-118.614261
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance — Database — EDR ID Number

East
1 - 2 Miles — OIL_GAS — CA00013630

Well Number:	16	Status:	Plugged and abandoned oil
API Number:	03716487	Operator:	Exxon Corp
Latitude:	34.422344	Longitude:	-118.608066
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — OIL_GAS — CA00013601

Well Number:	40	Status:	Plugged and abandoned oil
API Number:	03716507	Operator:	Exxon Corp
Latitude:	34.422263	Longitude:	-118.609969
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — OIL_GAS — CA00013622

Well Number:	34	Status:	Plugged and abandoned oil
API Number:	03716504	Operator:	Exxon Corp
Latitude:	34.422208	Longitude:	-118.604877
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1/2 - 1 Mile — OIL_GAS — CA00013623

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03716472	Operator:	Exxon Corp
Latitude:	34.422040	Longitude:	-118.625317
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles — **OIL_GAS** — **CA00013626**

Well Number:	12	Status:	Plugged and abandoned oil
API Number:	03716483	Operator:	Exxon Corp
Latitude:	34.421679	Longitude:	-118.617297
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — **OIL_GAS** — **CA00014213**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706632	Operator:	Conoco Inc
Latitude:	34.421566	Longitude:	-118.678243
Region:	2	Lease:	Newhall
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
2 - 3 Miles — **OIL_GAS** — **CA00014751**

Well Number:	6	Status:	Plugged and abandoned-dry hole
API Number:	03716536	Operator:	Chevron USA, Inc.
Latitude:	34.420819	Longitude:	-118.596350
Region:	2	Lease:	Newhall Land & Farming
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — **OIL_GAS** — **CA00008706**

Well Number:	2	Status:	Plugged and abandoned oil
API Number:	03706663	Operator:	The Newhall Land & Farming Co
Latitude:	34.420664	Longitude:	-118.671385
Region:	2	Lease:	Socal
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
1/4 - 1/2 Mile — **OIL_GAS** — **CA00013606**

Well Number:	45	Status:	Plugged and abandoned-dry hole
API Number:	03716511	Operator:	Exxon Corp
Latitude:	34.420650	Longitude:	-118.634767
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — **OIL_GAS** — **CA00008705**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706662	Operator:	The Newhall Land & Farming Co
Latitude:	34.420525	Longitude:	-118.673550
Region:	2	Lease:	Socal
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles — **OIL_GAS** — **CA00013614**

Well Number:	27	Status:	Plugged and abandoned oil
API Number:	03716498	Operator:	Exxon Corp
Latitude:	34.420239	Longitude:	-118.614736
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — **OIL_GAS** — **CA00013616**

Well Number:	29	Status:	136
API Number:	03706300	Operator:	Exxon Corp
Latitude:	34.420225	Longitude:	-118.600935
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles — OIL_GAS — CA00013631

Well Number:	17	Status:	Plugged and abandoned oil
API Number:	03716488	Operator:	Exxon Corp
Latitude:	34.420220	Longitude:	-118.606611
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1/4 - 1/2 Mile — OIL_GAS — CA00013588

Well Number:	54	Status:	Plugged and abandoned-dry hole-directional
API Number:	03716517	Operator:	Exxon Corp
Latitude:	34.420122	Longitude:	-118.638090
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles — OIL_GAS — CA00013628

Well Number:	14	Status:	Plugged and abandoned oil
API Number:	03716485	Operator:	Exxon Corp
Latitude:	34.419900	Longitude:	-118.612093
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00012701

Well Number:	12-20	Status:	Completed oil- directional
API Number:	03722746	Operator:	LBth Inc
Latitude:	34.419879	Longitude:	-118.678301
Region:	2	Lease:	N. L. & F.
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles — OIL_GAS — CA00012702

Well Number:	14-20	Status:	Completed oil
API Number:	03729957	Operator:	LBth Inc
Latitude:	34.419675	Longitude:	-118.678146
Region:	2	Lease:	N. L. & F.
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1/2 - 1 Mile — OIL_GAS — CA00013594

Well Number:	6	Status:	Plugged and abandoned oil
API Number:	03716477	Operator:	Exxon Corp
Latitude:	34.419343	Longitude:	-118.618768
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles — OIL_GAS — CA00013635

Well Number:	20	Status:	Plugged and abandoned oil
API Number:	03716491	Operator:	Exxon Corp
Latitude:	34.419305	Longitude:	-118.603759
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles — OIL_GAS — CA00013620

Well Number:	32	Status:	Plugged and abandoned oil
API Number:	03716502	Operator:	Exxon Corp
Latitude:	34.419300	Longitude:	-118.608938
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
2 - 3 Miles

OIL_GAS CA00013595

Well Number:	35	Status:	Plugged and abandoned oil
API Number:	03716505	Operator:	Exxon Corp
Latitude:	34.419067	Longitude:	-118.598330
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1/2 - 1 Mile

OIL_GAS CA00013624

Well Number:	10	Status:	Plugged and abandoned oil
API Number:	03716481	Operator:	Exxon Corp
Latitude:	34.418972	Longitude:	-118.622942
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles

OIL_GAS CA00013612

Well Number:	25	Status:	136
API Number:	03716496	Operator:	Exxon Corp
Latitude:	34.418950	Longitude:	-118.618369
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles

OIL_GAS CA00013559

Well Number:	8	Status:	Plugged and abandoned oil
API Number:	03716479	Operator:	Exxon Corp
Latitude:	34.418401	Longitude:	-118.616208
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

WSW
2 - 3 Miles

OIL_GAS CA00007251

Well Number:	8-20	Status:	Completed oil
API Number:	03722323	Operator:	Vintage Petroleum Inc
Latitude:	34.418247	Longitude:	-118.677247
Region:	2	Lease:	N. L. & F.
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW
2 - 3 Miles

OIL_GAS CA00007269

Well Number:	11-20	Status:	Completed oil- directional
API Number:	03722738	Operator:	Vintage Petroleum Inc
Latitude:	34.418095	Longitude:	-118.676968
Region:	2	Lease:	N. L. & F.
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1/2 - 1 Mile

OIL_GAS CA00013590

Well Number:	56	Status:	Plugged and abandoned oil-directional
API Number:	03716519	Operator:	Exxon Corp
Latitude:	34.418097	Longitude:	-118.625511
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW
2 - 3 Miles

OIL_GAS CA00007247

Well Number:	4-20	Status:	Drilling-idle
API Number:	03722308	Operator:	Vintage Petroleum Inc
Latitude:	34.418068	Longitude:	-118.677339
Region:	2	Lease:	N. L. & F.
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles — OIL_GAS — CA00013627

Well Number:	13	Status:	Plugged and abandoned oil
API Number:	03716484	Operator:	Exxon Corp
Latitude:	34.418069	Longitude:	-118.607116
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1/2 - 1 Mile — OIL_GAS — CA00013607

Well Number:	46	Status:	Plugged and abandoned oil
API Number:	03716512	Operator:	Exxon Corp
Latitude:	34.417857	Longitude:	-118.625595
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1/2 - 1 Mile — OIL_GAS — CA00013603

Well Number:	42	Status:	Plugged and abandoned gas
API Number:	03716509	Operator:	Exxon Corp
Latitude:	34.417819	Longitude:	-118.621121
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles — OIL_GAS — CA00013617

Well Number:	3	Status:	Plugged and abandoned oil
API Number:	03716474	Operator:	Exxon Corp
Latitude:	34.417690	Longitude:	-118.619161
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles — OIL_GAS — CA00013636

Well Number:	21	Status:	Plugged and abandoned oil
API Number:	03716492	Operator:	Exxon Corp
Latitude:	34.417500	Longitude:	-118.602317
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1/2 - 1 Mile — OIL_GAS — CA00013586

Well Number:	52	Status:	137
API Number:	03716516	Operator:	Exxon Corp
Latitude:	34.417322	Longitude:	-118.627121
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles — OIL_GAS — CA00013629

Well Number:	15	Status:	Plugged and abandoned oil
API Number:	03716486	Operator:	Exxon Corp
Latitude:	34.417226	Longitude:	-118.610494
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1/2 - 1 Mile — OIL_GAS — CA00013591

Well Number:	57	Status:	Plugged and abandoned-dry hole-directional
API Number:	03716520	Operator:	Exxon Corp
Latitude:	34.417166	Longitude:	-118.629478
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013613**

Well Number:	26	Status:	Plugged and abandoned oil
API Number:	03716497	Operator:	Exxon Corp
Latitude:	34.416961	Longitude:	-118.613448
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013600**

Well Number:	4	Status:	Plugged and abandoned oil
API Number:	03716475	Operator:	Exxon Corp
Latitude:	34.416748	Longitude:	-118.604866
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
2 - 3 Miles | **OIL_GAS** | **CA00013596**

Well Number:	36	Status:	Plugged and abandoned oil
API Number:	03706353	Operator:	Exxon Corp
Latitude:	34.416730	Longitude:	-118.594291
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
2 - 3 Miles | **OIL_GAS** | **CA00013619**

Well Number:	31	Status:	Plugged and abandoned oil-directional
API Number:	03716501	Operator:	Exxon Corp
Latitude:	34.416720	Longitude:	-118.598237
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013577**

Well Number:	7	Status:	Plugged and abandoned oil
API Number:	03716478	Operator:	Exxon Corp
Latitude:	34.416152	Longitude:	-118.608730
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00010738**

Well Number:	1	Status:	Plugged and abandoned-dry hole-directional
API Number:	03722352	Operator:	Quintana Petroleum Corp
Latitude:	34.414731	Longitude:	-118.646321
Region:	2	Lease:	NL&F-Trifield
Section:	22	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013583**

Well Number:	5	Status:	Plugged and abandoned oil
API Number:	03716476	Operator:	Exxon Corp
Latitude:	34.414706	Longitude:	-118.612305
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013633**

Well Number:	19	Status:	Plugged and abandoned oil
API Number:	03716490	Operator:	Exxon Corp
Latitude:	34.414621	Longitude:	-118.603049
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SE
1 - 2 Miles | OIL_GAS | CA00013632

Well Number:	18	Status:	Plugged and abandoned oil
API Number:	03716489	Operator:	Exxon Corp
Latitude:	34.414409	Longitude:	-118.620771
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW
2 - 3 Miles | OIL_GAS | CA00010733

Well Number:	1-21	Status:	Plugged and abandoned oil-directional
API Number:	03722347	Operator:	Quintana Petroleum Corp
Latitude:	34.414386	Longitude:	-118.675377
Region:	2	Lease:	N. L. & F.
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | OIL_GAS | CA00013610

Well Number:	23	Status:	Plugged and abandoned oil
API Number:	03716494	Operator:	Exxon Corp
Latitude:	34.414335	Longitude:	-118.616708
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | OIL_GAS | CA00013611

Well Number:	24	Status:	Plugged and abandoned oil
API Number:	03716495	Operator:	Exxon Corp
Latitude:	34.413945	Longitude:	-118.605969
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
2 - 3 Miles | OIL_GAS | CA00013615

Well Number:	28	Status:	Plugged and abandoned oil
API Number:	03716499	Operator:	Exxon Corp
Latitude:	34.413946	Longitude:	-118.600944
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | OIL_GAS | CA00013646

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706359	Operator:	Exxon Corp
Latitude:	34.413921	Longitude:	-118.609888
Region:	2	Lease:	Newhall Corporation
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | OIL_GAS | CA00013625

Well Number:	11	Status:	Plugged and abandoned oil
API Number:	03716482	Operator:	Exxon Corp
Latitude:	34.413576	Longitude:	-118.613921
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | OIL_GAS | CA00013558

Well Number:	78	Status:	Plugged and abandoned-dry hole
API Number:	03722728	Operator:	Exxon Corp
Latitude:	34.413208	Longitude:	-118.623247
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
2 - 3 Miles | OIL_GAS | CA00013618

Well Number:	30	Status:	Plugged and abandoned oil
API Number:	03716500	Operator:	Exxon Corp
Latitude:	34.413191	Longitude:	-118.598683
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
2 - 3 Miles | OIL_GAS | CA00013597

Well Number:	37	Status:	Plugged and abandoned oil
API Number:	03713506	Operator:	Exxon Corp
Latitude:	34.413175	Longitude:	-118.596309
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | OIL_GAS | CA00013587

Well Number:	53	Status:	136
API Number:	03706358	Operator:	Exxon Corp
Latitude:	34.413070	Longitude:	-118.622358
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | OIL_GAS | CA00013609

Well Number:	22	Status:	136
API Number:	03716493	Operator:	Exxon Corp
Latitude:	34.412628	Longitude:	-118.617868
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles | OIL_GAS | CA00013602

Well Number:	41	Status:	Plugged and abandoned oil
API Number:	03716508	Operator:	Exxon Corp
Latitude:	34.412374	Longitude:	-118.603543
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | OIL_GAS | CA00013647

Well Number:	2	Status:	Plugged and abandoned-dry hole
API Number:	03716471	Operator:	Exxon Corp
Latitude:	34.412161	Longitude:	-118.612355
Region:	2	Lease:	Newhall Corporation
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | OIL_GAS | CA00013648

Well Number:	3	Status:	Plugged and abandoned oil
API Number:	03706298	Operator:	Exxon Corp
Latitude:	34.411406	Longitude:	-118.606614
Region:	2	Lease:	Newhall Corporation
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | OIL_GAS | CA00011180

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03712619	Operator:	Oryx Energy Co.
Latitude:	34.411341	Longitude:	-118.641297
Region:	2	Lease:	Newhall Land and Farming
Section:	22	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
2 - 3 Miles — OIL_GAS — CA00013581

Well Number:	48	Status:	Plugged and abandoned oil
API Number:	03716513	Operator:	Exxon Corp
Latitude:	34.411173	Longitude:	-118.598564
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW
1 - 2 Miles — OIL_GAS — CA00008951

Well Number:	2	Status:	Plugged and abandoned-dry hole
API Number:	03712659	Operator:	Texaco E & P Inc
Latitude:	34.410582	Longitude:	-118.664094
Region:	2	Lease:	N. L. & F.
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
2 - 3 Miles — OIL_GAS — CA00013582

Well Number:	49	Status:	Plugged and abandoned oil
API Number:	03716514	Operator:	Exxon Corp
Latitude:	34.410224	Longitude:	-118.599815
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW
1 - 2 Miles — OIL_GAS — CA00008950

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03712658	Operator:	Texaco E & P Inc
Latitude:	34.409984	Longitude:	-118.662582
Region:	2	Lease:	N. L. & F.
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles — OIL_GAS — CA00008934

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03712660	Operator:	Texaco E & P Inc
Latitude:	34.409727	Longitude:	-118.656815
Region:	2	Lease:	Newhall
Section:	22	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — OIL_GAS — CA00012400

Well Number:	152	Status:	Plugged and abandoned oil
API Number:	03712654	Operator:	Medallion Calif Prpts Co
Latitude:	34.408044	Longitude:	-118.638431
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — OIL_GAS — CA00012416

Well Number:	142	Status:	136
API Number:	03712895	Operator:	Medallion Calif Prpts Co
Latitude:	34.407981	Longitude:	-118.644284
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles — OIL_GAS — CA00011167

Well Number:	134	Status:	136
API Number:	03712888	Operator:	Oryx Energy Co.
Latitude:	34.407966	Longitude:	-118.653138
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number

SSW
1 - 2 Miles — OIL_GAS — CA00012393

Well Number:	145	Status:	136
API Number:	03712898	Operator:	Medallion Calif Prpts Co
Latitude:	34.407775	Longitude:	-118.643927
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles — OIL_GAS — CA00011135

Well Number:	62	Status:	Plugged and abandoned oil
API Number:	03712875	Operator:	Oryx Energy Co.
Latitude:	34.407770	Longitude:	-118.657084
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles — OIL_GAS — CA00011160

Well Number:	104	Status:	136
API Number:	03713283	Operator:	Oryx Energy Co.
Latitude:	34.407720	Longitude:	-118.658997
Region:	2	Lease:	Rancho San Francisco
Section:	28	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — OIL_GAS — CA00011168

Well Number:	135	Status:	Plugged and abandoned oil
API Number:	03712889	Operator:	Oryx Energy Co.
Latitude:	34.407666	Longitude:	-118.640469
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number

SW
1 - 2 Miles — OIL_GAS — CA00011144

Well Number:	86	Status:	Plugged and abandoned oil
API Number:	03713265	Operator:	Oryx Energy Co.
Latitude:	34.407367	Longitude:	-118.654801
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles — OIL_GAS — CA00012359

Well Number:	66	Status:	036
API Number:	03710663	Operator:	Medallion Calif Prpts Co
Latitude:	34.407327	Longitude:	-118.650194
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles — OIL_GAS — CA00012370

Well Number:	41	Status:	Plugged and abandoned oil
API Number:	03712855	Operator:	Medallion Calif Prpts Co
Latitude:	34.407234	Longitude:	-118.652701
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — OIL_GAS — CA00012396

Well Number:	148	Status:	Completed oil
API Number:	03710658	Operator:	Medallion Calif Prpts Co
Latitude:	34.407218	Longitude:	-118.631878
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012402**

Well Number:	154	Status:	Completed oil
API Number:	03712656	Operator:	Medallion Calif Prpts Co
Latitude:	34.406719	Longitude:	-118.641473
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012416**

Well Number:	144	Status:	036
API Number:	03712897	Operator:	Medallion Calif Prpts Co
Latitude:	34.406710	Longitude:	-118.636999
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012431**

Well Number:	127	Status:	Completed oil
API Number:	03712881	Operator:	Medallion Calif Prpts Co
Latitude:	34.406675	Longitude:	-118.646809
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | **OIL_GAS** | **CA00011122**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706028	Operator:	Oryx Energy Co.
Latitude:	34.406603	Longitude:	-118.608929
Region:	2	Lease:	Sunray-McCulloch NCS
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles | **OIL_GAS** | **CA00012442**

Well Number:	111	Status:	Completed oil
API Number:	03713290	Operator:	Medallion Calif Prpts Co
Latitude:	34.406594	Longitude:	-118.653065
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00012421**

Well Number:	116	Status:	Completed oil
API Number:	03713295	Operator:	Medallion Calif Prpts Co
Latitude:	34.406485	Longitude:	-118.652590
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00012394**

Well Number:	146	Status:	Completed oil
API Number:	03712899	Operator:	Medallion Calif Prpts Co
Latitude:	34.406463	Longitude:	-118.650544
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles | **OIL_GAS** | **CA00011172**

Well Number:	155	Status:	Plugged and abandoned oil
API Number:	03712657	Operator:	Oryx Energy Co.
Latitude:	34.406209	Longitude:	-118.626209
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles | **OIL_GAS** | **CA00012439**

Well Number:	107	Status:	Completed oil
API Number:	03713286	Operator:	Medallion Calif Prpts Co
Latitude:	34.406113	Longitude:	-118.650383
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00011158**

Well Number:	56	Status:	Plugged and abandoned oil
API Number:	03712868	Operator:	Oryx Energy Co.
Latitude:	34.406045	Longitude:	-118.654267
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012415**

Well Number:	141	Status:	Completed oil
API Number:	03712894	Operator:	Medallion Calif Prpts Co
Latitude:	34.405879	Longitude:	-118.634270
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011162**

Well Number:	110	Status:	Plugged and abandoned oil
API Number:	03713289	Operator:	Oryx Energy Co.
Latitude:	34.405769	Longitude:	-118.649093
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012428**

Well Number:	124	Status:	Completed oil
API Number:	03712878	Operator:	Medallion Calif Prpts Co
Latitude:	34.405729	Longitude:	-118.644447
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012429**

Well Number:	125	Status:	Completed oil
API Number:	03712879	Operator:	Medallion Calif Prpts Co
Latitude:	34.405673	Longitude:	-118.636915
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00012389**

Well Number:	27	Status:	Plugged and abandoned oil
API Number:	03712645	Operator:	Medallion Calif Prpts Co
Latitude:	34.405593	Longitude:	-118.652138
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012391**

Well Number:	29	Status:	Completed oil
API Number:	03712647	Operator:	Medallion Calif Prpts Co
Latitude:	34.405587	Longitude:	-118.650284
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012373**

Well Number:	45	Status:	Completed oil
API Number:	03712858	Operator:	Medallion Calif Prpts Co
Latitude:	34.405456	Longitude:	-118.647783
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012374**

Well Number:	47	Status:	036
API Number:	03712860	Operator:	Medallion Calif Prpts Co
Latitude:	34.405450	Longitude:	-118.645909
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles | **OIL_GAS** | **CA00012395**

Well Number:	147	Status:	036
API Number:	03712900	Operator:	Medallion Calif Prpts Co
Latitude:	34.405297	Longitude:	-118.629468
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012423**

Well Number:	119	Status:	Completed oil
API Number:	03713297	Operator:	Medallion Calif Prpts Co
Latitude:	34.405276	Longitude:	-118.639661
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012419**

Well Number:	114	Status:	Completed oil
API Number:	03713293	Operator:	Medallion Calif Prpts Co
Latitude:	34.405266	Longitude:	-118.647463
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012412**

Well Number:	137	Status:	Completed oil
API Number:	03712890	Operator:	Medallion Calif Prpts Co
Latitude:	34.404787	Longitude:	-118.647592
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | **OIL_GAS** | **CA00012462**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705637	Operator:	Mcor Oil and Gas Corporation
Latitude:	34.404634	Longitude:	-118.610344
Region:	2	Lease:	McCulloch NC
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011169**

Well Number:	138	Status:	Plugged and abandoned oil
API Number:	03712891	Operator:	Oryx Energy Co.
Latitude:	34.404547	Longitude:	-118.641614
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles — **OIL_GAS** — **CA00011164**

Well Number:	121	Status:	Plugged and abandoned oil
API Number:	03700071	Operator:	Oryx Energy Co.
Latitude:	34.404364	Longitude:	-118.652213
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — **OIL_GAS** — **CA00012411**

Well Number:	136	Status:	Idle oil
API Number:	03706405	Operator:	Medallion Calif Prpts Co
Latitude:	34.404333	Longitude:	-118.648944
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — **OIL_GAS** — **CA00012365**

Well Number:	23	Status:	Idle oil
API Number:	03712642	Operator:	Medallion Calif Prpts Co
Latitude:	34.404289	Longitude:	-118.648162
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00012426**

Well Number:	122	Status:	Completed oil
API Number:	03713299	Operator:	Medallion Calif Prpts Co
Latitude:	34.404277	Longitude:	-118.635216
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles — **OIL_GAS** — **CA00012436**

Well Number:	102	Status:	Completed oil
API Number:	03713282	Operator:	Medallion Calif Prpts Co
Latitude:	34.404219	Longitude:	-118.646290
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — **OIL_GAS** — **CA00011132**

Well Number:	59	Status:	136
API Number:	03712871	Operator:	Oryx Energy Co.
Latitude:	34.403982	Longitude:	-118.639738
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00012410**

Well Number:	132	Status:	108
API Number:	03712886	Operator:	Medallion Calif Prpts Co
Latitude:	34.403961	Longitude:	-118.631592
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — **OIL_GAS** — **CA00012390**

Well Number:	28	Status:	Completed oil
API Number:	03712646	Operator:	Medallion Calif Prpts Co
Latitude:	34.403889	Longitude:	-118.645343
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles | **OIL_GAS** | **CA00011136**

Well Number:	63	Status:	Plugged and abandoned oil
API Number:	03712876	Operator:	Oryx Energy Co.
Latitude:	34.403850	Longitude:	-118.652649
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012443**

Well Number:	112	Status:	036
API Number:	03713291	Operator:	Medallion Calif Prpts Co
Latitude:	34.403810	Longitude:	-118.642229
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011155**

Well Number:	48	Status:	136
API Number:	03712861	Operator:	Oryx Energy Co.
Latitude:	34.403796	Longitude:	-118.641751
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012387**

Well Number:	25	Status:	108
API Number:	03712644	Operator:	Medallion Calif Prpts Co
Latitude:	34.403766	Longitude:	-118.650434
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012440**

Well Number:	108	Status:	Completed oil
API Number:	03713287	Operator:	Medallion Calif Prpts Co
Latitude:	34.403720	Longitude:	-118.641008
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011154**

Well Number:	46	Status:	Plugged and abandoned oil
API Number:	03712859	Operator:	Oryx Energy Co.
Latitude:	34.403691	Longitude:	-118.643456
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012355**

Well Number:	58	Status:	Completed oil
API Number:	03712870	Operator:	Medallion Calif Prpts Co
Latitude:	34.403614	Longitude:	-118.643000
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011138**

Well Number:	75	Status:	Plugged and abandoned oil
API Number:	03713254	Operator:	Oryx Energy Co.
Latitude:	34.403439	Longitude:	-118.639869
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles — **OIL_GAS** — **CA00011165**

Well Number:	131	Status:	Plugged and abandoned oil
API Number:	03712885	Operator:	Oryx Energy Co.
Latitude:	34.403208	Longitude:	-118.644255
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00012332**

Well Number:	97	Status:	036
API Number:	03713277	Operator:	Medallion Calif Prpts Co
Latitude:	34.403133	Longitude:	-118.637277
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles — **OIL_GAS** — **CA00012417**

Well Number:	143	Status:	Completed oil
API Number:	03712896	Operator:	Medallion Calif Prpts Co
Latitude:	34.402996	Longitude:	-118.626936
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — **OIL_GAS** — **CA00012444**

Well Number:	113	Status:	108
API Number:	03713292	Operator:	Medallion Calif Prpts Co
Latitude:	34.402974	Longitude:	-118.645075
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles — **OIL_GAS** — **CA00012425**

Well Number:	120	Status:	Completed oil
API Number:	03713298	Operator:	Medallion Calif Prpts Co
Latitude:	34.402959	Longitude:	-118.639979
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00012407**

Well Number:	129	Status:	Plugged and abandoned oil
API Number:	03712883	Operator:	Medallion Calif Prpts Co
Latitude:	34.402778	Longitude:	-118.637995
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — **OIL_GAS** — **CA00011170**

Well Number:	140	Status:	Plugged and abandoned oil
API Number:	03712893	Operator:	Oryx Energy Co.
Latitude:	34.402426	Longitude:	-118.650340
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles — **OIL_GAS** — **CA00011179**

Well Number:	6-7	Status:	Plugged and abandoned oil
API Number:	03712618	Operator:	Oryx Energy Co.
Latitude:	34.402421	Longitude:	-118.623989
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00012377**

Well Number:	52	Status:	136
API Number:	03712865	Operator:	Medallion Calif Prpts Co
Latitude:	34.402382	Longitude:	-118.637472
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012382**

Well Number:	20	Status:	Plugged and abandoned oil
API Number:	03712839	Operator:	Medallion Calif Prpts Co
Latitude:	34.402287	Longitude:	-118.646443
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012383**

Well Number:	21	Status:	Completed oil
API Number:	03712640	Operator:	Medallion Calif Prpts Co
Latitude:	34.402204	Longitude:	-118.641034
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011173**

Well Number:	17	Status:	Plugged and abandoned oil
API Number:	03712636	Operator:	Oryx Energy Co.
Latitude:	34.402171	Longitude:	-118.644209
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00012365**

Well Number:	72	Status:	Completed oil
API Number:	03713251	Operator:	Medallion Calif Prpts Co
Latitude:	34.402078	Longitude:	-118.637615
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012388**

Well Number:	26	Status:	046
API Number:	03700069	Operator:	Medallion Calif Prpts Co
Latitude:	34.402025	Longitude:	-118.650858
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012358**

Well Number:	65	Status:	Completed oil
API Number:	03713245	Operator:	Medallion Calif Prpts Co
Latitude:	34.402027	Longitude:	-118.635092
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011142**

Well Number:	84	Status:	136
API Number:	03713263	Operator:	Oryx Energy Co.
Latitude:	34.402023	Longitude:	-118.632798
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
SSW 1 - 2 Miles	**OIL_GAS**	**CA00012386**

Well Number:	24	Status:	Completed oil
API Number:	03712643	Operator:	Medallion Calif Prpts Co
Latitude:	34.401942	Longitude:	-118.648270
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South 1 - 2 Miles	**OIL_GAS**	**CA00012379**

Well Number:	54	Status:	Completed oil
API Number:	03712866	Operator:	Medallion Calif Prpts Co
Latitude:	34.401892	Longitude:	-118.639475
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South 1 - 2 Miles	**OIL_GAS**	**CA00012372**

Well Number:	44	Status:	Completed oil
API Number:	03712775	Operator:	Medallion Calif Prpts Co
Latitude:	34.401655	Longitude:	-118.639119
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW 2 - 3 Miles	**OIL_GAS**	**CA00011166**

Well Number:	133	Status:	Plugged and abandoned-dry hole
API Number:	03712887	Operator:	Oryx Energy Co.
Latitude:	34.401605	Longitude:	-118.657611
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
South 1 - 2 Miles	**OIL_GAS**	**CA00012420**

Well Number:	115	Status:	Completed oil
API Number:	03713294	Operator:	Medallion Calif Prpts Co
Latitude:	34.401452	Longitude:	-118.635262
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW 1 - 2 Miles	**OIL_GAS**	**CA00012435**

Well Number:	101	Status:	Completed gas
API Number:	03713281	Operator:	Medallion Calif Prpts Co
Latitude:	34.401368	Longitude:	-118.642110
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South 1 - 2 Miles	**OIL_GAS**	**CA00012441**

Well Number:	109	Status:	Completed oil
API Number:	03713288	Operator:	Medallion Calif Prpts Co
Latitude:	34.401373	Longitude:	-118.632033
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW 1 - 2 Miles	**OIL_GAS**	**CA00011145**

Well Number:	98	Status:	136
API Number:	03713278	Operator:	Oryx Energy Co.
Latitude:	34.401273	Longitude:	-118.647984
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

SSE
1 - 2 Miles — **OIL_GAS** — **CA00011174**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03712813	Operator:	Oryx Energy Co.
Latitude:	34.401215	Longitude:	-118.625593
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — **OIL_GAS** — **CA00012398**

Well Number:	150	Status:	Completed oil
API Number:	03712652	Operator:	Medallion Calif Prpts Co
Latitude:	34.400628	Longitude:	-118.643242
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00011159**

Well Number:	57	Status:	136
API Number:	03712869	Operator:	Oryx Energy Co.
Latitude:	34.400633	Longitude:	-118.633068
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00012378**

Well Number:	53	Status:	Completed oil
API Number:	03700070	Operator:	Medallion Calif Prpts Co
Latitude:	34.400601	Longitude:	-118.639246
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

SSW
1 - 2 Miles — **OIL_GAS** — **CA00012408**

Well Number:	13	Status:	Completed oil
API Number:	03712632	Operator:	Medallion Calif Prpts Co
Latitude:	34.400556	Longitude:	-118.641637
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00012406**

Well Number:	128	Status:	Completed oil
API Number:	03712882	Operator:	Medallion Calif Prpts Co
Latitude:	34.400510	Longitude:	-118.635290
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00011141**

Well Number:	8	Status:	Plugged and abandoned oil
API Number:	03712627	Operator:	Oryx Energy Co.
Latitude:	34.400424	Longitude:	-118.639481
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — **OIL_GAS** — **CA00012380**

Well Number:	19	Status:	Completed oil
API Number:	03712638	Operator:	Medallion Calif Prpts Co
Latitude:	34.400273	Longitude:	-118.643826
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00011171**

Well Number:	15	Status:	Plugged and abandoned oil
API Number:	03712634	Operator:	Oryx Energy Co.
Latitude:	34.400228	Longitude:	-118.637345
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012344**

Well Number:	80	Status:	Completed oil
API Number:	03713259	Operator:	Medallion Calif Prpts Co
Latitude:	34.400233	Longitude:	-118.630250
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012375**

Well Number:	50	Status:	Plugged and abandoned oil
API Number:	03712863	Operator:	Medallion Calif Prpts Co
Latitude:	34.400173	Longitude:	-118.635511
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012422**

Well Number:	118	Status:	Completed gas
API Number:	03713296	Operator:	Medallion Calif Prpts Co
Latitude:	34.400144	Longitude:	-118.637997
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012384**

Well Number:	22	Status:	Plugged and abandoned oil
API Number:	03712641	Operator:	Medallion Calif Prpts Co
Latitude:	34.400086	Longitude:	-118.646126
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles | **OIL_GAS** | **CA00011143**

Well Number:	85	Status:	136
API Number:	03713264	Operator:	Oryx Energy Co.
Latitude:	34.400023	Longitude:	-118.627790
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012364**

Well Number:	71	Status:	Completed oil
API Number:	03713250	Operator:	Medallion Calif Prpts Co
Latitude:	34.399995	Longitude:	-118.636071
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011134**

Well Number:	61	Status:	Plugged and abandoned oil
API Number:	03712873	Operator:	Oryx Energy Co.
Latitude:	34.399819	Longitude:	-118.633035
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSE
1 - 2 Miles | **OIL_GAS** | **CA00011175**

Well Number:	2-7	Status:	Plugged and abandoned oil
API Number:	03712614	Operator:	Oryx Energy Co.
Latitude:	34.399762	Longitude:	-118.625771
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012427**

Well Number:	123	Status:	Completed oil
API Number:	03713300	Operator:	Medallion Calif Prpts Co
Latitude:	34.399348	Longitude:	-118.631520
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012437**

Well Number:	105	Status:	Completed oil
API Number:	03713284	Operator:	Medallion Calif Prpts Co
Latitude:	34.399089	Longitude:	-118.635275
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012330**

Well Number:	95	Status:	Completed oil
API Number:	03713275	Operator:	Medallion Calif Prpts Co
Latitude:	34.399072	Longitude:	-118.644607
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011146**

Well Number:	30	Status:	Plugged and abandoned oil
API Number:	03712648	Operator:	Oryx Energy Co.
Latitude:	34.398936	Longitude:	-118.643101
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012346**

Well Number:	82	Status:	Oil well converted to water disposal
API Number:	03713261	Operator:	Medallion Calif Prpts Co
Latitude:	34.398705	Longitude:	-118.644657
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012404**

Well Number:	16	Status:	Completed oil
API Number:	03712635	Operator:	Medallion Calif Prpts Co
Latitude:	34.398624	Longitude:	-118.641791
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011161**

Well Number:	11	Status:	Plugged and abandoned oil
API Number:	03712630	Operator:	Oryx Energy Co.
Latitude:	34.398612	Longitude:	-118.635003
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

South
1 - 2 Miles — OIL_GAS — CA00012354

Well Number:	55	Status:	134
API Number:	03712867	Operator:	Medallion Calif Prpts Co
Latitude:	34.398571	Longitude:	-118.630682
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — OIL_GAS — CA00011157

Well Number:	5	Status:	Plugged and abandoned oil
API Number:	03712624	Operator:	Oryx Energy Co.
Latitude:	34.398424	Longitude:	-118.637341
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — OIL_GAS — CA00012361

Well Number:	69	Status:	Completed oil
API Number:	03712348	Operator:	Medallion Calif Prpts Co
Latitude:	34.398417	Longitude:	-118.632561
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — OIL_GAS — CA00011140

Well Number:	79	Status:	136
API Number:	03713258	Operator:	Oryx Energy Co.
Latitude:	34.398406	Longitude:	-118.628660
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

South
1 - 2 Miles — OIL_GAS — CA00012405

Well Number:	18	Status:	Plugged and abandoned oil
API Number:	03712637	Operator:	Medallion Calif Prpts Co
Latitude:	34.398318	Longitude:	-118.633195
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — OIL_GAS — CA00012352

Well Number:	90	Status:	Completed oil
API Number:	03713269	Operator:	Medallion Calif Prpts Co
Latitude:	34.398310	Longitude:	-118.640767
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — OIL_GAS — CA00011133

Well Number:	6	Status:	Plugged and abandoned oil
API Number:	03712625	Operator:	Oryx Energy Co.
Latitude:	34.398284	Longitude:	-118.639583
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — OIL_GAS — CA00012341

Well Number:	74	Status:	Completed gas
API Number:	03713253	Operator:	Medallion Calif Prpts Co
Latitude:	34.397992	Longitude:	-118.637507
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSE
2 - 3 Miles — **OIL_GAS** — **CA00011176**

Well Number:	3-5	Status:	Plugged and abandoned oil
API Number:	03712615	Operator:	Oryx Energy Co.
Latitude:	34.397752	Longitude:	-118.619935
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles — **OIL_GAS** — **CA00012347**

Well Number:	83	Status:	Completed oil
API Number:	03713262	Operator:	Medallion Calif Prpts Co
Latitude:	34.397611	Longitude:	-118.625051
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00012430**

Well Number:	126	Status:	Completed oil
API Number:	03712880	Operator:	Medallion Calif Prpts Co
Latitude:	34.397520	Longitude:	-118.630159
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00011185**

Well Number:	4	Status:	Plugged and abandoned oil
API Number:	03712823	Operator:	Oryx Energy Co.
Latitude:	34.397141	Longitude:	-118.635448
Region:	2	Lease:	Ranch San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles — **OIL_GAS** — **CA00012327**

Well Number:	92	Status:	Completed oil
API Number:	03713272	Operator:	Medallion Calif Prpts Co
Latitude:	34.396986	Longitude:	-118.634592
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
2 - 3 Miles — **OIL_GAS** — **CA00012351**

Well Number:	9	Status:	Plugged and abandoned oil
API Number:	03712628	Operator:	Medallion Calif Prpts Co
Latitude:	34.396931	Longitude:	-118.641918
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles — **OIL_GAS** — **CA00012356**

Well Number:	60	Status:	136
API Number:	03712872	Operator:	Medallion Calif Prpts Co
Latitude:	34.396745	Longitude:	-118.628691
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00012376**

Well Number:	51	Status:	Completed oil
API Number:	03712864	Operator:	Medallion Calif Prpts Co
Latitude:	34.396733	Longitude:	-118.630947
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | OIL_GAS | CA00011183

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03712620	Operator:	Oryx Energy Co.
Latitude:	34.396683	Longitude:	-118.637431
Region:	2	Lease:	Ranch San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | OIL_GAS | CA00012362

Well Number:	7	Status:	Completed oil
API Number:	03712626	Operator:	Medallion Calif Prpts Co
Latitude:	34.396671	Longitude:	-118.639707
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | OIL_GAS | CA00012366

Well Number:	73	Status:	Completed oil
API Number:	03713252	Operator:	Medallion Calif Prpts Co
Latitude:	34.396613	Longitude:	-118.626457
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | OIL_GAS | CA00012433

Well Number:	10	Status:	Completed oil
API Number:	03712629	Operator:	Medallion Calif Prpts Co
Latitude:	34.396484	Longitude:	-118.632944
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
2 - 3 Miles | OIL_GAS | CA00012409

Well Number:	130	Status:	Completed oil
API Number:	03712884	Operator:	Medallion Calif Prpts Co
Latitude:	34.396445	Longitude:	-118.640268
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | OIL_GAS | CA00012349

Well Number:	88	Status:	036
API Number:	03713267	Operator:	Medallion Calif Prpts Co
Latitude:	34.396179	Longitude:	-118.621185
Region:	2	Lease:	Rancho San Francisco
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | OIL_GAS | CA00012333

Well Number:	99	Status:	Completed oil
API Number:	03713279	Operator:	Medallion Calif Prpts Co
Latitude:	34.396163	Longitude:	-118.624061
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | OIL_GAS | CA00011177

Well Number:	4-5	Status:	Plugged and abandoned oil
API Number:	03712616	Operator:	Oryx Energy Co.
Latitude:	34.395879	Longitude:	-118.617688
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

South
2 - 3 Miles — OIL_GAS — CA00012414

Well Number:	14	Status:	Completed oil
API Number:	03712633	Operator:	Medallion Calif Prpts Co
Latitude:	34.395152	Longitude:	-118.631109
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles — OIL_GAS — CA00011184

Well Number:	3	Status:	Plugged and abandoned oil
API Number:	03712622	Operator:	Oryx Energy Co.
Latitude:	34.394860	Longitude:	-118.635153
Region:	2	Lease:	Ranch San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles — OIL_GAS — CA00012424

Well Number:	12	Status:	Plugged and abandoned oil
API Number:	03712631	Operator:	Medallion Calif Prpts Co
Latitude:	34.394753	Longitude:	-118.637298
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles — OIL_GAS — CA00012381

Well Number:	2	Status:	Completed oil
API Number:	03712621	Operator:	Medallion Calif Prpts Co
Latitude:	34.394727	Longitude:	-118.633015
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

SSE
2 - 3 Miles — OIL_GAS — CA00011139

Well Number:	78	Status:	Plugged and abandoned oil
API Number:	03713257	Operator:	Oryx Energy Co.
Latitude:	34.394692	Longitude:	-118.624488
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles — OIL_GAS — CA00012434

Well Number:	100	Status:	Completed oil
API Number:	03713280	Operator:	Medallion Calif Prpts Co
Latitude:	34.394668	Longitude:	-118.638161
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles — OIL_GAS — CA00011153

Well Number:	43	Status:	136
API Number:	03712857	Operator:	Oryx Energy Co.
Latitude:	34.394590	Longitude:	-118.628831
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles — OIL_GAS — CA00012353

Well Number:	91	Status:	Plugged and abandoned-dry hole
API Number:	03713270	Operator:	Medallion Calif Prpts Co
Latitude:	34.394369	Longitude:	-118.618793
Region:	2	Lease:	Rancho San Francisco
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

South
2 - 3 Miles | OIL_GAS | CA00012348

Well Number:	87	Status:	Completed oil
API Number:	03713266	Operator:	Medallion Calif Prpts Co
Latitude:	34.394335	Longitude:	-118.634652
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | OIL_GAS | CA00011186

Well Number:	91	Status:	Plugged and abandoned oil
API Number:	03713271	Operator:	Oryx Energy Co.
Latitude:	34.394339	Longitude:	-118.619154
Region:	2	Lease:	Ranch San Francisco
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | OIL_GAS | CA00011178

Well Number:	5-5	Status:	Plugged and abandoned oil
API Number:	03712617	Operator:	Oryx Energy Co.
Latitude:	34.394288	Longitude:	-118.614897
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | OIL_GAS | CA00012328

Well Number:	93	Status:	Completed oil
API Number:	03713273	Operator:	Medallion Calif Prpts Co
Latitude:	34.394049	Longitude:	-118.628014
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

South
2 - 3 Miles | OIL_GAS | CA00012345

Well Number:	81	Status:	Completed oil
API Number:	03713260	Operator:	Medallion Calif Prpts Co
Latitude:	34.393239	Longitude:	-118.630727
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | OIL_GAS | CA00011148

Well Number:	34	Status:	Plugged and abandoned oil
API Number:	03712848	Operator:	Oryx Energy Co.
Latitude:	34.393161	Longitude:	-118.633157
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | OIL_GAS | CA00012343

Well Number:	77	Status:	Completed oil
API Number:	03713256	Operator:	Medallion Calif Prpts Co
Latitude:	34.393159	Longitude:	-118.622675
Region:	2	Lease:	Rancho San Francisco
Section:	36	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | OIL_GAS | CA00012368

Well Number:	36	Status:	Plugged and abandoned oil
API Number:	03712850	Operator:	Medallion Calif Prpts Co
Latitude:	34.393110	Longitude:	-118.630378
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSE
2 - 3 Miles | **OIL_GAS** | **CA00011150**

Well Number:	37	Status:	136
API Number:	03712851	Operator:	Oryx Energy Co.
Latitude:	34.393077	Longitude:	-118.626334
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012397**

Well Number:	149	Status:	Completed oil
API Number:	03712651	Operator:	Medallion Calif Prpts Co
Latitude:	34.393039	Longitude:	-118.633617
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012392**

Well Number:	31	Status:	Plugged and abandoned oil
API Number:	03712649	Operator:	Medallion Calif Prpts Co
Latitude:	34.392956	Longitude:	-118.628634
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012331**

Well Number:	96	Status:	Completed oil
API Number:	03713276	Operator:	Medallion Calif Prpts Co
Latitude:	34.392238	Longitude:	-118.616366
Region:	2	Lease:	Rancho San Francisco
Section:	36	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
2 - 3 Miles | **OIL_GAS** | **CA00012399**

Well Number:	151	Status:	Completed oil
API Number:	03712653	Operator:	Medallion Calif Prpts Co
Latitude:	34.391926	Longitude:	-118.629748
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00011151**

Well Number:	39	Status:	136
API Number:	03712853	Operator:	Oryx Energy Co.
Latitude:	34.391584	Longitude:	-118.624342
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012357**

Well Number:	64	Status:	Completed oil
API Number:	03712877	Operator:	Medallion Calif Prpts Co
Latitude:	34.391463	Longitude:	-118.628809
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012350**

Well Number:	89	Status:	Completed oil
API Number:	03713268	Operator:	Medallion Calif Prpts Co
Latitude:	34.391404	Longitude:	-118.627480
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
2 - 3 Miles | **OIL_GAS** | **CA00012369**

Well Number:	38	Status:	Plugged and abandoned oil
API Number:	03712852	Operator:	Medallion Calif Prpts Co
Latitude:	34.391367	Longitude:	-118.626333
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
2 - 3 Miles | **OIL_GAS** | **CA00008320**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03720085	Operator:	Union Oil Co of Ca
Latitude:	34.391242	Longitude:	-118.645217
Region:	2	Lease:	R.S.F.
Section:	34	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012413**

Well Number:	139	Status:	Completed oil
API Number:	03712892	Operator:	Medallion Calif Prpts Co
Latitude:	34.391064	Longitude:	-118.622780
Region:	2	Lease:	Rancho San Francisco
Section:	36	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012342**

Well Number:	76	Status:	Completed oil
API Number:	03713255	Operator:	Medallion Calif Prpts Co
Latitude:	34.390795	Longitude:	-118.620289
Region:	2	Lease:	Rancho San Francisco
Section:	36	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012401**

Well Number:	153	Status:	Completed oil
API Number:	03712655	Operator:	Medallion Calif Prpts Co
Latitude:	34.390584	Longitude:	-118.625977
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012367**

Well Number:	33	Status:	Plugged and abandoned oil
API Number:	03712847	Operator:	Medallion Calif Prpts Co
Latitude:	34.389545	Longitude:	-118.624664
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
91355	13	0	0.00

Federal EPA Radon Zone for LOS ANGELES County: 2

Note: Zone 1 Indoor average level > 4 pCi/L.
: Zone 2 Indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 Indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 91355

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.750 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

APPENDIX H:

References

REFERENCES

1. 1994 Fault Activity Map of California and Adjacent Areas (1:750,000 scale), California Department of Conservation, Division of Mines and Geology.
2. County of Los Angeles Department of Public Works, Hydrologic Records, records request October 14, 2003.
3. County of Los Angeles Public Works Department, Building and Safety Division, and http://assessor.co.la.ca.us/DataMaps/pais.asp., October 23, 2003.
4. EDR Sanborn® Map Report, Inquiry No. 1108642.5s, January 8, 2004.
5. EPA Map of Radon Zones, 1993.
6. Munger Map Book of California/Alaska Oil and Gas Fields, 37th Edition, June 1993.
7. The EDR Aerial Photograph Print Service, Inquiry No. 1108642-9, January 15, 2004 and Continental Aerial Photography, Cypress, California 1952, 1972, 1980, 1988, 1990, 1993, 1995 and 1999.
8. The EDR Historical Topographic Map Report, Inquiry No. 1063369-5, October 16, 2003.
9. The EDR Radius Map with GeoCheck®, Inquiry No. 1108642.4s, January 8, 2004.
10. USGS Map, Newhall, California Quadrangle, 1952, photo-revised 1988.

APPENDIX I:

Glossary of Acronyms

Glossary Of Acronyms

(for words that frequently appear in environmental reports)

ASTs = above-ground storage tanks

ACMs = asbestos-containing materials

BTEX = benzene, toluene, ethylbenzene and xylenes

bgs = below ground surface

EDR = Environmental Data Resources, Inc.

LQG = Large Quantity Generator of hazardous waste

LUSTs = leaking underground storage tanks

MTBE = methyl-tertiary-butyl ether

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

PCE = perchloroethene

ppb = parts per billion

ppm = parts per million

SQG = Small Quantity Generator of hazardous waste

TCE = trichloroethene

TPH-d = Total Petroleum Hydrocarbons as diesel

TPH-g = Total Petroleum Hydrocarbons as gasoline

TRPH = Total Recoverable Petroleum Hydrocarbons

ug/kg = micrograms per kilogram

ug/l = micrograms per liter

USTs = underground storage tanks

VOCs = volatile organic compounds

ESA Addendum Letter - Water Tank Locations and UC Easements, September 2004

ADDENDUM LETTER
PHASE I ENVIRONMENTAL SITE ASSESSMENT

OF

PROPOSED WATER TANK LOCATIONS AND UTILITY CORRIDOR EASEMENTS ASSOCIATED WITH THE PROPOSED RIVER VILLAGE DEVELOPMENT TENTATIVE TRACT MAP NO. 53108, STATE HIGHWAY 126 NEWHALL RANCH, CALIFORNIA

FOR

NEWHALL LAND

BA ENVIRONMENTAL
A Division of Building Analytics

File No. 104012
September 2004

BA ENVIRONMENTAL
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818-246-8195 FAX

September 28, 2004

File No.: 104012

Mr. Keith Herren
Newhall Land
23823 Valencia Boulevard
Valencia, California 91355

Reference: Proposed Water Tank Locations and Utility Corridor Easements Associated with the Proposed River Village Development Tentative Tract Map No. 53108, State Highway 126 Newhall Ranch, California

Subject: Addendum Letter
Phase I Environmental Site Assessment

Dear Mr. Herren:

BA Environmental is pleased to submit this Addendum to the Phase I Environmental Site Assessment (ESA) conducted at the subject site on May 5, 2004. This addendum covers two proposed water tank locations and utility corridor easements associated with the proposed River Village Development. This addendum builds on information obtained during the May 2004 Phase I ESA, and includes a review of historical documents, a site reconnaissance, a review of local regulatory agencies and a review of pertinent government environmental databases. Historical documentation includes historical aerial photographs, historical topographic maps, city directories and building department records. Copies of historical aerial photographs and historical topographic maps are included in BA Environmental's Phase I ESA (BA #104012) dated May 5, 2004. A copy of the governmental database report is included as an attachment to this addendum letter.

Site Location

The subject property consists of two vacant parcels of land for proposed water tanks and narrow strips (approximately 35' to 140' wide) of land for proposed utility corridors. The subject site extends approximately 0.8 miles west of San Martinez Grande Canyon Road along Highway 126. To the east, the subject site extends along State Highway 126 to Henry Mayo Road and then along Henry Mayo Road to the Old Road. The subject site then extends southeast along the Old Road to Water Reclamation Plant (WRP) #32, approximately 1.2 miles southeast of the intersection of Highway 126 and Interstate Freeway 5 (Golden State Freeway). For the ease of this report, the subject site will be broken down into the following 10 sub-areas:

- Future WRP to Future Potrero Road
- Future Potrero Road to River Village Development
- Future Homestead Frontage Road
- River Village Development-Spine Road
- River Village Development to Commerce Center Drive
- Hancock Parkway-Commerce Center Drive
- Henry Mayo Road
- The Old Road
- Northern Proposed Water Tank Location
- Southern Proposed Water Tank Location

Site History and Reconnaissance

Future WRP to Future Potrero Road

This portion of the subject site is located adjacent to the south of Highway 126, and is located between the future WRP (approximately 0.8 miles west of San Martinez Grande Canyon Road) and the future Potrero Road (approximately 50 feet west of San Martinez Grande Canyon Road). The site includes an approximate 35-foot future rail easement, a 70-foot utility corridor and a 60-foot utility easement.

Historically, portions of this site were occupied by Southern Pacific Railroad track easement from prior to 1903 until prior to 1991. Sometime prior to 1991, the railroad tracks were removed. Since the removal of the railroad tracks, the railroad bed has been used as an access road.

Adjacent properties to this portion of the subject property include Highway 126 followed by vacant undeveloped land and agricultural land to the north. To the south of the subject site is agricultural land, followed by the Santa Clara River. To the west is agricultural land, and to the east is the Future Potrero Road to River Village portion of the subject site.

On the day of the site reconnaissance, the subject site was occupied by an access road. A portion of this access road was a former railroad easement. The railroad tracks had been removed. The access road appeared to be predominately dirt, with some gravel. No staining or distressed vegetation was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of underground storage tanks (USTs), aboveground storage tanks (ASTs) or wastewater clarifiers were observed on this site.

Two water lines were observed to cross the subject site to the west and then run parallel along the northern side. A Shell Oil pipeline was also observed to run parallel along the northern side of the subject site (beneath what appeared to be the future rail easement). A Shell Oil vault or booster station was observed along the north side of the subject site, near the eastern boundary. No staining was observed on the surface surrounding the vault/booster station. In addition, two old pipe sections were observed on the subject site. These sections are believed to have been former sections of oil pipelines.

Future Potrero Road to River Village Development

This portion of the subject site is located adjacent to the south of Highway 126, and is located between the future Potrero Road (approximately 50 feet west of San Martinez Grande Canyon Road) and the future River Village Development (approximately 1.0 miles northeast of the intersection of Highway 126 and San Martinez Grande Canyon Road). The site includes an approximate 35-foot future rail easement, a 47-foot utility corridor and a 37-foot utility easement.

Historically, portions of this site were occupied by Southern Pacific Railroad track easement from prior to 1903 until prior to 1991. Sometime prior to 1991, the railroad tracks were removed. Since the removal of the railroad tracks, the railroad bed has been used as an access road. Two oil wells were formerly located approximately 100 feet southeast of Highway 126, while a third oil well was approximately 600 feet to the southeast. All of these wells appeared to be south of the utility corridor.

Adjacent properties to this portion of the subject property include Highway 126 followed by agricultural land to the north. To the south of the subject site is agricultural land, and the Santa Clara River. To the west is the Future WRP to Future Potrero Road portion of the subject site, and to the east is the River Village Development portion of the subject site.

On the day of the site reconnaissance, the subject site was occupied by an access road. A portion of this access road was a former railroad easement. The railroad tracks had been removed. The access road appeared to be predominately dirt with some gravel. No staining or distressed vegetation was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

A Shell Oil pipeline was observed to run parallel along the northern side of the subject site (beneath what appeared to be the future rail easement). At a small stream crossing, the pipeline was exposed. The pipeline was of steel construction and appeared to be approximately eight inches in diameter. A second pipeline was observed to run parallel along the southern side of the subject property. This pipeline appeared to no longer be in use, since a portion of the pipeline was exposed and cut. This pipeline appeared to be 10 to 12 inches in diameter. What appeared to be a pipeline vent was observed on the east side of the small stream. No staining was observed on the surface surrounding the exposed sections of pipe.

Future Homestead Frontage Road

This portion of the subject site is located north of Highway 126. It crosses Highway 126 at Potrero Road and roughly parallels Highway 126 along the base of the mountain to the north, and intersects Chiquito Canyon Road north of Highway 126. The site includes an approximate 66-foot utility easement beneath the street.

Historically, portions of this site were occupied by orchards from prior to 1903 until recently. In addition, portions of the site have been located in the southeast tip of the Del

Valle Oil and Gas Field from 1903 until the present. This portion of the Del Valle Oil and Gas Field is no longer producing oil.

Adjacent properties to this portion of the subject property include vacant undeveloped mountain sides and the Del Valle Oil and Gas Field to the north. To the south of the subject site is agricultural land and Highway 126. To the west of the subject site is vacant undeveloped land and agricultural land. Adjacent to the east of the subject site is Chiquito Canyon Road followed by agricultural land and undeveloped land (Borrow Site "B"; See BA Environmental's Phase I ESA dated May 5, 2004 – BA #104012).

On the day of the site reconnaissance, the majority of the subject site was occupied by agricultural land. Several structures (houses) were observed in close vicinity to the subject site. Portions of the subject site were also observed to be occupied by vacant undeveloped land covered by native vegetation. This area is known to have been in the Del Valle Oil and Gas Field, and several concrete footings, possibly related to oil production, were observed in the immediate vicinity of the subject site. No evidence of staining or distressed vegetation was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

No pipelines were observed on the day of the site visit; however, since this site is located within a portion of an oil field, oil pipelines may exist beneath or adjacent to the subject site.

River Village Development-Spine Road

This portion of the subject site is located south of Highway 126, north and west of the Santa Clara River, and east of the intersection of Highway 126 and Chiquito Canyon Road. The site includes a utility easement beneath Spine Road (approximately 58 feet to 110 feet), beneath Long Canyon Road and Walcott Road, and along the northern and southern River Village Development property boundaries. All of the subject sites are located within the River Village Development. For a more detailed assessment of this area, see BA Environmental's Phase I ESA dated May 5, 2004 (BA #104012).

Historically, portions of this site have been occupied by agricultural land from the early 1900's through the present day. In addition, the portions of the subject site crossed through a portion of the Castaic Junction Oil Field from prior to 1947 until recently. This portion of the Castaic Junction Oil Field is no longer producing oil. Several oil wells and three wash tanks were observed in the immediate vicinity of the subject site. A portion of the subject site also appears to be located where an old airfield formerly existed, from prior to 1968 until 1994, when it was removed. Portions of the subject site were also occupied by the Indian Dunes Motorcycle Park from prior to 1972 until prior to 1994 when it was removed.

Adjacent properties to this portion of the subject property include Highway 126 to the north and the Santa Clara River to the south. The Future Potrero Road to River Village Development portion of the subject site was to the west, and the River Village Development to Commerce Center Drive portion of the subject property was to the east.

In addition, portions of the subject property are also surrounded by agricultural land, and to the east is the River Village Development portion of the subject site.

On the day of the site reconnaissance, the majority of the subject site was occupied by agricultural land. No hazardous materials were observed on the subject site. In May of 2004, soil samples were collected from the subject site and analyzed for pesticides and herbicides. No significant concentrations of pesticides or herbicides were detected in any of the samples collected. The subject site crosses the northeastern corner of the River Village Development, which is occupied by a storage area consisting of three buildings and a plastic-sheeting hothouse. The buildings are used for storage and packaging. Farm equipment was observed to be stored in this area. Several small ASTs were observed in this area, as well as agricultural chemical mixing. Several 55-gallon drums and smaller five-gallon buckets were observed. None of these containers were labeled. Some staining was observed on the dirt in this storage area. No evidence of distressed vegetation was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site, other than those described above.

An old railroad easement was observed along the northern boundary of the River Village Development, paralleling Highway 126. Portions of the subject property are located within this former easement. The railroad tracks have been removed; however, some ballast materials still remain. Debris and trash piles were observed along this easement.

Several pipelines were observed crossing or in the immediate vicinity of the subject site. The pipelines were identified visually by either marker signs, or visible piping or pipeline vents. A Southern California Gas pipeline was observed in or adjacent to the northern easement (in the old railroad easement), and crossing Long Canyon Road in the western portion of the River Village Development. These pipelines are believed to be 18" to 20" in diameter and likely carry natural gas. Where visible, these pipelines appeared to be coated with a tar-like material to prevent corrosion.

A Shell Oil Company petroleum pipeline was also observed to run along the northern easement, parallel to the old railroad easement. The size of this pipeline is unknown; however, it is likely 8" in diameter (similar to that seen to the west) and contains crude oil. Approximately 250 feet southeast of the intersection of Chiquito Canyon Road and Highway 126 is a fenced enclosure. This enclosure is adjacent to the Shell Oil Company pipeline and a Shell Oil pipeline vault. A sign on the gate of the enclosure indicates that the enclosure is owned by Eouilon Pipeline Company, and is the Del Valle booster station. This is likely a booster station for an oil pipeline. Inside of the enclosure was a pump, a 100-gallon AST likely containing diesel fuel, and two electrical transformers. The pump and AST were observed to be in a concrete containment.

An unidentified pipeline was observed running along the southern edge of the old railroad easement. Where exposed, the pipeline appeared to be approximately 18" to 20" in diameter and was coated with a tar-like substance to prevent corrosion. Two vents, similar to those used in oil pipelines, were observed associated with this pipeline.

Damaged piping was observed on the surface in the old railroad easement. It appeared that this pipeline had been removed. It is uncertain whether this pipeline was replaced or

completely removed. The pipeline appeared to be 16" to 18" in diameter. Oil staining was observed in the areas where this pipeline was exposed.

A Unocal pipeline was observed to run across the western end of the subject property. The size of this pipeline is unknown; however, the pipeline likely carried oil. Reportedly, this pipeline is currently idle.

River Village Development to Commerce Center Drive

This portion of the subject site is adjacent to the south side of Highway 126, between the Santa Clara River to the west and Commerce Center Drive to the west. The site includes an approximate 47-foot utility corridor and a 37-foot utility easement.

Historically, portions of this site were occupied by a Southern Pacific Railroad track easement from prior to 1903 until prior to 1991. Sometime prior to 1991, the railroad tracks were removed. Since the removal of the railroad tracks, the railroad bed has not been used. This portion of the subject site is located within the Castaic Junction Oil Field.

Adjacent properties to this portion of the subject property include Highway 126 followed by a partially graded vacant parcel of land (proposed commercial development) to the north and the Travel Village to the south. The Future River Village Development-Spine Road portion of the subject site was to the west, and the Henry Mayo Road portion of the subject property was to the east.

On the day of the site reconnaissance, the subject site was occupied by the old Southern Pacific Railroad easement. Non-hazardous trash was observed scattered throughout the subject site. No evidence of staining or distressed vegetation was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

A Shell Oil pipeline was also observed to run beneath or parallel, along the northern side of the subject site. An eight-inch Texaco oil pipeline, and two six-inch abandoned Mobile Oil pipelines were noted to run down the center of Highway 126, just north of the subject site.

Hancock Parkway-Commerce Center Drive

This portion of the subject site consist of two utility corridors which border to the west, north and south of the proposed Commerce Center (TPM 18108) and Hancock Parkway, adjacent to the north of Highway 126 and to the east of Commerce Center Drive, and a utility easement down Commerce Center Drive, between the Santa Clara River and Henry Mayo Road. The site consists of utility corridors approximately 47 feet to 117 feet wide.

Historically, the two easements bordering Commerce Center (TPM 18108) have been occupied by either vacant undeveloped land, or used for agricultural purposes, from prior to 1903 until 1999. In 1999, the subject properties began undergoing grading activities.

Commerce Center Drive was also occupied by vacant undeveloped land or used for agricultural purposes from prior to 1903 until sometime after 1999. Sometime after 1999, Commerce Center Drive was constructed. This portion of the subject site is located within the Castaic Junction Oil Field. What appeared to be an oil well was located near the junction of the easements in the northeast, near Commerce Center Drive, from prior to 1952 until sometime after 1993. This well was not located on the subject property.

Adjacent properties to this portion of the subject property include Highway 126 followed by Travel Village to the south. To the north and west is the Santa Clara River. East of the site is graded vacant land. The subject site borders the proposed Commerce Center (TPM 18108) and Hancock Parkway, to the center.

On the day of the site reconnaissance, the two easements of the portion of the subject property bordering the proposed Commerce Center (TPM 18108) and Hancock Parkway were observed to be occupied by vacant undeveloped land. Non-hazardous trash was observed scattered throughout this portion of the subject site. No evidence of staining or distressed vegetation was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site. The portion of the subject property occupied by Commerce Center Drive was also observed to have scattered non-hazardous trash. In addition, there was no vegetation, and no evidence of staining was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

A five-foot wide General Petroleum Pipeline easement was observed to cross the subject property in the west and east. In addition, an eight-inch Texaco oil pipeline, and two 6-inch abandoned Mobile Oil pipelines were noted to run down the center of Highway 126, just south of the subject site.

Henry Mayo Road

This portion of the subject site consists of a utility corridor, which runs beneath Henry Mayo Road, starting at the intersection of Henry Mayo Road and Commerce Center Drive, and continuing east to the intersection of Henry Mayo Road and The Old Road. The utility corridor is approximately 100 feet wide.

Historically, the subject property beneath Henry Mayo Road has been occupied by Henry Mayo Road from prior to 1952 until present. This portion of the subject site runs through what is called Castaic Junction. This was also the location of the Newhall Ranch. Parallel to The Old Road, a Southern Pacific Railroad track once ran. This area is also on the edge of the Castaic Junction Oil Field.

Adjacent properties to the north and south include vacant land and various commercial businesses, including Schwartz Oil (a bulk fuel distributor), two construction companies, offices for RM Pyle's Boys Camp, the Saugus Unified School Maintenance yard, Los Angeles County Fire Station #76, Al Towing and Auto Service, and an equipment storage area. Formerly, two of the adjacent properties appeared to have been occupied by gasoline service stations. Since the subject site consists of narrow utility easements, it is unlikely that any of the adjacent properties have impacted the subject property.

On the day of the site visit, the portion of the subject property occupied by Henry Mayo Road was observed to have scattered non-hazardous trash. No vegetation, and no evidence of staining were observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

The Old Road

This portion of the subject site consists of a utility corridor, which runs beneath The Old Road, starting at Henry Mayo Road and continuing south to WRP #32. The utility corridor is approximately 140 feet wide. Also included in this portion of the subject property is a utility easement, which runs along a proposed road, starting at Henry Mayo Road approximately 800 feet west of the intersection of The Old Road and Henry Mayo Road, and running parallel and south of The Old Road, intersecting The Old Road approximately 3,000 feet southeast of the intersection of The Old Road and Henry Mayo Road. This easement is estimated to be approximately 30 feet wide.

Historically, the subject property beneath The Old Road has been occupied by The Old Road (former Highway 99) from prior to 1952 until present. The planned easement to the south of The Old Road was either vacant undeveloped land or agricultural land from prior to 1952 until present. These portions of the subject site are located within the areas called Castaic Junction. This was also the location of the Newhall Ranch. Parallel to The Old Road, a Southern Pacific Railroad track once ran. This area is also on the edge of the Castaic Junction Oil Field.

Adjacent properties to this portion of the subject property include vacant graded land, a California Highway Patrol Station, and a Pacific Bell facility, followed by the Golden State Freeway to the north and east. To the south is agricultural land. To the southeast is WRP #32. To the west is agricultural land and various commercial businesses. To the northwest are also commercial businesses.

On the day of the site visit, the portion of the subject property occupied by The Old Road was observed to have scattered non-hazardous trash. No vegetation, and no evidence of staining were observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site. The portion of the subject site south of The Old Road was observed to be occupied by agricultural land. This portion of the subject property was observed to have scattered non-hazardous trash. No evidence of staining was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

Observation of the subject site revealed Underground Services Alert markings on the road, indicating underground pipelines were located between approximately 3 feet and 153 feet south of The Old Road and running parallel to The Old Road. These pipelines included a six-inch Mobil Oil pipeline approximately three feet south of The Old Road, a 12-inch high pressure gas pipeline and a 10-inch Flexismer pipeline approximately 28.5 feet south of The Old Road, a six-inch Mobil Oil pipeline approximately 42 feet south of The Old Road, an eight-inch Epsilon Oil pipeline approximately 137 feet south of The

Old Road, and a 10-inch Mobil Oil pipeline approximately 153 feet south of The Old Road. There is also an eight-inch Shell Oil pipeline that is also located south of the Old Road.

Northern Proposed Water Tank Location

This portion of the subject site consists of an approximate 200 foot by 200 foot area, approximately 1,300 feet north of the northeast corner of the proposed River Village Development, intended for a proposed water tank location, and a pipeline easement which runs from the tank location, and along Walcott Avenue to the planned River Village Development. The pipeline easement is anticipated to be approximately 10 feet wide.

Historically, the tank location has been occupied by vacant undeveloped land from prior to 1903 until present. Walcott Avenue was not constructed until sometime between 1990 and 1993. Prior to this, the portion of the subject site occupied by Walcott Avenue was occupied by vacant undeveloped land, or agricultural land. This portion of the subject site is located within the Castaic Junction Oil Field.

Adjacent properties to the tank location include vacant undeveloped parcels to the north, south, east and west. A water tank occupies the hill to the southwest of the proposed tank site. In the valley to the north-northeast are commercial/industrial developments. Walcott Avenue is predominantly bordered by vacant undeveloped land. Walcott Avenue crosses Highway 126 in the south. It also crosses a small portion of agricultural land just north of Highway 126.

On the day of the site reconnaissance, the proposed tank location was situated on the top of an undeveloped hilltop covered by native vegetation. No evidence of staining or distressed vegetation was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site. Lower on the slopes of the hill were two pads cut into the hillside. It is believed that these pads may have been the locations of former oil production wells or exploratory wells. No staining was observed on the soil surface of either pad. The portion of the subject property occupied by Walcott Avenue was observed to have scattered non-hazardous trash. No vegetation, and no evidence of staining was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

A Mobile Oil pipeline was observed to cross Walcott Avenue near its intersection with Highway 126.

Southern Proposed Water Tank Location

This portion of the subject site consists of an approximate 200 foot by 200 foot area, approximately 3,000 feet south of the proposed River Village Development, intended for a proposed water tank location, and a pipeline easement which runs from the tank location to the planned River Village Development. The pipeline easement is anticipated to be approximately 10 feet wide. The tank location is in what has been called Proposed

Borrow Site "A" for the River Village Development, located on the south side of the Santa Clara River.

Historically, the tank location has been vacant undeveloped land from prior to 1903 until present. The pipeline easement has been occupied by either vacant undeveloped land or agricultural land from at least 1903 until present. Both the tank location and the pipeline easement have been located on the edge of an oil field from prior to 1945 until present.

Adjacent properties to the tank location include vacant undeveloped parcels to the north, south, east and west. An oil field is located to the south of the subject site. Adjacent properties to the pipeline easement include vacant undeveloped land and agricultural land. Single oil wells are located to the north and south of the pipeline easement. None of the wells were located on the subject property.

On the day of the site reconnaissance, the proposed tank location was situated on the top of an undeveloped hilltop covered by native vegetation. No evidence of staining or distressed vegetation was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site. This site is located in the proposed Borrow Site "A". Pads cut into the hillsides of Barrow Site "A" are believed to have been the locations of former oil production wells or exploratory wells. No staining was observed on the soil surface of this area. The portion of the subject property occupied by the pipeline easement runs northwest through Barrow Site "A" and then to the north through agricultural land and across the Santa Clara River into the proposed River Village Development. This area was observed to have scattered non-hazardous trash. No evidence of staining was observed on this portion of the subject site. During the site visit, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this site.

Los Angeles County Department of Public Works (LACDPW)

BA Environmental visited the office of the LACDPW regarding files for USTs and hazardous materials storage and usage. According to the LACDPW, files existed for several properties owned and operated by Newhall Land. These files included 30003 Walnut Orchard Road, 31820 Henry Mayo Drive, 28700 Henry Mayo Drive, and 27230 Henry Mayo Drive. Only the 28700 Henry Mayo Drive listing appears to be within the limits of the subject property, River Village Development-Spine Road. One 1,000-gallon gasoline and one 1,000-gallon diesel UST were removed in 1989 by PW Environmental, in the vicinity of the central farm equipment storage area south of Wolcott Way. One sample collected beneath the gasoline UST was reported to contain 96 milligrams per kilogram (mg/kg) of Total Petroleum Hydrocarbons as gasoline (TPH-g). LACDPW requested a description of sampling methods and manifests for the UST removal. PW Environmental submitted these documents in August and September of 1989. No closure letter was present in the file. This address is just north of the Spine Road easement.

GOVERNMENT RECORDS REVIEW

Regulatory compliance is a primary element of an ESA. Failure to comply with governmental regulations can result in fines, and can expose businesses or individuals to liabilities from which the law would otherwise shield them. The presence of hazardous wastes or hazardous materials, on-site or at neighboring sites, may present certain liabilities. Environmental Data Resources, Inc. (EDR) provided the most recent information regarding the hazardous materials sites identified below.[1] Sites of potential environmental concern are described at the end of this section in Table 1. It should be noted that the search radii for each database has been extended beyond ASTM requirements. The referenced search radii below are minimum distances. The actual search distances are much greater.

Table 1
GOVERNMENT-LISTED DATABASES
IDENTIFIED SITES OF ENVIRONMENTAL CONCERN
Proposed Water Tank Locations and Utility Corridor Easements Associated with the Proposed River Village Development
Tentative Tract Map No. 53108, State Highway 126
Newhall Ranch, California

Site of Concern And Address	Distance and Direction from Subject Property	Databases	Regulatory Status	Potential Environmental Impact
27353 San Martinez Grande Canyon	3,960 Feet North of Future Homestead Frontage Road (up-gradient)	CHMIRS	Release of approximately 1,000-gallons of crude oil from a tanker truck accident	Low
27900 Chiquito Canyon Road	200 Feet East of Future Homestead Frontage Road (up/cross-gradient)	CHMIRS	Unknown release	Low
Newhall Land & Farming 3003 Walnut Orchard Rd	200 Feet North of Future Homestead Frontage Road (up/cross-gradient)	LUST Cortese	Release of gasoline to the soil only; Case closed 6/27/96	Low
LA Cty Fire Dept/DelVal Trg Ctr 28101 Chiquito Cnyn	660 Feet north of Future Homestead Frontage Road (up/cross-gradient)	HAZNET LA Site Mitigation HMS LUST Cortese AST	Release of hydrocarbons to soil; Leak being confirmed	Low

1 The EDR Radius Map with GeoCheck®, Inquiry No. 1108642.4s, January 8, 2004.

Site of Concern And Address	Distance and Direction from Subject Property	Databases	Regulatory Status	Potential Environmental Impact
UNOCAL - Lincoln Lease 28101 Chiquito Cyn	660 Feet north of Future Homestead Frontage Road (up/cross-gradient)	CA SLIC	Facility closed	Low
Chiquito Canyon Landfill 29201 Henry Mayo Dr	200 Feet North of River Village Development-Spine Road (up/cross-gradient)	HMS HAZNET SWF/LF CA WDS EMI SWAT RCRIS-SQG FINDS	No Violations	Low
Laidlaw Waste Systems Inc 29201 Henry Mayo Dr	200 Feet North of River Village Development-Spine Road (up/cross-gradient)	HMS CA FID UST	No Violations	Low
Universal By-Products-Valencia 29201 Henry Mayo Dr	200 Feet North of River Village Development-Spine Road (up/cross-gradient)	WMUDS SWAT	No Violations	Low
27900 Chiquito Canyon	200 Feet North of River Village Development-Spine Road (up/cross-gradient)	CHMIRS	Release of Petroleum February 1989	Low
Travel Village/ Fiesta Resorts/ Valencia Travel Village 27946 Henry Mayo Dr	200 Feet South of River Village Development to Commerce Center Drive (down-gradient)	Hist. UST HMS HAZNET CA FID	Not on LUST list	Low
Schwartz Oil Co 27241 Henry Mayo Dr	20 Feet North of Henry Mayo Road (cross/up-gradient)	Hist. UST UST HAZNET EMI CA FID Cortese LUST FINDS	Release of gasoline to other groundwater; Case closed 8/30/96	Low

Site of Concern And Address	Distance and Direction from Subject Property	Databases	Regulatory Status	Potential Environmental Impact
LA County Fire Dept Station 76 27223 Henry Mayo Dr	20 Feet North of Henry Mayo Road (cross/up-gradient)	AST HMS LUST Cortese Hist. UST CA FID	Release of hydrocarbons to the soil only; Case closed 6/13/97	Low
R.M. Pyles Boys Camp, Inc. 27211 Henry Mayo Dr	20 Feet North of Henry Mayo Road (cross/up-gradient)	Hist. UST	Not on LUST list	Low
Newhall Land & Farming 27230 Henry Mayo Rd	50 Feet South of Henry Mayo Road (cross/up-gradient)	Cortese LUST	Release of gasoline to the soil only; Case closed 1/29/90	Low
29300 The Old Road	200 Feet North of The Old Road (cross-gradient)	CHMIRS	Unknown Release	Low
Dixie Diesel Station 29471 The Old Road	600 Feet North of The Old Road (cross-gradient)	Cortese LUST	Release of diesel fuel to other groundwater; Case closed 11/30/87	Low
Newhall Land & Farming Co 28760 N Castaic Canyon Rd	100 Feet East of The Old Road (down-gradient)	Cortese LUST HMS	Release of gasoline to the soil only; Case closed 1/10/90	Low
Tri-R-Trucking 28748 Castaic Canyon Rd	100 Feet East of The Old Road (down-gradient)	Cortese LUST	Release of diesel fuel to soil only; Case closed 10/11/94	Low
Chevron Station 9 1899 28805 The Old Rd	100 Feet East of The Old Road (down-gradient)	RCRIS-SQG FINDS Cortese	No other information on release	Low
TA Manufacturing 28605 W. Franklin	2,000 Feet Northeast of Northern Proposed Water Tank Location (up-gradient)	LQG FINDS HAZNET	No Violations	Low

The subject property is not listed on any of the searched databases. Several adjacent sites are listed as either UST or LUST sites. Although there have been releases at these adjacent sites, since the subject site is a narrow utility easement, there is a low potential for the adjacent site to have impacted the subject site.

Based on the above data, this assessment has revealed no evidence of recognized environmental conditions in connection with the subject property, except the following:

- Portions of the subject site are located within active and inactive oil fields; and
- Portions of the subject property cross or run parallel to petroleum pipelines.

If you have questions regarding this project or report, please contact us at (818) 500-1898.

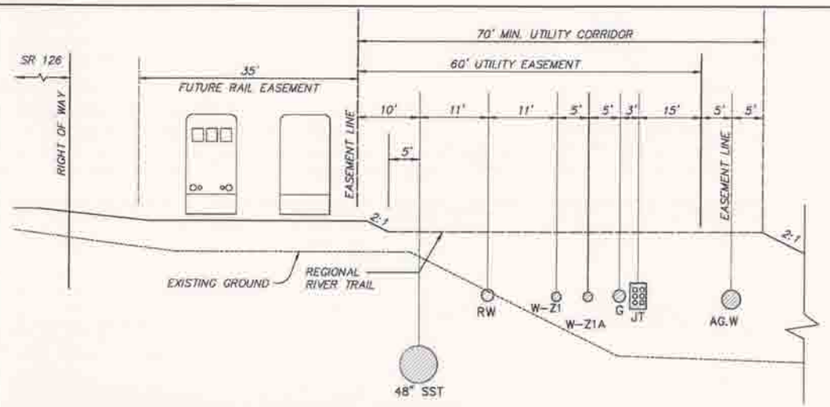
Respectfully submitted,
BA ENVIRONMENTAL

Russell M. Cote, M.Sc., R.G. No. 7139
Manager, Environmental Services

Attachments: Figures
Governmental Database Report

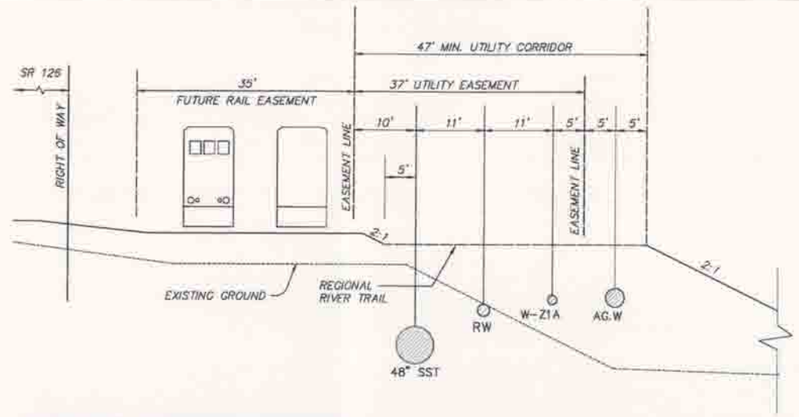
ATTACHMENTS

Figures



TYPICAL SECTION - WRP TO POTRERO ROAD

NOT TO SCALE



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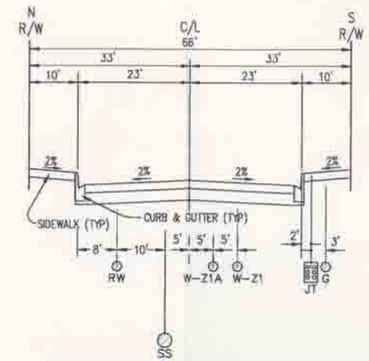

TYPICAL SECTION - HOMESTEAD FRONTAGE ROAD

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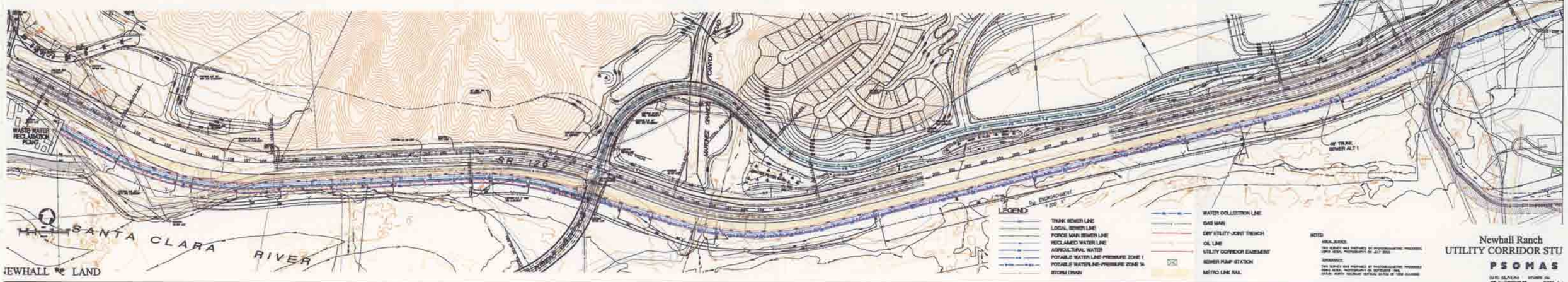


Newhall Ranch
UTILITY CORRIDOR STU

PSOMAS

TYPICAL RIVER VILLAGE - SPINE ROAD SECTION (110' R/W)

NOT TO SCALE

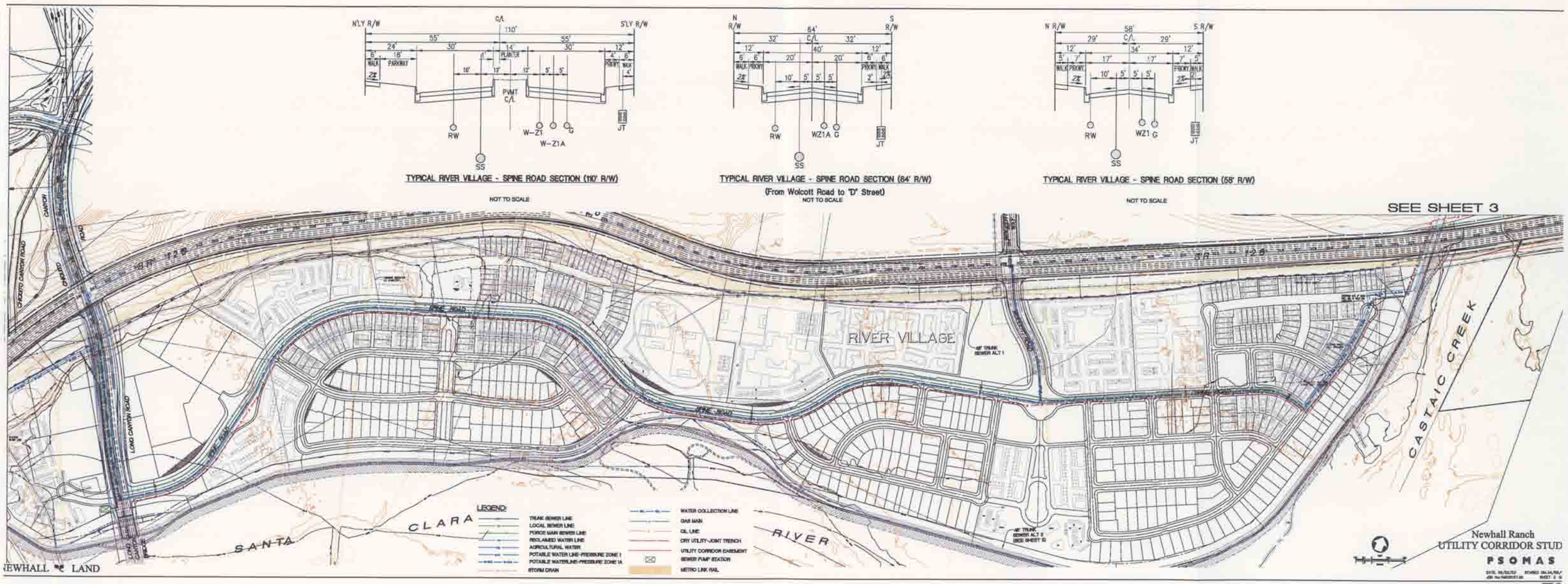
TYPICAL RIVER VILLAGE - SPINE ROAD SECTION (64' R/W)

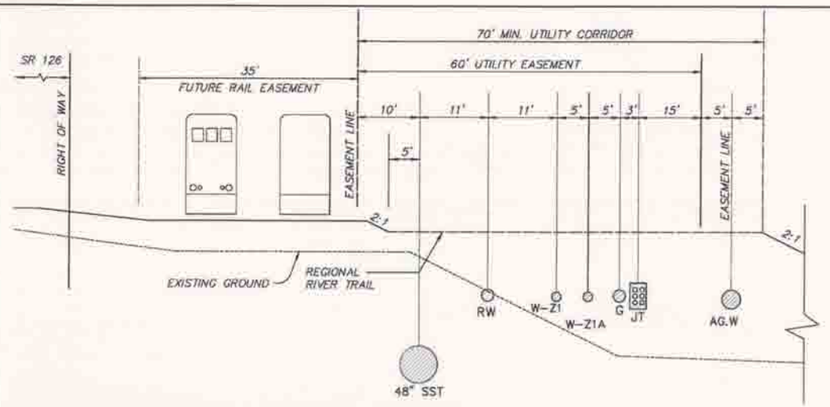
(From Wolcott Road to 'D' Street)

NOT TO SCALE

TYPICAL RIVER VILLAGE - SPINE ROAD SECTION (58' R/W)

NOT TO SCALE





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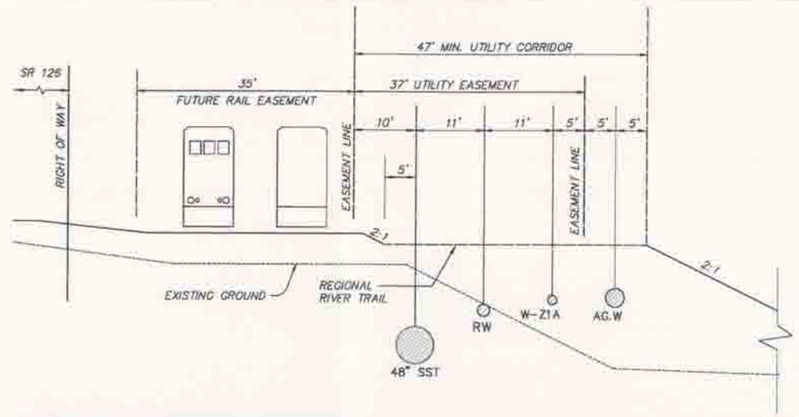

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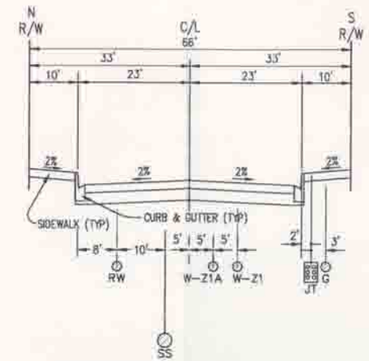

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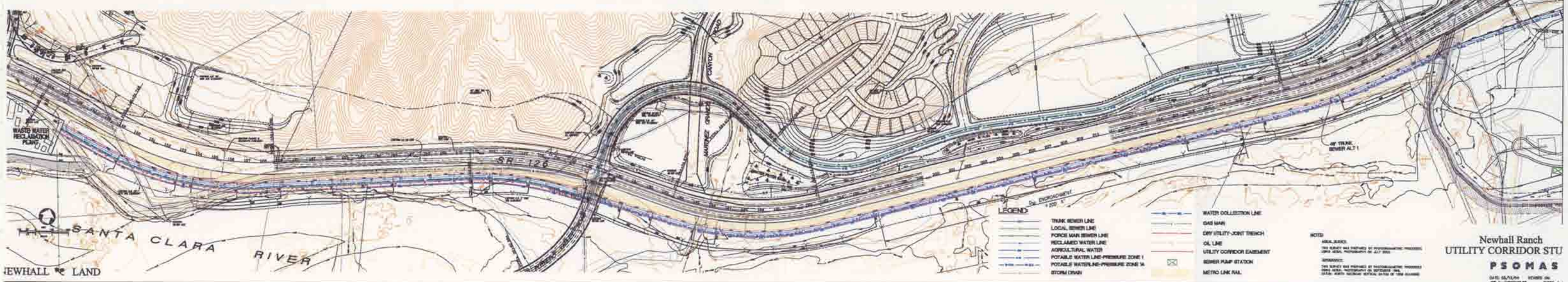
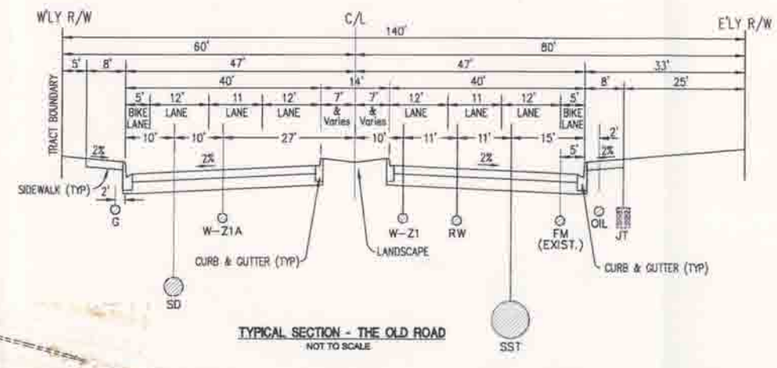


Newhall Ranch
UTILITY CORRIDOR STU

PSOMAS



TYPICAL SECTION - THE OLD ROAD
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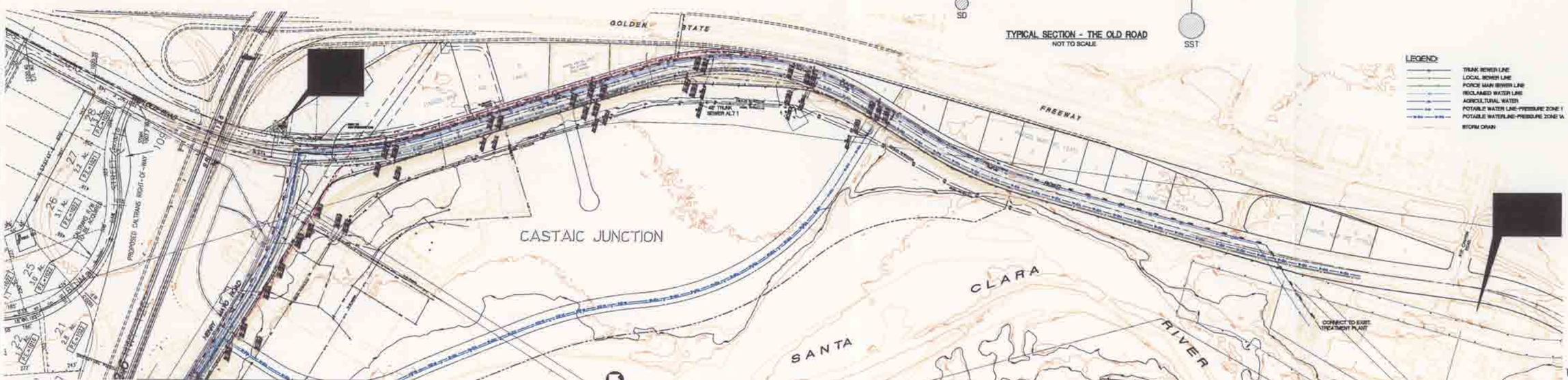
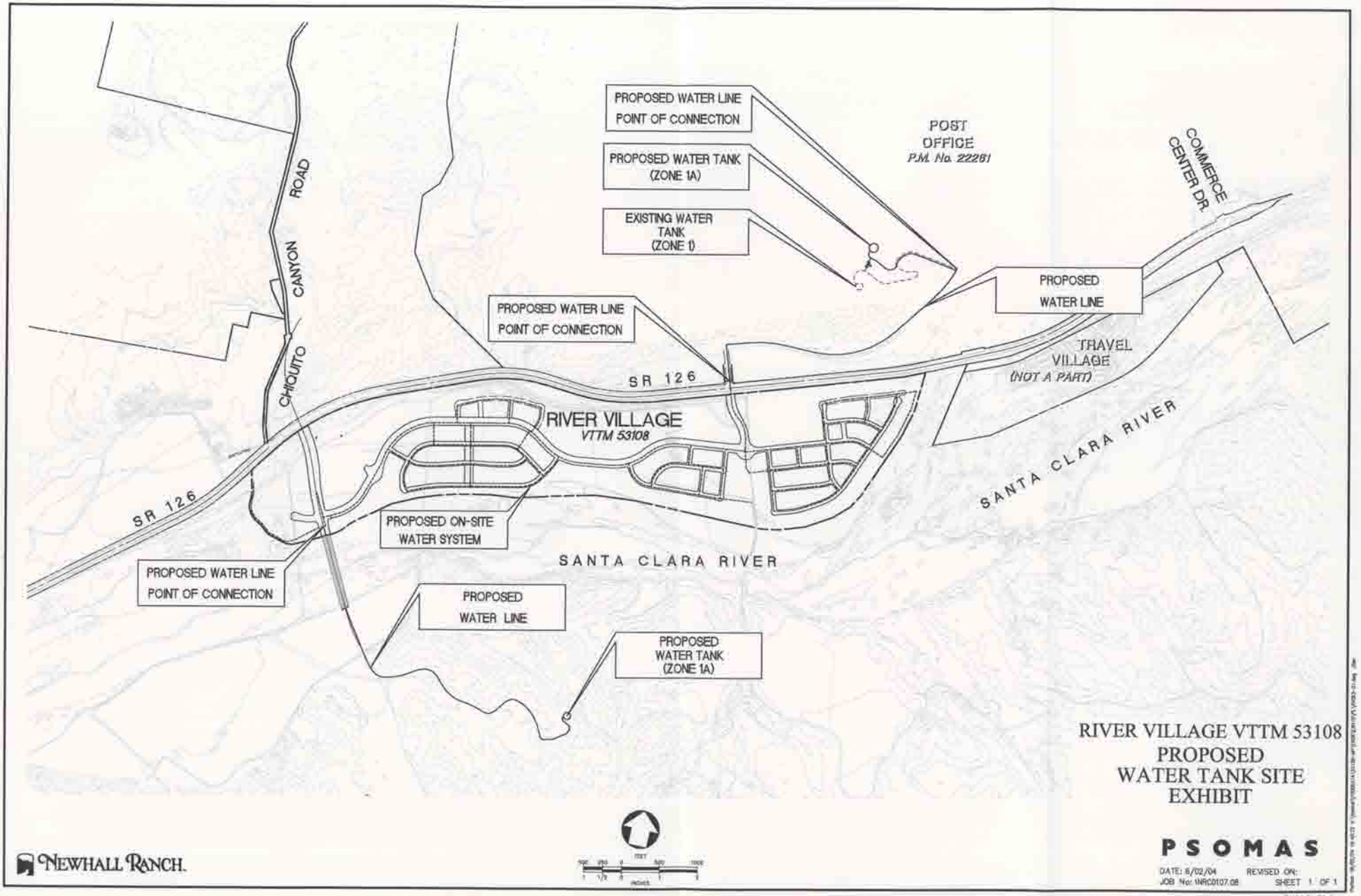


SEE SHEET 3

NEWHALL LAND

Newhall Ranch
UTILITY CORRIDOR STU

PSOMAS



RIVER VILLAGE VTTM 53108
PROPOSED
WATER TANK SITE
EXHIBIT

Governmental Database Report

The EDR Radius Map
with GeoCheck®

Tentative Tract Map No. 53108
Wolcott Way/Henry Mayo Drive
Valencia, CA 91355

Inquiry Number: 1108642.4s

January 08, 2004

Environmental Data Resources, Inc.

***The* Source For Environmental Risk Management Data**

3530 Post Road
Southport, Connecticut 06890

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM JM

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

WOLCOTT WAY/HENRY MAYO DRIVE
VALENCIA, CA 91355

COORDINATES

Latitude (North):	34.424300 - 34' 25' 27.5"
Longitude (West):	118.637300 - 118' 38' 14.3"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	349543.9
UTM Y (Meters):	3810222.8
Elevation:	958 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	34118-D6 VAL VERDE, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRIS-TSD..... Resource Conservation and Recovery Information System
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

AWP..... Annual Workplan Sites

EXECUTIVE SUMMARY

Cal-Sites..... Calsites Database
Notify 65..... Proposition 65 Records
Toxic Pits..... Toxic Pits Cleanup Act Sites
CA BOND EXP. PLAN..... Bond Expenditure Plan
VCP..... Voluntary Cleanup Program Properties
INDIAN UST..... Underground Storage Tanks on Indian Land

FEDERAL ASTM SUPPLEMENTAL

CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
Delisted NPL..... National Priority List Deletions
HMIRS..... Hazardous Materials Information Reporting System
MLTS..... Material Licensing Tracking System
MINES..... Mines Master Index File
NPL Liens..... Federal Superfund Liens
PADS..... PCB Activity Database System
DOD..... Department of Defense Sites
US BROWNFIELDS..... A Listing of Brownfields Sites
RAATS..... RCRA Administrative Action Tracking System
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
SSTS..... Section 7 Tracking Systems
FTTS INSP..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

CLEANERS..... Cleaner Facilities
DEED..... List of Deed Restrictions
SCH..... School Property Evaluation Program
NFA..... No Further Action Determination
REF..... Unconfirmed Properties Referred to Another Agency
NFE..... Properties Needing Further Evaluation
AOCONCERN..... San Gabriel Valley Areas of Concern

BROWNFIELDS DATABASES

US BROWNFIELDS..... A Listing of Brownfields Sites
VCP..... Voluntary Cleanup Program Properties

EDR PROPRIETARY HISTORICAL DATABASES

See the EDR Proprietary Historical Database Section for details

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRIS-LQG list, as provided by EDR, and dated 09/10/2003 has revealed that there are 3 RCRIS-LQG sites within approximately 1.75 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
T A MANUFACTURING CO	*28065 W FRANKLIN PKWY*	*1/2 - 1*	*NE*	*10*	*15*
DEL WEST ENGINEERING	*28128 W LIVINGSTON AVE*	*1 - 2*	*NNE*	*E28*	*31*
PHARMAVITE LLC	*28305 W LIVINGSTON AVE*	*1 - 2*	*NNE*	*G35*	*36*

RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRIS-SQG list, as provided by EDR, and dated 09/10/2003 has revealed that there are 4 RCRIS-SQG sites within approximately 1.75 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON SANITARY LANDF	*29201 HENRY MAYO DRIVE*	*1/2 - 1*	*W*	*B9*	*15*
R A H INDUSTRIES	*28035 HARRISON PKWY*	*1 - 2*	*NNE*	*E25*	*29*
TIME AVIATION SERVICES INC	*28402 W LIVINGSTON AVE*	*1 - 2*	*N*	*F32*	*34*
KIMBALL MICROELECTRONICS	*28575 LIVINGSTON AVE*	*1 - 2*	*N*	*37*	*39*

STATE ASTM STANDARD

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 12/31/2002 has revealed that there are 8

CHMIRS sites within approximately 2.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
Not reported	27900 CHIQUITO CANYON R	1 - 2	W	13	17
Not reported	***28201 FRANKLIN PARKWAY***	***1 - 2***	***NE***	***D23***	***25***
Not reported	28201 FRANKLIN PKWY, B	1 - 2	NE	D24	28
Not reported	27353 SAN MARTINEZ GRAN	1 - 2	W	53	53
Not reported	***29300 THE OLD ROAD***	***>2***	***NE***	***K54***	***54***
Not reported	29300 THE OLD ROAD	>2	NE	K55	59
Not reported	N/B I-5, CASTAIC INSP F	>2	NE	59	67
Not reported	HASELY CYN 1MI NORTH OF	>2	NNE	61	68

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there are 9 Cortese sites within approximately 2.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
LA CO FD FIRE TRAINING CN	28101 CHIQUITO CNYN	1 - 2	W	C19	24
SCHWARTZ OIL CO.	*27241 HENRY MAYO DR*	*1 - 2*	*NE*	*I44*	*44*
LA CO FD FIRE STA #076	*27223 W HENRY MAYO DR*	*1 - 2*	*NE*	*I47*	*47*
NEWHALL LAND & FARMING	*27230 HENRY MAYO RD*	*1 - 2*	*ENE*	*J52*	*51*
DIXIE DIESEL STATION	*29471 THE OLD ROAD*	*>2*	*NE*	*56*	*60*
NEWHALL LAND & FARMING CO	*28760 N CASTAIC CANYON*	*>2*	*ENE*	*L57*	*62*
TRI-R-TRUCKING	*28748 CASTAIC CANYON RD*	*>2*	*ENE*	*L58*	*65*
CHEVRON STATION 9 1899	*28805 THE OLD RD*	*>2*	*ENE*	*60*	*68*

Lower Elevation	Address	Dist / Dir		Map ID	Page
NEWHALL LAND & FARMING	*3003 WALNUT ORCHARD RD*	*1 - 2*	*WSW*	*14*	*18*

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, has revealed that there are 2 SWF/LF sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON LANDFILL INC	*29201 HENRY MAYO DRIVE*	*1/2 - 1*	*W*	*B4*	*7*
CHIQUITA CANYON LANDFILL	*29201 HENRY MAYO DR*	*1/2 - 1*	*W*	*B6*	*10*

WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, has revealed that there are 2 WMUDS/SWAT sites

within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
UNIVERSAL BY-PRODUCTS-VALENCIA	29201 SAUGUS-VENTURA RO	1/4 - 1/2 WNW	A3	6
CHIQUITA CANYON LANDFILL	29201 HENRY MAYO DR	1/2 - 1 W	B7	13

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 04/02/2003 has revealed that there are 5 LUST sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
L A COUNTY FIRE DEPT	*28101 N CHIQUITO CANYON*	*1 - 2 W*	*C17*	*22*
SCHWARTZ OIL CO.	*27241 HENRY MAYO DR*	*1 - 2 NE*	*I44*	*44*
LA CO FD FIRE STA #076	*27223 W HENRY MAYO DR*	*1 - 2 NE*	*I47*	*47*
NEWHALL LAND & FARMING	*27230 HENRY MAYO RD*	*1 - 2 ENE*	*J52*	*51*

Lower Elevation	Address	Dist / Dir	Map ID	Page
NEWHALL LAND & FARMING	*3003 WALNUT ORCHARD RD*	*1 - 2 WSW*	*14*	*18*

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 04/02/2003 has revealed that there are 3 UST sites within approximately 1.75 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
LAIDLAW WASTE SYSTEMS INC	29201 HENRY MAYO DR	1/2 - 1 W	B8	15
US POSTAL - SANTA CLARITA P&DC	28201 FRANKLIN PKWY	1 - 2 NE	D22	25
SCHWARTZ OIL CO	*27241 HENRY MAYO DR*	*1 - 2 NE*	*I43*	*43*

CA FID: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, has revealed that there are 4 CA FID UST sites within approximately 1.75 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
LAIDLAW WASTE SYSTEMS INC	29201 HENRY MAYO DR	1/2 - 1 W	B5	10
FIESTA RESORT TRAVEL VILLAGE	27946 HENRY MAYO RD	1 - 2 NE	H42	42
LA CO FD FIRE STA #076	27223 HENRY MAYO DR	1 - 2 NE	I49	50
SCHUARTI OIL CO. INC.	27241 HENRY MAYO RD	1 - 2 ENE	J51	50

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 4 HIST UST sites within approximately 1.75 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
TRAVEL VILLAGE	27946 HENRY MAYO DR	1/2 - 1 ENE	11	17
SCHWARTZ OIL CO	*27241 HENRY MAYO DR*	*1 - 2 NE*	*I43*	*43*
FIRE STATION #76	27223 HENRY MAYO DR	1 - 2 NE	I48	50
R.M. PYLES BOYS CAMP, INC.	27211 HENRY MAYO DR	1 - 2 NE	I50	50

FEDERAL ASTM SUPPLEMENTAL

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 10/23/2003 has revealed that there are 8 FINDS sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
CHIQUITA CANYON SANITARY LANDF	*29201 HENRY MAYO DRIVE*	*1/2 - 1 W*	*B9*	*15*
T A MANUFACTURING CO	*28065 W FRANKLIN PKWY*	*1/2 - 1 NE*	*10*	*15*
R A H INDUSTRIES	*28035 HARRISON PKWY*	*1 - 2 NNE*	*E25*	*29*
DEL WEST ENGINEERING	*28128 W LIVINGSTON AVE*	*1 - 2 NNE*	*E28*	*31*
TIME AVIATION SERVICES INC	*28402 W LIVINGSTON AVE*	*1 - 2 N*	*F32*	*34*
PHARMAVITE LLC	*28305 W LIVINGSTON AVE*	*1 - 2 NNE*	*G35*	*36*
KIMBALL MICROELECTRONICS	*28575 LIVINGSTON AVE*	*1 - 2 N*	*37*	*39*
SCHWARTZ OIL CO INC	27241 HENRY MAYO DR	1 - 2 NE	I45	47

STATE OR LOCAL ASTM SUPPLEMENTAL

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the AST list, as provided by EDR, and dated 07/01/2003 has revealed that there are 2 AST sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
DEL VALLE REGIONAL EMERGENCY T	28101 CHIQUITO CANYON R	1 - 2 W	C20	25
LA COUNTY FIRE DEPT STATION 76	27223 HENRY MAYO DR	1 - 2 NE	I46	47

WDS: California Water Resources Control Board - Waste Discharge System.

A review of the CA WDS list, as provided by EDR, and dated 09/22/2003 has revealed that there is 1 CA WDS site within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON LANDFILL	***29201 HENRY MAYO DR***	***1/2 - 1***	***W***	***B6***	***10***

Emissions Inventory Data: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the EMI list, as provided by EDR, and dated 12/31/2001 has revealed that there are 3 EMI sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON LANDFILL	***29201 HENRY MAYO DR***	***1/2 - 1***	***W***	***B6***	***10***
US POSTAL SERVICE, SANTA CLARI	28201 FRANKLIN PKY	1 - 2	NE	D21	25
SCHWARTZ OIL CO	***27241 HENRY MAYO DR***	***1 - 2***	***NE***	***I43***	***43***

CA SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the CA SLIC list, as provided by EDR, has revealed that there are 2 CA SLIC sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
UNOCAL - LINCOLN LEASE	28101 CHIQUITO CYN	1 - 2	W	C18	24
PROPOSED SCHOOL BUS STOP	28300 LIVINGSTON	1 - 2	NNE	G34	36

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, has revealed that there are 19 HAZNET sites within approximately 1.75 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON LANDFILL INC	***29201 HENRY MAYO DRIVE***	***1/2 - 1***	***W***	***B4***	***7***
CHIQUITA CANYON LANDFILL	***29201 HENRY MAYO DR***	***1/2 - 1***	***W***	***B6***	***10***
T A MANUFACTURING CO	***28065 W FRANKLIN PKWY***	***1/2 - 1***	***NE***	***10***	***15***
BLOOMERS METAL STAMPINGS INC	28615 BRAXTON AVE	1 - 2	NE	12	17
LA CTY FIRE DEPT/DELVAL TRG CT	28101 CHIQUITO CANYON R	1 - 2	W	C16	21
Not reported	***28201 FRANKLIN PARKWAY***	***1 - 2***	***NE***	***D23***	***25***
R A H INDUSTRIES	***28035 HARRISON PKWY***	***1 - 2***	***NNE***	***E25***	***29***
EMCO	28045 W HARRISON PKWY	1 - 2	NNE	E26	30
JERRY AVALOS TRUCKING	28459 CHIQUITO CANYON R	1 - 2	WNW	27	30
DEL WEST ENGINEERING	***28128 W LIVINGSTON AVE***	***1 - 2***	***NNE***	***E28***	***31***
20TH CENTURY FOX,PAPI CHULO	28455 LIVINGSTON AVE	1 - 2	N	30	32
REGENT AEROSPACE INC	28110 HARRISON PKWY	1 - 2	NNE	E31	33
TIME AVIATION SERVICES	28402 W LIVINGSTON AVE	1 - 2	N	F33	34
PHARMAVITE LLC	***28305 W LIVINGSTON AVE***	***1 - 2***	***NNE***	***G35***	***36***

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
PHARMAVITE LLC	***28310 W LIVINGSTON AVE***	***1 - 2***	***NNE***	***G36***	***37***
KIMBALL MICROELECTRONICS	***28575 LIVINGSTON AVE***	***1 - 2***	***N***	***37***	***39***
WALT DISNEY PICTURES & TELEVIS	28150 W HARRISON PARKWA	1 - 2	NNE	38	40
THE VALENCIA TRAVEL VILLAGE	27946 HENRY MAYO ROAD,	1 - 2	NE	H41	42
SCHWARTZ OIL CO	***27241 HENRY MAYO DR***	***1 - 2***	***NE***	***I43***	***43***

HMS: Los Angeles County Industrial Waste and Underground Storage Tank Sites.

A review of the LOS ANGELES CO. HMS list, as provided by EDR, has revealed that there are 8 LOS ANGELES CO. HMS sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
CHIQUITA CANYON LANDFILL	29201 W HENRY MAYO DR	1/4 - 1/2	WNW	A1	6
LAIDLAW WASTE SYSTEMS INC	29201 W HENRY MAYO DR	1/4 - 1/2	WNW	A2	6
L A COUNTY FIRE DEPT	***28101 N CHIQUITO CANYON***	***1 - 2***	***W***	***C17***	***22***
DEL WEST ENGINEERING	28128 W LIVINGSTON AVE	1 - 2	NNE	E29	32
PHARMAVITE LLC	***28310 W LIVINGSTON AVE***	***1 - 2***	***NNE***	***G36***	***37***
FIESTA RESORTS	27946 W HENRY MAYO DR	1 - 2	ENE	H39	41
VALENCIA TRAVEL VILLAGE	27946 W HENRY MAYO DR	1 - 2	ENE	H40	41
LA CO FD FIRE STA #076	***27223 W HENRY MAYO DR***	***1 - 2***	***NE***	***I47***	***47***

Site Mitigation Complaint Control Log: The Los Angeles County Site Mitigation Log comes from Community Health Services.

A review of the LA Co. Site Mitigation list, as provided by EDR, has revealed that there is 1 LA Co. Site Mitigation site within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
DEL VALLE TRAINING CENTER	28101 CHIQUITO CANYON R	1 - 2	W	C15	21

EDR PROPRIETARY HISTORICAL DATABASES

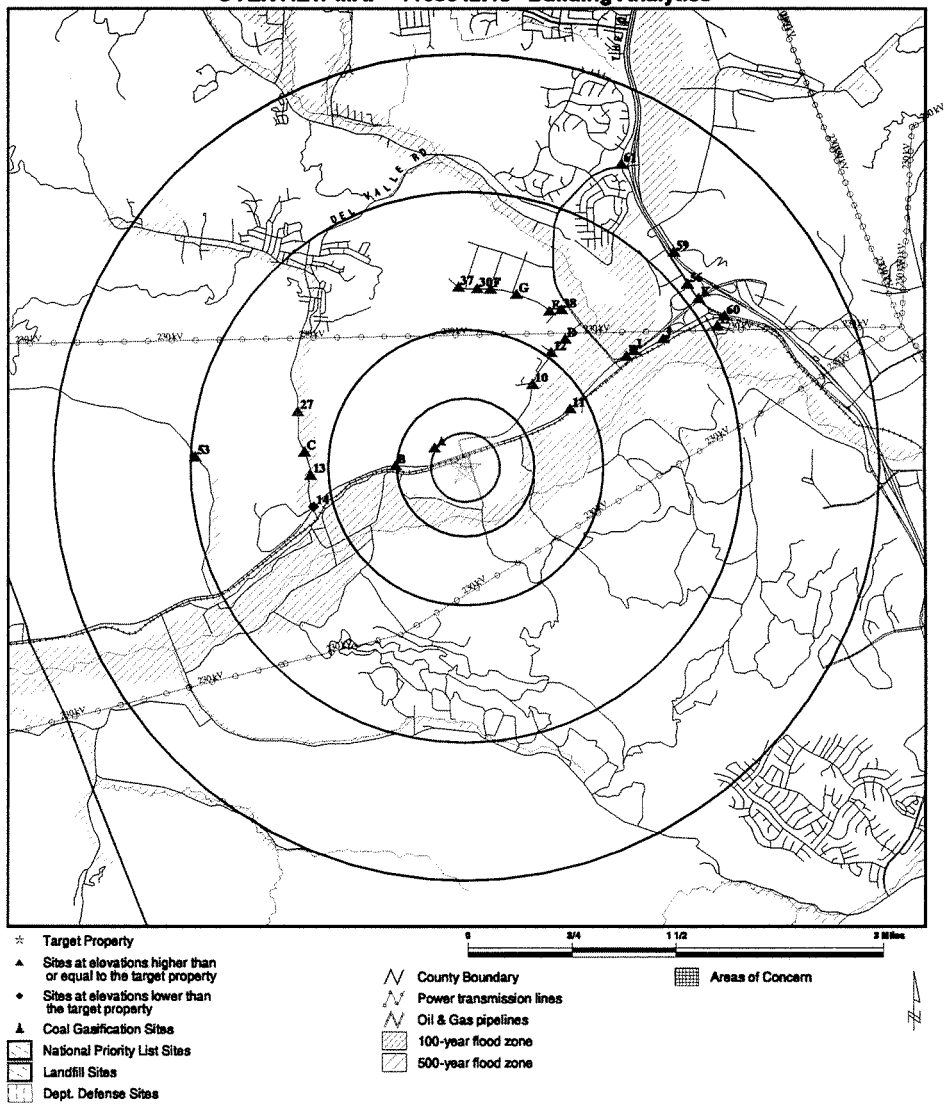
See the EDR Proprietary Historical Database Section for details

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
PPG INDUSTRIES INC WORKS 24	RCRIS-SQG, RCRIS-TSD, FINDS, CORRACTS, CERC-NFRAP, LOS ANGELES CO. HMS
BERTH 70, LONG BEACH HARBOUR	CHMIRS, HAZNET
BERTH 30 LONG BEACH HARBOUR	CHMIRS, HAZNET
FLORENCE AVE / TELEGRAPH RD WHITTIER	CHMIRS, LUST
CSI CRIME SCENE INVESTIGATION	HAZNET
CALIFORNIA INSTITUTE OF THE ARTS	HAZNET
PRODUCTION GOODBYE LOVER	HAZNET
LOS ANGELES COUNTY FIRE DEPT	HAZNET
TECHNICAL TROUBLE SHOOTING	HAZNET
HOWARD CUSTOM BOATS INCORPORATED	FINDS, EMI, HAZNET
DEPARTMENT OF TRANSPORTATION	RCRIS-SQG, FINDS
TWO WATER WELLS RESTORATION	CA WDS
COMMERCE CENTER BRIDGE	CA WDS
CASTAIC CREEK CHANNEL LINING	CA WDS
HWY. 126 BRIDGE	CA WDS
GOLDEN VALLEY ROAD EXTENSION	CA WDS
WATER WELL NO. W-11	CA WDS
GRUBER SYSTEMS, INC	REF
SCHOOL ON 18 ACRE SITE	SCH

OVERVIEW MAP - 1108642.4s - Building Analytics



TARGET PROPERTY:	Tentative Tract Map No. 53108	CUSTOMER:	Building Analytics
ADDRESS:	Wolcott Way/Henry Mayo Drive	CONTACT:	Joe Montoya
CITY/STATE/ZIP:	Valencia CA 91355	INQUIRY #:	1108642.4s
LAT/LONG:	34.4243 / 118.6373	DATE:	January 08, 2004 12:46 pm

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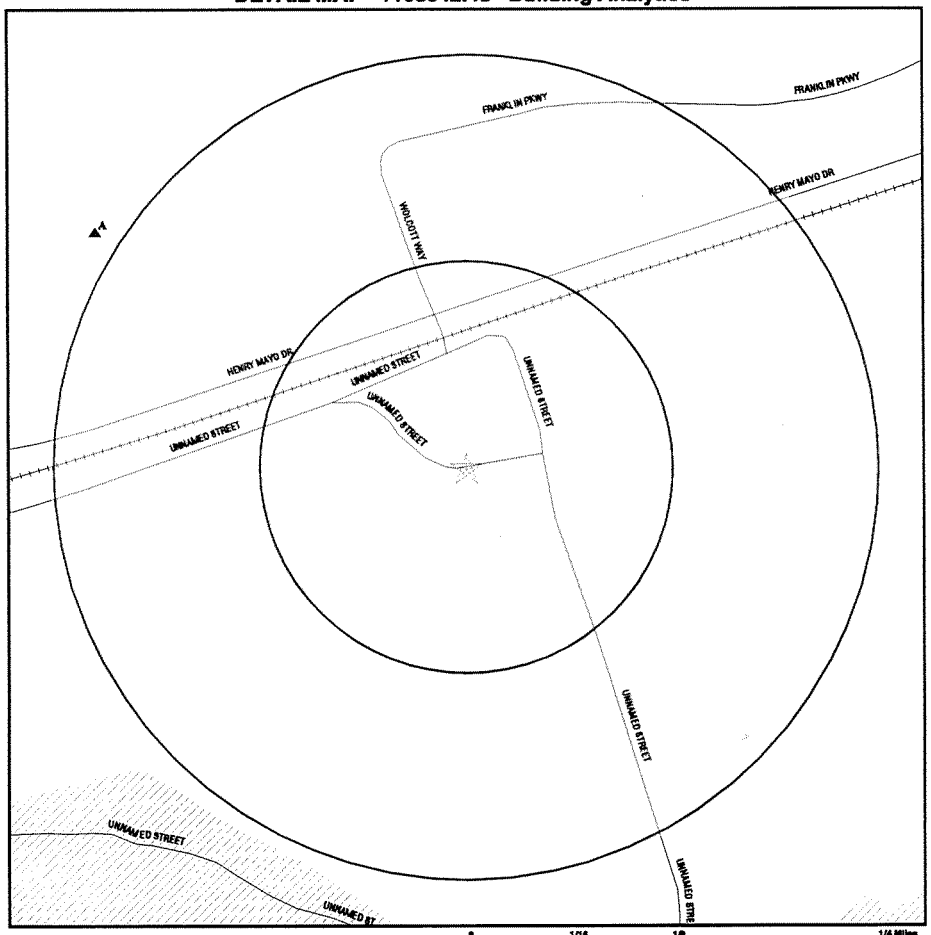
DETAIL MAP - 1108642.4s - Building Analytics



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Historical Gas Stations / Historical Dry Cleaners See the EDR Proprietary Historical Map Findings
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- County Boundary
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	Tentative Tract Map No. 53108	CUSTOMER:	Building Analytics
ADDRESS:	Wolcott Way/Henry Mayo Drive	CONTACT:	Joe Montoya
CITY/STATE/ZIP:	Valencia CA 91355	INQUIRY #:	1108642.4s
LAT/LONG:	34.4243 / 118.6373	DATE:	January 08, 2004 12:47 pm

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		2.500	0	0	0	0	0	0
Proposed NPL		2.500	0	0	0	0	0	0
CERCLIS		2.000	0	0	0	0	0	0
CERC-NFRAP		1.750	0	0	0	0	0	0
CORRACTS		2.500	0	0	0	0	0	0
RCRIS-TSD		2.000	0	0	0	0	0	0
RCRIS Lg. Quan. Gen.		1.750	0	0	0	1	2	3
RCRIS Sm. Quan. Gen.		1.750	0	0	0	1	3	4
ERNS		1.500	0	0	0	0	0	0
STATE ASTM STANDARD								
AWP		2.500	0	0	0	0	0	0
Cal-Sites		2.500	0	0	0	0	0	0
CHMIRS		2.500	0	0	0	0	8	8
Cortese		2.500	0	0	0	0	9	9
Notify 65		2.500	0	0	0	0	0	0
Toxic Pits		2.500	0	0	0	0	0	0
State Landfill		2.000	0	0	0	2	0	2
WMUDS/SWAT		2.000	0	0	1	1	0	2
LUST		2.000	0	0	0	0	5	5
CA Bond Exp. Plan		2.500	0	0	0	0	0	0
UST		1.750	0	0	0	1	2	3
VCP		2.000	0	0	0	0	0	0
INDIAN UST		1.750	0	0	0	0	0	0
CA FID UST		1.750	0	0	0	1	3	4
HIST UST		1.750	0	0	0	1	3	4
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		2.500	0	0	0	0	0	0
ROD		2.500	0	0	0	0	0	0
Delisted NPL		2.500	0	0	0	0	0	0
FINDS		1.500	0	0	0	2	6	8
HMIRS		1.500	0	0	0	0	0	0
MLTS		1.500	0	0	0	0	0	0
MINES		1.750	0	0	0	0	0	0
NPL Liens		1.500	0	0	0	0	0	0
PADS		1.500	0	0	0	0	0	0
DOD		2.500	0	0	0	0	0	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
RAATS		1.500	0	0	0	0	0	0
TRIS		1.500	0	0	0	0	0	0
TSCA		1.500	0	0	0	0	0	0
SSTS		1.500	0	0	0	0	0	0
FTTS		1.500	0	0	0	0	0	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
AST		1.500	0	0	0	0	2	2

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CLEANERS		1.750	0	0	0	0	0	0
CA WDS		1.500	0	0	0	1	0	1
DEED		1.500	0	0	0	0	0	0
SCH		1.750	0	0	0	0	0	0
NFA		1.750	0	0	0	0	0	0
EMI		1.500	0	0	0	1	2	3
REF		1.750	0	0	0	0	0	0
NFE		1.750	0	0	0	0	0	0
CA SLIC		2.000	0	0	0	0	2	2
HAZNET		1.750	0	0	0	3	16	19
Los Angeles Co. HMS		1.500	0	0	2	0	6	8
LA Co. Site Mitigation		1.500	0	0	0	0	1	1
AOCONCERN		2.500	0	0	0	0	0	0
EDR PROPRIETARY HISTORICAL DATABASES								
Gas Stations/Dry Cleaners		0.250	0	0	NR	NR	NR	0
Coal Gas		2.500	0	0	0	0	0	0
BROWNFIELDS DATABASES								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
VCP		2.000	0	0	0	0	0	0

NOTES:

See the EDR Proprietary Historical Database Section for details

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID / Direction / Distance / Distance (ft.) / Elevation | Site | Database(s) | EDR ID Number / EPA ID Number

A1
WNW
1/4-1/2
1402 ft.

CHIQUITA CANYON LANDFILL — **LOS ANGELES CO. HMS** — **1001865073**
29201 W HENRY MAYO DR — **N/A**
UNINCORPORATED, CA

Site 1 of 3 in cluster A

Relative: Higher

Actual: 1034 ft.

HMS:

Facility Id:	005897-I06111		
Area:	7		
Facility Type:	I08		
Permit Number:	174	Permit Status:	Closed
Facility Status:	Permit		
Region:	Los Angeles County:		
Facility Id:	005897-037921		
Area:	7		
Facility Type:	I09		
Permit Number:	174	Permit Status:	Permit
Facility Status:	Permit		
Region:	Los Angeles County:		
Facility Id:	005897-037920		
Area:	7		
Facility Type:	T0		
Permit Number:	174	Permit Status:	Permit
Facility Status:	Permit		
Region:	Los Angeles County:		

A2
WNW
1/4-1/2
1402 ft.

LAIDLAW WASTE SYSTEMS INC — **LOS ANGELES CO. HMS** — **S102064584**
29201 W HENRY MAYO DR — **N/A**
UNINCORPORATED, CA

Site 2 of 3 in cluster A

Relative: Higher

Actual: 1034 ft.

HMS:

Facility Id:	005897-006111		
Area:	7		
Facility Type:	T0		
Permit Number:	174	Permit Status:	Closed
Facility Status:	Permit		
Region:	Los Angeles County:		

A3
WNW
1/4-1/2
1402 ft.

UNIVERSAL BY-PRODUCTS-VALENCIA — **WMUDS/SWAT** — **S103441396**
29201 SAUGUS-VENTURA ROAD — **N/A**
VALENCIA, CA

Site 3 of 3 in cluster A

Relative: Higher

Actual: 1034 ft.

WMUDS:

Region:	4
Date of Last Facility Edit:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System ID:	4 190133NUR
Solid Waste Information ID:	Not reported
Waste Discharge System:	False
Solid Waste Assessment Test Program:	True
Facility Name:	Not reported
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act Program:	False
Department of Defense:	False

UNIVERSAL BY-PRODUCTS-VALENCIA (Continued) **S103441396**

Open to Public:	False
Number of WMUDS at Facility:	1
Facility Telephone:	Not reported
Primary Standard Industrial Classification:	Not reported
Secondary Standard Industrial Classification:	Not reported
Solid Waste Assessment Test Program Name:	UNIVERSAL BY-PRODUCTS
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Sub Chapter 15:	False
Reg. Board Project Officer:	LT
Section Range:	Not reported
RCRA Facility:	Not reported
Waste Discharge Requirements:	Not reported
Base Meridian:	Not reported
Waste List:	False
Facility Description:	Not reported
Self-Monitoring Rept. Frequency:	Not reported

Threat to Water Quality:Not reported

Agency:	UNIVERSAL BY-PRODUCTS
Address:	Not reported
Department:	Not reported
Contact:	Not reported
Telephone:	Not reported
Landowner:	Not reported
Address:	CA
Telephone:	Not reported
Contact:	Not reported

B4 West 1/2-1 2690 ft.

Relative: Higher

Actual: 974 ft.

CHIQUITA CANYON LANDFILL INC **HAZNET** **S100932492**
29201 HENRY MAYO DRIVE **SWF/LF** **N/A**
VALENCIA, CA 91355

Site 1 of 6 in cluster B

LF:

Facility ID:	19-AA-0052
Operator:	Republic Services Of California I, L.L.C
Operator Phone:	(661) 257-3655
Operator Addr:	29201 Henry Mayo Drive Valencia, CA 91355
Owner:	Republic Services Of California I, L.L.C
Owner Address:	Not reported 29201 Henry Mayo Drive Valencia, CA 91355
Owner Telephone:	(661) 257-3655
Activity:	Solid Waste Landfill
Operator's Status:	Active
Regulation Status:	Permitted
Region:	STATE
Lat/Long:	34 / -119
Permit Date:	Not reported
Accepted Waste:	Construction/demolition,Green Materials,Industrial,Inert,Mixed municipal
Restrictions:	
Status :	Not reported
Swisnumber :	Not reported
Site Type :	Not reported

CHIQUITA CANYON LANDFILL INC (Continued) **S100932492**

Aka :	Not reported
Type Of Waste :	Not reported
Disposal Area :	Not reported
SWFP Date :	Not reported
WDR Number :	Not reported
Dates Of Operation :	Not reported
Closure Approved :	Not reported
Date Of Field Units :	Not reported
Surface Condition :	Not reported
Landfill Gas :	Not reported
Leachate :	Not reported
Emergency Response :	Not reported
Other Recommendation :	Not reported
Reassess Site :	Not reported
Priority For Site Assessment :	Not reported
Lea Date :	Not reported
Explanation:	Not Reported
No Further Action:	Not Reported
Permitted Throughput with Units:	6000
Permitted Throughput with Units:	6000
Permitted Throughput with Units:	6000
Actual Throughput with Units:	Tons/day
Actual Capacity with Units:	45889550
Permitted Capacity with Units:	45889550
Remaining Capacity with Units:	Cubic Yards
Permitted Total Acreage:	592
Inspection Frequency:	Monthly
Landuse Name:	Residential,Recreational,Industrial,Agricultural
GIS Source:	Map
Permit Status:	Permitted
Category:	Disposal
Unit Number:	01
Last Waste Tire Inspection Count :	Not reported
Last Waste Tire Inspection Date:	Not reported
Original Waste Tire Count:	Not reported
Original Waste Tire Count Date:	Not reported
Closure Date:	11/24/2019
Closure Type:	Estimated
Disposal Acreage:	257
Remaining Capacity:	26024360

HAZNET:

Gepaid:	CAL000035857
TSD EPA ID:	AZD049318009
Gen County:	Los Angeles
Tsd County:	99
Tons:	.4250
Waste Category:	Laboratory waste chemicals
Disposal Method:	Transfer Station
Contact:	CHIQUITA CANYON LANDFILL INC
Telephone:	(805) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Los Angeles

CHIQUITA CANYON LANDFILL INC (Continued) **S100932492**

Gepaid: CAL000035857
TSD EPA ID: AZD049318009
Gen County: Los Angeles
Tsd County: 99
Tons: .5000
Waste Category: Unspecified organic liquid mixture
Disposal Method: Transfer Station
Contact: CHIQUITA CANYON LANDFILL INC
Telephone: (805) 257-3655
Mailing Address: 29201 HENRY MAYO DR
VALENCIA, CA 91355
County Los Angeles

Gepaid: CAL000035857
TSD EPA ID: CAT000613893
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .2400
Waste Category: Unspecified organic liquid mixture
Disposal Method: Transfer Station
Contact: CHIQUITA CANYON LANDFILL INC
Telephone: (805) 257-3655
Mailing Address: 29201 HENRY MAYO DR
VALENCIA, CA 91355
County Los Angeles

Gepaid: CAL000035857
TSD EPA ID: CAT000613893
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .1542
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Contact: CHIQUITA CANYON LANDFILL INC
Telephone: (805) 257-3655
Mailing Address: 29201 HENRY MAYO DR
VALENCIA, CA 91355
County Los Angeles

Gepaid: CAL000035857
TSD EPA ID: CAD099452708
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 2.0850
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: CHIQUITA CANYON LANDFILL INC
Telephone: (805) 257-3655
Mailing Address: 29201 HENRY MAYO DR
VALENCIA, CA 91355
County Los Angeles

The CA HAZNET database contains 16 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

CHIQUITA CANYON LANDFILL INC (Continued) **S100932492**

B5 **West** **1/2-1** **2690 ft.**

LAIDLAW WASTE SYSTEMS INC **CA FID UST** **S101586012**
29201 HENRY MAYO DR **N/A**
VALENCIA, CA 91355

Site 2 of 6 in cluster B

Relative: Higher

Actual: 974 ft.

FID:
Facility ID: 19036223 Regulate ID: Not reported
Reg By: Active Underground Storage Tank Location
Cortese Code: Not reported SIC Code: Not reported
Status: Active Facility Tel: (805) 257-3655
Mail To: Not reported
29201 HENRY MAYO DR
VALENCIA, CA 91355
Contact: Not reported Contact Tel: Not reported
DUNs No: Not reported NPDES No: Not reported
Creation: 10/22/93 Modified: 00/00/00
EPA ID: Not reported
Comments: Not reported

B6 **West** **1/2-1** **2690 ft.**

CHIQUITA CANYON LANDFILL **CA WDS** **1002687338**
29201 HENRY MAYO DR **EMI** **N/A**
VALENCIA, CA 91310 **HAZNET**
SWF/LF

Site 3 of 6 in cluster B

Relative: Higher

Actual: 974 ft.

LF:
Facility ID: Not reported
Operator: Not reported
Operator Phone: Not reported
Operator Addr:
Owner: Not reported
Owner Address: Not reported
Not reported
Owner Telephone: Not reported
Activity: Not reported
Operator's Status: Not reported
Regulation Status: Not reported
Region: LOS ANGELES
Lat/Long: Not reported
Permit Date: Not reported
Accepted Waste:
Restrictions:
Status : Not reported
Swisnumber : Not reported
Site Type : Not reported
Aka : Not reported
Type Of Waste : Not reported
Disposal Area : Not reported
SWFP Date : Not reported
WDR Number : Not reported
Dates Of Operation : Not reported
Closure Approved : Not reported
Date Of Field Units : Not reported
Surface Condition : Not reported
Landfill Gas : Not reported
Leachate : Not reported

CHIQUITA CANYON LANDFILL (Continued) **1002687338**

Emergency Response :	Not reported
Other Recommendation :	Not reported
Reassess Site :	Not reported
Priority For Site Assessment :	Not reported
Lea Date :	Not reported
Explanation:	Not Reported
No Further Action:	Not Reported
Permitted Throughput with Units:	Not reported
Permitted Throughput with Units:	Not reported
Permitted Throughput with Units:	Not reported
Actual Throughput with Units:	Not reported
Actual Capacity with Units:	Not reported
Permitted Capacity with Units:	Not reported
Remaining Capacity with Units:	Not reported
Permitted Total Acreage:	Not reported
Inspection Frequency:	Not reported
Landuse Name:	Not reported
GIS Source:	Not reported
Permit Status:	Not reported
Category:	Not reported
Unit Number:	Not reported
Last Waste Tire Inspection Count :	Not reported
Last Waste Tire Inspection Date:	Not reported
Original Waste Tire Count:	Not reported
Original Waste Tire Count Date:	Not reported
Closure Date:	/ /
Closure Type:	Not reported
Disposal Acreage:	Not reported
Remaining Capacity:	Not reported

HAZNET:

Gepaid:	CAL000196316
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.00
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Transfer Station
Contact:	MATT TERRELL
Telephone:	(661) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Not reported

Gepaid:	CAL000196316
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.14
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Recycler
Contact:	MATT TERRELL
Telephone:	(661) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Not reported

CHIQUITA CANYON LANDFILL (Continued) **1002687338**

Gepaid:	CAL000196316
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	1.66
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Contact:	MATT TERRELL
Telephone:	(661) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Not reported

Gepaid:	CAL000196316
TSD EPA ID:	CAD008252405
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.0166
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Recycler
Contact:	REPUBLIC SERVICES OF CA I LLC
Telephone:	(661) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Los Angeles

Gepaid:	CAL000196316
TSD EPA ID:	CAT000613893
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.0625
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Not reported
Contact:	REPUBLIC SERVICES OF CA I LLC
Telephone:	(661) 257-3655
Mailing Address:	29201 HENRY MAYO DR VALENCIA, CA 91355
County	Los Angeles

The CA HAZNET database contains 8 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

WDS:

Facility ID:	0		
Facility Contact	Mike Dean (General manager)	Facility Telephone	(661) 257-3655
SIC Code:	4953	SIC Code 2:	Not reported
Agency Name:	A REPUBLIC WASTE SERVICES CO.		
Agency Address:	0		
Agency Contact:	Not reported	Agency Phone:	Not reported
Design Flow:	0 Million Gal/Day	Baseline Flow:	0 Million Gal/Day
Facility Type:	Solid Waste Site-Class III - Landfills for non hazardous solid wastes.		
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.		
Agency Type:	Private		
Waste Type:	Solid Wastes - Nonhazardous Solid Wastes/Influent or Solid Wastes that contain nonhazardous putrescible and non putrescible solid, semisolid, and liquid wastes (E.G., garbage, trash, refuse, paper, demolition and construction wastes, manure, vegetable or animal solid and semisolid waste).		

CHIQUITA CANYON LANDFILL (Continued) **1002687338**

Threat to Water: Not reported
Complexity: Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.
Reclamation: No reclamation requirements associated with this facility.
POTW: The facility is not a POTW.
NPDES Number: Not reported
Subregion: 4

EMISSIONS :

Facility ID :	61029
Air District Code :	SC
SIC Code :	4959
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	2
Reactive Organic Gases :	1
Carbon Monoxide Emissions :	6
NOX Gas Emissions (Nitrogen - Oxygen) :	5
SOX Gas Emissions (Sulphur - Oxygen) :	3

Facility ID :	61029
Air District Code :	SC
SIC Code :	4959
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	Not reported
Reactive Organic Gases :	Not reported
Carbon Monoxide Emissions :	Not reported
NOX Gas Emissions (Nitrogen - Oxygen) :	Not reported
SOX Gas Emissions (Sulphur - Oxygen) :	Not reported

B7
West
1/2-1
2690 ft.

CHIQUITA CANYON LANDFILL **WMUDS/SWAT** **1001526767**
29201 HENRY MAYO DR **N/A**
VALENCIA CA, CA 91310

Site 4 of 6 in cluster B

Relative:
Higher

Actual:
974 ft.

WMUDS:

Region:	4
Date of Last Facility Edit:	11/22/1996
Last Facility Editors:	JHM, JHM, JHM
Waste Discharge System ID:	4A190359001
Solid Waste Information ID:	19-AA-0052
Waste Discharge System:	True
Solid Waste Assessment Test Program:	True

CHIQUITA CANYON LANDFILL (Continued) **1001526767**

Facility Name:	LAIDLAW WASTE SYSTEMS CHIQUITA, INC.
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act Program:	False
Department of Defense:	False
Open to Public:	False
Number of WMUDS at Facility:	5
Facility Telephone:	(805) 257-3655
Primary Standard Industrial Classification:	4953
Secondary Standard Industrial Classification:	Not reported
Solid Waste Assessment Test Program Name:	LAIDLAW WASTE SYSTEMS CHIQUITA, INC
NPID:	Not reported
Tonnage:	5000
Regional Board ID:	67-20
Municipal Solid Waste:	True
Superorder:	True
Sub Chapter 15:	True
Reg. Board Project Officer:	Not reported
Section Range:	04N17W14
RCRA Facility:	No
Waste Discharge Requirements:	A
Base Meridian:	SB
Waste List:	True
Facility Description:	Not reported
Self-Monitoring Rept. Frequency:	Quarterly Submittal

Threat to Water Quality:
Major Threat to Water Quality. A violation could render unusable a ground water or surface water resource used as a significant drink water supply, require closure of an area used for contact recreation, result in long-term deleterious effects on shell fish spawning or growth areas of aquatic resources, or directly expose the public to toxic substances.

Facility Type: Solid Waste Site-Class III - Landfills for non hazardous solid wastes.

Complexity: Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.

Prime Waste: Solid Wastes - Nonhazardous Solid Wastes/Influent or Solid Wastes that contain nonhazardous putrescible and non putrescible solid, semisolid, and liquid wastes (E.G., garbage, trash, refuse, paper, demolition and construction wastes, manure, vegetable or animal solid and semisolid waste).

Agency: USA WASTE
Address: 29201 HENRY MAYO DRIVE
VALENCIA CA 91310
Department: REGIONAL ENGINEER
Contact: RYAN WURGLER
Telephone: (805) 257-3655
Type: Private
Landowner: NEWHALL LAND & FARMING
Address: 27050 HENRY MAYO DR.
CASTAIC, CA 91310
Telephone: (805) 255-4000
Contact: Not reported
Comments: REGIONAL BOARD SAYS 3500 TONS PER DAY...

CHIQUITA CANYON LANDFILL (Continued) — **1001526767**

B8
West
1/2-1
2690 ft.

Relative: Higher

Actual: 974 ft.

LAIDLAW WASTE SYSTEMS INC — **UST** — **U003776127**, **N/A**
29201 HENRY MAYO DR
CASTAIC, CA 91384

Site 5 of 6 in cluster B

State UST:
Facility ID: 6111
Region: STATE
Local Agency: 19000

B9
West
1/2-1
2690 ft.

Relative: Higher

Actual: 974 ft.

CHIQUITA CANYON SANITARY LANDFILL — **RCRIS-SQG**, **FINDS** — **1000820545**, **CAD983666041**
29201 HENRY MAYO DRIVE
CASTAIC, CA 91384

Site 6 of 6 in cluster B

RCRIS:
Owner: LAIDLAW WASTE SYSTEMS INC
(805) 257-3655
EPA ID: CAD983666041
Contact: SONNY STAATS
(805) 257-3655
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
AIRS/AIRS Facility Subystem (AIRS/AFS)
National Emissions Inventory (NEI)
National Emissions Trends (NET)
National Toxics Inventory (NTI)
Resource Conservation and Recovery Act Information system (RCRAINFO)
Solid Waste Inventory System (California sub-system of landfills) (SWIS)

10
NE
1/2-1
4090 ft.

Relative: Higher

Actual: 983 ft.

T A MANUFACTURING CO — **RCRIS-LQG**, **FINDS**, **HAZNET** — **1001231332**, **CAR000039230**
28065 W FRANKLIN PKWY
VALENCIA, CA 91355

RCRIS:
Owner: T A MANUFACTURING CO
(805) 775-1100
EPA ID: CAR000039230
Contact: DAVID SCHMIDT
(805) 775-1100
Classification: Large Quantity Generator
TSDF Activities: Not reported

T A MANUFACTURING CO (Continued) — **1001231332**

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:

Gepaid:	CAR000039230
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	99
Tons:	0.00
Waste Category:	Other inorganic solid waste
Disposal Method:	Treatment, Incineration
Contact:	ERIC BENFORD
Telephone:	(661) 775-1100
Mailing Address:	28065 W FRANKLIN PKWY VALENCIA, CA 91355
County	Not reported

Gepaid:	CAR000039230
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	99
Tons:	0.10
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Disposal, Land Fill
Contact:	ERIC BENFORD
Telephone:	(661) 775-1100
Mailing Address:	28065 W FRANKLIN PKWY VALENCIA, CA 91355
County	Not reported

Gepaid:	CAR000039230
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	99
Tons:	0.04
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Recycler
Contact:	ERIC BENFORD
Telephone:	(661) 775-1100
Mailing Address:	28065 W FRANKLIN PKWY VALENCIA, CA 91355
County	Not reported

Gepaid:	CAR000039230
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	3.62
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Contact:	ERIC BENFORD
Telephone:	(661) 775-1100
Mailing Address:	28065 W FRANKLIN PKWY VALENCIA, CA 91355
County	Not reported

T A MANUFACTURING CO (Continued) — **1001231332**

Gepaid: CAR000039230
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.40
Waste Category: Unspecified organic liquid mixture
Disposal Method: Recycler
Contact: ERIC BENFORD
Telephone: (661) 775-1100
Mailing Address: 28065 W FRANKLIN PKWY
VALENCIA, CA 91355
County Not reported

The CA HAZNET database contains 55 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

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11 ENE 1/2-1 4583 ft. — **TRAVEL VILLAGE** — **HIST UST** — **U001567876** / **N/A**
27946 HENRY MAYO DR
CASTAIC, CA 91355

Relative: Higher
Actual: 984 ft.

UST HIST:
Facility ID: 41379 — Facility Status: Not reported
Total Tanks: 1 — Region: STATE
Owner Name: NEWHALL INVESTMENT PROPERTIES — Box Number: Not reported
Owner Address: 23823 VALENCIA BOULEVARD
VALENCIA, CA 91355

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12 NE > 1 5500 ft. — **BLOOMERS METAL STAMPINGS INC** — **HAZNET** — **S105724739** / **N/A**
28615 BRAXTON AVE
VALENCIA, CA 91355

Relative: Higher
Actual: 1020 ft.

HAZNET:
Gepaid: CAL000214634
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Kings
Tons: 4.21
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Contact: PERRY BLOOMER / VICE PRESIDENT
Telephone: (661) 257-2955
Mailing Address: 28615 BRAXTON AVE
VALENCIA, CA 91355
County Not reported

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13 West > 1 5954 ft. — **CHMIRS** — **S100216887** / **N/A**
27900 CHIQUITO CANYON ROAD
UNINC, CA

Relative: Higher
Actual: 962 ft.

CHMIRS:
OES Control Number: 8904996
Chemical Name: Not reported
Extent of Release: Not reported
Property Use: Petroleum Refinery

(Continued) — **S100216887**

Incident Date: 23-FEB-89
Date Completed: 23-FEB-89
Time Completed : 2035
Agency Id Number : 19110
Agency Incident Number : 52
OES Incident Number : 8904996
Time Notified : 1915
Surrounding Area : 946
Estimated Temperature : Not reported
Property Management : P
More Than Two Substances Involved? : N
Special Studies 1 : Not reported
Special Studies 2 : Not reported
Special Studies 3 : Not reported
Special Studies 4 : Not reported
Special Studies 5 : Not reported
Special Studies 6 : Not reported
Responding Agency Personel # Of Injuries : 0
Responding Agency Personel # Of Fatalities : 0
Resp Agncy Personel # Of Decontaminated : 0
Others Number Of Decontaminated : 0
Others Number Of Injuries : 0
Others Number Of Fatalities : 0
Vehicle Make/year : Not reported
Vehicle License Number : Not reported
Vehicle State : Not reported
Vehicle Id Number : Not reported
CA/DOT/PUC/ICC Number : Not reported
Company Name : Not reported
Reporting Officer Name/ID : CAPT. JOHN W. EVERETT
Report Date : 26-FEB-89
Comments : Not reported
Facility Telephone Number : 213 267-2485
Waterway Involved : Not reported
Waterway : Not reported
Spill Site : Not reported
Cleanup By : Not reported
Containment : Not reported
What Happened : Not reported
Type : Not reported
Other : Not reported
Chemical 1 : Not Reported
Chemical 2 : Not Reported
Chemical 3 : Not Reported
Date/Time : Not reported
Evacuations : Not reported

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14 WSW > 1 6031 ft. — **NEWHALL LAND & FARMING** — **Cortese LUST** — **S102434348** / **N/A**
3003 WALNUT ORCHARD RD
VALENCIA, CA 91350

Relative: Lower
Actual: 949 ft.

State LUST:
Cross Street: HENRY MAYO DRIVE
Qty Leaked: Not reported
Case Number I-14101
Reg Board: 4
Chemical: Gasoline
Lead Agency: Regional Board

NEWHALL LAND & FARMING (Continued) **S102434348**

Local Agency : 19000
Case Type: Soil only
Status: Case Closed
Review Date: Not reported — Confirm Leak: Not reported
Workplan: 3/9/90 — Prelim Assess: 3/9/90
Pollution Char: Not reported — Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 06/27/1996
Release Date: 03/09/1990
Cleanup Fund Id : Not reported
Discover Date : 01/25/1989
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 03/05/1990
Funding: Federal Funds
Staff Initials: Not reported
How Discovered: Tank Closure
How Stopped: Not reported
Interim : Not reported
Leak Cause: UNK
Leak Source: UNK
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : JONES, ROGER ALSO SEE I-14100
Oversight Prgm: RB Lead Underground Storage Tank
Oversight Prgm : UST
Review Date : 07/22/1998
Stop Date : 01/25/1989
Work Suspended :Not reported
Responsible PartyNEWHALL LAND AND FARM
RP Address: 23823 VALENCIA BLVD., VAKENCIA, 91355 C
Global Id: T0603704137
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 3/9/1990
Lead Agency: Regional Board
Local Agency: 19000
Case Number: I-14101
Substance: Gasoline

NEWHALL LAND & FARMING (Continued) **S102434348**

Case Type: Soil
Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Federal Funds
Date the Leak was Discovered: 1/25/1989
How the Leak was Discovered: Tank Closure
How the Leak was Stopped: Close Tank
Cause of Leak: Unknown
Leak Source: Unknown
Date The Leak was Stopped: 1/25/1989
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: 3/9/1990
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 6/27/1996
Date Case Last Changed on Database: 7/22/1998
Enforcement Action Date: Not reported
Date Leak First Reported: 3/9/1990
Enforcement Type: Not reported
Global ID : T0603704137
Organization : Not reported
Historical Max MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported
County: Los Angeles
Regional Board: 04
Owner Contact: Not reported
Responsible Party: NEWHALL LAND AND FARM
RP Address: 23823 VALENCIA BLVD., VAKENCIA, 91355 C
Significant Interim Remedial Action Taken: Not reported
Program : UST
Lat / Long : 34.4200613 / -118.6567124
MTBE Counts : 0
MTBE Fuel : 1
MTBE Tested : NT
Local Agency Staff: UNK
Summary : Not reported
Hydrologic Basin # : Not reported
Beneficial Use : Not reported
Priority : Not reported
Cleanup Fund Id : Not reported
Suspended : Not reported
Local Case No : Not reported
Substance Quantity : Not reported
Abatement Method Used at the Site: Not reported
Operator : JONES, ROGER ALSO SEE I-14100
Water System : WALNUT HILL
Well Name : WELL C-6
Approx. Dist To Production Well (ft) : 8339.4141756642599077889829 5
W Global ID : W0603709014
Assigned Name : 04N/17W-14Q07 S

NEWHALL LAND & FARMING (Continued) **S102434348**

MTBE Class : Not reported

CORTESE:
Region: CORTESE
Fac Address 2: 3003 WALNUT ORCHARD RD

C15 West > 1 6207 ft. **DEL VALLE TRAINING CENTER** **LA Co. Site Mitigation** **S103697023**
28101 CHIQUITO CANYON RD **N/A**
SCV, CA 91350

Site 1 of 6 in cluster C

Relative: Higher

Actual: 994 ft.

Site Mitigation Log:
Case Number: 91S259
Abatement Date: 08/12/97
Thomas Guide Page Numbers: 4549C2

C16 West > 1 6207 ft. **LA CTY FIRE DEPT/DELVAL TRG CTR** **HAZNET** **S103649248**
28101 CHIQUITO CANYON ROAD **N/A**
CASTAIC, CA 91384

Site 2 of 6 in cluster C

Relative: Higher

Actual: 994 ft.

HAZNET:
Gepaid: CAL000100193
TSD EPA ID: CAT080013352
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .6255
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: COUNTY OF LOS ANGELES-FIRE DEP
Telephone: (818) 448-0161
Mailing Address: 1320 N EASTERN AVE
LOS ANGELES, CA 90063 - 3294
County Los Angeles

Gepaid: CAL000100193
TSD EPA ID: CAD000088252
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .5293
Waste Category: Other inorganic solid waste
Disposal Method: Transfer Station
Contact: COUNTY OF LOS ANGELES-FIRE DEP
Telephone: (818) 448-0161
Mailing Address: 1320 N EASTERN AVE
LOS ANGELES, CA 90063 - 3294
County Los Angeles

Gepaid: CAL000100193
TSD EPA ID: CAD000088252
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .3880
Waste Category: Other inorganic solid waste
Disposal Method: Transfer Station
Contact: COUNTY OF LOS ANGELES-FIRE DEP
Telephone: (818) 448-0161
Mailing Address: 1320 N EASTERN AVE

LA CTY FIRE DEPT/DELVAL TRG CTR (Continued) **S103649248**

LOS ANGELES, CA 90063 - 3294
County Los Angeles

C17 West > 1 6207 ft. **L A COUNTY FIRE DEPT** **LOS ANGELES CO. HMS** **S102064540**
28101 N CHIQUITO CANYON RD **LUST** **N/A**
CASTAIC, CA 91384

Site 3 of 6 in cluster C

Relative: Higher

Actual: 994 ft.

State LUST:
Cross Street: SAN MARTINEZ CYN RD
Qty Leaked: Not reported
Case Number R-00003
Reg Board: 4
Chemical: Hydrocarbons
Lead Agency: Local Agency
Local Agency : 19000
Case Type: Soil only
Status: Leak being confirmed
Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site
Review Date: 04/10/1991 Confirm Leak: 04/10/1991
Workplan: Not reported Prelim Assess: Not reported
Pollution Char: Not reported Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: Not reported
Release Date: 12/03/1997
Cleanup Fund Id : Not reported
Discover Date : 04/10/1991
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 02/18/1998
Funding: Not reported
Staff Initials: Not reported
How Discovered: OM
How Stopped: Not reported
Interim : Not reported
Leak Cause: Not reported
Leak Source: Tank
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Not Required to be Tested.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)
Oversight Prgm : LIA
Review Date : 12/03/1997
Stop Date : / /
Work Suspended : Not reported
Responsible Party UNOCAL CORP

L A COUNTY FIRE DEPT (Continued) **S102064540**

RP Address: 2125 KNOLL DR., P.O. BOX 6176, VENTURA, CA 93003
Global Id: T0603704507
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 12/3/1997
Lead Agency: Local Agency
Local Agency: 19000
Case Number: R-00003
Substance: Hydrocarbons
Case Type: Soil
Status: Leak being confirmed
Region: 4
Staff: Not reported

Source of Cleanup Funding:	Not reported
Date the Leak was Discovered:	4/10/1991
How the Leak was Discovered:	Other Means
How the Leak was Stopped:	Close Tank
Cause of Leak:	Not reported
Leak Source:	Tank
Date The Leak was Stopped:	Not reported
Date Confirmation Leak Began:	4/10/1991
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	Not reported
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Date the Case was Closed:	Not reported
Date Case Last Changed on Database:	12/3/1997
Enforcement Action Date:	Not reported
Date Leak First Reported:	12/3/1997
Enforcement Type:	Not reported
Global ID :	T0603704507
Organization :	Not reported
Historical Max MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Hist Max MTBE Conc In Groundwater:	Not reported
Hist Max MTBE Conc in Soil :	Not reported
County:	Los Angeles
Regional Board:	04
Owner Contact: Not reported	
Responsible Party:	UNOCAL CORP
RP Address:	2125 KNOLL DR., P.O. BOX 6176, VENTURA, CA 93003
Significant Interim Remedial Action Taken:	Not reported
Program :	LIA
Lat / Long :	34.4358266 / -118.6591324
MTBE Counts :	0
MTBE Fuel :	0

L A COUNTY FIRE DEPT (Continued) **S102064540**

MTBE Tested :	NRQ
Local Agency Staff:	UNK
Summary :	TPH 17000 PPM, 36000 PPM & 20000 PPM IN SOIL DEPTH TO GW 300 FT BGS.
Hydrologic Basin # :	Not reported
Beneficial Use :	Not reported
Priority :	Not reported
Cleanup Fund Id :	Not reported
Suspended :	Not reported
Local Case No :	Not reported
Substance Quantity :	Not reported
Abatement Method Used at the Site:	Excavate and Dispose
Operator :	Not reported
Water System :	WALNUT HILL
Well Name :	WELL C-6
Approx. Dist To Production Well (ft) :	9199.3148241037374240915100 48
W Global ID :	W0603709014
Assigned Name :	04N/17W-14Q07 S
MTBE Class :	Not reported

HMS:
Facility Id: 000003-I00003
Area: 7
Facility Type: I09
Permit Number: 174 Permit Status: Removed
Facility Status: Removed
Region: Los Angeles County:

Facility Id: 000003-000003
Area: 7
Facility Type: T0
Permit Number: 174 Permit Status: Removed
Facility Status: Removed
Region: Los Angeles County:

C18 **West** **> 1** **6207 ft.** **Relative: Higher** **Actual: 994 ft.**

UNOCAL - LINCOLN LEASE **CA SLIC** **S104404774** **N/A**
28101 CHIQUITO CYN
CASTAIC, CA 91384

Site 4 of 6 in cluster C

SLIC Region 4:
Facility Status: Closure
Region: 4
SLIC 0520B
Staff: Manjulika Chakarbarti
Substance: TPH

C19 **West** **> 1** **6212 ft.** **Relative: Higher** **Actual: 994 ft.**

LA CO FD FIRE TRAINING CN **Cortese** **S105023127** **N/A**
28101 CHIQUITO CNYN
CASTAIC, CA 91384

Site 5 of 6 in cluster C

CORTESE:
Region: CORTESE
Fac Address 2: Not reported

LA CO FD FIRE TRAINING CN (Continued) — **S105023127**

C20 West > 1 6212 ft. — Relative: Higher — Actual: 994 ft.

DEL VALLE REGIONAL EMERGENCY TRAINING CTR — AST — A100210954 / N/A
28101 CHIQUITO CANYON RD
CASTAIC, CA 91384

Site 6 of 6 in cluster C

AST:
Owner: LOS ANGELES COUNTY FIRE DEPT
Total Gallons: 2000

D21 NE > 1 6222 ft. — Relative: Higher — Actual: 1022 ft.

US POSTAL SERVICE, SANTA CLARI — EMI — S105940246 / N/A
28201 FRANKLIN PKY
SANTA CLARITA, CA 91383

Site 1 of 4 in cluster D

EMISSIONS :

Facility ID :	100544
Air District Code :	SC
SIC Code :	4300
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	Not reported
Reactive Organic Gases :	Not reported
Carbon Monoxide Emissions :	Not reported
NOX Gas Emissions (Nitrogen - Oxygen) :	Not reported
SOX Gas Emissions (Sulphur - Oxygen) :	Not reported

D22 NE > 1 6222 ft. — Relative: Higher — Actual: 1022 ft.

US POSTAL - SANTA CLARITA P&DC — UST — U003777338 / N/A
28201 FRANKLIN PKWY
SANTA CLARITA, CA 91383

Site 2 of 4 in cluster D

State UST:
Facility ID: 17066
Region: STATE
Local Agency: 19000

D23 NE > 1 6222 ft. — Relative: Higher — Actual: 1022 ft.

CHMIRS — S103993337
HAZNET — N/A
28201 FRANKLIN PARKWAY
SANTA CLARITA, CA 02584

Site 3 of 4 in cluster D

(Continued) — **S103993337**

HAZNET:

Gepaid:	CAL000157107
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Not reported
Tons:	0.33
Waste Category:	Polychlorinated biphenyls and material containing PCB's
Disposal Method:	Recycler
Contact:	KEN GONZALES/MAINT ENG SP
Telephone:	(661) 775-7975
Mailing Address:	28201 FRANKLIN PKWY SANTA CLARITA, CA 91383 - 9735
County	Not reported

Gepaid:	CAL000157107
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	0.04
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Contact:	KEN GONZALES/MAINT ENG SP
Telephone:	(661) 775-7975
Mailing Address:	28201 FRANKLIN PKWY SANTA CLARITA, CA 91383 - 9735
County	Not reported

Gepaid:	CAL000157107
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	San Bernardino
Tons:	3.28
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Transfer Station
Contact:	KEN GONZALES/MAINT ENG SP
Telephone:	(661) 775-7975
Mailing Address:	28201 FRANKLIN PKWY SANTA CLARITA, CA 91383 - 9735
County	Not reported

Gepaid:	CAL000157107
TSD EPA ID:	Not reported
Gen County:	Los Angeles
Tsd County:	San Bernardino
Tons:	0.22
Waste Category:	Waste oil and mixed oil
Disposal Method:	Transfer Station
Contact:	KEN GONZALES/MAINT ENG SP
Telephone:	(661) 775-7975
Mailing Address:	28201 FRANKLIN PKWY SANTA CLARITA, CA 91383 - 9735
County	Not reported

(Continued) **S103993337**

Gepaid: CAL000157107
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: San Bernardino
Tons: 0.20
Waste Category: Unspecified oil-containing waste
Disposal Method: Transfer Station
Contact: KEN GONZALES/MAINT ENG SP
Telephone: (661) 775-7975
Mailing Address: 28201 FRANKLIN PKWY
SANTA CLARITA, CA 91383 - 9735
County Not reported

The CA HAZNET database contains 39 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

CHMIRS:

OES Control Number:	97-2033
Chemical Name:	Ink
Extent of Release:	Not reported
Property Use:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Time Completed :	Not reported
Agency Id Number :	Not reported
Agency Incident Number :	Not reported
OES Incident Number :	97-2033
Time Notified :	Not reported
Surrounding Area :	Not reported
Estimated Temperature :	Not reported
Property Management :	Not reported
More Than Two Substances Involved? :	Not reported
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	Not reported
Others Number Of Decontaminated :	Not reported
Others Number Of Injuries :	Not reported
Others Number Of Fatalities :	Not reported
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	Not reported
Report Date :	Not reported
Comments :	Not reported
Facility Telephone Number :	Not reported
Waterway Involved :	Yes
Waterway :	Drain
Spill Site :	Other

(Continued) **S103993337**

Cleanup By :	Not being accomplished
Containment :	Unknown
What Happened :	Dumped by employees, weekley into drain
Type :	OTHER, CHEMICAL
Other :	Ink
Chemical 1 :	Solvent
Quantity Released :	15 Gal(s)
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	5/21/97
Evacuations :	0

D24 **CHMIRS** **S105882989**
NE **28201 FRANKLIN PKWY, BMF** **N/A**
> 1 **SANTA CLARITA, CA 91387**
6222 ft.

Site 4 of 4 in cluster D

Relative: Higher
Actual: 1022 ft.

CHMIRS:

OES Control Number:	02-1417
Chemical Name:	Motor Oil
Extent of Release:	Not reported
Property Use:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Time Completed :	Not reported
Agency Id Number :	Not reported
Agency Incident Number :	Not reported
OES Incident Number :	02-1417
Time Notified :	Not reported
Surrounding Area :	Not reported
Estimated Temperature :	Not reported
Property Management :	Not reported
More Than Two Substances Involved? :	Not reported
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	Not reported
Others Number Of Decontaminated :	Not reported
Others Number Of Injuries :	Not reported
Others Number Of Fatalities :	Not reported
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	Not reported
Report Date :	Not reported
Comments :	Not reported
Facility Telephone Number :	Not reported
Waterway Involved :	Yes
Waterway :	storm drain
Spill Site :	Other

(Continued) — **S105882989**

Cleanup By :	Reporting Party
Containment :	Unknown
What Happened :	A vehicle leaked oil into a storm drain
Type :	Qt.(s)
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	3/14/2002 1330
Evacuations :	0

E25 / NNE / > 1 / 6527 ft. — **R A H INDUSTRIES**, **28035 HARRISON PKWY**, **VALENCIA, CA 91355** — RCRIS-SQG, FINDS, HAZNET — **1004677606**, **CAR000099523**

Relative: Higher / **Actual: 1054 ft.**

Site 1 of 5 in cluster E

RCRIS:
Owner: R A H INDUSTRIES INC
(661) 295-5190
EPA ID: CAR000099523
Contact: RICHARD CRESPO
(661) 295-5190
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:
Gepaid: CAR000099523
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 1.27
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: Richard Crespo
Telephone: (661) 295-5190
Mailing Address: 28035 Harrison Pkwy
Valencia, CA 91355
County Not reported

Gepaid: CAR000099523
TSD EPA ID: Not reported
Gen County: Not reported
Tsd County: Not reported
Tons: 0.69
Waste Category: Waste oil and mixed oil
Disposal Method: Not reported
Contact: Richard Crespo
Telephone: (661) 295-5190
Mailing Address: 28035 Harrison Pkwy
Valencia, CA 91355
County Not reported

R A H INDUSTRIES (Continued) — **1004677606**

Gepaid: CAR000099523
TSD EPA ID: Not reported
Gen County: Not reported
Tsd County: Not reported
Tons: 0.69
Waste Category: Waste oil and mixed oil
Disposal Method: Transfer Station
Contact: Richard Crespo
Telephone: (661) 295-5190
Mailing Address: 28035 Harrison Pkwy
Valencia, CA 91355
County Not reported

E26 / NNE / > 1 / 6578 ft. — **EMCO**, **28045 W HARRISON PKWY**, **VALENCIA, CA 91355** — HAZNET — **S106092383**, **N/A**

Relative: Higher / **Actual: 1053 ft.**

Site 2 of 5 in cluster E

HAZNET:
Gepaid: CAL000229937
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.34
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Contact: MATT HAY
Telephone: (661) 294-9966
Mailing Address: 28045 W HARRISON PKWY
VALENCIA, CA 91355
County Not reported

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27 / WNW / > 1 / 6784 ft. — **JERRY AVALOS TRUCKING**, **28459 CHIQUITO CANYON RD**, **VAL VERDE, CA 91350** — HAZNET — **S105724410**, **N/A**

Relative: Higher / **Actual: 1046 ft.**

HAZNET:
Gepaid: CAL000207708
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.02
Waste Category: Unspecified organic liquid mixture
Disposal Method: Not reported
Contact: ROBERT AVALOS
Telephone: (818) 367-8415
Mailing Address: 28459 CHIQUITO CANYON RD
VAL VERDE, CA 91350
County Not reported

E28 NNE > 1 6790 ft. — **DEL WEST ENGINEERING**, **28128 W LIVINGSTON AVE**, **VALENCIA, CA 91355** — **RCRIS-LQG, FINDS, HAZNET** — **1001459707 / CAR000048694**

Relative: Higher

Actual: 1063 ft.

Site 3 of 5 in cluster E

RCRIS:
Owner: DEL WEST ENGINEERING
(805) 295-5700
EPA ID: CAR000048694
Contact: BEN MC CABE
(805) 295-5700
Classification: Large Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:
Gepaid: CAR000048694
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 5.00
Waste Category: Unspecified oil-containing waste
Disposal Method: Not reported
Contact: R J SOUKUP/FACILITIES MGR
Telephone: (661) 295-5700
Mailing Address: 28128 W LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

Gepaid: CAR000048694
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 4.17
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Contact: R J SOUKUP/FACILITIES MGR
Telephone: (661) 295-5700
Mailing Address: 28128 W LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

Gepaid: CAR000048694
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.01
Waste Category: Liquids with pH <UN-> 2
Disposal Method: Recycler
Contact: R J SOUKUP/FACILITIES MGR
Telephone: (661) 295-5700
Mailing Address: 28128 W LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

DEL WEST ENGINEERING (Continued) — **1001459707**

Gepaid: CAR000048694
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: San Bernardino
Tons: 7.50
Waste Category: Other inorganic solid waste
Disposal Method: Transfer Station
Contact: R J SOUKUP/FACILITIES MGR
Telephone: (661) 295-5700
Mailing Address: 28128 W LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

Gepaid: CAR000048694
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: San Bernardino
Tons: 14.63
Waste Category: Other organic solids
Disposal Method: Transfer Station
Contact: R J SOUKUP/FACILITIES MGR
Telephone: (661) 295-5700
Mailing Address: 28128 W LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

The CA HAZNET database contains 41 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

E29 NNE > 1 6795 ft. — **DEL WEST ENGINEERING**, **28128 W LIVINGSTON AVE**, **UNINCORPORATED, CA** — **LOS ANGELES CO. HMS** — **1001472911 / N/A**

Relative: Higher

Actual: 1063 ft.

Site 4 of 5 in cluster E

HMS:
Facility Id: 017610-024096
Area: 7
Facility Type: I09
Permit Number: 174 — Permit Status: Permit
Facility Status: Permit
Region: Los Angeles County:

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30 North > 1 6873 ft. — **20TH CENTURY FOX,PAPI CHULO**, **28455 LIVINGSTON AVE**, **VALENCIA, CA 91355** — **HAZNET** — **S106088596 / N/A**

Relative: Higher

Actual: 1173 ft.

HAZNET:
Gepaid: CAC002555271
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.31
Waste Category: Latex waste
Disposal Method: Recycler
Contact: ORLANDO PEREZ, PAINTER
Telephone: (818) 800-0454

20TH CENTURY FOX,PAPI CHULO (Continued) **S106088596**

Mailing Address: 805 S SAN FERNANDO RD
BURBANK, CA 91502
County Not reported

E31 NNE > 1 6895 ft. **REGENT AEROSPACE INC** **HAZNET** **S105725099**
28110 HARRISON PKWY **N/A**
VALENCIA, CA 91355

Relative: Higher **Actual: 1042 ft.**

Site 5 of 5 in cluster E

HAZNET:
Gepaid: CAL000220147
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.02
Waste Category: Halogenated solvents (chloroform, methyl chloride, perchloroethylene, etc.)
Disposal Method: Recycler
Contact: MIKE VARGAS
Telephone: (661) 257-3000
Mailing Address: 28110 HARRISON PKWY
VALENCIA, CA 91355
County Not reported

Gepaid: CAL000220147
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.24
Waste Category: Unspecified solvent mixture Waste
Disposal Method: Treatment, Tank
Contact: MIKE VARGAS
Telephone: (661) 257-3000
Mailing Address: 28110 HARRISON PKWY
VALENCIA, CA 91355
County Not reported

Gepaid: CAL000220147
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.06
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Transfer Station
Contact: MIKE VARGAS
Telephone: (661) 257-3000
Mailing Address: 28110 HARRISON PKWY
VALENCIA, CA 91355
County Not reported

Gepaid: CAL000220147
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.91
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: MIKE VARGAS
Telephone: (661) 257-3000
Mailing Address: 28110 HARRISON PKWY

REGENT AEROSPACE INC (Continued) **S105725099**

VALENCIA, CA 91355
County Not reported

Gepaid: CAL000220147
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Sacramento
Tons: 1.17
Waste Category: Other organic solids
Disposal Method: Disposal, Other
Contact: MIKE VARGAS
Telephone: (661) 257-3000
Mailing Address: 28110 HARRISON PKWY
VALENCIA, CA 91355
County Not reported

The CA HAZNET database contains 4 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

F32 North > 1 6913 ft. **TIME AVIATION SERVICES INC** **RCRIS-SQG** **1001967326**
28402 W LIVINGSTON AVE **FINDS** **CAR000067363**
VALENCIA, CA 91355

Relative: Higher **Actual: 1151 ft.**

Site 1 of 2 in cluster F

RCRIS:
Owner: JOHN W BUTLER
(661) 702-0800
EPA ID: CAR000067363

Contact: LARRY COLLINS
(661) 702-7311

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

F33 North > 1 6913 ft. **TIME AVIATION SERVICES** **HAZNET** **S105094017**
28402 W LIVINGSTON AVE **N/A**
VALENCIA, CA 91355

Relative: Higher **Actual: 1151 ft.**

Site 2 of 2 in cluster F

HAZNET:
Gepaid: CAR000067363
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.42
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Contact: LARRY COLLINGS - DIR OF QUALIT
Telephone: (661) 702-7311
Mailing Address: 28402 W LIVINGSTON AVE
VALENCIA, CA 91355 - 1415

TIME AVIATION SERVICES (Continued) **S105094017**

County: Not reported

Gepaid: CAR000067363
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.12
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Transfer Station
Contact: LARRY COLLINGS - DIR OF QUALIT
Telephone: (661) 702-7311
Mailing Address: 28402 W LIVINGSTON AVE
VALENCIA, CA 91355 - 1415
County: Not reported

Gepaid: CAR000067363
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.06
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Transfer Station
Contact: LARRY COLLINGS - DIR OF QUALIT
Telephone: (661) 702-7311
Mailing Address: 28402 W LIVINGSTON AVE
VALENCIA, CA 91355 - 1415
County: Not reported

Gepaid: CAR000067363
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: San Bernardino
Tons: 1.04
Waste Category: Unspecified organic liquid mixture
Disposal Method: Transfer Station
Contact: LARRY COLLINGS - DIR OF QUALIT
Telephone: (661) 702-7311
Mailing Address: 28402 W LIVINGSTON AVE
VALENCIA, CA 91355 - 1415
County: Not reported

Gepaid: CAR000067363
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.8
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Contact: LARRY COLLINGS - DIR OF QUALIT
Telephone: (661) 702-7311
Mailing Address: 28402 W LIVINGSTON AVE
VALENCIA, CA 91355 - 1415
County: Not reported

The CA HAZNET database contains 4 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

TIME AVIATION SERVICES (Continued) **S105094017**

G34 NNE > 1 6923 ft. **PROPOSED SCHOOL BUS STOP** **CA SLIC** **S103878798 N/A**
28300 LIVINGSTON
CASTAIC, CA 91384

Relative: Higher **Actual: 1102 ft.**

Site 1 of 3 in cluster G

SLIC Region 4:
Facility Status: Closure
Region: 4
SLIC 0834
Staff: Jenny Au
Substance: TPH

G35 NNE > 1 6924 ft. **PHARMAVITE LLC** **RCRIS-LQG** **1001815586**
28305 W LIVINGSTON AVE **FINDS** **CAR000057190**
VALENCIA, CA 91355 **HAZNET**

Relative: Higher **Actual: 1103 ft.**

Site 2 of 3 in cluster G

RCRIS:
Owner: OTSUKA AMERICA INC
(415) 986-5300
EPA ID: CAR000057190
Contact: TIM COFFMAN
(818) 837-3633
Classification: Large Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:
Gepaid: CAR000057190
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 1.08
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County: Not reported

Gepaid: CAR000057190
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: 99
Tons: 107.84
Waste Category: Baghouse waste
Disposal Method: Disposal, Land Fill
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200

PHARMAVITE LLC (Continued) **1001815586**

Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

Gepaid: CAR000057190
TSD EPA ID: NVT330010000
Gen County: Los Angeles
Tsd County: 99
Tons: 17.6988
Waste Category: Baghouse waste
Disposal Method: Disposal, Land Fill
Contact: OTSUKA AMERICA INC
Telephone: (000) 000-0000
Mailing Address: 15451 SAN FERNANDO MISSION BLV
MISSION HILLS, CA 91345
County Los Angeles

Gepaid: CAR000057190
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: 99
Tons: 143.69
Waste Category: Baghouse waste
Disposal Method: Disposal, Land Fill
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

Gepaid: CAR000057190
TSD EPA ID: NVT330010000
Gen County: Los Angeles
Tsd County: 99
Tons: 18.5416
Waste Category: Baghouse waste
Disposal Method: Not reported
Contact: OTSUKA AMERICA INC
Telephone: (000) 000-0000
Mailing Address: 15451 SAN FERNANDO MISSION BLV
MISSION HILLS, CA 91345
County Los Angeles

The CA HAZNET database contains 1 additional record for this site.
Please click here or contact your EDR Account Executive for more information.

G36 NNE > 1 6927 ft. **PHARMAVITE LLC** **LOS ANGELES CO. HMS** **1001959798**
28310 W LIVINGSTON AVE **HAZNET** **N/A**
VALENCIA, CA 91355

Site 3 of 3 in cluster G

Relative: Higher

Actual: 1106 ft.

PHARMAVITE LLC (Continued) **1001959798**

HAZNET:
Gepaid: CAR000064444
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.62
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

Gepaid: CAR000064444
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.54
Waste Category: Unspecified solvent mixture Waste
Disposal Method: Recycler
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

Gepaid: CAR000064444
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: San Bernardino
Tons: 0.03
Waste Category: Other organic solids
Disposal Method: Not reported
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

Gepaid: CAR000064444
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 12.50
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Recycler
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

PHARMAVITE LLC (Continued) **1001959798**

Gepaid: CAR000064444
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: 99
Tons: 8.42
Waste Category: Baghouse waste
Disposal Method: Disposal, Land Fill
Contact: TIM COFFMAN MGR REG COMPLIANCE
Telephone: (818) 221-6200
Mailing Address: PO BOX 9606
MISSION HILLS, CA 91346
County Not reported

The CA HAZNET database contains 9 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

HMS:
Facility Id: 020797-037829
Area: 7
Facility Type: I01
Permit Number: 174 Permit Status: Permit
Facility Status: Permit
Region: Los Angeles County:

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37 North > 1 6928 ft. **KIMBALL MICROELECTRONICS** **RCRIS-SQG 1004677121**
28575 LIVINGSTON AVE **FINDS CAR000093468**
VALENCIA, CA 91355 **HAZNET**

Relative: Higher
Actual: 1252 ft.

RCRIS:
Owner: KIMBALL INTL INC
(812) 482-1600
EPA ID: CAR000093468
Contact: FRANK FABIANO
(661) 775-3500
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:
Gepaid: CAR000093468
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.44
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Contact: KENT DAVIS
Telephone: (661) 775-3500
Mailing Address: 28575 LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

KIMBALL MICROELECTRONICS (Continued) **1004677121**

Gepaid: CAR000093468
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.67
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Contact: KENT DAVIS
Telephone: (661) 775-3500
Mailing Address: 28575 LIVINGSTON AVE
VALENCIA, CA 91355
County Not reported

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38 NNE > 1 7080 ft. **WALT DISNEY PICTURES & TELEVISION** **HAZNET S104581097**
28150 W HARRISON PARKWAY **N/A**
VALENCIA, CA 91355

Relative: Higher
Actual: 1046 ft.

HAZNET:
Gepaid: CAL000180976
TSD EPA ID: CAD050806850
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.2085
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Transfer Station
Contact: WALT DISNEY PICTURES & TV
Telephone: (000) 000-0000
Mailing Address: 500 S. BUENA VISTA ST.
BURBANK, CA 91521 - 2663
County Los Angeles

Gepaid: CAL000180976
TSD EPA ID: CAD050806850
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.9875
Waste Category: Other organic solids
Disposal Method: Transfer Station
Contact: WALT DISNEY PICTURES & TV
Telephone: (000) 000-0000
Mailing Address: 500 S. BUENA VISTA ST.
BURBANK, CA 91521 - 2663
County Los Angeles

Gepaid: CAL000180976
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 0.86
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Transfer Station
Contact: DEBBIE GONZALEZ ENVIRONMENTAL
Telephone: (818) 553-4061
Mailing Address: 500 S. BUENA VISTA ST.
BURBANK, CA 91521 - 6015
County Not reported

WALT DISNEY PICTURES & TELEVISION (Continued) **S104581097**

Gepaid: CAL000180976
TSD EPA ID: CAD050806850
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .6255
Waste Category: Waste oil and mixed oil
Disposal Method: Transfer Station
Contact: WALT DISNEY PICTURES & TV
Telephone: (000) 000-0000
Mailing Address: 500 S. BUENA VISTA ST.
BURBANK, CA 91521 - 2663
County Los Angeles

Gepaid: CAL000180976
TSD EPA ID: CAD050806850
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .3000
Waste Category: Other organic solids
Disposal Method: Transfer Station
Contact: WALT DISNEY PICTURES & TV
Telephone: (000) 000-0000
Mailing Address: 500 S. BUENA VISTA ST.
BURBANK, CA 91521 - 2663
County Los Angeles

The CA HAZNET database contains 1 additional record for this site.
Please click here or contact your EDR Account Executive for more information.

H39
ENE
> 1
7331 ft.

FIESTA RESORTS — **LOS ANGELES CO. HMS** — **S102064533** / **N/A**
27946 W HENRY MAYO DR
UNINCORPORATED, CA

Site 1 of 4 in cluster H

Relative: Higher

Actual: 1001 ft.

HMS:
Facility Id: 014852-015631
Area: 7
Facility Type: T0
Permit Number: 174 — Permit Status: Closed
Facility Status: Closed
Region: Los Angeles County:

H40
ENE
> 1
7331 ft.

VALENCIA TRAVEL VILLAGE — **LOS ANGELES CO. HMS** — **S102064534** / **N/A**
27946 W HENRY MAYO DR
UNINCORPORATED, CA

Site 2 of 4 in cluster H

Relative: Higher

Actual: 1001 ft.

HMS:
Facility Id: 014852-021889
Area: 7
Facility Type: T0
Permit Number: 174 — Permit Status: Removed
Facility Status: Removed
Region: Los Angeles County:

VALENCIA TRAVEL VILLAGE (Continued) **S102064534**

H41
NE
> 1
7485 ft.

THE VALENCIA TRAVEL VILLAGE — **HAZNET** — **S103991139** / **N/A**
27946 HENRY MAYO ROAD, RTE 126
VALENCIA, CA 91384

Site 3 of 4 in cluster H

Relative: Higher

Actual: 998 ft.

HAZNET:
Gepaid: CAC001485192
TSD EPA ID: CAD982484933
Gen County: Los Angeles
Tsd County: 7
Tons: .2500
Waste Category: Other empty containers 30 gallons or more
Disposal Method: Recycler
Contact: STEWART BLAIR
Telephone: (805) 257-3333
Mailing Address: 27946 HENRY MAYO ROAD, RTE 126
VALENCIA, CA 91384
County Los Angeles

Gepaid: CAC001485192
TSD EPA ID: CAD028409019
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: .4170
Waste Category: Aqueous solution with 10% or more total organic residues
Disposal Method: Treatment, Tank
Contact: STEWART BLAIR
Telephone: (805) 257-3333
Mailing Address: 27946 HENRY MAYO ROAD, RTE 126
VALENCIA, CA 91384
County Los Angeles

H42
NE
> 1
7485 ft.

FIESTA RESORT TRAVEL VILLAGE — **CA FID UST** — **S101584732** / **N/A**
27946 HENRY MAYO RD
VALENCIA, CA 91384

Site 4 of 4 in cluster H

Relative: Higher

Actual: 998 ft.

FID:
Facility ID: 19014937 — Regulate ID: Not reported
Reg By: Active Underground Storage Tank Location
Cortese Code: Not reported — SIC Code: Not reported
Status: Active — Facility Tel: (805) 257-1135
Mail To: Not reported
27946 HENRY MAYO DR
VALENCIA, CA 91384
Contact: Not reported — Contact Tel: Not reported
DUNs No: Not reported — NPDES No: Not reported
Creation: 10/22/93 — Modified: 00/00/00
EPA ID: Not reported
Comments: Not reported

I43
NE
> 1
7816 ft.

SCHWARTZ OIL CO
27241 HENRY MAYO DR
VALENCIA, CA 91355

UST **U001567874**
EMI **N/A**
HIST UST
HAZNET

Site 1 of 8 in cluster I

Relative:
Higher

Actual:
996 ft.

HAZNET:

Gepaid: CAL000171310
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 1.14
Waste Category: Tank bottom waste
Disposal Method: Recycler
Contact: GINNY OSTROVE-OFFICE MGR
Telephone: (661) 259-4000
Mailing Address: 27241 HENRY MAYO DR
VALENCIA, CA 91355
County Not reported

Gepaid: CAL000171310
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 15.01
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Recycler
Contact: GINNY OSTROVE-OFFICE MGR
Telephone: (661) 259-4000
Mailing Address: 27241 HENRY MAYO DR
VALENCIA, CA 91355
County Not reported

Gepaid: CAL000171310
TSD EPA ID: Not reported
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 10.42
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: GINNY OSTROVE-OFFICE MGR
Telephone: (661) 259-4000
Mailing Address: 27241 HENRY MAYO DR
VALENCIA, CA 91355
County Not reported

Gepaid: CAC001421632
TSD EPA ID: CAD028409019
Gen County: Los Angeles
Tsd County: Los Angeles
Tons: 1.8556
Waste Category: Unspecified oil-containing waste
Disposal Method: Treatment, Tank
Contact: TRUDY EMETERIO
Telephone: (000) 000-0000
Mailing Address: 27241 HENRY MAYO
VALENCIA, CA 00000
County Los Angeles

SCHWARTZ OIL CO (Continued) **U001567874**

Gepaid: CAC001421632
TSD EPA ID: CAD982484933
Gen County: Los Angeles
Tsd County: 7
Tons: .5000
Waste Category: Empty containers less than 30 gallons
Disposal Method: Disposal, Other
Contact: TRUDY EMETERIO
Telephone: (000) 000-0000
Mailing Address: 27241 HENRY MAYO
VALENCIA, CA 00000
County Los Angeles

The CA HAZNET database contains 1 additional record for this site.
Please click here or contact your EDR Account Executive for more information.

UST HIST:

Facility ID: 5275
Total Tanks: 4
Owner Name: SCHWARTZ OIL COMPANY INC.
Owner Address: 27241 HENRY MAYO RD.
VALENCIA, CA 91355
Facility Status: Not reported
Region: STATE
Box Number: Not reported

EMISSIONS :

Facility ID : 35743
Air District Code : SC
SIC Code : 5171
Total Priority Score : Not reported
Health Risk Assessment : Not reported
Non-cancer Chronic Haz Index : Not reported
Non-cancer Acute Haz Index : Not reported
Air Basin : SC
Air District Name : SOUTH COAST AQMD
Community Health Air Pollution Info System : Not reported
Consolidated Emission Reporting Rule : Not reported
Total Organic Hydrocarbon Gases : Not reported
Reactive Organic Gases : Not reported
Carbon Monoxide Emissions : Not reported
NOX Gas Emissions (Nitrogen - Oxygen) : Not reported
SOX Gas Emissions (Sulphur - Oxygen) : Not reported

State UST:

Facility ID: 16425
Region: STATE
Local Agency: 19000

I44
NE
> 1
7816 ft.

SCHWARTZ OIL CO.
27241 HENRY MAYO DR
VALENCIA, CA 91355

Cortese **S104160064**
LUST **N/A**

Site 2 of 8 in cluster I

Relative:
Higher

Actual:
996 ft.

State LUST:

Cross Street: THE OLD ROAD
Qty Leaked: Not reported
Case Number I-16425
Reg Board: 4
Chemical: Gasoline
Lead Agency: Regional Board
Local Agency : 19000

SCHWARTZ OIL CO. (Continued) **S104160064**

Case Type: Other ground water affected
Status: Case Closed
Review Date: Not reported — Confirm Leak: Not reported
Workplan: 4/14/92 — Prelim Assess: 4/14/92
Pollution Char: Not reported — Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 08/30/1996
Release Date: 04/14/1992
Cleanup Fund Id : Not reported
Discover Date : 01/23/1992
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 05/26/1992
Funding: Federal Funds
Staff Initials: Not reported
How Discovered: OM
How Stopped: Not reported
Interim : Not reported
Leak Cause: UNK
Leak Source: Tank
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: RB Lead Underground Storage Tank
Oversight Prgm : UST
Review Date : 09/24/1996
Stop Date : / /
Work Suspended :Not reported
Responsible PartySCHWARTZ OIL CO.
RP Address: 2615 NUTMEG ST., MORRO BAY, 93442 D
Global Id: T0603704411
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 4/14/1992
Lead Agency: Regional Board
Local Agency: 19000
Case Number: I-16425
Substance: Gasoline
Case Type: Groundwater

SCHWARTZ OIL CO. (Continued) **S104160064**

Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Federal Funds
Date the Leak was Discovered: 1/23/1992
How the Leak was Discovered: Other Means
How the Leak was Stopped: Not reported
Cause of Leak: Unknown
Leak Source: Tank
Date The Leak was Stopped: Not reported
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: 4/14/1992
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 8/30/1996
Date Case Last Changed on Database: 9/24/1996
Enforcement Action Date: Not reported
Date Leak First Reported: 4/14/1992
Enforcement Type: Not reported
Global ID : T0603704411
Organization : Not reported
Historical Max MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported
County: Los Angeles
Regional Board: 04
Owner Contact: Not reported
Responsible Party: SCHWARTZ OIL CO.
RP Address: 2615 NUTMEG ST., MORRO BAY, 93442 D
Significant Interim Remedial Action Taken: Not reported
Program : UST
Lat / Long : 34.4391864 / -118.609307
MTBE Counts : 0
MTBE Fuel : 1
MTBE Tested : NT
Local Agency Staff: UNK
Summary : Not reported
Hydrologic Basin # : Not reported
Beneficial Use : Not reported
Priority : Not reported
Cleanup Fund Id : Not reported
Suspended : Not reported
Local Case No : Not reported
Substance Quantity : Not reported
Abatement Method Used at the Site: Not reported
Operator : Not reported
Water System : PETER PITCHESS HONOR RANCHO, LAC SHERIFF
Well Name : WELL 01A - INACTIVE
Approx. Dist To Production Well (ft) : 4770.98173265197454216571728 31
W Global ID : W0603700046
Assigned Name : 1900046-008
MTBE Class : Not reported

SCHWARTZ OIL CO. (Continued) — **S104160064**

CORTESE:
Region: CORTESE
Fac Address 2: 27241 HENRY MAYO DR

I45 NE > 1 7816 ft. — **SCHWARTZ OIL CO INC** — **FINDS** — **1006306954 / 110012435551**
27241 HENRY MAYO DR
VALENCIA, CA 91355

Site 3 of 8 in cluster I

Relative: Higher — **Actual: 996 ft.**

FINDS:
Other Pertinent Environmental Activity Identified at Site:
National Emissions Inventory (NEI)
National Toxics Inventory (NTI)

I46 NE > 1 7839 ft. — **LA COUNTY FIRE DEPT STATION 76** — **AST** — **A100211166 / N/A**
27223 HENRY MAYO DR
VALENCIA, CA 91355

Site 4 of 8 in cluster I

Relative: Higher — **Actual: 996 ft.**

AST:
Owner: LOS ANGELES COUNTY FIRE DEPT
Total Gallons: 1000

I47 NE > 1 7839 ft. — **LA CO FD FIRE STA #076** — **LOS ANGELES CO. HMS, Cortese LUST** — **S102064489 / N/A**
27223 W HENRY MAYO DR
VALENCIA, CA 91355

Site 5 of 8 in cluster I

Relative: Higher — **Actual: 996 ft.**

State LUST:
Cross Street: CASTAIC CANYON RD
Qty Leaked: Not reported
Case Number R-12547
Reg Board: 4
Chemical: Hydrocarbons
Lead Agency: Local Agency
Local Agency : 19000
Case Type: Soil only
Status: Case Closed
Abate Method: Other Means
Review Date: Not reported — Confirm Leak: Not reported
Workplan: Not reported — Prelim Assess: Not reported
Pollution Char: Not reported — Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 08/13/1997
Release Date: 06/26/1997
Cleanup Fund Id : Not reported
Discover Date : 06/04/1997
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 07/17/1997
Funding: Not reported
Staff Initials: Not reported
How Discovered: Tank Closure

LA CO FD FIRE STA #076 (Continued) — **S102064489**

How Stopped: Not reported
Interim : Not reported
Leak Cause: UNK
Leak Source: Tank
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Not Required to be Tested.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)
Oversight Prgm : LIA
Review Date : 08/13/1997
Stop Date : / /
Work Suspended : Not reported
Responsible Party LA COUNTY FIRE DEPARTMENT
RP Address: 1320 N. EASTERN AVE., LOS ANGELES CA 90063-3294
Global Id: T0603705143
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 6/26/1997
Lead Agency: Local Agency
Local Agency: 19000
Case Number: R-12547
Substance: Hydrocarbons
Case Type: Soil
Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Not reported
Date the Leak was Discovered: 6/4/1997
How the Leak was Discovered: Tank Closure
How the Leak was Stopped: Close Tank
Cause of Leak: Unknown
Leak Source: Tank
Date The Leak was Stopped: Not reported
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported

LA CO FD FIRE STA #076 (Continued) **S102064489**

Post Remedial Action Monitoring Began:	Not reported
Date the Case was Closed:	8/13/1997
Date Case Last Changed on Database:	8/13/1997
Enforcement Action Date:	Not reported
Date Leak First Reported:	6/26/1997
Enforcement Type:	Not reported
Global ID :	T0603705143
Organization :	Not reported
Historical Max MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil :	Not reported
County:	Los Angeles
Regional Board:	04
Owner Contact: Not reported	
Responsible Party:	LA COUNTY FIRE DEPARTMENT
RP Address:	1320 N. EASTERN AVE., LOS ANGELES CA 90063-3294
Significant Interim Remedial Action Taken:	Not reported
Program :	LIA
Lat / Long :	34.4391864 / -118.609307
MTBE Counts :	0
MTBE Fuel :	0
MTBE Tested :	NRQ
Local Agency Staff:	UNK
Summary :	DEPTH TO G.W. 25TH. BGS. FURTHER ASSESSMENT REQ'D. POTENTIAL G.W. CONTAMINATION.
Hydrologic Basin # :	Not reported
Beneficial Use :	Not reported
Priority :	Not reported
Cleanup Fund Id :	Not reported
Suspended :	Not reported
Local Case No :	Not reported
Substance Quantity :	Not reported
Abatement Method Used at the Site:	OT
Operator :	Not reported
Water System :	PETER PITCHESS HONOR RANCHO, LAC SHERIFF
Well Name :	WELL 01A - INACTIVE
Approx. Dist To Production Well (ft) :	4770.98173265197454216571728 31
W Global ID :	W0603700046
Assigned Name :	1900046-008
MTBE Class :	Not reported

CORTESE:

Region:	CORTESE
Fac Address 2:	27223 HENRY MAYO DR

HMS:

Facility Id:	012416-012547		
Area:	7		
Facility Type:	T0		
Permit Number:	174	Permit Status:	Removed
Facility Status:	Removed		
Region:	Los Angeles County:		

LA CO FD FIRE STA #076 (Continued) **S102064489**

I48 NE > 1 7839 ft. — **FIRE STATION #76** — **HIST UST** — **U001562296** / N/A
27223 HENRY MAYO DR
VALENCIA, CA 90063

Site 6 of 8 in cluster I

Relative: Higher
Actual: 996 ft.

UST HIST:

Facility ID:	20631	Facility Status:	Not reported
Total Tanks:	2	Region:	STATE
Owner Name:	LOS ANGELES COUNTY MECHANICAL	Box Number:	Not reported
Owner Address:	1100 N. EASTERN AVE. LOS ANGELES, CA 90063		

I49 NE > 1 7839 ft. — **LA CO FD FIRE STA #076** — **CA FID UST** — **S101587195** / N/A
27223 HENRY MAYO DR
NEWHALL, CA 91321

Site 7 of 8 in cluster I

Relative: Higher
Actual: 996 ft.

FID:

Facility ID:	19055062	Regulate ID:	00020631
Reg By:	Active Underground Storage Tank Location		
Cortese Code:	Not reported	SIC Code:	Not reported
Status:	Active	Facility Tel:	(818) 000-0000
Mail To:	Not reported 1320 N EASTERN AVE NEWHALL, CA 91321		
Contact:	Not reported	Contact Tel:	Not reported
DUNs No:	Not reported	NPDES No:	Not reported
Creation:	10/22/93	Modified:	00/00/00
EPA ID:	Not reported		
Comments:	Not reported		

I50 NE > 1 7857 ft. — **R.M. PYLES BOYS CAMP, INC.** — **HIST UST** — **U001567871** / N/A
27211 HENRY MAYO DR
VALENCIA, CA 91355

Site 8 of 8 in cluster I

Relative: Higher
Actual: 996 ft.

UST HIST:

Facility ID:	55879	Facility Status:	Not reported
Total Tanks:	1	Region:	STATE
Owner Name:	R.M. PYLES BOYS CAMP, INC.	Box Number:	Not reported
Owner Address:	27211 HENRY MAYO DRIVE VALENCIA, CA 91355		

J51 ENE > 1 8897 ft. — **SCHUARTI OIL CO. INC.** — **CA FID UST** — **S101583389** / N/A
27241 HENRY MAYO RD
VALENCIA, CA 91355

Site 1 of 2 in cluster J

Relative: Higher
Actual: 1009 ft.

SCHUARTI OIL CO. INC. (Continued) **S101583389**

FID:

Facility ID:	19003595	Regulate ID:	Not reported
Reg By:	Active Underground Storage Tank Location		
Cortese Code:	Not reported	SIC Code:	Not reported
Status:	Active	Facility Tel:	(805) 259-4000
Mail To:	Not reported 6215 NUTMEG ST VALENCIA, CA 91355		
Contact:	Not reported	Contact Tel:	Not reported
DUNs No:	Not reported	NPDES No:	Not reported
Creation:	10/22/93	Modified:	00/00/00
EPA ID:	Not reported		
Comments:	Not reported		

J52 ENE > 1 9015 ft. **NEWHALL LAND & FARMING** **Cortese** **S102064490**
27230 HENRY MAYO RD **LUST** **N/A**
VALENCIA, CA 91355

Relative: Higher

Actual: 1010 ft.

Site 2 of 2 in cluster J

State LUST:

Cross Street:	Not reported		
Qty Leaked:	Not reported		
Case Number	I-14698		
Reg Board:	4		
Chemical:	Gasoline		
Lead Agency:	Local Agency		
Local Agency :	19000		
Case Type:	Soil only		
Status:	Case Closed		
Review Date:	Not reported	Confirm Leak:	Not reported
Workplan:	Not reported	Prelim Assess:	Not reported
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	Not reported		
Monitoring:	Not reported		
Close Date:	01/29/1990		
Release Date:	01/29/1990		
Cleanup Fund Id :	Not reported		
Discover Date :	/ /		
Enforcement Dt :	Not reported		
Enf Type:	Not reported		
Enter Date :	01/22/1990		
Funding:	Not reported		
Staff Initials:	Not reported		
How Discovered:	Not reported		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	Not reported		
Leak Source:	Not reported		
MTBE Date :	/ /		
Max MTBE GW :	0 Parts per Billion		
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.		
Priority:	Not reported		
Local Case # :	Not reported		
Beneficial:	Not reported		
Staff :	JLC		
GW Qualifier :	Not reported		
Max MTBE Soil :	Not reported		

NEWHALL LAND & FARMING (Continued) **S102064490**

Soil Qualifier :	Not reported
Hydr Basin #:	Not reported
Operator :	Not reported
Oversight Prgm:	Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)
Oversight Prgm :	LIA
Review Date :	01/29/1990
Stop Date :	/ /
Work Suspended :	Not reported
Responsible Party	NEWHALL LAND & FARMING CO.
RP Address:	23823 VALENCIA BOULEVARD, VALENCIA, 91355
Global Id:	T0603704197
Org Name:	Not reported
Contact Person:	Not reported
MTBE Conc:	0
Mtbe Fuel:	1
Water System Name:	Not reported
Well Name:	Not reported
Distance To Lust:	0
Waste Discharge Global ID:	Not reported
Waste Disch Assigned Name:	Not reported

LUST Region 4:

Report Date:	1/29/1990
Lead Agency:	Local Agency
Local Agency:	19000
Case Number:	I-14698
Substance:	Gasoline
Case Type:	Soil
Status:	Case Closed
Region:	4
Staff:	Not reported
Source of Cleanup Funding:	Not reported
Date the Leak was Discovered:	Not reported
How the Leak was Discovered:	Not reported
How the Leak was Stopped:	Not reported
Cause of Leak:	Not reported
Leak Source:	Not reported
Date The Leak was Stopped:	Not reported
Date Confirmation Leak Began:	Not reported
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	Not reported
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Date the Case was Closed:	1/29/1990
Date Case Last Changed on Database:	1/29/1990
Enforcement Action Date:	Not reported
Date Leak First Reported:	1/29/1990
Enforcement Type:	Not reported
Global ID :	T0603704197
Organization :	Not reported
Historical Max MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil :	Not reported

NEWHALL LAND & FARMING (Continued) **S102064490**

County:	Los Angeles
Regional Board:	04
Owner Contact: Not reported	
Responsible Party:	NEWHALL LAND & FARMING CO.
RP Address:	23823 VALENCIA BOULEVARD, VALENCIA, 91355
Significant Interim Remedial Action Taken:	Not reported
Program :	LIA
Lat / Long :	34.4391864 / -118.609307
MTBE Counts :	0
MTBE Fuel :	1
MTBE Tested :	NT
Local Agency Staff:	UNK
Summary :	Not reported
Hydrologic Basin # :	Not reported
Beneficial Use :	Not reported
Priority :	Not reported
Cleanup Fund Id :	Not reported
Suspended :	Not reported
Local Case No :	Not reported
Substance Quantity :	Not reported
Abatement Method Used at the Site:	Not reported
Operator :	Not reported
Water System :	PETER PITCHESS HONOR RANCHO, LAC SHERIFF
Well Name :	WELL 01A - INACTIVE
Approx. Dist To Production Well (ft) :	4770.98173265197454216571728 31
W Global ID :	W0603700046
Assigned Name :	1900046-008
MTBE Class :	Not reported

CORTESE:

Region:	CORTESE
Fac Address 2:	27230 HENRY MAYO RD

53
West
> 1
10396 ft.

27353 SAN MARTINEZ GRANDE CANYON
SANTA CLARITA, CA 0

CHMIRS **S105648719**
N/A

Relative:
Higher

Actual:
1030 ft.

CHMIRS:

OES Control Number:	97-4284
Chemical Name:	crude oil
Extent of Release:	Not reported
Property Use:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Time Completed :	Not reported
Agency Id Number :	Not reported
Agency Incident Number :	Not reported
OES Incident Number :	97-4284
Time Notified :	Not reported
Surrounding Area :	Not reported
Estimated Temperature :	Not reported
Property Management :	Not reported
More Than Two Substances Involved? :	Not reported
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported

(Continued) **S105648719**

Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	Not reported
Others Number Of Decontaminated :	Not reported
Others Number Of Injuries :	Not reported
Others Number Of Fatalities :	Not reported
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	Not reported
Report Date :	Not reported
Comments :	Not reported
Facility Telephone Number :	Not reported
Waterway Involved :	Yes
Waterway :	River Bed
Spill Site :	Road
Cleanup By :	To be determined
Containment :	No
What Happened :	A tanker truck loaded with 1,000 gals of crude oil was involved in a traffic accident an unknown amount of the crude oil was released. The release is ongoing. The substance going into the Santa Clarita River Bed, No flowing water in the riverbed at this
Type :	PETROLEUM
Other :	1,000 Potential
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	10/27/97
Evacuations :	0

K54
NE
> 1
11010 ft.

29300 THE OLD ROAD
SAUGUS, CA 91384

CHMIRS **S100279945**
EMI **N/A**
HAZNET
SWF/LF

Site 1 of 2 in cluster K

Relative:
Higher

Actual:
1018 ft.

LF:

Facility ID:	19-AA-0057
Operator:	County Of Los Angeles Sheriff's Dept
Operator Phone:	(213) 974-4528
Operator Addr:	293000 The Old Road Saugus, CA 90012
Owner:	County Of Los Angeles Sheriff's Dept
Owner Address:	Not reported 293000 The Old Road Saugus, CA 90012
Owner Telephone:	(213) 974-4528
Activity:	Solid Waste Landfill
Operator's Status:	Closed
Regulation Status:	Permitted
Region:	STATE
Lat/Long:	34 / -118
Permit Date:	Not reported
Accepted Waste:	Agricultural,Construction/demolition,Mixed municipal,Other hazardous,Tires

(Continued) **S100279945**

Restrictions:

Status :	Not reported
Swisnumber :	Not reported
Site Type :	Not reported
Aka :	Not reported
Type Of Waste :	Not reported
Disposal Area :	Not reported
SWFP Date :	Not reported
WDR Number :	Not reported
Dates Of Operation :	Not reported
Closure Approved :	Not reported
Date Of Field Units :	Not reported
Surface Condition :	Not reported
Landfill Gas :	Not reported
Leachate :	Not reported
Emergency Response :	Not reported
Other Recommendation :	Not reported
Reassess Site :	Not reported
Priority For Site Assessment :	Not reported
Lea Date :	Not reported
Explanation:	Not Reported
No Further Action:	Not Reported
Permitted Throughput with Units:	154
Permitted Throughput with Units:	154
Permitted Throughput with Units:	154
Actual Throughput with Units:	Cu Yards/day
Actual Capacity with Units:	Not reported
Permitted Capacity with Units:	Not reported
Remaining Capacity with Units:	Not reported
Permitted Total Acreage:	54
Inspection Frequency:	Quarterly
Landuse Name:	Not reported
GIS Source:	External
Permit Status:	Permitted
Category:	Disposal
Unit Number:	01
Last Waste Tire Inspection Count :	Not reported
Last Waste Tire Inspection Date:	Not reported
Original Waste Tire Count:	Not reported
Original Waste Tire Count Date:	Not reported
Closure Date:	01/01/1992
Closure Type:	Actual
Disposal Acreage:	0
Remaining Capacity:	Not reported

HAZNET:

Gepaid:	CAL000022055
TSD EPA ID:	CAD000088252
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	.6000
Waste Category:	Contaminated soil from site clean-ups
Disposal Method:	Transfer Station
Contact:	LA CNTY SHERIFFS DEPT
Telephone:	(213) 526-5541
Mailing Address:	4700 RAMONA BLVD MONTEREY PARK, CA 91754 - 2169
County	Los Angeles

(Continued) **S100279945**

Gepaid:	CAL000022055
TSD EPA ID:	CAD008252405
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	6.1090
Waste Category:	Paint sludge
Disposal Method:	Recycler
Contact:	LA CNTY SHERIFFS DEPT
Telephone:	(213) 526-5541
Mailing Address:	4700 RAMONA BLVD MONTEREY PARK, CA 91754 - 2169
County	Los Angeles

Gepaid:	CAL000022055
TSD EPA ID:	CAD008252405
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	2.2935
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Contact:	LA CNTY SHERIFFS DEPT
Telephone:	(213) 526-5541
Mailing Address:	4700 RAMONA BLVD MONTEREY PARK, CA 91754 - 2169
County	Los Angeles

Gepaid:	CAL000022055
TSD EPA ID:	CAD008252405
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	1.0425
Waste Category:	Unspecified solvent mixture Waste
Disposal Method:	Recycler
Contact:	LA CNTY SHERIFFS DEPT
Telephone:	(213) 526-5541
Mailing Address:	4700 RAMONA BLVD MONTEREY PARK, CA 91754 - 2169
County	Los Angeles

Gepaid:	CAL000022055
TSD EPA ID:	CAD099452708
Gen County:	Los Angeles
Tsd County:	Los Angeles
Tons:	.3335
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Contact:	LA CNTY SHERIFFS DEPT
Telephone:	(213) 526-5541
Mailing Address:	4700 RAMONA BLVD MONTEREY PARK, CA 91754 - 2169
County	Los Angeles

The CA HAZNET database contains 131 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

CHMIRS:

OES Control Number:	9014303
Chemical Name:	Not reported
Extent of Release:	Not reported

(Continued) **S100279945**

Property Use:	Industrial, Utility
Incident Date:	05-DEC-90
Date Completed:	05-DEC-90
Time Completed :	1935
Agency Id Number :	19110
Agency Incident Number :	51
OES Incident Number :	9014303
Time Notified :	1835
Surrounding Area :	Q99
Estimated Temperature :	60
Property Management :	C
More Than Two Substances Involved? :	N
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	0
Others Number Of Decontaminated :	0
Others Number Of Injuries :	0
Others Number Of Fatalities :	0
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	CAPT. LYNN MOHR #124351
Report Date :	05-DEC-90
Comments :	Yes
Facility Telephone Number :	213 267-2401
Waterway Involved :	Not reported
Waterway :	Not reported
Spill Site :	Not reported
Cleanup By :	Not reported
Containment :	Not reported
What Happened :	Not reported
Type :	Not reported
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	Not reported
Evacuations :	Not reported

EMISSIONS :

Facility ID :	6488
Air District Code :	SC
SIC Code :	9223
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD

(Continued) **S100279945**

Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	1
Reactive Organic Gases :	1
Carbon Monoxide Emissions :	1
NOX Gas Emissions (Nitrogen - Oxygen) :	4
SOX Gas Emissions (Sulphur - Oxygen) :	0
Facility ID :	58949
Air District Code :	SC
SIC Code :	9223
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Y
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	65
Reactive Organic Gases :	6
Carbon Monoxide Emissions :	5
NOX Gas Emissions (Nitrogen - Oxygen) :	28
SOX Gas Emissions (Sulphur - Oxygen) :	1
Facility ID :	6488
Air District Code :	SC
SIC Code :	9223
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	Not reported
Reactive Organic Gases :	Not reported
Carbon Monoxide Emissions :	Not reported
NOX Gas Emissions (Nitrogen - Oxygen) :	Not reported
SOX Gas Emissions (Sulphur - Oxygen) :	Not reported
Facility ID :	58949
Air District Code :	SC
SIC Code :	9223
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SC
Air District Name :	SOUTH COAST AQMD
Community Health Air Pollution Info System :	Y
Consolidated Emission Reporting Rule :	Not reported
Total Organic Hydrocarbon Gases :	Not reported
Reactive Organic Gases :	Not reported
Carbon Monoxide Emissions :	Not reported
NOX Gas Emissions (Nitrogen - Oxygen) :	Not reported

(Continued) **S100279945**

SOX Gas Emissions (Sulphur - Oxygen) : Not reported

K55
NE **29300 THE OLD ROAD** **CHMIRS** **S100279260**
> 1 **VALENCIA, CA 91384** **N/A**
11010 ft.

Site 2 of 2 in cluster K

Relative:
Higher

Actual:
1018 ft.

CHMIRS:

OES Control Number:	8905392
Chemical Name:	Not reported
Extent of Release:	Not reported
Property Use:	099
Incident Date:	29-MAR-89
Date Completed:	29-MAR-89
Time Completed :	1606
Agency Id Number :	19110
Agency Incident Number :	27
OES Incident Number :	8905392
Time Notified :	1446
Surrounding Area :	099
Estimated Temperature :	Not reported
Property Management :	Not reported
More Than Two Substances Involved? :	N
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	0
Others Number Of Decontaminated :	0
Others Number Of Injuries :	0
Others Number Of Fatalities :	0
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	CAPT. JOHN W. EVERETT
Report Date :	29-MAR-89
Comments :	Not reported
Facility Telephone Number :	213 267-2485
Waterway Involved :	Not reported
Waterway :	Not reported
Spill Site :	Not reported
Cleanup By :	Not reported
Containment :	Not reported
What Happened :	Not reported
Type :	Not reported
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	Not reported
Evacuations :	Not reported

(Continued) **S100279260**

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56 **DIXIE DIESEL STATION** **Cortese** **S102428845**
NE **29471 THE OLD ROAD** **LUST** **N/A**
> 1 **SAUGUS, CA 91350**
11020 ft.

Relative:
Higher

Actual:
1020 ft.

State LUST:

Cross Street:	Not reported		
Qty Leaked:	Not reported		
Case Number	I-12830		
Reg Board:	4		
Chemical:	Diesel		
Lead Agency:	Local Agency		
Local Agency :	19000		
Case Type:	Other ground water affected		
Status:	Case Closed		
Abate Method:	Excavate and Dispose - remove contaminated soil and dispose in approved site		
Review Date:	Not reported	Confirm Leak:	Not reported
Workplan:	2/3/87	Prelim Assess:	2/3/87
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	6/20/30		
Monitoring:	Not reported		
Close Date:	11/30/1993		
Release Date:	04/06/1987		
Cleanup Fund Id :	Not reported		
Discover Date :	/ /		
Enforcement Dt :	1/1/65		
Enf Type:	Informal Enforcement Actions,including Notices of Violations and Staff Enforcement Letters		
Enter Date :	/ /		
Funding:	Federal Funds		
Staff Initials:	Not reported		
How Discovered:	Subsurface Monitoring		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	UNK		
Leak Source:	UNK		
MTBE Date :	/ /		
Max MTBE GW :	0 Parts per Billion		
MTBE Tested:	Not Required to be Tested.		
Priority:	Not reported		
Local Case # :	Not reported		
Beneficial:	Not reported		
Staff :	JLC		
GW Qualifier :	Not reported		
Max MTBE Soil :	Not reported		
Soil Qualifier :	Not reported		
Hydr Basin #:	Not reported		
Operator :	Not reported		
Oversight Prgm:	Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)		
Oversight Prgm :	LIA		
Review Date :	11/30/1993		
Stop Date :	/ /		
Work Suspended :	Not reported		
Responsible Party	GORTIKOV/HASLEY PARTNERS, LTD		
RP Address:	15165 VENTURA BLVD, #230, SHERMAN OAKS, 91403		
Global Id:	T0603704004		
Org Name:	Not reported		

DIXIE DIESEL STATION (Continued) **S102428845**

Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 4/6/1987
Lead Agency: Local Agency
Local Agency: 19000
Case Number: I-12830
Substance: Diesel
Case Type: Groundwater
Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Federal Funds
Date the Leak was Discovered: Not reported
How the Leak was Discovered: Subsurface Monitoring
How the Leak was Stopped: Not reported
Cause of Leak: Unknown
Leak Source: Unknown
Date The Leak was Stopped: Not reported
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: 2/3/1987
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: 6/20/1930
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 11/30/1993
Date Case Last Changed on Database: 11/30/1993
Enforcement Action Date: Not reported
Date Leak First Reported: 4/6/1987
Enforcement Type: IEA
Global ID : T0603704004
Organization : Not reported
Historical Max MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported
County: Los Angeles
Regional Board: 04
Owner Contact: Not reported
Responsible Party: GORTIKOV/HASLEY PARTNERS, LTD
RP Address: 15165 VENTURA BLVD, #230, SHERMAN OAKS, 91403
Significant Interim Remedial Action Taken: Not reported
Program : LIA
Lat / Long : 34.4680232 / -118.4689948
MTBE Counts : 0
MTBE Fuel : 0
MTBE Tested : NRQ
Local Agency Staff: UNK
Summary : 2215 MG/KG TPH IN SOIL AT 10'. 5 MG/L TPH IN WATER

DIXIE DIESEL STATION (Continued) **S102428845**

2ND LEAK REPORTED 1/29/91

OLD CASE #021089-08

Hydrologic Basin # : Not reported
Beneficial Use : Not reported
Priority : Not reported
Cleanup Fund Id : Not reported
Suspended : Not reported
Local Case No : Not reported
Substance Quantity : Not reported
Abatement Method Used at the Site: Excavate and Dispose
Operator : Not reported
Water System : CLEVELAND NATIONAL FOREST
Well Name : LPA REPORTED PRIMARY SOURCE
Approx. Dist To Production Well (ft) : 1452.0339321360871453471030342
W Global ID : W0607300028
Assigned Name : 3700028-001GEN
MTBE Class : Not reported

CORTESE:
Region: CORTESE
Fac Address 2: 29471 THE OLD ROAD

L57 ENE > 1 11058 ft. **NEWHALL LAND & FARMING CO** **LOS ANGELES CO. HMS** **S102064571**
28760 N CASTAIC CANYON RD **Cortese** **N/A**
VALENCIA, CA 91355 **LUST**

Relative: Higher

Actual: 1016 ft.

Site 1 of 2 in cluster L

State LUST:
Cross Street: Not reported
Qty Leaked: Not reported
Case Number I-05310
Reg Board: 4
Chemical: Gasoline
Lead Agency: Local Agency
Local Agency : 19000
Case Type: Soil only
Status: Case Closed
Review Date: Not reported
Workplan: Not reported
Pollution Char: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 01/10/1990
Release Date: 01/10/1990
Cleanup Fund Id : Not reported
Discover Date : / /
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 01/22/1990
Funding: Not reported
Staff Initials: Not reported
How Discovered: Not reported
How Stopped: Not reported
Interim : Not reported
Leak Cause: Not reported
Leak Source: Not reported
MTBE Date : / /
Confirm Leak: Not reported
Prelim Assess: Not reported
Remed Plan: Not reported

NEWHALL LAND & FARMING CO (Continued) **S102064571**

Max MTBE GW : 0 Parts per Billion
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JLC
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)
Oversight Prgm : LIA
Review Date : 01/29/1990
Stop Date : / /
Work Suspended :Not reported
Responsible PartyNEWHALL LAND & FARMING
RP Address: 23823 VALENCIA BOULEVARD, VALENCIA, 91355
Global Id: T0603703062
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 4:
Report Date: 1/10/1990
Lead Agency: Local Agency
Local Agency: 19000
Case Number: I-05310
Substance: Gasoline
Case Type: Soil
Status: Case Closed
Region: 4
Staff: Not reported
Source of Cleanup Funding: Not reported
Date the Leak was Discovered: Not reported
How the Leak was Discovered: Not reported
How the Leak was Stopped: Not reported
Cause of Leak: Not reported
Leak Source: Not reported
Date The Leak was Stopped: Not reported
Date Confirmation Leak Began: Not reported
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 1/10/1990
Date Case Last Changed on Database: 1/29/1990
Enforcement Action Date: Not reported
Date Leak First Reported: 1/10/1990

NEWHALL LAND & FARMING CO (Continued) **S102064571**

Enforcement Type: Not reported
Global ID : T0603703062
Organization : Not reported
Historical Max MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil : Not reported
County: Los Angeles
Regional Board: 04
Owner Contact: Not reported
Responsible Party: NEWHALL LAND & FARMING
RP Address: 23823 VALENCIA BOULEVARD, VALENCIA, 91355
Significant Interim Remedial Action Taken: Not reported
Program : LIA
Lat / Long : 34.4392614 / -118.6062849
MTBE Counts : 0
MTBE Fuel : 1
MTBE Tested : NT
Local Agency Staff: UNK
Summary : Not reported
Hydrologic Basin # : Not reported
Beneficial Use : Not reported
Priority : Not reported
Cleanup Fund Id : Not reported
Suspended : Not reported
Local Case No : Not reported
Substance Quantity : Not reported
Abatement Method Used at the Site: Not reported
Operator : Not reported
Water System : PETER PITCHESS HONOR RANCHO, LAC SHERIFF
Well Name : WELL 01A - INACTIVE
Approx. Dist To Production Well (ft) : 5154.1700564668503719162462375
W Global ID : W0603700046
Assigned Name : 1900046-008
MTBE Class : Not reported

CORTESE:
Region: CORTESE
Fac Address 2: 28760 CASTAIC CANYON RD

HMS:
Facility Id: 005116-005310
Area: 7
Facility Type: Not reported
Permit Number: 174 Permit Status: Not reported
Facility Status: Removed
Region: Los Angeles County:

Facility Id: 014173-014696
Area: 7
Facility Type: Not reported
Permit Number: 174 Permit Status: Not reported
Facility Status: Removed
Region: Los Angeles County:

NEWHALL LAND & FARMING CO (Continued) **S102064571**

L58 ENE > 1 11175 ft. **TRI-R-TRUCKING** **Cortese LUST** **S101298311 N/A**
28748 CASTAIC CANYON RD
VALENCIA, CA 91355

Site 2 of 2 in cluster L

Relative: Higher

Actual: 1016 ft.

State LUST:

Cross Street:	THE OLD RD
Qty Leaked:	Not reported
Case Number	I-15245
Reg Board:	4
Chemical:	Diesel
Lead Agency:	Local Agency
Local Agency :	19000
Case Type:	Soil only
Status:	Case Closed
Review Date:	Not reported
Workplan:	Not reported
Pollution Char:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	10/11/1994
Release Date:	10/29/1990
Cleanup Fund Id :	Not reported
Discover Date :	12/08/1989
Enforcement Dt :	Not reported
Enf Type:	Not reported
Enter Date :	12/05/1990
Funding:	Federal Funds
Staff Initials:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Interim :	Not reported
Leak Cause:	UNK
Leak Source:	UNK
MTBE Date :	/ /
Max MTBE GW :	0 Parts per Billion
MTBE Tested:	Not Required to be Tested.
Priority:	Not reported
Local Case # :	Not reported
Beneficial:	Not reported
Staff :	JLC
GW Qualifier :	Not reported
Max MTBE Soil :	Not reported
Soil Qualifier :	Not reported
Hydr Basin #:	Not reported
Operator :	JAMES, ED OLD CASE#120690-17
Oversight Prgm:	Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)
Oversight Prgm :	LIA
Review Date :	10/11/1994
Stop Date :	12/08/1989
Work Suspended :	Not reported
Responsible Party	TRI-R TRUCKING
RP Address:	28748 CASTIAC CYN RD, VALENCIA CA 91355
Global Id:	T0603704280
Org Name:	Not reported
Contact Person:	Not reported

Confirm Leak:	Not reported
Prelim Assess:	Not reported
Remed Plan:	Not reported

TRI-R-TRUCKING (Continued) **S101298311**

MTBE Conc:	0
Mtbe Fuel:	0
Water System Name:	Not reported
Well Name:	Not reported
Distance To Lust:	0
Waste Discharge Global ID:	Not reported
Waste Disch Assigned Name:	Not reported

LUST Region 4:

Report Date:	10/29/1990
Lead Agency:	Local Agency
Local Agency:	19000
Case Number:	I-15245
Substance:	Diesel
Case Type:	Soil
Status:	Case Closed
Region:	4
Staff:	Not reported
Source of Cleanup Funding:	Federal Funds
Date the Leak was Discovered:	12/8/1989
How the Leak was Discovered:	Tank Closure
How the Leak was Stopped:	Close Tank
Cause of Leak:	Unknown
Leak Source:	Unknown
Date The Leak was Stopped:	12/8/1989
Date Confirmation Leak Began:	Not reported
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	Not reported
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Date the Case was Closed:	10/11/1994
Date Case Last Changed on Database:	10/11/1994
Enforcement Action Date:	Not reported
Date Leak First Reported:	10/29/1990
Enforcement Type:	Not reported
Global ID :	T0603704280
Organization :	Not reported
Historical Max MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil :	Not reported
County:	Los Angeles
Regional Board:	04
Owner Contact:	Not reported
Responsible Party:	TRI-R TRUCKING
RP Address:	28748 CASTIAC CYN RD, VALENCIA CA 91355
Significant Interim Remedial Action Taken:	Not reported
Program :	LIA
Lat / Long :	34.4389004 / -118.6060599
MTBE Counts :	0
MTBE Fuel :	0
MTBE Tested :	NRQ
Local Agency Staff:	UNK
Summary :	Not reported
Hydrologic Basin # :	Not reported

TRI-R-TRUCKING (Continued) **S101298311**

Beneficial Use :	Not reported
Priority :	Not reported
Cleanup Fund Id :	Not reported
Suspended :	Not reported
Local Case No :	Not reported
Substance Quantity :	Not reported
Abatement Method Used at the Site:	Not reported
Operator :	JAMES, ED OLD CASE#120690-17
Water System :	PETER PITCHESS HONOR RANCHO, LAC SHERIFF
Well Name :	WELL 01A - INACTIVE
Approx. Dist To Production Well (ft) :	5301.736465194323767948137824 3
W Global ID :	W0603700046
Assigned Name :	1900046-008
MTBE Class :	Not reported

CORTESE:
Region: CORTESE
Fac Address 2: 28748 CASTAIC CANYON RD

59
NE
> 1
11470 ft.

N/B I-5, CASTAIC INSP FACILITY **CHMIRS** **S100279769**
SANTA CLARITA, CA **N/A**

Relative: Higher

Actual: 1039 ft.

CHMIRS:

OES Control Number:	9010073
Chemical Name:	Not reported
Extent of Release:	Not reported
Property Use:	099
Incident Date:	09-FEB-90
Date Completed:	09-FEB-90
Time Completed :	645
Agency Id Number :	66
Agency Incident Number :	90-027
OES Incident Number :	9010073
Time Notified :	15
Surrounding Area :	099
Estimated Temperature :	Not reported
Property Management :	S
More Than Two Substances Involved? :	N
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	0
Others Number Of Decontaminated :	0
Others Number Of Injuries :	0
Others Number Of Fatalities :	0
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	L. ACEVEDO #8721

(Continued) **S100279769**

Report Date :	20-MAR-90
Comments :	Not reported
Facility Telephone Number :	916 327-3310
Waterway Involved :	Not reported
Waterway :	Not reported
Spill Site :	Not reported
Cleanup By :	Not reported
Containment :	Not reported
What Happened :	Not reported
Type :	Not reported
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	Not reported
Evacuations :	Not reported

60
ENE
> 1
11471 ft.

CHEVRON STATION 9 1899 **RCRIS-SQG** **1000886345**
28805 THE OLD RD **FINDS** **CA0000138552**
VALENCIA, CA 91355 **Cortese**

Relative: Higher

Actual: 1019 ft.

RCRIS:

Owner:	CHEVRON U S A PRODUCTS CO (310) 694-7452
EPA ID:	CA0000138552
Contact:	RAMON J CRESSALL (805) 257-2584
Classification:	Small Quantity Generator
TSDF Activities:	Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

CORTESE:
Region: CORTESE
Fac Address 2: Not reported

61
NNE
> 1
13061 ft.

HASELY CYN 1MI NORTH OF THE OLD ROAD **CHMIRS** **S100275931**
CASTAIC, CA 91355 **N/A**

Relative: Higher

Actual: 1047 ft.

CHMIRS:

OES Control Number:	9012379
Chemical Name:	Not reported
Extent of Release:	Not reported
Property Use:	Vacant Lot
Incident Date:	13-AUG-90
Date Completed:	13-AUG-90
Time Completed :	2115
Agency Id Number :	19110
Agency Incident Number :	A-65
OES Incident Number :	9012379
Time Notified :	1956

(Continued) — **S100275931**

Surrounding Area :	936
Estimated Temperature :	80
Property Management :	P
More Than Two Substances Involved? :	Y
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Y
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	0
Others Number Of Decontaminated :	0
Others Number Of Injuries :	0
Others Number Of Fatalities :	0
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	MARTIN L. SCOTT #081235
Report Date :	13-AUG-90
Comments :	Yes
Facility Telephone Number :	213 267-2401
Waterway Involved :	Not reported
Waterway :	Not reported
Spill Site :	Not reported
Cleanup By :	Not reported
Containment :	Not reported
What Happened :	Not reported
Type :	Not reported
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	Not reported
Evacuations :	Not reported

MAP FINDINGS - EDR PROPRIETARY HISTORICAL DATABASES

YEAR	NAME	ADDRESS	CITY	ST	DIR.	DIST.	ELEV.	TYPE

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

EDR Historical Gas Station & Dry Cleaner Search: No mapped sites were found in EDR's search of the EDR Historical Gas Station & Dry Cleaner Database within 0.250 mile of the Target Property.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CANYON COUNTRY	S105774538	TWO WATER WELLS RESTORATION	SIERRA HWY. / ARLINE ST.	91355	CA WDS
CASTAIC	S105628449	SCHOOL ON 18 ACRE SITE	RIDGE ROUTE ROAD	91384	SCH
LOS ANGELES COUNTY	S105637568		BERTH 70, LONG BEACH HARBOUR		CHMIRS, HAZNET
LOS ANGELES COUNTY	S105641187		BERTH 30 LONG BEACH HARBOUR		CHMIRS, HAZNET
LOS ANGELES COUNTY	S105630661		FLORENCE AVE / TELEGRAPH RD WHITTIER		CHMIRS, LUST
SANTA CLARITA	S105774545	COMMERCE CENTER BRIDGE	HWY.126 / THE OLD ROAD	91355	CA WDS
SANTA CLARITA	S105774543	CASTAIC CREEK CHANNEL LINING	HWY. 126 / THE OLD ROAD	91355	CA WDS
SANTA CLARITA	S105774544	HWY. 126 BRIDGE	HWY. 126 / CASTAIC CREEK	91355	CA WDS
SANTA CLARITA	1005441285	DEPARTMENT OF TRANSPORTATION	RTE 5 MAGIC MOUNTAIN PKWY EXIT	91355	RCRIS-SQG, FINDS
SANTA CLARITA	S105774555	GOLDEN VALLEY ROAD EXTENSION	BETWEEN SIERRA HWY / SOLEDAD CYN RD	91355	CA WDS
SANTA CLARITA	S106085278	CSI CRIME SCENE INVESTIGATION	3 MILES N OF TEMPLIN HWY ON	91355	HAZNET
VALENCIA	S106089351	CALIFORNIA INSTITUTE OF THE ARTS	VY #147 MCBEAN PRKWY / HWY 5	91355	HAZNET
VALENCIA	1000119892	PPG INDUSTRIES INC WORKS 24	25663 W AVE STANFORD	91355	RCRIS-SQG, RCRIS-TSD, FINDS, CORRACTS, CERC-NFRAP, LOS ANGELES CO. HMS
VALENCIA	S103646510	PRODUCTION GOODBYE LOVER	25135 AVENUE ANZA	91355	HAZNET
VALENCIA	S103646520	LOS ANGELES COUNTY FIRE DEPT	27223 HENRY MAYO DR- STATION 76	91355	HAZNET
VALENCIA	S105090242	TECHNICAL TROUBLE SHOOTING	24932 KEARNY AVENUE	91355	HAZNET
VALENCIA	S105774562	WATER WELL NO. W-11	S MCBEAN / COPPERHILL DR	91355	CA WDS
VALENCIA	1006839028	HOWARD CUSTOM BOATS INCORPORATED	28113 STANFORD AVENUE	91355	FINDS, EMI, HAZNET
VALENCIA	S101480564	GRUBER SYSTEMS, INC	25636 STANFORD AVENUE	91355	REF

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/21/03
Date Made Active at EDR: 12/08/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 11/03/03
Elapsed ASTM days: 35
Date of Last EDR Contact: 11/03/03

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 10/14/03
Date Made Active at EDR: 12/08/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 11/03/03

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 09/11/03
Date Made Active at EDR: 10/29/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 09/24/03
Elapsed ASTM days: 35
Date of Last EDR Contact: 12/22/03

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 09/11/03
Date Made Active at EDR: 10/29/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 09/24/03
Elapsed ASTM days: 35
Date of Last EDR Contact: 12/22/03

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/17/03
Date Made Active at EDR: 11/11/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 10/01/03
Elapsed ASTM days: 41
Date of Last EDR Contact: 12/08/03

RCRIS: Resource Conservation and Recovery Information System
Source: EPA
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/10/03
Date Made Active at EDR: 10/01/03
Database Release Frequency: Varies
Date of Data Arrival at EDR: 09/11/03
Elapsed ASTM days: 20
Date of Last EDR Contact: 11/18/03

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/02
Date Made Active at EDR: 02/03/03
Database Release Frequency: Annually
Date of Data Arrival at EDR: 01/27/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 10/27/03

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/01/01
Database Release Frequency: Biennially
Date of Last EDR Contact: 12/16/03
Date of Next Scheduled EDR Contact: 03/15/04

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies
Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/09/03
Database Release Frequency: Annually
Date of Last EDR Contact: 10/08/03
Date of Next Scheduled EDR Contact: 01/05/04

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/21/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/23/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/07/03
Date of Next Scheduled EDR Contact: 01/05/04

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 08/11/03
Database Release Frequency: Annually
Date of Last EDR Contact: 10/23/03
Date of Next Scheduled EDR Contact: 01/19/04

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/16/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/07/03
Date of Next Scheduled EDR Contact: 01/05/04

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 08/27/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/29/03
Date of Next Scheduled EDR Contact: 03/29/04

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91 — Date of Last EDR Contact: 11/21/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 02/23/04

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/30/03 — Date of Last EDR Contact: 11/12/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 02/09/04

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-648-5920
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03 — Date of Last EDR Contact: 11/12/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/09/04

STORMWATER: Storm Water General Permits
Source: Environmental Protection Agency
Telephone: 202 564-0746
A listing of all facilities with Storm Water General Permits.

Date of Government Version: N/A — Date of Last EDR Contact: N/A
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: N/A

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 07/15/03 — Date of Last EDR Contact: 12/17/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 03/15/04

RMP: Risk Management Plans
Source: Environmental Protection Agency
Telephone: 202-564-8600
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: N/A — Date of Last EDR Contact: N/A
Database Release Frequency: N/A — Date of Next Scheduled EDR Contact: N/A

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95 — Date of Last EDR Contact: 12/08/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 03/08/04

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-260-1531
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/01 — Date of Last EDR Contact: 12/22/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 03/22/04

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: Every 4 Years — Date of Next Scheduled EDR Contact: 01/19/04

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-564-2501

Date of Government Version: 10/16/03 — Date of Last EDR Contact: 12/22/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/22/04

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-5008
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/01 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 01/19/04

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-564-2501
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/16/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 11/30/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Annually
Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 38
Date of Last EDR Contact: 12/01/03

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 11/30/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 38
Date of Last EDR Contact: 12/01/03

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/02
Date Made Active at EDR: 08/07/03
Database Release Frequency: Varies
Date of Data Arrival at EDR: 07/11/03
Elapsed ASTM days: 27
Date of Last EDR Contact: 11/24/03

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 04/01/01
Date Made Active at EDR: 07/26/01
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 05/29/01
Elapsed ASTM days: 58
Date of Last EDR Contact: 10/27/03

NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Made Active at EDR: 11/19/93
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 10/20/03

TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95
Date Made Active at EDR: 09/26/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 08/30/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 11/03/03

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/14/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 12/16/03
Elapsed ASTM days: 23
Date of Last EDR Contact: 12/16/03

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00
Date Made Active at EDR: 05/10/00
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 04/10/00
Elapsed ASTM days: 30
Date of Last EDR Contact: 12/09/03

LUST: Leaking Underground Storage Tank Information System
Source: State Water Resources Control Board
Telephone: 916-341-5740
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/02/03
Date Made Active at EDR: 04/25/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 04/16/03
Elapsed ASTM days: 9
Date of Last EDR Contact: 10/14/03

CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89
Date Made Active at EDR: 08/02/94
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Telephone: 916-341-5700
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 04/02/03
Date Made Active at EDR: 04/30/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 04/16/03
Elapsed ASTM days: 14
Date of Last EDR Contact: 10/14/03

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/30/03 — Date of Data Arrival at EDR: 12/01/03
Date Made Active at EDR: 12/23/03 — Elapsed ASTM days: 22
Database Release Frequency: Quarterly — Date of Last EDR Contact: 12/01/03

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 9
Telephone: 415-972-3368

Date of Government Version: 12/05/03 — Date of Data Arrival at EDR: 12/05/03
Date Made Active at EDR: 01/08/04 — Elapsed ASTM days: 34
Database Release Frequency: Varies — Date of Last EDR Contact: 11/24/03

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-445-6532
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94 — Date of Data Arrival at EDR: 09/05/95
Date Made Active at EDR: 09/29/95 — Elapsed ASTM days: 24
Database Release Frequency: No Update Planned — Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5700
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90 — Date of Data Arrival at EDR: 01/25/91
Date Made Active at EDR: 02/12/91 — Elapsed ASTM days: 18
Database Release Frequency: No Update Planned — Date of Last EDR Contact: 07/26/01

STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-341-5712
Registered Aboveground Storage Tanks.

Date of Government Version: 07/01/03 — Date of Last EDR Contact: 11/03/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 02/02/04

CLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-225-0873
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 11/26/03 — Date of Last EDR Contact: 01/07/04
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 04/05/04

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-657-1571
Sites which have been issued waste discharge requirements.

Date of Government Version: 09/22/03 — Date of Last EDR Contact: 12/22/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/22/04

DEED: List of Deed Restrictions
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes.

Date of Government Version: 10/07/03 — Date of Last EDR Contact: 10/08/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/05/04

NFA: No Further Action Determination
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

Date of Government Version: 11/30/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/01/04

EMI: Emissions Inventory Data
Source: California Air Resources Board
Telephone: 916-322-2990
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/01 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 01/19/04

REF: Unconfirmed Properties Referred to Another Agency
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 11/30/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/01/04

SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/30/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/01/04

NFE: Properties Needing Further Evaluation
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA In Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 11/30/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/01/04

HAZNET: Hazardous Waste Information System
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/02 — Date of Last EDR Contact: 11/11/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 02/09/04

LOCAL RECORDS

ALAMEDA COUNTY:

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 12/09/03 — Date of Last EDR Contact: 10/27/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/26/04

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 07/03/03 — Date of Last EDR Contact: 10/27/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/26/04

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 12/01/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 03/01/04

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/07/03 — Date of Last EDR Contact: 10/08/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/09/04

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Kern County Sites and Tanks Listing.

Date of Government Version: 07/25/03 — Date of Last EDR Contact: 12/22/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/08/04

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 06/03/03 — Date of Last EDR Contact: 11/21/03
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 02/16/04

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-524-2236

Date of Government Version: 09/11/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/16/04

City of Long Beach Underground Storage Tank
Source: City of Long Beach Fire Department
Telephone: 562-570-2543

Date of Government Version: 03/28/03 — Date of Last EDR Contact: 11/24/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 02/23/04

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 09/03/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/16/04

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 03/01/02 — Date of Last EDR Contact: 12/16/03
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 03/15/04

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/30/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/16/04

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/07/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 02/16/04

San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98 — Date of Last EDR Contact: 07/06/99
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: N/A

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 08/19/03 — Date of Last EDR Contact: 11/03/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/02/04

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/02/03 — Date of Last EDR Contact: 12/29/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 03/29/04

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/02/03 — Date of Last EDR Contact: 12/29/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 03/29/04

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/01/03 — Date of Last EDR Contact: 11/25/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/08/04

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 09/02/03 — Date of Last EDR Contact: 12/19/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/08/04

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 10/24/00 — Date of Last EDR Contact: 12/08/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 03/08/04

PLACER COUNTY:

Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 10/16/03 — Date of Last EDR Contact: 12/22/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 03/22/04

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/03/03 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/19/04

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 05/30/03 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/19/04

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 07/17/03 — Date of Last EDR Contact: 11/03/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 02/02/04

ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 07/17/03 — Date of Last EDR Contact: 11/03/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 02/02/04

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 09/30/03 — Date of Last EDR Contact: 12/08/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/08/04

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00 — Date of Last EDR Contact: 11/21/03
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 02/23/04

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 10/31/03 — Date of Last EDR Contact: 10/07/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/05/04

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 12/09/03 — Date of Last EDR Contact: 12/08/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/08/04

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 09/11/03 — Date of Last EDR Contact: 12/08/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/08/04

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 11/24/03 — Date of Last EDR Contact: 10/27/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/26/04

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 11/13/03 — Date of Last EDR Contact: 10/13/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 01/12/04

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 07/02/03 — Date of Last EDR Contact: 12/29/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 03/29/04

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 10/01/03 — Date of Last EDR Contact: 12/08/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 03/08/04

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 08/21/03 — Date of Last EDR Contact: 12/16/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/15/04

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 08/21/03 — Date of Last EDR Contact: 12/16/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/15/04

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-565-6565

Date of Government Version: 10/01/03 — Date of Last EDR Contact: 10/27/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/26/04

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 07/01/01 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/05/04

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 09/01/02 — Date of Last EDR Contact: 11/26/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 02/23/04

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 09/26/03 — Date of Last EDR Contact: 12/16/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/15/04

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 07/30/03 — Date of Last EDR Contact: 10/16/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/12/04

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/02/03 — Date of Last EDR Contact: 12/16/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 03/15/04

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 10/29/03 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 01/19/04

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01 — Date of Last EDR Contact: 11/21/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 02/23/04

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 03/28/03 — Date of Last EDR Contact: 10/14/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/12/04

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 05/19/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 02/16/04

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 08/09/01 — Date of Last EDR Contact: 12/31/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 03/29/04

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-255-3125

Date of Government Version: 07/01/03 — Date of Last EDR Contact: 10/16/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/05/04

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/03 — Date of Last EDR Contact: 12/08/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 03/08/04

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 11/13/03 — Date of Last EDR Contact: 10/07/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/05/04

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 07/02/02 — Date of Last EDR Contact: 12/29/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 03/29/04

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4498
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/16/03 — Date of Last EDR Contact: 11/12/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 02/09/04

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: 01/19/04

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 04/03/03 — Date of Last EDR Contact: 11/21/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/23/04

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 03/28/03 — Date of Last EDR Contact: 10/14/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/12/04

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 09/16/03 — Date of Last EDR Contact: 11/17/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 02/16/04

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 10/01/03 — Date of Last EDR Contact: 10/27/03
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 01/26/04

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-855-3075
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 10/20/03 — Date of Last EDR Contact: 10/07/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/05/04

SLIC REG 6L: SLIC Sites
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574

Date of Government Version: 09/09/03 — Date of Last EDR Contact: 12/08/03
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 03/08/04

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 05/08/03 — Date of Last EDR Contact: 10/07/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/05/04

SLIC REG 7: SLIC List
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491

Date of Government Version: 05/29/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 02/23/04

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-3298

Date of Government Version: 04/01/03 — Date of Last EDR Contact: 10/20/03
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 01/05/04

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 12/01/03 — Date of Last EDR Contact: 12/01/03
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 03/04/04

EDR PROPRIETARY HISTORICAL DATABASES

EDR Historical Gas Station and Dry Cleaners: EDR has searched select national collections of business directories and has collected listings of potential dry cleaner and gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning and gas station/filling station/service station establishments. The categories reviewed included, but were not limited to: *gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, dry cleaner, cleaners, laundry, laundromat, cleaning/laundry, wash & dry, etc.*

This information is meant to assist and complement environmental professionals in their conduct of environmental site assessments, and is not meant to be a substitute for a full historical investigation as defined in ASTM E1527. The information provided in this proprietary database may or may not be complete; i.e., the absence of a dry cleaner or gas station/filling station/service station site does not necessarily mean that such a site did not exist in the area covered by this report.

(A note on "dry cleaning" sites: it is not possible for EDR to differentiate between establishments that use PERC on-site as a cleaning solvent and sites that function simply as drop-off and pick-up locations or that are traditional wet cleaning/laundry facilities. Therefore, it is essential for environmental professionals to incorporate professional judgment in the evaluation of each site.)

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

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The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

BROWNFIELDS DATABASES

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: N/A
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

TENTATIVE TRACT MAP NO. 53108
WOLCOTT WAY/HENRY MAYO DRIVE
VALENCIA, CA 91355

TARGET PROPERTY COORDINATES

Latitude (North):	34.424301 - 34' 25' 27.5"
Longitude (West):	118.637299 - 118' 38' 14.3"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	349543.9
UTM Y (Meters):	3810222.8
Elevation:	958 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

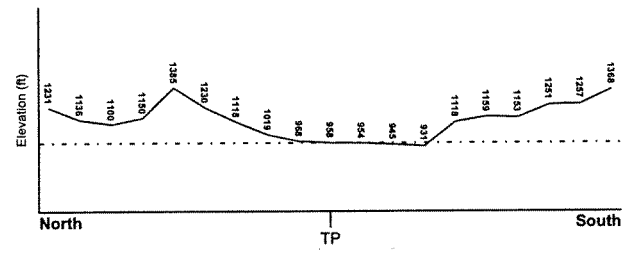
TOPOGRAPHIC INFORMATION

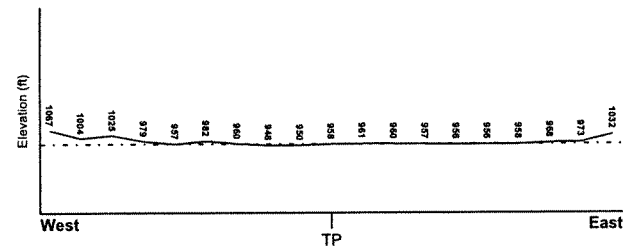
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	34118-D6 VAL VERDE, CA
General Topographic Gradient:	General South
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 958 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
LOS ANGELES, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0650430340B

Additional Panels in search area: 0650430475B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
VAL VERDE	Not Available

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era: Cenozoic
System: Tertiary
Series: Pliocene
Code: Tpc *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Continental Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: PICO

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	14 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 8.40 Min: 7.90
2	14 inches	54 inches	stratified	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 8.40 Min: 7.90
3	54 inches	60 inches	stratified	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 20.00 Min: 6.00	Max: 8.40 Min: 7.90

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: clay loam
sand
gravelly - sand
gravelly - sandy loam
loamy sand
loam
silty clay loam

Surficial Soil Types: clay loam
sand
gravelly - sand
gravelly - sandy loam
loamy sand
loam
silty clay loam

Shallow Soil Types: loamy fine sand

Deeper Soil Types: loam
coarse sand

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	4565	1/4 - 1/2 Mile ENE

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles North
2 - 3 Miles NNW	2 - 3 Miles North
2 - 3 Miles North	2 - 3 Miles NNW
2 - 3 Miles NNW	2 - 3 Miles NW
2 - 3 Miles NNE	2 - 3 Miles NNW
1 - 2 Miles North	2 - 3 Miles NNW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
2 - 3 Miles NNW	2 - 3 Miles NNW
2 - 3 Miles NE	2 - 3 Miles NW
1 - 2 Miles NNW	1 - 2 Miles NNW
1 - 2 Miles NNW	2 - 3 Miles NNW
1 - 2 Miles NNW	1 - 2 Miles NNW
1 - 2 Miles North	2 - 3 Miles NE
1 - 2 Miles North	1 - 2 Miles North
1 - 2 Miles NNE	2 - 3 Miles WNW
1 - 2 Miles NNW	2 - 3 Miles ENE
1 - 2 Miles NW	1 - 2 Miles NE
1 - 2 Miles WNW	1 - 2 Miles WNW
1 - 2 Miles WNW	1 - 2 Miles WNW
2 - 3 Miles WNW	1/2 - 1 Mile NNW
2 - 3 Miles WNW	1 - 2 Miles WNW
1/2 - 1 Mile NNW	1 - 2 Miles ENE
1 - 2 Miles WNW	2 - 3 Miles WNW
1 - 2 Miles ENE	1 - 2 Miles WNW
1 - 2 Miles WNW	1 - 2 Miles WNW
1 - 2 Miles WNW	1/2 - 1 Mile NE
1 - 2 Miles WNW	2 - 3 Miles West
1 - 2 Miles ENE	1 - 2 Miles WNW
2 - 3 Miles East	1/2 - 1 Mile ENE
1 - 2 Miles East	1 - 2 Miles West
2 - 3 Miles West	1 - 2 Miles East
1 - 2 Miles West	2 - 3 Miles West
1 - 2 Miles West	1 - 2 Miles West
2 - 3 Miles West	1 - 2 Miles West
2 - 3 Miles West	1 - 2 Miles West
2 - 3 Miles West	1 - 2 Miles East
1/2 - 1 Mile ENE	1 - 2 Miles West
1 - 2 Miles West	1 - 2 Miles West
2 - 3 Miles West	2 - 3 Miles West
2 - 3 Miles West	2 - 3 Miles West
2 - 3 Miles West	1 - 2 Miles West
2 - 3 Miles West	2 - 3 Miles West
1 - 2 Miles West	1 - 2 Miles West
2 - 3 Miles West	1 - 2 Miles East
1 - 2 Miles West	1 - 2 Miles West
2 - 3 Miles West	1 - 2 Miles East
1 - 2 Miles West	1 - 2 Miles West
2 - 3 Miles West	1 - 2 Miles East
2 - 3 Miles West	2 - 3 Miles West
1 - 2 Miles West	1/4 - 1/2 Mile ENE
1 - 2 Miles East	1 - 2 Miles West
1 - 2 Miles West	1 - 2 Miles West
1 - 2 Miles West	2 - 3 Miles West
1 - 2 Miles West	1 - 2 Miles West
1/4 - 1/2 Mile East	2 - 3 Miles West
2 - 3 Miles East	1 - 2 Miles West
2 - 3 Miles West	2 - 3 Miles West
1 - 2 Miles East	1/2 - 1 Mile East
2 - 3 Miles West	2 - 3 Miles West
1 - 2 Miles West	2 - 3 Miles West
1 - 2 Miles West	2 - 3 Miles West
1/4 - 1/2 Mile West	1/2 - 1 Mile West

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1/2 - 1 Mile West	2 - 3 Miles West
1 - 2 Miles West	0 - 1/8 Mile SSW
1 - 2 Miles West	2 - 3 Miles West
2 - 3 Miles West	1 - 2 Miles West
1 - 2 Miles West	2 - 3 Miles West
2 - 3 Miles West	2 - 3 Miles West
2 - 3 Miles West	1 - 2 Miles East
2 - 3 Miles West	1 - 2 Miles East
1 - 2 Miles East	1 - 2 Miles East
1 - 2 Miles East	1/2 - 1 Mile ESE
1 - 2 Miles ESE	2 - 3 Miles West
2 - 3 Miles East	2 - 3 Miles West
1/4 - 1/2 Mile South	2 - 3 Miles West
1 - 2 Miles ESE	1 - 2 Miles East
1 - 2 Miles ESE	1/4 - 1/2 Mile SSW
1 - 2 Miles ESE	2 - 3 Miles West
2 - 3 Miles West	1/2 - 1 Mile ESE
1 - 2 Miles ESE	1 - 2 Miles ESE
2 - 3 Miles ESE	1/2 - 1 Mile SE
1 - 2 Miles ESE	1 - 2 Miles ESE
2 - 3 Miles WSW	2 - 3 Miles WSW
1/2 - 1 Mile SE	2 - 3 Miles WSW
1 - 2 Miles ESE	1/2 - 1 Mile SE
1/2 - 1 Mile SE	1 - 2 Miles ESE
1 - 2 Miles ESE	1/2 - 1 Mile SE
1 - 2 Miles ESE	1/2 - 1 Mile SSE
1 - 2 Miles ESE	1 - 2 Miles ESE
2 - 3 Miles ESE	2 - 3 Miles ESE
1 - 2 Miles ESE	1 - 2 Miles SW
1 - 2 Miles ESE	1 - 2 Miles ESE
1 - 2 Miles SE	2 - 3 Miles WSW
1 - 2 Miles SE	1 - 2 Miles ESE
2 - 3 Miles ESE	1 - 2 Miles ESE
1 - 2 Miles SE	1 - 2 Miles SE
2 - 3 Miles ESE	2 - 3 Miles ESE
1 - 2 Miles SE	1 - 2 Miles SE
1 - 2 Miles ESE	1 - 2 Miles SE
1 - 2 Miles ESE	1 - 2 Miles SSW
2 - 3 Miles ESE	1 - 2 Miles WSW
2 - 3 Miles ESE	1 - 2 Miles WSW
1 - 2 Miles SW	1 - 2 Miles South
1 - 2 Miles SSW	1 - 2 Miles SW
1 - 2 Miles SSW	1 - 2 Miles SW
1 - 2 Miles SW	1 - 2 Miles SSW
1 - 2 Miles SW	1 - 2 Miles SW
1 - 2 Miles SW	1 - 2 Miles South
1 - 2 Miles SSW	1 - 2 Miles South
1 - 2 Miles SSW	1 - 2 Miles SE
1 - 2 Miles SW	1 - 2 Miles SW
1 - 2 Miles SW	1 - 2 Miles SSE
1 - 2 Miles SW	1 - 2 Miles SW
1 - 2 Miles South	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles South
1 - 2 Miles SW	1 - 2 Miles SSW
1 - 2 Miles SSW	1 - 2 Miles SSW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	
1 - 2 Miles	SSE
1 - 2 Miles	SSW
1 - 2 Miles	SE
1 - 2 Miles	SW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	SW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSE
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	SSE
1 - 2 Miles	South
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	SSE
1 - 2 Miles	South
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	South
2 - 3 Miles	SSE
1 - 2 Miles	South
1 - 2 Miles	South
2 - 3 Miles	South
1 - 2 Miles	South
2 - 3 Miles	SSE
2 - 3 Miles	South
2 - 3 Miles	SSE
2 - 3 Miles	South
2 - 3 Miles	South
2 - 3 Miles	SSE
2 - 3 Miles	South
2 - 3 Miles	South
2 - 3 Miles	SSE
2 - 3 Miles	South
2 - 3 Miles	SSE

DISTANCE FROM TP (Miles)	
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	SSE
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	South
2 - 3 Miles	SW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	SSE
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	SSW
1 - 2 Miles	SSW
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	South
1 - 2 Miles	SSE
1 - 2 Miles	South
2 - 3 Miles	SSW
1 - 2 Miles	South
2 - 3 Miles	South
2 - 3 Miles	South
2 - 3 Miles	SSE
2 - 3 Miles	SSE
2 - 3 Miles	South
2 - 3 Miles	South
2 - 3 Miles	South
2 - 3 Miles	SSE
2 - 3 Miles	SSE
2 - 3 Miles	South
2 - 3 Miles	South
2 - 3 Miles	South

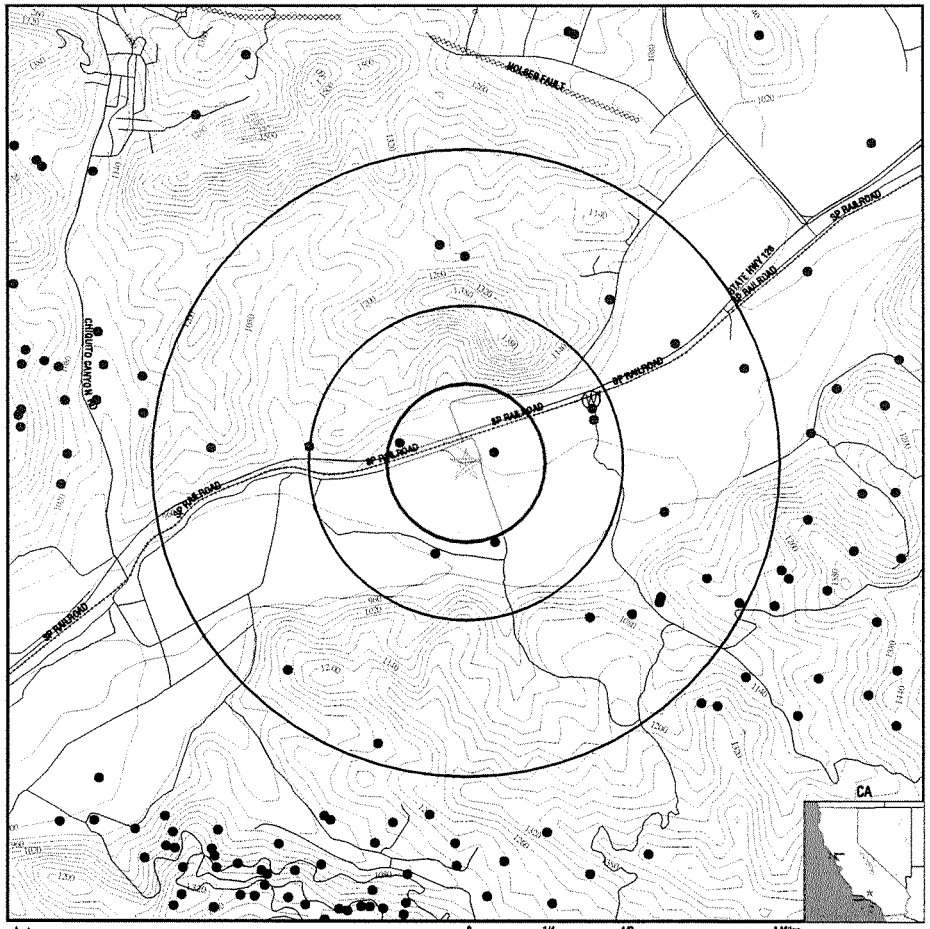
GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	
2 - 3 Miles	SSE
2 - 3 Miles	South
2 - 3 Miles	South
2 - 3 Miles	South
2 - 3 Miles	South
2 - 3 Miles	SSE
2 - 3 Miles	SSE

DISTANCE FROM TP (Miles)	
2 - 3 Miles	South
2 - 3 Miles	SSE
2 - 3 Miles	SSE
2 - 3 Miles	South
2 - 3 Miles	SSW
2 - 3 Miles	SSE
2 - 3 Miles	SSE

PHYSICAL SETTING SOURCE MAP - 1108642.4s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

TARGET PROPERTY:	Tentative Tract Map No. 53108	CUSTOMER:	Building Analytics
ADDRESS:	Wolcott Way/Henry Mayo Drive	CONTACT:	Joe Montoya
CITY/STATE/ZIP:	Valencia CA 91355	INQUIRY #:	1108642.4s
LAT/LONG:	34.4243 / 118.6373	DATE:	January 08, 2004 12:47 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation	Database	EDR ID Number
1 **ENE** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**4565**

Water System Information:

Prime Station Code:	04N/17W-14Q07 S	User ID:	19C
FRDS Number:	1909014001	County:	Los Angeles
District Number:	49	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	342538.0 1183746.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL C-6		
System Number:	1909014		
System Name:	WALNUT HILL		
Organization That Operates System:	23823 VALENCIA VALENCIA, CA 91355		
Pop Served:	50	Connections:	10
Area Served:	Not Reported		

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

North
2 - 3 Miles | **OIL_GAS** | **CA00010927**

Well Number:	5	Status:	Completed oil- directional
API Number:	03722953	Operator:	Petrominerals Corporation
Latitude:	34.459921	Longitude:	-118.636642
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00010926**

Well Number:	4	Status:	Completed oil- directional
API Number:	03722948	Operator:	Petrominerals Corporation
Latitude:	34.459793	Longitude:	-118.636673
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00011006**

Well Number:	7	Status:	Completed oil
API Number:	03722750	Operator:	Petrominerals Corporation
Latitude:	34.459727	Longitude:	-118.640970
Region:	2	Lease:	Burns Crist
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00011004**

Well Number:	5	Status:	001
API Number:	03724193	Operator:	Petrominerals Corporation
Latitude:	34.459573	Longitude:	-118.640939
Region:	2	Lease:	Burns Crist
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

North
2 - 3 Miles | **OIL_GAS** | **CA00010953**

Well Number:	1	Status:	Completed oil- directional
API Number:	03722739	Operator:	Petrominerals Corporation
Latitude:	34.458657	Longitude:	-118.639917
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00011005**

Well Number:	6	Status:	Completed oil
API Number:	03722740	Operator:	Petrominerals Corporation
Latitude:	34.458523	Longitude:	-118.641679
Region:	2	Lease:	Burns Crist
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00010925**

Well Number:	2	Status:	Completed oil
API Number:	03722940	Operator:	Petrominerals Corporation
Latitude:	34.458479	Longitude:	-118.639731
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00010950**

Well Number:	3	Status:	Completed oil- directional
API Number:	03722747	Operator:	Petrominerals Corporation
Latitude:	34.457277	Longitude:	-118.639759
Region:	2	Lease:	McGillivrae
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

North
2 - 3 Miles | **OIL_GAS** | **CA00010948**

Well Number:	9	Status:	001
API Number:	03724195	Operator:	Petrominerals Corporation
Latitude:	34.456633	Longitude:	-118.641273
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00010941**

Well Number:	10	Status:	001
API Number:	03724196	Operator:	Petrominerals Corporation
Latitude:	34.456607	Longitude:	-118.641520
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00010946**

Well Number:	7	Status:	Completed oil
API Number:	03722727	Operator:	Petrominerals Corporation
Latitude:	34.456428	Longitude:	-118.641365
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00010947**

Well Number:	8	Status:	001
API Number:	03724194	Operator:	Petrominerals Corporation
Latitude:	34.456353	Longitude:	-118.641056
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

NNW
2 - 3 Miles | **OIL_GAS** | **CA00013454**

Well Number:	17	Status:	Plugged and abandoned oil
API Number:	03707260	Operator:	G. R. Nance Co., Inc
Latitude:	34.456041	Longitude:	-118.656948
Region:	2	Lease:	Towle
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00010949**

Well Number:	2	Status:	Completed oil
API Number:	03722349	Operator:	Petrominerals Corporation
Latitude:	34.455897	Longitude:	-118.639788
Region:	2	Lease:	McGillivrae
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
2 - 3 Miles | **OIL_GAS** | **CA00010945**

Well Number:	6	Status:	Completed oil
API Number:	03722340	Operator:	Petrominerals Corporation
Latitude:	34.455253	Longitude:	-118.641239
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | **OIL_GAS** | **CA00010966**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03721689	Operator:	Petrominerals Corporation
Latitude:	34.455147	Longitude:	-118.656791
Region:	2	Lease:	Hilgenfeld
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

NNW
2 - 3 Miles | **OIL_GAS** | **CA00013495**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03707259	Operator:	Federal Oil Company
Latitude:	34.454320	Longitude:	-118.652337
Region:	2	Lease:	Federal-Towle
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NW
2 - 3 Miles | **OIL_GAS** | **CA00010784**

Well Number:	88-4	Status:	Plugged and abandoned oil
API Number:	03707261	Operator:	Porsco Operating Company
Latitude:	34.454295	Longitude:	-118.659325
Region:	2	Lease:	Claiborne
Section:	04	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNE
2 - 3 Miles | **OIL_GAS** | **CA00015458**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03707262	Operator:	British-American Oil Prod Co
Latitude:	34.454254	Longitude:	-118.613133
Region:	2	Lease:	Waysida Honor Farm
Section:	01	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | **OIL_GAS** | **CA00010943**

Well Number:	4	Status:	Completed oil
API Number:	03722060	Operator:	Petrominerals Corporation
Latitude:	34.454010	Longitude:	-118.645937
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

North
1 - 2 Miles | **OIL_GAS** | **CA00010967**

Well Number:	1	Status:	Completed oil
API Number:	03707258	Operator:	Petrominerals Corporation
Latitude:	34.453848	Longitude:	-118.641113
Region:	2	Lease:	Mabel E. Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | **OIL_GAS** | **CA00010944**

Well Number:	5	Status:	Plugged and abandoned-dry hole
API Number:	03722072	Operator:	Petrominerals Corporation
Latitude:	34.453826	Longitude:	-118.647420
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | **OIL_GAS** | **CA00010940**

Well Number:	2	Status:	Completed oil
API Number:	03721715	Operator:	Petrominerals Corporation
Latitude:	34.453634	Longitude:	-118.643833
Region:	2	Lease:	Mabel E. Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | **OIL_GAS** | **CA00010942**

Well Number:	3	Status:	Completed oil- directional
API Number:	03721805	Operator:	Petrominerals Corporation
Latitude:	34.453607	Longitude:	-118.644112
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

NE
2 - 3 Miles | **OIL_GAS** | **CA00007344**

Well Number:	27	Status:	Plugged and abandoned-dry hole
API Number:	03707281	Operator:	Vintage Petroleum inc
Latitude:	34.453190	Longitude:	-118.610317
Region:	2	Lease:	Honor Rancho 'A' (NCT-1)
Section:	01	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NW
2 - 3 Miles | **OIL_GAS** | **CA00013497**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705395	Operator:	Fernando Oil Company
Latitude:	34.452872	Longitude:	-118.657065
Region:	2	Lease:	Wel No.
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1 - 2 Miles | **OIL_GAS** | **CA00012074**

Well Number:	81X	Status:	Plugged and abandoned-dry hole
API Number:	03721466	Operator:	Montara Petroleum Company
Latitude:	34.452826	Longitude:	-118.641111
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1 - 2 Miles | **OIL_GAS** | **CA00010933**

Well Number:	2-10	Status:	Completed oil
API Number:	03721816	Operator:	Petrominerals Corporation
Latitude:	34.452744	Longitude:	-118.642502
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

NNW
1 - 2 Miles | **OIL_GAS** | **CA00010932**

Well Number:	1-10	Status:	Completed oil
API Number:	03721801	Operator:	Petrominerals Corporation
Latitude:	34.452663	Longitude:	-118.643893
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
2 - 3 Miles | **OIL_GAS** | **CA00008486**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706205	Operator:	U. S. Natural Gas C & Manning
Latitude:	34.452622	Longitude:	-118.648222
Region:	2	Lease:	Strawn
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1 - 2 Miles | **OIL_GAS** | **CA00015649**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705148	Operator:	Atlantic Oil Company
Latitude:	34.452428	Longitude:	-118.645253
Region:	2	Lease:	Strawn
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1 - 2 Miles | **OIL_GAS** | **CA00013952**

Well Number:	3-10	Status:	Plugged and abandoned oil
API Number:	03721871	Operator:	Decalta International Corp
Latitude:	34.450949	Longitude:	-118.644354
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

North
1 - 2 Miles | **OIL_GAS** | **CA00009001**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706082	Operator:	Texaco E & P Inc
Latitude:	34.450430	Longitude:	-118.639127
Region:	2	Lease:	Fernando
Section:	11	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NE
2 - 3 Miles | **OIL_GAS** | **CA00008942**

Well Number:	D-3	Status:	Plugged and abandoned-dry hole
API Number:	03707300	Operator:	Texaco E & P Inc
Latitude:	34.447757	Longitude:	-118.604933
Region:	2	Lease:	Newhall
Section:	07	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
1 - 2 Miles | **OIL_GAS** | **CA00008939**

Well Number:	B-1	Status:	Plugged and abandoned-dry hole
API Number:	03706107	Operator:	Texaco E & P Inc
Latitude:	34.444225	Longitude:	-118.630643
Region:	2	Lease:	Newhall
Section:	11	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

North
1 - 2 Miles | **OIL_GAS** | **CA00008940**

Well Number:	D-1	Status:	Plugged and abandoned-dry hole
API Number:	03706108	Operator:	Texaco E & P Inc
Latitude:	34.444098	Longitude:	-118.630303
Region:	2	Lease:	Newhall
Section:	11	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

NNE
1 - 2 Miles | **OIL_GAS** | **CA00008941**

Well Number:	D-2	Status:	Plugged and abandoned-dry hole
API Number:	03706109	Operator:	Texaco E & P Inc
Latitude:	34.444058	Longitude:	-118.619976
Region:	2	Lease:	Newhall
Section:	12	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
2 - 3 Miles | **OIL_GAS** | **CA00009857**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705882	Operator:	Shell Western E. & P. Inc.
Latitude:	34.443227	Longitude:	-118.667094
Region:	2	Lease:	Daugherty
Section:	09	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1 - 2 Miles | **OIL_GAS** | **CA00008973**

Well Number:	1	Status:	Plugged and abandoned-dry hole-directional
API Number:	03706091	Operator:	Texaco E & P Inc
Latitude:	34.443164	Longitude:	-118.648605
Region:	2	Lease:	Malis
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
2 - 3 Miles | **OIL_GAS** | **CA00008944**

Well Number:	F-1	Status:	Plugged and abandoned-dry hole
API Number:	03706111	Operator:	Texaco E & P Inc
Latitude:	34.440622	Longitude:	-118.601451
Region:	2	Lease:	Newhall
Section:	07	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

NW
1 - 2 Miles | **OIL_GAS** | **CA00012519**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705621	Operator:	Marathon Oil Co
Latitude:	34.440369	Longitude:	-118.651382
Region:	2	Lease:	Mabel S. Henderson
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NE
1 - 2 Miles | **OIL_GAS** | **CA00013561**

Well Number:	B-1	Status:	Plugged and abandoned-dry hole
API Number:	03705490	Operator:	Exxon Corp
Latitude:	34.439071	Longitude:	-118.613720
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	12	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles | **OIL_GAS** | **CA00008923**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706117	Operator:	Texaco E & P Inc
Latitude:	34.438953	Longitude:	-118.661520
Region:	2	Lease:	Seaboard-So Cal Pet. Daugherty
Section:	09	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles | **OIL_GAS** | **CA00010509**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706664	Operator:	Rothschild Oil Company
Latitude:	34.438293	Longitude:	-118.660282
Region:	2	Lease:	Barbour
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

WNW
1 - 2 Miles | **OIL_GAS** | **CA00011095**

Well Number:	1-16	Status:	Plugged and abandoned-dry hole-directional
API Number:	03722947	Operator:	Pancandian Petroleum Co
Latitude:	34.437987	Longitude:	-118.659972
Region:	2	Lease:	N. L. & F.
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles | **OIL_GAS** | **CA00014987**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706671	Operator:	Chevron USA, Inc.
Latitude:	34.437767	Longitude:	-118.657127
Region:	2	Lease:	Boobier
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
2 - 3 Miles | **OIL_GAS** | **CA00008784**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706631	Operator:	The British American Oil Prod
Latitude:	34.437578	Longitude:	-118.667330
Region:	2	Lease:	Kinler-So. Cal
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1/2 - 1 Mile | **OIL_GAS** | **CA00010300**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03722056	Operator:	Santa Fe Energy Resources
Latitude:	34.434360	Longitude:	-118.637827
Region:	2	Lease:	N. L. & F.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

WNW
2 - 3 Miles | **OIL_GAS** | **CA00010278**

Well Number:	16-1	Status:	Plugged and abandoned-dry hole
API Number:	03706666	Operator:	Scope Industries
Latitude:	34.434221	Longitude:	-118.669889
Region:	2	Lease:	Kinler
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles | **OIL_GAS** | **CA00016378**

Well Number:	1	Status:	Plugged and abandoned oil-directional
API Number:	03706629	Operator:	Amax Petroleum Corporation
Latitude:	34.434002	Longitude:	-118.666890
Region:	2	Lease:	Kinler
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNW
1/2 - 1 Mile | **OIL_GAS** | **CA00013589**

Well Number:	55	Status:	Plugged and abandoned-dry hole
API Number:	03716518	Operator:	Exxon Corp
Latitude:	34.433828	Longitude:	-118.636435
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
1 - 2 Miles | **OIL_GAS** | **CA00013576**

Well Number:	69	Status:	135
API Number:	03716528	Operator:	Exxon Corp
Latitude:	34.433372	Longitude:	-118.605058
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

WNW
1 - 2 Miles | **OIL_GAS** | **CA00016403**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706626	Operator:	Amax Petroleum Corporation
Latitude:	34.433315	Longitude:	-118.665961
Region:	2	Lease:	Barbour
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
2 - 3 Miles | **OIL_GAS** | **CA00013452**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03721365	Operator:	G. R. Nance Co., Inc
Latitude:	34.433214	Longitude:	-118.672732
Region:	2	Lease:	Gallagher
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
1 - 2 Miles | **OIL_GAS** | **CA00013538**

Well Number:	2	Status:	230
API Number:	03716535	Operator:	Exxon Corp
Latitude:	34.433129	Longitude:	-118.617295
Region:	2	Lease:	Newhall Land & Farming Co. 12
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles | **OIL_GAS** | **CA00016404**

Well Number:	2	Status:	Plugged and abandoned oil
API Number:	03706627	Operator:	Amax Petroleum Corporation
Latitude:	34.432941	Longitude:	-118.663301
Region:	2	Lease:	Barbour
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

WNW
1 - 2 Miles | **OIL_GAS** | **CA00016405**

Well Number:	3	Status:	Plugged and abandoned oil
API Number:	03706628	Operator:	Amax Petroleum Corporation
Latitude:	34.432538	Longitude:	-118.661569
Region:	2	Lease:	Barbour
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles | **OIL_GAS** | **CA00015495**

Well Number:	1-16	Status:	Plugged and abandoned-dry hole-directional
API Number:	03722707	Operator:	Black Hawk Resources Corp
Latitude:	34.432378	Longitude:	-118.663455
Region:	2	Lease:	N. L. & F.
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles | **OIL_GAS** | **CA00016379**

Well Number:	2	Status:	Plugged and abandoned-dry hole
API Number:	03706630	Operator:	Amax Petroleum Corporation
Latitude:	34.432286	Longitude:	-118.667690
Region:	2	Lease:	Kinler
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NE
1/2 - 1 Mile | **OIL_GAS** | **CA00013578**

Well Number:	70	Status:	Plugged and abandoned oil-directional
API Number:	03716529	Operator:	Exxon Corp
Latitude:	34.431838	Longitude:	-118.628361
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

WNW
1 - 2 Miles | **OIL_GAS** | **CA00011714**

Well Number:	10	Status:	Completed oil
API Number:	03706728	Operator:	Nuevo Energy Company
Latitude:	34.430692	Longitude:	-118.663235
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00014523**

Well Number:	5	Status:	Plugged and abandoned-dry hole
API Number:	03706681	Operator:	Chevron USA, Inc.
Latitude:	34.430390	Longitude:	-118.676467
Region:	2	Lease:	Sepulveda
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
1 - 2 Miles | **OIL_GAS** | **CA00013556**

Well Number:	76	Status:	Plugged and abandoned oil-directional
API Number:	03716534	Operator:	Exxon Corp
Latitude:	34.430373	Longitude:	-118.608880
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW
1 - 2 Miles | **OIL_GAS** | **CA00014985**

Well Number:	5	Status:	Plugged and abandoned-dry hole
API Number:	03706668	Operator:	Chevron USA, Inc.
Latitude:	34.430357	Longitude:	-118.656865
Region:	2	Lease:	Blair
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

East
2 - 3 Miles | **OIL_GAS** | **CA00013553**

Well Number:	73	Status:	137
API Number:	03716531	Operator:	Exxon Corp
Latitude:	34.429852	Longitude:	-118.596595
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
1/2 - 1 Mile | **OIL_GAS** | **CA00013575**

Well Number:	68	Status:	Plugged and abandoned oil
API Number:	03716527	Operator:	Exxon Corp
Latitude:	34.429832	Longitude:	-118.624709
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | **OIL_GAS** | **CA00013573**

Well Number:	66	Status:	Plugged and abandoned oil
API Number:	03701977	Operator:	Exxon Corp
Latitude:	34.429748	Longitude:	-118.604609
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011698**

Well Number:	4	Status:	Completed oil
API Number:	03706722	Operator:	Nuevo Energy Company
Latitude:	34.429525	Longitude:	-118.660914
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles | **OIL_GAS** | **CA00012525**

Well Number:	20	Status:	Completed gas
API Number:	03722026	Operator:	Marathon Oil Co
Latitude:	34.429188	Longitude:	-118.676589
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | **OIL_GAS** | **CA00013580**

Well Number:	72	Status:	Plugged and abandoned oil
API Number:	03716530	Operator:	Exxon Corp
Latitude:	34.429084	Longitude:	-118.612185
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011687**

Well Number:	13	Status:	Completed oil
API Number:	03706731	Operator:	Nuevo Energy Company
Latitude:	34.429017	Longitude:	-118.659861
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011929**

Well Number:	3	Status:	Completed oil
API Number:	03706698	Operator:	Nuevo Energy Company
Latitude:	34.428991	Longitude:	-118.674486
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00011700**

Well Number:	6	Status:	Completed oil
API Number:	03706724	Operator:	Nuevo Energy Company
Latitude:	34.428895	Longitude:	-118.665581
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011691**

Well Number:	17	Status:	Completed oil
API Number:	03706735	Operator:	Nuevo Energy Company
Latitude:	34.428859	Longitude:	-118.661129
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011906**

Well Number:	9	Status:	Completed oil
API Number:	03706704	Operator:	Nuevo Energy Company
Latitude:	34.428846	Longitude:	-118.672105
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00008178**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706717	Operator:	Union Oil Company, Operator
Latitude:	34.428825	Longitude:	-118.656553
Region:	2	Lease:	Liebhart
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles | **OIL_GAS** | **CA00012669**

Well Number:	4-17	Status:	Completed oil
API Number:	03706643	Operator:	LBth Inc
Latitude:	34.428772	Longitude:	-118.678721
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011672**

Well Number:	7	Status:	Completed oil
API Number:	03706725	Operator:	Nuevo Energy Company
Latitude:	34.428739	Longitude:	-118.659057
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012675**

Well Number:	8-17	Status:	Completed oil
API Number:	03706647	Operator:	LBth Inc
Latitude:	34.428703	Longitude:	-118.676495
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | **OIL_GAS** | **CA00013579**

Well Number:	71	Status:	169
API Number:	03706299	Operator:	Exxon Corp
Latitude:	34.428699	Longitude:	-118.601974
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ENE
1/2 - 1 Mile | **OIL_GAS** | **CA00013574**

Well Number:	67	Status:	Plugged and abandoned oil
API Number:	03716526	Operator:	Exxon Corp
Latitude:	34.428670	Longitude:	-118.620842
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011945**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706696	Operator:	Nuevo Energy Company
Latitude:	34.428605	Longitude:	-118.668116
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011713**

Well Number:	1	Status:	Completed oil
API Number:	03706719	Operator:	Nuevo Energy Company
Latitude:	34.428597	Longitude:	-118.663200
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011686**

Well Number:	12	Status:	Completed oil
API Number:	03706730	Operator:	Nuevo Energy Company
Latitude:	34.428564	Longitude:	-118.665148
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles | **OIL_GAS** | **CA00012691**

Well Number:	12-17	Status:	Completed oil
API Number:	03706651	Operator:	LBth Inc
Latitude:	34.428471	Longitude:	-118.677020
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011946**

Well Number:	10	Status:	Plugged and abandoned-dry hole
API Number:	03706705	Operator:	Nuevo Energy Company
Latitude:	34.428430	Longitude:	-118.674083
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011925**

Well Number:	19	Status:	Completed oil- directional
API Number:	03706714	Operator:	Nuevo Energy Company
Latitude:	34.428406	Longitude:	-118.673743
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011920**

Well Number:	14	Status:	Completed oil- directional
API Number:	03706709	Operator:	Nuevo Energy Company
Latitude:	34.428353	Longitude:	-118.674392
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles | **OIL_GAS** | **CA00011923**

Well Number:	17	Status:	Completed oil
API Number:	03706712	Operator:	Nuevo Energy Company
Latitude:	34.428316	Longitude:	-118.670310
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00008179**

Well Number:	2	Status:	Plugged and abandoned-dry hole
API Number:	03706718	Operator:	Union Oil Company, Operator
Latitude:	34.428295	Longitude:	-118.654387
Region:	2	Lease:	Liebhart
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011931**

Well Number:	5	Status:	Completed oil- directional
API Number:	03706700	Operator:	Nuevo Energy Company
Latitude:	34.428251	Longitude:	-118.674051
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011947**

Well Number:	11	Status:	026
API Number:	03706706	Operator:	Nuevo Energy Company
Latitude:	34.428225	Longitude:	-118.674299
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00011696**

Well Number:	21	Status:	Completed oil
API Number:	03706739	Operator:	Nuevo Energy Company
Latitude:	34.428035	Longitude:	-118.663044
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011690**

Well Number:	16	Status:	Completed oil
API Number:	03706734	Operator:	Nuevo Energy Company
Latitude:	34.427951	Longitude:	-118.665115
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011927**

Well Number:	20	Status:	Completed oil- directional
API Number:	03706715	Operator:	Nuevo Energy Company
Latitude:	34.427846	Longitude:	-118.673216
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | **OIL_GAS** | **CA00013572**

Well Number:	65	Status:	Plugged and abandoned oil-directional
API Number:	03716470	Operator:	Exxon Corp
Latitude:	34.427717	Longitude:	-118.615676
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00011689**

Well Number:	15	Status:	Completed oil
API Number:	03706733	Operator:	Nuevo Energy Company
Latitude:	34.427627	Longitude:	-118.662672
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011928**

Well Number:	21	Status:	Completed oil- directional
API Number:	03706716	Operator:	Nuevo Energy Company
Latitude:	34.427530	Longitude:	-118.668454
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011924**

Well Number:	18	Status:	Completed oil
API Number:	03706713	Operator:	Nuevo Energy Company
Latitude:	34.427495	Longitude:	-118.671113
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | **OIL_GAS** | **CA00013570**

Well Number:	63	Status:	Plugged and abandoned oil-directional
API Number:	03700147	Operator:	Exxon Corp
Latitude:	34.427306	Longitude:	-118.609028
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00012728**

Well Number:	7	Status:	Completed oil
API Number:	03706669	Operator:	LBth Inc
Latitude:	34.427187	Longitude:	-118.656951
Region:	2	Lease:	Blair
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011692**

Well Number:	18	Status:	Completed oil
API Number:	03706736	Operator:	Nuevo Energy Company
Latitude:	34.427181	Longitude:	-118.658714
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012694**

Well Number:	15-17	Status:	Completed gas
API Number:	03706654	Operator:	LBth Inc
Latitude:	34.427042	Longitude:	-118.676337
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | **OIL_GAS** | **CA00013571**

Well Number:	64	Status:	Plugged and abandoned oil
API Number:	03716525	Operator:	Exxon Corp
Latitude:	34.426960	Longitude:	-118.612985
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00011673**

Well Number:	8	Status:	Completed oil
API Number:	03706726	Operator:	Nuevo Energy Company
Latitude:	34.426952	Longitude:	-118.665577
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011930**

Well Number:	4	Status:	Completed oil
API Number:	03706699	Operator:	Nuevo Energy Company
Latitude:	34.426911	Longitude:	-118.670122
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012671**

Well Number:	5-17	Status:	Plugged and abandoned oil
API Number:	03706644	Operator:	LBth Inc
Latitude:	34.426888	Longitude:	-118.676553
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE
1/4 - 1/2 Mile | **OIL_GAS** | **CA00013560**

Well Number:	9	Status:	Plugged and abandoned-dry hole
API Number:	03716480	Operator:	Exxon Corp
Latitude:	34.426825	Longitude:	-118.629340
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

East
1 - 2 Miles | **OIL_GAS** | **CA00013567**

Well Number:	60	Status:	Plugged and abandoned oil
API Number:	03705101	Operator:	Exxon Corp
Latitude:	34.426786	Longitude:	-118.600438
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011688**

Well Number:	14	Status:	Completed oil
API Number:	03706732	Operator:	Nuevo Energy Company
Latitude:	34.426776	Longitude:	-118.664989
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011699**

Well Number:	5	Status:	Completed oil
API Number:	03706723	Operator:	Nuevo Energy Company
Latitude:	34.426782	Longitude:	-118.663227
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011694**

Well Number:	2	Status:	Completed oil
API Number:	03706720	Operator:	Nuevo Energy Company
Latitude:	34.426764	Longitude:	-118.661155
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00011926**

Well Number:	2	Status:	036
API Number:	03706697	Operator:	Nuevo Energy Company
Latitude:	34.426740	Longitude:	-118.667741
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012698**

Well Number:	19-17	Status:	Completed oil
API Number:	03706658	Operator:	LBth Inc
Latitude:	34.426701	Longitude:	-118.678872
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00012727**

Well Number:	27	Status:	Completed oil
API Number:	03706670	Operator:	LBth Inc
Latitude:	34.426609	Longitude:	-118.654353
Region:	2	Lease:	Blair
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011715**

Well Number:	11	Status:	Completed oil
API Number:	03706729	Operator:	Nuevo Energy Company
Latitude:	34.426508	Longitude:	-118.661309
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

East
1/4 - 1/2 Mile | **OIL_GAS** | **CA00013557**

Well Number:	77	Status:	Plugged and abandoned-dry hole-directional
API Number:	03722047	Operator:	Exxon Corp
Latitude:	34.426314	Longitude:	-118.629247
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011949**

Well Number:	13	Status:	Completed oil
API Number:	03706708	Operator:	Nuevo Energy Company
Latitude:	34.426170	Longitude:	-118.670028
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
2 - 3 Miles | **OIL_GAS** | **CA00013568**

Well Number:	61	Status:	Plugged and abandoned oil-directional
API Number:	03716523	Operator:	Exxon Corp
Latitude:	34.425995	Longitude:	-118.595433
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011693**

Well Number:	19	Status:	Completed oil
API Number:	03706737	Operator:	Nuevo Energy Company
Latitude:	34.425971	Longitude:	-118.661185
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles | **OIL_GAS** | **CA00011933**

Well Number:	7	Status:	Completed oil- directional
API Number:	03706702	Operator:	Nuevo Energy Company
Latitude:	34.425940	Longitude:	-118.669904
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011921**

Well Number:	15	Status:	Completed oil- directional
API Number:	03706710	Operator:	Nuevo Energy Company
Latitude:	34.425719	Longitude:	-118.674696
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | **OIL_GAS** | **CA00013593**

Well Number:	59	Status:	Plugged and abandoned oil
API Number:	03716522	Operator:	Exxon Corp
Latitude:	34.425718	Longitude:	-118.603938
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	18	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1/2 - 1 Mile | **OIL_GAS** | **CA00013592**

Well Number:	58	Status:	Plugged and abandoned oil-directional
API Number:	03716521	Operator:	Exxon Corp
Latitude:	34.425693	Longitude:	-118.617125
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	13	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles | **OIL_GAS** | **CA00011932**

Well Number:	6	Status:	Completed oil
API Number:	03706701	Operator:	Nuevo Energy Company
Latitude:	34.425592	Longitude:	-118.674510
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012676**

Well Number:	9-17	Status:	Completed oil
API Number:	03706648	Operator:	LBth Inc
Latitude:	34.425577	Longitude:	-118.678622
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011695**

Well Number:	20	Status:	Completed oil
API Number:	03706738	Operator:	Nuevo Energy Company
Latitude:	34.425524	Longitude:	-118.664770
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012692**

Well Number:	13-17	Status:	Completed oil- directional
API Number:	03706652	Operator:	LBth Inc
Latitude:	34.425457	Longitude:	-118.676674
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00011934**

Well Number:	8	Status:	036
API Number:	03706703	Operator:	Nuevo Energy Company
Latitude:	34.425331	Longitude:	-118.668913
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012693**

Well Number:	14-17	Status:	Plugged and abandoned oil
API Number:	03706653	Operator:	LBth Inc
Latitude:	34.425278	Longitude:	-118.676673
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1/4 - 1/2 Mile | **OIL_GAS** | **CA00013584**

Well Number:	50	Status:	Plugged and abandoned oil
API Number:	03716515	Operator:	Exxon Corp
Latitude:	34.425228	Longitude:	-118.640066
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1/2 - 1 Mile | **OIL_GAS** | **CA00008933**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706695	Operator:	Texaco E & P Inc
Latitude:	34.425057	Longitude:	-118.645105
Region:	2	Lease:	Newhall
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1/2 - 1 Mile | **OIL_GAS** | **CA00013672**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706638	Operator:	Exxon Corp
Latitude:	34.424987	Longitude:	-118.650578
Region:	2	Lease:	Castaic Junction Gas Unit #1
Section:	15	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011948**

Well Number:	12	Status:	Completed oil
API Number:	03706707	Operator:	Nuevo Energy Company
Latitude:	34.424829	Longitude:	-118.673426
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00011674**

Well Number:	9	Status:	Plugged and abandoned oil
API Number:	03706727	Operator:	Nuevo Energy Company
Latitude:	34.424807	Longitude:	-118.665325
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
0 - 1/8 Mile | **OIL_GAS** | **CA00013634**

Well Number:	2	Status:	Plugged and abandoned oil-directional
API Number:	03716473	Operator:	Exxon Corp
Latitude:	34.424787	Longitude:	-118.634809
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	14	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00011697**

Well Number:	3	Status:	Plugged and abandoned-dry hole
API Number:	03706721	Operator:	Nuevo Energy Company
Latitude:	34.424703	Longitude:	-118.658585
Region:	2	Lease:	Lincoln
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012695**

Well Number:	16-17	Status:	Completed oil
API Number:	03706655	Operator:	LBth Inc
Latitude:	34.424691	Longitude:	-118.676394
Region:	2	Lease:	Vasquez
Section:	17	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00011922**

Well Number:	16	Status:	Oil well converted to water disposal
API Number:	03706711	Operator:	Nuevo Energy Company
Latitude:	34.424482	Longitude:	-118.670519
Region:	2	Lease:	Barnes
Section:	16	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
1 - 2 Miles | **OIL_GAS** | **CA00012672**

Well Number:	6	Status:	Completed oil
API Number:	03706694	Operator:	LBth Inc
Latitude:	34.423361	Longitude:	-118.668513
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

West
1 - 2 Miles | **OIL_GAS** | **CA00013236**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706634	Operator:	Havenstrite Oil Co
Latitude:	34.423300	Longitude:	-118.658934
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012700**

Well Number:	3	Status:	Completed oil
API Number:	03706691	Operator:	LBth Inc
Latitude:	34.423283	Longitude:	-118.671345
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00008995**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706633	Operator:	Texaco E & P Inc
Latitude:	34.423259	Longitude:	-118.676515
Region:	2	Lease:	Encinas Fee
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00014377**

Well Number:	4	Status:	Plugged and abandoned oil-directional
API Number:	03706692	Operator:	Chevron USA, Inc.
Latitude:	34.423186	Longitude:	-118.671558
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles — OIL_GAS — CA00012699

Well Number:	2-17	Status:	Completed oil
API Number:	03706690	Operator:	LBth Inc
Latitude:	34.422999	Longitude:	-118.673648
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — OIL_GAS — CA00013621

Well Number:	33	Status:	Plugged and abandoned oil
API Number:	03716503	Operator:	Exxon Corp
Latitude:	34.422943	Longitude:	-118.612414
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles — OIL_GAS — CA00012670

Well Number:	5	Status:	Completed oil- directional
API Number:	03706693	Operator:	LBth Inc
Latitude:	34.422886	Longitude:	-118.673919
Region:	2	Lease:	Vasquez
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — OIL_GAS — CA00013599

Well Number:	39	Status:	136
API Number:	03706409	Operator:	Exxon Corp
Latitude:	34.422889	Longitude:	-118.614261
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

East
1 - 2 Miles — OIL_GAS — CA00013630

Well Number:	16	Status:	Plugged and abandoned oil
API Number:	03716487	Operator:	Exxon Corp
Latitude:	34.422344	Longitude:	-118.608066
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — OIL_GAS — CA00013601

Well Number:	40	Status:	Plugged and abandoned oil
API Number:	03716507	Operator:	Exxon Corp
Latitude:	34.422263	Longitude:	-118.609969
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles — OIL_GAS — CA00013622

Well Number:	34	Status:	Plugged and abandoned oil
API Number:	03716504	Operator:	Exxon Corp
Latitude:	34.422208	Longitude:	-118.604877
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1/2 - 1 Mile — OIL_GAS — CA00013623

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03716472	Operator:	Exxon Corp
Latitude:	34.422040	Longitude:	-118.625317
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013626**

Well Number:	12	Status:	Plugged and abandoned oil
API Number:	03716483	Operator:	Exxon Corp
Latitude:	34.421679	Longitude:	-118.617297
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00014213**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706632	Operator:	Conoco Inc
Latitude:	34.421566	Longitude:	-118.678243
Region:	2	Lease:	Newhall
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
2 - 3 Miles | **OIL_GAS** | **CA00014751**

Well Number:	6	Status:	Plugged and abandoned-dry hole
API Number:	03716536	Operator:	Chevron USA, Inc.
Latitude:	34.420819	Longitude:	-118.596350
Region:	2	Lease:	Newhall Land & Farming
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00008706**

Well Number:	2	Status:	Plugged and abandoned oil
API Number:	03706663	Operator:	The Newhall Land & Farming Co
Latitude:	34.420664	Longitude:	-118.671385
Region:	2	Lease:	Socal
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
1/4 - 1/2 Mile | **OIL_GAS** | **CA00013606**

Well Number:	45	Status:	Plugged and abandoned-dry hole
API Number:	03716511	Operator:	Exxon Corp
Latitude:	34.420650	Longitude:	-118.634767
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00008705**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706662	Operator:	The Newhall Land & Farming Co
Latitude:	34.420525	Longitude:	-118.673550
Region:	2	Lease:	Socal
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013614**

Well Number:	27	Status:	Plugged and abandoned oil
API Number:	03716498	Operator:	Exxon Corp
Latitude:	34.420239	Longitude:	-118.614736
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

East
1 - 2 Miles | **OIL_GAS** | **CA00013616**

Well Number:	29	Status:	136
API Number:	03706300	Operator:	Exxon Corp
Latitude:	34.420225	Longitude:	-118.600935
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013631**

Well Number:	17	Status:	Plugged and abandoned oil
API Number:	03716488	Operator:	Exxon Corp
Latitude:	34.420220	Longitude:	-118.606611
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1/4 - 1/2 Mile | **OIL_GAS** | **CA00013588**

Well Number:	54	Status:	Plugged and abandoned-dry hole-directional
API Number:	03716517	Operator:	Exxon Corp
Latitude:	34.420122	Longitude:	-118.638090
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013628**

Well Number:	14	Status:	Plugged and abandoned oil
API Number:	03716485	Operator:	Exxon Corp
Latitude:	34.419900	Longitude:	-118.612093
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West
2 - 3 Miles | **OIL_GAS** | **CA00012701**

Well Number:	12-20	Status:	Completed oil- directional
API Number:	03722746	Operator:	LBth Inc
Latitude:	34.419879	Longitude:	-118.678301
Region:	2	Lease:	N. L. & F.
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
2 - 3 Miles | **OIL_GAS** | **CA00012702**

Well Number:	14-20	Status:	Completed oil
API Number:	03729957	Operator:	LBth Inc
Latitude:	34.419675	Longitude:	-118.678146
Region:	2	Lease:	N. L. & F.
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1/2 - 1 Mile | **OIL_GAS** | **CA00013594**

Well Number:	6	Status:	Plugged and abandoned oil
API Number:	03716477	Operator:	Exxon Corp
Latitude:	34.419343	Longitude:	-118.618768
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013635**

Well Number:	20	Status:	Plugged and abandoned oil
API Number:	03716491	Operator:	Exxon Corp
Latitude:	34.419305	Longitude:	-118.603759
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013620**

Well Number:	32	Status:	Plugged and abandoned oil
API Number:	03716502	Operator:	Exxon Corp
Latitude:	34.419300	Longitude:	-118.608938
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

ESE
2 - 3 Miles | **OIL_GAS** | **CA00013595**

Well Number:	35	Status:	Plugged and abandoned oil
API Number:	03716505	Operator:	Exxon Corp
Latitude:	34.419067	Longitude:	-118.598330
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1/2 - 1 Mile | **OIL_GAS** | **CA00013624**

Well Number:	10	Status:	Plugged and abandoned oil
API Number:	03716481	Operator:	Exxon Corp
Latitude:	34.418972	Longitude:	-118.622942
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013612**

Well Number:	25	Status:	136
API Number:	03716496	Operator:	Exxon Corp
Latitude:	34.418950	Longitude:	-118.618369
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013559**

Well Number:	8	Status:	Plugged and abandoned oil
API Number:	03716479	Operator:	Exxon Corp
Latitude:	34.418401	Longitude:	-118.616208
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

WSW
2 - 3 Miles | **OIL_GAS** | **CA00007251**

Well Number:	8-20	Status:	Completed oil
API Number:	03722323	Operator:	Vintage Petroleum Inc
Latitude:	34.418247	Longitude:	-118.677247
Region:	2	Lease:	N. L. & F.
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW
2 - 3 Miles | **OIL_GAS** | **CA00007269**

Well Number:	11-20	Status:	Completed oil- directional
API Number:	03722738	Operator:	Vintage Petroleum Inc
Latitude:	34.418095	Longitude:	-118.676968
Region:	2	Lease:	N. L. & F.
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1/2 - 1 Mile | **OIL_GAS** | **CA00013590**

Well Number:	56	Status:	Plugged and abandoned oil-directional
API Number:	03716519	Operator:	Exxon Corp
Latitude:	34.418097	Longitude:	-118.625511
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW
2 - 3 Miles | **OIL_GAS** | **CA00007247**

Well Number:	4-20	Status:	Drilling-idle
API Number:	03722308	Operator:	Vintage Petroleum Inc
Latitude:	34.418068	Longitude:	-118.677339
Region:	2	Lease:	N. L. & F.
Section:	20	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013627**

Well Number:	13	Status:	Plugged and abandoned oil
API Number:	03716484	Operator:	Exxon Corp
Latitude:	34.418069	Longitude:	-118.607116
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1/2 - 1 Mile | **OIL_GAS** | **CA00013607**

Well Number:	46	Status:	Plugged and abandoned oil
API Number:	03716512	Operator:	Exxon Corp
Latitude:	34.417857	Longitude:	-118.625595
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1/2 - 1 Mile | **OIL_GAS** | **CA00013603**

Well Number:	42	Status:	Plugged and abandoned gas
API Number:	03716509	Operator:	Exxon Corp
Latitude:	34.417819	Longitude:	-118.621121
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013617**

Well Number:	3	Status:	Plugged and abandoned oil
API Number:	03716474	Operator:	Exxon Corp
Latitude:	34.417690	Longitude:	-118.619161
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013636**

Well Number:	21	Status:	Plugged and abandoned oil
API Number:	03716492	Operator:	Exxon Corp
Latitude:	34.417500	Longitude:	-118.602317
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1/2 - 1 Mile | **OIL_GAS** | **CA00013586**

Well Number:	52	Status:	137
API Number:	03716516	Operator:	Exxon Corp
Latitude:	34.417322	Longitude:	-118.627121
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013629**

Well Number:	15	Status:	Plugged and abandoned oil
API Number:	03716486	Operator:	Exxon Corp
Latitude:	34.417226	Longitude:	-118.610494
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1/2 - 1 Mile | **OIL_GAS** | **CA00013591**

Well Number:	57	Status:	Plugged and abandoned-dry hole-directional
API Number:	03716520	Operator:	Exxon Corp
Latitude:	34.417166	Longitude:	-118.629478
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013613**

Well Number:	26	Status:	Plugged and abandoned oil
API Number:	03716497	Operator:	Exxon Corp
Latitude:	34.416961	Longitude:	-118.613448
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013600**

Well Number:	4	Status:	Plugged and abandoned oil
API Number:	03716475	Operator:	Exxon Corp
Latitude:	34.416748	Longitude:	-118.604866
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
2 - 3 Miles | **OIL_GAS** | **CA00013596**

Well Number:	36	Status:	Plugged and abandoned oil
API Number:	03706353	Operator:	Exxon Corp
Latitude:	34.416730	Longitude:	-118.594291
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
2 - 3 Miles | **OIL_GAS** | **CA00013619**

Well Number:	31	Status:	Plugged and abandoned oil-directional
API Number:	03716501	Operator:	Exxon Corp
Latitude:	34.416720	Longitude:	-118.598237
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013577**

Well Number:	7	Status:	Plugged and abandoned oil
API Number:	03716478	Operator:	Exxon Corp
Latitude:	34.416152	Longitude:	-118.608730
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00010738**

Well Number:	1	Status:	Plugged and abandoned-dry hole-directional
API Number:	03722352	Operator:	Quintana Petroleum Corp
Latitude:	34.414731	Longitude:	-118.646321
Region:	2	Lease:	NL&F-Trifield
Section:	22	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013583**

Well Number:	5	Status:	Plugged and abandoned oil
API Number:	03716476	Operator:	Exxon Corp
Latitude:	34.414706	Longitude:	-118.612305
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013633**

Well Number:	19	Status:	Plugged and abandoned oil
API Number:	03716490	Operator:	Exxon Corp
Latitude:	34.414621	Longitude:	-118.603049
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SE
1 - 2 Miles | **OIL_GAS** | **CA00013632**

Well Number:	18	Status:	Plugged and abandoned oil
API Number:	03716489	Operator:	Exxon Corp
Latitude:	34.414409	Longitude:	-118.620771
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW
2 - 3 Miles | **OIL_GAS** | **CA00010733**

Well Number:	1-21	Status:	Plugged and abandoned oil-directional
API Number:	03722347	Operator:	Quintana Petroleum Corp
Latitude:	34.414386	Longitude:	-118.675377
Region:	2	Lease:	N. L. & F.
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | **OIL_GAS** | **CA00013610**

Well Number:	23	Status:	Plugged and abandoned oil
API Number:	03716494	Operator:	Exxon Corp
Latitude:	34.414335	Longitude:	-118.616708
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013611**

Well Number:	24	Status:	Plugged and abandoned oil
API Number:	03716495	Operator:	Exxon Corp
Latitude:	34.413945	Longitude:	-118.605969
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

ESE
2 - 3 Miles | **OIL_GAS** | **CA00013615**

Well Number:	28	Status:	Plugged and abandoned oil
API Number:	03716499	Operator:	Exxon Corp
Latitude:	34.413946	Longitude:	-118.600944
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013646**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03706359	Operator:	Exxon Corp
Latitude:	34.413921	Longitude:	-118.609888
Region:	2	Lease:	Newhall Corporation
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | **OIL_GAS** | **CA00013625**

Well Number:	11	Status:	Plugged and abandoned oil
API Number:	03716482	Operator:	Exxon Corp
Latitude:	34.413576	Longitude:	-118.613921
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | **OIL_GAS** | **CA00013558**

Well Number:	78	Status:	Plugged and abandoned-dry hole
API Number:	03722728	Operator:	Exxon Corp
Latitude:	34.413208	Longitude:	-118.623247
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	23	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

ESE
2 - 3 Miles | **OIL_GAS** | **CA00013618**

Well Number:	30	Status:	Plugged and abandoned oil
API Number:	03716500	Operator:	Exxon Corp
Latitude:	34.413191	Longitude:	-118.598683
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
2 - 3 Miles | **OIL_GAS** | **CA00013597**

Well Number:	37	Status:	Plugged and abandoned oil
API Number:	03713506	Operator:	Exxon Corp
Latitude:	34.413175	Longitude:	-118.596309
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | **OIL_GAS** | **CA00013587**

Well Number:	53	Status:	136
API Number:	03706358	Operator:	Exxon Corp
Latitude:	34.413070	Longitude:	-118.622358
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | **OIL_GAS** | **CA00013609**

Well Number:	22	Status:	136
API Number:	03716493	Operator:	Exxon Corp
Latitude:	34.412628	Longitude:	-118.617868
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013602**

Well Number:	41	Status:	Plugged and abandoned oil
API Number:	03716508	Operator:	Exxon Corp
Latitude:	34.412374	Longitude:	-118.603543
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | **OIL_GAS** | **CA00013647**

Well Number:	2	Status:	Plugged and abandoned-dry hole
API Number:	03716471	Operator:	Exxon Corp
Latitude:	34.412161	Longitude:	-118.612355
Region:	2	Lease:	Newhall Corporation
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
1 - 2 Miles | **OIL_GAS** | **CA00013648**

Well Number:	3	Status:	Plugged and abandoned oil
API Number:	03706298	Operator:	Exxon Corp
Latitude:	34.411406	Longitude:	-118.606614
Region:	2	Lease:	Newhall Corporation
Section:	24	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011180**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03712619	Operator:	Oryx Energy Co.
Latitude:	34.411341	Longitude:	-118.641297
Region:	2	Lease:	Newhall Land and Farming
Section:	22	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

ESE
2 - 3 Miles | **OIL_GAS** | **CA00013581**

Well Number:	48	Status:	Plugged and abandoned oil
API Number:	03716513	Operator:	Exxon Corp
Latitude:	34.411173	Longitude:	-118.598564
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW
1 - 2 Miles | **OIL_GAS** | **CA00008951**

Well Number:	2	Status:	Plugged and abandoned-dry hole
API Number:	03712659	Operator:	Texaco E & P Inc
Latitude:	34.410582	Longitude:	-118.664094
Region:	2	Lease:	N. L. & F.
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ESE
2 - 3 Miles | **OIL_GAS** | **CA00013582**

Well Number:	49	Status:	Plugged and abandoned oil
API Number:	03716514	Operator:	Exxon Corp
Latitude:	34.410224	Longitude:	-118.599815
Region:	2	Lease:	Newhall Land & Farming Co.
Section:	19	Township:	04N
Range:	16W	Map Number:	252
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW
1 - 2 Miles | **OIL_GAS** | **CA00008950**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03712658	Operator:	Texaco E & P Inc
Latitude:	34.409984	Longitude:	-118.662582
Region:	2	Lease:	N. L. & F.
Section:	21	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles | **OIL_GAS** | **CA00008934**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03712660	Operator:	Texaco E & P Inc
Latitude:	34.409727	Longitude:	-118.656815
Region:	2	Lease:	Newhall
Section:	22	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012400**

Well Number:	152	Status:	Plugged and abandoned oil
API Number:	03712654	Operator:	Medallion Calif Prpts Co
Latitude:	34.408044	Longitude:	-118.638431
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012416**

Well Number:	142	Status:	136
API Number:	03712895	Operator:	Medallion Calif Prpts Co
Latitude:	34.407981	Longitude:	-118.644284
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00011167**

Well Number:	134	Status:	136
API Number:	03712888	Operator:	Oryx Energy Co.
Latitude:	34.407966	Longitude:	-118.653138
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles — **OIL_GAS** — **CA00012393**

Well Number:	145	Status:	136
API Number:	03712898	Operator:	Medallion Calif Prpts Co
Latitude:	34.407775	Longitude:	-118.643927
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles — **OIL_GAS** — **CA00011135**

Well Number:	62	Status:	Plugged and abandoned oil
API Number:	03712875	Operator:	Oryx Energy Co.
Latitude:	34.407770	Longitude:	-118.657084
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles — **OIL_GAS** — **CA00011160**

Well Number:	104	Status:	136
API Number:	03713283	Operator:	Oryx Energy Co.
Latitude:	34.407720	Longitude:	-118.658997
Region:	2	Lease:	Rancho San Francisco
Section:	28	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles — **OIL_GAS** — **CA00011168**

Well Number:	135	Status:	Plugged and abandoned oil
API Number:	03712889	Operator:	Oryx Energy Co.
Latitude:	34.407666	Longitude:	-118.640469
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles — **OIL_GAS** — **CA00011144**

Well Number:	86	Status:	Plugged and abandoned oil
API Number:	03713265	Operator:	Oryx Energy Co.
Latitude:	34.407367	Longitude:	-118.654801
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles — **OIL_GAS** — **CA00012359**

Well Number:	66	Status:	036
API Number:	03710663	Operator:	Medallion Calif Prpts Co
Latitude:	34.407327	Longitude:	-118.650194
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles — **OIL_GAS** — **CA00012370**

Well Number:	41	Status:	Plugged and abandoned oil
API Number:	03712855	Operator:	Medallion Calif Prpts Co
Latitude:	34.407234	Longitude:	-118.652701
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles — **OIL_GAS** — **CA00012396**

Well Number:	148	Status:	Completed oil
API Number:	03710658	Operator:	Medallion Calif Prpts Co
Latitude:	34.407216	Longitude:	-118.631878
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012402**

Well Number:	154	Status:	Completed oil
API Number:	03712656	Operator:	Medallion Calif Prpts Co
Latitude:	34.406719	Longitude:	-118.641473
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012418**

Well Number:	144	Status:	036
API Number:	03712897	Operator:	Medallion Calif Prpts Co
Latitude:	34.406710	Longitude:	-118.636999
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012431**

Well Number:	127	Status:	Completed oil
API Number:	03712881	Operator:	Medallion Calif Prpts Co
Latitude:	34.406675	Longitude:	-118.646809
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | **OIL_GAS** | **CA00011122**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706028	Operator:	Oryx Energy Co.
Latitude:	34.406603	Longitude:	-118.608929
Region:	2	Lease:	Sunray-McCulloch NCS
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles | **OIL_GAS** | **CA00012442**

Well Number:	111	Status:	Completed oil
API Number:	03713290	Operator:	Medallion Calif Prpts Co
Latitude:	34.406594	Longitude:	-118.653065
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00012421**

Well Number:	116	Status:	Completed oil
API Number:	03713295	Operator:	Medallion Calif Prpts Co
Latitude:	34.406485	Longitude:	-118.652590
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00012394**

Well Number:	146	Status:	Completed oil
API Number:	03712899	Operator:	Medallion Calif Prpts Co
Latitude:	34.406463	Longitude:	-118.650544
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles | **OIL_GAS** | **CA00011172**

Well Number:	155	Status:	Plugged and abandoned oil
API Number:	03712657	Operator:	Oryx Energy Co.
Latitude:	34.406209	Longitude:	-118.626209
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles | **OIL_GAS** | **CA00012439**

Well Number:	107	Status:	Completed oil
API Number:	03713286	Operator:	Medallion Calif Prpts Co
Latitude:	34.406113	Longitude:	-118.650383
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00011158**

Well Number:	56	Status:	Plugged and abandoned oil
API Number:	03712868	Operator:	Oryx Energy Co.
Latitude:	34.406045	Longitude:	-118.654267
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012415**

Well Number:	141	Status:	Completed oil
API Number:	03712894	Operator:	Medallion Calif Prpts Co
Latitude:	34.405879	Longitude:	-118.634270
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011162**

Well Number:	110	Status:	Plugged and abandoned oil
API Number:	03713289	Operator:	Oryx Energy Co.
Latitude:	34.405769	Longitude:	-118.649093
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012428**

Well Number:	124	Status:	Completed oil
API Number:	03712878	Operator:	Medallion Calif Prpts Co
Latitude:	34.405729	Longitude:	-118.644447
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012429**

Well Number:	125	Status:	Completed oil
API Number:	03712879	Operator:	Medallion Calif Prpts Co
Latitude:	34.405673	Longitude:	-118.636915
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
1 - 2 Miles | **OIL_GAS** | **CA00012389**

Well Number:	27	Status:	Plugged and abandoned oil
API Number:	03712645	Operator:	Medallion Calif Prpts Co
Latitude:	34.405593	Longitude:	-118.652138
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012391**

Well Number:	29	Status:	Completed oil
API Number:	03712647	Operator:	Medallion Calif Prpts Co
Latitude:	34.405587	Longitude:	-118.650284
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012373**

Well Number:	45	Status:	Completed oil
API Number:	03712858	Operator:	Medallion Calif Prpts Co
Latitude:	34.405456	Longitude:	-118.647783
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012374**

Well Number:	47	Status:	036
API Number:	03712860	Operator:	Medallion Calif Prpts Co
Latitude:	34.405450	Longitude:	-118.645909
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles | **OIL_GAS** | **CA00012395**

Well Number:	147	Status:	036
API Number:	03712900	Operator:	Medallion Calif Prpts Co
Latitude:	34.405297	Longitude:	-118.629468
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012423**

Well Number:	119	Status:	Completed oil
API Number:	03713297	Operator:	Medallion Calif Prpts Co
Latitude:	34.405276	Longitude:	-118.639661
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012419**

Well Number:	114	Status:	Completed oil
API Number:	03713293	Operator:	Medallion Calif Prpts Co
Latitude:	34.405266	Longitude:	-118.647463
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012412**

Well Number:	137	Status:	Completed oil
API Number:	03712890	Operator:	Medallion Calif Prpts Co
Latitude:	34.404787	Longitude:	-118.647592
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SE
1 - 2 Miles | **OIL_GAS** | **CA00012462**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705637	Operator:	Mcor Oil and Gas Corporation
Latitude:	34.404634	Longitude:	-118.610344
Region:	2	Lease:	McCulloch NC
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011169**

Well Number:	138	Status:	Plugged and abandoned oil
API Number:	03712891	Operator:	Oryx Energy Co.
Latitude:	34.404547	Longitude:	-118.641614
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles | **OIL_GAS** | **CA00011164**

Well Number:	121	Status:	Plugged and abandoned oil
API Number:	03700071	Operator:	Oryx Energy Co.
Latitude:	34.404364	Longitude:	-118.652213
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012411**

Well Number:	136	Status:	Idle oil
API Number:	03706405	Operator:	Medallion Calif Prpts Co
Latitude:	34.404333	Longitude:	-118.648944
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012385**

Well Number:	23	Status:	Idle oil
API Number:	03712642	Operator:	Medallion Calif Prpts Co
Latitude:	34.404289	Longitude:	-118.648162
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012426**

Well Number:	122	Status:	Completed oil
API Number:	03713299	Operator:	Medallion Calif Prpts Co
Latitude:	34.404277	Longitude:	-118.635216
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012436**

Well Number:	102	Status:	Completed oil
API Number:	03713282	Operator:	Medallion Calif Prpts Co
Latitude:	34.404219	Longitude:	-118.646290
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011132**

Well Number:	59	Status:	136
API Number:	03712871	Operator:	Oryx Energy Co.
Latitude:	34.403982	Longitude:	-118.639738
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012410**

Well Number:	132	Status:	108
API Number:	03712886	Operator:	Medallion Calif Prpts Co
Latitude:	34.403961	Longitude:	-118.631592
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012390**

Well Number:	28	Status:	Completed oil
API Number:	03712646	Operator:	Medallion Calif Prpts Co
Latitude:	34.403889	Longitude:	-118.645343
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SW
1 - 2 Miles | **OIL_GAS** | **CA00011136**

Well Number:	63	Status:	Plugged and abandoned oil
API Number:	03712876	Operator:	Oryx Energy Co.
Latitude:	34.403850	Longitude:	-118.652649
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012443**

Well Number:	112	Status:	036
API Number:	03713291	Operator:	Medallion Calif Prpts Co
Latitude:	34.403810	Longitude:	-118.642229
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011155**

Well Number:	48	Status:	136
API Number:	03712861	Operator:	Oryx Energy Co.
Latitude:	34.403796	Longitude:	-118.641751
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012387**

Well Number:	25	Status:	108
API Number:	03712644	Operator:	Medallion Calif Prpts Co
Latitude:	34.403766	Longitude:	-118.650434
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012440**

Well Number:	108	Status:	Completed oil
API Number:	03713287	Operator:	Medallion Calif Prpts Co
Latitude:	34.403720	Longitude:	-118.641008
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011154**

Well Number:	46	Status:	Plugged and abandoned oil
API Number:	03712859	Operator:	Oryx Energy Co.
Latitude:	34.403691	Longitude:	-118.643456
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012355**

Well Number:	58	Status:	Completed oil
API Number:	03712870	Operator:	Medallion Calif Prpts Co
Latitude:	34.403614	Longitude:	-118.643000
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011138**

Well Number:	75	Status:	Plugged and abandoned oil
API Number:	03713254	Operator:	Oryx Energy Co.
Latitude:	34.403439	Longitude:	-118.639869
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011165**

Well Number:	131	Status:	Plugged and abandoned oil
API Number:	03712885	Operator:	Oryx Energy Co.
Latitude:	34.403208	Longitude:	-118.644255
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012332**

Well Number:	97	Status:	036
API Number:	03713277	Operator:	Medallion Calif Prpts Co
Latitude:	34.403133	Longitude:	-118.637277
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles | **OIL_GAS** | **CA00012417**

Well Number:	143	Status:	Completed oil
API Number:	03712896	Operator:	Medallion Calif Prpts Co
Latitude:	34.402996	Longitude:	-118.626936
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012444**

Well Number:	113	Status:	108
API Number:	03713292	Operator:	Medallion Calif Prpts Co
Latitude:	34.402974	Longitude:	-118.645075
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012425**

Well Number:	120	Status:	Completed oil
API Number:	03713298	Operator:	Medallion Calif Prpts Co
Latitude:	34.402959	Longitude:	-118.639979
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012407**

Well Number:	129	Status:	Plugged and abandoned oil
API Number:	03712883	Operator:	Medallion Calif Prpts Co
Latitude:	34.402778	Longitude:	-118.637995
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011170**

Well Number:	140	Status:	Plugged and abandoned oil
API Number:	03712893	Operator:	Oryx Energy Co.
Latitude:	34.402426	Longitude:	-118.650340
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles | **OIL_GAS** | **CA00011179**

Well Number:	6-7	Status:	Plugged and abandoned oil
API Number:	03712618	Operator:	Oryx Energy Co.
Latitude:	34.402421	Longitude:	-118.623989
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00012377**

Well Number:	52	Status:	136
API Number:	03712865	Operator:	Medallion Calif Prpts Co
Latitude:	34.402382	Longitude:	-118.637472
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012382**

Well Number:	20	Status:	Plugged and abandoned oil
API Number:	03712639	Operator:	Medallion Calif Prpts Co
Latitude:	34.402287	Longitude:	-118.646443
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012383**

Well Number:	21	Status:	Completed oil
API Number:	03712640	Operator:	Medallion Calif Prpts Co
Latitude:	34.402204	Longitude:	-118.641034
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011173**

Well Number:	17	Status:	Plugged and abandoned oil
API Number:	03712636	Operator:	Oryx Energy Co.
Latitude:	34.402171	Longitude:	-118.644209
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00012365**

Well Number:	72	Status:	Completed oil
API Number:	03713251	Operator:	Medallion Calif Prpts Co
Latitude:	34.402078	Longitude:	-118.637615
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012388**

Well Number:	26	Status:	046
API Number:	03700069	Operator:	Medallion Calif Prpts Co
Latitude:	34.402025	Longitude:	-118.650658
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012358**

Well Number:	65	Status:	Completed oil
API Number:	03713245	Operator:	Medallion Calif Prpts Co
Latitude:	34.402027	Longitude:	-118.635092
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011142**

Well Number:	84	Status:	136
API Number:	03713263	Operator:	Oryx Energy Co.
Latitude:	34.402023	Longitude:	-118.632798
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012386**

Well Number:	24	Status:	Completed oil
API Number:	03712643	Operator:	Medallion Calif Prpts Co
Latitude:	34.401942	Longitude:	-118.648270
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012379**

Well Number:	54	Status:	Completed oil
API Number:	03712866	Operator:	Medallion Calif Prpts Co
Latitude:	34.401892	Longitude:	-118.639475
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012372**

Well Number:	44	Status:	Completed oil
API Number:	03712775	Operator:	Medallion Calif Prpts Co
Latitude:	34.401655	Longitude:	-118.639119
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW
2 - 3 Miles | **OIL_GAS** | **CA00011166**

Well Number:	133	Status:	Plugged and abandoned-dry hole
API Number:	03712887	Operator:	Oryx Energy Co.
Latitude:	34.401605	Longitude:	-118.657611
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00012420**

Well Number:	115	Status:	Completed oil
API Number:	03713294	Operator:	Medallion Calif Prpts Co
Latitude:	34.401452	Longitude:	-118.635262
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012435**

Well Number:	101	Status:	Completed gas
API Number:	03713281	Operator:	Medallion Calif Prpts Co
Latitude:	34.401368	Longitude:	-118.642110
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012441**

Well Number:	109	Status:	Completed oil
API Number:	03713288	Operator:	Medallion Calif Prpts Co
Latitude:	34.401373	Longitude:	-118.632033
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011145**

Well Number:	98	Status:	136
API Number:	03713278	Operator:	Oryx Energy Co.
Latitude:	34.401273	Longitude:	-118.647984
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSE
1 - 2 Miles | **OIL_GAS** | **CA00011174**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03712613	Operator:	Oryx Energy Co.
Latitude:	34.401215	Longitude:	-118.625593
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012398**

Well Number:	150	Status:	Completed oil
API Number:	03712852	Operator:	Medallion Calif Prpts Co
Latitude:	34.400628	Longitude:	-118.643242
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011159**

Well Number:	57	Status:	136
API Number:	03712869	Operator:	Oryx Energy Co.
Latitude:	34.400633	Longitude:	-118.633068
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012378**

Well Number:	53	Status:	Completed oil
API Number:	03700070	Operator:	Medallion Calif Prpts Co
Latitude:	34.400601	Longitude:	-118.639246
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012408**

Well Number:	13	Status:	Completed oil
API Number:	03712632	Operator:	Medallion Calif Prpts Co
Latitude:	34.400556	Longitude:	-118.641637
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012406**

Well Number:	128	Status:	Completed oil
API Number:	03712882	Operator:	Medallion Calif Prpts Co
Latitude:	34.400510	Longitude:	-118.635290
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011141**

Well Number:	8	Status:	Plugged and abandoned oil
API Number:	03712627	Operator:	Oryx Energy Co.
Latitude:	34.400424	Longitude:	-118.639481
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012380**

Well Number:	19	Status:	Completed oil
API Number:	03712638	Operator:	Medallion Calif Prpts Co
Latitude:	34.400273	Longitude:	-118.643826
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00011171**

Well Number:	15	Status:	Plugged and abandoned oil
API Number:	03712634	Operator:	Oryx Energy Co.
Latitude:	34.400228	Longitude:	-118.637345
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012344**

Well Number:	80	Status:	Completed oil
API Number:	03713259	Operator:	Medallion Calif Prpts Co
Latitude:	34.400233	Longitude:	-118.630250
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012375**

Well Number:	50	Status:	Plugged and abandoned oil
API Number:	03712863	Operator:	Medallion Calif Prpts Co
Latitude:	34.400173	Longitude:	-118.635511
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012422**

Well Number:	118	Status:	Completed gas
API Number:	03713296	Operator:	Medallion Calif Prpts Co
Latitude:	34.400144	Longitude:	-118.637997
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012384**

Well Number:	22	Status:	Plugged and abandoned oil
API Number:	03712641	Operator:	Medallion Calif Prpts Co
Latitude:	34.400086	Longitude:	-118.646126
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles | **OIL_GAS** | **CA00011143**

Well Number:	85	Status:	136
API Number:	03713264	Operator:	Oryx Energy Co.
Latitude:	34.400023	Longitude:	-118.627790
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012364**

Well Number:	71	Status:	Completed oil
API Number:	03713250	Operator:	Medallion Calif Prpts Co
Latitude:	34.399995	Longitude:	-118.636071
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011134**

Well Number:	61	Status:	Plugged and abandoned oil
API Number:	03712873	Operator:	Oryx Energy Co.
Latitude:	34.399819	Longitude:	-118.633035
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSE
1 - 2 Miles | **OIL_GAS** | **CA00011175**

Well Number:	2-7	Status:	Plugged and abandoned oil
API Number:	03712614	Operator:	Oryx Energy Co.
Latitude:	34.399762	Longitude:	-118.625771
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012427**

Well Number:	123	Status:	Completed oil
API Number:	03713300	Operator:	Medallion Calif Prpts Co
Latitude:	34.399348	Longitude:	-118.631520
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012437**

Well Number:	105	Status:	Completed oil
API Number:	03713284	Operator:	Medallion Calif Prpts Co
Latitude:	34.399089	Longitude:	-118.635275
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012330**

Well Number:	95	Status:	Completed oil
API Number:	03713275	Operator:	Medallion Calif Prpts Co
Latitude:	34.399072	Longitude:	-118.644607
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSW
1 - 2 Miles | **OIL_GAS** | **CA00011146**

Well Number:	30	Status:	Plugged and abandoned oil
API Number:	03712648	Operator:	Oryx Energy Co.
Latitude:	34.398936	Longitude:	-118.643101
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012346**

Well Number:	82	Status:	Oil well converted to water disposal
API Number:	03713261	Operator:	Medallion Calif Prpts Co
Latitude:	34.398705	Longitude:	-118.644657
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
1 - 2 Miles | **OIL_GAS** | **CA00012404**

Well Number:	16	Status:	Completed oil
API Number:	03712635	Operator:	Medallion Calif Prpts Co
Latitude:	34.398624	Longitude:	-118.641791
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011161**

Well Number:	11	Status:	Plugged and abandoned oil
API Number:	03712630	Operator:	Oryx Energy Co.
Latitude:	34.398612	Longitude:	-118.635003
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00012354**

Well Number:	55	Status:	134
API Number:	03712867	Operator:	Medallion Calif Prpts Co
Latitude:	34.398571	Longitude:	-118.630682
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011157**

Well Number:	5	Status:	Plugged and abandoned oil
API Number:	03712624	Operator:	Oryx Energy Co.
Latitude:	34.398424	Longitude:	-118.637341
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012361**

Well Number:	69	Status:	Completed oil
API Number:	03712348	Operator:	Medallion Calif Prpts Co
Latitude:	34.398417	Longitude:	-118.632561
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011140**

Well Number:	79	Status:	136
API Number:	03713258	Operator:	Oryx Energy Co.
Latitude:	34.398406	Longitude:	-118.628660
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00012405**

Well Number:	18	Status:	Plugged and abandoned oil
API Number:	03712637	Operator:	Medallion Calif Prpts Co
Latitude:	34.398318	Longitude:	-118.633195
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012352**

Well Number:	90	Status:	Completed oil
API Number:	03713269	Operator:	Medallion Calif Prpts Co
Latitude:	34.398310	Longitude:	-118.640767
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011133**

Well Number:	6	Status:	Plugged and abandoned oil
API Number:	03712625	Operator:	Oryx Energy Co.
Latitude:	34.398284	Longitude:	-118.639583
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012341**

Well Number:	74	Status:	Completed gas
API Number:	03713253	Operator:	Medallion Calif Prpts Co
Latitude:	34.397992	Longitude:	-118.637507
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSE
2 - 3 Miles | **OIL_GAS** | **CA00011176**

Well Number:	3-5	Status:	Plugged and abandoned oil
API Number:	03712615	Operator:	Oryx Energy Co.
Latitude:	34.397752	Longitude:	-118.619935
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
1 - 2 Miles | **OIL_GAS** | **CA00012347**

Well Number:	83	Status:	Completed oil
API Number:	03713262	Operator:	Medallion Calif Prpts Co
Latitude:	34.397611	Longitude:	-118.625051
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012430**

Well Number:	126	Status:	Completed oil
API Number:	03712880	Operator:	Medallion Calif Prpts Co
Latitude:	34.397520	Longitude:	-118.630159
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00011185**

Well Number:	4	Status:	Plugged and abandoned oil
API Number:	03712623	Operator:	Oryx Energy Co.
Latitude:	34.397141	Longitude:	-118.635448
Region:	2	Lease:	Ranch San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00012327**

Well Number:	92	Status:	Completed oil
API Number:	03713272	Operator:	Medallion Calif Prpts Co
Latitude:	34.396986	Longitude:	-118.634592
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
2 - 3 Miles | **OIL_GAS** | **CA00012351**

Well Number:	9	Status:	Plugged and abandoned oil
API Number:	03712628	Operator:	Medallion Calif Prpts Co
Latitude:	34.396931	Longitude:	-118.641918
Region:	2	Lease:	Rancho San Francisco
Section:	27	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012356**

Well Number:	60	Status:	136
API Number:	03712872	Operator:	Medallion Calif Prpts Co
Latitude:	34.396745	Longitude:	-118.628691
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
1 - 2 Miles | **OIL_GAS** | **CA00012376**

Well Number:	51	Status:	Completed oil
API Number:	03712864	Operator:	Medallion Calif Prpts Co
Latitude:	34.396733	Longitude:	-118.630947
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

South
1 - 2 Miles | **OIL_GAS** | **CA00011183**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	03712620	Operator:	Oryx Energy Co.
Latitude:	34.396683	Longitude:	-118.637431
Region:	2	Lease:	Ranch San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012362**

Well Number:	7	Status:	Completed oil
API Number:	03712626	Operator:	Medallion Calif Prpts Co
Latitude:	34.396671	Longitude:	-118.639707
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012366**

Well Number:	73	Status:	Completed oil
API Number:	03713252	Operator:	Medallion Calif Prpts Co
Latitude:	34.396613	Longitude:	-118.626457
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012433**

Well Number:	10	Status:	Completed oil
API Number:	03712629	Operator:	Medallion Calif Prpts Co
Latitude:	34.396484	Longitude:	-118.632944
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

South
2 - 3 Miles | **OIL_GAS** | **CA00012409**

Well Number:	130	Status:	Completed oil
API Number:	03712884	Operator:	Medallion Calif Prpts Co
Latitude:	34.396445	Longitude:	-118.640268
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012349**

Well Number:	88	Status:	036
API Number:	03713267	Operator:	Medallion Calif Prpts Co
Latitude:	34.396179	Longitude:	-118.621185
Region:	2	Lease:	Rancho San Francisco
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012333**

Well Number:	99	Status:	Completed oil
API Number:	03713279	Operator:	Medallion Calif Prpts Co
Latitude:	34.396163	Longitude:	-118.624061
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00011177**

Well Number:	4-5	Status:	Plugged and abandoned oil
API Number:	03712616	Operator:	Oryx Energy Co.
Latitude:	34.395879	Longitude:	-118.617688
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

South
2 - 3 Miles | **OIL_GAS** | **CA00012414**

Well Number:	14	Status:	Completed oil
API Number:	03712633	Operator:	Medallion Calif Prpts Co
Latitude:	34.395152	Longitude:	-118.631109
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00011184**

Well Number:	3	Status:	Plugged and abandoned oil
API Number:	03712622	Operator:	Oryx Energy Co.
Latitude:	34.394860	Longitude:	-118.635153
Region:	2	Lease:	Ranch San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012424**

Well Number:	12	Status:	Plugged and abandoned oil
API Number:	03712631	Operator:	Medallion Calif Prpts Co
Latitude:	34.394753	Longitude:	-118.637298
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012381**

Well Number:	2	Status:	Completed oil
API Number:	03712621	Operator:	Medallion Calif Prpts Co
Latitude:	34.394727	Longitude:	-118.633015
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

SSE
2 - 3 Miles | **OIL_GAS** | **CA00011139**

Well Number:	78	Status:	Plugged and abandoned oil
API Number:	03713257	Operator:	Oryx Energy Co.
Latitude:	34.394692	Longitude:	-118.624488
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012434**

Well Number:	100	Status:	Completed oil
API Number:	03713280	Operator:	Medallion Calif Prpts Co
Latitude:	34.394668	Longitude:	-118.638161
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00011153**

Well Number:	43	Status:	136
API Number:	03712857	Operator:	Oryx Energy Co.
Latitude:	34.394590	Longitude:	-118.628831
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012353**

Well Number:	91	Status:	Plugged and abandoned-dry hole
API Number:	03713270	Operator:	Medallion Calif Prpts Co
Latitude:	34.394369	Longitude:	-118.618793
Region:	2	Lease:	Rancho San Francisco
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
South 2 - 3 Miles	**OIL_GAS**	**CA00012348**

Well Number:	87	Status:	Completed oil
API Number:	03713266	Operator:	Medallion Calif Prpts Co
Latitude:	34.394335	Longitude:	-118.634652
Region:	2	Lease:	Rancho San Francisco
Section:	26	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE 2 - 3 Miles	**OIL_GAS**	**CA00011186**

Well Number:	91	Status:	Plugged and abandoned oil
API Number:	03713271	Operator:	Oryx Energy Co.
Latitude:	34.394339	Longitude:	-118.619154
Region:	2	Lease:	Ranch San Francisco
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE 2 - 3 Miles	**OIL_GAS**	**CA00011178**

Well Number:	5-5	Status:	Plugged and abandoned oil
API Number:	03712617	Operator:	Oryx Energy Co.
Latitude:	34.394288	Longitude:	-118.614897
Region:	2	Lease:	Newhall Corp.-Wolfson
Section:	25	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South 2 - 3 Miles	**OIL_GAS**	**CA00012328**

Well Number:	93	Status:	Completed oil
API Number:	03713273	Operator:	Medallion Calif Prpts Co
Latitude:	34.394049	Longitude:	-118.628014
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
South 2 - 3 Miles	**OIL_GAS**	**CA00012345**

Well Number:	81	Status:	Completed oil
API Number:	03713260	Operator:	Medallion Calif Prpts Co
Latitude:	34.393239	Longitude:	-118.630727
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South 2 - 3 Miles	**OIL_GAS**	**CA00011148**

Well Number:	34	Status:	Plugged and abandoned oil
API Number:	03712848	Operator:	Oryx Energy Co.
Latitude:	34.393161	Longitude:	-118.633157
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE 2 - 3 Miles	**OIL_GAS**	**CA00012343**

Well Number:	77	Status:	Completed oil
API Number:	03713256	Operator:	Medallion Calif Prpts Co
Latitude:	34.393159	Longitude:	-118.622675
Region:	2	Lease:	Rancho San Francisco
Section:	36	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South 2 - 3 Miles	**OIL_GAS**	**CA00012368**

Well Number:	36	Status:	Plugged and abandoned oil
API Number:	03712850	Operator:	Medallion Calif Prpts Co
Latitude:	34.393110	Longitude:	-118.630378
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSE
2 - 3 Miles | **OIL_GAS** | **CA00011150**

Well Number:	37	Status:	136
API Number:	03712851	Operator:	Oryx Energy Co.
Latitude:	34.393077	Longitude:	-118.626334
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012397**

Well Number:	149	Status:	Completed oil
API Number:	03712651	Operator:	Medallion Calif Prpts Co
Latitude:	34.393039	Longitude:	-118.633617
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012392**

Well Number:	31	Status:	Plugged and abandoned oil
API Number:	03712649	Operator:	Medallion Calif Prpts Co
Latitude:	34.392956	Longitude:	-118.628634
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012331**

Well Number:	96	Status:	Completed oil
API Number:	03713276	Operator:	Medallion Calif Prpts Co
Latitude:	34.392238	Longitude:	-118.616366
Region:	2	Lease:	Rancho San Francisco
Section:	36	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

South
2 - 3 Miles | **OIL_GAS** | **CA00012399**

Well Number:	151	Status:	Completed oil
API Number:	03712653	Operator:	Medallion Calif Prpts Co
Latitude:	34.391926	Longitude:	-118.629748
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00011151**

Well Number:	39	Status:	136
API Number:	03712853	Operator:	Oryx Energy Co.
Latitude:	34.391584	Longitude:	-118.624342
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012357**

Well Number:	64	Status:	Completed oil
API Number:	03712877	Operator:	Medallion Calif Prpts Co
Latitude:	34.391463	Longitude:	-118.628809
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South
2 - 3 Miles | **OIL_GAS** | **CA00012350**

Well Number:	89	Status:	Completed oil
API Number:	03713268	Operator:	Medallion Calif Prpts Co
Latitude:	34.391404	Longitude:	-118.627480
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

South
2 - 3 Miles | **OIL_GAS** | **CA00012369**

Well Number:	38	Status:	Plugged and abandoned oil
API Number:	03712852	Operator:	Medallion Calif Prpts Co
Latitude:	34.391367	Longitude:	-118.626333
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSW
2 - 3 Miles | **OIL_GAS** | **CA00008320**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03720085	Operator:	Union Oil Co of Ca
Latitude:	34.391242	Longitude:	-118.645217
Region:	2	Lease:	R.S.F.
Section:	34	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012413**

Well Number:	139	Status:	Completed oil
API Number:	03712892	Operator:	Medallion Calif Prpts Co
Latitude:	34.391064	Longitude:	-118.622780
Region:	2	Lease:	Rancho San Francisco
Section:	36	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012342**

Well Number:	76	Status:	Completed oil
API Number:	03713255	Operator:	Medallion Calif Prpts Co
Latitude:	34.390795	Longitude:	-118.620289
Region:	2	Lease:	Rancho San Francisco
Section:	36	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction
Distance | Database | EDR ID Number

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012401**

Well Number:	153	Status:	Completed oil
API Number:	03712655	Operator:	Medallion Calif Prpts Co
Latitude:	34.390584	Longitude:	-118.625977
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SSE
2 - 3 Miles | **OIL_GAS** | **CA00012367**

Well Number:	33	Status:	Plugged and abandoned oil
API Number:	03712847	Operator:	Medallion Calif Prpts Co
Latitude:	34.389545	Longitude:	-118.624664
Region:	2	Lease:	Rancho San Francisco
Section:	35	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
91355	13	0	0.00

Federal EPA Radon Zone for LOS ANGELES County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 91355

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.750 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations for District 2, 3, 5 and 6
Source: Department of Conservation
Telephone: 916-323-1779

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

ESA Addendum Letter - Historical Documents and Site Reconnaissance, May 6, 2004

BA ENVIRONMENTAL
A Division of Building Analytics
www.BAEnvironmental.com

CORPORATE OFFICE
528 STATE STREET
GLENDALE, CALIFORNIA 91203
TOLL FREE 1-888-440-7225
818-500-1898
818-246-8195 FAX

May 6, 2004

File No.: 103169

Mr. Keith Herren
Newhall Land
23823 Valencia Boulevard
Valencia, California 91355

Reference: Parcel Map #53108, Highway 126
Newhall Ranch, California

Subject: Addendum Letter
Phase I Environmental Site Assessment

Dear Mr. Herren:

BA Environmental is pleased to submit this Addendum to the Phase I Environmental Site Assessment (ESA) conducted at the subject site on December 3, 2003.

In a review of historical documents, as well as a site reconnaissance, BA Environmental identified that the subject property had been utilized intermittently for over 100 years for agricultural production.

On March 29, 2004, Los Angeles County Department of Parks and Recreation reviewed the Phase I ESA for the subject property. In their review, the Los Angeles County Department of Parks and Recreation indicated that additional information would be needed with regard to potential past and present pesticide usage. In addition, the Los Angeles County Department of Parks and Recreation indicated the soil sampling might be required.

In an interview conducted with Mr. John Frye, General Manager, Agriculture and Natural Resources for Newhall Land and Farming, conducted on April 14, 2004, Mr. Frye was queried regarding pesticide usage by Newhall Land and Farming on the subject property. To the best of Mr. Frye's knowledge, Newhall Land and Farming has never used pesticides on the subject property.

Two companies currently lease the land in this area for growing various vegetables, Starr Produce and Cilantro Farms. On April 13, 2004, BA Environmental contacted Mr. Steve Starr of Starr Produce, and Mr. F.F. Gonsalez of Cilantro Farms. According to Mr. Starr and Mr. Gonsalez, various pesticides and herbicides are used on-site. According to Mr. Starr and Mr. Gonsalez, the quantities of pesticides used vary depending upon the manufacturers' recommended usage.

On April 27, 2004, BA Environmental contacted Inspector Michael Sium of the County of Los Angeles Agricultural Commissioner, Department of Pesticide Regulation. Mr. Sium is the local inspector for the Department of Pesticide Regulation in that region. According to Mr. Sium, he has been an inspector in that area for approximately two years. Since he has been inspecting the subject property, Mr. Sium has not observed any violations with regard to pesticide usage. Also on April 27, 2004, BA Environmental contacted Inspector Adrian Zavala of the Department of Pesticide Regulation. According to Inspector Zavala, the Department of Pesticide Regulation maintains records for three years. Inspector Zavala indicated that, in the last three years, neither Starr Produce nor Cilantro Farms were reported to have any violations. Inspector Zavala provided BA Environmental with copies of Department of Pesticide Regulation Monthly Pesticide Use Reports for both Starr Produce and Cilantro Farms, for the years 2002, 2003 and 2004. A listing of pesticides used by both companies for the past three years is included as an attachment to this report.

On January 29, 2004, BA Environmental conducted soil sampling on the subject property as part of a sampling program for the larger River Village Development. The entire River Village Development was grided based on field shape and crop type. Four samples were collected from each grid at a depth of between one and two feet below ground surface (bgs). The four soil samples were then sent to a State of California Department of Health Certified Laboratory under a strict chain of custody. At the laboratory, the four samples from each grid were then composited into one sample, and that sample was analyzed for Organochlorine Pesticides (OCP), Organophosphorous Pesticides (OPP) and Chlorinated Herbicides (CH), using Environmental Protection Agency (EPA) Method Nos. 8081 (OCP), 8141 (OPP) and 8151 (CH).

Two grids were located on the subject site, Grids G7 and G8. Grid G8 is located in the northern portion of the subject property and Grid G7 is located in the southern portion. The sample locations can be seen in the attached figure. The composite sample from Grid G7 was reported to contain only 0.002 milligrams per kilogram (mg/kg), or parts per million (ppm) of Dieldrin, an OCP. No other OCPs, or OPPs or CHs were detected in this composited sample. In addition, no OCPs, OPPs or CHs were detected in the composited sample from Grid G8. According to the EPA Region 9 Preliminary Remedial Goal (PRG) Table, the Residential PRG for Dieldrin is 1.7 mg/kg or ppm. Based on this, the concentration of Dieldrin detected in the composite sample collected in Grid G7 is well below the Residential PRG for that pesticide. A copy of the laboratory report for Grids 7 and 8 is included as an attachment to this letter.

According to Mr. Keith Herren, Vice President of Residential Development for Newhall Land and Farming, clean backfill will be brought onto the subject property in order to raise grade approximately 10 feet above current ground surface. This would eliminate any direct exposure to any soil that may be impacted by residual pesticides.

Based on the above data, it is BA Environmental's opinion that the residual pesticides detected on the subject site do not pose any threat to human health.

If you have questions regarding this project or report, please contact us at (818) 500-1898.

Respectfully submitted,
BA ENVIRONMENTAL

Russell M. Cote, M.Sc., R.G. No. 7139
Manager, Environmental Services

Attachments: Table
Figure
Lab Results

ATTACHMENTS

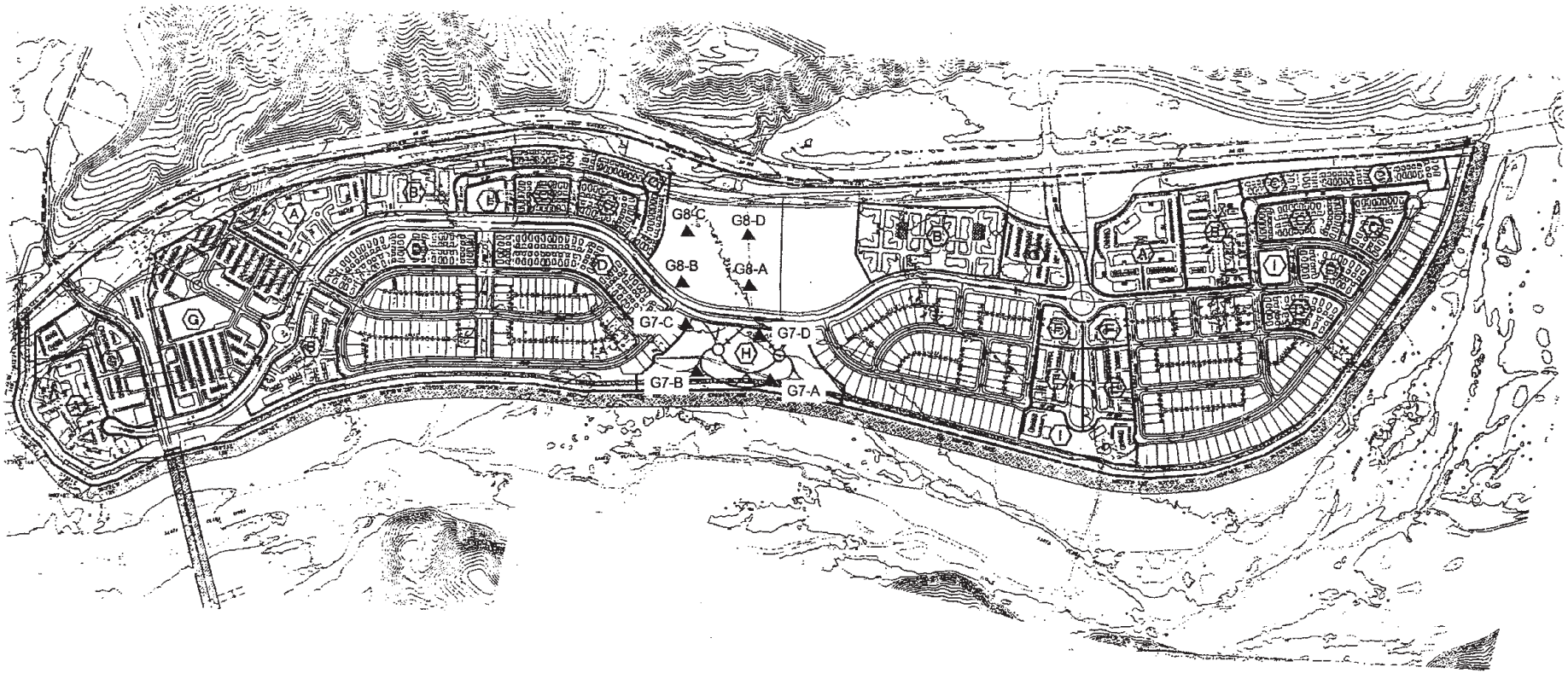
TABLES

Table 1
PESTICIDE/HERBICIDE USAGE BY
STARR PRODUCE AND CILANTRO FARMS
2002/2003/2004
Parcel Map #53108, Highway 126
Newhall Ranch, California

Brand Name	Chemical Name	Type	Starr Produce	Cilantro Farms
Ambush	Permethrin	Insecticide	Yes	No
Ammo 2.5 EC	Cypermethrin	Pesticide	No	Yes
Assail	Acetamiprid	Insecticide	No	Yes
Baythroid 2	Cyfluthrin	Insecticide	No	Yes
Bravo Weather Stick	Tetrachloroisophthalo nitrile	Fungicide	No	Yes
Confirm 2F	Tebufenozide	Insecticide	No	Yes
Dacthal W-75	Dacthal	Herbicide	Yes	Yes
Diazinon Ag 500	Diazion	Insecticide	Yes	Yes
Diazinon 4E	Diazinon	Organochlorine Pesticide	No	Yes
Dibrom 8E	Naled 91,2-Dibromo-2,2-dichloroethyl phosphate	Insecticide	No	Yes
Goal	Oxyfluorfen	Herbicide	Yes	No
Herbicide Activator	Unknown	Herbicide Activator	No	Yes
Javelin	Bacillus Thuringiensis	Biological Insecticide	Yes	No
Kocide 4.5 LF	Copper Hydroxide	Fungicide and Bactericide	No	Yes
Lorox	Linuron	Herbicide	Yes	No
Malathion 8	Malathion	Insecticide	No	Yes
Manex	Maneb	Fungicide	No	Yes
Poast	Sethoxydim	Herbicide	Yes	Yes
Pounce 3.2 EC	Permethrin	Insecticide	Yes	Yes
Prefar	Bensulide	Herbicide	Yes	No
Promatryne	2,4-bis (isopropylamino)-6-methylthio-s-triazine	Herbicide	Yes	No
Provado 1.6	Imidacloprid	Insecticide	No	Yes
Pyrellin EC	Pyrethrins and Rotenone	Botanical Insecticide	No	Yes
Roundup	Isopropylamine salt of glyphosate	Herbicide	Yes	No

Brand Name	Chemical Name	Type	Starr Produce	Cilantro Farms
Ridomil Gold	Mefenoxam	Fungicide	Yes	No
Ro-Neet	Cycloate Technical	Herbicide	Yes	Yes
Spin Aid	3-methoxycarbonyalminophenyl 3-methylcarbanilate	Herbicide	Yes	Yes
Success	Spinosad	Insecticide	Yes	Yes
Treflan	Trifluralin	Herbicide	Yes	No
Vapam	Sodium methyldithiocarbamate	Soil Fumigant	Yes	No
Xentari	Bacillus Thuringiensis	Biological Insecticide	No	Yes

FIGURES



Site Plan

BA ENVIRONMENTAL

NORTH

0 335 670
Approximate Scale, feet

▲ G7-A = Soil Sample Location and Designation

PHASE I ENVIRONMENTAL SITE ASSESSMENT
Soil Sample Locations

PROJECT: **River Village**
Tentative Tract Map No. 53108, Highway 126
Newhall Ranch, California

PROJECT NO.
103169

FIGURE
1

Laboratory Reports

Enviro - Chem, Inc.
1215 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: February 6, 2004

FEB 12 2004

Mr. Russell Cote
BA Environmental
528 State Street
Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

Project: **Newhall Land / 104012**

Dear Mr. Cote:

The analytical results for the soil samples, received by our Lab on January 29, 2004, are attached.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G7-A/B/C/D (Composite)**
LAB I.D.: 040130-34,-35,-36,-37 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	0.002	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G8-A/B/C/D (Composite)**
LAB I.D.: 040130-38,-39,-40,-41 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02/04
DATE ANALYZED: 02/03-04/04
DATE REPORTED: 02/06/04

METHOD BLANK FOR LAB I.D.: 040130-10 TO -13 (Composite), 040130-14 TO -17 (Composite), 040130-18 TO -21 (Composite), 040130-22 TO -25 (Composite), 040130-26 TO -29 (Composite), 040130-30 TO -33 (Composite), 040130-34 TO -37 (Composite), 040130-38 TO -41 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL(X1)
Aldrin	ND	0.001
alpha-BHC	ND	0.001
beta-BHC	ND	0.001
gamma-BHC (Lindane)	ND	0.001
delta-BHC	ND	0.001
alpha-Chlordane	ND	0.001
gamma-Chlordane	ND	0.001
4,4'-DDD	ND	0.001
4,4'-DDE	ND	0.001
4,4'-DDT	ND	0.001
Dieldrin	ND	0.001
Endosulfan I	ND	0.001
Endosulfan II	ND	0.001
Endosulfan Sulfate	ND	0.001
Endrin	ND	0.001
Endrin Aldehyde	ND	0.001
Endrin Ketone	ND	0.001
Heptachlor Epoxide	ND	0.001
Heptachlor	ND	0.001
Methoxyclor	ND	0.001
Toxaphene	ND	0.200

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CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

EPA 8081 QA/QC Report

Matrix: Soil
Unit: mg/Kg

Date Analyzed: 2/3-4/2004

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 040130-120

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP %RPD	ACP %REC
Gamma-BHC	0.000	0.050	0.046	**92%**	0.047	**94%**	**2%**	**0-20%**	**70-130**
Aldrin	0.000	0.050	0.048	**95%**	0.048	**97%**	**2%**	**0-20%**	**70-130**
4,4-DDE	0.000	0.050	0.050	**99%**	0.051	**102%**	**3%**	**0-20%**	**70-130**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
Gamma-BHC	0.050	0.049	**97%**	**75-125**
Aldrin	0.050	0.049	**98%**	**75-125**
4,4-DDE	0.050	0.049	**98%**	**75-125**
Dieldrin	0.050	0.052	**104%**	**75-125**

Surrogate Recovery	ACP%	MB	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.			040130-116	040130-117	040130-118	040130-119	040130-120	0130-10~13
Tetra-chloro-meta-xylene		111%	120%	114%	116%	130%	110%	122%
Decachlorobipneyl	50-150	114%	116%	108%	121%	94%	103%	112%

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.	0130-14~17	0130-18~21	0130-22~25	0130-26~29	0130-30~33	0130-34~37	0130-38~41	
Tetra-chloro-meta-xylene	116%	129%	117%	121%	99%	113%	111%	
Decachlorobipneyl	108%	126%	106%	118%	80%	104%	96%	

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.						
Tetra-chloro-meta-xylene						
Decachlorobipneyl						

S.R. = Sample Result
spk conc = Spike Concentration
%REC = Percent Recovery
ACP %RPD = Acceptable Percent RPD Range
ACP %REC = Acceptable Percent Recovery Range

* = *Surrogate fail due to matrix interference*

Note: ***LCS, MS, MSD are in control therefore results are in control.***

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G7-A/B/C/D (Composite)**
LAB I.D.: 040130-34,-35,-36,-37 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
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ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

SAMPLE I.D.: **G8-A/B/C/D (Composite)**
LAB I.D.: 040130-38,-39,-40,-41 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

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CAL-DHS ELAP CERTIFICATE No.: 1555

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1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/02-04/04
DATE ANALYZED: 02/04/04
DATE REPORTED: 02/06/04

METHOD BLANK FOR LAB I.D.: 040130-10 TO -13 (Composite), 040130-14 TO -17 (Composite), 040130-18 TO -21 (Composite), 040130-22 TO -25 (Composite), 040130-26 TO -29 (Composite), 040130-30 TO -33 (Composite), 040130-34 TO -37 (Composite), 040130-38 TO -41 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL
2,4,5-T	ND	0.020
2,4,5-TP (Silvex)	ND	0.020
2,4-D	ND	0.200
2,4-DB	ND	0.200
Dalapon (Dichloroacetic Acid)	ND	0.500
Dicamba	ND	0.020
Dichloroprop	ND	0.200
Dinoseb (DNBP)	ND	0.100
MCPA	ND	20.0
MCPP	ND	20.0

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

QA/QC Report

Analysis: EPA 8151A

Matrix: **SOIL** Date Analyzed: **2/4/2004**

Unit: **mg/Kg (PPM)**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 040130-38~41

Analyte	S.R.	spk conc	MS	% REC	MSD	% REC	%RPD	ACP %RPD	ACP %REC
2,4,5-T	0	1.0	1.03	**103%**	1.06	**106%**	**3%**	**0-20%**	**50-150**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
2,4,5-T	0.100	0.105	105%	**70-130**
2,4,5-TP	0.100	0.094	94%	**70-130**
2,4-DB	1.00	1.12	112%	**70-130**

Surrogate Recovery:

Analyte	spk conc	ACP %	M-BLK	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:				040130-10~13	040130-14~17	040130-18~21	040130-22~25	040130-26~29	040130-30~33
DCAA	0.20	50-150	59%	57%	66%	75%	66%	86%	85%

Analyte	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:	040130-34~37	040130-38~41							
DCAA	68%	75%							

Analyte	%REC	%REC	%REC	%REC	%REC
Sample ID:					
DCAA					

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: February 9, 2004

Mr. Russell Cote
BA Environmental
528 State Street
Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

Project: **Newhall Land / 104012; 8141A**

Dear Mr. Cote:

The analytical results for the soil samples, received by our Lab on January 29, 2004, are attached.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro - Chem, Inc.
1218 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
528 State Street, Glendale, CA 91203
Tel(818)500-1898 Fax(818)246-8195

PROJECT: **Newhall Land / 104012**
MATRIX: SOIL
DATE SAMPLED: 01/29/04
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
DATE EXTRACTED: 02/03/04
DATE ANALYZED: 02/07/04
DATE REPORTED: 02/09/04

SAMPLE I.D.: **G7-A/B/C/D (Composite)**
LAB I.D.: 040130-34,-35,-36,-37 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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PROJECT: **Newhall Land / 104012**
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REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 01/29/04
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DATE REPORTED: 02/09/04

SAMPLE I.D.: **G8-A/B/C/D (Composite)**
LAB I.D.: 040130-38,-39,-40,-41 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
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DATA REVIEWED AND APPROVED BY: _____
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METHOD BLANK REPORT

CUSTOMER: BA Environmental
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Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL X1
Azinphos Methyl	ND	1.0
Bolstar (Sulprofos)	ND	0.1
Chlorpyrifos	ND	0.2
Coumaphos	ND	1.0
Demeton-O	ND	0.17
Demeton-S	ND	0.17
Diazinon	ND	0.4
Dichlorvos	ND	0.07
Disulfoton	ND	0.13
Ethoprop	ND	0.17
Fensulfothion	ND	1.0
Fenthion	ND	0.07
Malathion	ND	0.02
Merphos	ND	0.17
Mevinphos	ND	0.2
Naled	ND	0.07
Parathion Ethyl	ND	0.02
Parathion Methyl	ND	0.02
Phorate	ND	0.1
Ronnel	ND	0.2
Tetrachlorvinphos (Stirophos)	ND	3.35
Tokuthion (Prothiofos)	ND	0.33
Trichloronate	ND	0.1

COMMENTS:
PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
ANALYSIS PERFORMED BY ASSOCIATED LABS, ORANGE, CA

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	8081	8141	8151							Misc. COMMENTS
G7-A	040130-34	1-29-04		Soil	1x4oz		ICE	X	X	X							Composite Samples
G7-B	-35							X	X	X							
G7-C	-36							X	X	X							
G7-D	-37							X	X	X							
G8-A	-38							X	X	X							Composite Samples
G8-B	-39							X	X	X							
G8-C	-40							X	X	X							
G8-D	-41							X	X	X							

Analysis Required

Company Name: Building Analytics
Address: 528 State St.
City/State/Zip: Glendale CA 91203

Project Contact: Russell Cote
Tel: (818) 500-1888
Fax: (818) 246-6155

Sampler's Signature: Russell Cote
Project Name/ID: Newhall Land 104012

Relinquished by: Russell Cote	Received by: [illegible]	Date & Time: 1/29/04 1525	Instructions for Sample Storage After Analysis:
Relinquished by: [illegible]	Received by: [illegible]	Date & Time: 1/30/04 0905	O Dispose of O Return to Client O Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

Date:

WHITE WITH SAMPLE, YELLOW TO CLIENT

Waste Discharge Requirements

State of California
Resources Agency
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

ORDER No. 75-14

WASTE DISCHARGE REQUIREMENTS ORIGINAL

FOR DISPOSAL OF SLUDGE ON LAND
COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
AND NEWHALL LAND AND FARMING COMPANY
(File 73-62)

The California Regional Water Quality Control Board, Los Angeles Region, finds

1. County Sanitation Districts of Los Angeles County have filed a report of waste discharge relative to land disposal of digested sewage sludge produced at the District 26 and 32 Water Renovation Plants. These are secondary plants utilizing the activated sludge process to treat sewage, principally of domestic origin. The discharges of secondary effluent from these plants are the subject of NPDES Permits Nos. CA0054313 and CA0054216 (for surface discharge) and Orders Nos. 74-182 and 74-183 (for reclaimed water use), respectively, adopted by this Board on July 15, 1974.

2. County Sanitation Districts of Los Angeles County haul the digested sludge from these plants to agricultural lands owned by Newhall Land and Farming Company where it is spread on unplanted areas and disked for fertilizing and soil conditioning purposes.

3. The Districts have selected five disposal sites (Exhibits 1 & 2). The first site is in Hasley Canyon about one mile northeast of Highway 126 in Sections 11 and 12, T4N, R17W, S. B. B. and M. The second site is adjacent to Castaic Creek, immediately north of Castaic Junction, in Section 12, T4N, R17W, S. B. B. and M. The third and fourth sites are in San Francisquito Canyon, about 7,000 feet west of San Francisquito Canyon Road. Site 3 is located in Sections 9 and 10, T4N, R16W, S. B. B. & M. All the sites are within Eastern Hydrologic Subarea and overlie highly permeable unconsolidated Recent alluvium. Currently the sludge is disposed of at site 5 only, by spreading and disking into the soil.

4. The Board adopted an Interim Water Quality Control Plan for Santa Clara and Los Angeles River Basins on June 10, 1971; this plan was updated on December 13, 1972.

5. The beneficial uses of groundwaters in Eastern Hydrologic Subarea are: municipal, domestic, agricultural, and industrial water supply.

6. Groundwater from wells in the vicinity is used for irrigation and occasionally for domestic purposes. The quality of these waters is marginal for domestic use because of high dissolved solids (TDS up to 1,500 mg/l and Class 2 for irrigation because of mineralization and a boron concentration often greater than 0.5 mg/l.

7. Drainage from the selected sites is ultimately to Santa Clara River; surface waters of which are beneficially used for ground-water recharge, water-contact and non-water-contact recreation, and fresh-water aquatic habitat.

8. The State Department of Health has not yet adopted criteria for the use of digested sewage sludge, but the staff of the State Department of Health has drafted tentative guidelines for such use. The tentative guidelines specify that if liquid sludge is applied and mixed into the soil, there should be no public use o the land for one year and drainage from the lands must be contro The tentative guidelines further recommend that sewage sludge us on food crops must be sterilized equivalent to that of heat dryi except under special study conditions approved by the Department of Health.

The Board has notified the discharger and interested agencies and persons its intent to prescribe waste discharge requirements for this discharge.

The Board in a public meeting heard and considered all comments pertainin to the discharge.

IT IS HEREBY ORDERED, that County Sanitatation Districts of Los Angeles County and Newhall Land and Farm Company shall comply with the following:

A. Waste Discharge Requirements

1. Wastes discharged at these sites shall be limited to digeste sewage sludge only.

2. Wastes discharged shall not be permitted to escape as surface flow from areas of application or to enter creeks, drainage ditches or watercourses.

3. Wastes shall not be permitted to pond on the property or be placed in ponded water; wastes shall be spread and immediatel disked into the topsoil, as proposed.

4. Erosion of deposited materials by surface flow shall be prevented.

5. Storm runoff, except rain falling naturally on the site, shal be diverted around this site.

6. Wastes shall be discharged only at the proposed site and only on land owned or controlled by the discharger.

7. Water used for irrigation shall not be allowed to escape from the sludge spreading areas as surface runoff.

8. Odors of waste origin shall not be perceptible beyond the boundaries of the property.

9. Breeding of flies, mosquitoes, or other vectors of public health or nuisance significance insofar as it relates to this discharge shall be controlled by the discharger.

10. Neither the discharge nor any treatment or handling of wastes shall cause a pollution or nuisance.

11. No part of sludge spreading areas shall be closer than 100 feet to any water well or a stream channel or watercourse.

12. There shall be no public use of the land on which sludge has been placed for one year unless the sludge has been heat-dried equivalent to sterilization or has been chemically oxidized.

13. Sludge shall not be applied onto lands within 100 feet of any low pressure water line from which domestic water is derived.

B. Provisions

1. A copy of this Order shall be maintained where it will be available at all times to operating personnel.

2. In accordance with Section 13260 of the Water Code, the discharger shall file a report of any material change or propose change in the character, location or volume of the discharge.

3. In the event of any change in name of operator or ownership or control of land or waste disposal facilities, the discharg shall notify this Board of such change and shall notify the succeeding owner or operator of the existence of this Order b letter, copy of which shall be forwarded to the Board.

4. The discharger shall notify this Board immediately by telepho of any adverse condition resulting from these waste discharge or from operations producing these waste discharges, such notifications to be affirmed in writing.

5. In accordance with Section 13267 of the Water Code the discha shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordanc with specifications prepared by the Executive Officer, which specifications are subject to periodic revisions as may be warranted.

6. This Board considers the property owner to have a continuing responsibility for correcting any problems which may arise in the future as a result of the waste discharges or water applie to the property.

7. These requirements will be reviewed and revised as necessary at such time as the State Department of Health adopts criteri for the use of sewage sludge.

8. Before any proposed site is placed in operation, the discharge shall furnish a plan for surface drainage control to protect the site against errosion and to divert runoff around the site Such plans must be approved by the Executive Officer prior to disposal operations.

I, Raymond M. Hertel, Executive Officer, do hereby certify that the foregoing is a full. true. and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on March 10, 1975.

Raymond M Hertel

RAYMOND M. HERTEL, Executive Officer

Monitoring and Reporting Program
County Sanitation Districts of
Los Angeles County and Newhall
Land and Farming Company

GENERAL PROVISIONS FOR SAMPLING AND ANALYSIS

Unless otherwise noted, all sampling, sample preservation and analyses sha be conducted in accordance with the current edition of "Standard Methods for Examination of Water and Waste Water" or by procedures approved by the Executive Officer.

All analyses shall be performed in a laboratory approved by the Executive Officer.

REPORTING

Semiannual reports shall be submitted to the Board, beginning with the second half of 1975. If no wastes were deposited during the reporting period the report shall so state.

East report shall contain the following information with respect to the reporting period:

1. Total volume of wastes discharged during the reporting period, anc average monthly discharge in gallons including the origin, hauler date of hauling and volume of each shipment.

2. A scaled map showing the areas of the site where the above wastes were applied during the reporting period, including the quantity (gallons per acre per day) applied per each area and the location and designation of selected groundwater sampling wells.

3. A certification that all wastes deposited were in compliance with the Board's requirements and that no wastes have been deposited outside of the boundaries of the site as specified in the Board's requirements.

4. The results of groundwater monitoring obtained during the report period, including groundwater level of monitored wells.

The first monitoring report is due by July 15, 1975, and shall include the results of all annual and semiannual monitoring specified above.

In reporting the monitoring data, the discharger shall arrange the data in a tablular form so that the dates, constituents, concentrations and other information are readily discernible.

Monitoring and Reporti Program
County Sanitation Districts of
Los Angeles County and Newhall
Land and Farming Company

GENERAL PROVISIONS FOR REPORTING

If Board requirements are not met, a statement shall be submitted of the actions undertaken or proposed which will bring the operation into full compliance with requirements at the earliest time and submit a timetable for cleanup and/or correction.

By January 30 of each year, beginning in 1977, the discharger shall submit an annual report to the regional board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition, the discharger shall discuss the compliance record and the corrective actions taken or planned which may be needed to bring the discharge into full compliance with the waste discharge requireme

Each report shall contain the following completed declaration:

"I declare under penalty of perjury that the foregoing is true and correct.

Executed on the _____ day of _____ at _____.

_____(Signature)

_____(Title)"

These records and reports are public documents and shall be made available for inspection during business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region.

Ordered by Raymond M. Hertel
RAYMOND M. HERTEL
Executive Officer

March 10, 1975

CALIFORNIA REGIONAL TER QUALITY CONTROL BOAR LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM

FOR

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
NEWHALL LAND AND FARMING COMPANY
(File 73-62)

MONITORING AND REPORTING

GROUNDWATER MONITORING

The discharger shall establish a suitable and accessible water well down-gradient from each disposal site used as an underground receiving water monitoring station. In addition to the above, at least one control well shall be established upstream from all disposal sites. The selected wells are subject to the approval of the Executive Officer.

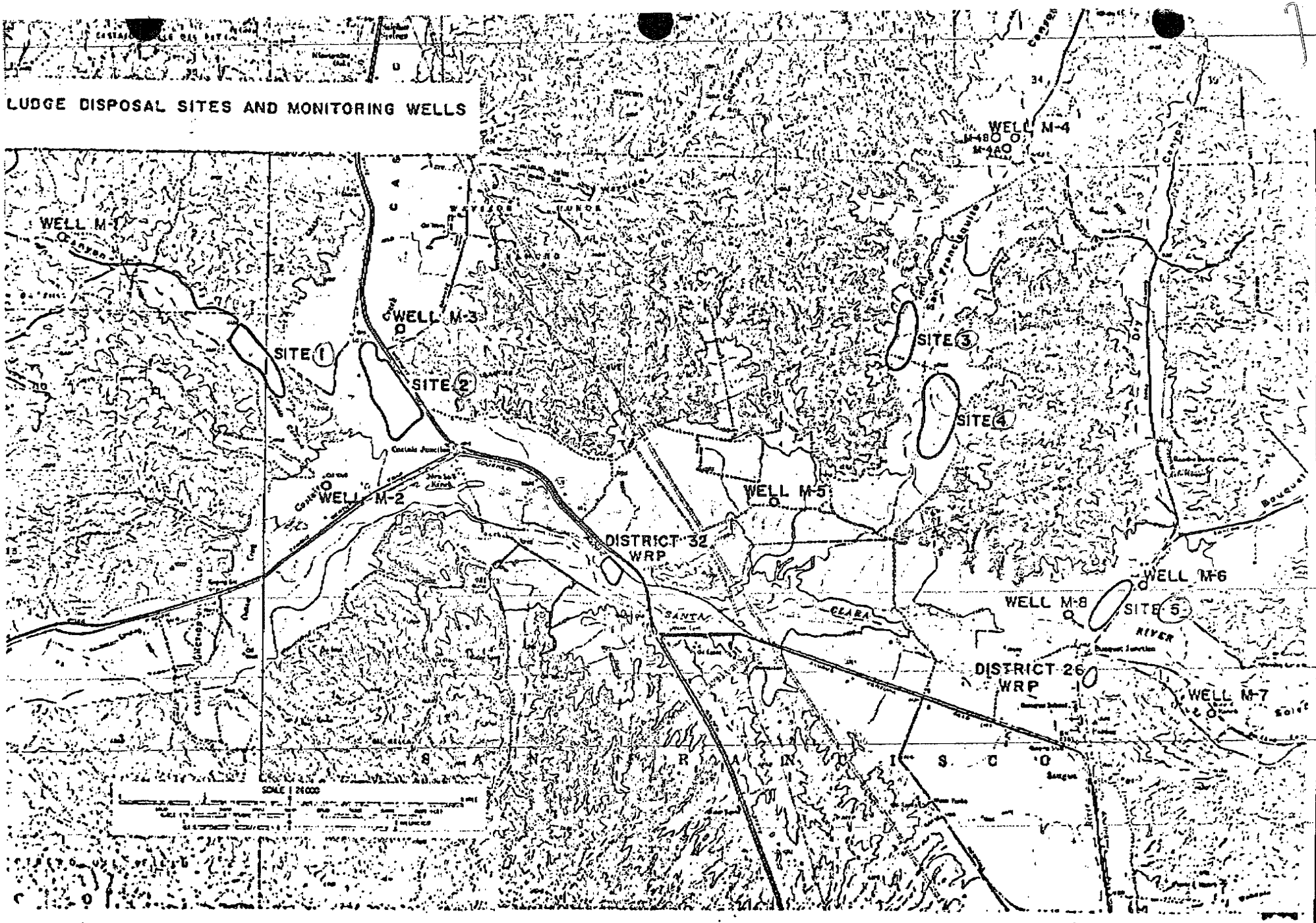
The following shall constitute the groundwater monitoring program:

Parameter	Units	Frequency
Total dissolved solids[1/]	mg/l	semiannually
Chloride	mg/l	semiannually
Sulfate	mg/l	semiannually
Electrical conductivity	u mhos/cm	semiannually
pH	pH units	semiannually
Nitrate nitrogen	mg/l	semiannually
Chemical oxygen demand	mg/l	semiannually
Boron	mg/l	annually
Lead	mg/l	annually
Cadmium	mg/l	annually
Total chromium	mg/l	annually
Copper	mg/l	annually
Nickel	mg/l	annually
Silver	mg/l	annually
Zinc	mg/l	annually
Mercury	mg/l	annually
Arsenic	mg/l	annually
Phenols (as C_6H_5OH)	mg/l	annually
Detergents (as MBAS)	mg/l	annually
Oil and grease[2/]	mg/l	annually
Chlorinated hydrocarbons	mg/l	semiannually

1/ By glass fiber filtration with evaporation at 180°C. Reference: Methods for Chemical Analysis of Water and Wastes, 1971, Environmental Protection Agency (EPA Methods), p. 275.

2/ By the trichlorotrifluoroethane extraction method.

LUDGE DISPOSAL SITES AND MONITORING WELLS



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Studies misc

County Sanitation Districts

of

Los Angeles County

DISTRICTS 26/32 SLUDGE DISPOSAL STUDY

PROGRESS REPORT NO. 1

John D. Parkhurst
Chief Engineer and General Manager

1955 Workman Mill Road
Whittier, California 90601

September 1977

II

PRESENT SLUDGE DISPOSAL PRACTICE AND PROGRESS REPORT ON THE SLUDGE STUDY

A. History

Land disposal of liquid digested sludge has been the disposal method of choice since the Saugus-Newhall and Valencia WRP's were placed into operation during the latter part of 1962 and 1966, respectively. The Sanitation Districts have six possible disposal sites, shown in Figure 1, for spreading sludge from the Saugus-Newhall and Valencia WRP's. Sludge is hauled from both treatment plants to the disposal sites using a combination of Sanitation Districts' vehicles and personnel, and a private hauler (Reagen Vacuum Truck Service). The sludge is emptied from the tank truck while the truck is moving and subsequently turned into the soil by a tractor-drawn harrow. The sites, of about 25 to 60 acres each, include four no longer in use, one presently in use, and one which has not been used. They are all located on the flood plains of the Santa Clara River and three tributary canyons: San Francisquito, Hasley, and Castaic Canyons. The sites are discussed below in essentially chronological order of use.

Site 5 (25 acres at the junction of Bouquet Canyon and Santa Clarita Valley, northwest of Bouquet Junction) and portions of land northeast of Bouquet Junction between Soledad Canyon Road and the Santa Clara River were used for sludge spreading operations during the early years of Saugus-Newhall treatment plant operation. The initial treatment facility was a 0.25 mgd extended aeration plant which was expanded to 1.0, 1.5, and 5.0 mgd during the years 1963, 1965, and 1967, respectively. Because the Saugus-Newhall WRP utilized extended aeration and experienced average wastewater flows less than half of design capacity, no significant quantities of sludge were spread during this period.

Site 6 (60 acres in the Santa Clarita Valley) was used for several years but is not now in use. It was commonly called the Forneris site after the individual who farmed it. In the fall of 1973, Newhall Land and Farming Company, which owns the site, requested the Sanitation Districts to cease operation on the Forneris site when odor complaints were received from nearby commercial enterprises. Operations were transferred to Site 1.

Site 1 (37 acres in Hasley Canyon) was used for only three months, from January-March 1974. Newhall Land and Farming Company leased the land to a seed company and requested the Districts to abandon use of Hasley Canyon and transfer operations to San Francisquito Canyon.

Site 4 (43 acres in San Francisquito Canyon) was used for sludge disposal from April through September 1974. The operation was then shifted to Site 3 (27 acres in San Francisquito Canyon). During the period October 1974 to October 1975, the entire quantity of sludge from the Saugus-Newhall and Valencia WRP's was disposed of at Site 3. The sludge loading rate during this period was approximately 45 dry tons/acre/year (based on 2 percent solids content in digested sludge).

In the period October 1975 to present, the sludges have been applied to Site 4 at a rate of approximatey 25 tons/acre/year. Sludge spreading operations continued without cost to the Sanitation Districts until a formal lease arrangement was drawn up in August 1976. This permits the Districts to continue spreading operations at Sites 3 and 4 for five years from that date. After August 1981, the lease is to continue in force from year to year with a 180-day notice required for cancellation prior to the end of the current year.

Site 2 (60 acres at the junction of Castaic Valley and Santa Clara Valley) was identified as an alternative to Sites 3 and 4 for rainy periods when more time is needed for allowing equipment to reenter the site. The site has never been used and may never be used because it is near a developed area.

B. Sludge Characterization

Characterization of the disgested sludge is the first step in a quantitative approach to the sludge disposal problem. Table 0 summarizes the quantities of sludge currently being produced at the Saugus-Newhall and Valencia WRP's. In order to characterize the digested sludges, samples were collected during November 1976 and April 1977, and submitted to the Districts' San Jose Creek Water Quality Laboratory for analyses of physical properties, nitrogen, phosphorous, and heavy metals content. During the November sampling period each sample was a daily composite of grab samples from each truckload of sludge hauled to the spreading site from the respective plants. In April 1977, samples were taken of the raw sludge as well as the float from the air flotation unit and the subnatant of the small and large digester systems in order to show more clearly the sources of nitrogen in the sludge hauled from the respective plants.

The amount of digested waste activated sludge solids (W.A.S.) hauled to the sludge disposal sites was approximately 55 percent of the total solids hauled from the Saugus-Newhall WRP during November 1976. At the Valencia WRP during the same period, the amount of waste activated sludge solids fed to the mixed digestion system ranged from 23.6 to 93.7 percent of the total solids with an average blend of 70.0 percent W.A.S.

TABLE 0

Sludge Quantities Produced at WRP, 1977

	Saugus-Newhall	Valencia
Average Flow, mgd	3.1	2.0
Total Sludge,		
. dry tons/day	2.6	1.3
. wet tons/day	103	59
. % solids	2.5	2.3
W.A.S.		
. dry tons/day	1.4	1.5
. wet tons/day	35	40
. % solids	4.0	3.7

Table I is a summary of the data obtained from analyses of Saugus-Newhall and Valencia digested sludge samples during the November 1976 sample period; Table II compares the April nutrient data with November 1976 data. In general, analysis of the data indicates that both sludges contain a relatively high fraction of nutrients and low levels of toxic constituents. A more specific discussion of the results follows.

1. Nutrient Concentrations

Analysis of data from both plants reveals characteristics typical of sludges from municipal sources with little industrial waste input. In particular, total nitrogen and phosphate concentrations are higher than or equal to most sludges. During November 1976 the total nitrogen was 9.5 percent (as N) of dry sludge solids at each plant; the total phosphate was 2.2 percent (as P) at Saugus-Newhall WRP, and 3.1 percent (as P) at Valencia WRP. By comparison sludge produced by the Districts' main treatment plant (JWPCP) is low in nitrogen, containing 5 percent total nitrogen (dry weight basis) for digested primary sludge, 6 percent for W.A.S., and only 1 percent for compost.[1] Samples of digested sludge collected during April 1977, at the Saugus-Newhall and Valencia WRP's showed a consistently lower total nitrogen content (8.6 to 8.8 percent) than the previous samples, although they were close enough to be in the same range. However, total phosphate concentrations of digested sludge samples obtained at the Valencia WRP were even higher than those obtained during the November sampling period (3.5 percent as P compared to 3.1 percent). Samples of thickened W.A.S. contained almost twice as much total nitrogen on a dry weight basis (7.6 and 8.5 percent, respectively) as primary sludge (4.9 and 4.3 percent) at the two plants. The higher concentrations of total nitrogen in waste activated sludges relative to primary sludges is typical.[2] In general, the sludges have nitrogen concentrations comparable to those in some materials marketed as fertilizer and much more than sludges marketed as soil amendments.

2. Trace Constituent Concentrations

The heavy metal concentrations are contained in Table I. These concentrations are all low relative to typical digested sludges.[3]

1. Lo, M.P., Haug, T., and Davis, R., "Municipal Sludge Characterization : Los Angeles and Orange Counties, CA," LA/OMA Project Technical Report No. 3, August 1977.
2. WPCF Manual of Practice No. 2, "Utilization of Municipal Wastewater Sludge," 1971.
3. Keeney, D.R., Lee, K.W., and Walsh, L.M., "Guidelines for the Application of Wastewater Sludge to Agricultural Land in Wisconsin," Technical Bulletin No. 88, Department of Natural Resources, Madison, Wisconsin, 1975.

TABLE I

Districts 26 & 32 Sludge Characterization

Summary of Digested Sludge Composites

November, 1976

Constituent	District 26 - Saugus		District 32 - Valencia	
	Averages of 5 daily composites[1] Concentration as mg/kg dry sludge		Averages of 6 daily composites[1] Concentration as mg/kg dry sludge	
	Average	Range	Average	Range
pH - units	6.94	6.82-7.03	7.77	7.12-8.61
Total Solids-%	2.50	2.28 -3.04	2.25	1.95 -2.43
NO_3-N	3.7	3.3-4.4	4.5	4.1-5.1
NH_3-N	19,840	14720-22270	39,550	36260-47980
Organic N	74,780	71770-79730	55,600	52940-60960
PO_4-Total	57,850(4)	54000-60000	82,380(5)	55100-93100
Arsenic	10.3(4)	1.84-16.3	9.41(5)	4.56-11.2
Boron	127(1)	--	99.9	71.5-149
Cadmium	10.1	7.3 -12.0	11.3	9.39-13.7
Chromium	53.5	27.5-82.1	250	187-292
Copper	740	690-776	757	587-855
Lead	217	140-275	210	185-233
Mercury	0.87	0.05-4.09	10.9	6.05-17.5
Molybdenum	16.8	11.1-21.7	28.1	17.0-51.9
Nickel	52.5	43.7-73.7	28.6	21.5-32.2
Selenium	7.09(4)	5.97-8.61	11.7(5)	7.84-20.5
Silver	20.7	0.85-66.6	12.7	5.95-28.6
Zinc	2350	1940-2760	2270	1473-2670
Cd/Zn ratio %	0.43	0.32-0.51	0.50	0.35-0.93

[1]Where values are followed by a number in parentheses, the average represents the indicated number of daily composites.

FYI - Above metals concentration are not representative of current concentrations

TABLE II

Saugus-Newhall and Valencia Sludge Characterization

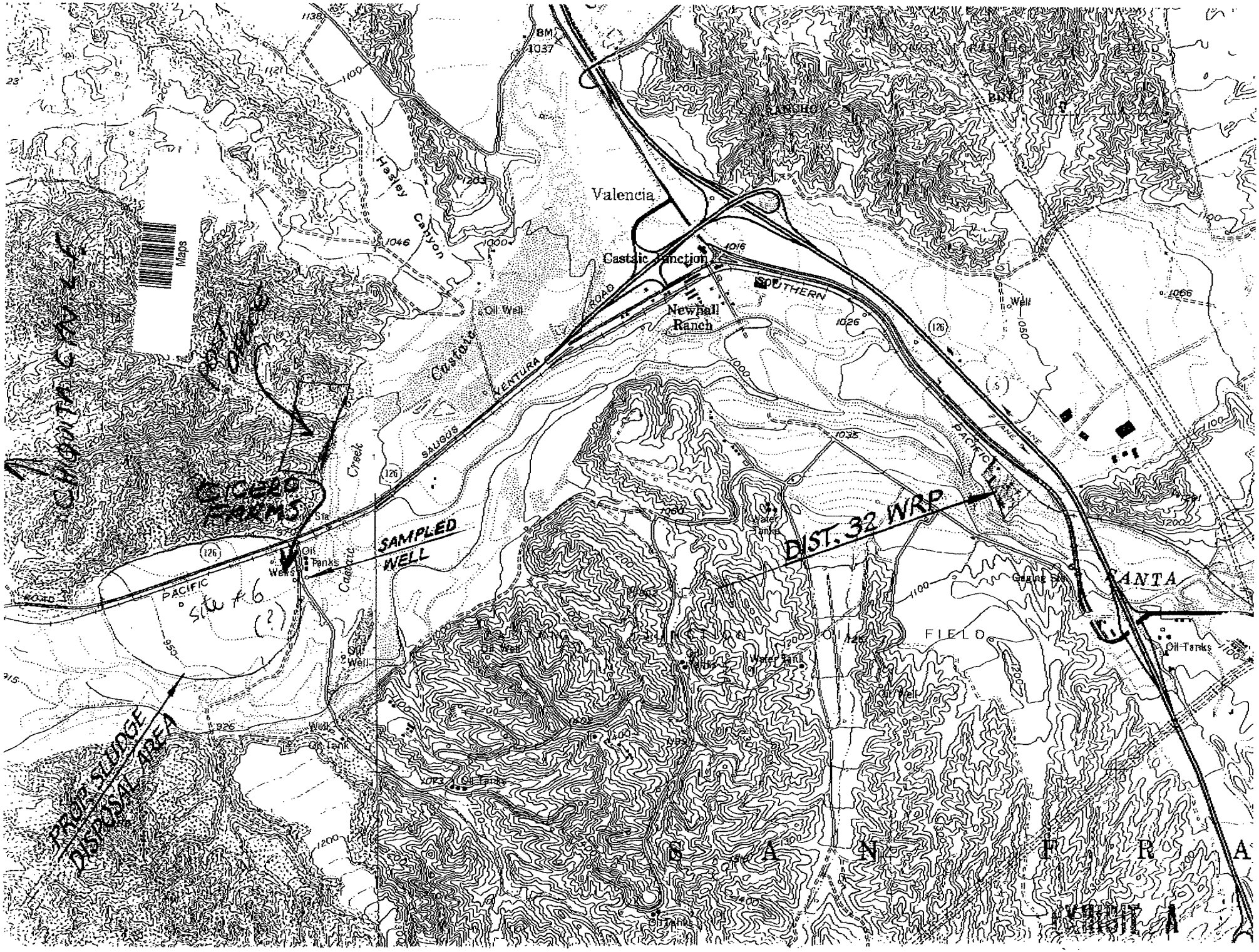
Comparison of Nutrient Concentrations in Process Sludges[1]

Source / Constituent	November Samples[2]		April Samples[3]						
			Saugus-Newhall Sludges				Valencia Sludges		
	Saugus -Newhall Digested Sludge	Valencia Digested Sludge	Primary	Waste	Small Digester	Large Digester	Primary	Waste	Digested
Total Solids-%	2.50	2.25	8.90	0.60	2.37	2.39	4.03	3.33	2.55
Ammonia-mg/kg N	19840	39550	4420	5400	10950	43520	3180	4670	41960
Organic N - mg/kg N	74780	55600	44680	70790	76640	43100	39710	80640	43920
Total Kjeldahl Nitrogen - mg/kg N	94620	95150	49100	76190	87590	86620	42890	85310	85880
Total Phosphate - mg/kg PO_4	57850	82380	23100	61860	70080	32220	36380	58460	91260

(1) Results reported as mg per Kg of dry sludge solids.

(2) Averages of 5 composites.

(3) Averages of 3 composites.


Valencia
Castaic Junction
Newhall Ranch
Hasley Canyon
Castaic Creek
VENTURA
SOUTHERN
PACIFIC
SAUGUS
ROAD
Oil Well
Oil Tanks
Water Tanks
Water Tank
Oil Tank
Well
Sta
Gaging Sta
Oil Tanks
FIELD
SANTA
CICERO FARMS
SAMPLED WELL
DIST. 32 WRP
Site #6 (?)
PROP. SLUDGE DISPOSAL AREA
EXHIBIT A
Maps

COUNTY OF LOS ANGELES
Public Health

JONATHAN E. FIELDING, M.D., M.P.H.
Acting Director and Health Officer

JOHN F. SCHUNHOFF, Ph.D.
Acting Chief Deputy

Environmental Health
ARTURO AGUIRRE, R.E.H.S., M.A.
Director of Environmental Health

Bureau of Environmental Protection
Solid Waste Management Program/L.A. County LEA
KEN MURRAY, CHIEF
5050 Commerce Drive
Baldwin Park, California 91706
Tel. (626) 430-5540 Fax (626) 430-4839
www.lapublichealth.org

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Yvonne B. Burke
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Studies misc

County Sanitation Districts

of

Los Angeles County

DISTRICTS 26/32 SLUDGE DISPOSAL STUDY

PROGRESS REPORT NO. 1

John D. Parkhurst
Chief Engineer and General Manager

1955 Workman Mill Road
Whittier, California 90601

September 1977

II

PRESENT SLUDGE DISPOSAL PRACTICE AND PROGRESS REPORT ON THE SLUDGE STUDY

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Organic N - mg/kg N	74780	55600	44680	70790	76640	43100	39710	80640	43920
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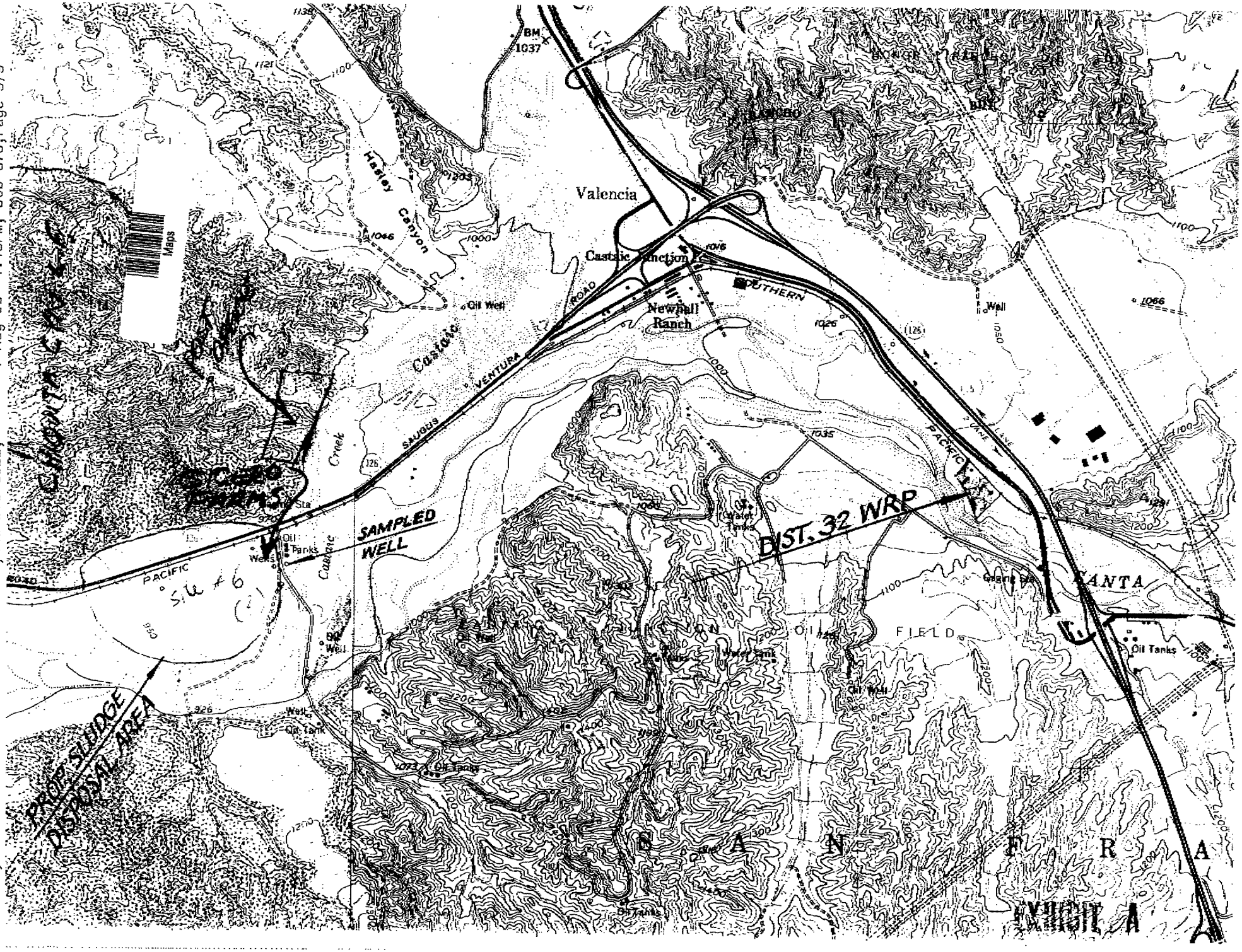
(1) Results reported as mg per Kg of dry sludge solids.

(2) Averages of 5 composites.

(3) Averages of 3 composites.


Valencia
Castaic Junction
Newhall Ranch
SOUTHERN
PACIFIC
VENTURA
ROAD
SAUGUS
Castaic
Creek
Hasley Canyon
Oil Well
Oil Tanks
Water Tanks
Water Tank
Gas Tank
Maps
SAMPLED WELL
DIST. 32 WRP
PROP. SLUDGE DISPOSAL AREA
Site #6
SANTA
FIELD
EXHIBIT A

COUNTY OF LOS ANGELES
DEPARTMENT OF HEALTH SERVICES
Public Health

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Acting Director and Chief Medical Officer
DEPARTMENT OF HEALTH SERVICES

JONATHAN E. FIELDING, M.D., M.P.H.
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April 14, 2006

Cam Noltemeyer
Committee for Safe Schools
camandjerryn@netzero.net

Dear Ms. Noltemeyer:

The Los Angeles County Department of Health Services (DHS) was contacted by Supervisor Michael D. Antonovich's office regarding your recent concerns about the health and safety of students at Rio Norte Junior High School and future residents of the West Creek Development. Although the development is near land that was previously used for municipal sewage disposal, we do not believe that the current grading and building poses a health hazard to students at Rio Norte Junior High School or the future residents of the West Creek Development.

This Department's Toxics Epidemiology Program assists with identifying, controlling, and preventing health effects associated with toxic agents throughout Los Angeles County. In reviewing your concerns, the Toxics Epidemiology Program gathered background information and corresponded with representatives from: the Los Angeles County Sanitation District, this Department's Environmental Health, the Los Angeles County's Department of Public Works, the State Department of Toxic Substances Control, Newhall Land, and William S. Hart Union High School District. We reviewed the attached documents including the original 1976 contract/ lease for sewage disposal between Newhall Land and the Sanitation District and a letter from Valencia Company confirming termination of the sewage disposal contract on November 1, 1986.

Staff also reviewed a Complaint Report that was prepared at your request by an inspector from the Environmental Health Water, Sewage and Subdivision Program after a site visit on March 1, 2006. This was a site visit at the open area south and southwest of Rio Norte Junior High School (near the lower athletic field). This site visit was followed by an e-mail response that was sent to you on March 14, 2006, by Dennis Hunter of the Department of Public Works. We reviewed letters and files from 2000 and 2001 pertaining to the Toxic Substance Control's review of the 2000 Preliminary Endangerment Assessment (PEA) for Rio Norte Junior High School. Finally, we reviewed pertinent sections of the 1999 West Creek Draft Environmental Impact Report (EIR) provided by Newhall Land and a report dated February 16, 1998, entitled Investigation and Analysis of Sewage Disposal Site No. 3 completed by R.T. Frankian and Associates.

The most compelling factor demonstrating that there is no public health risk, is the significant time that has passed since it was last utilized as a municipal sewage disposal site. This land has not been used for sludge disposal since 1986. Consequently, any potential biological hazards at that time, would not be hazardous today.

In addition, the following factors further support the lack of public health risk:

- This former site for municipal sewage disposal existed on 27 acres of land. These 27 acres are located outside of the development envelope for the proposed West Creek Development. Thus, none of the land formerly used for sewage disposal is currently undergoing grading or building.

- Soil testing at the former disposal site was performed by a State certified laboratory in 1997. Laboratory results confirmed that the soil presented minimal risk to human health. Thus, the area was deemed safe for development and construction.

- According to Toxics Substance Control's site assessment before Rio Norte school construction, the sewage disposal site was "at least 600 feet down-gradient from the school" and "it does not appear that the sludge-spreading site has impacted the proposed school site." Therefore, students at the nearby school are not at risk from exposure to the soil from the former disposal site.

- Based upon the 2000 PEA conducted at Rio Norte Junior High School, Toxics Substance Control determined that "neither an actual or potential release of hazardous material indicated at the site pose a threat to human health" and "no further action is required with respect to investigation and remediation of hazardous substances in surface and subsurface soil at the site."

- Per the William Hart Union High School District, an odor detected at the lower athletic fields is due to problems with the current irrigation system, and not due to soil at the former sewage disposal site. We were assured that school facilities' personnel are currently working on a solution to address this situation.

- According to DHS' Environmental Health Program, there is no visible evidence of sewage, fecal matter and/or sewage sludge, and there are no observable sanitation violations at the open area south and southwest of the school near the athletic fields.

Thank you for sharing these health and safety concerns. If you have any questions or need additional information regarding our findings, please call Paul Simon, M.D., Director, Health Assessment and Epidemiology, at (213) 240-7785.

Sincerely,

John F. Schunhoff, Ph.D.
Chief of Operations, Public Health

Attachments

c: Michael D. Antonovich, Supervisor, Fifth Supervisorial District
Dennis Hunter. Los Angeles County Department of Public Works
Mike Sullivan, Los Angeles County Sanitation Districts
Richard Wagener, Los Angeles County Environmental Health
Becky Valenti, Los Angeles County Environmental Health
Javier Hinojosa, Department of Toxics Substances Control
Mike Otavka, William S. Hart Union High School District
Glenn Adamick, Vice President, Forward Planning and Entitlements, Newhall Land

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August 30, 2006

File No.: 106190

Gatzke Dillon & Ballance LLP
c/o Rachel Cook
1525 Faraday Avenue, Suite 150
Carlsbad, California 92008

REFERENCE: FORMER SLUDGE DISPOSAL SITE 6
LANDMARK VILLAGE
VALENCIA, CALIFORNIA

SUBJECT: THIRD-PARTY REVIEW OF ENVIRONMENTAL DOCUMENTS

Dear Ms. Cook:

BA Environmental, a division of Building Analytics, is pleased to submit this review of previous environmental documents, to **Gatzke Dillon & Ballance LLP.** According to previous environmental documents, a portion of the proposed Landmark Village site was reported to formerly be used for sludge disposal.

The purpose of this engagement is to provide third-party review of existing environmental and related documents, and to determine if there is a potential for significant environmental impact to the subject site.

The scope of work is defined as follows:

REVIEW OF EXISTING ENVIRONMENTAL ASSESSMENT REPORTS

1. Conducted a desktop review of existing environmental reports provided by Client. Reports were reviewed in the order provided.

2. Provided a brief letter report for the subject property, outlining the environmental condition of the subject site due to past sludge disposal activities.

3. Provided recommendations regarding the past sludge disposal activities on the subject site.

4. The letter report shall be based upon information provided by Gatzke Dillon & Ballance LLP. BA Environmental makes no guarantee regarding the accuracy or completeness of information provided to us by others.

Note: Consultant shall use its best efforts to perform its services and to make recommendations consistent with standard engineering practices of the environmental industry. This contract is for "Third Party" review services only. Consultant has not communicated with the regulatory agencies, developed the scope of services or provided supervision in performing same. As such, Consultant makes no warranty, either expressed or implied, and accepts no responsibility in connection with the environmental work previously conducted.

REVIEW OF PREVIOUS ENVIRONMENTAL REPORT

County Sanitation Districts of Los Angeles County (LACSD), Districts 26/32 Sludge Disposal Study Progress Report No. 1, dated September 1977. According to the 1977 document prepared by the LACSD, land disposal for liquid digested sludge has been the method of choice for disposal by the Saugus-Newhall and Valencia Wastewater Reclamation Plants (WRPs) since their coming online in 1962 and 1966, respectively. The subject site is reported to be one of six disposal sites used by the Saugus-Newhall and Valencia WRPs for sludge disposal. The subject site was identified as Disposal Site #6, also known as the Forneris Site after the individual who farmed it. The site consisted of 60 acres of agricultural land which was owned by the Newhall Land and Farming Company (NHL&F). According to the LACSD document, the standard practice was to haul the sludge from both WRPs using both county trucks and a private hauler. The sludge was emptied from the tank truck while the truck was moving. Subsequently, the sludge was turned into the soil by a tractor-pulled harrow. This disposal practice continued until the fall of 1973, when NHL&F requested that the LACSD cease disposal operations on Site #6 (Forneris Site). These disposal operations were transferred to Site #1. A map (labeled Exhibit A) which was included with the report revealed that the former Site #6 (Forneris Site) occupied the approximate eastern 25% of the proposed Landmark Village development.

According to the LACSD document, samples of the digested sludge from both WRPs were collected in November of 1976 and April of 1977. The samples were collected and analyzed to characterize the digested sludge for disposal. Daily samples were composites of samples collected from each truck load from their respective WRPs. In November of 1976, 5 daily composite sample results were averaged, while in April of 1977, 6 daily composite sample results were averaged. The averaged samples revealed higher than average concentrations of nitrogen and phosphorous. The LACSD also indicated that the heavy metal concentrations were low relative to typical digested sludges. The LACSD concluded that the nutrient levels in the sludges were high, while the levels of toxic constituents were low.

CONCLUSIONS

The eastern 25% of the proposed Landmark Village site was used in the 1960s and early 1970s for the disposal of treated municipal sewage sludge. Since the cessation of the disposal operations in 1973, the disposal site has been used for agricultural cropland. These agricultural activities would have included frequent disking and turning of the soils. This frequent turning of the soils would have aerated the shallow soils beneath the subject site. Based on the length of time since the last disposal event and the frequent

turning of the soils in the former disposal site #6, it is highly unlikely that any pathogens remain in the soil from the former sludge disposal activities. In addition, due to the frequent turning of the soil, the usage of the land for agricultural crops and the natural leaching of the soils by rainwater percolation, it is highly unlikely that any of the original concentrations of nitrates, ammonia, phosphates or heavy metals in the sludges deposited in the soil due to sludge disposal remain. In addition, Newhall Land has informed BA Environmental that the current grade of the land for the Landmark Village site is going to be brought up a minimum of 10 feet. This will place at least 10 feet of fill between the planned grade and the soil in which the sludge was deposited. Based on the additional 10 feet of fill on top of the former sludge disposal site, it is highly unlikely that humans could come into contact with the soil from the former sludge disposal site. Therefore, it is BA Environmental's opinion that the former sludge disposal site poses a very low threat to human health, and does not pose any significant environmental issues.

RECOMMENDATIONS

Based on the length of time that has passed since the subject site was used for treated municipal sewage sludge, the covering of the subject site with at least 10 feet of fill material, and the very low threat to human health, it is BA Environmental's opinion that no further investigations or remedial activities are warranted at this time.

If you have any questions or require additional information, please contact the undersigned at (818) 841-2575.

Respectfully submitted,
BA ENVIRONMENTAL

Russell M. Cote, M.Sc., R.G. No. 7139
Manager, Environmental Services

REGISTERED GEOLOGIST
RUSSELL M. COTE
No. 7139
Exp. 12-31-07
STATE OF CALIFORNIA

ESA Addendum Letter - Potable and Reclaimed Water Tank Site,
October 3, 2005

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DRAFT

October 3, 2005

File No.: 104012

Mr. Keith Herren
Newhall Land
23823 Valencia Boulevard
Valencia, California 91355

Reference: Potable and Reclaimed Water Tank Site
Associated with the Proposed Landmark Village Development
Tentative Tract Map No. 53108, State Highway 126
Newhall Ranch, California

Subject: Addendum Letter
Phase I Environmental Site Assessment

Dear Mr. Herren:

BA Environmental is pleased to submit this Addendum to the Phase I Environmental Site Assessment (ESA) conducted at the subject site on May 5, 2004. This addendum covers the proposed Potable and Reclaimed Water Tank Site associated with the proposed Landmark Village Development (formerly known as the River Village Development). This addendum builds on information obtained during the May 2004 Phase I ESA, and includes a review of historical documents, a site reconnaissance, a review of local regulatory agencies and a review of pertinent government environmental databases. Historical documentation includes historical aerial photographs, historical topographic maps, city directories and building department records. Copies of historical aerial photographs, historical topographic maps and copy of the governmental database report is included as an attachment to this addendum letter.

Site Location

The subject property consists of vacant land for proposed water tanks and narrow strips (approximately 35' to 140' wide) of land for proposed utility corridors. The subject site is located in the southern portion of what is known as the proposed Chiquito Estates development, and along the western edge of what is known as the Chiquito Canyon Development. These developments are located along the western foot of Chiquito Canyon (see Figure 2). Easements for the water lines also continue along Highway 126 to the west toward the proposed Water Reclamation Plant and into the Landmark Village Development. These easements are discussed in an addendum letter for the May 2004 Phase I ESA (BA #104012) for the Landmark Village Development.

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Site History and Reconnaissance

The majority of the subject site is located in the southern portion of what is known as the proposed Chiquito Estates development, and along the western edge of what is known as the Chiquito Canyon Development. In 2005, BA Environmental conducted a Phase I ESA (BA #105034) on several developments which included the Chiquito Canyon and Chiquito Estates Developments. Although part of the Chiquito Canyon and Chiquito Estates Developments, the proposed Potable and Reclaimed Water Tank Site is associated with the proposed Landmark Village Development. Two easements for the water lines also along Highway 126 to the west toward the proposed Water Reclamation Plant, and to the south and east into the Landmark Village Development are discussed in an addendum letter for the May 2004 Phase I ESA (BA #104012) for the Landmark Village Development.

Historically, the tanks locations are located in the eastern-most portion of the Del Valle Oil and Gas Field. Both tank locations were occupied by vacant hills covered by native vegetation from the early 1900s through the present day. By 1952, a small dirt road traversed the Zone 1 Tank Site. The water line easements for both tank sites traversed vacant undeveloped land with some dirt roads crossing them, from prior to the 1950s through the present. The easement along the western side of Chiquito Canyon was vacant undeveloped land until some time in the 1940s. In the 1940s, Chiquito Canyon Road was constructed along the proposed easement.

Adjacent properties to the tank locations included vacant undeveloped land to the north, south, east and west. Oil wells were formerly located in the site vicinity to the west, east and south.

On the day of the site reconnaissance, the two proposed tank sites were observed to be occupied by vacant undeveloped land, with a dirt road traversing the Zone 1 Tank Site. The proposed Zone 1 Tank Site (Parcel 372) consists of approximately 3.86 acres of land. Two tanks are proposed for this site, 3.0 MG water tanks and a 1.7 MG reclaimed water tank. The easement leading from these tanks to the main easement in Chiquito Canyon traversed vacant undeveloped land. Two former oil well locations were observed just north of the easement. In addition, a geotechnical boring location was observed to the north of the easement. The easement was also observed to be located near a dirt access road running along an intermittent stream channel. Along this road was an area where trash was formerly being dumped. Various old rusty cans, bottles, and wood and metal debris were observed. No evidence of distressed vegetation or soil staining was observed on the Zone 1 Tank Site or on its water line easement. In addition, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this portion of the subject site.

The proposed Zone 1A Tank Site (Parcel 373) consists of approximately 1.24 acres of land. One tank is proposed for this site, and consists of a 1.1 MG water tank. The easement leading from this tank to the main easement in Chiquito Canyon traversed vacant undeveloped land and along a small dirt road. An area of oil staining was observed just north of the easement. The easement was also observed to run along a small dirt access road running along an intermittent stream channel. Along this road was

an area where trash was formerly being dumped. Various old rusty cans, bottles, and wood and metal debris were observed. No evidence of distressed vegetation or soil staining was observed on the Zone 1 Tank Site or on its water line easement. In addition, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this portion of the subject site.

The water line easement along the western edge of Chiquito Canyon is occupied by Chiquito Canyon Road. A Unocal Pipeline was observed to run beneath Chiquito Canyon Road. Several other pipelines, including Mobil Oil, Chevron and Shell Oil Company pipelines, cross this easement. There are no indications that these pipelines have leaked. These pipelines and any environmental issues regarding these pipelines are the responsibility of the oil company which owns and operates them. Several active and former oil wells, along with several former tank battery locations, are located near the easement to the east and west. In addition, agricultural land was observed to the east of the easement. No evidence of distressed vegetation or soil staining was observed on this water line easement. In addition, no hazardous substances, or evidence of USTs, ASTs or wastewater clarifiers were observed on this portion of the subject site.

AGENCY CONTACTS

California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR)

BA Environmental contacted the office of the DOGGR regarding oil wells on the subject site. According to DOGGR, no oil wells are located on the subject site.

Los Angeles County Department of Public Works (LACDPW)

BA Environmental visited the office of the LACDPW regarding files for USTs and hazardous materials storage and usage. According to the LACDPW, no files exist for the subject properties.

State of California Regional Water Quality Control Board, Los Angeles Region (Region 9)

BA Environmental contacted the State of California Regional Water Quality Control Board, Los Angeles Region (RWQCB) regarding the subject site. According to the RWQCB, no files exist for the subject site.

GOVERNMENT RECORDS REVIEW

Regulatory compliance is a primary element of an ESA. Failure to comply with governmental regulations can result in fines, and can expose businesses or individuals to liabilities from which the law would otherwise shield them. The presence of hazardous wastes or hazardous materials, on-site or at neighboring sites, may present certain liabilities. Environmental Data Resources, Inc. (EDR) provided the most recent

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information regarding the hazardous materials sites identified below.[1] Sites of potential environmental concern are described at the end of this section in Table 1. It should be noted that the search radii for each database has been extended beyond ASTM requirements. The referenced search radii below are minimum distances. The actual search distances are much greater.

Table 1
GOVERNMENT-LISTED DATABASES
IDENTIFIED SITES OF ENVIRONMENTAL CONCERN

Site of Concern And Address	Distance and Direction from Subject Property	Databases	Regulatory Status	Potential Environmental Impact
27900 Chiquito Canyon Road	Chiquito Canyon Easement	CHMIRS	Release of unknown compound 2/23/89, date completed 2/23/89	Low The exact location of this release is unknown, although it is not likely that it is on the subject site.
Newhall Land 3003 Walnut Orchard Rd	500 feet West of Chiquito Canyon Easement (cross-gradient)	LUST Cortese	Release of gasoline to soil only, case closed 6/27/96	Low
LA Cty Fire Dept/Delval Trg Ctr/Unocal - Lincoln Lease 28101 Chiquito Canyon Road	2,000 feet South of Tank sites and west of Chiquito Canyon Easement (cross and down-gradient)	HAZNET LA Co. Site Mitigation LA Co. HMS LUST Cortese AST CA SLIC CHMIRS	Disposal of waste oil, Release of hydrocarbon to soil only, site undergoing remediation, release of crude oil due to damaged pipeline	Low

1 The EDR Radius Map Report No. 01376454.1r, March 15, 2005.

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Site of Concern And Address	Distance and Direction from Subject Property	Databases	Regulatory Status	Potential Environmental Impact
Laidlaw Waste Systems Inc/Chiquita Canyon Landfill/Universal By-Products-Valencia 29201 W Henry Mayo Dr	2,600 feet East of Chiquito Canyon Easement (cross-gradient)	LA CO HMS WMUDS/ SWAT UST RCRA-SQG FINDS CA FID HAZNET SWF/LF WMUDS/ SWAT CA WDS EMI	No violations, not on LUST list	Low

The subject property is not listed on any of the databases searched. One site is located very close to the subject site. This site, 27900 Chiquito Canyon Road, is reported to be a CHMIRS site. The compound is unknown. Although the exact location of the release is unknown, due to the narrow width of the easement, it is unlikely that this release has impacted the subject site in that area. Several adjacent sites are listed as either LUST or SLIC sites. Although there have been releases at these adjacent sites, all of the sites of concern appear to be either cross- or down-gradient. Therefore, it is BA Environmental's opinion that there is a low potential for the adjacent site to have impacted the subject site.

Based on the above data, this assessment has revealed no evidence of recognized environmental conditions in connection with the subject property, except the following:

- Portions of the subject site are located within active and inactive oil fields;
- Portions of the subject property cross or run parallel to petroleum pipelines; and
- A portion of the waterline easement associated with the Zone 1A Tank Site is adjacent to an old trash dumping site.

If you have questions regarding this project or report, please contact us at (818) 500-1898.

Respectfully submitted,
BA ENVIRONMENTAL

Russell M. Cote, M.Sc., R.G. No. 7139
Manager, Environmental Services

Attachments: Figures
Governmental Database Report

PHASE II SUBSURFACE INVESTIGATION

OF

LANDMARK SCHOOL SITE
VALENCIA, CALIFORNIA

FOR

GATZKE DILLON & BALANCE LLP

BA ENVIRONMENTAL
A Division of Building Analytics

File No. 106166
September 2006

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September 1, 2006

File No.: 106166

Ms. Rachel Cook
Gatzke Dillon & Balance LLP
1525 Faraday Avenue, Suite 150
Carlsbad, California 92008

Reference: Landmark School Site
Valencia, California

Subject: Report
Phase II Subsurface Investigation

Dear Ms. Cook:

BA Environmental is pleased to submit this report summarizing the Phase II Subsurface Investigation activities to **Gatzke Dillon & Balance LLP**. This report is regarding the proposed 9-acre school site in the Landmark development. The Phase II Subsurface Investigation was performed in general accordance with the scope of service outlined in BA Environmental's proposal and contract dated July 25, 2006, and in accordance with the California State Department of Toxic Substance Control (DTSC) Interim Guidance for Sampling Agricultural Fields for School sites (Second revision), dated August 26, 2002.

If you have questions regarding this project or report, please contact us at (818) 841-2575.

Respectfully submitted,
BA ENVIRONMENTAL

Russell M. Cote, M.Sc., R.G. No. 7139
Manager, Environmental Services

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PHASE II SUBSURFACE INVESTIGATION
Landmark School Site
Valencia, California

INTRODUCTION

BA Environmental is pleased to submit this report summarizing the Phase II Subsurface Investigation activities to **Gatzke Dillon & Balance LLP**. This report is regarding the proposed 9-acre school site in the Landmark development. The Phase II Subsurface Investigation was performed in general accordance with the scope of service outlined in BA Environmental's proposal and contract dated July 25, 2006, and in accordance with the California State Department of Toxic Substance Control (DTSC) Interim Guidance for Sampling Agricultural Fields for School Sites (Second revision), dated August 26, 2002.

BACKGROUND

In January and February 2004, BA Environmental conducted a Phase I ESA (BA #104012) on the subject site. The Phase I ESA was conducted on the proposed 280-acre River Village, of which the subject site is a part. The subject site itself consists of approximately 9 acres of this larger development, located in the north-central portion of the development. During the site reconnaissance, it was observed that the subject property is occupied by agricultural land. Historical documents revealed that the subject site was agricultural land from the 1940s until the 1960s. In the 1960s, the subject site was part of the Indian Hills Motorcycle Park. The subject site continued to be part of the Indian Hills Motorcycle Park until the 1980s, when it was again used as agricultural land. Presently, the subject site continues to be used for agricultural land. Agricultural usages include dry farming of wheat, and vegetable crops such as green beans, beets and carrots. An addendum to Consultant's Phase I ESA prepared on May 6, 2004 for an adjacent property indicated the larger River Village development has been farmed by Newhall Land and Farming, Starr Produce, and Cilantro Farms. According to County of Los Angeles Agricultural Commissioner, Department of Pesticide Regulation, no violations existed for any of these companies.

SITE LOCATION AND IMPROVEMENTS

The subject property is a 9-acre portion of a larger parcel of land located south of Henry Mayo Drive (Highway 126), north of the Santa Clara River, east of the intersection of Henry Mayo Drive (Highway 126) and Chiquito Canyon Road, and west of Castaic Creek, which is referred to as River Village, Tentative Tract Map No. 53108, Highway 126, in Newhall Ranch, California. This 9-acre portion of the larger parcel is a proposed school site. The subject property may be reached from the Interstate Freeway 5 (Golden State Freeway), exit Highway 126. Proceed west approximately 4 miles to Walcott Way. The subject site is located on the south side of Highway 126, approximately 1,100 feet west of the intersection of Walcott Way and Highway 126, and approximately 200 feet south of Highway 126. Primary vehicular access to the subject site is from private driveways to the north, east, west and south.

The subject property is a 9-acre portion of a larger 280-acre parcel of land that has been graded and utilized for agricultural production. Several dirt roads traverse the subject site. Currently the subject site is vacant and left to fallow.

Adjacent land use to the subject site includes agricultural land and undeveloped land to the north, east, south and west (Figures 1 and 2).

GEOLOGY AND HYDROGEOLOGY

The subject site is located on the alluvial plain of the Santa Clara River and tributaries. Underlying sediments consist of alluvial and flood plain deposits of silt, sands and gravels. Sand is medium to coarse grained, and cobbles are found to increase in size with depth. The Plio-Pleistocene Saugus Formation, a thin to moderately thick bedded non-marine deposit, ranging from reddish-brown siltstones, silty sandstones to conglomerates, underlies the Quaternary alluvial sediments and outcrops in the northern and eastern portion of the subject property. The Newhall Segment of the San Gabriel Fault, which is classified as a late Quaternary fault which cuts strata of Pleistocene age, is located within 500 feet of the subject site (CDMG, 1994).

According to the County of Los Angeles, Department of Public Works, Hydraulic Conservation Division, which maintains information on groundwater depth from the county-owned wells, the closest well to the subject property, listed with their department, is located approximately 1,500 feet west of the confluence of the Santa Clara River and Castaic Creek. This well is identified as #6967, and was last measured on June 19, 2003. The data indicates that from the ground surface depth to groundwater surface was 24.3 feet, and that the ground surface elevation at the well head is 949.7 feet above mean sea level (msl). Groundwater flow direction is expected to flow to the south/southwest following topography (LACDPW, 2003). A groundwater monitoring well located approximately 200 feet north of the subject property, associated with the Chiquito Canyon Landfill, was reported to have groundwater at approximately 32 to 36 below ground surface (bgs). Groundwater monitoring wells associated with the Landmark development revealed depth to water to the south of the subject site to be 7 feet to 10 feet bgs.

OBJECTIVE AND SCOPE OF WORK

The purpose of this Phase II Subsurface Investigation was to assess whether past agricultural activities at the subject site have impacted subsurface soil conditions beneath the subject property. BA Environmental proposed to advance a maximum of 32 shallow soil borings to a maximum depth of approximately 2 to 3 feet bgs.

Soil samples were to be collected at approximately 0.5 feet bgs and 2 to 3 feet bgs. In addition, four off-site samples were to be collected from adjacent sites without a history of agricultural usage (if possible) and with similar soil types. These samples were to be collected at a depth of 0.5 feet bgs and used for background samples for metals. Sampling was to be conducted using DTSC Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision), dated August 26, 2002.

To accomplish the objectives, BA Environmental performed the following tasks:

a. Obtained all required permits prior to start of work;

b. Prepared a site-specific health and safety plan prior to initiating the field work;

c. Visited the subject property and mark the proposed probe boring locations. Subsequently, the regional utility locating center was contacted to clear the proposed boring locations for utilities;

d. Advanced 32 shallow soil borings using hand auger equipment. The 32 shallow soil borings were advanced to a maximum depth of 2 feet bgs. Borings were located on 0.5-acre or less centers, depending upon field shape and usage;

e. Soil samples were collected at approximately 0.5 feet bgs and 2 feet bgs in each shallow soil boring. In addition, 4 off-site samples were collected from adjacent sites without a history of agricultural usage (if possible) and with similar soil types. The samples from the four off-site locations were also collected at a depth of 0.5 feet bgs and 2 feet bgs and used for background samples for metals;

f. The 32 surface soil samples were composited into a total of 8 composite soil samples (4 samples per composite) in the laboratory. Only adjacent samples were composited. Only samples from areas of like crops were composited. The composited samples collected at 0.5 feet bgs were analyzed, while the 2-foot-deep samples were placed on "hold";

g. Submitted 8 composited soil samples to a State of California, Department of Health Services (DHS)-certified laboratory to be analyzed for Organo Chlorine Pesticides (OCPs) using Environmental Protection Agency (EPA) Method No. 8081A;

h. Submitted 8 composited soil samples to a State of California, DHS-certified laboratory to be analyzed for Organo Phosphorus Pesticides (OPPs) using EPA Method No. 8041;

i. Submitted 8 composited soil samples to a State of California, DHS-certified laboratory to be analyzed for Paraquat using Chevron RM8-10 method;

j. Submitted 8 composited soil samples to a State of California, DHS-certified laboratory to be analyzed for Chlorinated Herbicides (CHs) using EPA Method No. 8151;

k. Submitted 8 discrete soil samples to a State of California, DHS-certified laboratory to be analyzed for Arsenic using EPA Method No. 6010;

l. Submitted 8 discrete soil samples to a State of California, DHS-certified laboratory to be analyzed for CAM-17 Metals using EPA Method Nos. 6000/7000 series;

m. Submitted 4 discrete background soil samples to a State of California, DHS-certified laboratory to be analyzed for CAM-17 Metals using EPA Method Nos. 6000/7000 series;

n. Submitted 1 composited blind duplicate QA/QC soil sample to a State of California, DHS-certified laboratory to be analyzed for OCPs, OPPs, CHs and Paraquat using EPA Method Nos. 8081, 8041 and 8151, and Chevron RM8-10 method;

o. Submitted 1 discrete blind duplicate QA/QC soil sample to a State of California, DHS-certified laboratory to be analyzed for CAM-17 metals using EPA Method Nos. 6000/7000 series.

p. Submitted 1 equipment blank QA/QC rinsate sample to a State of California, DHS-certified laboratory to be analyzed for OCPs, OPPs, CHs, CAM-17 Metals

and Paraquat using EPA Method Nos. 8081, 8041, 8151 and 6000/7000 series, and Chevron RM8-10 method;

q. Submitted 3 temperature blanks (QA/QC samples) to a State of California, DHS-certified laboratory to be checked for sample temperature;

r. Submitted the remaining discrete deep soil samples to the laboratory, to be placed on hold pending the results of the initial soil analyses;

s. Provided all of the necessary equipment and materials to perform the required services. This equipment will include hand auger, soil sampling equipment, etc.;

t. Backfilled borings with soil cuttings in the order in which they were removed.

SOIL INVESTIGATION

Utility Clearance

Prior to drilling, BA Environmental personnel visited the site, grided off the subject site, and marked the boring locations. The local utility companies cleared the underground utilities at each boring location prior to initiation of drilling activities.

Drilling and Sampling

On August 9, 2006, BA Environmental conducted a Subsurface Investigation using 4-inch o.d. hand auger equipment. Coordination and supervision of drilling and soil sampling activities were performed by a Registered Geologist from BA Environmental.

A total of 32 shallow hand auger borings were advanced on-site. In addition, four shallow soil borings were advanced off-site in order to collect background metal samples. The shallow soil borings were advanced to a maximum depth of 2 feet bgs. Soil samples were collected from the shallow soil borings at 0.5 feet bgs and 2 feet bgs. The locations of the shallow soil borings are provide in Figure 2. Global Positioning System (GPS) coordinates for the shallow soil borings are provided in Table 1.

Upon reaching the desired depth, soil samples were collected in 4-oz. glass jars with Teflon® lined lids. Subsequent to the collection of the samples, the sample jars were labeled with the sample number, collection date and project number, placed in a cooler chilled to approximately 4° C (40° F), and retained for laboratory analyses.

Field observations of soil samples collected from all of the soil borings revealed no unusual discoloration or odors. Soils were observed to consist of silts, silty sands, sands and gravelly sands to a depth of 2 feet bgs. Groundwater was not encountered in any of the shallow soil borings.

Boring Backfill

Subsequent to the collection of soil samples from the soil borings, the borings were backfilled. The borings were backfilled with cuttings generally in the order in which they were removed. After the borings were backfilled, the surface was restored to match the surrounding surface.

DECONTAMINATION

Quality assurance/quality control (QA/QC) and decontamination procedures were performed to prevent cross contamination between the samples. Only clean sampling equipment was used for this drilling project. The soil sampling and hand auger equipment were decontaminated between sampling intervals, using a bristle brush, with Liquinox™ (an inorganic detergent) solution; this was followed by a tapwater rinse, and rinsed in a final De-ionized water rinse. The sampling and auger equipment were then dried by air prior to use. Sterilized nitrile gloves were used while obtaining the samples. The soil samples were collected in new 4-oz. glass jars supplied by the laboratory.

SAMPLE HANDLING AND TRANSPORT

All soil samples from the soil borings were placed in a cooler, chilled to approximately 4° C (40° F), and transported to Enviro Chem Inc. of Pomona, California, a State of California DHS-certified laboratory under a strict chain-of-custody which was prepared at the time of sampling.

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

To increase the confidence levels in the data obtained, a QA/QC program was implemented. QA refers to management of actions designed to maintain precision, accuracy and completeness of the data developed from the project. QC refers to accepted formal procedures and activities specifically designed for the purpose of collecting data that are intended to be reliable and consistent for the site conditions.

The program includes formal procedures for all field activities, soil and groundwater sampling, decontamination, instrument calibration, documentation of activities and calculations, and peer review. Routine QC procedures were performed by the laboratory, and included daily calibration of instruments, percent surrogate recoveries and analyses of matrix spikes and matrix spike duplicates (laboratory reports). The laboratory reported the results to be within acceptable percent recoveries with no results exceeding the laboratory established control limits.

In addition, in accordance with the DTSC Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision), QA/QC and background soil samples were collected. These QA/QC samples included one equipment blank and one blind duplicate. In addition, four background samples for metals were collected. Three temperature blanks were prepared, one for each ice chest used to store and transport the samples to the lab. These temperature blanks were insure that the samples remained chilled.

LABORATORY RESULTS

All soil samples were submitted to Enviro-Chem Inc. of Pomona, California, a State of California, DHS certified laboratory. Thirty-two (32) shallow soil samples were composited at the laboratory in groups of four. The remaining 32 deeper soil samples were placed on "hold" pending the results of the shallower composited samples. The composited samples were analyzed for OCPs, OPPs, CHs and Paraquat in general accordance with EPA Method Nos. 8081, 8041 and 8151, and Chevron RM8-10 method. In addition, selected discrete soil samples were analyzed for arsenic and CAM-17 metals in general accordance with EPA Method No. 6000/7000 series.

OCP in Soil

All 8 composited soil samples, one blind duplicate and equipment blank were analyzed for OCP and the data is presented in Table 2, which is included as an attachment to this report. In summary, five of the composite samples (SS1, SS4, SS6, SS& and SS8) collected were reported to contain low level concentrations of Trifluralin ranging from 0.22 milligrams per kilogram (mg/kg) to 0.46 mg/kg.

Subsequently, as per the DTSC Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision), the discrete samples from the composite sample with the highest OCP concentrations, sample SS1, were analyzed for Trifluralin. The result of this additional analysis is also summarized in Table 2. These samples were also reported to contain low level concentrations of Trifluralin ranging from 0.005 mg/kg to 0.196 mg/kg. The laboratory report is included in Appendix A.

Based on the low concentrations of Trifluralin detected in the soils beneath the subject site, it is BA Environmental's opinion that these residual concentrations do not pose a threat to human health or the environment..

OPP in Soil

All 8 composited soil samples, one blind duplicate and equipment blank were analyzed for OPPs and the data is presented in Table 2. In summary, none of the soil samples analyzed were reported to contain detectable concentrations of OPPs. The laboratory report is included in Appendix A.

CH in Soil

All 8 composited soil samples, one blind duplicate and equipment blank were analyzed for CH and the data is presented in Table 2. In summary, all of the samples analyzed were reported not to contain detectable concentrations of CH.. The laboratory report is included in Appendix A.

Paraquat in Soil

All 8 composited soil samples, one blind duplicate and equipment blank were analyzed for Paraquat and the data is presented in Table 2. In summary, all of the samples analyzed were reported not to contain detectable concentrations of Paraquat. The laboratory report is included in Appendix A.

Arsenic in Soil

Random discrete soil samples were analyzed for arsenic. Arsenic is a metallic element that has been historically used in some pesticides. The laboratory results for arsenic are summarized in Table 3. California Code of Regulations (CCR) Title 22 has established threshold limits for various heavy metal compounds; both for the total concentrations of the metals as well as for the soluble concentration of metals. These threshold limits are known as the Total Threshold Limit Concentrations (TTLCs) and the Soluble Threshold Limit Concentrations (STLCs). A substance is considered to be hazardous if it contains a

total concentration of a metal greater than the TTLC limit for that metal, or if it contains a soluble concentration of a metal greater than the STLC limit for that metal. As a rule of thumb, generally if the concentration of a metal in the soil exceeds 10 times the STLC limit for that metal, an STLC analysis is run for that metal.

Analyses of soil samples revealed no detectable concentrations of arsenic in the shallow soils beneath the subject site. Laboratory reports and chain-of-custody forms are included as Appendix A.

Metals in Soil

Historically, various metals have been used in some pesticides and fertilizers. Random discrete soil samples were analyzed for CAM-17 metals. In addition, four discrete background soil samples were collected from off-site locations for comparison. The laboratory results are summarized in Table 3. California Code of Regulations (CCR) Title 22 has established threshold limits for various heavy metal compounds; both for the total concentrations of the metals as well as for the soluble concentration of metals. These threshold limits are known as the Total Threshold Limit Concentrations (TTLCs) and the Soluble Threshold Limit Concentrations (STLCs). A substance is considered to be hazardous if it contains a total concentration of a metal greater than the TTLC limit for that metal, or if it contains a soluble concentration of a metal greater than the STLC limit for that metal. As a rule of thumb, generally if the concentration of a metal in the soil exceeds 10 times the STLC limit for that metal, an STLC analysis is run for that metal.

Analyses of samples revealed no metals which exceeded the TTLC for those metals, or which exceeded 10 times the STLC for those metals. A comparison of the results of the discrete soil samples collected on-site with those collected from off-site indicated that the metal concentrations detected appear to be within the normal background range of metals in soils within the region.

Laboratory reports and chain-of-custody forms are included as Appendix A.

Equipment Blank

As part of the QA/QC procedures, one equipment blank was analyzed for OCPs, OPPs, CHs, Paraquat and CAM-17 metals. The laboratory results are summarized in Tables 2 and 3. In summary, the Equipment Blank was reported not to have detected concentrations of OCPs, OPPs, CHs, Paraquat and CAM-17 metals. Laboratory reports and chain-of-custody forms are included as Appendix A.

DISCUSSION

The planned use for the subject property will be development of land into a school. This investigation was conducted to assess the possible presence of pesticides on-site from past agricultural activities. Soil sampling was to be conducted using DTSC Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision), dated August 26, 2002.

The investigation consisted of drilling 32 shallow soil borings to a maximum depth of 2 feet bgs. Soil samples were collected at 0.5 feet bgs and 2 feet bgs. In addition, four shallow soil borings were drilled off-site in order to collect background samples for metals. The 32 on-site surface soil samples (collected at 0.5 feet bgs) were composited

into a total of 8 composite soil samples (4 samples per composite). Only adjacent soil sample locations were composited. The composited soil samples were analyzed for OPPs, OCPs, CHs and Paraquat. Random surface discrete soil samples were analyzed for arsenic and CAM-17 metals.

Analyses of the composited soil samples revealed no detectable concentrations of OPPS, CHs or Paraquat. Five of the composite samples (SS1, SS4, SS6, SS& and SS8) were reported to contain low level concentrations of Trifluralin, an OCP. Subsequently as per the DTSC Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision), the discrete samples from the composite sample with the highest OCP concentrations, sample SS1, were analyzed for Trifluralin. These samples were also reported to contain low level concentrations of Trifluralin. In comparing the concentrations of Trifluralin in both the composited soil samples and the discrete soil samples collected from the subject site to the Preliminary Cleanup Goals (PRGs) outlined in the Environmental Protection Agency (EPA) Region 9 PRG Table, dated October 2004, it can be seen that the concentrations of Trifluralin detected in the soil samples are well below the PRGs for residential use. Arsenic has historically been used in pesticides. Analytical results of the discrete soil samples revealed no detectable concentrations of arsenic, indicated that there appear to be no arsenopesticides present on the subject site. Various heavy metals have been historically used in pesticides and fertilizers. Analytical results of shallow discrete soil samples for CAM-17 metals revealed no elevated concentrations of heavy metals. In addition, a comparison of the results of the discrete soil samples collected on-site with those collected from off-site indicated that the metal concentrations detected appear to be within the normal background range of metals in soils within the region.

This assessment has revealed that only very low concentrations of an OCP, Trifluralin, remain from the past on-site agricultural operations. The reported concentrations of Trifluralin detected in the shallow soils beneath the subject site are well below the PRGs for even residential usage which, according to the DTSCs publication "New Environmental Requirements for Proposed Schoolsites (Assembly Bill 387 and Senate Bill 162), is considered to be the most protective standard for children. In addition, according to Newhall Land, it is intended to bring the final grade of the subject site up approximately 10 feet with clean imported fill. By raising the grade by 10 feet with imported fill, this would further reduce the potential for a human to come into contact with the soil containing low concentrations of Trifluralin. Trifluralin is a solid at room temperature; therefore, there is a low potential for vapor migration of this compound. Based on this information, it is BA Environmental's opinion that the residual Trifluralin concentrations detected in the shallow soils beneath the subject site pose a very low threat to human health, and poses no significant threat to the environment.

Based on the results of this subsurface assessment, BA Environmental recommends no further subsurface investigations or remedial action at this time.

REPORT AUTHORS

BA Environmental
502 South Verdugo Drive, Suite 200
Burbank, California 91502

Prepared by: Russell M. Cote, M. Sc., R.G. No. 7139
Manager, Environmental Services

Reviewed by: Richard O'Neil
Project Manager

REFERENCES

California Department of Conservation, Division of Mines and Geology (CDMG), 1994 Fault Activity Map of California and Adjacent Areas (1:750,000 scale),

County of Los Angeles Department of Public Works, Hydrologic Records, records request October 14, 2003.

ATTACHMENTS

TABLES

Table 1
Sample Location Coordinates
Landmark School Site
Valencia, California

Sample Number	Date	Elevation*	GPS Coordinates**
SS-1A	08/08/06	926'	N34° 25.436' W118° 38.504'
SS-1B	08/08/06	924'	N34° 25.411' W118° 38.559'
SS-1C	08/08/06	934'	N34° 25.403' W118° 38.584'
SS-1D	08/08/06	925'	N34° 25.405' W118° 38.584'
SS-2A	08/08/06	934'	N34° 25.421' W118° 38.548'
SS-2B	08/08/06	932'	N34° 25.422' W118° 38.527'
SS-2C	08/08/06	922'	N34° 25.417' W118° 38.525'
SS-2D	08/08/06	922'	N34° 25.404' W118° 38.546'
SS-3A	08/08/06	938'	N34° 25.429' W118° 38.513'
SS-3B	08/08/06	944'	N34° 25.427' W118° 38.501'
SS-3C	08/08/06	939'	N34° 25.417' W118° 38.491'
SS-3D	08/08/06	925'	N34° 25.416' W118° 38.510'
SS-4A	08/08/06	934'	N34° 25.383' W118° 38.560'
SS-4B	08/08/06	940'	N34° 25.383' W118° 38.543'
SS-4C	08/08/06	931'	N34° 25.4374' W118° 38.517'
SS-4D	08/08/06	930'	N34° 25.376' W118° 38.558'
SS-5A	08/08/06	927'	N34° 25.390' W118° 38.515'
SS-5B	08/08/06	933'	N34° 25.393' W118° 38.497'
SS-5C	08/08/06	938'	N34° 25.375' W118° 38.489'
SS-5D	08/08/06	928'	N34° 25.374' W118° 38.515'

Table 2
Soil Sample Analytical Results
OCP, OPP, CH, Cam-17 metals, Arsenic,
and Paraquat
Landmark School Site
Valencia, California

Sample No.	Date	Depth bgs	OPPs (mg/kg)	CH (mg/kg)	OCP (mg/kg)	Paraquat (µg/gg)
SS-1A,1B,1C,1D-0.5	08/09/06	0.5	ND	ND	**0.046 Trifluralin**	ND
SS-1A-0.5	08/09/06	0.5	NA	NA	**0.101 Trifluralin**	NA
SS-1B-0.5	08/09/06	0.5	NA	NA	**0.196 Trifluralin**	NA
SS-1C-0.5	08/09/06	0.5	NA	NA	**0.010 Trifluralin**	NA
SS-1D-0.5	08/09/06	0.5	NA	NA	**0.005 Trifluralin**	NA
SS-2A,2B,2C,2D-0.5	08/09/06	0.5	ND	ND	ND	ND
SS-3A,3B,3C,3D-0.5	08/09/06	0.5	ND	ND	ND	ND
SS-4A,4B,4C,4D-0.5	08/09/06	0.5	ND	ND	**0.038 Trifluralin**	ND
SS-5A,5B,5C,5D-0.5	08/09/06	0.5	ND	ND	ND	ND
SS-6A,6B,6C,6D-0.5	08/09/06	0.5	ND	ND	**0.033 Trifluralin**	ND
SS-7A,7B,7C,7D-0.5	08/09/06	0.5	ND	ND	**0.022 Trifluralin**	ND
SS-8A,8B,8C,8D-0.5	08/09/06	0.5	ND	ND	**0.023 Trifluralin**	ND
DUPA,B,C,D-0.5	08/09/06	0.5	ND	ND	ND	ND
Equipment Blank	08/09/06	---	ND*	ND*	ND*	ND*
PRGs Residential			---	---	**63 Trifluralin ca****	---
PRGs Industrial			---	---	**220 Trifluralin ca***	---
Detection Limits (mg/kg)			**0.05-0.10**	**0.02-20.0**	**0.001-0.20**	**1.0**

Notes:

CH = Chlorinated Herbicides
OCP = Organochlorine Pesticides
OPP = Organophosphorous Pesticides
ND = None detected above detection limits.
NA = Not applicable
* = Reported in micrograms per liter (µg/l)
bgs = below ground surface
ca = Cancer PRG
ca* = Cancer PRG (where :nc<100x ca)
nc = Non-cancer PRG

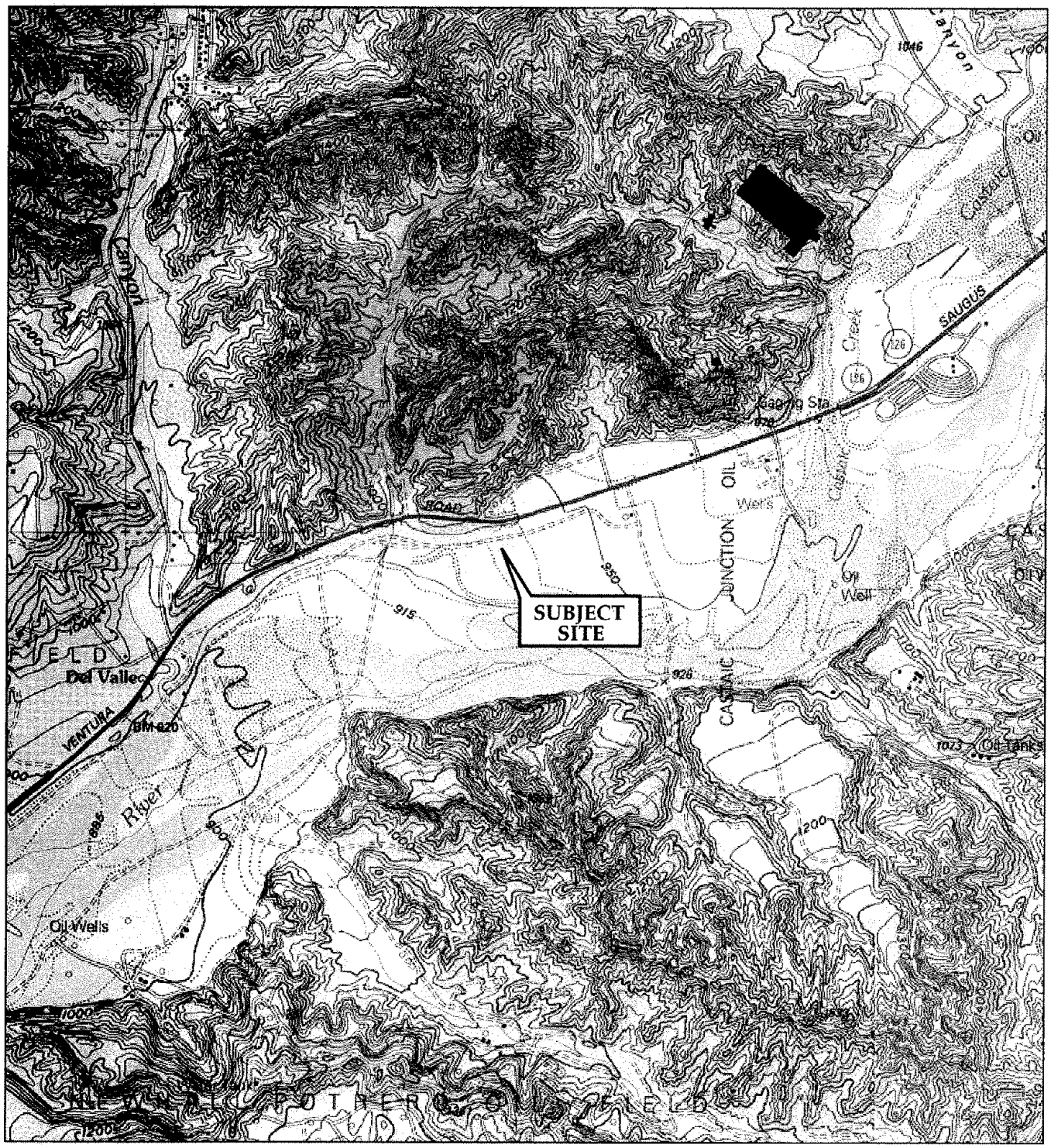
Table 3
Soil Sample Analytical Results
Cam-17 Metals and Arsenic,
Landmark School Site
Valencia, California

Sample No.	Date	Depth bgs	Arsenic (mg/kg)	Cam-17 (mg/kg)
SS-1A-0.5	08/09/06	0.5	ND	NA
SS-1C-0.5	08/09/06	0.5	ND	Below 10x STLC
SS-2C-0.5	08/09/06	0.5	ND	NA
SS-3B-0.5	08/09/06	0.5	ND	NA
SS-4B-0.5	08/09/06	0.5	ND	Below 10x STLC
SS-4D-0.5	08/09/06	0.5	ND	NA
SS-5B-0.5	08/09/06	0.5	ND	NA
SS-6B-0.5	08/09/06	0.5	ND	Below 10x STLC
SS-6D-0.5	08/09/06	0.5	ND	NA
SS-7A-0.5	08/09/06	0.5	ND	NA
SS-8A-0.5	08/09/06	0.5	ND	Below 10x STLC
SS-8C-0.5	08/09/06	0.5	ND	NA
DUPB-0.5	08/09/06	0.5	ND	Below 10x STLC
BG1 -0.5	08/09/06	0.5	ND	Below 10x STLC
BG2-0.5	08/09/06	0.5	ND	Below 10x STLC
BG3 -0.5	08/09/06	0.5	ND	Below 10x STLC
BG4-0.5	08/09/06	0.5	ND	Below 10x STLC
Equipment Blank	08/09/06	---	ND*	ND*
Detection Limits (mg/kg)			**0.30**	**0.19-5.0**

Notes:
ND = None detected above detection limits.
NA = Not applicable
* = Reported in milligrams per liter (mg/l)
bgs = below ground surface

- Concentrations are reported in milligrams per kilogram (mg/kg) which is equivalent to parts per million (ppm).
- Analyses for CAM-17 Metals were performed in accordance with the EPA Method No. 6000/7000 series
- Analyses for Arsenic were performed in accordance with the EPA Method No. 6010B

FIGURES



NORTH

Reference: USGS Val Verde Quadrangle, California
7.5 Minute Series

SITE VICINITY

SCALE - 1:24,000

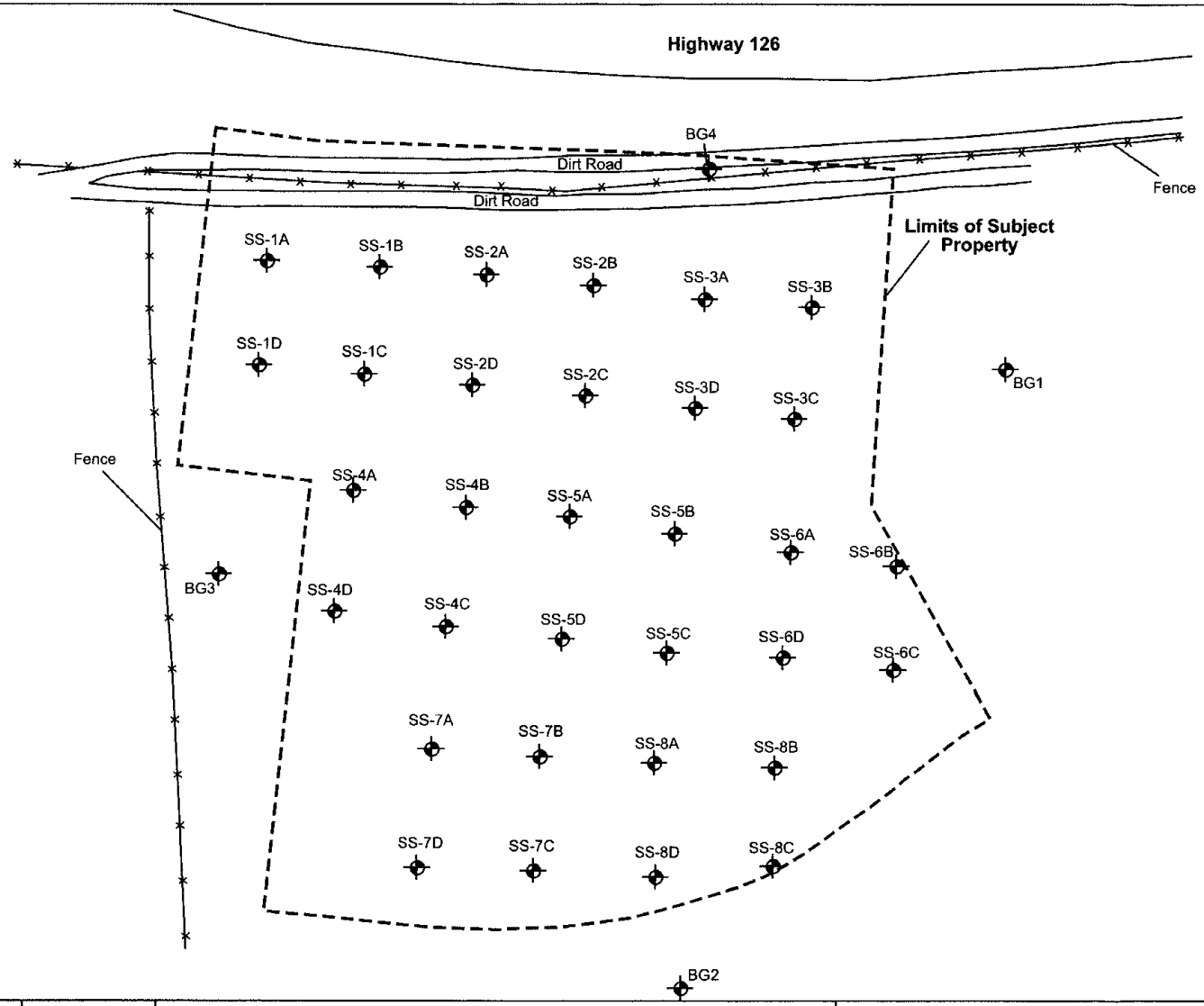
BA ENVIRONMENTAL

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PROJECT: **Landmark School Site**
Valencia, California

PROJECT NO.
106166

FIGURE
1



BA ENVIRONMENTAL

NORTH

0 50 100
Approximate Scale, feet

LEGEND

SS-1A = Soil Boring Location and Designation

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PROJECT: **Landmark School Site**
Valencia, California

PROJECT NO.
106166

FIGURE
2

APPENDICES

APPENDIX A:

Lab Reports and Chain of Custody Documentation

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: August 16, 2006

Mr. Russell Cote
BA Environmental
502 South Verdugo Drive,
Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

Project: **Landmark School Site / 106166**
Lab I.D.: **060809-23 through -102**

Dear Mr. Cote:

The **analytical results (except Paraquat)** for the soil and water samples, received by our laboratory on August 9, 2006, are attached. The samples were received chilled, intact and accompanying chain of custody record.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
MATRIX: SOIL DATE EXTRACTED: 08/10/06
DATE SAMPLED: 08/09/06 DATE ANALYZED: 08/10/06
REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-1A-0.5, SS-1B-0.5, SS-1C-0.5, SS-1D-0.5 (Composite)**
LAB I.D.: 060809-23 through -26 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	0.05	1
Bolstar (Sulprofos)	ND	0.05	1
Chlorpyrifos	ND	0.05	1
Coumaphos	ND	0.05	1
Demeton-O	ND	0.05	1
Demeton-S	ND	0.05	1
Diazinon	ND	0.05	1
Dichlorvos	ND	0.05	1
Disulfoton	ND	0.05	1
Ethoprop	ND	0.05	1
Fenchlorphos (Ronnel)	ND	0.05	1
Fensulfothion	ND	0.05	1
Fenthion	ND	0.05	1
Merphos	ND	0.05	1
Methyl Parathion	ND	0.05	1
Mevinphos	ND	0.10	1
Naled	ND	0.10	1
Phorate	ND	0.05	1
Ronnel	ND	0.05	1
Tetrachlorvinphos (Stirophos)	ND	0.05	1
Tokuthion (Prothiofos)	ND	0.05	1
Trichloronate	ND	0.05	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166**
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/10/06
DATE ANALYZED: 08/10/06
DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-2A-0.5, SS-2B-0.5, SS-2C-0.5, SS-2D-0.5 (Composite)**
LAB I.D.: 060809-31 through -34 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	0.05	1
Bolstar (Sulprofos)	ND	0.05	1
Chlorpyrifos	ND	0.05	1
Coumaphos	ND	0.05	1
Demeton-O	ND	0.05	1
Demeton-S	ND	0.05	1
Diazinon	ND	0.05	1
Dichlorvos	ND	0.05	1
Disulfoton	ND	0.05	1
Ethoprop	ND	0.05	1
Fenchlorphos (Ronnel)	ND	0.05	1
Fensulfothion	ND	0.05	1
Fenthion	ND	0.05	1
Merphos	ND	0.05	1
Methyl Parathion	ND	0.05	1
Mevinphos	ND	0.10	1
Naled	ND	0.10	1
Phorate	ND	0.05	1
Ronnel	ND	0.05	1
Tetrachlorvinphos (Stirophos)	ND	0.05	1
Tokuthion (Prothiofos)	ND	0.05	1
Trichloronate	ND	0.05	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
MATRIX: SOIL DATE EXTRACTED: 08/10/06
DATE SAMPLED: 08/09/06 DATE ANALYZED: 08/10/06
REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-3A-0.5, SS-3B-0.5, SS-3C-0.5, SS-3D-0.5 (Composite)**
LAB I.D.: 060809-39 through -42 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	0.05	1
Bolstar (Sulprofos)	ND	0.05	1
Chlorpyrifos	ND	0.05	1
Coumaphos	ND	0.05	1
Demeton-O	ND	0.05	1
Demeton-S	ND	0.05	1
Diazinon	ND	0.05	1
Dichlorvos	ND	0.05	1
Disulfoton	ND	0.05	1
Ethoprop	ND	0.05	1
Fenchlorphos (Ronnel)	ND	0.05	1
Fensulfothion	ND	0.05	1
Fenthion	ND	0.05	1
Merphos	ND	0.05	1
Methyl Parathion	ND	0.05	1
Mevinphos	ND	0.10	1
Naled	ND	0.10	1
Phorate	ND	0.05	1
Ronnel	ND	0.05	1
Tetrachlorvinphos (Stirophos)	ND	0.05	1
Tokuthion (Prothiofos)	ND	0.05	1
Trichloronate	ND	0.05	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
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PROJECT: **Landmark School Site / 106166**
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/10/06
DATE ANALYZED: 08/10/06
DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-4A-0.5, SS-4B-0.5, SS-4C-0.5, SS-4D-0.5 (Composite)**
LAB I.D.: 060809-47 through -50 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	0.05	1
Bolstar (Sulprofos)	ND	0.05	1
Chlorpyrifos	ND	0.05	1
Coumaphos	ND	0.05	1
Demeton-O	ND	0.05	1
Demeton-S	ND	0.05	1
Diazinon	ND	0.05	1
Dichlorvos	ND	0.05	1
Disulfoton	ND	0.05	1
Ethoprop	ND	0.05	1
Fenchlorphos (Ronnel)	ND	0.05	1
Fensulfothion	ND	0.05	1
Fenthion	ND	0.05	1
Merphos	ND	0.05	1
Methyl Parathion	ND	0.05	1
Mevinphos	ND	0.10	1
Naled	ND	0.10	1
Phorate	ND	0.05	1
Ronnel	ND	0.05	1
Tetrachlorvinphos (Stirophos)	ND	0.05	1
Tokuthion (Prothiofos)	ND	0.05	1
Trichloronate	ND	0.05	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

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PROJECT: **Landmark School Site / 106166**
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
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DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-5A-0.5, SS-5B-0.5, SS-5C-0.5, SS-5D-0.5 (Composite)**
LAB I.D.: 060809-55 through -58 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	0.05	1
Bolstar (Sulprofos)	ND	0.05	1
Chlorpyrifos	ND	0.05	1
Coumaphos	ND	0.05	1
Demeton-O	ND	0.05	1
Demeton-S	ND	0.05	1
Diazinon	ND	0.05	1
Dichlorvos	ND	0.05	1
Disulfoton	ND	0.05	1
Ethoprop	ND	0.05	1
Fenchlorphos (Ronnel)	ND	0.05	1
Fensulfothion	ND	0.05	1
Fenthion	ND	0.05	1
Merphos	ND	0.05	1
Methyl Parathion	ND	0.05	1
Mevinphos	ND	0.10	1
Naled	ND	0.10	1
Phorate	ND	0.05	1
Ronnel	ND	0.05	1
Tetrachlorvinphos (Stirophos)	ND	0.05	1
Tokuthion (Prothiofos)	ND	0.05	1
Trichloronate	ND	0.05	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
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PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
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REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-6A-0.5, SS-6B-0.5, SS-6C-0.5, SS-6D-0.5 (Composite)**
LAB I.D.: 060809-63 through -66 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	0.05	1
Bolstar (Sulprofos)	ND	0.05	1
Chlorpyrifos	ND	0.05	1
Coumaphos	ND	0.05	1
Demeton-O	ND	0.05	1
Demeton-S	ND	0.05	1
Diazinon	ND	0.05	1
Dichlorvos	ND	0.05	1
Disulfoton	ND	0.05	1
Ethoprop	ND	0.05	1
Fenchlorphos (Ronnel)	ND	0.05	1
Fensulfothion	ND	0.05	1
Fenthion	ND	0.05	1
Merphos	ND	0.05	1
Methyl Parathion	ND	0.05	1
Mevinphos	ND	0.10	1
Naled	ND	0.10	1
Phorate	ND	0.05	1
Ronnel	ND	0.05	1
Tetrachlorvinphos (Stirophos)	ND	0.05	1
Tokuthion (Prothiofos)	ND	0.05	1
Trichloronate	ND	0.05	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

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PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
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DATE SAMPLED: 08/09/06 DATE ANALYZED: 08/10/06
REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-7A-0.5, SS-7B-0.5, SS-7C-0.5, SS-7D-0.5 (Composite)**
LAB I.D.: 060809-71 through -74 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	0.05	1
Bolstar (Sulprofos)	ND	0.05	1
Chlorpyrifos	ND	0.05	1
Coumaphos	ND	0.05	1
Demeton-O	ND	0.05	1
Demeton-S	ND	0.05	1
Diazinon	ND	0.05	1
Dichlorvos	ND	0.05	1
Disulfoton	ND	0.05	1
Ethoprop	ND	0.05	1
Fenchlorphos (Ronnel)	ND	0.05	1
Fensulfothion	ND	0.05	1
Fenthion	ND	0.05	1
Merphos	ND	0.05	1
Methyl Parathion	ND	0.05	1
Mevinphos	ND	0.10	1
Naled	ND	0.10	1
Phorate	ND	0.05	1
Ronnel	ND	0.05	1
Tetrachlorvinphos (Stirophos)	ND	0.05	1
Tokuthion (Prothiofos)	ND	0.05	1
Trichloronate	ND	0.05	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

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DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-8A-0.5, SS-8B-0.5, SS-8C-0.5, SS-8D-0.5 (Composite)**
LAB I.D.: 060809-79 through -82 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	0.05	1
Bolstar (Sulprofos)	ND	0.05	1
Chlorpyrifos	ND	0.05	1
Coumaphos	ND	0.05	1
Demeton-O	ND	0.05	1
Demeton-S	ND	0.05	1
Diazinon	ND	0.05	1
Dichlorvos	ND	0.05	1
Disulfoton	ND	0.05	1
Ethoprop	ND	0.05	1
Fenchlorphos (Ronnel)	ND	0.05	1
Fensulfothion	ND	0.05	1
Fenthion	ND	0.05	1
Merphos	ND	0.05	1
Methyl Parathion	ND	0.05	1
Mevinphos	ND	0.10	1
Naled	ND	0.10	1
Phorate	ND	0.05	1
Ronnel	ND	0.05	1
Tetrachlorvinphos (Stirophos)	ND	0.05	1
Tokuthion (Prothiofos)	ND	0.05	1
Trichloronate	ND	0.05	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
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Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
MATRIX: SOIL DATE EXTRACTED: 08/10/06
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REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **Dup A-0.5, Dup B-0.5, Dup C-0.5, Dup D-0.5 (Composite)**
LAB I.D.: 060809-87 through -90 (Composite)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	0.05	1
Bolstar (Sulprofos)	ND	0.05	1
Chlorpyrifos	ND	0.05	1
Coumaphos	ND	0.05	1
Demeton-O	ND	0.05	1
Demeton-S	ND	0.05	1
Diazinon	ND	0.05	1
Dichlorvos	ND	0.05	1
Disulfoton	ND	0.05	1
Ethoprop	ND	0.05	1
Fenchlorphos (Ronnel)	ND	0.05	1
Fensulfothion	ND	0.05	1
Fenthion	ND	0.05	1
Merphos	ND	0.05	1
Methyl Parathion	ND	0.05	1
Mevinphos	ND	0.10	1
Naled	ND	0.10	1
Phorate	ND	0.05	1
Ronnel	ND	0.05	1
Tetrachlorvinphos (Stirophos)	ND	0.05	1
Tokuthion (Prothiofos)	ND	0.05	1
Trichloronate	ND	0.05	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
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METHOD BLANK REPORT

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DATE REPORTED: 08/16/06

METHOD BLANK FOR LAB I.D.: 060809-23 THROUGH -26 (COMPOSITE), 060809-31 THROUGH -34 (COMPOSITE), 060809-39 THROUGH -42 (COMPOSITE), 060809-47 THROUGH -50 (COMPOSITE), 060809-55 THROUGH -58 (COMPOSITE), 060809-63 THROUGH -66 (COMPOSITE), 060809-71 THROUGH -74 (COMPOSITE), 060809-79 THROUGH -82 (COMPOSITE), 060809-87 THROUGH -90 (COMPOSITE)

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	0.05	1
Bolstar (Sulprofos)	ND	0.05	1
Chlorpyrifos	ND	0.05	1
Coumaphos	ND	0.05	1
Demeton-O	ND	0.05	1
Demeton-S	ND	0.05	1
Diazinon	ND	0.05	1
Dichlorvos	ND	0.05	1
Disulfoton	ND	0.05	1
Ethoprop	ND	0.05	1
Fenchlorphos (Ronnel)	ND	0.05	1
Fensulfothion	ND	0.05	1
Fenthion	ND	0.05	1
Merphos	ND	0.05	1
Methyl Parathion	ND	0.05	1
Mevinphos	ND	0.10	1
Naled	ND	0.10	1
Phorate	ND	0.05	1
Ronnel	ND	0.05	1
Tetrachlorvinphos (Stirophos)	ND	0.05	1
Tokuthion (Prothiofos)	ND	0.05	1
Trichloronate	ND	0.05	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

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EPA 8141A QA/QC Report

Matrix: **Soil** Date Analyzed: **8/10-11/2006**

Unit: **mg/Kg (PPM)**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 060807-20~24

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP %RPD	ACP %REC
Bolstar	0.00	1.00	1.03	**103%**	0.987	**99%**	**4%**	**0-30%**	**40-140**
Ethoprop	0.00	1.00	1.00	**100%**	0.960	**96%**	**4%**	**0-30%**	**40-140**
Ronnel	0.00	1.00	0.978	**98%**	1.01	**101%**	**3%**	**0-30%**	**40-140**
Phorate	0.00	1.00	1.03	**103%**	0.977	**98%**	**5%**	**0-30%**	**40-140**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
Bolstar	0.200	0.212	**106%**	**40-140**
Ethoprop	0.200	0.196	**98%**	**40-140**
Ronnel	0.200	0.211	**106%**	**40-140**
Phorate	0.200	0.196	**98%**	**40-140**

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		MB	0807-20~24	0807-25~29	060809-3	060809-4	060809-5	060809-6
Tributyl Phosphate	40-140	89%	94%	94%	96%	98%	94%	95%
Triphenyl Phosphate	40-140	87%	98%	97%	98%	100%	96%	98%

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.	060809-18	060809-19	060809-20	0809-23~26	0809-31~34	0809-39~42	0809-47~50	0809-55~58
Tributyl Phosphate	101%	95%	96%	95%	96%	98%	95%	88%
Triphenyl Phosphate	106%	96%	98%	99%	98%	101%	97%	89%

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.	0809-63~66	0809-71~74	0809-79~82	0809-87~90		
Tributyl Phosphate	100%	98%	95%	92%		
Triphenyl Phosphate	102%	99%	96%	93%		

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

** = Surrogate fail due to matrix interference (If Marked)*

Note: *LCS, MS, MSD are in control therefore results are in control.*

Analyzed and Reviewed By: _____

Final Reviewer: _____

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SAMPLE I.D.: **SS-1A-0.5, SS-1B-0.5, SS-1C-0.5, SS-1D-0.5 (Composite)**
LAB I.D.: 060809-23 through -26 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
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DATE RECEIVED: 08/09/06
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DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-2A-0.5, SS-2B-0.5, SS-2C-0.5, SS-2D-0.5 (Composite)**
LAB I.D.: 060809-31 through -34 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
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PROJECT: **Landmark School Site / 106166**
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/10-11/06
DATE ANALYZED: 08/11/06
DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-3A-0.5, SS-3B-0.5, SS-3C-0.5, SS-3D-0.5 (Composite)**
LAB I.D.: 060809-39 through -42 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166**
MATRIX: SOIL
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SAMPLE I.D.: **SS-4A-0.5, SS-4B-0.5, SS-4C-0.5, SS-4D-0.5 (Composite)**
LAB I.D.: 060809-47 through -50 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

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SAMPLE I.D.: **SS-5A-0.5, SS-5B-0.5, SS-5C-0.5, SS-5D-0.5 (Composite)**
LAB I.D.: 060809-55 through -58 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

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SAMPLE I.D.: **SS-6A-0.5, SS-6B-0.5, SS-6C-0.5, SS-6D-0.5 (Composite)**
LAB I.D.: 060809-63 through -66 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

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SAMPLE I.D.: **SS-7A-0.5, SS-7B-0.5, SS-7C-0.5, SS-7D-0.5 (Composite)**
LAB I.D.: 060809-71 through -74 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

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SAMPLE I.D.: **SS-8A-0.5, SS-8B-0.5, SS-8C-0.5, SS-8D-0.5 (Composite)**
LAB I.D.: 060809-79 through -82 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

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SAMPLE I.D.: **Dup A-0.5, Dup B-0.5, Dup C-0.5, Dup D-0.5 (Composite)**
LAB I.D.: 060809-87 through -90 (Composite)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

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METHOD BLANK REPORT

CUSTOMER: **BA Environmental**
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PROJECT: **Landmark School Site / 106166**
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METHOD BLANK FOR LAB I.D.: 060809-23 THROUGH -26 (COMPOSITE), 060809-31 THROUGH -34 (COMPOSITE), 060809-39 THROUGH -42 (COMPOSITE), 060809-47 THROUGH -50 (COMPOSITE), 060809-55 THROUGH -58 (COMPOSITE), 060809-63 THROUGH -66 (COMPOSITE), 060809-71 THROUGH -74 (COMPOSITE), 060809-79 THROUGH -82 (COMPOSITE), 060809-87 THROUGH -90 (COMPOSITE)

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

QA/QC Report

Analysis: EPA 8151A

Matrix: **Soil/Solid** Date Analyzed: **8/11-12/2006**

Unit: **mg/Kg (PPM)**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 060809-18

Analyte	S.R.	spk conc	MS	% REC	MSD	% REC	%RPD	ACP %RPD	ACP %REC
2,4,5-T	0	0.500	0.601	**120%**	0.570	**114%**	**5%**	**0-20%**	**50-150**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
2,4,5-T	0.0500	0.0505	101%	**70-130**
2,4,5-TP	0.0500	0.0431	86%	**70-130**
2,4-DB	0.500	0.566	113%	**70-130**

Surrogate Recovery:

Analyte	ACP %	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:		M-BLK	060809-18	060809-19	060809-20	0809-23~26	0809-31~34	0809-39~42	0809-47~50
DCAA	50-150	123%	84%	80%	82%	72%	79%	77%	78%

Analyte	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:	0809-55~58	0809-63~66	0809-71~74	0809-79~82	0809-87~90				
DCAA	77%	78%	80.00	85%	76%				

Analyte	%REC	%REC	%REC	%REC					
Sample ID:									
DCAA									

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

Analyzed and Reviewed By: _____

Final Reviewer: _____

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SAMPLE I.D.: **SS-1A-0.5, SS-1B-0.5, SS-1C-0.5, SS-1D-0.5 (Composite)**
LAB I.D.: 060809-23 through -26 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	10*
alpha-BHC	ND	0.001	10*
beta-BHC	ND	0.001	10*
gamma-BHC (Lindane)	ND	0.001	10*
delta-BHC	ND	0.001	10*
alpha-Chlordane	ND	0.001	10*
gamma-Chlordane	ND	0.001	10*
4,4'-DDD	ND	0.001	10*
4,4'-DDE	ND	0.001	10*
4,4'-DDT	ND	0.001	10*
Dieldrin	ND	0.001	10*
Endosulfan I	ND	0.001	10*
Endosulfan II	ND	0.001	10*
Endosulfan Sulfate	ND	0.001	10*
Endrin	ND	0.001	10*
Endrin Aldehyde	ND	0.001	10*
Endrin Ketone	ND	0.001	10*
Heptachlor Epoxide	ND	0.001	10*
Heptachlor	ND	0.001	10*
Methoxyclor	ND	0.001	10*
Toxaphene	ND	0.200	10*
Chloroneb	ND	0.010	10*
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.001	10*
Hexachlorobenzene	ND	0.001	10*
Mirex	ND	0.002	10*
Trifluralin	0.046	0.002	10*

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT
* = ACTUAL DETECTION LIMIT RAISED DUE TO MATRIX INTERFERENCE

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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SAMPLE I.D.: **SS-2A-0.5, SS-2B-0.5, SS-2C-0.5, SS-2D-0.5 (Composite)**
LAB I.D.: 060809-31 through -34 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	10*
alpha-BHC	ND	0.001	10*
beta-BHC	ND	0.001	10*
gamma-BHC (Lindane)	ND	0.001	10*
delta-BHC	ND	0.001	10*
alpha-Chlordane	ND	0.001	10*
gamma-Chlordane	ND	0.001	10*
4,4'-DDD	ND	0.001	10*
4,4'-DDE	ND	0.001	10*
4,4'-DDT	ND	0.001	10*
Dieldrin	ND	0.001	10*
Endosulfan I	ND	0.001	10*
Endosulfan II	ND	0.001	10*
Endosulfan Sulfate	ND	0.001	10*
Endrin	ND	0.001	10*
Endrin Aldehyde	ND	0.001	10*
Endrin Ketone	ND	0.001	10*
Heptachlor Epoxide	ND	0.001	10*
Heptachlor	ND	0.001	10*
Methoxyclor	ND	0.001	10*
Toxaphene	ND	0.200	10*
Chloroneb	ND	0.010	10*
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.001	10*
Hexachlorobenzene	ND	0.001	10*
Mirex	ND	0.002	10*
Trifluralin	ND	0.002	10*

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
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SAMPLE I.D.: **SS-3A-0.5, SS-3B-0.5, SS-3C-0.5, SS-3D-0.5 (Composite)**
LAB I.D.: 060809-39 through -42 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	10*
alpha-BHC	ND	0.001	10*
beta-BHC	ND	0.001	10*
gamma-BHC (Lindane)	ND	0.001	10*
delta-BHC	ND	0.001	10*
alpha-Chlordane	ND	0.001	10*
gamma-Chlordane	ND	0.001	10*
4,4'-DDD	ND	0.001	10*
4,4'-DDE	ND	0.001	10*
4,4'-DDT	ND	0.001	10*
Dieldrin	ND	0.001	10*
Endosulfan I	ND	0.001	10*
Endosulfan II	ND	0.001	10*
Endosulfan Sulfate	ND	0.001	10*
Endrin	ND	0.001	10*
Endrin Aldehyde	ND	0.001	10*
Endrin Ketone	ND	0.001	10*
Heptachlor Epoxide	ND	0.001	10*
Heptachlor	ND	0.001	10*
Methoxyclor	ND	0.001	10*
Toxaphene	ND	0.200	10*
Chloroneb	ND	0.010	10*
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.001	10*
Hexachlorobenzene	ND	0.001	10*
Mirex	ND	0.002	10*
Trifluralin	ND	0.002	10*

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT
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SAMPLE I.D.: **SS-4A-0.5, SS-4B-0.5, SS-4C-0.5, SS-4D-0.5 (Composite)**
LAB I.D.: 060809-47 through -50 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	10*
alpha-BHC	ND	0.001	10*
beta-BHC	ND	0.001	10*
gamma-BHC (Lindane)	ND	0.001	10*
delta-BHC	ND	0.001	10*
alpha-Chlordane	ND	0.001	10*
gamma-Chlordane	ND	0.001	10*
4,4'-DDD	ND	0.001	10*
4,4'-DDE	ND	0.001	10*
4,4'-DDT	ND	0.001	10*
Dieldrin	ND	0.001	10*
Endosulfan I	ND	0.001	10*
Endosulfan II	ND	0.001	10*
Endosulfan Sulfate	ND	0.001	10*
Endrin	ND	0.001	10*
Endrin Aldehyde	ND	0.001	10*
Endrin Ketone	ND	0.001	10*
Heptachlor Epoxide	ND	0.001	10*
Heptachlor	ND	0.001	10*
Methoxyclor	ND	0.001	10*
Toxaphene	ND	0.200	10*
Chloroneb	ND	0.010	10*
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.001	10*
Hexachlorobenzene	ND	0.001	10*
Mirex	ND	0.002	10*
Trifluralin	0.038	0.002	10*

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT
* = ACTUAL DETECTION LIMIT RAISED DUE TO MATRIX INTERFERENCE

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
MATRIX: SOIL DATE EXTRACTED: 08/10/06
DATE SAMPLED: 08/09/06 DATE ANALYZED: 08/11/06
REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-5A-0.5, SS-5B-0.5, SS-5C-0.5, SS-5D-0.5 (Composite)**
LAB I.D.: 060809-55 through -58 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	10*
alpha-BHC	ND	0.001	10*
beta-BHC	ND	0.001	10*
gamma-BHC (Lindane)	ND	0.001	10*
delta-BHC	ND	0.001	10*
alpha-Chlordane	ND	0.001	10*
gamma-Chlordane	ND	0.001	10*
4,4'-DDD	ND	0.001	10*
4,4'-DDE	ND	0.001	10*
4,4'-DDT	ND	0.001	10*
Dieldrin	ND	0.001	10*
Endosulfan I	ND	0.001	10*
Endosulfan II	ND	0.001	10*
Endosulfan Sulfate	ND	0.001	10*
Endrin	ND	0.001	10*
Endrin Aldehyde	ND	0.001	10*
Endrin Ketone	ND	0.001	10*
Heptachlor Epoxide	ND	0.001	10*
Heptachlor	ND	0.001	10*
Methoxyclor	ND	0.001	10*
Toxaphene	ND	0.200	10*
Chloroneb	ND	0.010	10*
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.001	10*
Hexachlorobenzene	ND	0.001	10*
Mirex	ND	0.002	10*
Trifluralin	ND	0.002	10*

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT
* = ACTUAL DETECTION LIMIT RAISED DUE TO MATRIX INTERFERENCE

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

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PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
MATRIX: SOIL DATE EXTRACTED: 08/10/06
DATE SAMPLED: 08/09/06 DATE ANALYZED: 08/11/06
REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-6A-0.5, SS-6B-0.5, SS-6C-0.5, SS-6D-0.5 (Composite)**
LAB I.D.: 060809-63 through -66 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	10*
alpha-BHC	ND	0.001	10*
beta-BHC	ND	0.001	10*
gamma-BHC (Lindane)	ND	0.001	10*
delta-BHC	ND	0.001	10*
alpha-Chlordane	ND	0.001	10*
gamma-Chlordane	ND	0.001	10*
4,4'-DDD	ND	0.001	10*
4,4'-DDE	ND	0.001	10*
4,4'-DDT	ND	0.001	10*
Dieldrin	ND	0.001	10*
Endosulfan I	ND	0.001	10*
Endosulfan II	ND	0.001	10*
Endosulfan Sulfate	ND	0.001	10*
Endrin	ND	0.001	10*
Endrin Aldehyde	ND	0.001	10*
Endrin Ketone	ND	0.001	10*
Heptachlor Epoxide	ND	0.001	10*
Heptachlor	ND	0.001	10*
Methoxyclor	ND	0.001	10*
Toxaphene	ND	0.200	10*
Chloroneb	ND	0.010	10*
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.001	10*
Hexachlorobenzene	ND	0.001	10*
Mirex	ND	0.002	10*
Trifluralin	0.033	0.002	10*

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT
* = ACTUAL DETECTION LIMIT RAISED DUE TO MATRIX INTERFERENCE

DATA REVIEWED AND APPROVED BY: _____
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PROJECT: **Landmark School Site / 106166**
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/10/06
DATE ANALYZED: 08/11/06
DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-7A-0.5, SS-7B-0.5, SS-7C-0.5, SS-7D-0.5 (Composite)**
LAB I.D.: 060809-71 through -74 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	10*
alpha-BHC	ND	0.001	10*
beta-BHC	ND	0.001	10*
gamma-BHC (Lindane)	ND	0.001	10*
delta-BHC	ND	0.001	10*
alpha-Chlordane	ND	0.001	10*
gamma-Chlordane	ND	0.001	10*
4,4'-DDD	ND	0.001	10*
4,4'-DDE	ND	0.001	10*
4,4'-DDT	ND	0.001	10*
Dieldrin	ND	0.001	10*
Endosulfan I	ND	0.001	10*
Endosulfan II	ND	0.001	10*
Endosulfan Sulfate	ND	0.001	10*
Endrin	ND	0.001	10*
Endrin Aldehyde	ND	0.001	10*
Endrin Ketone	ND	0.001	10*
Heptachlor Epoxide	ND	0.001	10*
Heptachlor	ND	0.001	10*
Methoxyclor	ND	0.001	10*
Toxaphene	ND	0.200	10*
Chloroneb	ND	0.010	10*
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.001	10*
Hexachlorobenzene	ND	0.001	10*
Mirex	ND	0.002	10*
Trifluralin	0.022	0.002	10*

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT
* = ACTUAL DETECTION LIMIT RAISED DUE TO MATRIX INTERFERENCE

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PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
MATRIX: SOIL DATE EXTRACTED: 08/10/06
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REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-8A-0.5, SS-8B-0.5, SS-8C-0.5, SS-8D-0.5 (Composite)**
LAB I.D.: 060809-79 through -82 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	10*
alpha-BHC	ND	0.001	10*
beta-BHC	ND	0.001	10*
gamma-BHC (Lindane)	ND	0.001	10*
delta-BHC	ND	0.001	10*
alpha-Chlordane	ND	0.001	10*
gamma-Chlordane	ND	0.001	10*
4,4'-DDD	ND	0.001	10*
4,4'-DDE	ND	0.001	10*
4,4'-DDT	ND	0.001	10*
Dieldrin	ND	0.001	10*
Endosulfan I	ND	0.001	10*
Endosulfan II	ND	0.001	10*
Endosulfan Sulfate	ND	0.001	10*
Endrin	ND	0.001	10*
Endrin Aldehyde	ND	0.001	10*
Endrin Ketone	ND	0.001	10*
Heptachlor Epoxide	ND	0.001	10*
Heptachlor	ND	0.001	10*
Methoxyclor	ND	0.001	10*
Toxaphene	ND	0.200	10*
Chloroneb	ND	0.010	10*
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.001	10*
Hexachlorobenzene	ND	0.001	10*
Mirex	ND	0.002	10*
Trifluralin	0.023	0.002	10*

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT
* = ACTUAL DETECTION LIMIT RAISED DUE TO MATRIX INTERFERENCE

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
MATRIX: SOIL DATE EXTRACTED: 08/10/06
DATE SAMPLED: 08/09/06 DATE ANALYZED: 08/11/06
REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **DUP A-0.5, DUP B-0.5, DUP C-0.5, DUP D-0.5 (Composite)**
LAB I.D.: 060809-87 through -90 (Composite)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	10*
alpha-BHC	ND	0.001	10*
beta-BHC	ND	0.001	10*
gamma-BHC (Lindane)	ND	0.001	10*
delta-BHC	ND	0.001	10*
alpha-Chlordane	ND	0.001	10*
gamma-Chlordane	ND	0.001	10*
4,4'-DDD	ND	0.001	10*
4,4'-DDE	ND	0.001	10*
4,4'-DDT	ND	0.001	10*
Dieldrin	ND	0.001	10*
Endosulfan I	ND	0.001	10*
Endosulfan II	ND	0.001	10*
Endosulfan Sulfate	ND	0.001	10*
Endrin	ND	0.001	10*
Endrin Aldehyde	ND	0.001	10*
Endrin Ketone	ND	0.001	10*
Heptachlor Epoxide	ND	0.001	10*
Heptachlor	ND	0.001	10*
Methoxyclor	ND	0.001	10*
Toxaphene	ND	0.200	10*
Chloroneb	ND	0.010	10*
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.001	10*
Hexachlorobenzene	ND	0.001	10*
Mirex	ND	0.002	10*
Trifluralin	ND	0.002	10*

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT
* = ACTUAL DETECTION LIMIT RAISED DUE TO MATRIX INTERFERENCE

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.
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METHOD BLANK REPORT

CUSTOMER: **BA Environmental**
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Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166**
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/10/06
DATE ANALYZED: 08/10/06
DATE REPORTED: 08/16/06

METHOD BLANK FOR LAB I.D.: 060809-23 THROUGH -26 (COMPOSITE), 060809-31 THROUGH -34 (COMPOSITE), 060809-39 THROUGH -42 (COMPOSITE), 060809-47 THROUGH -50 (COMPOSITE), 060809-55 THROUGH -58 (COMPOSITE), 060809-63 THROUGH -66 (COMPOSITE), 060809-71 THROUGH -74 (COMPOSITE), 060809-79 THROUGH -82 (COMPOSITE), 060809-87 THROUGH -90 (COMPOSITE)

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	1
alpha-BHC	ND	0.001	1
beta-BHC	ND	0.001	1
gamma-BHC (Lindane)	ND	0.001	1
delta-BHC	ND	0.001	1
alpha-Chlordane	ND	0.001	1
gamma-Chlordane	ND	0.001	1
4,4'-DDD	ND	0.001	1
4,4'-DDE	ND	0.001	1
4,4'-DDT	ND	0.001	1
Dieldrin	ND	0.001	1
Endosulfan I	ND	0.001	1
Endosulfan II	ND	0.001	1
Endosulfan Sulfate	ND	0.001	1
Endrin	ND	0.001	1
Endrin Aldehyde	ND	0.001	1
Endrin Ketone	ND	0.001	1
Heptachlor Epoxide	ND	0.001	1
Heptachlor	ND	0.001	1
Methoxyclor	ND	0.001	1
Toxaphene	ND	0.200	1
Chloroneb	ND	0.010	1
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.001	1
Hexachlorobenzene	ND	0.001	1
Mirex	ND	0.002	1
Trifluralin	ND	0.002	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

EPA 8081 QA/QC Report

Matrix: **Soil** Date Analyzed: **8/10-11/2006**

Unit: mg/Kg

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 060809-18

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP %RPD	ACP %REC
Gamma-BHC	0.000	0.050	0.0498	**100%**	0.0501	**100%**	**1%**	**0-20%**	**70-130**
Aldrin	0.000	0.050	0.0474	**95%**	0.0478	**96%**	**1%**	**0-20%**	**70-130**
4,4-DDE	0.000	0.050	0.0450	**90%**	0.0455	**91%**	**1%**	**0-20%**	**70-130**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
Gamma-BHC	0.0050	0.00492	**98%**	**75-125**
Aldrin	0.0050	0.00494	**99%**	**75-125**
4,4-DDE	0.0050	0.00453	**91%**	**75-125**
Dieldrin	0.0050	0.00474	**95%**	**75-125**

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		MB	060809-18	060809-19	060809-20	0809-23~26	0809-31~34	0809-39~42
Tetra-chloro-meta-xylene	50-150	105%	98%	93%	107%	104%	104%	103%
Decachlorobiphenyl	50-150	105%	94%	87%	93%	102%	102%	99%

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.	0809-47~50	0809-55~58	0809-63~66	0809-71~74	0809-79~82	0809-87~90		
Tetra-chloro-meta-xylene	100%	101%	103%	101%	103%	99%		
Decachlorobiphenyl	100%	98%	97%	95%	97%	97%		

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.						
Tetra-chloro-meta-xylene						
Decachlorobiphenyl						

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

** = Surrogate fail due to matrix interference (if Marked)*

Note: *LCS, MS, MSD are in control therefore results are in control.*

Analyzed and Reviewed By: _____

Final Reviewer: _____

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LABORATORY REPORT

CUSTOMER: **BA Environmental**
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PROJECT: **Landmark School Site / 106166**

MATRIX: SOIL — DATE RECEIVED: 08/09/06
DATE SAMPLED: 08/09/06 — DATE ANALYZED: 08/11/06
REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-1A-0.5** — LAB I.D.: 060809-23

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Arsenic(As)	ND	0.3	1	500	5.0	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
* = STLC analysis for the metal is recommended (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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PROJECT: **Landmark School Site / 106166**

MATRIX: SOIL — DATE RECEIVED: 08/09/06
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REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-1C-0.5** — LAB I.D.: 060809-25

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.3	1	500	5.0	6010B
Barium(Ba)	85.8	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	12.9	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt(Co)	4.27	1.0	1	8,000	80	6010B
Copper(Cu)	6.51	1.0	1	2,500	25	6010B
Lead(Pb)	4.06	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.1	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	8.51	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	30.4	5.0	1	2,400	24	6010B
Zinc(Zn)	41.1	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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PROJECT: **Landmark School Site / 106166**

MATRIX: SOIL — DATE RECEIVED: 08/09/06
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REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-2C-0.5** — LAB I.D.: 060809-33

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Arsenic(As)	ND	0.3	1	500	5.0	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
* = STLC analysis for the metal is recommended (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
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LABORATORY REPORT

CUSTOMER: **BA Environmental**
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Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166**

MATRIX: SOIL — DATE RECEIVED: 08/09/06
DATE SAMPLED: 08/09/06 — DATE ANALYZED: 08/11/06
REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-3B-0.5** — LAB I.D.: 060809-40

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Arsenic(As)	ND	0.3	1	500	5.0	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
* = STLC analysis for the metal is recommended (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

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REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-4B-0.5** — LAB I.D.: 060809-48

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.3	1	500	5.0	6010B
Barium(Ba)	106	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	12.9	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt(Co)	4.31	1.0	1	8,000	80	6010B
Copper(Cu)	6.64	1.0	1	2,500	25	6010B
Lead(Pb)	4.04	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.1	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	8.03	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	30.8	5.0	1	2,400	24	6010B
Zinc(Zn)	40.8	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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PROJECT: **Landmark School Site / 106166**

MATRIX: SOIL — DATE RECEIVED: 08/09/06
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REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-4D-0.5** — LAB I.D.: 060809-50

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Arsenic(As)	ND	0.3	1	500	5.0	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
* = STLC analysis for the metal is recommended (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

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PROJECT: **Landmark School Site / 106166**

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REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-5B-0.5** — LAB I.D.: 060809-56

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Arsenic(As)	ND	0.3	1	500	5.0	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
* = STLC analysis for the metal is recommended (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

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PROJECT: **Landmark School Site / 106166**

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REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-6B-0.5** — LAB I.D.: 060809-64

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.3	1	500	5.0	6010B
Barium(Ba)	87.3	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	14.1	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt(Co)	4.63	1.0	1	8,000	80	6010B
Copper(Cu)	7.50	1.0	1	2,500	25	6010B
Lead(Pb)	4.64	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.1	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	9.34	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	31.8	5.0	1	2,400	24	6010B
Zinc(Zn)	46.5	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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PROJECT: **Landmark School Site / 106166**

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SAMPLE I.D.: **SS-6D-0.5** — LAB I.D.: 060809-66

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Arsenic(As)	ND	0.3	1	500	5.0	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
* = STLC analysis for the metal is recommended (if marked)
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PROJECT: **Landmark School Site / 106166**

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REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-7A-0.5** — LAB I.D.: 060809-71

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Arsenic(As)	ND	0.3	1	500	5.0	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
* = STLC analysis for the metal is recommended (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

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PROJECT: **Landmark School Site / 106166**

MATRIX: SOIL — DATE RECEIVED: 08/09/06
DATE SAMPLED: 08/09/06 — DATE ANALYZED: 08/11/06
REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-8A-0.5** — LAB I.D.: 060809-79

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.3	1	500	5.0	6010B
Barium(Ba)	48.9	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	8.66	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt(Co)	3.23	1.0	1	8,000	80	6010B
Copper(Cu)	4.76	1.0	1	2,500	25	6010B
Lead(Pb)	ND	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.1	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	5.96	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	21.7	5.0	1	2,400	24	6010B
Zinc(Zn)	29.7	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
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*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

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PROJECT: **Landmark School Site / 106166**

MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE ANALYZED: 08/11/06
DATE REPORTED: 08/16/06

SAMPLE I.D.: **SS-8C-0.5**

LAB I.D.: 060809-81

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Arsenic(As)	ND	0.3	1	500	5.0	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
* = STLC analysis for the metal is recommended (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

Data Reviewed and Approved by: _____
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PROJECT: **Landmark School Site / 106166**

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SAMPLE I.D.: **DUP B-0.5** — LAB I.D.: 060809-88

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.3	1	500	5.0	6010B
Barium(Ba)	64.2	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	10.7	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt(Co)	3.57	1.0	1	8,000	80	6010B
Copper(Cu)	4.08	1.0	1	2,500	25	6010B
Lead(Pb)	ND	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.1	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	6.80	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	27.5	5.0	1	2,400	24	6010B
Zinc(Zn)	33.2	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
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PROJECT: **Landmark School Site / 106166**

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SAMPLE I.D.: **BG 1** — LAB I.D.: 060809-96

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.3	1	500	5.0	6010B
Barium(Ba)	49.5	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	8.59	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt(Co)	2.73	1.0	1	8,000	80	6010B
Copper(Cu)	4.56	1.0	1	2,500	25	6010B
Lead(Pb)	ND	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.1	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	5.46	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	20.7	5.0	1	2,400	24	6010B
Zinc(Zn)	27.9	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
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-- = Not analyzed/not requested

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PROJECT: **Landmark School Site / 106166**

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SAMPLE I.D.: **BG 2** — LAB I.D.: 060809-97

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.3	1	500	5.0	6010B
Barium(Ba)	149	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	10.4	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt(Co)	3.36	1.0	1	8,000	80	6010B
Copper(Cu)	5.35	1.0	1	2,500	25	6010B
Lead(Pb)	5.68	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.1	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	6.85	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	23.2	5.0	1	2,400	24	6010B
Zinc(Zn)	41.5	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166**

MATRIX: SOIL — DATE RECEIVED: 08/09/06
DATE SAMPLED: 08/09/06 — DATE ANALYZED: 08/11/06
REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **BG 3** — LAB I.D.: 060809-98

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.3	1	500	5.0	6010B
Barium(Ba)	137	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	12.6	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt(Co)	3.84	1.0	1	8,000	80	6010B
Copper(Cu)	5.44	1.0	1	2,500	25	6010B
Lead(Pb)	5.10	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.1	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	7.73	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	29.3	5.0	1	2,400	24	6010B
Zinc(Zn)	42.5	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
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LABORATORY REPORT

CUSTOMER: **BA Environmental**
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166**

MATRIX: SOIL — DATE RECEIVED: 08/09/06
DATE SAMPLED: 08/09/06 — DATE ANALYZED: 08/11/06
REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **BG 4** — LAB I.D.: 060809-99

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.3	1	500	5.0	6010B
Barium(Ba)	181	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	8.65	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt(Co)	3.23	1.0	1	8,000	80	6010B
Copper(Cu)	6.88	1.0	1	2,500	25	6010B
Lead(Pb)	5.78	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.1	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	6.98	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	18.8	5.0	1	2,400	24	6010B
Zinc(Zn)	68.6	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: **BA Environmental**
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Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166**

MATRIX: SOIL — DATE RECEIVED: 08/09/06
DATE SAMPLED: 08/09/06 — DATE ANALYZED: 08/11/06
REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

METHOD BLANK FOR LAB I.D.: 060809-23,-25,-33,-40, -48,-50,-56,-64,-66,-71,-79,-81,-88,-96,-97,-98,-99

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: MG/KG = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.3	1	500	5.0	6010B
Barium(Ba)	ND	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	ND	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt(Co)	ND	1.0	1	8,000	80	6010B
Copper(Cu)	ND	1.0	1	2,500	25	6010B
Lead(Pb)	ND	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.1	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	ND	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	ND	5.0	1	2,400	24	6010B
Zinc(Zn)	ND	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
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Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis --TTLC--SOLID/SOIL MATRIX

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 8/11/2006

Unit : Mg/KG(ppm)

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic (As)	060809-20	1.00	99.5	PASS	0	50.0	44.7	89%	45.3	91%	1%
Copper (Cu)	060809-20	1.00	98.7	PASS	5.34	50.0	49.5	88%	51.8	93%	5%
Lead (Pb)	060809-20	1.00	99.4	PASS	0	50.0	44.7	89%	45.8	92%	2%

ANALYSIS DATE. :

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	060809-99	0.300	92.4	PASS	0	0.300	0.265	88%	0.277	92%	4%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic (As)	PASS	PASS	PASS	PASS
LEAD (Pb)	PASS	PASS	PASS	PASS
Copper (Cu)	PASS	PASS	PASS	PASS
MERCURY (Hg)	PASS	PASS	PASS	PASS
Accepted Range	75 ~ 125	75 ~ 125	85 ~ 115	0 ~ 20

ANALYST: Keith

FINAL REVIEWER: B

Enviro – Chem, Inc.
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LABORATORY REPORT

CUSTOMER: **BA Environmental**
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Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166**

MATRIX: WATER — DATE RECEIVED: 08/09/06
DATE SAMPLED: 08/09/06 — DATE ANALYZED: 08/11-14/06
REPORT TO: MR. RUSSELL COTE — DATE REPORTED: 08/16/06

SAMPLE I.D.: **Equip. Blank** — LAB I.D.: 060809-95

TOTAL METALS ANALYSIS
UNIT: MG/L = MILLIGRAM PER LITER = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	EPA METHOD
Antimony(Sb)	ND	0.02	1	200.7
Arsenic(As)	ND	0.01	1	200.7
Barium(Ba)	ND	0.10	1	200.7
Beryllium(Be)	ND	0.01	1	200.7
Cadmium(Cd)	ND	0.01	1	200.7
Chromium(Cr)	ND	0.01	1	200.7
Cobalt(Co)	ND	0.02	1	200.7
Copper(Cu)	ND	0.02	1	200.7
Lead(Pb)	ND	0.01	1	200.7
Mercury(Hg)	ND	0.0005	1	245.1
Molybdenum(Mo)	ND	0.1	1	200.7
Nickel(Ni)	ND	0.05	1	200.7
Selenium(Se)	ND	0.02	1	200.7
Silver(Ag)	ND	0.02	1	200.7
Thallium(Tl)	ND	0.02	1	200.7
Vanadium(V)	ND	0.1	1	200.7
Zinc(Zn)	ND	0.01	1	200.7

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection limit or non-detected

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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METHOD BLANK REPORT

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DATE ANALYZED: 08/11-14/06
REPORT TO: MR. RUSSELL COTE
DATE REPORTED: 08/16/06

METHOD BLANK FOR LAB I.D.: 060809-95

TOTAL METALS ANALYSIS
UNIT: MG/L = MILLIGRAM PER LITER = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	EPA METHOD
Antimony(Sb)	ND	0.02	1	200.7
Arsenic(As)	ND	0.01	1	200.7
Barium(Ba)	ND	0.10	1	200.7
Beryllium(Be)	ND	0.01	1	200.7
Cadmium(Cd)	ND	0.01	1	200.7
Chromium(Cr)	ND	0.01	1	200.7
Cobalt(Co)	ND	0.02	1	200.7
Copper(Cu)	ND	0.02	1	200.7
Lead(Pb)	ND	0.01	1	200.7
Mercury(Hg)	ND	0.0005	1	245.1
Molybdenum(Mo)	ND	0.1	1	200.7
Nickel(Ni)	ND	0.05	1	200.7
Selenium(Se)	ND	0.02	1	200.7
Silver(Ag)	ND	0.02	1	200.7
Thallium(Tl)	ND	0.02	1	200.7
Vanadium(V)	ND	0.1	1	200.7
Zinc(Zn)	ND	0.01	1	200.7

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection limit or non-detected

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for TTLC Metals Analysis --WATER/LIQUID *MATRIX*

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 8/14/2006

Unit : *mg/kg (ppm)*

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	*Sample Result*	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic (As)	060810-16	1.00	111	*PASS*	*0*	1.00	1.00	100%	1.03	103%	3%
Nickel (Ni)	060810-16	1.00	102	*PASS*	*0*	1.00	0.850	85%	0.839	84%	1%
LEAD (Pb)	060810-16	1.00	111	*PASS*	*0*	1.00	0.819	82%	0.823	82%	0%

ANALYSIS DATE. :

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	*Sample Result*	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)		0.00300		*FAIL*	*0*	0.00300		0%		0%	#DIV/0!

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
ARSENIC (As)	*PASS*	*PASS*	*PASS*	*PASS*
LEAD (Pb)	*PASS*	*PASS*	*PASS*	*PASS*
Nickel (Ni)	*PASS*	*PASS*	*PASS*	*PASS*
MERCURY (Hg)				
Accepted Range	**75 ~ 125**	**75 ~ 125**	**85 ~ 115**	**0 ~ 20**

ANALYST: _____

FINAL REVIEWER: _____

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LABORATORY REPORT

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Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
MATRIX: WATER DATE EXTRACTED: 08/11-14/06
DATE SAMPLED: 08/09/06 DATE ANALYZED: 08/16/06
REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **Equip. Blank** LAB I.D.: 060809-95

ANALYSIS: CHLORINATED HERBICIDES, EPA 8151A
UNIT: uG/L = MICROGRAM PER LITER = PPB

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	2	1
2,4,5-TP (Silvex)	ND	2	1
2,4-D	ND	20	1
2,4-DB	ND	20	1
Dalapon (Dichloroacetic Acid)	ND	50	1
Dicamba	ND	2	1
Dichloroprop	ND	20	1
Dinoseb (DNBP)	ND	10	1
MCPA	ND	2000	1
MCPP	ND	2000	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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METHOD BLANK REPORT

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PROJECT: **Landmark School Site / 106166**
MATRIX: WATER
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/11-14/06
DATE ANALYZED: 08/16/06
DATE REPORTED: 08/16/06

METHOD BLANK FOR LAB I.D.: 060809-95

ANALYSIS: CHLORINATED HERBICIDES, EPA 8151A
UNIT: uG/L = MICROGRAM PER LITER = PPB

PARAMETER	SAMPLE RESULT	PQL	DF
2,4,5-T	ND	2	1
2,4,5-TP (Silvex)	ND	2	1
2,4-D	ND	20	1
2,4-DB	ND	20	1
Dalapon (Dichloroacetic Acid)	ND	50	1
Dicamba	ND	2	1
Dichloroprop	ND	20	1
Dinoseb (DNBP)	ND	10	1
MCPA	ND	2000	1
MCPP	ND	2000	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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QA/QC Report

Analysis: EPA 8151A

Matrix: **Water** Date Analyzed: 8/16/2006

Unit: ug/L (PPB)

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 060814-LCS1/2

Analyte	S.R.	spk conc	MS	% REC	MSD	% REC	%RPD	ACP %RPD	ACP %REC
2,4,5-T	0	5.00	3.33	**67%**	3.05	**61%**	**9%**	**0-20%**	**50-150**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
2,4,5-T	0.500	0.306	61%	**70-130**
2,4,5-TP	0.500	0.323	65%	**70-130**
2,4-DB	5.00	4.96	99%	**70-130**

Surrogate Recovery:

Analyte	spk conc	ACP %	M-BLK	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:			M-BLK	060809-95					
DCAA	0.20	50-150	93%	72%					

Analyte	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:									
DCAA									

Analyte	%REC	%REC	%REC	%REC	%REC
Sample ID:					
DCAA					

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

Analyzed and Reviewed By: _____

Final Reviewer: _____

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LABORATORY REPORT

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PROJECT: **Landmark School Site / 106166**
MATRIX: WATER
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/11/06
DATE ANALYZED: 08/11/06
DATE REPORTED: 08/16/06

SAMPLE I.D.: **Equip. Blank**
LAB I.D.: 060809-95

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: ug/L = Microgram per Liter = PPB

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.100	1
alpha-BHC	ND	0.100	1
beta-BHC	ND	0.100	1
gamma-BHC (Lindane)	ND	0.100	1
delta-BHC	ND	0.100	1
alpha-Chlordane	ND	0.100	1
gamma-Chlordane	ND	0.100	1
4,4'-DDD	ND	0.100	1
4,4'-DDE	ND	0.100	1
4,4'-DDT	ND	0.100	1
Dieldrin	ND	0.100	1
Endosulfan I	ND	0.100	1
Endosulfan II	ND	0.100	1
Endosulfan Sulfate	ND	0.100	1
Endrin	ND	0.100	1
Endrin Aldehyde	ND	0.100	1
Endrin Ketone	ND	0.100	1
Heptachlor Epoxide	ND	0.100	1
Heptachlor	ND	0.100	1
Methoxyclor	ND	0.100	1
Toxaphene	ND	20.0	1
Chloroneb	ND	1.00	1
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.100	1
Hexachlorobenzene	ND	0.100	1
Mirex	ND	0.200	1
Trifluralin	ND	0.200	1

COMMENTS:
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Data Reviewed and Approved by:
CAL-DHS CERTIFICATE # 1555

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CUSTOMER: **BA Environmental**
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166**
MATRIX: WATER
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/11/06
DATE ANALYZED: 08/11/06
DATE REPORTED: 08/16/06

METHOD BLANK FOR LAB I.D.: 060809-95

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: ug/L = Microgram per Liter = PPB

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.100	1
alpha-BHC	ND	0.100	1
beta-BHC	ND	0.100	1
gamma-BHC (Lindane)	ND	0.100	1
delta-BHC	ND	0.100	1
alpha-Chlordane	ND	0.100	1
gamma-Chlordane	ND	0.100	1
4,4'-DDD	ND	0.100	1
4,4'-DDE	ND	0.100	1
4,4'-DDT	ND	0.100	1
Dieldrin	ND	0.100	1
Endosulfan I	ND	0.100	1
Endosulfan II	ND	0.100	1
Endosulfan Sulfate	ND	0.100	1
Endrin	ND	0.100	1
Endrin Aldehyde	ND	0.100	1
Endrin Ketone	ND	0.100	1
Heptachlor Epoxide	ND	0.100	1
Heptachlor	ND	0.100	1
Methoxyclor	ND	0.100	1
Toxaphene	ND	20.0	1
Chloroneb	ND	1.00	1
1,2-Dibromo-3-Chloropropane(DBCP)	ND	0.100	1
Hexachlorobenzene	ND	0.100	1
Mirex	ND	0.200	1
Trifluralin	ND	0.200	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

Data Reviewed and Approved by:
CAL-DHS CERTIFICATE # 1555

Enviro-Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

EPA 8081 QA/QC Report

Matrix: **Water** Date Analyzed: 8/11/2006
Unit: ug/L

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)
Spiked Sample Lab I.D.: 060809-95

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP %RPD	ACP %REC
Gamma-BHC	0	5.00	4.73	95%	4.78	96%	1%	0-20%	70-130
Aldrin	0	5.00	4.74	95%	4.91	98%	4%	0-20%	70-130
4,4-DDE	0	5.00	4.41	88%	4.46	89%	1%	0-20%	70-130

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
Gamma-BHC	0.500	0.475	95%	75-125
Aldrin	0.500	0.465	93%	75-125
4,4-DDE	0.500	0.452	90%	75-125
Dieldrin	0.500	0.465	93%	75-125

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		MB	060808-71	060809-95				
Tetra-chloro-meta-xylene	50-150	104%	114%	73%				
Decachlorobipneyl	50-150	97%	89%	66%				

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.								
Tetra-chloro-meta-xylene								
Decachlorobipneyl								

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.						
Tetra-chloro-meta-xylene						
Decachlorobipneyl						

S.R. = Sample Result
spk conc = Spike Concentration
%REC = Percent Recovery
ACP %RPD = Acceptable Percent RPD Range
ACP %REC = Acceptable Percent Recovery Range

** = Surrogate fail due to matrix interference*
Note: ***LCS, MS, MSD are in control therefore results are in control.***

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro - Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **BA Environmental**
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166** DATE RECEIVED: 08/09/06
MATRIX: WATER DATE EXTRACTED: 08/14/06
DATE SAMPLED: 08/09/06 DATE ANALYZED: 08/14/06
REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/16/06

SAMPLE I.D.: **Equip. Blank** LAB I.D.: 060809-95

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: ug/L = Microgram Per Liter = PPB

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	5	1
Bolstar (Sulprofos)	ND	5	1
Chlorpyrifos	ND	5	1
Coumaphos	ND	5	1
Demeton-O	ND	5	1
Demeton-S	ND	5	1
Diazinon	ND	5	1
Dichlorvos	ND	5	1
Disulfoton	ND	5	1
Ethoprop	ND	5	1
Fensulfothion	ND	5	1
Fenthion	ND	5	1
Merphos	ND	5	1
Methyl Parathion	ND	5	1
Mevinphos	ND	10	1
Naled	ND	10	1
Phorate	ND	5	1
Ronnel	ND	5	1
Tetrachlorvinphos (Stirophos)	ND	5	1
Tokuthion (Prothiofos)	ND	5	1
Trichloronate	ND	5	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: **BA Environmental**
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: **Landmark School Site / 106166**
MATRIX: WATER
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/14/06
DATE ANALYZED: 08/14/06
DATE REPORTED: 08/16/06

METHOD BLANK FOR LAB I.D.: 060809-95

Organophosphorus Pesticides Analysis
Method: EPA 8141A
Unit: ug/L = Microgram Per Liter = PPB

PARAMETER	SAMPLE RESULT	PQL	DF
Azinphos Methyl	ND	5	1
Bolstar (Sulprofos)	ND	5	1
Chlorpyrifos	ND	5	1
Coumaphos	ND	5	1
Demeton-O	ND	5	1
Demeton-S	ND	5	1
Diazinon	ND	5	1
Dichlorvos	ND	5	1
Disulfoton	ND	5	1
Ethoprop	ND	5	1
Fensulfothion	ND	5	1
Fenthion	ND	5	1
Merphos	ND	5	1
Methyl Parathion	ND	5	1
Mevinphos	ND	10	1
Naled	ND	10	1
Phorate	ND	5	1
Ronnel	ND	5	1
Tetrachlorvinphos (Stirophos)	ND	5	1
Tokuthion (Prothiofos)	ND	5	1
Trichloronate	ND	5	1
Chloroneb	ND	1	1
1,2-Dibromo-3-Chloropropane(DBCP)	ND	1	1
Hexachlorobenzene	ND	1	1
Mirex	ND	1	1
Trifluralin	ND	1	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

EPA 8141A QA/QC Report

Matrix: **Water** Date Analyzed: **8/14-15/2006**

Unit: **UG/L (PPB)**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 060814-LCS1/2

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP %RPD	ACP %REC
Bolstar	0.00	200	227	**114%**	225	**113%**	**1%**	**0-30%**	**40-140**
Ethoprop	0.00	200	213	**107%**	212	**106%**	**0%**	**0-30%**	**40-140**
Ronnel	0.00	200	225	**113%**	224	**112%**	**0%**	**0-30%**	**40-140**
Phorate	0.00	200	211	**106%**	209	**105%**	**1%**	**0-30%**	**40-140**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
Bolstar	20.0	22.8	**114%**	**40-140**
Ethoprop	20.0	21.3	**106%**	**40-140**
Ronnel	20.0	22.5	**112%**	**40-140**
Phorate	20.0	20.9	**105%**	**40-140**

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		MB	060809-95					
Tributyl Phosphate	40-140	101%	108%					
Triphenyl Phosphate	40-140	104%	110%					

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.								
Tributyl Phosphate								
Triphenyl Phosphate								

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.						
Tributyl Phosphate						
Triphenyl Phosphate						

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

** = Surrogate fail due to matrix interference (If Marked)*

Note: *LCS, MS, MSD are in control therefore results are in control.*

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	Organo Chlorine Pesticides (Special List)	Organo Phosphorus Pesticide	Chlorinated Herbicides	Percent Moisture	Percent Moisture Sample	CAM-17 Metals Digest Sample	HOLD			Misc. COMMENTS
SS-1A-0.5	060809-23	8-9-06	725	SOIL	3	4°C	ICE	X	X	X	X	X					Composite
SS-1B-0.5	-24		722		3			X	X	X	X						
SS-1C-0.5	-25		719		3			X	X	X	X		X				
SS-1D-0.5	-26		729		3			X	X	X	X						
SS-1A-2	-27		727		3									X			
SS-1B-2	-28		724		3									X			
SS-1C-2	-29		720		3									X			
SS-1D-2	-30		731		3									X			
SS-2A-0.5	-31		711		3			X	X	X	X						Composite
SS-2B-0.5	-32		705		3			X	X	X	X						
SS-2C-0.5	-33		658		3			X	X	X	X	X					
SS-2D-0.5	-34		715		3			X	X	X	X						
SS-2A-2	-35		713		3									X			
SS-2B-2	-36		709		3									X			
SS-2C-2	-37		701		3									X			

Analysis Required

Company Name: Building Analytics	Project Contact: Russell Cote	Sampler's Signature: Russell Cote	
Address: 502 S. Verdugo Dr. Ste 200	Tel: (818) 841-2575	Project Name/ID: Landmark School site 1061166	
City/State/Zip: Burbank CA	Fax: (818) 841-2576		
Relinquished by: Russell Cote	Received by: [signature]	Date & Time: 8/9/06 1445	Instructions for Sample Storage After Analysis:
Relinquished by: [signature]	Received by: WP	Date & Time: 8/9/06 1600	O Dispose of O Return to Client O Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

Date: 8-9-06

WHITE WITH SAMPLE - YELLOW TO CLIENT

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	Organo chlorine Pesticides (Special List)	Organo Phosphorus pesticides	Chlorinated Herbicides	Paraquat	Arsenic (discrete) Cam-17 metals Discrete sample	HOLD			Misc. / COMMENTS
SS-2D-2	060809-38	8-9-06	731	Soil	3		ICE						X			
SS-3A-0.5	-39		620		3			X	X	X	X					Composite
SS-3B-0.5	-40		629		3			X	X	X	X	X				Composite
SS-3C-0.5	-41		638		3			X	X	X	X					Composite
SS-3D-0.5	-42		649		3			X	X	X	X					Composite
SS-3A-2	-43		624		3								X			
SS-3B-2	-44		635		3								X			
SS-3C-2	-45		644		3								X			
SS-3D-2	-46		653		3								X			
SS-4A-0.5	-47		735		3			X	X	X	X					Composite
SS-4B-0.5	-48		740		3			X	X	X	X		X			Composite
SS-4C-0.5	-49		743		3			X	X	X	X					Composite
SS-4D-0.5	-50		745		3			X	X	X	X	X				Composite
SS-4A-2	-51		737		3								X			
SS-4B-2	-52		741		3								X			

Analysis Required

Company Name: Building Analytics
Address: 502 S. Verdugo Dr. Ste 200
City/State/Zip: Burbank, CA

Project Contact: Russell Cole
Tel: (818) 841-2575
Fax: (818) 841-2576

Sampler's Signature: [signature]
Project Name/ID: Landmark School site 1061166

Relinquished by: [signature]	Received by: [signature]	Date & Time: 8/9/06 1647	Instructions for Sample Storage After Analysis:
Relinquished by: [signature]	Received by: [signature]	Date & Time: 8/9/06 1600	O Dispose of O Return to Client O Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

Date: 8-9-06

WHITE WITH SAMPLE - YELLOW TO CLIENT

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	Organochlorine Pesticide Expanded List	Organophosphorus Pesticide	Chlorinated Herbicides	Pure Gut	Arsenic Dis. Recent Sample	CAM-17 Metals Discrete Sample	HOLD			Misc. / COMMENTS
								Analysis Required									
SS-4C-2	060809-53	8-9-06	744	SOIL	3	4°C	ICE							X			
SS-4D-2	-54		747		3									X			
SS-5A-0.5	-55		749		3			X	X	X	X						Composite
SS-5B-0.5	-56		752		3			X	X	X	X	X					
SS-5C-0.5	-57		759		3			X	X	X	X						
SS-5D-0.5	-58		803		3			X	X	X	X						
SS-5A-2	-59		750		3									X			
SS-5B-2	-60		757		3									X			
SS-5C-2	-61		801		3									X			
SS-5D-2	-62		805		3									X			
SS-6A-0.5	-63		808		3			X	X	X	X						Composite
SS-6B-0.5	-64		812		3			X	X	X	X		X				
SS-6C-0.5	-65		822		3			X	X	X	X						
SS-6D-0.5	-66		826		3			X	X	X	X	X					
SS-6A-2	-67		810		3									X			

Company Name: Balding Analytics
Address: 502 S. Verdugo Dr. Ste 200
City/State/Zip: Burbank, CA

Project Contact: Russell Cote
Tel: (818) 841-2575
Fax: (818) 841-2576

Sampler's Signature: Russell Cote
Project Name/ID: Landmark School site 1061166

Relinquished by: Russell Cote	Received by: [illegible]	Date & Time: 8/9/06 1445	Instructions for Sample Storage After Analysis:
Relinquished by: [illegible]	Received by: WP	Date & Time: 8/9/06 1600	O Dispose of O Return to Client O Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

Date: 8-9-06

WHITE WITH SAMPLE - YELLOW TO CLIENT

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	Organo Chlorine Pesticides	Cadmium	Organo Phosphorus Pesticide	Chlorinated Herbicides	Pure Gold	Arsenic	Discrete Sample Cadmium Metal	Discrete Sample HOLD			Misc. / COMMENTS
SS-6B-2	060809-68	8-9-06	820	Soil	3		ICE							X				
SS-6C-2	-69		824		3									X				
SS-6D-2	-70		830		3									X				
SS-7A-0.5	-71		950		3			X	X	X	X	X						Composite
SS-7B-0.5	-72		957		3			X	X	X	X							
SS-7C-0.5	-73		1003		3			X	X	X	X							
SS-7D-0.5	-74		1010		3			X	X	X	X							
SS-7A-2	-75		953		3									X				
SS-7B-2	-76		1000		3									X				
SS-7C-2	-77		1005		3									X				
SS-7D-2	-78		1012		3									X				
SS-8A-0.5	-79		924		3			X	X	X	X		X					Composite
SS-8B-0.5	-80		930		3			X	X	X	X							
SS-8C-0.5	-81		936		3			X	X	X	X	X						
SS-8D-0.5	-82		941		3			X	X	X	X							

Analysis Required

Company Name: Building Analytics	Project Contact: Russell Cole	Sampler's Signature: Russell Cole
Address: 502 S. Verdugo Dr. Ste 200	Tel: (818) 841-2575	Project Name/ID: Landmark School site 106166
City/State/Zip: Burbank CA	Fax: (818) 841-2576	

Relinquished by: Russell Cole	Received by: [illegible]	Date & Time: 8/9/06 1445
Relinquished by: [illegible]	Received by: [illegible]	Date & Time: 8/9/06 1600
Relinquished by:	Received by:	Date & Time:

Instructions for Sample Storage After Analysis:
O Dispose of O Return to Client O Store (30 Days)
O Other:

CHAIN OF CUSTODY RECORD

Date: 8-9-06

WHITE WITH SAMPLE - YELLOW TO CLIENT

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	Organochlorine Pesticide (Spiked cost)	Organo Phosphorus Pesticide	Chlorinated Herbicide	PCB Grp #	Arsenic	Discrete Sample Chromium metal	Discrete Sample HOLD			Misc. COMMENTS
SS-8A-2	060809-83	8-9-06	928	SOIL	3		ICE							X			
SS-8B-2	-84		933		3									X			
SS-8C-2	-85		940		3									X			
SS-8D-2	-86		944		3									X			
DUPA-0.5	-87		—		3			X	X	X	X						Composite
DUPB-0.5	-88		—		3			X	X	X	X		X				Composite
DUPC-0.5	-89		—		3			X	X	X	X						Composite
DUPD-0.5	-90		—		3			X	X	X	X						Composite
DUPA-2	-91		—		3									X			
DUPB-2	-92		—		3									X			
DUPC-2	-93		—		3									X			
DUPD-2	-94		—		3									X			
Equip. Blank	-95		—	WATER	5			X	X	X	X		X				
BG 1	-96		1030	SOIL	1								X				
BG 2	-97		1042	SOIL	1								X				

Analysis Required

Company Name: Building Analytic
Address: 508 S. Verdugo Dr. Ste 200
City/State/Zip: Burbank CA

Project Contact: Russell Cote
Tel: (818) 841-2575
Fax: (818) 841-2576

Sampler's Signature: Russell Cote
Project Name/ID: Landmark School site 106166

Relinquished by: Russell Cote	Received by: [signature]	Date & Time: 8/9/06 1445	Instructions for Sample Storage After Analysis:
Relinquished by: [signature]	Received by: [signature]	Date & Time: 8/9/06 1600	O Dispose of O Return to Client O Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

Date: 8-9-06

WHITE WITH SAMPLE - YELLOW TO CLIENT

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
X 1 Week (Standard)
Other:

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	CAM-17 Metals Discrete Sample	Temperature									Misc.
								Analysis Required										COMMENTS
BG 3	060809-98	8-9-06	1117	SOIL	1		ICE	X										
BG 4	-99		1138	SOIL	1			X										
Temp Blank #1	-100		—	WATER	1				X									
Temp Blank #2	-101		—		1				X									
Temp Blank #3	-102		—		1				X									

Company Name: Building Analytics	Project Contact: Russell Cole	Sampler's Signature: Russell Cole
Address: 502 S. Verdugo Dr. Ste 200	Tel: (818) 841-2575	Project Name/ID: Landmark School site 1061166
City/State/Zip: Burbank CA	Fax: (818) 841-2576	

Relinquished by: Russell Cole	Received by:	Date & Time: 8/9/06 1445	Instructions for Sample Storage After Analysis:
Relinquished by:	Received by:	Date & Time: 8/9/06 1600	O Dispose of O Return to Client O Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

Date: 8-9-06

WHITE WITH SAMPLE - YELLOW TO CLIENT

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: August 30, 2006

Mr. Russell Cote
BA Environmental
502 South Verdugo Drive,
Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

Project: **Landmark School Site / 106166**
Lab I.D.: **060809-23 through -102**

Dear Mr. Cote:

The **Paraquat results** for the soil and water samples, received by our laboratory on August 9, 2006, are attached. The samples were received intact, accompanying chain of custody and also stored per the EPA protocols.

The samples were received at four degrees Celsius

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

for

Jesse Tu, Ph.D.
Laboratory Manager

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: Landmark School Site / 106166
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/16&22/06
DATE ANALYZED: 08/29/06
DATE REPORTED: 08/30/06

PARAQUAT ANALYSIS
METHOD: CHEVRON RM8-10
UNIT: uG/G = MICROGRAM PER GRAM

SAMPLE I.D.	LAB I.D.	RESULT	DF
SS-1A-0.5,SS-1B-0.5,SS-1C-0.5, SS-1D-0.5 (COMPOSITE)	060809-23 To -26 (Composite)	ND	1
SS-2A-0.5,SS-2B-0.5,SS-2C-0.5, SS-2D-0.5 (COMPOSITE)	060809-31 To -34 (Composite)	ND	1
SS-3A-0.5,SS-3B-0.5,SS-3C-0.5, SS-3D-0.5 (COMPOSITE)	060809-39 To -42 (Composite)	ND	1
SS-4A-0.5,SS-4B-0.5,SS-4C-0.5, SS-4D-0.5 (COMPOSITE)	060809-47 To -50 (Composite)	ND	1
SS-5A-0.5,SS-5B-0.5,SS-5C-0.5, SS-5D-0.5 (COMPOSITE)	060809-55 To -58 (Composite)	ND	1
SS-6A-0.5,SS-6B-0.5,SS-6C-0.5, SS-6D-0.5 (COMPOSITE)	060809-63 To -66 (Composite)	ND	1
SS-7A-0.5,SS-7B-0.5,SS-7C-0.5, SS-7D-0.5 (COMPOSITE)	060809-71 To -74 (Composite)	ND	1
SS-8A-0.5,SS-8B-0.5,SS-8C-0.5, SS-8D-0.5 (COMPOSITE)	060809-79 To -82 (Composite)	ND	1
DUP A-0.5,DUP B-0.5,DUP C-0.5, DUP D-0.5 (COMPOSITE)	060809-87 To -90 (Composite)	ND	1
METHOD BLANK	---	ND	1
	PQL	1.0	

COMMENTS
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = DF X PQL
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: Landmark School Site / 106166
MATRIX: WATER
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/15/06
DATE ANALYZED: 08/24/06
DATE REPORTED: 08/30/06

PARAQUAT ANALYSIS
METHOD: EPA 549.2
UNIT: uG/L = MICROGRAM PER LITER

SAMPLE I.D.	LAB I.D.	RESULT	DF
EQUIP BLANK	060809-95	ND	1
METHOD BLANK	---	ND	1
	PQL	0.4	

COMMENTS
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = DF X PQL
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

SEP 07 2006

NORTH COAST LABORATORIES LTD.

August 29, 2006

Enviro-Chem, Inc.
1214 E. Lexington Ave.
Pomona, CA 91766

Attn: Curt Desilets

RE: 060809-23~95

Order No.: 0608323
Invoice No.: 60566
PO No.: REQUIRED
ELAP No. 1247-Expires July 2006

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	060809-23~26
02A	060809-31~34
03A	060809-39~42
04A	060809-47~50
05A	060809-55~58
06A	060809-63~66
07A	060809-71~74
08A	060809-79~82
09A	060809-87~90
10A	060809-95

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Collen Blackstone — Laboratory Supervisor(s)

QA Unit

(FOR JGC) — Jesse G. Chaney, Jr., Laboratory Director

5680 West End Road • Arcata California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Printed on Recycled Paper

North Coast Laboratories, Ltd.

Date: 29-Aug-2006

CLIENT: Enviro-Chem, Inc.
Project: 060809-23~95
Lab Order: 0608323

CASE NARRATIVE

EPA 549.2:
Paraquat strongly adsorbs to soil particles that are suspended in water. The strong chemical bonds make the herbicide chemically inactive. When bound with soil particles, the extraction procedure for method EPA 549.2 is ineffective at isolating the bound paraquat. Any reported paraquat represents the dissolved analyte in the water that has not been bound to the soil particles.

The laboratory control sample (LCS) recovery was below the lower acceptance limit for paraquat. The laboratory control sample duplicate (LCSD) recovery was within the acceptance limits; therefore, the data were accepted.

The relative percent difference (RPD) for the laboratory control samples was above the acceptance limit for paraquat. This indicates that the results could be variable. Since there were no detectable levels of analyte in the samples, the data were accepted.

NORTH COAST LABORATORIES
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Printed on Recycled Paper

Date: 29-Aug-2006
WorkOrder: 0608323

ANALYTICAL REPORT

Client Sample ID: 060809-23~26 **Received:** 8/11/06 **Collected:** 8/9/06 0:00
Lab ID: 0608323-01A

Test Name: Paraquat **Reference:** Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	8/16/06	8/29/06

Client Sample ID: 060809-31~34 **Received:** 8/11/06 **Collected:** 8/9/06 0:00
Lab ID: 0608323-02A

Test Name: Paraquat **Reference:** Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	8/16/06	8/29/06

Client Sample ID: 060809-39~42 **Received:** 8/11/06 **Collected:** 8/9/06 0:00
Lab ID: 0608323-03A

Test Name: Paraquat **Reference:** Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	8/22/06	8/29/06

Client Sample ID: 060809-47~50 **Received:** 8/11/06 **Collected:** 8/9/06 0:00
Lab ID: 0608323-04A

Test Name: Paraquat **Reference:** Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	8/22/06	8/29/06

Client Sample ID: 060809-55~58 **Received:** 8/11/06 **Collected:** 8/9/06 0:00
Lab ID: 0608323-05A

Test Name: Paraquat **Reference:** Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	8/22/06	8/29/06

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Date: 29-Aug-2006
WorkOrder: 0608323

ANALYTICAL REPORT

Client Sample ID: 060809-63~66 **Received:** 8/11/06 **Collected:** 8/9/06 0:00
Lab ID: 0608323-06A

Test Name: Paraquat **Reference:** Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	8/22/06	8/29/06

Client Sample ID: 060809-71~74 **Received:** 8/11/06 **Collected:** 8/9/06 0:00
Lab ID: 0608323-07A

Test Name: Paraquat **Reference:** Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	8/22/06	8/29/06

Client Sample ID: 060809-79~82 **Received:** 8/11/06 **Collected:** 8/9/06 0:00
Lab ID: 0608323-08A

Test Name: Paraquat **Reference:** Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	8/22/06	8/29/06

Client Sample ID: 060809-87~90 **Received:** 8/11/06 **Collected:** 8/9/06 0:00
Lab ID: 0608323-09A

Test Name: Paraquat **Reference:** Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	8/22/06	8/29/06

Client Sample ID: 060809-95 **Received:** 8/11/06 **Collected:** 8/9/06 0:00
Lab ID: 0608323-10A

Test Name: EPA 549.2 **Reference:** EPA 549.2

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat (dissolved)	ND	0.40	µg/L	1.0	8/15/06	8/24/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831
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North Coast Laboratories, Ltd.

Date: 29-Aug-2006

CLIENT: Enviro-Chem, Inc.
Work Order: 0608323
Project: 060809-23~95

QC SUMMARY REPORT

Method Blank

Sample ID: **MB-16276** Batch ID: **16276** Test Code: **549W** Units: **µg/L** Analysis Date: **8/23/06 11:10:14 PM** Prep Date: **8/15/06**
Client ID: Run ID: **ORLC2_060827A** SeqNo: **616410**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat (dissolved)	ND	0.40									

Sample ID: **MB-16289** Batch ID: **16289** Test Code: **PARAQS** Units: **µg/g** Analysis Date: **8/29/06** Prep Date: **8/16/06**
Client ID: Run ID: **OLSPEC_060829A** SeqNo: **617280**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat	ND	1.0									

Sample ID: **MB-16334** Batch ID: **16334** Test Code: **PARAQS** Units: **µg/g** Analysis Date: **8/29/06** Prep Date: **8/22/06**
Client ID: Run ID: **OLSPEC_060829A** SeqNo: **617290**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat	ND	1.0									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 29-Aug-2006

CLIENT: Enviro-Chem, Inc.
Work Order: 0608323
Project: 060809-23~95

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-16276** Batch ID: **16276** Test Code: **549W** Units: **µg/L** Analysis Date: **8/23/06 11:21:03 PM** Prep Date: **8/15/06**
Client ID: Run ID: **ORLC2_060827A** SeqNo: **616411**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat (dissolved)	0.4491	0.40	2.00	0	22.5%	50	126	0			S

Sample ID: **LCSD-16276** Batch ID: **16276** Test Code: **549W** Units: **µg/L** Analysis Date: **8/23/06 11:31:52 PM** Prep Date: **8/15/06**
Client ID: Run ID: **ORLC2_060827A** SeqNo: **616412**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat (dissolved)	1.734	0.40	2.00	0	86.7%	50	126	0.449	118%	20	R

Sample ID: **LCS-16289** Batch ID: **16289** Test Code: **PARAQS** Units: **µg/g** Analysis Date: **8/29/06** Prep Date: **8/16/06**
Client ID: Run ID: **OLSPEC_060829A** SeqNo: **617278**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat	4.186	1.0	5.00	0	83.7%	59	101	0			

Sample ID: **LCSD-16289** Batch ID: **16289** Test Code: **PARAQS** Units: **µg/g** Analysis Date: **8/29/06** Prep Date: **8/16/06**
Client ID: Run ID: **OLSPEC_060829A** SeqNo: **617279**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat	4.336	1.0	5.00	0	86.7%	59	101	4.19	3.53%	20	

Sample ID: **LCS-16334** Batch ID: **16334** Test Code: **PARAQS** Units: **µg/g** Analysis Date: **8/29/06** Prep Date: **8/22/06**
Client ID: Run ID: **OLSPEC_060829A** SeqNo: **617288**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat	4.246	1.0	5.00	0	84.9%	59	101	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

0608323

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
0 1-Week (Standard)
Other:

Misc.
Reference Quote # 878

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	PARAQUAT									COMMENTS
								Analysis Required									
060809-23~26		8/9		Soil			None	X									
060809-31~34								X									
-39~42								X									
-47~50								X									
~55~58								X									
-63~66								X									
-71~74								X									
-79~82								X									
-87~90								X									
-95				Water	1		None	X									

Company Name: Enviro-Chem, Inc
Address: 1214 E Lexington Ave
City/State/Zip: Pomona, CA 91766

Project Contact: Curtis Desilets
Tel: 909-590-5905
Fax: 909-590-5907

Sampler's Signature: N/A
Project Name/ID: 060809-23~95

Relinquished by:	Received by:	Date & Time: 8/11/06 11 30	Instructions for Sample Storage After Analysis:
Relinquished by:	Received by: recd temp 10.0°C	Date & Time:	O Dispose of O Return to Client (Store (30 Days)
Relinquished by:	Received by:	Date & Time:	O Other:

CHAIN OF CUSTODY RECORD

Date: 8/10/06

WHITE WITH SAMPLE, YELLOW TO CLIENT

INVOICE

DATE: August 29, 2006

Remit To: North Coast Laboratories, Ltd.
5680 West End Road
Arcata, CA 95521-9202
Attn: Accounts Receivable

NORTH COAST LABORATORIES LTD.
5680 West End Road · Arcata · CA 95521-9202
707-822-4649 Fax 707-822-6831

Invoice To: Enviro-Chem, Inc.
1214 E. Lexington Ave
Pomona, CA 91766

Attn: Ammy Chang / Accts Payable
Phone: (909) 590-5905

Work Order: 0608323
PO Number: required
Project Name: 060809-23-95

Date Received: 8/11/06

Invoice Number: 60566

Payment Due Date: 9/28/06
Payment Terms: Net 30 Days

Item	Matrix	Code	Qty	List Price	Test Total
EPA 549.2	Aqueous	5021.21	1	$130.00	$130.00
Paraquat	**Soil**	5021.21	9	$165.00	$1,485.00

Order TOTAL: $1,615.00

Discount: 0.00%
Surcharge: 0.00%
Misc Charges: $0.00

Comments:

Subtotal: $1,615.00
Payment Received: $0.00

INVOICE Total $1,615.00

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: August 16, 2006

Mr. Russell Cote
BA Environmental
502 South Verdugo Drive,
Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

Project: **Landmark School Site / 106166**
Lab I.D.: **060809-23 through -102**

Dear Mr. Cote:

The **analytical results (except Paraquat)** for the soil and water samples, received by our laboratory on August 9, 2006, are attached. The samples were received chilled, intact and accompanying chain of custody record.

The samples were received at four degrees Celsius

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: August 29, 2006

Mr. Russell Cote
BA Environmental
502 South Verdugo Drive,
Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

Project: **Landmark School Site / 106166**
Lab I.D.: **060809-23 through -102**

Dear Mr. Cote:

The **additional Trifluralin results** for the soil and water samples, received by our laboratory on August 9, 2006, are attached. The samples were received intact, accompanying chain of custody and also stored per the EPA protocols.

The samples were received at four degrees Celsius

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manager

Jesse Tu, Ph.D.
Laboratory Manager

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: Landmark School Site / 106166
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/24/06
DATE ANALYZED: 08/25/06
DATE REPORTED: 08/29/06

SAMPLE I.D.: SS-1A-0.5 LAB I.D.: 060809-23

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Trifluralin	0.101	0.002	10

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: Landmark School Site / 106166 DATE RECEIVED: 08/09/06
MATRIX: SOIL DATE EXTRACTED: 08/24/06
DATE SAMPLED: 08/09/06 DATE ANALYZED: 08/25/06
REPORT TO: MR. RUSSELL COTE DATE REPORTED: 08/29/06

SAMPLE I.D.: SS-1B-0.5 LAB I.D.: 060809-24

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Trifluralin	0.196	0.002	10

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: BA Environmental
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: Landmark School Site / 106166
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/24/06
DATE ANALYZED: 08/25/06
DATE REPORTED: 08/29/06

SAMPLE I.D.: SS-1C-0.5 LAB I.D.: 060809-25

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Trifluralin	0.010	0.002	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: BA Environmental
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: Landmark School Site / 106166
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/24/06
DATE ANALYZED: 08/25/06
DATE REPORTED: 08/29/06

SAMPLE I.D.: SS-1D-0.5
LAB I.D.: 060809-26

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Trifluralin	0.005	0.002	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: BA Environmental
502 South Verdugo Drive, Suite 200
Burbank, CA 91502
Tel(818)841-2575 Fax(818)841-2576

PROJECT: Landmark School Site / 106166
MATRIX: SOIL
DATE SAMPLED: 08/09/06
REPORT TO: MR. RUSSELL COTE

DATE RECEIVED: 08/09/06
DATE EXTRACTED: 08/24/06
DATE ANALYZED: 08/25/06
DATE REPORTED: 08/29/06

METHOD BLANK FOR LAB I.D.: 060809-23 THROUGH -26

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: Mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Trifluralin	ND	0.002	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

APPENDIX 4.22

Cultural and Paleontological Resources

Intensive Phase I Archeological Survey

INTENSIVE PHASE I ARCHAEOLOGICAL SURVEY OF THE WEST RANCH AREA, NEWHALL RANCH, LOS ANGELES COUNTY

1.0 INTRODUCTION

Pursuant to a request from Ms. Gloria Glenn, Vice President - Planning, Newhall Land and Farming Company, an intensive Phase I archaeological survey and cultural resources assessment was conducted by W & S Consultants on the West Ranch portion of the Newhall Ranch, Los Angeles County, California (Figure 1). This survey of this approximately 12,000 acres study area was conducted in two phases, with the first occurring during June and July, 1993, and the second in February through April, 1994. This survey and assessment was intended to identify all cultural resources (prehistoric and historical archaeological sites) within the study area and to offer recommendations for any additional archaeological studies on the property that may be warranted.

The intensive Phase I archaeological survey established that the West Ranch study area has a very low density of prehistoric archaeological remains, apparently due to environmental conditions that were not favorable for aboriginal settlement. Historical archaeological resources, similarly, are restricted to one portion of the West Ranch. Although archaeological sites are present within the study area, they are primarily concentrated in two zones: historical cultural resources at the northeastern boundary of the project; and prehistoric sites on either side of the Santa Clara River, between Potrero and Chiquito Canyons.

This document is intended to summarize the background research conducted as part of the study; to outline the field techniques employed to intensively survey the West Ranch; to describe the results of the survey; and to suggest appropriate additional procedures for cultural resource management within the study area. We begin with a discussion of the background studies, before considering these additional topics in turn.

2.0 BACKGROUND STUDIES

2.1 Project Location and Environment

The West Ranch study area portion of the Newhall Ranch is located in northwestern Los Angeles County, immediately west of the City of Santa Clarita (Figure 1). It includes the Santa Clara River and its north and south banks from approximately Castaic Junction to the Los Angeles - Ventura Counties border; the lower reaches of San Martinez Chiquito Canyon on the north side of the river; and the uplands and valleys on the south side of the river to the crest of the Santa Susana Mountains, which constitutes the major portion of the study area. With the exception of the alluvial floodplain and stream bottom of the Santa Clara River, the West Ranch generally consists of highly disected, steeply sided hills, ridges and mountain peaks, with small and narrow intervening drainages. Potrero Canyon, entering the Santa Clara River from the south, comprises a wide and open valley in the otherwise relatively rugged topography of the southern portion of the study area. Flat, open upland mesas are present on the south side of the river, however. These include Potrero, Grapevine and Airport Mesas from west to east, respectively.

With the exception of the Santa Clara River, per se, the study area is notable for its limited water resources, a fact that undoubtedly affected aboriginal and historical use of the property. The study area south of the river, constituting the major portion of the study zone, for example, apparently contains no springs or streams with potable water (Merrill Castle, personal communication, 1993), and thus is unusually dry, even by inland southern California standards. It is for this

reason, discussed below, that the first Spanish map of the West Ranch area characterizes this region as lomas esterilas, "sterile hills".

Although historic and recent land-use changes have altered the environment considerably from what existed during prehistoric times, at least four major plant associations probably characterized the study area during the aboriginal period. These are chaparral, coastal sage scrub, southern oak woodlands, and riparian associations (cf. Muntz 1974).

The chaparral association covers steeper slopes with poorly developed soils and xeric conditions. It includes the following species: California sagebrush (Artemisia californica), white sage (Salvia mellifera), black sage (S. apliana), purple or white-leaved sage (S. Leucophylla), California encilia (Encilia californica), California buckwheat (Eriogonum fasciculatum), chamise (Adneostoma fasciculatum), buckbruch (Ceanothus cuneatus), scrub oak (Quercus dumosa), toyon (Heteromeles arbutifolia), mountain mahogony (Cercocarpus betuloides), lemonade sumac (Rhus integrifolia) and sugar sumac (R. ovata). This is a particularly common association in the West Ranch study area.

The coastal sage scrub community is the climax community for portions of inland-coastal southern California. It is generally composed of coast buckwheat (Eriogonum cinereum) and wild buckwheat (E. fasciculatum), along with black sage (Salvia apliana), common hazardia (Haplopappus squarrosus), prickly phlox (Leptodactylon californicum), yucca (Yucca whipplei) and California sagebrush (Artemisia californica) as major constituents.

Although both of the above plant associations were undoubtedly of subsistence importance to the aboriginal population of the region, the third association, the southern oak woodland, may have been of primary significance in the inland zones adjacent to the coastal strip. This results because of the great importance placed on the acorn as a food staple by Native Californians (Kroeber 1925), and the rarity of this resource on the coastal side of the Santa Monica Mountains. The association is characterized by the coast live oak (Quercus lobata) and the valley oak (Q. agrifolia), but also would have included various species of native grasses. Although currently restricted in distribution, this association may once have been found across much of the wide, upper reaches of Potrero Canyon and the mesas on the south side of the Santa Clara River. Currently, stands of oak woodlands are still found at higher elevations on the less precipitous ridge/hilltops on the southern side of the property.

The fourth and final plant association consists of riparian habitats, which are localized and poorly diversified woodlands found in areas of perennial moisture. They include such species as arroyo willow (Salix lasiolepsi), mule fat (Baccharis glutinosa), willow dock (Rumex salicifolius), swamp knotweed (Polygonum coccineum), nettle (Urtica holosericea), cocklebur (Xanthium strumarium) and rabbitsfoot grass (Polypogon monspeiensis). Though this plant association is limited in distribution, it can still be considered to have had significant economic importance in aboriginal times, especially in terms of the acquisition of raw materials for items like baskets, cordage and netting. In addition to the obvious aboriginal presence of riparian habitats in the Santa Clara River valley, small riparian habitats were probably once present in some of

the ephemeral drainages tributary to the valley, and in Salt Canyon on the southern side of the river.

2.2 Ethnographic Background

The Upper Santa Clara Valley region, including the West Ranch portion of the Newhall Ranch, appears to have been inhabited during the ethnographic past by an ethnolinguistic group known as the Tataviam. Some controversy exists in reference to this attribution. But, based on a few existing word lists, descriptions provided by early travelers, mission placenames, and the recollections of other aboriginal informants, the Tataviam are generally accepted as the aboriginal inhabitants of this region. Their language is believed to represent a member of the Takic branch of the Uto-Aztecan linguistic family (King and Blackburn 1976). In this sense, it was related to other Takic languages in the Los Angeles County region, such as Gabrielino/Fernandeño of the Los Angeles Basin proper, and Kitanemuk of the Antelope Valley.

The Tataviam are thought to have inhabited the upper Santa Clara River drainage from about Piru eastwards to just beyond the Vasquez Rocks/Agua Dulce area; southwards as far as Newhall and the crests of the San Gabriel and Santa Susana Mountains; and northwards to include the middle reaches of Piru Creek, the Liebre Mountains and the southwesternmost fringe of the Antelope Valley (ibid; Kroeber 1925; Earle 1990; Johnson and Earle 1990). Their northern boundary most likely ran along

the northern foothills of the Liebre Mountains (i.e., the edge of the Antelope Valley), and then crossed to the southern slopes of the Sawmill Mountains and the Sierra Pelona, extending as far east as Soledad Pass (Earle 1990:94). Ethnographically, at least, the Tataviam do not appear to have controlled the Leona Valley or areas to the north, with the Elizabeth Lake area proper a zone of uncertainty.

Known Tataviam villages during the historic period include: pi?irukung and ?akavaya, both near modern Piru; tsavayu(?u)ng, San Francisquito; etseng, kuvung and huyung, on Piru Creek above Piru; tochonanga, near Newhall; kwarung, Elizabeth Lake; and tsawayung, near Castaic Junction. At kamulus, near modern Rancho Camulos, a mixed Chumash-Tataviam population lived (King and Blackburn 1976:535-6). Because the name kamulus is unquestionably Chumash and not Tataviam, however, the toponym has been viewed as problematical (Johnson and Earle 1990:197); that is, as not reflecting the original (Tataviam) name for this village. Regardless of original name, however, the Spanish missionary Señan, writing in 1804, indicated that the Chumash inhabitants of the village of sécpey had migrated to kamulos, accounting for this admixture (Señan 1962:15). Sécpey is of course now known as Sespe, near the modern town of Fillmore.

The putative historical Tataviam village of tsawayung, also known as chaguayabit or tacuyamam, has generated interest, due to its reported location at Castaic Junction and its association with Asistencia de San Francisco (cf. Henshaw 1955:196; King and Blackburn 1976:536; Johnson 1978; Johnson and Earle 1990). This Tataviam placename is controversial (or at least ambiguous) on two counts. First, the exact location of it was never precisely identified in the historical records.

Although it has been widely presumed to be at or immediately adjacent to the Asistencia, no archaeological or other evidence of such has yet been forthcoming. Second, and moreover, Henshaw (1955:196) argued that it was not the site of a major village where ceremonies were conducted, as many later authors have also assumed. However, John Johnson (personal communication, 1993) has mentioned that there are a significant number of entries in the San Fernando Mission registrar, noting births, baptism, marriages and deaths from persons originally inhabiting this locale, and suggesting that it was once a village of some size. Thus, it remains somewhat enigmatic. At this point, our best interpretation of its original location places it in approximately one-half mile east of the intersection of Rye Canyon Road and Interstate-5, based on evidence discussed subsequently.

Culturally-speaking, the Tataviam were in most respects similar to their Fernandeño and Chumash neighbors, to the south and west, respectively (King and Blackburn 1976). In this sense, they were hunters-gatherers, with subsistence emphasizing yucca, acorns, juniper berries, sage seeds and islay. Game was also hunted, with small animals, such as rabbits/hares and rodents, probably representing more significant contributions of meat protein than larger game, such as deer.

Almost nothing is known of Tataviam social and political organization. Based on analogies with surrounding groups, however, it can be suggested that they were organized in a series of tribelets, similar to the naciones described by Earle (1990) for the Antelope Valley, and found to be characteristic of much of California aboriginal socio-political organization (cf. Kroeber 1925). The tribelet represented an autonomous

land-holding unit, minimally controlled by a head-chief or big-man. They usually included one large, 'capital' village, sometimes occupied year-around, and a series of smaller, seasonally inhabited hamlets. Whether the Tataviam may have had exogomous clans and moieties, like the Cahuilla and Serrano to the east, is unknown. However, it is estimated that the Tataviam population was less than 1000 people at the time of Euro-American contact, and that only two or three of the largest villages throughout their territory were inhabited at any given time (King and Blackburn 1976).

It is also likely that Tataviam religion followed the patterns of their surrounding neighbors. In this case, shamanism would have functioned as the central element. This posits a direct and personal relationship between each individual and the supernatural world, with this relationship enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychoto-mimetic plants, such as jimsonweed or native tobacco). Shamans, per se, who were considered individuals with an unusual degree of supernatural power, served as ritual specialists: ceremonies and rites were infrequent in occasion and limited in type. Perhaps most importantly, shamans served as healers or curers, with the etiology of disease as well as its cure held to lie in the supernatural world. Shamans are also known to have produced the rock art of this region (Whitley 1992), which depicted the hallucinations and spirits they observed in their vision quests.

Although the Tataviam were one of the earliest groups contacted by Spanish missionaries, with a number of their villages described by members of the Portolá expedition of 1769, a general lack of information on this group exists because, by 1810, all Tataviam had been baptized at Mission San

Fernando and were quickly absorbed by other groups through intermarriage. The last speaker of Tataviam died in 1916 (King and Blackburn 1976).

2.3 Archaeological Background

Archaeologically speaking, more information is available on the Upper Santa Clara River area, although here, too, less is known than for many of the surrounding regions of southern California. In general terms, the prehistory of this inland area appears to parallel that of the Santa Barbara Channel/southern California coastal zone (cf. McIntyre 1990), with William Wallace's (1955) cultural historical framework appropriate as a chronological system of reference.

Correspondingly, the earliest evidence for human occupation of this region corresponds to Wallace's Early Millingstone Period (or, alternatively, the Early Horizon), dated from about 7000 to 4000 years before present (B.P.). This represents a period during which subsistance and adaptation are said to have emphasized the collecting and processing of hard seeds, with inland artifact assemblages, correspondingly, dominated by mullers and millingstones known as manos and metates. Evidence for an Early Millingstone occupation of the Upper Santa Clara Valley region is, admittedly, very limited, and has been found at only two sites. Both of these are located near Vasquez Rocks, with temporal attribution based on the presence of a small number of Olivella barrel beads (McIntyre 1990). Such bead types have subsequently proven unreliable temporal indicators, throwing doubt on human inhabitation of this region before about 4000 years ago. Further, recent excavations at one of these putative early locales, the Escondido Canyon Site,

failed to uncover evidence for occupation prior to about 2700 years B.P. (Love 1990).

The second temporal unit in Wallace's chronology is the Intermediate Period (or Middle Horizon), dated from 3500 to 1500 years B.P. It is marked by a shift to the mortar and pestle, with an increased emphasis on hunting and hunting tools in artifact assemblages. Population appears to have increased during this period, with more temporary camps founded. Evidence for Intermediate Period occupation of the Upper Santa Clara Valley region is substantial, in that it has been found at a number of sites and has been based on radiocarbon, obsidian hydration and typological dating (McIntyre 1990). The Agua Dulce village complex, for example, includes occupation extending back to the Intermediate Period, at which time population of the village may have been 50 or more people (King et al n.d.). Furthermore, the Intermediate Period appears to represent a time during which a substantial exploitation of mid-altitude environments first began, with considerable use, for example, of portions of the nearby Hathaway Ranch (located to northwest of the study area) beginning at this time.

Assuming that the Upper Santa Clara River region was first significantly occupied during the Intermediate Period, as existing evidence now suggests, a parallel can be drawn with the inland Ventura County region, where a similar pattern has been identified (Whitley and Beaudry 1991), as well as possibly the Antelope Valley and western Mojave Desert (Sutton 1988a, 1988b). In all of these areas a major expansion in settlement, the establishment of large site complexes, and an increase in the range of environments exploited, appear to have occurred sometime roughly around 3000 years ago. Although most efforts to explain this expansion have focussed on very local

circumstances and events, it is increasingly clear that this was a major southern California-wide occurrence, and therefore that explanation of it must be sought at a larger level of analysis.

There is a continuity in the inland regions between the Intermediate Period and subsequent times, labelled the Late Prehistoric Period, lasting from 1500 years B.P. to historic contact, at about 200 years B.P. Site complexes first occupied in the Intermediate Period continued to be inhabited, although they increased in size, with more specialized and diversified sites added to the kinds of sites present. In fact, the principal distinction between Intermediate and Late Prehistoric sites in the inland regions is a change in certain diagnostic artifact types (notably, projectile points, with a shift from spear points to bow and arrow points). This change in fact may not signify consequential changes in culture, adaptation or subsistence, although the trends begun in the Intermediate accelerate over time during the Late Prehistoric. For example, a large number of Late Prehistoric Period sites are known from the Upper Santa Clara River/Agua Dulce region (cf. McIntyre 1990), with the Agua Dulce village complex estimated to have grown to a population of 200 to 300 people around A.D. 1500 - 1600 (King et al n.d.). Sometime during this period the Tataviam can be hypothesized to have occupied this region, although it is possible that they may have appeared somewhat earlier. However, the important point is that, during the Late Prehistoric Period, the patterns of lifeways recorded for the ethnographic period were fully in operation.

During the Historic Period, the aboriginal population appears to have dropped considerably. This, without doubt, can be attributed to the effects of missionization and its attendant

relocation of the aboriginal population to centralized locales, along with the depredations of introduced Old World diseases. The Upper Santa Clara River region appears to be one of those inland zones, like the Antelope Valley to the north, that quickly and completely lost its aboriginal population. In particular, the aboriginal population from the Upper Santa Clara Valley was moved into Mission San Fernando, in the San Fernando Valley, and the area was effectively depopulated.

2.4 Historical Background

As noted previously, Euro-American mention of the Newhall Ranch region first occurred in the chronicles of the Portolá expedition of 1769, which passed through the San Fernando Valley to Newhall, then to the Castaic Junction area, and then down the Santa Clara River, to Ventura, on its way to Monterey (Bolton 1971; Boneau Companys 1983; Brandes 1970; Cleland 1940). Portolá, in fact, camped at the confluence of the Santa Clara and Castaic Creeks - modern Castaic Junction - and suggested this locale as an appropriate spot for a mission. Portolá described Castaic Junction as follows:

> The country...is delightful and beautiful in the plain, although the mountains that surround it are bare and rough. In the plain we saw many tall and thick cottonwoods and oaks; the watering place [Castaic Junction] consists of an arroyo with a great deal of water which runs in a moderately wide valley, well grown with willows and cottonwoods. We stopped on the bank of the arroyo, where we found a populous village in which people lived without any cover, for they had no more than a light shelter fenced in like a corral...As soon as we arrived they gave us many baskets of different kinds of seeds, and a sort of sweet preserve like little raisins, and another

> resembling honeycomb, very sweet and purging, and made of the dew which sticks to the reed grass. It is a very suitable site for a mission, with much good land, many palisades, two very large arroyos of water, and five large villages close by.
>
> (Bolton 1971:153)

This description, which bears the ledger entry of Tuesday, August 8, 1769, apparently describes a temporary, late summer encampment of Tataviam, judging from the description of the corral-like huts of the village's inhabitants.

Although the Upper Santa Clara Valley region was traversed by a number of Spanish explorers in subsequent years, it initially remained isolated due to rugged topography, even though Portolá had suggested it as a locale for a mission. With the establishment of Missions San Buenaventura, in 1782, and San Fernando, in 1797, late-18th century historical events largely occurred in areas to the west and south of the Upper Santa Clara Valley proper, particularly inasmuch as the Camino Real - the Spanish Royal Road - was eventually established through the Conejo Corridor rather than down the Santa Clara Valley.

However, as the missions increased in size and their herds grew, it became necessary for many of them to establish mission ranchos, or estancias, to allow their cattle to graze some distance from the mission vineyards and fields, per se. With this geographical expansion of mission influence and activities, the Upper Santa Clara Valley region became important, if not pivotal, in a number of events central to the development of southern California. San Francisco Xavier served as the estancia for Mission San Fernando. It comprised the upper reaches of the Santa Clara Valley down to Piru (Cleland 1940; Perkins 1957; Smith 1977) - essentially what

would become the Newhall Ranch - and was established in 1804, a few years after the founding of the mission itself. The headquarters of Estancia San Francisco Xavier was constructed at Castaic Junction, on a bluff overlooking the confluence of the Santa Clara and Castaic Creeks from the south. Eventually it was raised from the status of Estancia to Asistencia, or sub-mission.

The Asistencia de San Francisco Xavier represents the first European settlement of the Castaic Junction region. During this period, its primary function was as a ranching and perhaps agricultural out-station, although it undoubtedly served as a religious outpost as well. Placed at the location suggested for a mission earlier by Father Crespi of the Portolá expedition, it consisted of two rectangular adobe buildings, measuring 105 by 17 feet and 107 by 22 feet, respectively, in size, one of which included a tiled sacristy (Reynolds 1992:17). Eventually a third adobe structure, referred to as the "Old Milk House", was constructed downhill from the main structures, an undated photo of which was published by Perkins (1957:112).

William Lewis Manly, for reasons discussed below, provided a description of the Asistencia in 1849. At that time it was no longer an adjunct to Mission San Fernando but had transferred in ownership to Antonio del Valle when the Asistencia's land was granted as Rancho San Francisco to del Valle by Governor Alvarado in 1839. Notably, Antonio del Valle had served as majordomo and later administrator of Mission San Fernando and its lands from 1834 to 1837, and the family had made supplications to the governor in 1835 and 1837 to obtain a grant in the Santa Clara Valley (Newhall 1958:36; Perkins 1957). When finally awarded, the rancho contained slightly more than 46,000 acres which, as Smith (1977) acknowledges,

was just under the maximum of 11 square leagues then legally allowed.

Manly's description pertains to the period when the Asistencia buildings served as a ranch headquarters for one of a number of del Valle's properties, while he and his family continued to live in Los Angeles. Manly described the Asistencia, his first sighting of California mission architecture, as follows:

> A house on higher ground soon appeared in sight. It was low, of one story with a flat roof, gray in color, and of a different style of architecture from any we had ever seen before. There was no fence around it, and there were no animals or wagons or persons to be seen...but a mule tied to a post told us there was some one about...The house...was built of sun-dried bricks about one by two feet in size, and one end was used as a storehouse...down the hill...[was a]...small, poorly, fenced field which was sometimes cultivated.
>
> (Manly 1924:178-179)

In 1845 the rancho passed to Antonio del Valle's son, Ygnacio. Ygnacio del Valle ultimately became a prominent politician in southern California, serving as Alcalde (mayor) of Los Angeles during the Mexican period, as a member of the Territorial Deputation when California was admitted into the Union in 1850, and in the State Legislature. Forced to fight off efforts by Pedro Carrillo to obtain the western portions of Rancho San Francisco, Ygnacio built a corral at Camulos (the approximate site of the Chumash-Tataviam village of kamulus) in 1841, and finally the Camulos Adobe in 1864, as well as one of the first commercial wineries in the state in 1867 (Smith 1977). The Camulos Adobe, which then became the del Valle family home, was visited by Helen Hunt Jackson in 1882, and served as the

setting for her famous early California novel Ramona. (The D.W. Griffith film "Ramona", starring Mary Pickford, was also filmed at the adobe in 1911).

However, prior to the development of Camulos, the Del Valle ranch headquarters remained at the old site of the Asistencia de San Francisco, above Castaic Junction. Furthermore, it was to the Asistencia that the lead group of the Manly-Walker party - the "Death Valley '49ers" - first emerged out of the wilderness from their efforts to cross the Mojave Desert (Manly 1924:178-179). Manly's description of the Asistencia's buildings, quoted above, represent not only his first sighting of California mission architecture, but his first encounter with civilization, after his harrowing escape from Death Valley.

Following established California agrarian practices, Rancho San Francisco was employed by the del Valles primarily for raising cattle, although Mexican law also required the establishment of an orchard and other agricultural endeavors to validate a land grant (Smith 1977). Perkins (1957:107), for example, recorded that del Valle raised 600 head of cattle on the ranch and planted wheat in a marshy area below Camulos. Notably, however, the original diseño or land grant map for Rancho San Francisco, drawn in 1843, labels the Santa Susana Mountains and hills, south of the Santa Clara River and west of Castaic Junction, as lomas esterilas, "sterile hills" (Smith 1977: frontispiece; Johnson and Earle 1990: Figure 2) which, presumably, was of marginal use to them. This area of "sterile hills" constitutes the large majority of the West Ranch project area.

Rancho San Francisco is, ultimately, the origin for the Newhall Ranch and the Newhall Land and Farming Company. Because the

history of this ranch is very well documented, with complete published accounts provided by Newhall (1958), Perkins (1957), Reynolds (1992), Rolle (1991) and Smith (1977), we provide only a brief summary here.

As is discussed below, del Valle sold the majority of Rancho San Francisco in 1865 for $1.25/acre, retaining only 1500 acres around Rancho Camulos. This 1865 sale was precipitated by the discovery of tar seeps in Pico Canyon, immediately to the south of the original land grant, where oil had been discovered in 1859. The purchasers of the ranch were Thomas A. Scott and Thomas Bard, representing the Philadelphia and California Petroleum Company. Because they believed that ranching and oil were incompatible activities, Scott and Bard subsequently sold 39,503 acres of the ranch to Henry Mayo Newhall, a San Francisco financier, in January, 1875, for $2.20/acre (Newhall 1958; Rolle 1991; Smith 1977). According to Thompson and West (1880:104), shortly thereafter Newhall placed 7000 acres of the ranch under cultivation for wheat and barley, and raised 700 head of cattle and 10,000 sheep. Headquarters for the ranch was adjacent to the Asistencia, in the area of the modern Magic Mountain parking lot.

The town of Newhall was created the following year, as a result of the Southern Pacific Railroad Company's move to place a rail line down the Santa Clara Valley to the coast at Ventura. Although the original development was unsuccessful - due to frequent sandstorms the town's six buildings and name of Newhall were moved three miles to the south in 1878, with the original townsite becoming known as Saugus - ultimately the rail line provided an outlet for the agricultural and ranching products of the ranch, and greatly stimulated oil production in the immediate area (Franks and Lambert 1985:7). For obvious

reasons, both circumstances stimulated the commercial development of the Newhall Ranch.

Henry Mayo Newhall was thrown from his horse on the ranch and died, in San Francisco, in 1883. The ranch then passed to his heirs. According to Rolle (1991:145), the Newhall financial empire subsequently went into decline, coming close to liquidation in 1930. At that point Athol McBean, son-in-law of William Mayo Newhall, was appointed chairman. McBean reorganized the Newhall Land and Farming Company and, aided by a restitution award of three-quarters of a million dollars resulting from the Saint Francis Dam catastrophe (see below), moved the ranch and company back onto sound financial footing. The company has continued as the major agricultural/ranching and land development concern in the region to the present time.

The Rancho San Francisco/Newhall Ranch and the upper reaches of the Santa Clara Valley also figured in three other important episodes in southern California history, two of which are landmarks in the economic history of the state. The first of these is the discovery of gold. Although the history of gold discovery and exploitation in California is often linked with James Marshall's 1848 discovery of gold in John Sutter's Coloma mill-race, it is a well-known fact that gold was found earlier in California 1842, in Placeritas Canyon, by Francisco Lopez, Manuel Cota and Domingo Bermudez (Smith 1977; Outland 1986; Reynolds 1992). But it is by no means clear that even this well-documented incident represents the first true discovery of gold in the state. Instead, a variety of lines of historical evidence suggest that gold may have been mined in the Santa Clara Valley region one to three decades earlier (e.g., see Clark 1970:176).

According to an account published by Outland (1986), a local tale indicates that a group of about 20 men, led by one Santiago Feliciano, left Mission San Fernando in 1820 to explore the Castaic region. After reaching the Castaic Junction area, they headed up Hasley Canyon (north of the study area), and travelled up it about 10 miles. There they discovered gold, and a mining camp, "San Feliciano" (from which San Feliciano Canyon apparently gets its name), was born. The region from San Feliciano to Soledad Canyon was subsequently prospected and mined (mostly for placer deposits) for a number of years, with little record of these efforts presumably resulting because of the legal complications involved in recording gold claims in Mexican California: while the granting of land for agricultural purposes could be effected by the Governor of California, the recording of a gold claim under Mexican law required a trip to Mexico City, an effort none were apparently willing to gamble.

Although, as Outland notes, there is no clear verification for this tale (which ultimately derives from the prominent early settler and local historian S.P. Guiberson), there is nonetheless fairly strong evidence that the Placeritas discovery in 1842 was by no means the first in this region (Smith 1977; Outland 1986; Clark 1970). In 1832, for example, Ewing Young discovered an old ore smelting oven in San Emigdio Canyon (Outland 1986), suggesting that gold mining in the area had occurred for one or two decades prior to the 1842 event, and a number of other sources indicate that the presence of gold in the area was known at least a few years prior to the famous 1842 Placeritas Canyon incident (Smith 1977:32-33), in which gold was discovered by Francisco Lopez.

Lopez's discovery is often trivialized as accidental: a fortuitous event resulting from digging up a wild onion. In fact, Lopez had

been educated at a mining college in Mexico City, and was known to have been systematically prospecting the region prior to the 1842 discovery. As the uncle of Antonio del Valle's widow, he had leased portions of Rancho San Francisco for cattle, and was headquartered at the old Asistencia. There is every reason to assume, thus, that this "official" discovery of gold resulted from intentional prospecting activities, carried out by the then-resident of the Asistencia.

Be this as it may, the 1842 discovery did have one important repercussion: it caused Lopez to continue to look further afield for gold, resulting in his second gold discovery of the state in San Feliciano Canyon (Perkins 1958). In turn, this led to the granting of Rancho Temescal to Lopez and Jose Arellanes, in 1843. This grant included most of Piru Creek, as well as Placerita and San Feliciano Canyons, and totalled over 13,000 acres. Apparently, the legality of this grant under Mexican law has always been a point of some question for, as noted previously, the Governor of California only held the right to award agricultural but not mining grants. However, Thompson and West (1886:74) record that the area was worked by miners from Sonora, Mexico, between 1842 and 1846, at which time they returned to Mexico, and that they extracted between six and eight thousand dollars of gold per year during that period. Nonetheless, about a dozen years later, Rancho Temescal was acquired by Ygnacio del Valle and added to his Rancho San Francisco holdings.

Thus, not only was this region the first in California in which gold was discovered, it was also the first where true oil drilling occurred (Smith 1977), which was the second historical event of statewide importance in the region. This led to discoveries of oil on Rancho San Francisco and, ultimately,

throughout the Santa Clara Valley region. This first major discovery of oil resulted when Ygnacio del Valle sold the majority of his Rancho San Francisco holdings to Thomas Bard, representing Senator Thomas A. Scott, in 1865. Seven weeks later, the first oil well came in on the south side of the Santa Clara River, on property acquired by Bard, near the del Valle adobe (Smith 1977). This discovery, of course, was instrumental in the regional oil boom that ensued.

Following the discovery of oil in the valley, and with the depletion of the (relatively small) placer gold deposits in the region by the 1880s, the Upper Santa Clara Valley region became renowned both for its oil and (ultimately) for its citrus crops. The study area is surrounded by, and includes, a number of oil fields, including the Hasley Canyon and the Castaic Junction Oil Fields to the north, and the Pico Oil Field (with its historical settlement of Mentryville) to the south, that were first developed in this period.

The third local event of historical importance was the collapse of Los Angeles Department of Water and Power's St. Francis Dam and the resulting flood of the Santa Clara River Valley on March 12 and 13, 1928. With the failure of dam close to midnight on March 12, water raged down San Francisquito Canyon to Castaic Junction, which it effectively leveled, and then on to Fillmore, Santa Paula and ultimately to the Pacific, causing great loss of life and destruction along the way. At Castaic Junction, the only survivor of the flood was George MacIntyre, son of the owner of McIntyre's motel and gas station. George was washed northwards by a great arc of the floodwaters, towards Castaic Canyon, where he was able to grab hold of a power pole and avoid drowning; the bodies of his father and one brother were found in Santa Paula; another

brother's body was never recovered. All told, at least 336 known deaths were caused by the flood, 101 individuals were missing and can now be presumed dead, 909 homes were destroyed, and countless acres of orchards were flattened (Outland 1963).

Within the larger Newhall Ranch, but outside of the West Ranch study area at Blue Cut in Ventura County, the flood waters rose to the level of the highway. The restriction of the Santa Clara River stream course at this spot momentarily bottled the flood, resulting in a temporary upsurge of waters against the flood current, creating a whirlpool. An Edison Company work camp of tents housing 150 men had been established at the railroad siding of Kemp, immediately east of Blue Cut, which was innundated by the upsurge. When the flood waters receeded, 84 of these men had been drowned by the catastrophe (Outland 1963:106-107).

In retrospect, it is interesting to note that the Newhall Land and Farming Company had independently hired Harmon Bonte, a consulting engineer, to review the suitability of the Saint Francis Dam in 1924, prior to its construction. Arguing against LADWP's William Mulholland, Bonte contended on the part of his clients that the conglomerate bedrock at the proposed dam site was unfit for dam anchorage. His report was widely published after the disaster, as an indictment of Mulholland's engineering studies (Outland 1963:43), and no doubt contributed to Mulholland's subsequent decision to retire from professional and public life.

In summary, it is apparent that the Newhall Ranch played an important role in both local and state historical events. Although the major portions of the West Ranch study area were

peripheral to these events, the study area nonetheless contained the first European settlement and building in the region; was associated with a number of important historical figures, including Portolá, Crespi, the del Valles, and the Newhalls; and played a role in a series of historical incidents, including the rescue of the Death Valley '49ers, the first discovery of gold in the state, the development of southern California's oil industry, and the Saint Francis Dam catastrophe of 1928.

3.0 ARCHIVAL RECORDS SEARCH

An archival records search of the West Ranch Study Area was completed by the UCLA Archaeological Information Center (AIC) staff to determine whether any prehistoric or historical sites were known on the property, and/or whether all or portions of it had been previously systematically surveyed by archaeologists.

A complete copy of the Records Search is included as Appendix A to this report. In summary form, however, the West Ranch Study Area was found to have never been systematically surveyed, although portions of 13 previous surveys had examined small portions of the property. Only two archaeological sites had been recorded within the study area during these previous studies. The first, CA-LAN-962H, was recorded in 1978 by Bob Edberg and represents the historical Asistencia de San Francisco. The second, recorded by Peak and Associates in 1992, is the prehistoric site of CA-LAN-2133. both of these sites are discussed and described subsequently.

In addition to the records search conducted at the UCLA AIC, we also conducted a preliminary review of existing, published records and maps to aid in defining the zones most likely to contain extant sites. In reference to prehistoric archaeological sites, a map of historical Native American villages in the region (Kroeber 1925; see also King and Blackburn 1976) indicates that all such known villages in the general study area were concentrated along the Santa Clara River, with most of them apparently situated on its north side. Furthermore, the original diseño or land grant map for the Rancho San Francisco, drawn in 1843, also locates these historical villages (Johnson and Earle 1990). In neither map are any of the historical

villages located within the study area, per se. Equally importantly, however, the diseño depicts the upland portions of the West Ranch study area - that is, the vast majority of the study area lying to the south of the river - as lomas esterilas, "sterile hills". This suggests that this area was neither occupied by major Native American villages, nor significantly used during the early historical period. From the perspective of prehistoric archaeological sites, the existing records suggested that the primary area of Native American occupation and use would lie immediately along the Santa Clara River.

Existing records were also useful for identifying areas that might contain historical sites warranting consideration during the CEQA process. These were particularly useful inasmuch as historical site locations were not as greatly constrained by environmental factors as were prehistoric sites. In addition to the 1843 diseño, we examined the Wheeler map of 1879 (Johnson 1978), various published histories of the area (e.g., Thompson and West 1880; Englehart 1927; Perkins 1957; Newhall 1958; Señan 1962; Heil 1974; Cowan 1977; Smith 1977; Outland 1986; Rolle 1991; and Reynolds 1992) and unpublished documents (Woodward n.d.). The Asistencia de San Francisco (CA-LAN-962H) and the adjacent, original headquarters of the Newhall Ranch, located at the eastern side of the project area (discussed below) is one such well-known historical locality. Aside from this specific area, the only additional historical site suggested by the existing records was the "San Martine stage station", said to be located near the Ventura County line (Outland 1986:135; note that we were unable to locate any extant evidence of this historical locality). Thus, the historical records suggested that the concentration of historical sites within the study area should lie at the northeastern end of the West Ranch study area.

4.0 SURVEY METHODS

The intensive Phase I survey of the approximately 12,000 acres West Ranch study area was conducted in two phases: June and July of 1993, and February through April, 1994. Project staff included David S. Whitley, Ph.D., Joseph M. Simon, George Gumerman, Ph.D., Robert Rechtman, Ph.D., Tamara Whitley, M.A., and Thomas Haile.

Field procedures involved spacing the crew at approximately 15 to 20 meter intervals and then walking the property in transects, generally following the contours of the local topography. The groundsurface was examined during these transects to identify evidence of prehistoric sites. Such evidence might include surface artifacts, dark organically rich midden soils, fire-cracked rock resulting from earth ovens and roasting pits, and shell and bone that might represent remnants of dietary remains. Particular attention was paid to cut-banks and road-cuts that exposed buried soils, as well as to rodent-hole backdirt piles that revealed subsurface soils. Any identified archaeological sites were carefully examined in order to obtain an initial estimate of the the existing artifact inventory, and to assess the current site integrity and size.

During the survey special attention was paid to geomorphological conditions that affect the preservation of archaeological remains. Road or bank-cuts that expose subsurface stratigraphy, for example, along with stable geomorphic and depositional environments, were carefully examined for evidence of cultural remains. Given the geomorphology of the current project area, these included saddles in particular, as likely spots for subsurface deposition,

and knolltops as areas also likely to contain cultural resources. In contrast, slopes of greater than about 25% grade, where erosional and gravitational forces would preclude the preservation of archaeological remains, were less intensively examined both because of the negligible possibility that sites might be present on them, and for the safety of the crewmembers.

5.0 FIELD RESULTS

Field conditions for the intensive Phase I survey of the West Ranch study area were, in general, very good. During the period of the survey, vegetative cover was typically low or minimal, affording good groundsurface visibility. Field conditions notwithstanding, the West Ranch study area was found to have a very low density of archaeological remains, with site locations closely conforming to the expectations derived from the review of published and unpublished documents discussed previously. With only two minor exceptions, identified sites are concentrated in two areas: prehistoric sites are principally restricted to both sides of the Santa Clara River in a stretch between the mouths of Potrero and Chiquito Canyons; while historical resources are clustered near the northeastern boundary of the property, near Magic Mountain.

The cultural resources identified and mapped during the intensive Phase I survey are located on Figure 2. Appendix B provides site record forms for each of these sites. They can be described as: a concentration of six prehistoric sites, including one rockshelter, and one isolated artifact along or near the Santa Clara River; one surface site on Grapevine Mesa; one rockshelter in upper Potrero Canyon; and a multi-component historical locality at the eastern end of the study area. We discuss each of these sites in turn.

5.1 Prehistoric Archaeological Sites

A total of eight prehistoric archaeological sites and one isolated artifact were identified during the intensive Phase I

survey. Six of the sites and the isolated artifacts are concentrated along both sides of the Santa Clara River between the mouths of Potrero and Chiquito Canyons. We describe each of these sites, by geographical location, below.

5.11 Santa Clara River Sites

The sites identified along or near the Santa Clara River include two villages, one possible cemetery, two camps, one rockshelter, and one isolated artifact. One of the village sites, CA-LAN-2133, was previously discovered during a pipeline survey that crossed the property. The remaining sites were all newly discovered during the Phase I survey.

CA-LAN-2133 (NLF-1) - Potrero Canyon Mouth Village

The only previously discovered prehistoric archaeological site within the study area is situated on the south side of the Santa Clara River, on a river terrace approximately 500 meters northeast of the mouth of Potrero Canyon. The site appears to cover an area about 200 meters E-W and perhaps 100 meters N-S. However, the southern side of the site, where it abuts the toe of the slope leading to Potrero Mesa, is currently experiencing rapid colluviation. The site is therefore mantled by topsoil to the south and may extend further in this direction.

The site consists of a relatively large village, as indicated by the presence of an organic midden deposit and a wide range of tool types. We noted a chert leaf-shaped projectile point, Olivella shell bead, mano, basket-hopper mortar, and chert, fused shale and quartzite lithic debitage. The debitage included primary, secondary and tertiary flakes. Fire-cracked rock and

burnt animal bone are also present on the site. Furthermore, there are two areas within an eroded cut on the site which appear to represent intact earth-oven features that are being exposed by erosional processes.

Based on the projectile point, which is a large atlatl or dart point, as well as the presence of the basket-hopper mortar, site CA-LAN-2133 appears to date to the Intermediate Period, or from about 3500 to 1500 years B.P. (before present). Although the eroded cut, noted above, has disturbed a portion of the site, CA-LAN-2133 appears to be mostly intact and to maintain a high degree of integrity.

CA-LAN-2241 (NLF-2) - Potrero Canyon Mouth # 2

Immediately to the east of CA-LAN-2133, but on a separate and lower river terrace, we discovered evidence of a second archaeological site. This was encountered in a bulldozed area, alongside the existing dirt road, which exposes some deeply lying sediments within which the site is found. The site's temporal and functional relationship to CA-LAN-2133 is unclear. Based on its location on a separate landform than CA-LAN-2133, and its relatively great depth within the soil profile, we believe that CA-LAN-2241 warrants designation as a distinct site.

At CA-LAN-2241 we found possible evidence of a human interment. This comprised a few broken and highly scattered bones that, based on preliminary observations, may be human in origin. They were found on the groundsurface in a scraped area but appear to be derived from a within a white, non-organic, sandy alluvium that is entirely distinct from the midden soil found at site CA-LAN-2133. There was no evidence to suggest

that any artifacts were associated with this possible interment as grave goods, and the strata from which the bones were apparently derived was close to artifact-free. However, we did discover a fragmentary steatite bowl, broken mortar, a pestle and a single quartzite flake eroding out of the deposit at the same level as the possible human bones.

Mortars and pestles typically date from the Intermediate Period into more recent times in southern California, or to sometime during the last 3500 years. However, occasional discoveries of mortars and pestles in putatively much earlier sites leave their dating in question. While the presence of these artifacts in the deposit of the site, then, suggests that it may date to the same time period as CA-LAN-2133 nearby, this inference is still to be determined. In particular, the nature of the soil combined with the depth and location of the bones and artifacts (approximately 5 feet below grade) argue, to the contrary, that CA-LAN-2241 might be somewhat older.

CA-LAN-2241 is currently in very poor condition. The small terrace that it sits upon, originally perhaps 60 by 60 meters in size, is at least one-half eroded away by recent arroyo cutting. The existing dirt road and recent bulldozer cut, although serving to expose a site that otherwise could not have been identified from the groundsurface alone, have also removed a large section of the archaeological stratum. We estimate that less than 25% of the original site area is still in existence. Further, it is apparent that the few fragmentary bones that have eroded out of the soil are very fragile and could easily be destroyed by natural processes, such as erosion and arroyo cutting.

CA-LAN-2235 (NLF-3) - Chiquito Canyon Village

What appears to be a small village site was discovered on the western side of the mouth of San Martinez Chiquito Canyon. It is located north of Highway 126 on a low knoll; currently an occupied farm house sits on its southern half. We noted substantial evidence of fire-cracked rock, possible midden soil, some shell, core/cobble complex tools, a possible metate fragment, and lithic debitage at this locale, principally around the periphery of the yard containing the house. Although no temporal diagnostics were noted among the surface artifacts, our preliminary estimate is that CA-LAN-2235 dates to the Late Prehistoric period. The area containing the site measures approximately 150 by 50 meters.

Construction of the house on the site has unquestionably resulted in considerable damage to its integrity. However, intact portions of the deposit still may be present peripheral to the house.

CA-LAN-2234 (NLF-4) - Chiquito Canyon Camp # 1

A relatively small site was discovered on the south side of Highway 126, immediately to the east of the San Martinez Chiquito Canyon. The site sits between the highway and the original railroad right-of-way, and measures approximately 100 by 100 meters in size.

Although no evidence of midden soil was found at this locale, the surface of the site contained a moderate density of lithic debitage (principally quartzite and chert primary flakes), fire-cracked rock, and two manos. A small erosional cut on the site exposed a concentration of fire-cracked rock at a depth of about 20 centimeters. Accordingly, our preliminary interpretation is

that this site represents a small camp that is partly buried by natural colluvial processes.

Road construction and disking have disturbed the site to some degree and, in the interim between the two phases of the fieldwork, it was buried with a cap of fill (apparently to control erosion in this area), but it appears to be in fair condition. Although no temporal diagnostics were noted on the surface of the site, it is likely that it was functionally and temporally related to the occupation of CA-LAN-2235, the larger village site located a few hundred meters to the northwest.

CA-LAN-2233 (NLF-5) - Chiquito Canyon Camp # 2

A second campsite (possibly a small village) was located approximately 175 meters west of the mouth of San Martinez Chiquito Canyon, also on the high river terrace containing Highway 126. This site is similar in many respects to CA-LAN-2234, although apparently larger and more intact. It is located on either side of Highway 126 from the high bank of the stream to approximately 50 meters north of the highway. This area includes not only the highway right-of-way, but the original SPRR line as well, which ran parallel and south of the road. Railroad and highway construction, in other words, has seriously impacted the central portion of this site. Furthermore, the site area has been farmed for may years. Thus, its current integrity can only be considered moderate. We estimate its current dimensions at about 200 meters E-W by 150 meters N-S.

The site contains a high density of surface artifacts on its southern side, and a lower density to the north, upslope of the

highway, although these differences probably reflect recent agricultural activities and other impacts, rather than original condition. As at CA-LAN-2234, the artifacts consist principally of debitage and fire-cracked rock. The debitage includes chert/jasper, quartzite and fused shale flakes, including primary, secondary and tertiary specimens. The fire-cracked rock tends to be concentrated in about a half-dozen spots on the site, suggesting that relatively intact hearths or earth ovens may be present. Manos and core-cobble complex tools were also noted north of the highway.

No evidence of midden soil was noted and, in a small erosional cut on the site, we saw no indications of a subsurface component. However, it is possible that a low density of subsurface material has been buried by natural colluvial processes, as at CA-LAN-2235. Again, although no temporal diagnostics were noted on the groundsurface, it is likely that CA-LAN-2233 was functionally and temporally associated with the village at CA-LAN-2235.

As noted above, the highway and railroad may have destroyed the central portion of CA-LAN-2235. However, aside from some disking, the extant portion of the site appears to be in fair condition, notwithstanding the fact that the northern half once comprised a walnut orchard, which was removed over a decade ago.

CA-LAN-2242 (NLF-8) - Martinez Grande Cave

This site is a small west-facing cave, located on the eastern side of San Martinez Grande Canyon, slightly less than one mile north of the Santa Clara River. The cave measures approximately two meters deep by 3.5 meters wide, with a

ceiling that is currently about 1.5 meters high. However, judging from the exposure at the cave entry, it appears that as much as half a meter of soil may be blanketing the cave floor. The wall and ceiling of the cave currently have what appears to be deeply engraved historical grafitti. At the back wall, the word "MERRY" could be identified; other unintelligible words/letters are present on the ceiling. With the exception of this grafitti, the cave appears undisturbed.

Soil in the cave consists of fine, wind-blown sand, with no evidence of an organic midden-like soil. The cave ceiling is also currently free of fire-blackening. Although this last condition may have resulted from recent wind erosion on the ceiling, there is currently no evidence that the cave was used as a habitation, per se, in the sense of a living area. However, two aboriginal artifacts in the form of worked, ancient pieces of wood, are present on the surface of the cave, in a pack-rat nest, attesting to aboriginal use of it, probably as a cache cave.

Cache caves are common in the inland Los Angeles and Ventura Counties region (W & S Consultants 1989). In the immediate vicinity of this site (but outside of the study area), the important cache site Bower's Cave (CA-LAN-36) was discovered (Elsasser and Heizer 1963; Van Valkenburgh 1952). Although it is immediately apparent that this newly discovered cave does not contain a major cache of religious artifacts such as was found in Bower's Cave, it is likely that it was used for the temporary storage of utilitarian items and foodstuffs, as was common in the region, and thus is likely to contain a small quantity of buried archaeological remains.

Isolate-1

The final cultural resource located in the vicinity of Potrero and Chiquito Canyons was an isolated artifact, found within the flood channel of the river on its northern side. This consists of a broken, basket-hopper mortar, found immediately west of the mouth of San Martinez Grande Canyon. It is likely that it washed down the river (perhaps from the sites discovered near the mouth of Chiquito Canyon) during some flood season.

5.12 Other Prehistoric Sites

In addition to the concetration of sites along the Santa Clara River between Potrero and Chiquito Canyons, two other prehistoric archaeological sites were discovered during the intensive Phase I survey.

CA-LAN-2236 (NLF-6) - Grapevine Mesa Lithic Scatter

A very low density surface scatter of lithic flakes was discovered on the northern end of Grapevine Mesa, where it overlooks the Santa Clara River to the north. We identified approximately 8 primary quartzite flakes, spread over an area about 100 by 100 meters in size.

Although the site has suffered minor disturbance from disking, it appears essentially intact. This site apparently represents a small lithic workshop area. It is unlikely to contain a subsurface deposit.

CA-LAN-2240 (NLF-7) - Potrero Canyon Rockshelter

On the southeastern side of the study area, in a small tributary to Potrero Canyon, a small, dry rockshelter was located which may contain evidence of prehistoric use. The rockshelter measures approximately 5 meters across and 3 meters in depth, with a height of about 1.5 meters. The roof of the shelter is fire-blackened and a chert flake was noted on the groundsurface immediately outside of the dripline. Although it does not appear that this shelter served for intensive occupation or use, small rockshelters and caves were almost invariably employed as cache locales prehistorically, as noted above. Thus, it is likely that a small quantity of buried remains may be present in the aeolian deposit in this shelter.

5.2 Historical Archaeological Sites

Historical cultural resources are concentrated in what can best considered a single locality: the northeastern end of the project area, adjacent to the boundary with Magic Mountain. This area includes the Asistencia de San Francisco Xavier and the original Newhall Ranch headquarters. Both of these have been previously recorded as distinct archaeological sites but, because they grade into one another, they are most appropriately discussed as a different temporal components of a single archaeological locality.

5.21 The Asistencia (CA-LAN-962H)

The Asistencia de San Francisco Xavier proper is recorded as site CA-LAN-962H in the files of the UCLA Archaeological Information Center. It is registered as California Historical

Landmark 556 and is also listed in Historic Landmarks in Los Angeles County (County Superintendent of Schools, Los Angeles, 1956). It was originally founded in 1804 as an outpost or Estancia of Mission San Fernando, and was elevated to the status of an Asistencia, or sub-mission subsequently, probably when a second adobe structure on the site was built. The Asistencia continued to be occupied until at least 1861, however, having served as the original headquarters of Rancho San Francisco, controlled by the del Valle family. It was also the location at which Francisco Lopez resided when he made the first "official" discovery of gold in California, in Placeritas Canyon, in 1842. Furthermore, Manly and Rogers of the Death Valley '49ers first emerged into civilization at the Asistencia, in search of aid to rescue the other members of the stranded Bennett-Arcane party of Death Valley '49ers, as discussed above. Thus, the site not only represents the first Euro-American occupation of the Upper Santa Clara Valley region, but it was also associated with a series of notable historical persons and events in California history.

The Asistencia consisted of two long, rectangular buildings, connected by a low wall, and a kiln, located on a terrace overlooking the Santa Clara River and Castaic Junction; a small "milk house", said in one reference to lie in an adjacent canyon (Reynolds 1992) and, in another, to stand on the slope below the two main buildings (Smith 1977); a roadway and a series of ancillary corrals, fields, and so on, on the large flat below the two main structures. The two primary adobe buildings, on the terrace overlooking the river, apparently included tile flooring, a granary, and a small chapel. Perkins (1957) has published an undated photo of the "milk house". From the photo, it appears that this adobe structure stood on the slope below the terrace containing the main adobe buildings.

None of the existing documents indicate that the main buildings on the terrace were modified to any extent once the Asistencia was taken over by the del Valles when they acquired Rancho San Francisco in 1839. In fact, it appears that the principal del Valle residence was in Los Angeles until they moved the ranch headquarters, and the family, to the Camulos Adobe in the 1860s (cf. Smith 1977:116). Manly's (1924:178-179) description of the Asistencia in 1849, quoted previously, suggests that the Asistencia may have been principally occupied by ranch-workers.

A very brief, one-day exploratory excavation of the Asistencia was conducted in 1933 by Arthur Woodward of the Los Angeles County Museum of Natural History. Although Woodward published no report on this project, we have obtained a copy of his unpublished one-page typewritten fieldwork summary from the Museum (see Appendix C). Woodward's excavation goal was apparently just to define the orientation, size and number of internal rooms of the two main structures on the terrace. Judging from Smith's (1977:245, n. 29) published comments, Woodward's 1933 testing was planned as a preliminary effort to be followed by later, more substantial excavations at the site, which were never realized.

In his preliminary effort, Woodward found that the buildings had cobble foundations that were 24" wide and 20" deep, surmounted by adobe brick walls almost three feet thick. The first or northern structure was 105 feet long (E-W) by 17 feet wide (N-S). The second structure, parallel and to the south of the first, was slightly larger: 107 by 22 feet, divided into five separate rooms, one of which was an altar and chapel. Both buildings had tile roofs and floors.

Woodward evidently made no systematic effort to recover an artifact collection from the site during his one-day excavation. His typewritten notes indicate solely the recovery of a "few fragments of English blue pottery", a silver band and a small Spanish coin. According to recent conversations with Mr. Chris D. Coleman (personal communication, 1993), Collections Manager for the Anthropology Section of the Museum, there is no known artifact collection from this site currently housed at the Museum.

According to Smith (1977:245, n. 29), Woodward's intentions to continue with excavating the site were "abandoned in 1937 when vandals broke up the tile floors and removed most of the adobe walls in a search for mission treasure". A note in Historic Landmarks in Los Angeles County (p. 51) states further that the portions of the adobe wall and kiln that were still-standing following Woodward's excavation were subsequently bulldozed. A local resident has told us that this bulldozing occurred to discourage the vandals and pothunters that were apparently trespassing on and looting the site.

On the terrace area where the two main structures once stood we re-located a dense concentration of historical archaeological remains, including evidence of the cobble building foundations. This portion of the site includes an historical midden (i.e., kitchen refuse deposit) containing quantities of ash and burnt bone, and a considerable quantity of artifacts. These include roof and floor tiles, adobe bricks, hand-blown bottle glass, hand-made nails, and ceramics. Included in the ceramics are examples of pearlware, produced principally between 1780 and 1830, shell-edged ware (1750 - 1830), and annular ware (1795 - 1815). One ceramic maker's

mark was also noted on a whiteware sherd. This is the William Adams and Sons "Damascus" mark, produced about 1840 (Praetzellis et al 1983; Felton and Schulz 1983). Thus, it is apparent that substantial archaeological remains are intact on the site, including some architectural remains.

Although the artifact density is significantly lower below the terrace area, per se, we did identify a few specimens of mission-era remains (floor tiles, adobe brick and ceramics) in the large open area below and to the southeast. Currently, three houses are occupied below this terrace, and graded pads for two or more additional structures are evident. It is likely that additional Asistencia remains (privies, perhaps the foundations of the "milk house") are preserved in-and-around these houses and their yards. Furthermore, the original mission-era road is still intact in places along the hillside to the southeast of the terrace.

One issue related to the Asistencia warrants mention at this time, which has been alluded to above. This is the contention that the Asistencia was located at or near a major historical Tataviam village labelled in different orthographies as chaguayabit, tsawayung and tacuyamam (Perkins 1957; King and Blackburn 1976; Johnson 1978; Johnson and Earle 1990). This village is widely recognized as having been located in the Castaic Junction area and, although some have assumed it was located at the same spot as the Asistencia, its exact location has, in fact, never been determined. Various archaeologists have looked for evidence of the village. In 1990, Dr. Louis Tartaglia unsuccessfully attempted to locate it using a back-hoe. We found no evidence to suggest that it was located within or adjacent to the West Ranch project area, let alone at the Asistencia per se, although we intensively surveyed both sides

of the river bank upstream and downstream of this historical Euro-American site.

In addition to the mounting negative evidence suggesting that the village was actually not located at or immediately near the Asistencia, there is additional evidence supporting the interpretation that it may have been in the general Castaic Junction vicinity and not at this locale, per se. First, the Spanish in fact did not usually place their camps and settlements within or immediately adjacent to existing villages, due to health reasons. As a number of chroniclers recounted, the villages usually were ridden with vermin, so the Spanish preferred to establish their habitations some distance away. Second, Arthur Woodward worked at the Asistencia in 1933 while he and Richard Van Valkenburgh were conducting excavations at another historical Tataviam village in nearby Piru Canyon. Had there been a major prehistoric site at or close to the Asistencia in 1933, it is almost certain that Woodward and Van Valkenburgh would have noted such in his notes and maps, and investigated it directly. Further, that Woodward apparently conducted no investigations at the village suggests that, even in 1933 when he was working in the region, its location was unknown.

Thus, the actual whereabouts of chaguayabit/tsawayung may remain a mystery, but it does not appear to have been at the Asistencia, per se. It is possible that it may have been slightly lower lying than the Asistencia, and thus could have been destroyed by the San Francisquito Dam flood of 1928. According to Outland (1963), the waters of the flood raged across four miles of what was then Highway 99 (now I-5) at Castaic Junction, with the water as much as 30 feet high. Any archaeological site lying within the path of this flood, either at

Castaic Junction or further downstream on the Santa Clara River, clearly would have been destroyed by this catastrophe. Perhaps more likely, a Late Prehistoric village site has been identified and excavated about one-half mile east of the intersection of Interstate 5 and Rye Canyon Road, within an existing business park. This excavation resulted in the recovery of nine burials, suggesting that the site was a major or at least significant village locale. Our best estimate, unless and until additional evidence is obtained, is that chuguyabit/tsawayung was this Rye Canyon Road site.

In summary, the Asistencia can be considered a significant historical resource within the West Ranch study area. Although the built-structures have been destroyed over the years, it is apparent that their archaeological remnants are still largely intact, and that much of the historical land-use fabric (such as the mission road) is still evident at this locale.

5.22 The Newhall Ranch Headquarters (CA-LAN-961H)

The Newhall Ranch, founded by Mr. Henry Mayo Newhall in 1875, was originally headquartered at essentially the same locale as the Asistencia (Newhall 1958; Perkins 1957; Rolle 1991). The Newhall family home, the focus of the ranch headquarters, is recorded as site CA-LAN-961H at the UCLA AIC. It was located immediately off-property in what is now the Magic Mountain parking lot, though the house itself has been moved to the William S. Hart Park.

Features and historical artifacts from the ranch headquarters, however, are still present within the West Ranch project area,

overlapping with the extent of the Asistencia. In particular, the southernmost of three occupied houses in this area appears to be an example of turn-of-the-century, vernacular ranch architecture. It is 1"x12" board and batten construction, probably without internal studs, currently sitting on a concrete block foundation. Although this last fact indicates that it was moved to its present location sometime after its original construction, it nonetheless may represent a relatively intact example of historical, rural southern California architecture. Other historical features (e.g., privy pits, old structure foundations) may also be located in this same general area.

The historical cultural resources on the northeastern side of the West Ranch study area, accordingly, include remains and evidence of land-use dating from the Mission, Mexican rancho, and early Anglo-American periods. Indeed, this portion of the property documents the changing land-use patterns during this early, transitional period in California history, as well as the initial Euro-American occupation and use of the Upper Santa Clara River Valley. These scattered remains can be estimated to cover an area approximately 600 by 200 meters in size. However, the majority of them appear to be concentrated towards the north, around the terrace containing the Asistencia proper and the occupied houses immediately below.

6.0 SUMMARY AND RECOMMENDATIONS

An intensive Phase I archaeological survey and cultural resources assessment was conducted on the approximately 12,000 acres West Ranch study area, Newhall Ranch, northwestern Los Angeles County, California. This study, which involved an on-foot survey of the property and a review of written and unpublished documents on the archaeology, history and ethnography of the region, resulted in the evaluation of one previously recorded prehistoric (Native American) sites, the discovery of seven previously unrecorded prehistoric archaeological sites, one isolated artifact, and the assessment of two previously recorded historical (Euro-American) sites. In general, archaeological site density in the study area was found to be very light, probably due to the limited availability of water away from the Santa Clara River, with the identified sites, accordingly, clustering along the river course.

Identified sites were found in two primary concentrations. The first concentration is along both sides of the Santa Clara River, between the mouths of Potrero and Chiquito Canyons, where six prehistoric sites and one isolated artifact are found. Four of the sites and the isolate are located on the north side of the river near Chiquito Canyon; the remaining two sites are on the south bank near Potrero Canyon. The second concentration of cultural resources consists of a historical locality, found on the northeastern side of the study area near Magic Mountain. This includes the Asistencia de San Francisco Xavier (CA-LAN-962H), which also served as the original Rancho San Francisco headquarters occupied by the del Valle family, and the historical Newhall Ranch headquarters (CA-LAN-961H). (Although these two historical sites have been given different

trinomial designations, and though the primary focus of CA-LAN-961H was the Newhall house which is now off property, that portion of them within the study area properly should be considered a single historical locality containing different temporal/cultural components). In addition, two smaller prehistoric archaeological sites, consisting of a small surface scatter and a small rockshelter, were also located within the study area.

6.1 Recommendations

According to the guidelines provided by Appendix K of the California Environmental Quality Act (CEQA), Phase II test excavations and determinations of site significance are required for all sites that have the potential to be directly impacted by a proposed project. We therefore recommend that Phase II test excavations and determinations of site significance be conducted on the eight prehistoric archaeological sites and the historical locality within the study area. Recording of the isolated artifact designated I-1 will, according to CEQA guidelines, satisfactorily mitigate any adverse impacts to this artifact. No additional archaeological work, therefore, is required in reference to this resource.

The Phase II study for the eight prehistoric sites and the historical locality should be designed to provide baseline data from which the size, nature and significance of each resource can be determined. Final recommendations for the management or disposition of each of these cultural resources can then be provided, based on the results of the Phase II test excavations, and the determinations of significance derived therefrom.

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8.0 Figures

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1 - The West Ranch study area, Newhall Ranch, northwestern Los Angeles County, California.

2 - Location of identified archaeological sites within the West Ranch study area.

CONFIDENTIAL

9.0 APPENDIX A: ARCHIVAL RECORDS SEARCH

CONFIDENTIAL

10.0 APPENDIX B: SITE RECORD FORMS

CONFIDENTIAL

11.0 APPENDIX C: WOODWARD'S REPORT ON THE ASISTENCIA

Investigation of adobe ruins located on the Newhall Rancho about one mile from Castaic unction, California. May 13th. 1933.

In the party were Arthur Woodward, Curator of History, Los Angeles Co. Museum.
Dr. John Nordskog.
J. Marshall Miller.
R. F. Van Valkenburg of Field Staff L.A.Co. Museum.
A. B. Perkins.
Arthur Perkins.
Valentine Perkins.

The apparent length of the original structure was 107'-4" and the width was 22'-8", the nterior width was 17'. Work by Mr. Woodward, Dr. Nordskog, Mr. Miller, and Mr. Van Valkenburg showed a rubble foundation 24" wide and 20" deep, surmounted by adobe brick walls '-10" thick made of sun baked adobe bricks approximately 10" x 21" x 3½". Cleaning away f rubbish exposed a tile floor, portions of which were exposed in places These were kiln-urned flat floor tile, laid without bonding, of sizes 11"x 11", 11"x 11½", and 8½"x 11½", ll being from 1½" to 2" thick. The top of the foundation approximated the top of the floor line. The foundation was laid with adobe lime mortar, as also the walls. The inside as apparently plastered with this mix.

The main building was apparently divided into five appartments running, from the west, s follows in width 25', (from outside to partition center) 20', (partition center to partition center) 16' (last named centers) 22' (likewise) 25'- 6" (this from partition center o outside edge of wall). Lack of time made it impossible to locate the entrances. From ile fragments found on the floor, in the debris, and on the surrouding hillside, the structure was apparently roofed with typical Mission roof tile, the matt of the tile being approximately ¾" thick, Kiln-burned.

A few fragments of English blue pottery, typical of other finds at mission ruins, were found, also a small metal (possibly silver) band, about 2" long and 3/8" in width (widened at center) apparentlt cut for inlay (opinion of Mr. Woodward) and one small Spanish silver coin (probably a reale, but not yet deciphered).

Owing to lack of time, openings were not definitely located, and the rubbish was not thouroughly cleared from the floor, nor screened.

The tile floor in place was cleared for about a 5' length and two tile width at a point about 30' from southwest corner on southerly line. Adjacent to the tile floor in place, was one of several excavations on the ruins, made at some time in the past, possibly by treasure hunters, which had gone two or three feet below floor level and also taken out part of one tier of the wall bricks. The laying of the adobe bricks in the main walls was rather strange. On the long north wall the adobe brick toward the interior were all laid parallel to the length of the wall and although bonded with one another there was no bond with the bricks to the exterior which were all laid perpendicular to the length of the wall and bonded with each other. The opposite or south long wall was laid in similar manner only in this case the bricks laid parallel to the length of the wall were on the exterior and those perpendicular on the interior.

About 60' southerly from the above described structure, and parallel to it, is another ruined wall, with possible abutments toward the north ruin. These abutments were not investigated fully. Work on the easterly end showed a rubble foundation in place surmounted with adobe brick, this wall apparently running east and west, (parallel to the main ruin). The wall running northerly from this east end showed no signs of a rubble foundation but the bottom was several feet lower than the bottom of the rubble foundations of the adjoining wall.

(over)

This site is located on the south side of the Santa Clara River Valley at the junction of the Castaic (or Castac) Valley with the Santa Clara River Valley, Los Angeles County. Ruins located on prominence at turn of river and about 75' above the general valley floor. Latitude 34°26' N., Longitude 118°36'30" W. Santa Suzana Quadrangle, U. S. Geologic Survey topographical maps.

This property is now owned by the Newhall Land and Farming Company, (headquarters for the San Francisco Rancho at Piru), was originally held by San Fernando Mission, and upon secularization passed into the hands of Antonio del Valle (do not confuse with Ygnacio del Valle of Camulos).

Reference: Engelhardt, "San Fernando Rey", pp. 16, 52, 59, and 143. Reference to an adobe grainary and necessary rooms, size about 105'x 17', located on San Francisco Ranbho, built in 1804 by San Fernando Mission Indians of the adjoining rancheria of Chaguayabit. (This ranch is still known as the San Francesquito or San Francisco Rancho.) Rumer had it that Del Valle had built a home on the ranch about 1840 at the site of discovery, of which no details were known and as the ruins were supposed to have been only the Del Valle home site they had not previously been investigated.

by Arthur Woodward

ADDENDUM TO
INTENSIVE PHASE I ARCHAEOLOGICAL SURVEY OF THE WEST RANCH PROJECT AREA, LOS ANGLES COUNTY, CALIFORNIA: ARCHAEOLOGICAL SURVEY OF THE VALENCIA BOULEVARD EXTENSION STUDY AREA

Prepared For:

Mr. David Crowder
Newhall Ranch Company
23929 Valencia Blvd., Suite 207
Valencia, CA 91355

Prepared By:

W & S Consultants
2242 Stinson Street
Simi Valley, California 93065
(805) 581-3577

December 1995

MANAGEMENT SUMMARY

An intensive Phase I archaeological survey and cultural resources assessment was conducted for the Valencia Road extension study area, northern Los Angeles County, California. This investigation constituted an addendum to an earlier Phase I survey of the Newhall Ranch, and involved a review of archival records and an intensive, on-foot survey of the approximately 2.6 miles long by 800 feet wide study area. No cultural resources of any kind were found within the study area, and the extension of Valencia Boulevard will not result in adverse impacts to cultural resources.

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ADDENDUM TO PHASE I ARCHAEOLOGICAL SURVEY OF THE NEWHALL RANCH, LOS ANGLES COUNTY, CALIFORNIA

1.0 INTRODUCTION

At the request of Mr. David Crowder, Newhall Ranch Company, an intensive Phase I archaeological survey and cultural resources assessment was conducted for the proposed Valencia Boulevard extension, northern Los Angeles County, California (Figure 1). This study constitutes an addendum to an earlier Phase I archaeological survey of and report on the Newhall Ranch (W & S Consultants 1994a). The current proposed project, to be conducted as part of the proposed work in the area covered by the earlier Phase I report, will consist of the extension of Valencia Boulevard westward from Interstate 5 for a distance of about 2.6 miles.

The purpose of this Phase I archaeological addendum was to provide an archival records search in order to establish whether any known archaeological sites were present in the project zone, and/or whether any systematic study of the project area had been conducted by archaeologists; an intensive, pedestrian or on-foot survey of the project area in order to identify any previously unrecorded cultural resources; and, should any be found within the subject property, a preliminary assessment of such resources. Background studies of the prehistory, ethnography and history of the study area, as well as a review of pertinent previous research, have been provided in the Phase I report for the proposed project (W & S Consultants 1994a).

This manuscript constitutes a report on the Phase I archaeological addendum. Subsequent sections provide a description of the investigation, including the results of the archival record search; a summary of the field surveying techniques employed; the results of the fieldwork; and management recommendations derived therefrom.

2.0 ARCHIVAL RECORDS SEARCH

An archival record search was conducted at the UCLA Institute of Archaeology, Archaeological Information Center (AIC), by AIC staff members to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the Valencia Boulevard extension project area; (ii) if the project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. The complete results of this archival record search are included in this document as Appendix A.

Files and records at the UCLA AIC indicate that the project area had never been systematically surveyed in its entirety by archaeologists. No sites of any kind had been recorded in the study zone. Furthermore, only one prehistoric site had been recorded within a one-half mile radius of the study zone. This site, CA-LAN-2240, is located 400 feet south of the current study area. Furthermore, a Phase II test excavation and determination of significance was conducted on this site, a small rockshelter, as part of the investigations for the proposed project. It was determined to have no extant archaeological remains, therefore to not maintain significance nor to warrant any protection or mitigation measures (W & S Consultants 1994b).

Examination of historical maps (specifically, Santa Susana 1903 and 1941 15' series topographical sheet) failed to reveal any indications that historical sites would be present within the study area, although unimproved roads were present in the general area.

Historical inventories were also examined. The National Register of Historic Places (NRHP) and the California State Historical Resources Inventory (HRI) lists one property within a one-half mile radius of the study area. This is Well No. 4 of the Pico Canyon Oil Field, which was California's first commercially productive oil well. In addition, Mentryville is also a California Historical Landmark. Well No. 4 and

Mentryville are located south of the study area, in Pico Canyon.

In summary, the archival record search indicated that the project area had never been adequately surveyed to ascertain whether cultural resources were present within it, that no sites were known to be on it, and that archaeological sensitivity in this area was relatively low.

3.0 FIELD SURVEY METHODS

An intensive field survey of the Valencia Boulevard extension study area, Los Angeles County, California, was conducted by Joseph M. Simon and David S. Whitley, Ph.D., on December 1, 1995. The ground surface was examined with the crew spaced at 10 to 15 meter intervals, walking transects across the 800 feet wide study area to identify artifacts or other archaeological indicators that might be present on the ground surface. In addition, cut-banks of arroyos within the study area (where visible) were also examined to ascertain whether buried archaeological deposits might be present, while special attention was paid to potential areas of subsurface deposition, such as swales and saddles.

4.0 SURVEY RESULTS

The intensive Phase I field survey of the Valencia Boulevard extension study area found that ground surface visibility was excellent. Vegetation in the study area was minimal, thereby affording clear visibility of the groundsurface. However, the study area was found to comprise landforms that are largely unsuited for the preservation of cultural resources. The eastern side of the project area consists of a large open wash, subject to occasional flooding. The remainder of the study area comprises heavily dissected narrow ridges and steep bottomed arroyos, neither of which are suited for Native American inhabitation.

The field survey failed to find any evidence for the presence of cultural resources of any kind within the study area and, given the nature of the landforms within the study area, the likelihood that archaeological remains would have been deposited or could have been preserved in this area is minimal.

5.0 RECOMMENDATIONS

An intensive Phase I archaeological survey was conducted for the Valencia Boulevard extension study area, northern Los Angeles County, California. This involved an archival records search of site maps and files at the UCLA Archaeological Information Center; and an intensive, on-foot examination of the study area. Background studies and the archival records search failed to find evidence that archaeological sites of any kind had been previously recorded on the subject property, although no previous systematic study of the area in its entirety had been conducted. The subsequent on-foot survey of the study area failed to find any evidence that cultural resources are present in this area and, given the nature of the landforms in the study area, it is unlikely that any archaeological resources would have ever been present in this area.

Construction of the Valencia Boulevard extension project, therefore, will result in no adverse impacts to cultural resources, and no further archaeological work is required at this locale. However, in the unlikely event that archaeological resources are discovered during any phase of the project, it is recommended that an archaeologist be contacted to record, stabilize and/or recover such remains.

6.0 Cited References

W & S Consultants

1994a Intensive Phase I Archaeological Survey of the West Ranch Project Area, Los Angeles County, California. Manuscript on file, Los Angeles County Regional Planning Department.

1994b Phase II Test Excavations and Determinations of Significance at CA-LAN-2133, 2233, -2234, -2235, -2236, -2240, -2241, -2242, Los Angeles County, California. Manuscript on file, Los Angeles County Regional Planning Department.

7.0 FIGURES

List of Figures

1 - Location of the Valencia Boulevard extension study area, Los Angeles County, California.

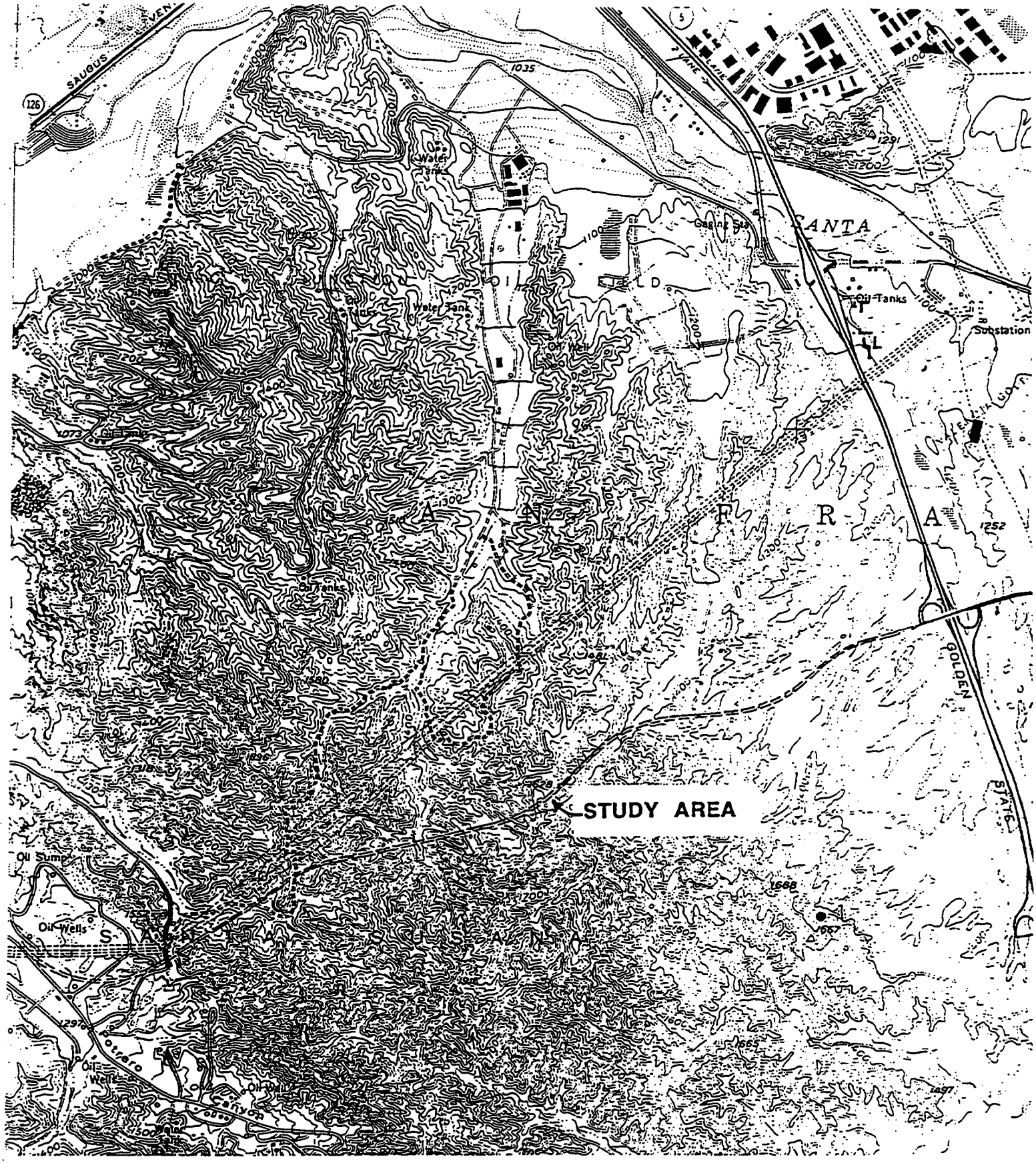

FIGURE 1: Valencia Boulevard extension study area, northern Los Angeles County, California. Base map: USGS Newhall 7.5' quadrangle; scale - 1 : 2000.

8.0 APPENDIX A: ARCHIVAL RECORDS SEARCH

California Historic Resources Inventory

Regional Information Center
Los Angeles, Orange, Ventura Counties

November 16, 1995

Joseph M. Simon
W & S Consultants
2242 Stinson Street
Simi Valley, CA 93065

RE: Record search for a Phase I archaeological survey of the 2.6 mile Valencia Blvd. Extension in Los Angeles County, California

Dear Mr. Simon,

As per your request of October 31, we have conducted a records search for the above referenced project. This search includes a review of all recorded historic and prehistoric archaeological sites within the project area as well as a review of all known cultural resource survey and excavation reports. In addition, we have checked our file of historic maps, the National Register of Historic Places, the California State Historic Resources Inventory, the California Points of Historical Interest, and the listing of California Historical Landmarks in the region. The following is a discussion of our findings regarding the project area.

PREHISTORIC RESOURCES:

One prehistoric site has been identified within a half mile radius of the project area (see enclosed map). This site is not located within the project area, but is 400 feet south of the southern portion of the project area.

HISTORIC RESOURCES:

No historic sites have been identified within a half mile radius of the project area (see enclosed map).. Inspection of our historic maps -- Santa Susana (1903, 1941) 15' series -- indicated that the project area labeled San Francisco on the 1903 map was minimally developed by the turn of the century. One unimproved road entered the area from the west and one jeep trail bisected the area from Castac in the north. The Santa Clara River flowed from east to west north of the project area and numerous intermittent streams crossed through the project area. By 1941, the jeep trail had become an unimproved road. State Route 99 bounded the project area on the east. Several other improved roads cut through the area. A secondary highway was routed thru Pico and Potrero Canyons. The Pico Oil Field and numerous other scattered oil wells were located around the project.

The National Register of Historic Places lists one property within a half mile radius of the project area. This resource was identified as Well No.4 of Pico Canyon Oil Field in San Fernando designated in 11/13/66 (NR# 66000212).

The California State Historic Resources Inventory lists one property within a half mile radius of the project area. This is the same property as the one listed in the National Register of Historic Places. Identified as Well No.4, please refer to the above mentioned resource.

South Central Coastal Information Center •UCLA Institute of Archaeology • Fowler Museum of Cultural History • Los Angeles, California 90095
Telephone: (310) 825-1980 FAX: (310) 206-4723

The listings of the California Historical Landmarks (1990) of the Office of Historic Preservation, California Department of Parks and Recreation, indicate that there are two California Historical Landmarks within a half mile radius of the project area. No. 516 has already been indicated above as Oil Well No.4. The second landmark is identified as No.516-2.

> No.516 Well No. "CSO" 4 (Pico No.4)
> On this site stands CSO-4 (Pico No.4), California's first commercially productive well. It was spudded in early 1876 under the direction of Demetrious G. Scofield who later became the first president of Standard Oil Company of California, and was completed at a depth of 300 feet on September 26, 1876, for an initial flow of 30 barrels of oil a day. Later that year, after the well was deepened to 600 feet with what was perhaps the first steam rig employed in oil well drilling in California, it produced at a rate of 150 barrels a day; it is still producing after 77 years (1953). The success of this well prompted formation of the Pacific Coast Oil Company of California, and led to the construction of the state's first refinery nearby. It was not only the discovery well of the Newhall Field, but was a powerful stimulus to the subsequent development of the California petroleum industry. Located On W Pico Canyon Rd, 3.3 mi W of I-5, Newhall

> No.516-2 Mentryville
> Named after pioneer oil developer Charles Alexander Mentry, who in 1876 drilled the first successful oil well in California. His restored home and barn and Felton School remain here where the Star Oil Company, one of the predecessors of Standard Oil of California was born. Located at 27201 W Pico Canyon Rd, 2.8 mi W of I-5, Newhall

There are no California Points of Historical Interest (1992) within a half mile radius of the project area.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS:

Sixteen surveys and/or excavations have been conducted within a half mile radius of the project area. Seven of these are located within the project area (see enclosed map and bibliography): L-510, 2031, 2427, 2450, 2477, 2848, 2950.

Please forward a copy of any reports resulting from this project to our office as soon as possible. Due to the sensitive nature of site location data, we ask that you do not include record search maps in your report. If you have any questions regarding the results presented herein, please feel free to contact our office at (310) 825-1980.

Invoices are mailed approximately two weeks after records searches. This enables your firm to request further information under the same invoice number. Please reference the invoice number listed below when making inquires. Requests made after invoicing necessitate the preparation of a separate invoice with a $15.00 handling fee.

Sincerely,

Ruth W. Chin
Staff Archaeologist

Enclosures:

(X) Map
(X) Bibliography
( ) Site list
( ) Site records
( ) Survey reports
(X) Confidentiality Form
( ) Invoice# 5894

BIBLIOGRAPHY

UCLA
FILE #

L-510 VAN HORN, DAVID M.
1979 PRELIMINARY ARCHAEOLOGICAL OVERVIEW: A 3,000+/- ACRE PARCEL BORDERING PORTRERO CANYON NEAR NEWHALL, CA.
Report on file, UCLA ARCH. INFO. CENTER
Particulars: PARTIAL SURVEY
QUADS: NEWHALL
QUADS: VAL VERDE
ACRES: 3000
SITES: CA-LAN-1020
FIRM: ARCHAEOLOGICAL ASSOCIATES, LTD.
AGENCY: ULTRASYSTEMS, INC.
PAGES: 15

L-1107 Wlodarski, Robert J.
1981 AN EVALUATION OF THE IMPACTS TO CULTURAL RESOURCES BY THE PROPOSED CONSTRUCTION OF AN OIL WELL AND APPURTENANCES (MAGIC MOUNTAIN #1), NEAR MAGIC MOUNTAIN PARKWAY IN LOS ANGELES COUNTY
Report on file, UCLA ARCH. INFO. CENTER
Particulars: SURVEY
QUADS: Newhall
ACRES: 2
SITES: NONE
FIRM: H.E.A.R.T.
AGENCY: MCR Services
PAGES: 18

L-1171 Tartaglia, Louis James
1982 CULTURAL RESOURCE SURVEY TENTATIVE TRACT NO. 34989
Report on file, UCLA ARCH. INFO. CENTER
Particulars: SURVEY
QUADS: Newhall
ACRES: 46
SITES: NONE
FIRM: LOUIS TARTAGLIA, C.A.
AGENCY: The Newhall Land and Farming Company
PAGES: 38

L-1180 Hawthorne, Janice G.
1981 CULTURAL RESOURCE SURVEY FOR ZC-80-065 VALENCIA, LOS ANGELES, CALIF.
Report on file, UCLA ARCH. INFO. CENTER
Particulars: PARTIAL SURVEY
QUADS: Newhall
ACRES: 20
SITES: NONE
FIRM: NARC
AGENCY: Sikand Engineering Associates
PAGES: 3

L-1235 Colby, Susan
1983 AN ARCHAEOLOGICAL RESOURCE SURVEY AND IMPACT ASSESSMENT OF A 5+ ACRE PARCEL IN VALENCIA, LOS ANGELES COUNTY, CALIF.
Report on file, UCLA ARCH. INFO. CENTER

UCLA
FILE #

QUADS: Newhall
ACRES: 5
SITES: NONE
FIRM: UCLA AS
AGENCY: Valencia Corporation
PAGES: 8

L-1266 Tartaglia, Louis James
1983 CULTRUAL RESOURCE RESURVEY OF TENTATIVE TRACT NO.34989
Report on file, UCLA ARCH. INFO. CENTER
Particulars: SURVEY
QUADS: Newhall
ACRES: 23
SITES: NONE
FIRM: C.A.
AGENCY: Valencia Corporation
PAGES: 8

L-1595 Brown, Robert S., and David M. Van Horn
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PHASE II TEST EXCAVATIONS AND DETERMINATIONS OF SIGNIFICANCE AT CA-LAN-2133, -2233, -2234, -2235, -2236, -2240, -2241 AND -2242, LOS ANGELES COUNTY, CALIFORNIA

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14 October 1994

MANAGEMENT SUMMARY

Phase II archaeological test excavations and determinations of significance were conducted on eight sites within the West Ranch study area, Western Los Angeles County, California. This included mapping, the collection of artifacts on the groundsurface, and the hand excavation of test pits at each of these sites, as well as an analysis of the recovered archaeological assemblages. Three of these sites, designated CA-LAN-2133, -2233 and - 2235, were found to be subsurface archaeological deposits resulting from small seasonal encampments. Each of these sites was found to date to the Intermediate Period, or from approximately 3500 to 800 years B.P. (before present). One archaeological site (CA-LAN-2236) was found to comprise a small, very low density surface lithic scatter of unknown age. Another presumed surface scatter (CA-LAN-2234) was found to consist of introduced fill derived from a nearby site, and thus to be artifact bearing, although lacking in integrity. A cave site (CA-LAN-2242) once comprised a cache of work tools and food, but was found to have been almost entirely looted at some point in the past; a second rockshelter (CA-LAN-2240) was found to contain no extant evidence of prehistoric use, and thus to not constitute a cultural resource. Finally, a small site (CA-LAN-2241) discovered in a disturbed, graded area was determined to no longer contain any extant, intact deposit or remains. Final recommendations for the management of each of these sites are presented.

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CHAPTER 1
INTRODUCTION

1.1 Summary and Background to the Project

At the request of The Newhall Land and Farming Company, Valencia, California, Phase II archaeological test excavations and determinations of significance were conducted at sites CA-LAN-2133, -2241, -2235, -2234 -2233, -2236, -2240 and -2242, northern Los Angeles County, California (Figure 1). This project was intended to determine the size, nature and significance of these eight prehistoric archaeological sites and thereby to provide baseline data from which an assessment of potential adverse impacts to these resources could be made. These data have been employed to develop final management recommendations for the treatment of these cultural resources.

This study was conducted by W & S Consultants during August and September, 1994. David S. Whitley, Ph.D., and Joseph M. Simon served as principal investigators for the project; Robert Rechtman, Ph.D., was field director for the study; while the laboratory analyses were conducted by Tamara K. Whitley, M.A., and D.S. Whitley. Glenn Russell, Ph.D., of the UCLA Institute of Archaeology, Obsidian Hydration Laboratory, provided chronometric analyses, while Paul Bouey, Ph.D., of Geotrace,

conducted the obsidian source tracing. This report was prepared by D.S. Whitley and Simon. Richard Angulo and Anthony Angulo, representing the California Indian Foundation, served as Native American monitors for the project.

The remainder of this chapter provides environmental and cultural background to the prehistory of the region, including a summary of previous archaeological research conducted in this region; and descriptions of the eight sites considered in this study. This is followed by the field methods used at each of the sites tested during this field program, along with summaries of the field results. We then turn to an assessment of the artifact assemblages recovered from each site, and certain of the analytical conclusions derived from the study of the recovered archaeological collections. We conclude with final recommendations for each of the eight cultural resources considered during this Phase II study.

1.2 Environmental and Cultural Overview

1.21 Environmental Background & Site Descriptions

Archaeological sites CA-LAN-2133, -2241, -2235, -2234 - 2233, -2236, -2240 and -2242 are located within the West

Ranch study area which sits astride the upper Santa Clara River immediately below Castaic Junction, northwestern Los Angeles County, California (Figure 1). Although historic and recent land-use changes have altered the environment considerably from what existed during prehistoric times, at least four major plant associations probably characterized the region containing these sites during the aboriginal period. These are chaparral, coastal sage scrub, southern oak woodlands, and riparian associations (cf. Muntz 1974).

The chaparral association covers steeper slopes with poorly developed soils and xeric conditions. It includes the following species: California sagebrush (Artemisia californica), white sage (Salvia mellifera), black sage (S. apliana), purple or white-leaved sage (S. Leucophylla), California encilia (Encilia californica), California buckwheat (Eriogonum fasciculatum), chamise (Adneostoma fasciculatum), buckbruch (Ceanothus cuneatus), scrub oak (Quercus dumosa), toyon (Heteromeles arbutifolia), mountain mahogony (Cercocarpus betuloides), lemonade sumac (Rhus integrifolia) and sugar sumac (R. ovata). This is a particularly common association in the West Ranch study area.

The coastal sage scrub community is the climax community for portions of inland-coastal southern California. It is generally composed of coast buckwheat (Eriogonum cinereum) and wild

buckwheat (E. fasciculatum), along with black sage (Salvia apliana), common hazardia (Haplopappus squarrosus), prickly phlox (Leptodactylon californicum), yucca (Yucca whipplei) and California sagebrush (Artemisia californica) as major constituents.

Although both of the above plant associations were undoubtedly of subsistence importance to the aboriginal population of the region, the third association, the southern oak woodland, may have been of primary significance in the inland zones adjacent to the coastal strip. This results because of the great importance placed on the acorn as a food staple by Native Californians (Kroeber 1925), and the rarity of this resource on the coastal side of the Santa Monica Mountains. The association is characterized by the coast live oak (Quercus lobata) and the valley oak (Q. agrifolia), but also would have included various species of native grasses. Although currently restricted in distribution, this association may once have been found across much of the wide, upper reaches of Potrero Canyon and the mesas on the south side of the Santa Clara River. Currently, stands of oak woodlands are still found at higher elevations on the less precipitous ridge/hilltops on the southern side of the property.

The fourth and final plant association consists of riparian habitats, which are localized and poorly diversified woodlands

found in areas of perennial moisture. They include such species as arroyo willow (Salix lasiolepsi), mule fat (Baccharis glutinosa), willow dock (Rumex salicifolius), swamp knotweed (Polygonum coccineum), nettle (Urtica holosericea), cocklebur (Xanthium strumarium) and rabbitsfoot grass (Polypogon monspeiensis). Though this plant association is limited in distribution, it can still be considered to have had significant economic importance in aboriginal times, especially in terms of the acquisition of raw materials for items like baskets, cordage and netting. In addition to the obvious aboriginal presence of riparian habitats in the Santa Clara River valley, small riparian habitats were probably once present in some of the ephemeral drainages tributary to the valley, and in Salt Canyon on the southern side of the river.

With the exception of CA-LAN-2133, which was found during a pipeline survey in 1992 (Peck and Associates 1992), all of the sites considered during the Phase II study were first discovered during a recent Phase I survey of the West Ranch property (W & S Consultants 1994a). Six of these sites can be considered as clustering into a grouping of locales along the Santa Clara River between Potrero and San Martinez Chico Canyons, with the remaining two sites located elsewhere within the study area. At that time, they were described as follows:

CA-LAN-2133 (NLF1) - Potrero Canyon Mouth Village

The only previously discovered prehistoric archaeological site within the study area is situated on the south side of the Santa Clara River, on a river terrace approximately 500 meters northeast of the mouth of Potrero Canyon. The site appeared to cover an area about 200 meters E-W and perhaps 100 meters N-S.

The site was believed to consist of a relatively large village, as indicated by the presence of an organic midden deposit and a wide range of tool types. We noted a chert leaf-shaped (atlatl) projectile point, an Olivella shell bead, mano, basket-hopper mortar, and chert, fused shale and quartzite lithic debitage during the Phase I survey of the property (W & S Consultants 1994a). The debitage included primary, secondary and tertiary flakes. Fire-cracked rock and burnt animal bone are also present on the site. Furthermore, there are two areas within an eroded cut on the site that appeared to represent intact earth-oven features that are being exposed by erosional processes.

Based on the projectile point, which is a large atlatl or dart point, as well as the presence of the basket-hopper mortar, site CA-LAN-2133 appeared to date to the Intermediate Period, or from about 3500 to 1500 years B.P. (before present). Although the dirt road and eroded cut, noted above, have disturbed a

portion of the site, it appeared to be mostly intact and to maintain a high degree of integrity.

CA-LAN-2241 (NLF2) - Potrero Canyon Mouth #2

Immediately to the east of CA-LAN-2133, but on a separate and lower river terrace, we discovered evidence of a second archaeological site (originally given the temporary designation of NLF2). This was first encountered in a bulldozed area, alongside the existing dirt road. The site's temporal and functional relationships to CA-LAN-2133 were unclear. Based on its location on a separate landform than CA-LAN-2133, it appeared that CA-LAN-2241 warranted designation as a distinct site.

At CA-LAN-2241 we initially discovered a fragmentary steatite bowl, broken mortar and a pestle in a heavily disturbed area. Subsequently, we also found evidence of at least two separate human interments. Both burials were partial and disturbed and, in one case at least, very fragmentary and scattered. One series of fragmentary human bones was found on the groundsurface scattered across a bull-dozer scraped area immediately south of the dirt road, near where the surface artifacts were found. The second, discovered during the fieldwork, was located in the bottom of a stream channel, having apparently fallen out of the stream sidewall. There was

no evidence to suggest that any artifacts were directly associated with either of these interments as grave goods, and the strata seeming to contain the burials appeared to be artifact-free.

Mortars and pestles typically date from the Intermediate Period into more recent times in southern California, or to sometime during the last 3500 years. While the presence of these artifacts on the site, then, suggests that it may date to the same time period as CA-LAN-2133 nearby, this inference is still to be supported.

CA-LAN-2241 was found to be in very poor condition. The small terrace that it sits upon, originally perhaps 60 by 60 meters in size, is approximately 85% eroded away by arroyo cutting. The existing dirt road and recent bulldozer cut have also removed a large section of the archaeological stratum, assuming one was at one time present at this locale. We estimate that less than 15% of the original site area is still in existence.

CA-LAN-2235 (NLF3)- Chiquito Canyon Village

What appears to be a small village site was discovered on the western side of the mouth of San Martinez Chiquito Canyon (temporary designation NLF3). It is located north of Highway 126 on a low knoll; currently an occupied farm house sits on the

southern half of this knoll. We noted substantial evidence of fire-cracked rock, possible midden soil, some shell, core/cobble complex tools, a possible metate fragment, and lithic debitage at this locale, principally around the periphery of the yard containing the house. The area containing the site measures approximately 150 by 50 meters.

Construction of the house on the site has unquestionably resulted in considerable damage to its integrity. However, isolated intact portions of the deposit still were thought to be present peripheral to the house.

CA-LAN-2234 (NLF4) - Chiquito Canyon Camp #1

A relatively small site was discovered on the south side of Highway 126, immediately to the east of the San Martinez Chiquito Canyon (temporary designation NLF4). The site sits between the highway and the original railroad right-of-way, and was believed to measure approximately 100 by 100 meters in size.

Although no evidence of midden soil was found at this locale, the surface of the site contained a moderate density of lithic debitage (principally quartzite and chert primary flakes), fire-cracked rock, and two manos. A small erosional cut on the site exposed a concentration of fire-cracked rock at a depth of about

20 centimeters. Accordingly, our preliminary interpretation is that this site represents a small camp that is partly buried by natural colluvial processes.

Road construction and disking have disturbed the site to some degree however. Although no temporal diagnostics were noted on the surface of the site, it is likely that it was functionally and temporally related to the occupation of CA-LAN-2235, the larger village site located a few hundred meters to the northwest.

CA-LAN-2233 (NLF5) - Chiquito Canyon Camp #2

A second campsite (possibly a village) was located approximately 175 meters west of the mouth of San Martinez Chiquito Canyon, also on the high river terrace containing Highway 126 (temporary designation NLF5). This site is similar in many respects to CA-LAN-2234, although apparently larger and more intact. It is located on both sides of Highway 126 from the high bank of the stream to at least 100 meters north of the highway. This area includes not only the highway right-of-way, but the original SPRR line as well, which ran parallel and south of the road. Railroad and highway construction, in other words, has seriously impacted the central portion of this site. Furthermore, the site area has been farmed for many years. Thus, its current integrity can only be considered

moderate. We estimated its dimensions at about 200 meters E-W by 150 meters N-S at the time of its discovery.

The site contains a high density of surface artifacts on its southern side, and a much lower density to the north, upslope of the highway, where colluviation is burying the deposit. As at nearby CA-LAN-2234, these consist principally of debitage and fire-cracked rock. The debitage includes chert/jasper, quartzite and fused shale flakes, including primary, secondary and tertiary specimens. Manos and core-cobble complex tools were also noted north of the highway.

No evidence of midden soil was noted and, in a small erosional cut on the site, we saw no indications of a subsurface component. However, it was believed possible that subsurface material has been buried by natural colluvial processes, especially to the north of the highway, were active farming might be bringing materials downslope. Again, although no temporal diagnostics were noted on the groundsurface, it was thought likely that CA-LAN-2233 was functionally and temporally associated with the village at CA-LAN-2235.

CA-LAN-2242 (NLF8)- Martinez Grande Cave

This site is a small west-facing cave, located on the eastern side of San Martinez Grande Canyon, slightly less than one mile

north of the Santa Clara River (temporary designation NLF8). The cave measures approximately 4.5 meters deep by 3.5 meters wide, with a ceiling that is currently about 1.5 meters high. However, judging from the exposure at the cave entry, it appears that as much as half a meter of soil may be blanketing the cave floor. The wall and ceiling of the cave currently have what appears to be deeply engraved historical grafitti. At the back wall, the word "MERRY" could be identified; other unintelligible words/letters are present on the ceiling. With the exception of this grafitti, the cave appears undisturbed.

Soil in the cave consists appeared to be a fine, wind-blown sand, with no obvious evidence of an organic midden-like soil. The cave ceiling is also currently free of fire-blackening. Although this last condition may have resulted from recent wind erosion on the ceiling, there was no evidence that the cave was used as a habitation, per se, in the sense of a living area. However, two putative aboriginal artifacts in the form of worked, ancient pieces of wood, were noted on the surface of the cave, in a pack-rat nest, thus suggesting aboriginal use of the cave, probably as a cache cave.

Cache caves are common in the inland Los Angeles and Ventura Counties region (W & S Consultants 1989). In the immediate vicinity of this site (but outside of the West Ranch study area), the important cache site Bower's Cave (CA-LAN-36) was

discovered (Elsasser and Heizer 1963; Van Valkenburgh 1952). Although it is immediately apparent that this newly discovered cave does not contain a major cache of religious artifacts such as was found in Bower's Cave, it is likely that it was used for the temporary storage of utilitarian items and foodstuffs, as was common in the region, and thus is likely to contain a small quantity of buried archaeological remains.

CA-LAN-2236 (NLF6) - Grapevine Mesa Lithic Scatter

A very low density surface scatter of lithic flakes (temporary designation NLF6) was discovered on the northern end of Grapevine Mesa, where it overlooks the Santa Clara River to the north, some distance from the above described grouping of sites. We identified approximately 8 pieces of lithic debitage, spread over an area about 100 by 100 meters in size, at this locale.

Although CA-LAN-2236 had suffered minor disturbance from disking, it appeared to be essentially intact. This site apparently represents a small lithic workshop area. It was thought unlikely to contain a subsurface deposit.

CA-LAN-2240 (NLF7) - Potrero Canyon Rockshelter

On the southeastern side of the study area, in a small tributary

to Potrero Canyon, a small, dry rockshelter was located which appeared to contain evidence of prehistoric use (temporary designation NLF7). The rockshelter measured approximately 5 meters across and 2 meters in depth, with a height of about 2.5 meters. The roof of the shelter was fire-blackened and a chert flake was noted on the groundsurface immediately outside of the shelter. Although it did not appear that this shelter served for intensive occupation or use, small rockshelters and caves were frequently employed as cache locales prehistorically, as noted above. Thus, it was considered very likely that a small quantity of buried remains may be present in the aeolian deposit in this shelter.

1.22 Ethnographic Background

The Upper Santa Clara Valley region, including the West Ranch portion of the Newhall Ranch, appears to have been inhabited during the ethnographic past by an ethnolinguistic group known as the Tataviam. Some controversy exists in reference to this attribution, as the Tataviam are now extinct and were effectively so prior to the initiation of systematic anthropological studies at the turn of the century. But, based on a few existing word lists, descriptions provided by early travelers, mission placenames, and the recollections of other aboriginal informants, the Tataviam are generally accepted as

the aboriginal inhabitants of this region. Their language is believed to represent a member of the Takic branch of the Uto-Aztecan linguistic family (King and Blackburn 1976). In this sense, it was related to other Takic languages in the Los Angeles County region, such as Gabrieleño/Fernandeño of the Los Angeles Basin proper, and Kitanemuk of the Antelope Valley.

The Tataviam are thought to have inhabited the upper Santa Clara River drainage from about Piru eastwards to just beyond the Vasquez Rocks/Agua Dulce area; southwards as far as Newhall and the crests of the San Gabriel and Santa Susana Mountains; and northwards to include the middle reaches of Piru Creek, the Liebre Mountains and the southwesternmost fringe of the Antelope Valley (ibid; Kroeber 1925; Earle 1990; Johnson and Earle 1990). Their northern boundary most likely ran along the northern foothills of the Liebre Mountains (i.e., the edge of the Antelope Valley), and then crossed to the southern slopes of the Sawmill Mountains and the Sierra Pelona, extending as far east as Soledad Pass (Earle 1990:94). Ethnographically, at least, the Tataviam do not appear to have controlled the Leona Valley or areas to the north, with the Elizabeth Lake area proper a zone of uncertainty.

Known Tataviam villages during the historic period include: pi?irukung and ?akavaya, both near modem Piru; tsavayu(?u)ng, San Francisquito; etseng, kuvung and huyung, on Piru Creek

above Piru; tochonanga, near Newhall; kwarung, Elizabeth Lake; and tsawayung, near Castaic Junction. At kamulus, near modern Rancho Camulos, a mixed Chumash-Tataviam population lived (King and Blackburn 1976:535-6). Because the name kamulus is unquestionably Chumash and not Tataviam, however, the toponym has been viewed as problematical (Johnson and Earle 1990:197); that is, as not reflecting the original (Tataviam) name for this village. Regardless of original name, however, the Spanish missionary Señan, writing in 1804, indicated that the Chumash inhabitants of the village of sécpey had migrated to kamulos, accounting for this admixture (Señan 1962:15). Sécpey is of course now known as Sespe, near the modern town of Fillmore.

Culturally-speaking, the Tataviam were in most respects similar to their Fernandeño and Chumash neighbors, to the south and west, respectively (King and Blackburn 1976). In this sense, they were hunters-gatherers, with subsistence emphasizing yucca, acorns, juniper berries, sage seeds and islay. Game was also hunted, with small animals, such as rabbits/hares and rodents, probably representing more significant contributions of meat protein than larger game, such as deer.

Almost nothing is known of Tataviam social and political organization. Based on analogies with surrounding groups,

however, it can be suggested that they were organized in a series of tribelets, similar to the naciones described by Earle (1990) for the Antelope Valley, and found to be characteristic of much of California aboriginal socio-political organization (cf. Kroeber 1925). The tribelet represented an autonomous land-holding unit, minimally controlled by a head-chief or big-man. They usually included one large, 'capital' village, sometimes occupied year-around, and a series of smaller, seasonally inhabited hamlets. Whether the Tataviam may have had exogomous clans and moieties, like the Cahuilla and Serrano to the east, is unknown. However, it is estimated that the Tataviam population was less than 1000 people at the time of Euro-American contact, and that only two or three of the largest villages throughout their territory were inhabited at any given time (King and Blackburn 1976).

It is also likely that Tataviam religion followed the patterns of their surrounding neighbors. In this case, shamanism would have functioned as the central element. This posits a direct and personal relationship between each individual and the supernatural world, with this relationship enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychoto-mimetic plants, such as jimsonweed or native tobacco). Shamans, per se, who were considered individuals with an unusual degree of supernatural power, served as ritual specialists: ceremonies and rites were infrequent in occasion

and limited in type. Perhaps most importantly, shamans served as healers or curers, with the etiology of disease as well as its cure held to lie in the supernatural world. Shamans are also known to have produced the rock art of this region (Whitley 1992), which depicted the hallucinations and spirits they observed in their vision quests.

Although the Tataviam were one of the earliest groups contacted by Spanish missionaries, with a number of their villages described by members of the Portolá expedition of 1769, a general lack of information on this group exists because, by 1810, all Tataviam had been baptized at Mission San Fernando and were quickly absorbed by other groups through intermarriage. The last speaker of Tataviam died in 1916 (King and Blackburn 1976).

1.23 Archaeological Background

Archaeologically speaking, more information is available on the Upper Santa Clara River area, although here, too, less is known than for many of the surrounding regions of southern California. In general terms, the prehistory of this inland area appears to parallel that of the Santa Barbara Channel/southern California coastal zone (cf. McIntyre 1990), with William Wallace's (1955) cultural historical framework appropriate as a chronological

system of reference.

Correspondingly, the earliest evidence for human occupation of this region corresponds to Wallace's Early Millingstone Period (or, alternatively, the Early Horizon), dated from about 7000 to 4000 years before present (B.P.). This represents a period during which subsistance and adaptation are said to have emphasized the collecting and processing of hard seeds, with inland artifact assemblages, correspondingly, dominated by mullers and millingstones known as manos and metates. Evidence for an Early Millingstone occupation of the Upper Santa Clara Valley region is, admittedly, very limited, and has been found at only two sites. Both of these are located near Vasquez Rocks, with temporal attribution based on the presence of a small number of Olivella barrel beads (McIntyre 1990). Such bead types have subsequently proven unreliable temporal indicators, throwing doubt on human inhabitation of this region before about 4000 years ago. Further, recent excavations at one of these putative early locales, the Escondido Canyon Site, failed to uncover evidence for occupation prior to about 2700 years B.P. (Love 1990).

The second temporal unit in Wallace's chronology is the Intermediate Period (or Middle Horizon), dated from 3500 to 800 years B.P. It is marked by a shift to the mortar and pestle, with an increased emphasis on hunting and hunting

in artifact assemblages. Population appears to have increased during this period, with more temporary camps founded. Evidence for Intermediate Period occupation of the Upper Santa Clara Valley region is substantial, in that it has been found at a number of sites and has been based on radiocarbon, obsidian hydration and typological dating (McIntyre 1990). The Agua Dulce village complex, for example, includes occupation extending back to the Intermediate Period, at which time population of the village may have been 50 or more people (King et al n.d.). Furthermore, the Intermediate Period appears to represent a time during which a substantial exploitation of mid-altitude environments first began, with considerable use, for example, of portions of the nearby Hathaway Ranch (located to northwest of the study area) beginning at this time.

Assuming that the Upper Santa Clara River region was first significantly occupied during the Intermediate Period, as existing evidence now suggests, a parallel can be drawn with the inland Ventura County region, where a similar pattern has been identified (Whitley and Beaudry 1991), as well as possibly the Antelope Valley and western Mojave Desert (Sutton 1988a, 1988b). In all of these areas a major expansion in settlement, the establishment of large site complexes, and an increase in the range of environments exploited, appear to have occurred sometime roughly around 3000 years ago. Although most efforts to explain this expansion have focussed on very local

circumstances and events, it is increasingly clear that this was a major southern California-wide occurrence, and therefore that explanation of it must be sought at a larger level of analysis.

There is a continuity in the inland regions between the Intermediate Period and subsequent times, labelled the Late Prehistoric Period, lasting from 800 years B.P. to historic contact, at about 200 years B.P. Site complexes first occupied in the Intermediate Period continued to be inhabited, although they increased in size, with more specialized and diversified sites added to the kinds of sites present. In fact, the principal distinction between Intermediate and Late Prehistoric sites in the inland regions is a change in certain diagnostic artifact types (notably, projectile points, with a shift from spear points to bow and arrow points). This change in fact may not signify consequential changes in culture, adaptation or subsistence, although the trends begun in the Intermediate accelerate over time during the Late Prehistoric. For example, a large number of Late Prehistoric Period sites are known from the Upper Santa Clara River/Agua Dulce region (cf. McIntyre 1990), with the Agua Dulce village complex estimated to have grown to a population of 200 to 300 people around A.D. 1500 - 1600 (King et al n.d.). Sometime during this period the Tataviam can be hypothesized to have occupied this region, although it is possible that they may have appeared somewhat earlier.

However, the important point is that, during the Late Prehistoric Period, the patterns of lifeways recorded for the ethnographic period were fully in operation.

During the Historic Period, the aboriginal population appears to have dropped considerably. This, without doubt, can be attributed to the effects of missionization and its attendant relocation of the aboriginal population to centralized locales, along with the depredations of introduced Old World diseases. The Upper Santa Clara River region appears to be one of those inland zones, like the Antelope Valley to the north, that quickly and completely lost its aboriginal population. In particular, the aboriginal population from the Upper Santa Clara Valley was moved into Mission San Fernando, in the San Fernando Valley, and the area was effectively depopulated.

CHAPTER 2
FIELD METHODS

2.1 Introduction

Phase II archaeological fieldwork at sites CA-LAN-2133 (temporary designation NLF1), -2241 (NLF2), -2235 (NLF3), -2234 (NLF4), -2233 (NLF5), -2236 (NLF6), -2240 (NLF7) and -2242 (NLF8) was intended to establish the nature and significance of each site, and to thereby provide baseline data from which a determination of the ultimate disposition of these cultural resources could be made. This required the collection of a representative sample of artifacts and archaeological indicators from each of these cultural resources, the establishment of the vertical and horizontal boundaries of each cultural deposit, and an analysis of the recovered artifact assemblage from these archaeological localities.

Procedures followed in the collection of data useful for establishing the nature and significance of the sites included mapping, surface collecting of artifacts lying on the groundsurface, and test excavation of pits to establish the presence or absence of a subsurface archaeological deposit, as well as to characterize such a deposit if found to be present on the sites considered in this study. Though these procedures

were systematized so that the recovered data would be comparable between each site, as well as with previous studies in the region, the magnitude of effort varied somewhat between the sites, reflecting the field conditions specific to each locale. We discuss each of these field methods below, with details on the level of effort expended at each site provided in the subsequent chapter.

2.2 Surface Collection

In order to determine the maximum areal extent of each site, the initial field procedure was to locate, map and collect all surface remains present on the groundsurface. In order to identify all such remains, the general area of each site was walked by crew-members spaced in approximate two meter intervals. Identified artifacts and archaeological indicators were then marked with flagging tape. Surface remains found within an area of approximately 3 meters-square in size (i.e., within a circle with a one-meter radius) were treated as discrete artifact associations and collected as clusters. Transit, stadia and surveyor's chain were subsequently used to map all remains or clusters of remains, which were numbered and collected by these provenience points.

2.3 Test Excavations

Employing a procedure used at all sites tested during this Phase II project, the number and location of the test pits placed on each site were predicated on an evaluation of the very localized geomorphological conditions found to be immediately present. Specifically, recognizing that subsurface archaeological remains could only be expected in areas where depositional processes contributed to the accumulation of soils, and that areas of active degradation would not only lack subsurface deposits but would also most likely contain surface finds (if found to be present) out of original context, test pits were placed in areas where the probability of deposition was deemed highest on each site, and subsequently located to delineate any such discovered deposits. In general, such depositional areas can be said to include: toeslopes and foots of hills; swales; and areas where active rodent activity or vegetative vigor indicate soil accumulation and depth. Conversely, areas of daylighting bedrock and erosional ridges, hilltops and slopes were conceeded only a minimal amount of testing, because of the very limited likelihood that they could accumulate buried archaeological remains.

Excavation units dug on each site were designated numerically. Each unit was dug with pick, shovel and trowel in arbitrary ten

centimeter spits or levels. Spoils from each of these levels was screened through one-eighth inch mesh. All artifacts and archaeological indicators were collected and bagged by unit level. In the initial units excavated on each site, excavation was continued for approximately 50 cm beyond the apparent termination of the cultural deposit, in order to obtain a clear indication of the soils stratigraphy present. Subsequent to stratigraphic definition and profiling, excavation was continued through two culturally sterile levels (i.e., 20 centimeters), or until decomposing bedrock was encountered.

CHAPTER 3
FIELD RESULTS

3.1 Introduction

Using the procedures outlined above, Phase II fieldwork at sites CA-LAN-2133, -2241, -2235, -2234 -2233, -2236, -2240 and -2242, resulted in the collection of a substantial quantity of archaeological remains, although the recovered remains were not uniformally distributed between the eight sites. In the next chapter we discuss the recovered archaeological remains from these sites in detail, including a summary of the laboratory procedures by which these collections were processed and analyzed, a review of each site's assemblage in typological terms, and an outline of certain of the analytical concerns and conclusions these collections allow us to draw. However, prior to considering the artifact collections in specific terms, below we present a summary of the field results in a more general sense, particularly in reference to the size of the surface manifestations of each site, the presence/absence of subsurface remains, the nature of the soils present, and what these features imply about each cultural resource.

3.2 CA-LAN-2133 (NLF1)

A total of 20 excavation units were dug on CA-LAN-2133 (Figure 2). These revealed an archaeological site deposit that is relatively deep but of low density, and is variable in depth. In particular, it appears that the site is primarily a subsurface deposit buried by downslope colluviation originating on Potrero Mesa to the south. Thus, only 14 artifacts were recovered from the groundsurface, all or most of which appear to have been displaced upwards in rodent-hole backdirt piles.

Soils and stratigraphic relationships at the site are depicted in Figure 3, which represents one of the pits (Unit 19) containing a thinner section of the cultural deposit, thereby illustrating the kinds and degrees of taphonomic processes affecting the preservation of the site and its artifacts in a truncated fashion.

All stratigraphic units depicted in this profile are A Horizon (i.e., "topsoil") strata. Starting at the top with A1, there is a lens that is 20 - 25 cm thick of sandy loam that is dark brown/brown (Munsell 10 YR 4/3) in color, and contains a low density of archaeological remains. Immediately below this stratum is an abrupt contact to a thin layer designated A2. This represents a single climatological event, a mudflow, and thus consists of poorly sorted but bedded coarse sands and pebbles. It is light yellowish brown in color (10 YR 6/4), averages about

5 cm in thickness, and is effectively devoid of archaeological remains. The contact between A2 and A3, below it, is irregular and abrupt, suggesting that the surface of layer A3 may have been stripped before A2 was deposited. Stratum A3 is also silty loam, but in this case a dark greyish brown (10 YR 4/2). It is approximately 10 to 15 cm in thickness, and represents the primary archaeological deposit. At about 40 cm in depth, there is a gradual contact with the A4 stratum, which is brown/dark brown in color (10 YR 4/3). In Unit 19, this stratum was about 20 cm thick. While artifacts are present within it, these appear to have moved downwards due to krotovinas (rodent burrows), which extend from the A4 base upwards to the modern ground-level. Although not depicted on Figure 3, stratum A5 lies below A4, and consists of an indurated yellowish brown (10 YR 4/4) clayey loam. It is entirely culturally sterile.

Thus, the soils at CA-LAN-2133 may be conceptually understood as comprising: 1 - a layer of topsoil (A1) that has a low density of archaeological remains that have been brought up from a stratum below; 2 - a primary archaeological deposit (A3) that varies between roughly 20 and 40 cm in thickness; and 3 - a lower lying layer (A4) that contains artifacts derived from the layer above.

Two taphonomic factors are important to emphasize with

reference to this soil profile at CA-LAN-2133. The first is the large number of krotovinas on the site, a circumstance very typical of local sites. These apparently are responsible for moving archaeological remains out of the primary cultural stratum (A3) down into A4, as well as up to A1 and the groundsurface. Furthermore and secondly, these burrows are particularly heavily concentrated in the A4 stratum near the contact with A5. This is due to the change in bulk density of the soil at this contact with the underlying, more indurated lower stratum, resulting in an accumulation of horizontal rather than vertical subterranean chambers near the A4/A5 contact. From an archaeological perspective, however, the important point is that dead rodents tend to die and to be "deposited" in these lower horizontal burrows. This yields an accumulation of clearly naturally-deposited, small mammal bones at or near the contact with the more indurated soils. We discuss the general taphonomic problems in the interpretation of mammal bones from these sites subsequently; here it is simply appropriate to note that an increase in small mammal bones occurs at the lower levels of the site due to natural and not cultural factors.

The subsurface deposit at CA-LAN-2133, accordingly, can best be characterized as a buried cultural lens (A3) that varies between 40 - 50 cm in thickness in the center of the site, to 20 cm or less on the site edges. As is typical in sites in the

region, archaeological materials from this primary cultural lens have been moved downwards into the lower (A4) soils by rodent activities and, inasmuch as the primary cultural deposit is capped by higher materials (A1 and A2), also upwards to the groundsurface.

This subsurface deposit, per se, is centered in an area approximately midway between the E-W dirt road and the edge of the river terrace at the north of the site, and between a large bulldozer cut on the west side of the site and an eastern sloping edge of the terrace that trends towards neighboring site CA-LAN-2241. In the center of the site the lower limits of the A4 stratum varies from 100 to 130 cm in depth. However, the deposits thin laterally outwards from this central area, resulting in an archaeological deposit that is progressively shallower, but still blanketed by overburden, as one moves outwards. Although the site is elliptical in shape, overall dimensions of the site are 70 m N-S by 165 m E-W, for a site area of approximately 11,550 m^2.

Disturbance to this site deposit, then, is of two kinds. As detailed above, rodent disturbance has impacted the stratigraphic integrity of the deposit, spreading cultural remains both up and down the profile. This activity also accounts for the the apparent absence of intact features in the site: although hearths and housepit floors would be expected in

campsites such as CA-LAN-2133, no evidence of intact subsurface features of any kind was uncovered. Second, the westernmost and southern sides of the site have been bulldozed; in the first instance, by the implacement of a pipeline and cow-path leading down to the Santa Clara River and, in the second, by the graded dirt road that traverses the site. Thus, the current integrity of CA-LAN-2133 must be considered no better than moderate.

3.3 CA-LAN-2241 (NLF2)

At the nearby site of CA-LAN-2241 a considerably different picture emerged during the fieldwork. As noted above, surface artifacts and two concentrations of human remains were encountered on the groundsurface of this site during our fieldwork. Inspector Nils Linder of the Los Angeles County Coroner's Office was notified of these human remains, while consultation with and monitoring by the California Indian Council Foundation occurred during the fieldwork, to determine the initial treatment of the human remains.

Mapping and surface collection on the site resulted in the recovery of a very small artifact assemblage, consisting of only six artifacts. These were entirely derived from the disturbed portions of the site: the roadway, the windrow alongside it, and

the bulldozed area to the south of the road. No surface artifacts or other archaeological indicators of any kind could be found on the small portions of intact ground on the site.

In addition to the mapping and collection of the groundsurface remains, four test units were excavated at CA-LAN-2241 (Figure 4). Because all of the surface archaeological remains from CA-LAN-2241 were found in heavily disturbed areas, and because road grading and run-off from Potrero Mesa have removed most of the original groundsurface in the site area, testing was concentrated in the three small portions of the site still containing original groundsurface. Each of the units was excavated by 10 cm level to a minimum depth of 50 cm; Units 1 and 3 were dug to 75 and 60 cm depth, respectively. Soils in each unit were a light yellow brown sandy colluvium. All of the units were entirely culturally sterile, indicating that no subsurface archaeological deposit is present at this site.

The human remains were found in two very different contexts. Burial #1 consists of a few heavily weathered and fragmentary pieces of a human cranium, humerus, femur and radius, found on the groundsurface of a bull-dozed area south of the dirt road. These were collected during the fieldwork for laboratory analysis and eventual re-interment, as requested by the California Indian Council Foundation.

All of the human remains from Burial #1 are apparently derived from an adult, but they are too fragmentary to age to any more specific degree, or to sex or to identify pathologies. The location in which Burial #1 was found corresponds to the area in which a number of the surface artifacts were also found. Based on the weathered nature of the human bones, their discovery in an area of obvious bulldozer disturbance, and the absence of any subsurface archaeological deposit in this location, they apparently were secondarily-deposited during the bulldozer activity, along with the surface artifacts from this same locale. That is, Burial #1 at CA-LAN-2241 consists of a highly disturbed, fragmentary interment in a secondary context. Given the absence of any extant subsurface remains at CA-LAN-2241 or surface artifacts in undisturbed groundsurface contexts, it is likely that this burial and the artifacts found near it on the site derive from an archaeological deposit that was destroyed during grading. That is, we believe that there is no longer an extant archaeological deposit at this site.

Burial #2, in contrast, provides a different and somewhat more ambiguous picture. It was found at the bottom of a steeply-sided arroyo (tributary to the Santa Clara River) that runs north-south along the presumed western side of CA-LAN-2241. At the time of discovery, it had apparently fallen out of the sidewall of this arroyo in a slope failure. A preliminary evaluation of it suggested that it comprised a fairly complete,

albeit obviously disturbed, human burial, that had fallen out of the upper portion of the arroyo sidewall. However, prior to a complete exposure and recording of it, a second slope failure occurred, burying this interment with many cubic yards of soil.

Extensive efforts were made to uncover and then to stabilize Burial #2 because, given its location on the bottom of the arroyo, it is clear that it eventually will be destroyed by natural stream action. However, the second slope failure proved to be very substantial, completely stymieing our efforts to uncover the burial. Thus, Burial #2 is still present on the site and, although it is currently buried by a considerable number of yards of soil from the slope failure, it is nonetheless apparent that natural stream erosion in the arroyo (which was ultimately responsible for both slope failures) will result in its eventual destruction.

At this point and given the above data, any interpretation of this burial must be considered very preliminary. The excavation of two of the test pits (Units #1 and 2) above the arroyo in the immediate area where the burial is presumed to be derived failed to find any evidence for subsurface archaeological remains. Thus, it is possible that Burial #2 represents an isolated prehistoric interment that is currently buried in the bottom of an arroyo by a slope failure. Alternatively, it is also possible that the burial is not an aboriginal interment at all,

but instead represents a victim of the 1928 San Francisquito Flood disaster, which caused the death of over 400 people, many of whose bodies were never recovered (Outland 1963). Although such a scenario might seem far-fetched, we have observed buried modern cow bones lying under five to six feet of alluvial overburden at about the same elevation on the same side of the Santa Clara River; it is known that a 300 feet wall of water inundated Castaic Junction, not far upstream from the site, during the flood; and a major wall of water was trapped slightly downstream from the site at Blue Cut (now known as 40 Mile Curve), causing a massive whirlpool that resulted in the loss of 84 men's lives who were, at that time, living in an Edison work camp along the river (ibid:106-107). Furthermore, our test excavations in the landform from which this burial presumably was derived indicate that soils at this spot are alluvial overbank deposits; that is, flood deposits.

In summary, then, our best estimate of CA-LAN-2241 is that it was once a small site that has been destroyed by road grading, bulldozer activities and natural erosion. With the exception of Burial #2, all archaeological remains from the site, which consisted entirely of disturbed surface remains, were collected during the Phase II test. Burial #2, although now heavily disturbed by natural erosional activities, is still present within the general confines of the site area. Most likely, it represents another prehistoric human burial from the site that will

eventually be destroyed if left in its current context. Alternatively, it may represent a modern flood victim that only coincidentally was laid to rest in the area of a prehistoric archaeological site.

Given the current destroyed status of CA-LAN-2241, then, it is impossible to estimate its original size. However, it is possible to infer that, in its original condition, it must have been very small, probably no more than 20 meters in diameter. This inference is based on the simple fact that the area within which the site was located is itself a small and narrow arroyo mouth, with the site presumably having originally sat on one of the arroyo terraces found therein. Further, the presence of only a very small quantity of disturbed artifacts supports the interpretation that this site was once quite small in size. In fact, it is possible that CA-LAN-2241 originally consisted simply of two human burials, both of which were disturbed over the years.

3.4 CA-LAN-2235 (NLF3)

Field conditions were, likewise, considerably different at CA-LAN-2235 than at the previous two sites, based on the obvious presence of a modern house, with its attendant utility system and ornamental vegetation, in the approximate middle of the

site, along with a paved road on its presumed southern and western sides. Fourteen test pits were excavated on the site (Figure 5) and, during the mapping and surface collection, 14 surface artifacts were collected. These procedures revealed the presence of a low density subsurface archaeological deposit. As at CA-LAN-2133, this deposit was variable in depth, in this case with greatest cultural depth at the southern end of the low knoll containing the site, thinning laterally towards the north and towards the sides.

The stratigraphic relationships at the site are revealed in Figure 6, which provides a profile of Unit 11, the deepest pit at CA-LAN-2235. As is evident in this profile, three A horizon strata are present at this site. The A1 or top 20 cm of the site is a plow zone and root layer, which has been heavily disturbed by disking and vegetation. Soil in this stratum is silty loam that is dark greyish brown (10 YR 4/2). Below A1, with a thickness of about 50 cm, is A2, also a silty loam but brown/dark brown in color (10 YR 4/3). This is the primary archaeological deposit on CA-LAN-2235. The A3 stratum, a sandy loam that is dark yellowish brown (10 YR 4/4), lies below A2. There is a gradual and diffuse contact between these two soil units; this contact is itself approximately 20 cm thick, lying between 70 and 90 cm in depth. Although artifacts are present in this gradual contact zone, these appear to have been moved into this lower contact zone by rodent activity, as

krotovinas are common in the A1, A2 and A3 strata.

Thus, the intact subsurface archaeological deposit at CA-LAN-2235 consists of a primary deposit that ranges from about 20 cm in thickness, at the northern end of the site, to approximately 50 cm in depth at the south. Above this primary deposit, the top 20 cm across the site has been heavily disturbed by disking. Additional disturbance has occurred at the base of the deposit, where rodent activity has moved archaeological materials deeper down the profile from the primary deposit, in some cases 20 cm or more.

As implied above, the size of CA-LAN-2235 is effectively defined by a paved dirt road on the southern and western side of the low knoll, and by the edge of the San Martinez Chico arroyo to the east. Dimensions north-south extend from the toeslope of the knoll (at the paved road) northwards up the elongated knoll about midway through the dirt lot north of the existing house on the site. Thus, the site covers an area 100 m NW-SE and 50 m SW-NE, for a total of 5000 m^2.

Note, however, that within this total site area considerable disturbance has occurred which has greatly reduced the extant area of intact site. The house and driveway, for example, cover approximately 600 m^2, or ~12% of the site area. These have effectively destroyed all vestiges of the archaeological deposit

that was once under them. Furthermore, during the excavation of Unit 6, the northern edge of a modern gravel leach field was encountered. This extended from 40 to 60 cm in depth. Although the archaeological deposit was 70 cm deep itself at this spot, the presence of a 20 cm gravel layer between 40 and 60 cm in depth here indicates that everything above 60 was at one point excavated out, the gravel was then spread within the leach field, and topsoil was placed on top of the gravel. That is, for all intents and purposes the archaeological deposit in the area of the leach field was also effectively destroyed, thus expanding the area of complete archaeological deposit destruction northwards from the house another 20 meters.

Based on the above figures, then, we can calculate that approximately 24% of CA-LAN-2235 has been completely destroyed by house and leach field construction, while the remaining portions of the site have been impacted by the rodent disturbance that is typical in the region, as well as by disking and horticultural modifications associated with a modern residence.

In summary, CA-LAN-2235 was found to have a primary, intact subsurface archaeological deposit ranging from 20 to approximately 50 cm in thickness; the 20 cm above this primary deposit has been disturbed by disking. Furthermore, although the site covers an area 5000 m^2 in size, construction within

this area has reduced this figure by roughly 24%, leaving about 3800 m^2 of intact deposit. Given these circumstances, CA-LAN-2235 can be considered to be highly disturbed; that is, in very poor condition.

3.5 CA-LAN-2234 (NLF4)

Surface collection and the excavation of nine test pits (Figure 7) were completed on CA-LAN-2234. These resulted in the recovery of seven surface specimens and a small quantity of subsurface archaeological remains. However, based on our excavations and on subsequent discussions with members of the Newhall Land and Farming Company agricultural division staff, subsurface soil conditions at the site proved to be complex, and indicated that the site had a relatively involved depositional history.

In order to fully understand the circumstances at this site, it is important to note that it sits immediately east of the San Martinez Chico arroyo; soils on the site, thus, are all alluvial overbank deposits. Within the approximate center of the site there is currently a large, mature oak. To the dripline of this oak the groundsurface is intact and undisturbed by disking or other modern activities. However, it is apparent that the tree

actually sits on the western bank of a small drainage, a fact that is masked by artificially elevated and recently disked soils around this island of undisturbed soil. That is, soils around the oak are essentially level in all directions, indicating at a minimum that soils had been brought in and placed southeast of the oak to fill-in the small drainage upon whose side this tree sits.

Excavation units in the disked soils on the site resulted in the recovery of very low densities of artifacts; typically on the order of one or two pieces of chipping waste per 10 cm level, extending in most cases to about 30 cm, but in two units to 60 cm. However, the distribution of the units containing different depths of cultural remains proved to follow no discernible pattern, as should occur in all subsurface deposits; instead, the depth distribution of cultural remains was completely random rather than, for example, having a deep deposit at one locale with a progressively thinner cultural deposit outwards from this deepest locale, which is the normal depositional pattern. Moreover, within the island of undisturbed soil in the middle of the site, no artifacts of any kind were encountered. That is, precisely where the most intact cultural deposit would be expected under normal site conditions, no archaeological remains of any kind were found. Based on the visibly identifiable artificial elevation of soils around the island containing the oak, the random depth distribution of cultural

materials, and the absence of cultural materials within the undisturbed island area, we inferred that the soils containing the site might be introduced fill derived from a nearby archaeological site.

Such an inference was verified by the agricultural staff of Newhall Land and Farming Company, who stated that the soils containing the artifacts at this "site" in fact had been borrowed from the area of CA-LAN-2233, to the west of the Martinez Chico arroyo and south of Highway 126, about 10 years previously, and were spread in their current location for erosion control. That is, CA-LAN-2234 in fact proved to not be an archaeological site, in the sense of an intact deposit of cultural remains, but instead represents a small quantity of out-of-context, highly disturbed artifacts that were moved from their original locations some years earlier. Given the extremely low density of artifacts recovered from the introduced fill, it appears that the portion of the nearby site of CA-LAN-2233 that was graded for this erosion control was a primarily a periperhal surface deposit.

Thus, CA-LAN-2234 entirely lacks integrity and, as a secondary deposit of introduced fill containing artifacts, is rightly not an archaeological site in the proper sense of the word. Any estimation of site size or depth, therefore, would be meaningless.

3.6 CA-LAN-2233 (NLF5)

Thirteen test pits were excavated on this site (Figure 8), which straddles Highway 126. Three of the test pits (Units #1 - 3) were placed south of the highway; the remainder (Units #4 - 13) were excavated to the north in an agricultural field extending towards CA-LAN-2235. Site conditions proved to be distinct between the southern and northern portions of the site; accordingly, we discuss each of these areas in turn.

That section of CA-LAN-2233 south of Highway 126 represents a relatively narrow portion of the lower terrace immediately overlooking the Santa Clara River, and appears to have been heavily impacted by various modern construction activities. In addition to the highway itself, which rests upon a large bed of fill where it crosses the southern section of CA-LAN-2233 (thus burying portions of the site), this southern section also includes the old railroad right-of-way and a dirt road alongside the former rail tracks. Furthermore, as noted above, the eastern end of this southern site area served as a borrow pit for fill dumped on nearby CA-LAN-2234. The southern section of the site, finally, has been cultivated, and thus has been disked and plowed for an unknown number of years. In short, there is ample evidence of considerable disturbance in this portion of

CA-LAN-2233.

That said, it is nonetheless true that surface artifacts are readily exposed on the ground in this portion of the site, indicating presumably that little in the way of colluviation has occurred here that would bury the surface expression of the site. Surface collecting undertaken in this portion of CA-LAN-2233 resulted in the recovery of 14 archaeological specimens.

The three test units excavated in the southern site area also yielded a very small assemblage of archaeological remains. However, all of these specimens were concentrated in alluvial overbank deposits in the top three levels of these units; that is, within the plow and disk zone, with no archaeological materials present below this zone of mechanical disturbance, and with no indication that a true subsurface archaeological deposit was present in this portion of the site. Accordingly, the handful of lithic waste flakes found during the excavations in this southern portion of the site clearly represent surface materials that were introduced into the subsurface by agricultural activities.

The southern section of CA-LAN-2233, thus, represents a small surface lithic scatter that has been heavily disturbed by the construction and then demolition and removal of a railroad track, by the grading of a dirt road, by the borrowing of topsoil,

by disking and plowing, and by the construction of Highway 126 over it. Most likely, this southern portion of CA-LAN-2233 once served as a peripheral activity area associated with the larger section of the site to the north. Our fieldwork on the southern site area, however, resulted in the collection of all extant surface artifacts in this area.

Although their geomorphological relationships are now slightly obscured by Highway 126, the northern portion of CA-LAN-2233 sits on what was once a higher terrace slightly northeast of the southern section of the site. Historically the northern portion of the site was a walnut orchard; for at least a dozen years it has been actively farmed with row crops. These activities have accelerated colluvial movement from the northern end of this terrace to the southern end, now truncated by the highway. The result is a buried subsurface archaeological deposit which thickens towards the south, and with surface expressions limited to very occassional evidence brought up in rodent back-dirt piles, by plowing, or perhaps by stump removal when the walnut orchard was cut-down and its remnants removed.

Ten test pits were dug in the northern portion of CA-LAN-2233 (Figure 8). These revealed the presence of a deep but very low density archaeological deposit. In one unit (#8) this deposit extended to a depth of 200 cm; average depth, however, was about 140 cm, with lateral thinning towards the edges of the

site, especially from south to north.

The nature of this deposit is best revealed with reference to a representative soil profile, as illustrated by Figure 9, which depicts the west wall of Unit 5. There are three pertinent soil horizons in this profile. Stratum A1 is the plow and disk zone, which extends from a minimum of 20 to a maximum of 30 cm below the modern groundsurface. A1 soil is silty loam that is yellow brown in color (10 YR 4/4). There is an abrupt but irregular contact between the A1 and underlying A2 strata. In some units (though not present in Unit 5 and not depicted in Figure 9), a stone line was found at the base of the plow zone, reflecting the settling of heavier materials at the bottom of this highly disturbed layer.

A2, which is the primary cultural deposit on the site, extends from the irregular contact with A1 to about 100 cm in depth in Unit 5; in some units it is considerably deeper. A2 is also silty loam but it is dark brown (10 YR 3/3) in color. This stratum has been disturbed by both krotovinas and by walnut tree roots; although the orchard was removed a number of years ago, large root casts were still noticeable in many of the test pits. Furthermore, certain of the units (particularly Unit 4) displayed no intact A2 stratum; instead, a heavily mixed deposit of A2 and A3 soils was found where intact A2 stratum should have been located. Although these mixed A2/A3 horizon areas

contained artifacts, we assume they result from former tree stump locations on the site. Removals of these stumps would have mixed the soils from these two strata and, of course, artifacts would be left within these disturbed areas, although they are now out-of-context and lack any archaeological integrity.

The contact between A2 and A3 is gradual and diffuse. A3 proper, however, is a pale brown sandy loam (10 YR 6/3), and is culturally sterile.

Although there are small numbers of artifacts throughout the A2 stratum (including a few in A1), the majority tend to be concentrated in the lower half of the A2 horizon in most units. For example, in Unit 8 only 23% of the lithic artifacts (tools and debitage) were found between 0 and 100 cm depth; 78%, in contrast, were recovered between 100 and 170 cm. Similarly, in Unit 8, these proportions are 26% and 74%. That is, the lower portion of the deposit contained three times as many lithic specimens as the upper portion, even though the lower section is only about two-thirds as thick as its upper counterpart.

Although this circumstance may be partly attributable to the downward movements of artifacts in a disturbed profile, we suspect that it also reflects the fact that the major and more intensive portion of the occupation of the site occurred during

its earlier period. That is, rodent, walnut orchard and plowing have clearly moved archaeological remains both up and down within the profile, and colluviation on the site has been quite rapid, leading to a thick soil profile. Nonetheless, there appears to be a sufficiently strong pattern of concentration towards the base of the A2 cultural deposit to suggest that the site was most intensely occupied early in its history.

One other aspect of the excavation of the northern portion of CA-LAN-2233 warrants mention at this time. This was the discovery of a human burial in Unit 6 between 80 and 100 cm depth. Inspector Nils Linder of the Los Angeles County Coroner's Office was notified of this discovery, while the California Indian Council Foundation was consulted with regards to its disposition, and provided monitoring services during its exposure and recording. At the request of this last group, it was decided to expose and record as much of the burial as possible, but to leave it in place and thus re-bury it in-situ.

The cranium of this burial was found protruding out of the south wall of Unit 6 at ~80 cm depth. A window was cut into the sidewall of this unit to expose as much as was feasible of this burial; this allowed us to examine and record portions of the cranium and the left radius and ulna. The burial was well preserved and, we believe, largely intact, although we cannot be certain of this fact given our limited and partial exposure of it.

Based on our observed evidence, we have inferred that it is a prone burial, facing west, with the body extending north-south. No grave goods were observed associated with the portion of the burial that was exposed.

Based on this partial exposure, it was apparent that the cranium, frontal, parietal, temporal, zygomatic and occipital portions of the skull were present. A fragmentary left radius and ulna were also observed. All observed bones were gracile and clearly adult. Although speculative, it thus appears that the burial may represent a female. No pathologies could be observed on the very few bones that were exposed.

In addition to the in-situ human bones, some small human bone fragments were also found in the 70 - 80 cm level of the unit. These include a fragmentary foot phalange and a few small pieces of rib bone. Furthermore, a highly worn lateral incisor was recovered in the 20 - 30 cm level of this unit. It is very common for smaller bones to get displaced from an in-situ burial, being moved by rodent activities and root disturbance. These small, out of context fragments apparently represent such occurrences. These bones were likewise re-buried with the in-situ burial when the unit was back-filled.

it is important to note that Unit 6 was placed on the southernmost edge of the northern portion of CA-LAN-2233;

specifically, immediately adjacent to a small dirt frontage road that runs along Highway 126. Subsequent to the testing of this site, it was determined that the exact location of this unit falls within the highway right-of-way; that is, outside of the project area, per se.

In summary, CA-LAN-2233 can be considered to consist of two discrete sections. The southern section, south of Highway 126, originally consisted of a surface lithic scatter on the periphery of the site. Mapping and collecting at this location resulted in the recovery of all extant surface remains present there, but disturbance within this southern portion of the site has been so extreme that it is currently impossible to obtain any meaningful estimate of its original extent. The northern portion of the site, to the north of Highway 126, consists of a subsurface deposit that averages 140 cm in depth. Although this portion of the site was found to contain a human burial, this apparently is located outside of the project area, per se, in the highway right-of-way.

The extant subsurface deposit within the northern portion of CA-LAN-2233 currently covers an area of 150 m N-S by 60 m E-W, or 9000 m^2. Originally the site undoubtedly was longer but the construction of Highway 126 has truncated the deposit to the south. This deposit is in moderate condition: in addition to its southern truncation, it has suffered from rodent disturbance

typical for sites in the area but, more importantly, it has been impacted by the existence of a historical orchard on the site. In certain areas, this has resulted in a heavy mixing of the site deposit with culturally sterile soils, thus leaving the artifacts out of original context and therefore lacking integrity.

3.7 CA-LAN-2236 (NLF6)

Mapping, surface collection and subsurface testing at CA-LAN-2236 included the excavation of two test pits (Figure 10) and the recovery of four lithic waste flakes on the groundsurface of the site. The test pits revealed the presence of a thin layer of silty loam topsoil (very pale brown, 10 YR 7/3 in color), which graded between 15 and 20 cm to a more indurated sandy loam (brown, 10 YR 5/3). Two flakes were recovered from the top few centimeters of Unit 1; otherwise the subsurface was entirely culturally sterile.

Because the site area had been disked, it is apparent that CA-LAN-2236 consisted of a small, very low density surface lithic scatter which has had a few pieces of lithic chipping waste introduced a few centimeters into the soil by disking. It measured approximately 20 m E-W by 15 m N-S, or 300 m^2, for an extremely low surface artifact density of one flake per 75 m^2. Phase II testing at this locale resulted in the recovery of

effectively all extant remains from this small surface site.

3.8 CA-LAN-2240 (NLF7)

This site is a small rockshelter, measuring 5 m E-W, 2.5 m N-S and 2.25 m in maximum height, located along upper Portero Canyon, and thus some distance from the Santa Clara River, as well as from all other sites discovered within the study area. When first located, this locale was inferred to be an archaeological site based on the presence of fire-blackening on the ceiling (typically, indicating that fires have burned within the cave), the presence of a single chert flake on the groundsurface immediately outside of the cave mouth, and the fact that the vast majority of caves and rockshelters in this region served as caches for prehistoric remains, even if they do not manifest visible surface evidence of archaeological specimens (W & S Consultants 1989a).

Phase II testing at CA-LAN-2240, however, proved that it was the exception to this rule. Two test pits were dug within this rockshelter (Figure 11). These demonstrated that the soils are very shallow within the rockshelter, consisting of fine aeolian sands, which were entirely culturally sterile. That is, the excavation of both units failed to result in the recovery of any archaeological remains from this locale. Furthermore, the

single isolated chert flake found outside of the mouth of the shelter could not be relocated; most likely, it had eroded down slope as a result of rains or windstorms.

Thus, CA-LAN-2240, is apparently not an archaeological site but instead a natural rockshelter with no extant evidence of prehistoric use. Fire-blackening on the ceiling, accordingly, may have been caused by the burning of naturally accumulated brush (such as packrat wood piles) in the shelter during a wildfire in the region, or by prehistoric peoples who used the shelter but left no extant artifactual remains from such use.

3.9 CA-LAN-2242 (NLF8)

Archaeological site CA-LAN-2242 likewise is a small cave. Unlike CA-LAN-2240, however, it is located in San Martinez Grande Canyon near the Santa Clara River and the other sites considered during this study. Furthermore, it was found to contain significant evidence of prehistoric use.

Eight test pits were placed within this cave (Figure 12), which measures 3.5 m N-S, 4.25 m E-W, 1.5 m in height, and with an opening 2.75 m across. Only four of these units, however, were a full 1x1 m in size; the remainder were smaller portions of meter squares configured to correspond to the irregular

dimensions of the cave walls. Each unit was excavated to bedrock, which varied from a few to approximately 30 cm in depth. Soils within the cave proved to be fine aeolian sand, with one exception: at the front of the cave near the drip-line, a small deposit of light brown soil, extending from the groundsurface to bedrock, was encountered. This consists of the aeolian sands enriched by organics. Contact between this brown sand and the clean aeolian sand in the interior of the cave was essentially vertical. A series of artifacts and archaeological specimens were recovered from within this relatively small section of brown sand. These included bone tools, a steatite arrow shaft straightener, shell beads, asphaltum bearing impressions of baskets, and a small quantity of faunal remains. In addition, modern remains (such as wooden matchsticks and pieces of plastic sheeting) were also found in the deposit, including essentially resting on bedrock. These modern specimens, however, were found in the clean aeolian sands towards the back of the cave, not in the organically enriched brown sands at the front.

Although we discuss the artifact assemblage from this site subsequently, a few comments are in order to explain this collection. First, the nature of this prehistoric assemblage is such that it is clearly a cache of work tools and other items; that is, it is not a sample of artifacts and remains that would result from an occupation of the cave, nor is it a cache of

ceremonial or religious artifacts. Second, the distinctive transition between the clean aeolian sands, in the interior of the cave, which contain modern artifacts, and the organically enriched sand at the front containing the prehistoric remains, is important in terms of understanding the status of the cave. It is apparent that the interior of the cave has been entirely looted, and that the accumulation of clean sands in the back of the cave has occurred since this looting event. The few remaining artifacts found at the front of the cave in the intact deposit, in contrast, appear to represent the remnants left behind by the looters. This inference is substantiated, third, when historical background on cache caves in this immediate area is considered.

Cache caves are common in the region (W & S Consultants 1989a). The most famous of these is Bowers' Cave (CA-LAN-36), which is located about one mile away from CA-LAN-2242 near Val Verde. It was discovered before the turn of the century by two local teen-agers, the Pyle Brothers, who lived at Mud Springs in Hasley Canyon, and was found to contain a wealth of ritual items: ceremonial wands, feather sashes and skirts, bullroarers, and baskets. Because of the rarity of these items, they were purchased by the Rev. Steven Bowers (hence "Bowers' Cave"), a Ventura resident, who subsequently sold most of the artifacts to the Peabody Museum at Harvard University. Bowers is known to have paid the Pyle brothers

$1800.00 for the artifacts which, prior to the turn of the century, would have been considered a very substantial sum of money (Van Valkenburgh 1952; Elsasser and Heizer 1963).

The end result of the discovery and sale of the Bowers' Cave artifacts was, apparently, a systematic search for and looting of local caves. (Among other evidence, oral history in the Fillmore-Piru area indicates that at least one additional ceremonial cache cave was ultimately discovered by the brothers, but in this case at a now unknown location in Piru Canyon. One of the ceremonial sashes obtained at this Piru Canyon cave is displayed in Harry Lechler's Piru museum). Given the proximity of CA-LAN-2242 to Bowers' Cave as well as the Pyle Ranch, the visibility of the site from the canyon bottom, and the interest in cave looting generated by the Bowers' Cave artifact sale, it would have required miraculous circumstances for CA-LAN-2242 to have survived intact.

CA-LAN-2242, accordingly, appears to have originally comprised a cave used to cache tools and storage baskets. For all intents and purposes, however, it was effectively destroyed by looters, most likely before the start of this century. Our Phase II testing at the site removed the last few remnants of archaeological remains that were once present at this locale.

CHAPTER 4
ARTIFACT ASSEMBLAGE AND ANALYTICAL CONCERNS

4.0 Introduction

Although the general patterns of artifact distributions, enumerated in the previous chapter, provide important information relative to the size and nature of the archaeological sites considered in this Phase II study, proper determination of the significance and scientific importance of these resources can only be obtained with a more intensive analysis of the recovered artifact assemblages. Accordingly, in this chapter we consider these assemblages in some analytical detail, and what they imply about each of the sites as well as aspects of the prehistory of the region. We begin by detailing the laboratory procedures followed in the processing and curation of the recovered remains. Subsequently we outline the taxonomic system employed to categorize and classify each site's collection. This is followed by a typological summary of the artifacts and archaeological indicators recovered from each site. Finally, we consider the scientific importance of these remains in slightly larger comparative terms. This places them in a regional perspective, and informs an understanding of their probable functions and chronological positions.

4.1 Laboratory Procedures

Following the completion of the Phase II fieldwork at CA-LAN-2133, -2241, -2235, -2234 -2233, -2236, and -2242, the recovered artifact assemblages were taken to the W & S Consultants' laboratory for washing, processing and analysis. (Note that no artifact collection was obtained at CA-LAN-2240, which proved to not to contain any extant archaeological remains, and thus it is not considered in this chapter). After each specimen was washed and labelled, metrical and typological analyses were performed. We provide measurements and weights for the various artifacts and archaeological indicators in the respective site catalogs (Tables 1 - 7) included in this report. In order to facilitate typological comparisons between these sites, as well as to other similar sites from this same region, we have employed a standardized taxonomic system. We describe this classificatory system in some detail below.

4.12 Taxonomic Considerations

In considering the artifacts recovered from the Phase II investigations at CA-LAN-2133, -2241, -2235, -2234 -2233, -2236, and -2242, we employ a morphological stone tool typology first published by Whitley et al (1979) and now widely

used in the region. This affords a number of advantages. First, because of its widespread use (e.g., Johnson 1979; W and S Consultants 1984, 1989a, 1989b) it permits easy comparability between existing studies. Second, because it is morphologically rather than functionally based, it provides greater objectivity in taxonomic assignments. Specifically, it avoids the dangers inherent in inferring dubious functional purposes for stone tools that may have had multiple uses, and that often exhibit little in the way of formal attributes. In the inland southern California region, in particular, it is increasingly clear that most sites are characterized by expediant or casual tool assemblages, probably reflecting the fact that the sites resulted from dispersal phase activities that little emphasized formal patterns of behavior (W & S Consultants 1989b). Thus, a typology based on the elucidation of tool manufacturing stages, rather than one assuming final function of the implements, stands less chance of leading interpretations astray. However, this is not to imply that functional interpretations are unwarranted or undesired. Such is not the case; instead, it is simply to emphasize that functional interpretations must be made somewhat independent of - and therefore including other lines of evidence from - the typological assignments alone.

The morphological typology employed here is based on four major categories of stone artifacts (cf. Whitley et al 1979). These are: (i) groundstone implements; (ii) core/cobble tools;

(iii) flaked stone tools; and (iv) tool manufacturing waste, or debitage. Groundstone implements are tools that have been pecked and/or ground into shape. They include manos (or mullers) and metates (or basal grinding slabs), along with mortars, pestles, stone bowls and comals (or griddles). Although there is a general association between groundstone artifacts and plant grinding, pulping and processing, as in the case of manos, metates, mortars and pestles, this is not invariably so: stone bowls and comals, for example, had other uses, with certain kinds of bowls, in particular, sometimes reserved for ceremonial purposes.

Groundstone artifacts are usually (but not invariably) made of softer lithic materials. Metates, for example, are often made from sandstone or some other sedimentary material; bowls and comals are typically manufactured from steatite (soapstone or talc schist). Manos, however, were often derived directly from river cobbles of appropriate size, so that quartzite is a common material source.

Core/cobble tools are generally large, bulky implements made by the re-use and/or modification of a river cobbles and lithic cores. They include 'hammerstones', 'choppers' and 'scraper planes'. Hammerstones are usually unshaped or minimally shaped, roughly fist-sized, stones that exhibit characteristic battering and pounding scars, but often otherwise lack

modification. Choppers are cobbles or cores that have been unifacially or bifacially flaked to create a relatively sharp edge. Scraper planes are high-backed, unifacially flaked tools that are usually 'biscuit-shaped' in plan, with edge angles near perpendicular, and with heavy use-scars along their convex face.

All of these tools were apparently employed for heavy pounding, scraping and/or battering tasks. There is a frequent association of core/cobble tools with groundstone artifacts (specifically manos and metates) in the nearby Conejo Corridor region (Whitley 1979b), suggesting that the two categories may have been functionally related; that is, that core/cobble tools may have served as part of a plant acquisition and processing toolkit. This is supported in reference to the scraper planes, in particular, which are argued to represent special yucca processing tools (Kowta 1969; Salls 1985). Further, this suggests in turn that the core/cobble tools were part of a woman's plant gathering toolkit (W & S Consultants 1989b).

Flaked or chipped stone tools are secondary reductions from cores and cobbles. That is, they represent tools manufactured from flakes struck-off the primary sources of lithic materials. These flakes may be used without modification as 'utilized flakes'; they may be bifacially flaked; or they may be unifacially flaked. It is apparent that the majority of the

flaked or chipped stone tools in the region are either utilized flakes with no modification, or have edges that have been flaked unifacially or bifacially, but exhibit little or no effort for further edge modification or shape regularization (W & S Consultants 1989b). Again, this further emphasizes the casual or expediant nature of these tools, and also implies that they may have been used for a variety of tasks with little functional specialization.

Correspondingly, the majority of the chipped stone tools from this region are what we have defined as biface or uniface 'edges', and they may have been used for any number of general cutting, scraping and abrading tasks. Of course, occassional projectile points and drills represent special types of bifaces with specific and known functions, whereas biface 'knives' (large leaf or knife-shaped tools) are presumed to have been used for cutting and piercing/stabbing tasks.

Generally, chipped stone tools were made from material with particular flaking characteristics; specifically, those subject to conchoidal fracture. Crypto-crystallates such as chert and chalcedony, therefore, are common raw materials, but fused shale, quartzite, cherty-siltstone, rhyolite, andesite, basalt and occassionally obsidian may also be present in a collection. Because small hand specimens of rhyolite, andesite and basalt are, in fact, only distinguishable with petrographic analysis, we

treat them all as "fine-grained volcanics". And, as we have recently discovered (W & S Consultants 1991b), "fused sandstone", resulting from contact metamorphism between Miocene Conejo Volcanics and sedimentary beds, was also a lithic material of common use in the region. Because of its similarities to fused shale (based, of course, on similar metamorphic origins), it has often been mistaken for this latter material. This would be inconsequential, save for the assumption that the putative fused shale has its sole origins in Grimes and Happy Camp Canyons, north of Moorpark. Instead, it is apparent that a number of fused sandstone quarries are present in the nearby Conejo Corridor; that their respective lithic materials are widely mis-recognized as fused shale; and that, therefore, lithic exploitation was probably much more widely ranging than the often inferred simple exploitation of major quarries at Grimes Canyon might suggest (W & S Consultants 1991b).

The final category of stone artifacts is what can be considered lithic waste or debitage. It includes spent cores, waste flakes, and angular shatter. There are a number of different kinds of cores and flakes, and the presence of these varieties at a site tends to signify different types of tool reduction or manufacturing techniques. For example, the presence of large numbers of secondary and tertiary flakes usually indicates that chipped stone tool manufacture occurred at a locale, whereas

primary flakes alone might be associated with the making of the cruder chipped stone tools, or might be expected at quarries where only the preliminary stages of tool manufacturing were conducted. Similarly, relatively large proportions of tertiary flakes correlate with habitation/campsites, in that tool maintenance and finishing occurred at these locales. Furthermore, because different lithic materials tend to correlate with different categories of tools, the material present in the debitage collection can also be a clue to a site's function. Quartzite and other 'crude' lithic materials, for example, are often found where core/cobble tools are manufactured, whereas crypto-crystallates tend to occur where chipped stone tools are manufactured. And, in a general way, there is an association between these last materials, chipped stone artifacts, and habitation sites (W & S Consultants 1989c).

In addition to the lithic tool typology, other classes of artifacts may be present at local sites. Dietary remains, in the form of shellfish and faunal bones, are sometimes present, as are ornaments, usually in the form of shell beads. Where appropriate, based on the specifics of each recovered artifact assemblage, we consider these categories of remains below, on a site by site basis, as well.

4.2 Artifact Assemblage: CA-LAN-2133 (NLF1)

The prehistoric artifact assemblage from CA-LAN-2133 (temporary designation NLF1) consisted of a total of 815 lithic specimens (Tables 1, 8 and 9). As in most sites, this was dominated by debitage or waste flakes, representing 796 specimens, or 98% of the assemblage total. The remaining 19 formal lithic artifacts (2%) included 2 examples of core-cobble complex tools (~11%), five flaked stone tools (~26%) and 12 piece of groundstone (~63%). Other archaeological specimens include three miscellaneous artifacts and a small quantity of shellfish and bone. We discuss the categories of artifacts present on the site in turn.

Core/cobble complex tools

Core/cobble complex tools from CA-LAN-2133 (Table 8) were limited to two examples, representing 11% of the formal tool assemblage from the site. These are a Type 2A minimally modified cobble hammerstone (see Whitley et al 1979:18), made of quartzite (catalog number #2133-188); and a Type 2 meta-volcanic biface core chopper (#2133-189; ibid:15). Both artifacts were recovered at depth from the site, being derived from the 40 - 50 cm level of Unit 18 and the 50 - 60 cm level of Unit 19, respectively.

With an assemblage of only two core/cobble complex artifacts, functional inferences of any kind are, necessarily, difficult to make. However, one characteristic of this assemblage - in this case the negative evidence that it presents - appears important for archaeological interpretations. This concerns the putative importance of core/cobble complex tools, particularly hammerstones and scraper planes, in agave processing. Earth ovens used for agave roasting are quite common in the archaeological record of the Upper Santa Clara Valley in the Acton/Agua Dulce area; thus one might infer that agave constituted an important part of the diet of the inhabitants of this region. We presume that artifact assemblages from sites in the Acton area would reflect this subsistence emphasis, with significant numbers of these kinds of core/cobble artifacts. Although we would have assumed that this subsistence pattern would have also held for the West Ranch study area around Castaic Junction, the absence of any significant numbers of these tool types, combined with our earlier failure to find agave roasting ovens during the archaeological survey of the property, demonstrate that the subsistence importance of agave was restricted to the more eastern, and therefore drier portions, of the Upper Santa Clara River.

Flaked Stone Tools

Although not common at the site, flaked stone tools were more frequently encountered than core/cobble complex tools, with five flaked stone artifacts recovered. This represents 26% of the formal tool assemblage.

Flaked stone tools include one projectile point, three biface tools, and one uniface artifact. The projectile point (#2133-29) is a fragmentary chert tip, recovered from the 50 - 60 cm level of Unit 2. As such, it is not temporally diagnostic and thus provides no information on the age of the site. However, it is worth noting that, at the time of the Phase I survey of the West Ranch study area, an atlatl point was discovered on the site surface, along an active cattle path. This could not be relocated at the time of the Phase II study, no doubt due to regular use of the pathway by cattle. Nonetheless, it demonstrates that at least some use of the site occurred prior to the introduction of the bow and arrow into the region, or prior to approximately A.D. 500 (cf. Yohe 1989).

The biface artifacts recovered from CA-LAN-2133 include one chert knife mid-section (#2133-185, Unit 18, 0 - 10 cm level), and two biface edges. Of the biface edges, artifact #2133-11 (Unit 1, 60 - 70 cm level) is made of chert, while artifact #2133-186 (Unit 18, 20 - 30 cm level) is made of quartz.

Although locally available, quartz is a particularly intractable lithic material for flaking purposes, and thus is only occasionally represented in the tool and debitage assemblage from the site. Given the difficulty in working quartz, this last biface edge is crude and clearly represents a casual and expedient tool form.

The final flaked stone tool from CA-LAN-2133 is a uniface edge made of quartzite (#2133-177), recovered from Unit 3, 90 - 100 cm level. As with the biface edges, it is also a crude and expedient stone tool.

Groundstone

Groundstone comprised the largest component of the formal tool assemblage from the site, with 12 artifacts, constituting 63% of the formal tool assemblage. Manos, or hand grinding stones, were the largest contributor to this class, represented by seven examples, for fully 37% of the formal tool assemblage. The manos included four Type 4B shaped biface artifacts (cf. Whitley et al 1979:43), one Type 4A shaped biface specimen, and two small untypable fragments. That the typable manos are all variants of Type 4 shaped biface specimens indicates that considerably more care was expended in groundstone manufacture than in the flaked stone assemblage, which (as we have noted) was dominated by expedient, casual tools.

Type 4B manos from CA-LAN-2133 include specimens #2133-68 (Unit 5, 50 - 60 cm level), made of schist; #2133-108 (Unit 6, 80 - 90 cm level), sandstone; #2133-176 (Unit 3, 70 - 80 cm level), quartzite; and #2133-250 (Unit 9, 30 - 40 cm level), also sandstone. The Type 4A mano is #2133-125 (Unit 10, 20 - 30 cm level), made of sandstone. The untypable fragments are both made of quartzite (#2133-175, Unit 3, 70 - 80 cm, and #2133-190, Unit 20, 40 - 50 cm). It is apparent that a wide range of materials, thus, were employed in mano manufacture. With one exception, these are locally available, presumably from the nearby river bed. The exception is the schist; presumably, Sierra Pelona schist from the Acton area. Although this has not been sourced chemically, as a general observation we have noted that what appears to be Sierra Pelona schist is common in the groundstone assemblages from Upper Santa Clara River sites, whereas it is not found in sites further towards the west and south.

Two unshaped but utilized pestles were also recovered from the site. Both of these are made of sandstone (#2133-87, Unit 5, 80 - 90 cm, and #2133-111, Unit 6, 50-60 cm).

The presence of pestles on the site is important for two reasons. First, it has long been assumed by archaeologists that manos (and their corresponding metates) and pestles (with

mortars) were functionally distinct: manos used to grind hard seeds, and pestles to pound acorns. Although this distinction has never been proven, it is reasonable enough, and it has an important implication about subsistence practices at the site: a variety of plant foods were being gathered and processed at CA-LAN-2133.

The second implication of the pestles is chronological: mortars and pestles first occur in the southern California archaeological record at the beginning of the Intermediate or Middle Period, or approximately 3500 years B.P. The presence of these artifacts at CA-LAN-2133, therefore, suggests that the site is an Intermediate Period, or later, occupation. This inference, furthermore, is substantiated by the atlatl point that was noted on the site surface during the Phase I survey, mentioned above, which is minimally 1500 years in age. The combination of these two temporal diagnostics suggests strongly that at least portions of the site date between 1500 B.C. and A.D. 500.

In addition to the hand groundstone, one fragment of a basal groundstone implement was recovered: an untypable portion of a metate (#2133-174, Unit 3, 50 -60 cm), made of sandstone. In addition, one miscellaneous piece of groundstone was encountered. This is a lightly ground piece of schist (#2133-109, Unit 6, 80 - 90 cm), which is either a fragment of a mano

or a groundstone plaque of unknown function.

Debitage

As noted above, debitage is almost invariably the most common class of remains from local sites. This proved true at CA-LAN-2133, where debitage constituted ~98% of the recovered assemblage. Details concerning the materials and classes of debitage recovered from the site are provided in Table 9. However, the debitage assemblage can be summarized as follows.

By lithic material, locally available chert was the most common debitage form, contributing ~58% of the total. Fused shale was also a very important lithic material at the site, constituting ~27% of the debitage. As noted previously, major fused shale sources are present in Grimes Canyon, near modern Fillmore, with smaller sources dispersed throughout the Conejo Volcanics to the southwest of Moorpark. Other quantitatively significant lithic materials include metavolcanics (7%), quartzite (~6%), and obsidian (~1%). Fine-grained volcanics and quartz are also represented, but in minor quantities (<1%).

The presence of fused shale on CA-LAN-2133 is important inasmuch as it reflects lithic material acquisition at a distance, albeit a relatively short distance. More to the point,

however, the obsidian from the site is clearly derived from volcanic glass sources in eastern California, and therefore demonstrates trade over long distances.

Five obsidian specimens from CA-LAN-2133 have been submitted to Glenn Russell, Ph.D., UCLA Institute of Archaeology Obsidian Hydration Laboratory, for hydration dating, and Paul Bouey, Ph.D., Geotrace, for x-ray flourescence (XRF) sourcing. Although the results of the XRF sourcing analysis are not yet available, and the dating must be based on the source from which the obsidian was obtained, there are nonetheless some provisional inferences that can be plausibly made, due to a very strong local pattern in prehistoric obsidian trading networks. This pattern demonstrates that the large majority of obsidian specimens from southern California sites are derived from the Coso obsidian source of Inyo County, which is approximately 175 miles from the site.

Until the final XRF results are available, it may be reasonably assumed that the inhabitants of CA-LAN-2133 were involved in long-distance trade of some form with the Coso region near Little Lake. In terms of trading networks it is important to note that, should the samples from CA-LAN-2133 prove to have been derived from other obsidian sources, the distance of this long-distance trade network will be increased, inasmuch as the Coso source is in fact the closest source to southern California.

However, accepting for a moment the assumption that the obsidian from the site is derived from Coso, we can then use the Coso calibration of 220 microns/year proposed by Meighan (1981) to obtain provisional direct chronometric ages for the specimens from CA-LAN-2133. These chronometric ages are as follows:

Catalog #	Microns	Years BP	Years AD/BC
22	4.9	1078	AD 874
48	7.0	1540	AD 412
56	9.6	2112	160 BC
65	3.6	792	AD 1160
86	7.2/7.7	1584/1694	AD 368/258

Thus, these provisional obsidian hydration dates suggest an occupation of CA-LAN-2133 extending minimally from 160 BC to AD 1160. This chronological inference, even though provisional at this point in our analyses, fits neatly with the estimates of site age made on the presence of an atlatl point and pestles, as noted previously. That is, this gives us three lines of evidence supporting an occupation of CA-LAN-2133 during the latter portion of the Intermediate Period, and perhaps mostly between roughly 200 BC and AD 1200.

The distribution of waste materials by debitage class is also useful for inferring the function of different archaeological sites: quarry and lithic workshops, for example, are dominated by cores, primary flakes and angular shatter; habitation sites

tend to have large proportions of secondary and especially tertiary flakes, reflecting final tool manufacturing and refinement. At CA-LAN-2133, the proportions per class are as follows: primary flakes - ~19% of the total; secondary flakes - ~22%; tertiary flakes - ~53%; and angular shatter - ~14%; with <1% cores and biface thinning flakes present.

The preponderance of tertiary flakes, followed by a significant quantity of secondary flakes, of course, matches the minimal numbers primary flakes, pieces of angular shatter and cores on the site. As noted above, the classes of debitage present on the site are those associated with final tool production, refinement and maintenance, not with primary lithic reduction and tool production. Moreover, the kinds of flakes present on the site are those typically associated with habitation sites: villages or campsites. In turn, this final inference is supported by the general nature of the tool assemblage which, even though relatively small quantitatively, is nonetheless characterized by a broad range of types and classes of implements.

One final point concerning the debitage needs be made. This concerns the absence of any clearly discernible pattern of lithic reduction in the flakes; for example, biface thinning flakes, which result from systematic biface manufacture (e.g., arrow points or knives), are all but absent in the debitage assemblage. Thus, while the debitage reflects final tool manufacture and

maintenance, it does not appear that this was either systematic or that it was conducted to any great intensity at this site.

Miscellaneous Artifacts

A small quantity of miscellaneous artifacts was also recovered from CA-LAN-2133 (Table 8). As regards bone tools, two tips of bone awls were recovered from the site (#2133-47, Unit 3, 50 - 60 cm, and #2133-193, Unit 6, 80 - 90 cm). Both of these, presumably, were manufactured from deer cannon bones. More importantly, they demonstrate that basketry production occurred on the site, inasmuch as bone awls were the primary tools used to weave coiled baskets.

The final category of miscellaneous artifacts is a bead, in this case a disk bead made of steatite (#2133-70, Unit 5, 60 - 70 cm). This, of course, is an indication that some degree of personal ornamentation was practiced by the inhabitants of the site, as was typical throughout prehistoric California. Unfortunately, while beads and ornaments are often useful as chronological indicators, this particular steatite bead represents a type used almost throughout the entirety of the prehistory of the region (cf, C. King 1981).

Faunal Remains

In addition to the lithic and bone artifacts, faunal remains were also recovered from CA-LAN-2133. Animal bone from the site is summarized in Table 10. In interpreting such a collection of faunal remains from local archaeological sites, however, an important analytical concern is the taphonomic history of the collection. That is, because bones may occur naturally in the subsoil - especially bones of small mammals such as pocket gophers and ground squirrels that commonly reside and die in burrows - it is not always a straightforward process to determine which specimens in a faunal collection are truly archaeological and which are present as the result of normal animal activities. This problem is compounded by the fact that certain of these same burrowing animals may have been employed as parts of the prehistoric aboriginal diet. Furthermore, domestic dogs and wild coyotes may take or leave bones on sites, while large mammals can die on them after their prehistoric occupation. And, in the case of caves and rockshelters, a very wide range of animals may have lived and died in these sheltered habitats, or have been dropped there by other non-human predators.

Because of these confounding factors we have developed a series of short and general guidelines to aid in determining which specimens are most likely 'cultural', in the sense of

having resulted from aboriginal behavior, and which bones are most probably unrelated to the archaeological remains and therefore only within the archaeological deposit due to serendipitous circumstances. In terms of positively determining that a given bone was brought onto a site by human agency we consider the following as useful criteria: (i) butchering and cutting marks; (ii) evidence of burning and charring; (iii) knowledge of the habits of a given species, indicating a low probability of its remains being naturally interred in a particular type of deposit; and (iv) ethnographic information concerning the diet and butchering habits of local aboriginal groups. Information counting against the inclusion of a given bone in a reconstruction of prehistoric diet includes: (a) knowledge concerning the behavior of a given species, indicating a high likelihood of natural deposition in the type of deposit in question; (b) 'freshness' of the bone; (c) absence of butchering marks and burning, or the presence of modern saw-cut marks; and (d) ethnographic data discounting the use of that species by local groups.

Thus, a cut long bone of a deer or a charred rabbit femur both would be considered most probably as 'cultural' specimens, and of course any marine mammal or fish bones could only have been deposited in an archaeological deposit by human activities. By contrast, pocket gopher and ground squirrel bones would be considered with suspicion if derived from an open-air deposit,

such as CA-LAN-2133, particularly if they lacked any evidence of butchering or charring.

With these considerations in mind, the collection of faunal remains from CA-LAN-2133 was analyzed and is tabulated in Table 10. As is typical in sites in the region (cf. Reynolds 1978), the large majority of this collection consists of very small fragments, resulting from a heavy processing of the bones (probably by breaking and smashing) to extract the marrow. The result is a collection that is very difficult, if not essentially impossible, to speciate, especially since there are few articulations upon which to base a positive species identification. Consequently, we have organized the specimens, as well as those from the other sites considered in this study, into a series of size categories that provide some idea of the probable species (or range of species) from which they were derived. Except in cases in which the bone is so fragmentary so as to preclude any categorization whatsoever, unspeciated bone has been assigned to the appropriate size grouping; where possible, the skeletal element has been identified as well. These categories, with the range of species potentially observable in southern California sites along with certain of their live weights (cf. Reynolds 1978), are as follows:

<u>Small mammal</u>:
Pocket gopher (2.5 - 8.8 ozs)
Kangaroo rat (1.6 - 2.7 ozs)

Harvest mouse (0.3 - 0.6 ozs)
Dusky-footed woodrat (8 - 13.75 ozs)
Meadow mouse (1.5 - 3.5 ozs)
Audobon cottontail (912 gms)
Brush rabbit (1.25 - 1.8 lbs)
Ground squirrel (0.2 - 0.5 lbs)
Western grey squirrel (average = 1.75 lbs)

Medium mammal:
Black-tailed hare (4.4 - 6.1 lbs)
Grey fox (7 - 13 lbs)
Coyote (20 - 50 lbs)
Domestic dog
Racoon (1.8 - 22.2 kg)
Badger (3.6 - 10 kg)
Striped skunk (6 - 14 lbs)
Bobcat (15 - 35 lbs)

Large mammal:
Mule deer (125 - 200 lbs)
Guadalupe fur seal (50 - 100 lbs)
California sea lion (males to 600 lbs, females to 400 lbs)
Grey wolf (60 - 100 lbs)
Horse
Domestic sheep
Domestic cow

We emphasize, again, the relatively high degree of processing that the faunal remains from CA-LAN-2133 exhibit. With the above difficulties and caveats in mind, it can then be reported that 1195 pieces of animal bone were recovered from the site, representing a total of 234.5 gms. Following typical regional patterns, small mammal bone is the most common constituent

of this assemblage, by count, whereas large mammal bone provides the majority of the bone by weight. More specifically, the figures for the different faunal classes are as follows: large mammal - 179 pieces or 15% by count, and 132.6 gms or 57% by weight; medium mammal - 52 pieces or 4%, and 16.8 gms or 7%; and small mammal - 906 pieces or 78%, and 78.1 gms or 33%. There was also a significant quantity of bone that was so heavily rendered that it could not be classed by size (31 pieces or ~3% and 2.5 gms for 1%). Reptiles are represented in the assemblage by two turtle scutes, presumably from the Pacific Pond Turtle, Clemmys marmorata. Birds are also present (21 pieces, or ~2% and 7.0 gms or ~3%) in small but significant quantities.

Although close to all of the bone has been so heavily rendered for marrow extraction that speciation is impossible, a few observations and inferences can still be derived from this assemblage. The first is that, relative to other sites in the general southern California region, there is a very rough equity between the large and small mammal bone in this assemblage. This could be interpreted two ways. The first is that there is a higher than usual presence of intrusive small mammal bones in the collection. Although there is no objective way for us to evaluate this inference, it seems unlikely, simply because it requires an invocation of special and unique circumstances to explain the faunal assemblage. The second potential

interpretation, then, and the one that we favor, is that the exploitation and use of small mammals constituted an important part of the animal protein in the diet of the site's inhabitants. The plausibility of this interpretation is enhanced given the known ethnographic use of small mammals by southern California groups.

Even given the apparent relative importance of small mammals at the site, it is also clear that large mammals provided the bulk of the meat protein to the inhabitants of CA-LAN-2133. It is therefore worth mentioning that, even while unspeciated, this large mammal faunal assemblage undoubtedly is almost primarily mule deer; certainly, there is no evidence that large marine mammals are represented in this assemblage. Furthermore, the large mammal assemblage is notable because it is heavily dominated by broken long-bone shaft fragments. Although this may to some degree reflect preservational factors and such activities as dogs scavenging on the site while it was occupied, it also suggests to us patterning in the butchering practices of the inhabitants of CA-LAN-2133; namely, that deer were killed at some distance from the site; butchered at or near the kill locality; and that only the more transportable portions of the carcass were brought back to the site, where they were heavily rendered for their grease. Such butchering practices, furthermore, reflect a relatively sedentary camp or village population, matched against a

relatively wide-ranging hunting strategy. This last inference may itself reflect a relatively low carrying capacity for the immediate region of the site for, as we have observed elsewhere (W & S Consultants 1994a), the hills to the south of CA-LAN-2133 are notable for their absence of potable water, leading the first mapper of the region to characterize this area in the 1840s as "lomas esterilos" - sterile hills.

Shellfish

A small amount of shellfish was recovered from CA-LAN-2133. This is quantified in Table 11. The total of all shell from the site is only 3.7 grams, representing 11 shell fragments. This shell is heavily weathered and, with only one exception, cannot be identified. The exception is a fragment of a *Conus californicus* shell. Although this does not appear to have been modified, *Conus* shells were used for beads rather than food; that is, it is the remains of an ornament, and therefore not reflective of subsistence practices at the site.

Much thought has been given to the interpretation of shellfish remains from California sites and, in certain cases, considerable effort has been expended in reconstructing the dietary implications of the different mixes of shellfish at different sites. There appears to be significant value in such efforts, at least for sites located immediately along the

coastal verge. However, as we have noted previously (W & S Consultants 1992a:60-61), there is some difficulty in inferring that shellfish remains at inland sites solely represent dietary remnants. This results for two reasons. (1) Untreated shellfish are notorious for quick spoilage and the production of bacterial toxins that are often fatal, and inland sites are effectively beyond the time-limits by which shellfish could be safely walked-in for consumption. (2) Moreover, it makes no logical sense that, in putatively carrying-in shellfish for consumption, the meat would be left attached to the shell. A far easier strategy would be to remove the meat from the shell and to just carry-in the edible meat, without the weight of the waste shells.

Because of these factors, we have speculated that shellfish in inland sites may not represent dietary remains, but instead shells brought-in for other purposes entirely, perhaps for the production of lime used in the preparation of pespibata, a native tobacco-based emetic that was widely used in Native California (ibid:61). This is supported by the observation that much of the shellfish at inland sites is burned, which is the primary means by which lime was produced to augment native tobacco in the pespibata admixture.

A corollary of the above speculations would be ethnographic evidence that coastal California natives processed shellfish at

the beach by removing it from the shell, and that they dried the removed meat to prevent spoilage. Thus, that shellfish meat would be transported without the shell. Just such a process is confirmed by Delfina Cuero, who noted that the meat of shellfish was removed from the shell at the beach, it was boiled to clean it, and then spread on the rocks to dry. If salt was available, the meat was also salted so it would "keep better" (Shipek 1991:28, 57). Notably, during Cuero's youth, upon which these recollections were based, she lived some distance inland from the coast, and thus this practice applies to inland dwellers concerned with the transporting their shellfish away from the coast, and preventing its rapid spoilage.

Cuero, of course, was not a Tataviam, Gabrielino or Chumash but a Kumeyaay, and thus some differences potentially may have existed from region to region in the way that shellfish were processed. However, we have no ethnographic data on local shellfish production, and the rapidity with which shellfish turn toxic represents a constraint that is truly cross-cultural in implications. Thus, although our speculations about the use of shellfish in the production of pespibata must remain hypothetical, we feel there is a strong likelihood, nonetheless, that the shellfish we find in inland sites represents something other than direct dietary remains. That is, our most plausible interpretation at this time is that shellfish from inland sites such as CA-LAN-2133 is not a dietary remnant, but instead a

by-product of some other activity.

Regardless of ultimate function, however, one point can be made about the relative importance of shellfish at this site vis-a-vis others in the inland region. We have calculated the grams of shellfish recovered from three sites/site complexes per areal meter square of excavation (W & S Consultants 1991b) for comparison with the sample from CA-LAN-2133. At CA-VEN-294 the resulting figure is 30.2 grams/m^2; at the Ring Brothers Site Complex the comparable figure is 29.3/m^2. At CA-LAN-760 the figure is 0.9/m^2 (W & S Consultants 1992). At CA-LAN-2133, in contrast, this figure is 0.6 gm/m^2. From these comparative figures, two conclusions result. The first is that there was considerable variation in the degree of shellfish use at different inland southern California sites in this region. The second is that the amount of shellfish present at CA-LAN-2133 is more than an order of magnitude less than that at some other, comparable inland sites. Thus, while it is apparent that some inland sites had sufficient access to coastal resources to acquire shellfish in some quantities, others (including CA-LAN-2133) had effectively little or no such access. Certainly, given the low amount of meat per gram of shell, it is clear that shellfish could not served as a significant dietary component for the site's inhabitants, even if our arguments for the potential use of shell in pespibata are discounted.

CA-LAN-2133 - Summary

The artifact assemblage from CA-LAN-2133, in summary, provides a coherent picture of prehistoric activity and occupation at this locale. As regards chronology, three artifact classes contribute to the temporal placement of the site. The pestles recovered during the excavation indicate that the site was occupied sometime after 1500 B.C. The atlatl point observed on the site surface during the Phase I survey suggests a minimum occupation between approximately 1500 B.C. and A.D. 500. Finally, obsidian from the site has been directly dated with six chronometric assays on five specimens yielding ages ranging from 160 BC to AD 1160. When these different lines of evidence are combined they provide a temporal span of occupation corresponding to the later portion of the Intermediate Period, from approximately 200 BC to AD 1200.

As regards site function, it is notable that the site artifact assemblage included a wide range, even if relatively small quantity, of tool types. Groundstone is the most common class of tool, although flaked stone tools are also represented in significant numbers. Though not collected and tabulated as part of the artifact assemblage, per se, it is also worth noting that fire-cracked rock was present in the excavation units. This last fact, combined with the presence of rendered faunal

remains and the high proportion of secondary and especially tertiary flakes, supports an interpretation of this site as a small, probably seasonally-occupied habitation site; that is, most likely a small camp, occupied during specific seasons by a small group, such as a single extended family. Subsistence practices for this group apparently emphasized plant foods, which may have included small seeds (e.g., grasses and chia) and acorns. Notably, agave does not appear to have been part of the inhabitant's diet to any significant degree, based on both the absence of scraper planes in the lithic assemblage, and our earlier failure to find earth ovens during the Phase I survey of the West Ranch study area. Finally, meat protein was provided in significant quantities by both large (e.g., deer) and small (rabbits and rodents) game. Butchering and rendering practices evident in the large game remains suggest a hunting strategy that was wide-ranging, with butchering occurring at the kill sites, and the meatiest portions of the carcass brought back to the camp. In this sense, CA-LAN-2133 may have served as a kind of base-camp for a small group of fairly wide-ranging foragers.

4.3 Artifact Assemblage: CA-LAN-2241 (NLF2)

Aside from the human remains found at CA-LAN-2241 (temporary designation NLF2), discussed in some detail

previously, a very small collection of artifacts was also obtained. All of these were also found within the disturbed surface portion of the site: the road and bulldozer borrow area. These artifacts are summarized in Table 2.

As indicated in this table, all of these artifacts are examples of groundstone. They include a miscellaneous piece of very lightly ground tabular schist (#2241-1), perhaps a schist plaque or thin, unshaped uniface mano; three fragments of a single steatite bowl (#2241-2), apparently made from Sierra Pelona talc schist; a sandstone bowl/mortar fragment (#2241-3); an unshaped sandstone pestle fragment (#2241-4); and a complete, small sandstone basket-hopper mortar with an asphaltum-coated rim (#2241-5).

Two inferences immediately result from this assemblage. First, these artifacts are clear indicators of plant food processing, with a presumed emphasis on acorns using mortars/bowls and basket-hopper mortars with pestles. Moreover, these artifacts all occur in Intermediate Period and later temporal contexts, suggesting an age of 3500 years B.P. or less for the site. Second, and even though disturbed, the assemblage is quite small in quantity and very limited in its range of artifact classes. Thus, although there appears to have been a site at this locale that was destroyed by bulldozing, this apparently was a very small site, probably representing a

limited, specialized activity area.

What is less clear is the context of these artifacts: as noted above, all were found in either the road or road windrow, or in a heavily bulldozed borrow area immediately south of the road. No artifacts were found on any intact portions of the groundsurface of the site, nor during the test excavations there. That is, all of the artifacts from the site were found in heavily disturbed contexts, with original proveniences then effectively lost.

One interpretation of the distribution of these artifacts in their disturbed contexts might be that they are derived from nearby site CA-LAN-2133. We think this is unlikely because we failed to find a continuous distribution of artifacts in the roadway between these two sites, as would be expected if the artifacts from CA-LAN-2241 originated from the grading of the road through CA-LAN-2133 and had been pushed to the east. Instead, their concentration in a relatively restricted area at CA-LAN-2241 suggests to the contrary that there was once a small archaeological deposit at this locale, but that it was essentially and unfortunately destroyed by bulldozing.

This said, it is nonetheless notable that the artifact assemblage from CA-LAN-2241 may be approximately equivalent in age to that from CA-LAN-2133. Such a

circumstance is not unusual inasmuch as groundstone milling stations in the inland southern California region, for example, are often associated with larger nearby habitation sites (Whitley 1979). Thus, it is possible that CA-LAN-2241 served as an ancillary activity area related to the occupation of CA-LAN-2133. Unfortunately, however, given the fact that CA-LAN-2241 had been effectively destroyed before any archaeological investigation of it, we may never adequately establish whether the two sites were utilized at the same time.

4.4 Artifact Assemblage: CA-LAN-2235 (NLF3)

The artifact assemblage from CA-LAN-2235 (temporary designation NLF3) included a total of 403 lithic specimens, one bone tool, and 5.6 gms of faunal remains (Tables 3, 12, 13 and 14). Formal tools are limited to 10 artifacts (~3% of the total): three pieces of groundstone; one core/cobble complex tool; and six flaked stone tools. We discuss this artifact assemblage by major class below.

Core/Cobble Complex Tools

Only a single core/cobble complex tool was recovered during the Phase II test excavations at CA-LAN-2235 (Table 12): a metavolcanic, Type 3 irregular core hammerstone (see Whitley

et al 1979:18). This artifact (catalog #2235-84) was encountered in the 20 - 30 cm level of Unit 8.

As noted previously, core/cobble complex tools, including hammerstones, may have been used in plant pulping and rendering, as well as stone tool flaking and groundstone roughening. Thus, any immediate functional attribution based on the presence of a single hammerstone at CA-LAN-2235 would be fool-hardy. This is not to imply that the core/cobble complex assemblage from the site is of limited inferential value. Instead, following the argument made earlier concerning CA-LAN-2133, we note that the absence of core/cobble complex tools here itself is of significance, further demonstrating a pattern in which the processing of heavy vegetal foods, such as agave, was not undertaken to any significant degree.

Groundstone Artifacts

Groundstone tools are the second most common components of the formal tool assemblage from CA-LAN-2235, with three specimens representing 30% of these tools. All of the groundstone from the site are fragments of manos. These include a Type 4B shaped biface specimen (#2235-20, Unit 8, 30 - 40 cm) made of quartzite; a Type 3C unshaped biface mano (#2235-21, Unit 8, 40 - 50 cm), also of quartzite; and a Type 3B unshaped biface mano variant (#2235-30, Unit 9, 30 - 40

cm) that is metavolcanic (cf. Whitley et al 1979:38, 43).

Two factors stand-out concerning these artifacts, when compared to CA-LAN-2133, discussed previously. The first is that greater specialization is indicated, in that manos but no pestles/mortars are included in the assemblage. Although the sample is sufficiently small to preclude any strong inferences, it can be suggested provisionally that small seed exploitation was the plant food emphasis of the site's inhabitants. The second notable factor in this assemblage is that all of the lithic materials present here are locally available, in the stream bed to the south of the site. This contrasts with CA-LAN-2133, again, where Sierra Pelona schist was present in the groundstone assemblage. Thus, site inhabitants were using exclusively local lithic materials in the manufacture of their groundstone tools.

Flaked Stone Tools

As implied above, flaked stone tools constituted the majority of the formal tool assemblage from CA-LAN-2235, with the six artifacts of this class representing 60% of the worked tools (Table 12). Included in this total are two projectile points, one biface, two uniface edges and one bifacially utilized flake.

The two projectile points include one atlatl point (#2235-82,

Unit 3, 20 - 30 cm level) and one arrow point (#2235-87, Unit 10, 0 - 10 cm; see Figure 13). The atlatl point is a relatively large and thick leaf-shaped specimen made of chert. As an atlatl, it can be confidently assumed to pre-date the introduction of the bow and arrow at A.D. 500; that is, it suggests a range of occupation for the site from 1500 B.C. to A.D. 500 (cf. Yohe 1992).

The arrow point is also made of chert. Although relatively crude, in general terms it resembles a Rose Spring side-notched point, as defined for the Mojave Desert. These points date from A.D. 500 - 1200 in eastern California and are presumed to so-date in the coastal region; that is, they apparently pre-date the start of the Late Prehistoric Period and instead represent the terminal portion of the Intermediate Horizon. The combination of the atlatl and arrow points on the site, thus, suggests a late Intermediate Period age, or roughly A.D. 1 to 1200, in addition to indicating that hunting occurred at the site. Note, however, that both artifacts were recovered from the upper levels of the site deposit. It is thus entirely possible that the initial occupation of the site was somewhat earlier than suggested by these projectile points.

Other flaked stone tools include a biface knife fragment (#2235-88, Unit 10, 70 - 80 cm); two uniface edges (#2235-83, Unit 8, 10 - 20 cm; and #2235-86, Unit 9, 60 - 70 cm); and

a utilized flake showing bifacial edge attrition (#2235-89, surface). With the exception of the utilized flake, all of these are made of chert; the exception is metavolcanic.

With the exception of the projectile points, indicative of hunting, the flaked stone tool assemblage from the site represents a non-specialized and largly expedient group of implements. Thus, although these tools out-number the groundstone from the site, which clearly reflects plant processing, it is difficult (if not impossible) to contend that any other activity may have been of greater importance than plant gathering to the site's inhabitants. Instead, the flaked stone tool assemblage suggests very generalized camp maintenance activities.

Debitage

The waste lithic material from CA-LAN-2235 included a total of 393 specimens (Table 13) which, like all hunter-gatherer archaeological sites, constitutes the vast majority of the recovered remains. As regards types of lithic materials, chert is by far the dominant contributor to this assemblage, representing fully 84% of the total. Metavolcanics are the second most common lithic material, contributing 8%. These two are followed by quartzite (13%); fused shale and obsidian (2% each); with a very small quantity of quartz (<1%).

The dominance of the chert followed by metavolcanics at a distant second is a pattern also evident in the flaked stone tools, as noted above; thus formal tool and debitage lithic material patterns are essentially equivalent, suggesting that the tools might be locally manufactured rather than traded-in as finished implements. Perhaps more interesting in the debitage assemblage is the relative proportions of obsidian and fused shale. As noted in reference to CA-LAN-2133, fused shale is a relatively local although restricted lithic resource, deriving from Grimes Canyon near Fillmore and other areas in the Conejo Volcanics Formation southwest of Moorpark. Obsidian, in great contrast, is from eastern California, with the closest source almost 200 miles away at Coso in Inyo County. Because there is this great disparity in distance from sources, it is then important to note that as much obsidian is present at CA-LAN-2235 as fused shale, even though the obsidian source is ten times further away than the fused shale quarries near Fillmore. This contrasts quite dramatically with CA-LAN-2133, where more normal relative frequencies of these materials were obtained (27% fused shale versus 1% obsidian).

The apparent contrast in relative frequency relative to distance from lithic source in obsidian and fused shale at CA-LAN-2133 appears quite important. Although the data at hand are too small to allow us to provide a final interpretation of this

empirical circumstance, we can offer some preliminary alternative hypotheses to account for this otherwise anomolous situation. First, this circumstance may reflect a situation in which fused shale trade was controlled and access to this raw material by the site's inhabitants was heavily restricted. While such a scenario is entirely speculative at this point, the plausibility of this scenario is enhanced by the fact that, historically at least, the fused shale quarries where located in Chumash and not Tataviam territory. Currently we have no ethnographic information indicating that there was any kind of a trade boundary between the Chumash and the Tataviam; however, we do know that access to resources and trade became highly structured during the Late Prehistoric Period in the Chumash realm. It is not inconceivable that such a circumstance developed towards the end of the Intermediate Period in reference to the fused shale quarries in Grimes Canyon; however, CA-LAN-2235 is not a Late Prehistoric Period site, and may not even date to the latter end of the Intermediate Period (see below). Moreover, it should also be noted in support of this theory that there is no ancillary evidence of trade between the inhabitants of this site and the Chumash, who controlled the coastal region; specifically, and in contrast to CA-LAN-2133, no shellfish or fish bone were found at the site, thus further emphasizing the minimal evidence for east - west trade into Chumash territory.

Alternatively, it might be posited that the time of site occupation occurred during the period of obsidian trade but before a significant fused shale trade had developed. Although this possibility is not inconceivable, we currently have no empirical evidence indicating that fused shale use and trade was necessarily later dating than the Intermediate Period obsidian trading network. Furthermore, should this be true, a corollary of it would be that CA-LAN-2235 and CA-LAN-2133 should represent different chronological periods of occupation, inasmuch as there is clear evidence of significant fused shale trade at CA-LAN-2133. Currently, there is no strong evidence to support this inference, as discussed below.

A third possibility that might explain this lithic material distribution would be a hypothesis based on the unique function of the site, or its specific season of occupance. Both of these possibilities are, at this point, unknowns, although there is nothing in the artifact assemblage suggesting that the site's function or seasonal period of occupation was necessarily dramatically different than CA-LAN-2133, for example. Moreover, our typical understanding of seasonal occupation rounds and the kinds of behaviors associated with different stages in these rounds would suggest that "exotic" trade goods, such as obsidian, would be rarely found at small dispersal camps, such as CA-LAN-2235, or at least would not occur in unusually large quantities, further emphasizing the anomolous

nature of this debitage assemblage.

The absence of any immediate and strong explanation for this lithic waste distribution reflects our general lack of knowledge about upper Santa Clara River drainage prehistory. However, it also suggests that there are aspects of the prehistory of this specific region that differ dramatically from the neighboring Chumash area, which is much better known, and that there may be a series of very interesting research problems that can be addressed in this region.

The above circumstance, thus, requiring further consideration as research proceeds in this region, we can nonetheless turn to other issues derived from the debitage, including specifically the direct chronometric ages that can be obtained from the obsidian found on the site. As at CA-LAN-2133, we have obtained obsidian hydration readings but not yet XRF sources for the obsidian specimens at this time. Making the reasonable assumption that these specimens are most likely derived from the Coso source, and using the average Coso rate of 220 microns per year, the following chronometric ages result:

Catalog #	Microns	Years BP	Years AD/BC
13	9.3	2046	94 BC
27	19.1	4202	2250 BC
41	17.6	3872	1920 BC
71	4.6	1012	AD 940
74	7.3/12.5	1606/2750	AD346/798 BC

These direct chronometric ages are fairly wide-ranging, and suggest a series of possible alternative explanations. First, they may all be valid, thus indicating that the site was used for a considerably long period stretching from 2250 BC to AD 940 - a span of slightly more than 3000 years. This would indicate occupance immediately prior to and then through the Intermediate Period, essentially starting with the Early Millingstone Horizon/Intermediate Period transition. Further, such an lengthy span of occupation would suggest that the actual use of the site at any given time was quite ephemeral, given the general paucity of artifacts at it. Second, it is also possible that some of the earlier hydration readings are derived from natural cortical rather than cultural surfaces and/or that inhabitants of the site "scavenged" pieces of flaked obsidian off earlier sites, and then brought them to CA-LAN-2235, in which case they would be considered "intrusive" dates. Care was certainly taken at the UCLA Obsidian Hydration Lab to insure that only cultural surfaces were examined. Moreover, the very divergent readings, and therefore dates, on specimen #74 (AD 346 and 798 BC) strongly support the fact that at least some older pieces of obsidian were being re-used (and therefore re-flaked) at later dates, in this case almost 1200 years apart. However, it still must be recognized that such "scavenging" of older obsidian could as easily have occurred on the site itself, as from some other locale. Third, it may also be that some of

these samples are from sources other than Coso and thus that the divergent readings reflect the need to apply different calibration rates, rather than high variance in their actual ages.

Resolution of these differing potential interpretations can only be achieved once the XRF sourcing studies are completed. In the meantime, it must be emphasized that these chronometric ages are all essentially consistent with an Intermediate Period age for the site, starting at roughly 1500 BC and extending to AD 1200, and perhaps beginning a half-millenium or more earlier. Thus, CA-LAN-2235 is roughly coeval with the occupation of CA-LAN-2133, albeit CA-LAN-2235 appears to have been first occupied at a slightly earlier date.

Finally, the patterning in the classes of debitage present on CA-LAN-2235 can be considered to help develop a perspective on the function of the site. By debitage type, the assemblage was dominated by tertiary flakes (48%) followed by secondary flakes (32%). Primary flakes and angular shatter are both present but in limited quantities, representing only 7% and 13% of the assemblage, respectively. From these figures we may conclude that primary lithic reduction and tool manufacture were limited activities on the site and that stone flaking, instead, emphasized tool maintenance and perhaps final tool finishing. As noted previously, this is a pattern that typically occurs in habitation rather than specialized activity sites.

Miscellaneous artifacts

A single miscellaneous artifact was recovered from CA-LAN-2235. This is the tip of a bone awl, presumably made from the cannon bone of a deer. This artifact (#2235-81) was recovered from the 40 - 50 cm level of Unit 12. As with bone awls generally, it indicates that basket making probably occurred at the site, as this was the primary function to which these implements were directed.

Faunal remains

As noted previously, a total of only 5.6 gms of faunal remains was recovered from CA-LAN-2235, representing 29 specimens of animal bone (Table 14). In keeping with the caveats and principles of faunal analysis discussed in reference to CA-LAN-2133, these remains were sorted and classified into animal size classes. Notably, no medium size mammal bones, reptile, bird, fish or marine mammal bones were recovered. Instead, the assemblage was dominated by large terrestrial mammal bones both by count (16 specimens, or 55%) and weight (4.1 gms, or 73%). A considerably smaller quantity of small mammal bones was also present (6 pieces, or 21% by count; 0.6 gm, or 11% by weight). The remaining faunal remains (7 for 24% and 0.9 gm for 16%) were too fragmentary even for size classification.

Four points, then, need be made about this bone assemblage. The first is that, like many sites in the region, the bone is too heavily rendered for marrow extraction to allow for any speciation; thus, food preparation procedures are equivalent to those noted at CA-LAN-2133, and other sites in the region. Second, and that said, the assemblage is dominated by large mammal bones to a degree not typically seen in the area; not only are small mammals much less common, but there is no evidence for other occasional components, such as birds, medium sized mammals or reptiles. This circumstance, rightly, may simply reflect the small sample size under consideration. Alternatively, it may represent a real (and not simply statitistical) pattern, thus signalling the fact that large mammal procurement was the primary hunting activity at this site. Note that, even if this were so, it nonetheless does not appear that animal meat protein was a particularly significant part of the site inhabitants' diet.

Third, it can also be noted that, with one exception, the large mammal bone all essentially consists of long-bone shaft fragments. The single exception is a very small cranial fragment; inasmuch as this specimen was recovered in the plow zone of the site, it is possible that it is a recent, introduced rather than prehistoric specimen. The predominance of long bone shaft fragments, then, suggests a butchering strategy that

would have been completed at the kill site, with the meatier portions of the carcass brought in to the camp.

Fourth, it is important to consider the distribution of the animal bone across the site. As is evident in Table 14, all of the bone from CA-LAN-2235 is derived from only three units (#1, 5 and 11). However, one of these units (#5) contained nothing but a small quantity of bone and was located a considerable distance from what is interpreted as the site deposit. We interpret the bone from this unit, accordingly, as non-cultural (or, at least, non-prehistoric). This interpretation is supported by the fact that the bone from this unit included the more anomolous components (such as a large mammal cranial fragment, which is highly unlikely to have been preserved in the deposit for any great length of time, and more probably represents a modern specimen). Once Unit 5 is removed from the probable collection of prehistoric, cultural faunal remains from the site, almost all of the faunal assemblage is derived from a single pit, Unit 11. This fact further supports an interpretation that faunal resources were of limited importance to the inhabitants of the site.

In sum, the faunal assemblage suggests that hunting was of minimal subsistence importance at the site but that, when practiced, it emphasized large game. Further, it appears that the butchering and cooking strategies then employed were

equivalent to those seen at other sites in the region: butchering at or near to the kill sites; transport of only the meatier portions of the carcass into the camp; and then heavy pounding and rendering of the bone for marrow extraction. However, we would provisionally infer that this hunting was of somewhat less importance here than at CA-LAN-2133, for example, as well as other sites in the region.

CA-LAN-2235 - Summary

The artifact assemblage from CA-LAN-2235, albeit small, provides at least initial information on the age and nature of the site. First, in reference to chronology, three temporal indicators were recovered from the site. Two of these are projectile points: an atlatl and an arrow point. The combination of these two artifacts suggests a site age of 1500 B.C. to A.D. 1200, or essentially the Intermediate Period. The presence of obsidian on the site, even in small quantities, provides the third temporal estimator. Direct chronometric assays on five obsidian flakes from the site yielded dates ranging from 2250 BC to AD 940, or essentially from slightly before the beginning of the Intermediate Period, some 3500 years ago, to near the end of this period at AD 1200.

The possibility of an occupation of this site in the earlier portion of the Intermediate Period, and perhaps even

immediately before the Intermediate Period during the Early Millingstone Horizon/Intermediate Period transition, moreover, is generally supported by another observation that can be made on the artifact assemblage; namely, the absence of pestles and mortars in the groundstone assemblage. It is difficult to build chronological arguments solely on groundstone implements, because manos and metates were never entirely replaced by mortars and pestles, and therefore because the use of these different implements was more resource and environment specific than temporally diagnostic. Still, the absence of pestles and mortars may provide weak evidence in favor of a slightly earlier occupation of this site, especially in comparison to the other large sites considered in this study (CA-LAN-2133 and -2233).

The artifact assemblage from the site is small but diverse, containing all major classes of lithic remains, and (beyond the groundstone) no indication of specialized economic or subsistence activities of any kind. Further, although dietary remains in the form of animal bones are present at the site, these only occur in very small quantities. Combined with the presence of fire-cracked rock, indicative of camp fires,which was noted during the excavation, this suggests that some degree of habitance occurred at this site. Given the depth of the deposit, the very small size of the artifact asemblage, and the potentially extensive length of time within which the site

was occupied of roughly 3000 years, we can only conclude that CA-LAN-2235 served as a very sporadically utilized seasonal camp. That is, it is clearly a location that was inhabited by a very small group, probably a single family, but likely not seasonally on a yearly basis. Instead, as we discuss subsequently, it may have been tied to the occupation of CA-LAN-2233, and may have been occupied seasonally during years when nearby CA-LAN-2233 was not inhabited.

4.5 Artifact Assemblage: CA-LAN-2234 (NLF4)

The artifact assemblage from CA-LAN-2234 (temporary designation NLF4) is summarized in Table 4. It includes two formal lithic artifacts, one ornament, one bone tool, 39 pieces of debitage weighing 63.6 gms, and eight fragments of animal bone weighing 2.5 gms.

The formal lithic artifacts from CA-LAN-2234 (Table 15) are limited to a bifacially flaked drill (#2234-28, Unit 3, 20 - 30 cm), made of chert (see Figure 13); and a fragment of an unshaped quartzite pestle (#2234-30, surface artifact #1). The miscellaneous artifacts include a square Haliotis bead (#2234-7, Unit 2, 10 - 20 cm) with a single, round, central perforation; and the tip of a bone awl (#29, Unit 6, 0 - 10 cm). Unfortunately, square abalone beads such as the example found

at CA-LAN-2234 are not temporally diagnostic (cf. King 1981:375-380).

By lithic material, debitage from the site (Table 16) was dominated by chert, which contributed 66% of the total by count. Fused shale was next in importance, contributing 21%. This was followed by metavolcanics (8%), and obsidian and quartzite (1% each). By debitage class, tertiary flakes were by far the most common, contributing 61%. Secondary flakes were next in numerical importance, with 26% of the total, followed by primary flakes (5%) and angular shatter (1%).

Faunal remains from CA-LAN-2234 are summarized in Table 17. They include two pieces of small mammal bone weighing a total of 0.2 gms; one piece of medium mammal bone weighing 0.4 gms; and five pieces of large mammal bone weighing 1.9 gms. The large mammal bone is predominated by shaft fragments of long-bones, including a number of burnt specimens.

As noted previously, the deposit from CA-LAN-2234 apparently represents deposited fill from a nearby site, apparently from the southern section of CA-LAN-2233. Thus, the archaeological materials from the site are out-of-original context and therefore are not immediately interpretable. In general terms, however, they do reflect a range of lithic tool and material types similar to those found on this nearby site, as discussed

below.

4.6 Artifact Assemblage: CA-LAN-2233 (NLF5)

The artifact assemblage recovered from CA-LAN-2233 (temporary designation NLF5) included 12 formal lithic tools, 279 pieces of debitage, five miscellaneous artifacts, and 138.8 gms of animal bone (Tables 5, 18, 19 and 20). Formal tools, which we discuss below, include seven groundstone implements, one core/cobble tool, and four flaked stone tools.

Core/cobble complex tools

Paralleling a situation noted at other sites tested during the project, CA-LAN-2233 had a very limited core/cobble complex tool assemblage, in this case restricted to a single example (Table 18). This artifact (#2233-44) is a Type 2A minimally modified cobble hammerstone (cf. Whitley et al 1979:18) made of quartzite and recovered from the 50 - 60 cm level of Unit 7.

As we have emphasized previously, the presence of a single core/cobble complex tool on the site is functionally ambiguous. Nonetheless, the general absence of this class of artifacts at this site supports our contention that agave (which required pounding, scraping and pulping) did not serve as an important

part of the local prehistoric diet, and that large amounts of lithic reduction were not undertaken at local sites either. Thus, we see a pattern in the artifact assemblage from CA-LAN-2233 that was also noted at CA-LAN-2133 and -2235, at least, but that differs somewhat from sites in the nearby Conejo and Simi Corridors, for example. In this sense the negative evidence from CA-LAN-2233 helps establish a regional pattern in tool assemblages, and presumably therefore local adaptive patterns.

Groundstone implements

Groundstone contributes the majority of the formal tool assemblage (7 or 58%) from CA-LAN-2233. As at nearby CA-LAN-2235, the groundstone from the site is entirely hand grinding tools, but in this case it includes both manos and pestles (Table 18).

Manos are the primary components of the groundstone and, in fact, formal tool assemblage as a whole, with six recovered from the site. Two of these are Type 3A unshaped biface manos (see Whitley et al 1979:38; #2233-79, Unit 8, 40 - 50 cm level; and #2233-113, Unit 9, 30 - 40 cm). These are quartzite and metavolcanic, respectively. Two manos consist of Type 4B shaped biface specimens (ibid:43; #2233-115, Unit 9, 40 - 50 cm; and #2233-135, Unit 11, 80 - 90 cm), both of which are

quartzite. One example is a Type 7 quadriface mano (ibid:46; #2233-97, Unit 8, 130-140 cm) made of quartzite. The final contributor to the mano assemblage is an untypable fragment (#2233-144, Unit 11, 110 - 120 cm), also made of quartzite.

As at nearby CA-LAN-2235, the groundstone assemblage, thus, is entirely dominated by locally available lithic materials. The presence of a pestle fragment at the site, however, provides chronological evidence that CA-LAN-2233 was occupied sometime after 3500 years B.P., or from the Intermediate Period onwards. Although the numbers are too small to warrant strong inferences, this may also suggest more varied plant subsistence practices at CA-LAN-2233 when compared to CA-LAN-2235.

Flaked stone tools

The flaked stone tools from the site constituted 33% of the formal tool assemblage, representing four artifacts. All of these are bifacially flaked specimens, and all are made of locally available chert (Table18).

Perhaps the most notable member of this class is a bifurcate-stemmed atlatl point (#2233-164) recovered from the 130 - 140 cm level of Unit 8 (Figure 13). By any measure this is a crude projectile point made from a side-struck flake with

minimal morphological modification. In fact, flaking has essentially been limited to edge regularization and sharpening, with no overall thinning such that the catenary pressure ripples from original removal of the flake are still evident.

Bifurcate-stemmed atlatl points are common in far western North America, even if slightly ambiguous in terms of chronological placement. In the desert the correspond to the Gypsum, Pinto or Gatecliff series types, depending upon region and author. Typically, these are believed to be between roughly 4000 and 2000 years in age in the Great Basin (cf. Holmer 1986). In the southern Sierra Nevada, in slight contrast, they occur during the Chowchilla Phase, or from approximately 2000 to 1700 years B.P. (Moratto 1984). In southern California, per se, they in fact are not typically present, but are probably typologically closest to Elko series points dating to what corresponds to the Intermediate Period locally (cf. Glenn 1991).

Although it is not yet clear that southern California coastal point types have fully equivalent chronological spans, the temporal patterns suggested by the temporal placement of these points in the remainder of the far west provide us with some sense of the probable age of bifurcate-stemmed points in this region. Thus, it seems likely that the specimen from CA-LAN-2233 is roughly 2000 years in age.

The remaining flaked stone tools from the site include two fragmentary biface knives (#2233-160, Unit 1, 20 - 30 cm; and #2233-162, Unit 8, 20 - 30 cm), and a bifacially flaked drill (#2233-161, Unit 7, 160 - 170 cm). While the drill was clearly used for drilling and gouging activities, the biface knife fragments could have been used for almost any purpose. Thus, although the flaked stone tool assemblage from the site is more restricted than that found at the other sites in the region, it nonetheless does not reflect any obvious level of specialization, whether economic, subsistence or otherwise.

Debitage

Lithic debitage recovered from CA-LAN-2233 is summarized in Table 19. It totalled 279 pieces. By material, and following the pattern seen at other sites during this project, locally available chert is by far the dominant lithic material, constituting fully 85% of the debitage. In order of quantitative importance, this is followed by metavolcanics (10%), fused shale (3%), quartzite (1%) and obsidian (1%).

The relative contributions of fused shale and obsidian from CA-LAN-2233, 3% and 1% respectively, closely parallel these same proportions at nearby CA-LAN-2235, which are 2% each; these figures are, statistically speaking, fully equivalent. Thus, the pattern first observed in raw lithic material at this nearby site

is verified by this additional, albeit slightly smaller, debitage assemblage from CA-LAN-2233. We have reviewed above the possible explanations that may account for the apparent fact that we have found equivalent quantities of raw materials from sources that are, respectively, about 20 and almost 200 miles distant from these sites. Note also that at CA-LAN-2233, as at CA-LAN-2235 (but not at CA-LAN-2133), no shellfish was recovered, further emphasizing the limited amount of trade between the inhabitants of this site and groups to the west. That this pattern is repeated at CA-LAN-2233 simply further speaks of the need for additional regional data from which to test these alternative competing hypotheses.

Obsidian from the site is, of course, valuable for chronometric analyses and therefore the temporal placement of the deposit. Five obsidian samples were dated at the UCLA Obsidian Hydration Lab. Bearing in mind the caveats mentioned earlier in reference to similar samples from CA-LAN-2133 and -2235, the following results were obtained:

Catalog #	Microns	Years BP	Years AD/BC
8	5.2	1144	AD 808
25	7.4	1628	AD 324
62	7.8	1716	AD 236
86	7.3/11.0	1606/2420	AD 346/468 BC
163	6.0	1320	AD 632

As noted in reference to the sample with two widely divergent readings from CA-LAN-2235, the differing dates for specimen

#86 from CA-LAN-2233 are also problematic. They may represent the inadvertent reading of a natural and not cultural surface, or they may reflect scavenging of obsidian from earlier sites. Excluding this single, slightly anomolous chronometric age, the obsidian samples from CA-LAN-2233 otherwise display a very tight temporal cluster, ranging from only AD 236 to AD 808, or in the terminal portion of the Intermediate Period. But even if the divergent reading from specimen #86 is included, all of these direct chronometric dates fall within the latter half of the Intermediate Period.

Turning to debitage classes, the waste lithic materials from CA-LAN-2233 are, once again, dominated by tertiary (43%) and secondary (37%) flakes. Primary flakes are relatively rare (<4%), with angular shatter somewhat more common (17%). As at CA-LAN-2133 and 2233, where similar patterns were observed, this suggests that tool maintenance and perhaps final tool finishing were conducted at the site, and that little in the way of primary lithic reduction or tool manufacture occurred at this locale.

Miscellaneous artifacts

Two classes of miscellaneous artifacts were recovered from CA-LAN-2233 (Table 18). The first is an incised schist plaque fragment (#2233-131), recovered from Unit 11 in the 50 - 60

cm level. This artifact appears to be a portion of a shaped, circular or semi-circular (perhaps lunate) piece, ground on both sides along both faces and the external edge to a smooth finish. On one side it also exhibits a lightly scratched geometric design (see Figure 14). The extant portions of this appear to consist of two slightly overlapping "pine tree"-like motifs. It appears that this plaque has been rubbed with red ochre on its incised side.

Such small incised plaques are unusual although not necessarily rare objects in the archaeological record, being particularly common in the desert region to the east. Some have been found locally, however, including at Medea Creek in western Ventura County (L. King 1981). A number of authors have noted the design similarities between these pieces of mobiliary art and scratched style petroglyphs (Ritter 1994). Such scratched petroglyphs are found in Tataviam territory at Vasquez Rocks, to the east (L. King 1981), but their function and relationship to the mobiliary art is still unknown.

The four remaining miscellaneous artifacts from CA-LAN-2233 are all portions of bone tools. Two of these are awl fragments (#2233-168 and #2233-169, both from Unit 7, 50 - 60 cm); again, presumably made from deer cannon bones and used in basketry manufacture. The remaining two specimens are small, polished pieces of bone that are too fragmentary to be

classified (#2233-170, Unit 8, 160 - 170 cm; and #2233-171, Unit 11, 130 - 140 cm), but also may ultimately derived from bone awls or needles.

Faunal remains

The faunal assemblage from CA-LAN-2233 consists of 641 pieces of animal bone weighing 138.8 grams, and is summarized in Table 20. As is frequently the case, large mammal bone is the largest contributor by weight (50%), but small mammal bone holds the position of prominence by count (64%). More specifically, the tabulations are as follows: large mammal class - 17% by count and 50% by weight; medium mammal - 5% and 6% respectively; small mammal - 64% and 31% respectively; and unidentifiable fragments - 15% and 12% respectively. Reptiles are also represented in this assemblage, in this case based on the presence of a single turtle scute, presumably derived from Clemmys marmorata, the Pacific Pond Turtle, which was used for both food and to make shell rattles. Birds, fish and marine mammals, however, are not represented in the bone assemblage.

Although differing somewhat from the faunal assemblage at CA-LAN-2235, where large mammal bones dominated in terms of both weight and count, the animal bones from CA-LAN-2233 resemble the collection from CA-LAN-2133 in terms of

proportions. In both cases, large mammals are quantitatively dominant by weight but small mammals by count, a fact which may simply reflect the high probability for the introduction of small mammal carcasses in archaeological site deposits after their formation. Difficulties in taphonomic interpretation notwithstanding, therefore, we can reasonably infer that large mammal exploitation (probably of mule deer) was the primary hunting activity of the inhabitants of CA-LAN-2233. Furthermore, the large mammal remains from the site are predominated by long bone shaft fragments, a situation that probably reflects butchering practices in which carcasses were dismembered near the kill site, and only the meatier portions of the animals brought back to the camp.

CA-LAN-2233 - Summary

Three temporal indicators were recovered from CA-LAN-2233: an atlatl point which can be inferred to date at roughly 2000 years B.P.; a pestle, which post-dates 3500 years B.P.; and a small but significant quantity of obsidian flakes. These have been directly dated, with ages ranging from AD 236 to AD 808. Based on these data, the site can be interpreted as Intermediate Period in age, maximally dating from 1500 B.C. to A.D. 1200, and conservatively placed between about A.D. 1 and 800. Note that this is essentially the same time range inferred for sites CA-LAN-2133 and -2235, a point to which we return in our

conclusions.

As regards function, CA-LAN-2233 also appears similar to CA-LAN-2133 and -2235. It has a small but diverse lithic tools assemblage with a significant quantity of groundstone and a limited amount of faunal remains. It has a debitage assemblage dominated by the kinds of flakes that result from activities typically conducted at habitation sites such as camps or villages. Yet there is essentially no evidence for economic or subsistence specialization at the site, while the presence of a burial on the site further supports the interpretation that it is a habitation and not special activity locale.

Thus, the evidence at hand suggests that CA-LAN-2233 most likely served as a small, seasonally occupied camp, probably used over a millenium or more by a small group, perhaps a single family. Based on its proximity to and chronological overlap with CA-LAN-2235, furthermore, we can infer that these two sites represent portions of a single site complex; granted, CA-LAN-2235 may in part be slightly earlier dating than CA-LAN-2233, but there are nonetheless clear indications for at least some coterminous occupation. Based on patterns observed elsewhere in the inland southern California region (see Whitley 1979), these two discrete but adjacent archaeological sites probably represent a manifestation of horizontal, rather than vertical, stratigraphy. That is, they

most likely represent portions of the same functional settlement unit, with each of them occupied successively, as fire or pest infestation would occasionally cause the camp's occupants to shift the exact locations of their brush huts from one site to the next.

4.7 Artifact Assemblage: CA-LAN-2236 (NLF6)

Fitting its interpretation as a small surface lithic scatter, the artifact assemblage from CA-LAN-2236 (temporary designation NLF6) consisted of a small number of pieces of lithic debitage (Table 6). These consisted of six specimens total, all recovered from the surface of the site with the exception of two pieces found in the first few centimeters of Unit 1.

By material, metavolcanics were the most common class, constituting half of the total. Quartzite, chert and fused shale were each represented by a single specimen. Secondary flakes were the most common by debitage type, again with half of the total. Two tertiary flakes were also recovered, along with a single primary flake.

The artifact collection from CA-LAN-2236, thus, clearly represents a small lithic scatter resulting from an unknown activity, such as plant collecting or hunting. Nothing in this

assemblage is temporally or functionally diagnostic, but it is likely that the debitage found at this locale nonetheless results as a bi-product of some other specific activity. Given the location of this site on a mesa edge overlooking the river, hunting would seem an obvious possibility, but this same mesa may equally well have provided a valuable plant gathering area. Moreover, the diversity in lithic material types suggests that even the flaking activity at this site was diverse and non-specialized.

What is inferentially most useful about this assemblage, then, is the simple fact that it indicates that some prehistoric use of these upland areas occurred. In this case this use was clearly ephemeral and light, but this still is suggestive of wide-ranging foraging activities.

4.8 Artifact Assemblage: CA-LAN-2242 (NLF8)

The artifact assemblage recovered from CA-LAN-2242 (temporary designation NLF8) is summarized in Table 7. It is an unusual assemblage in that the site itself appears to have served as a cache locality, and because the cave was very heavily looted at some time in the past. Thus, as discussed previously, the extant artifacts were recovered from a small intact area under the drip-line of the cave, with the majority of

the interior of the cave apparently excavated-out and swept clean by looters. It is entirely possible that the area within which the artifacts were found during our test excavation represents the back-dirt pile left by the looters, with the artifacts simply their overlooked items. But by whatever agency, the result is an assemblage that is at once very mixed, and that hints at what once may have been present in this small cave.

As is evident in Table 7, worked artifacts from the site include one complete bone awl (#2242-8), one steatite shaft straightener (#2242-20), one steatite bowl fragment (#2242-16), three shell beads (#2242-3), and a possible shell pendant (#2242-10). Sixteen fragments of asphaltum, weighing a total of 40.4 gms, were also recovered. Twelve of these display impressions of basketry, indicating that they were once pressed on tarred baskets. Finally, 34 pieces of animal bone, weighing a total of 72.7 gms, were collected, along with two shell fragments weighing 6.8 gms.

The bone awl is a large, complete example made from a deer cannon bone. Because the preservation is excellent in the dry cave and/or due to the relative youthfullness of this specimen, it appears essentially new and little used or weathered. One other faunal specimen from the cave (#2242-23) consists of a deer cannon bone articulated end. Although this example is too

fragmentary to determine whether it was worked into an awl, there is a reasonable likelihood that such may have been the case.

The shaft straightener, made of steatite, is a relatively small (4.9 cm maximum length) elliptical implement with a single, deep groove across it. This groove measures 3.7 cm in length, 1.29 cm in width, and approximately 0.75 cm in depth. Although it is impossible to be certain without a petrographic thin-section, it appears that it is made of Sierra Pelona talc schist, from the steatite source area located in Tataviam territory near Agua Dulce. The steatite bowl fragment might be considered a bowl sherd, in the sense of being a relatively small sidewall fragment. It derives from a relatively thin-walled vessel (~1.48 cm in wall thickness) that was smoothed on both the interior and exterior surfaces. This specimen is clearly made from Sierra Pelona and not Catalina Island steatite, judging from a small, fresh break on its side.

All three shell beads are made from Olivella biplicata shells. Two are wall disks, the third is a cup. As such, they are not temporally diagnostic in any exact sense (cf. C King 1981:360). One of the disks, however, shows clear evidence of having had its central perforation drilled with a metal needle, demonstrating that it is historical in age and most likely dating after the beginning of Spanish colonization (ibid:295-296); i.e.,

post - A.D. 1769. Thus, the beads support the interpretation of CA-LAN-2242 as historical, perhaps even nineteenth century, in age.

The single shell pendant from the site is a large, flat, triangular-shaped piece of Haliotis rufescens shell (see Figure 14). It lacks any perforation, but the extreme end of the apex (where a perforation would be expected) is worn away, indicating that the presence/absence of a perforation is ambiguous. The two cut edges of the shell piece, however, are ground smooth, and the dorsal surface has been ground and polished to remove the epidermis of the shell. It seems most likely that this specimen served as a pendant hung from a perforation at its apex; however, we cannot discount the possibility that it originally constituted some other form of ornament, given the current absence of any perforation.

As noted above, 40.4 gms of asphaltum were found in the cave, with the majority of these displaying evidence of basketry impressions. Such would result from tarred baskets, which were used as water bottles or jugs, globular storage baskets, or as part of basket-hopper mortars. Furthermore, the discovery of tarred basketry fragments in caves in inland southern California is quite common (W & S Consultants 1989a). Thus, the presence of these fragments in the cave suggests that baskets were once kept at this locale; whether they were looted

from the cave or removed aboriginally, however, may never be known.

Only one of the basketry impressions is sufficiently large and detailed to provide any indication of the kind of basket it once covered. This specimen (#2242-11) itself only measures 2.01 by 1.45 by 0.26 cm, demonstrating, among other things, that the asphaltum coating was quite thin. It was placed on what appears to be a simple close twined basket, using the technological terminology of Adovasio (1977). Wefts are 0.25 cm wide and 0.65 cm high; there are thus approximately three wefts per centimeter, and slightly less than two warps per centimeter. Given the impossibility of orienting this small specimen, it is not possible to determine whether it was **s** or **z** slant twined.

In addition to the prehistoric or aboriginal remains from CA-LAN-2242, a small quantity of modern Euro-American artifacts were also recovered, and are listed in Table 7. These include two match sticks, some plastic sheeting fragments, and a corroded metal strap of some kind, perhaps from a bucket. The inferential importance of these artifacts pertains to the evidence they provide for disturbance of the deposit. As is evident in Table 7, they indicate that modern materials were introduced essentially to bedrock; that is, that the deposit had been turned-over, further supporting our interpretation of it as

The final class of archaeological remains from the cave is faunal specimens. A total of 34 pieces of animal bone, weighing 72.7 gms, and two pieces of shell weighing 6.8 gms, were recovered from the cave (Table 21). As regards the animal bone, and as noted previously, one of these specimens (#2242-23) is the articulated end of a deer cannon bone that may be a fragment of a bone awl. When this is subtracted from the collection, 33 pieces of bone were found weighing 55.8 gms. All of this, with two exceptions, consists of large mammal bone. The exceptions are, first, 11 pieces of small mammal bone weighing 0.4 gms and, second, a single piece of turtle shell, (Clemmys marmorata) weighing 0.6 gms.

Faunal remains from cave deposits are particularly difficult to interpret, inasmuch as the taphonomic problems are greatly compounded by the fact that such settings may be used by coyotes and other predators, who would also introduce bone into the deposit. This circumstance relative to CA-LAN-2242 is particularly acute in that there is no clear evidence that the site served as a habitation or camp; indeed, its small size and low-ceiling essentially precludes such having occurred. Thus, although we think it likely that some of the animal bone (including the turtle remains) may have been brought into the cave by human agency, there is no feasible way to argue

whether or not the bulk of the faunal collection is natural or cultural.

Two pieces of unmodified shellfish were, however, recovered during the excavation. These consist of single fragments of pectin and Conus californicus. In the latter case, this is a shell species used for ornamental, not dietary, purposes, thus fitting with the interpretation of the site as a cache rather than habitation area.

In summary, CA-LAN-2242 appears to have been a small cache cave, used to store baskets (perhaps water bottles), and various tools (such as shaft straighteners and bone awls) and ornaments (including shell beads). At least one of these last artifacts indicates that the cave was used into the historical period, perhaps during the early nineteenth century. Unlike the famous nearby Bowers' Cave, however, we found no evidence to suggest that ceremonial or sacred objects, such as ritual wands and feather sashes and capes, were stored at this locale. However, the cave appears to have been looted sometime in the past, so a complete understanding of its original contents may never be obtained.

4.9 Interpretive Concerns

The excavation of eight sites within the West Ranch study area revealed the presence of three small camps or habitation sites (CA-LAN-2133, -2233 and -2235); one very small lithic scatter (CA-LAN-2236); and one historical cache cave that had been heavily looted some time in the past (CA-LAN-2242). The three remaining sites investigated proved in one case to represent a small site seemingly destroyed in its entirety by inadvertent bulldozer activities and natural erosion (CA-LAN-2241), in the second a secondary deposit of fill derived from a nearby site and thus containing a small quantity of out of context artifacts (CA-LAN-2234), and in the third a cave that was found to have no extant evidence of aboriginal use (CA-LAN-2240). Thus, in terms of substantive archaeological concerns, our emphasis necessarily is on the three habitation or camp sites.

The data obtained from the Phase II test excavations at the prehistoric sites within the West Ranch study area can then be summarized in terms of a few key issues. The first concerns site distributions, and therefore settlement patterns on the Santa Clara River drainage. As now seems apparent, prehistoric sites are exclusively concentrated immediately along this river course, with no evidence for upland or off-river <u>occupation</u> in this immediate region in the Castaic Junction area. While we presume that natural resources were exploited away from the

river, it is very clear that that inhabitation was tethered to the river course, most likely due to the presumed absence of potable water sources away from this riparian zone. Alternatively, it is possible that subsistence heavily emphasized riparian resources that we have not yet recognized archaeologically, but in either case the riverine environment was a primary inhabitation region, at least during parts of the seasonal round.

Note, further, that the qualitative and quantitative nature of the artifact assemblages from the three habitation sites suggests seasonal and essentially non-intensive site use. There is no evidence to support either an interpretation that these sites were year-around villages, or that they were even seasonally inhabited by large groups of peoples. Instead, they appear to represent small dispersal phase camps, perhaps occupied by single or extended families during part of a seasonal movement pattern. This raises a subsidiary question concerning the nature of this putative seasonal round and, in particular, where else on the landscape the inhabitants of these sites may have travelled during their yearly cycle of transhumance. The current project certainly cannot provide a final resolution to this regional question. However, based on the absence of sites in the upland areas of the Santa Susana Mountains south of the river (W & S Consultants 1994a), it seems most likely that seasonal movements involved either

shifts to higher elevations in the Los Padres to the north, or movements along the Santa Clara River towards the east. We discount the possibility that seasonal movements may have been directed towards the coast, based on the dramatic negative evidence on these three sites indicating little or no interaction with coastal peoples and/or access to coastal resources.

Our prehistoric evidence from these sites, thus, matches what is known about the historical distribution of villages in this region (cf. Kroeber 1925), which places all villages on the banks of the Santa Clara River. However, this raises the second, and perhaps primary, issue, chronology, and its corollary concern, the relationship between the sites in the study area, per se. When the sites considered in this study are placed chronologically, a very clear pattern emerges. The three largest sites, CA-LAN-2133, -2233 and -2235 are all temporally equivalent, dating to the Intermediate Horizon (albeit it is possible that CA-LAN-2235 may include a slightly earlier occupation than the other two sites). That is, we have obtained relative temporal diagnostics as well as direct chronometric ages for these sites that place them between 3500 and 800 years B.P. No evidence was obtained to support significantly earlier or later occupations in the region.

The regional implications of the discovery of three habitation

deposits within an approximately 12,000 acres study area, but located in very close proximity and dating to the same time period with no evidence of earlier or later occupation, are quite great. This evidence suggests a dramatic punctuation in the prehistoric occupation of this region, involving a population that first becomes archaeologically visible during the Intermediate Period and, at its end, all but disappears from the area. We argue that this circumstance in the Santa Clara River drainage represents a local variant of a major adaptive radiation and population expansion which we have recently identified, and that apparently occurred after approximately 4000 years B.P. throughout far western North America.

In the last few years, we have undertaken a re-analysis of the artifact assemblages, chronometric and relative ages, and soils stratigraphies of all excavated sites in Ventura, Los Angeles, Riverside, and portions of Kern and Inyo Counties (Whitley 1994; Whitley and Beaudry 1991; Whitley et al 1988; Whitley et al, n.d.; Whitley and Simon n.d.; cf., W & S Consultants 1989a, 1989b, 1991a, 1991b; 1994b; etc.). In addition, we have completed major surveys as well as test and salvage excavations on a number of sites, for numerous different projects, in a general transect that runs from the Ventura/Los Angeles coast through the middle elevations of the Los Padres and San Gabriel Mountains, including the upper Santa Clara Valley, Agua Dulce/Acton region; through the Antelope Valley;

across the southern Sierra Nevada; and into the western Great Basin. Combined with the data from a series of published studies (e.g., McGuire and Garfinkel 1980; Horne 1981; Meighan 1981; Sutton 1988; Whitley 1994), this re-analysis has resulted in one important conclusion: essentially all previous temporal assignments of inland and interior sites to the Early Millingstone Period (or Early Horizon), beyond surface finds of projectile points in the desert regions, are dubious in the extreme. That is, we have found that the "evidence" for Early Millingstone occupation of the inland and interior regions is either based on the presence of non-diagnostic, functional distinctions in artifact assemblages which, more rightly, pertain to site adaptive function rather than age (cf. Glassow 1965:68), or to a very small number of highly suspect chronometric assays. Moreover, we have also found a soils stratigraphic "basement" level for cultural deposits in the inland Ventura/western Los Angeles County region that, based on our own chronometric ages, dates to no more than 3500 to 4000 years in age.

That is, we have found that although Early Millingstone Period sites are relatively common along the coast, there is little if any evidence for the occupation of the inland and interior regions during this early time period. While the millingstone adaptation to seeds and plants, and toolkits dominated by plant processing tools, are present (if not common) in the inland and

interior zones, they appear to date to a later time period, with true Early Millingstone Period occupation apparently restricted to the coastal strip, proper (Whitley and Beaudry 1991). It is currently unclear whether this pattern is fully a function of real differences in inland and interior versus coastal settlement distributions, or whether it reflects site preservation problems in the inland region, but the widespread nature of the pattern tends to preclude causality due to site formation processes alone.

An appropriate example of the confusion of millingstone functional and adaptational patterns for Early Millingstone Period chronological diagnostics at inland sites, and the resulting muddle in the cultural-historical sequence, is provided by the so-called "Topanga Culture", as exemplified by excavations at CA-LAN-1, the "Tank Site" (cf. Heizer and Lemert 1947; Treganza and Malamud 1950; Treganza and Bierman 1958). This is widely regarded as "Early Millingstone" chronologically, and its base ("Phase I") was initially assigned 10,000 years of age, due to the large numbers of millingstones, "crude" choppers and "cog stones" (see Treganza and Bierman 1958:75, Table 1). More recently, it has been assigned a revised age of more than 5000 years B.P. (Moratto 19845:127). But, as Johnson (1966) has rightly pointed out, Phase III of the Topanga Culture, as demonstrated by his excavations at CA-LAN-2, is only 2500 years old; that is, it is Intermediate and not Early Millingstone

in age. It then must follow that the preceding Phase II can only be considered 3500 to 2500 years old, due to the presence of (Intermediate Period) mortars and pestles in the Phase II assemblage. That is, Phase II of the Topanga Culture also can only be Intermediate period in age. Since Phase I lies immediately and comformally below Phase II stratigraphically, it likewise must follow that it immediately pre-dates the Intermediate Period Topanga Phase II remains. At best, then, Phase I of the Topanga Culture is terminal Early Millingstone or transitional Early Millingstone/Intermediate, but not necessarily of any great antiquity. This intepretation is confirmed when it is recognized that one of the key classes of temporal diagnostics said to support the very early age assignment for Phase I, the cogged stones, were all recovered from the Phase II deposit, even though Treganza and Bierman (1958) incorrectly assigned them to the Phase I assemblage (Eberhart 1961:366-7). That is, cogged stones are part of an assemblage that includes Intermediate Period mortars and pestles. Thus, there is currently no evidence to suggest any great antiquity for Phase I of the Topanga culture; instead it appears to be simply ~4000, rather than 10,000 or even 5000+ years in age. And, once it is acknowledged that a "classic" Early Millingstone temporal diagnostic, the cogged stone, is in fact only Intermediate Period in age, then a whole series of putatively 6000 to 8000 year old inland sites - the basement level for most inland regions - immediately become

Intermediate Period in age.

In the general inland southern California region, chronometric arguments for an Early Millingstone inland occupation then reduce to a single early radiocarbon age from CA-VEN-294 (Rosen 1978) which, for reasons discussed at length elsewhere (Whitley 1979) is stratigraphically and typologically unlikely. Elsewhere in interior south-central California and the western Great Basin, the plausible case for a pre--~4000 years B.P. occupation of any consequence is also close to non-existant.

Our point here is not to suggest that no inhabitation or exploitation of inland/interior southern California and the western Great Basin occurred before 3500 - 4000 years ago. We are sure that such did occur, especially in light of the occassional discovery of Paleoindian/Late Pleistocene and Early Holocene remains from this region. Instead, it is simply to emphasize two points. First, there is little or no evidence of such occupation, away from the immediate coastal verge, prior to ~4000 years ago. That is, the inland and interior regions appear to have been more or less depopulated prior to roughly 4000-3500 years ago. In the desert regions we certainly know that substantial population existed during the Early Holocene/Western Pluvial Lakes Tradition Period. Thus, the depopulation appears to represent the middle Holocene, essentially the Altithermal climatic period, while the

population increase correlates with the so-called neo-glacial. Second, it is apparent that after ~4000 B.P. there was a very dramatic increase in site numbers, site functional types, and environmental zones exploited, in addition to the diversity represented by artifact assemblages. For example, we have noted that the initial occupations of many middle elevation zones in the Los Padres and San Gabriel Mountains, near to the southern California coastal zone, as well as in the southern Sierra Nevada, first occurred at approximately 4000 - 3500 years ago. And, as has been noted for a number of years in the coastal Santa Barbara region, per se, the Intermediate Period is signalled by an addition of new subsistance strategies and artifact types in the archaeological record.

Thus, we would like to suggest that CA-LAN-2133, -2233 and -2235, all dispersal phase camps located in inland southern California, reflect far western North American-wide demographic and cultural processes that occurred during what is referred to, locally, as the Intermediate Period or Middle Horizon, and represents the improving post-Altithermal climatic period. These processes included a major demographic explosion, which resulted in the inhabitation of previously depopulated or under-populated inland and interior regions; a concomitant diversification of adaptive strategies and exploitation of a wide range of terrestrial resources, and the demographic radiation into new kinds of environments.

The flip-side of this argument is a circumstance that has only recently become apparent; namely, the widespread abandonment of inland sites at the start of the Late Prehistoric Period (W & S Consultants 1994b). Although the details of this seeming reduction in population and settlement have yet to be fully explored, there again appears to be a process that extended from the western Great Basin (Whitley 1994) and, in fact, throughout the greater Southwest, across the Mojave Desert and Antelope Valley (Sutton 1988) and, as is evident at sites CA-LAN-2133, -2233 and -2235, into the Santa Clara River drainage, at a minimum. Furthermore, some perturbations of this same process are evident near the coast in the Santa Barbara Channel area (ibid). In this case, environmental change again may be a driving force behind these abandonment, as a long-term circa AD 1200 drought has been identified as a major disruptive factor across the far western United States.

Again, we do not mean to imply that no aboriginal population lived in the Santa Clara River drainage after AD 1200; historical records, among others, demonstrate that there certainly was a resident population in this region. Instead, our current interpretation is that the Intermediate Period maintained a higher population and therefore denser settlement pattern than the subsequent Late Prehistoric, most likely reflecting changes in the relative carrying capacity of the

natural environment over time.

Thus, CA-LAN-2133, -2233 and -2235 appear to reflect prehistoric inhabitation of the Santa Clara River system during an environmentally-optimal period in the past, with the appearance of these sites thus correlating with the end of the hot and dry Altithermal climatic period and the beginning of the cooler and wetter neo-glacial. In contrast, their abandonment occurred at a time of drought and therefore reduced available natural resources.

This apparent demographic pattern leads to a corollary concern, which is the nature of the relationship between these three specific habitation sites. We have implied aspects of their inferred relationships above, but these warrant explicit consideration here. First, it is quite clear that although CA-LAN-2233 and -2235 sit upon different landforms, and therefore fully qualify as distinct sites, for all intents and purposes they represent the same geographical location: the west bank of the Martinez Chico arroyo at its confluence with the Santa Clara River. This fact, combined with their essentially coeval occupation spans, as well as the very similar constituents of their respective artifact assemblages, leads to one conclusion: although definable in a clerical sense as distinct sites, CA-LAN-2233 and -2235 clearly represent a single behavioral pattern. That is, they are manifestations of

the same functional settlement unit.

In order to accomodate circumstances such as this, where distinctive sites in fact appear to reflect aspects of the same functional settlement unit, we have developed the term "site complex": a clustering of sites and deposits that, in the large sense, were probably occupied by the same group of people following the same adaptive strategies (Whitley 1979; Whitley and Beaudry 1991). Site complexes are particularly common in inland Ventura and western Los Angeles Counties, where they reflect the fact that archaeological sites develop horizontal, as well as vertical, accretions over time. Such minor changes in the focus of habitation sites - e.g., from one knolltop to an immediately adjacent knolltop - occurred most likely due to minor circumstances, such as the burning of a camp, or its infestation by pests. Indeed, Spanish accounts attest to the fact that villages had an average lifespan of about seven years, at which point they would be burned and shifted slightly to a nearby location. Availability of water, of course, prevented the village locations from changing to any consequential degree.

Thus, it is clear that CA-LAN-2233 and -2235 are portions of the same functional settlement unit. Less clear is the relationship of these two archaeological deposits to CA-LAN-2133, across the river and slightly downstream from their locations. The following appear to be the pertinent factors

intents and purposes, located within the same environmental zone as the two north bank sites. We thus can dismiss the possibility that CA-LAN-2133 represents part of the seasonal round of the inhabitants of the other two sites. If such were the case, at least one of the sites would necessarily be located in a different kind of environment, so as to facilitate access to seasonally variable resources in different environments. Thus, the north bank and south bank sites appear to be equivalent in terms of probable position in seasonal subsistence patterns. Although there are some seemingly minor differences in stone tool assemblages and faunal remains between the north bank and south bank sites, furthermore, in general there is a quite close correspondance in artifact assemblages and faunal remains. Certainly, given the evidence currently available, there is no strong case in the artifact assemblages for differing functional or subsistence specializations between these sites, thus supporting the above inference.

Second, if we compare the size of the two subsurface deposits from the north bank sites with that on the south, they can be stated as grossly equivalent in size, especially considering that variations in depth should contribute to different areal dimensions, even with fully equivalent population numbers and lengths of occupation: CA-LAN-2133 covers approximately 11,550 m^2; the combined size of CA-LAN-2233 and -2235 is 12,800 m^2. That is, at a gross level the contrast between the

two north bank sites and the single south bank habitation suggests roughly equivalent population sizes, here assuming (as is widely accepted) that there is some constant between population size, site area, and amount of artifactual debris generated.

Third, however, there is one seemingly distinctive difference when the north bank sites as a unit are compared to the south bank site. This concerns evidence for trade. As discussed at some length above, all sites display essentially equivalent evidence for trade in the form of obsidian with eastern California. Only CA-LAN-2133 on the south bank, though, has substantial evidence of trade with the area to the west, most noticeably in the amount of fused shale on the site and, to a lesser degree, in coastal shell. Furthermore, this site has a larger number of pieces of Sierra Pelona steatite, originating in the Acton area to the east. That is, CA-LAN-2133 has apparently significantly greater evidence for trade to the west <u>and to</u> the east than either CA-LAN-2233 and -2235 singly or combined.

It is difficult to offer any strong interpretation of this seemingly significant circumstance, given the relatively limited data at hand. Clearly, however, the inhabitants of CA-

LAN-2133 had greater access to western resources, and therefore stronger ties with populations living downstream in the drainage than the north bank occupants. Perhaps surprisingly, CA-LAN-2133's inhabitants also seemingly had greater access to resources to the east, specifically to Sierra Pelona steatite. The only plausible explanation for this circumstance, accordingly, is that CA-LAN-2133 on the west, and CA-LAN-2233 and -2235, on the east, sat astride a cultural boundary of some sort, with the increased accessibility maintained by the inhabitants of CA-LAN-2133 to western resources such as fused shale and coastal items allowing them to more readily obtain eastern trade goods, such as Sierra Pelona steatite, than the inhabitants of sites that were actually slightly more closely located to these resources. That is, this explanation assumes a difference in relative economic value between these various trade goods. While there is no independent support for such an assumption, no more plausible interpretation appears to exist which can account for the empirical evidence obtained from these sites.

Thus, it is apparent that the archaeological evidence obtained during the Phase II test excavations on sites in the West Ranch study area both contribute to emerging interpretive reconstructions in far western North American prehistory, as well as suggest additional problems requiring further analysis and study.

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary and Conclusions

Test excavations and determinations of site significance were conducted at eight prehistoric archaeological sites within the West Ranch study area, designated CA-LAN-2133, -2241, -2235, -2234 -2233, -2236, -2240 and -2242, northern Los Angeles County, California. This Phase II fieldwork involved mapping, the surface collecting of groundsurface artifacts and archaeological indicators, and the hand excavation of test pits on each site, along with laboratory processing, cataloging and analyses of the recovered artifact collections.

CA-LAN-2133 (NLF1) proved to comprise a subsurface archaeological deposit mantled by natural colluviation, and was found to measure approximately 11,550 m^2 in size. Judging from artifacts recovered from the site it appears to represent a small campsite or habitation, probably occupied by a single extended family on a seasonal basis. Temporally diagnostic artifacts from the site indicate that it was inhabited sometime during the Intermediate Period, or between about 3500 to 800 years B.P.; however, direct chronometric assays on obsidian

flakes from the site support an occupation restricted to the latter half of the Intermediate Period, from 160 B.C. to A.D. 1160. Currently, CA-LAN-2133 is in moderate to good condition. A graded road and disking have impacted the upper levels of the site, and its western end has been truncated by a eroded cut leading down to the river; otherwise, it is largely intact.

CA-LAN-2241 (NLF2) appears to have once represented a very small archaeological deposit that contained one, and possibly two, isolated human burials, and a small number of plant processing tools. No extant portions of this site could be located during the Phase II test. Instead, the human bones and artifacts found at this site were recovered in heavily disturbed contexts; specifically, on the groundsurface of a graded dirt road and in a large bulldozed area adjacent to the road, where all recovered artifacts were found and a few very fragmentary human bones were collected. A second human burial was also observed on the site in an immediately adjacent arroyo bottom. It had eroded out of the side-wall of the arroyo and had fallen to the stream bed when first located, but a subsequent arroyo side-wall collapse buried this interment under a very large volume of dirt. Efforts to expose and record this second burial by hand excavation were unsuccessful, due to the volume of collapsed soils covering it. It is assumed that this burial is also prehistoric in origin, based on its proximity to the other

prehistoric aboriginal remains. However, there is currently no positive empirical evidence in support this inference, and the apparent stratigraphic context of the burial in alluvial overbank (flood) deposits suggests the possibility that it may actually represent one of the many unrecovered bodies of a vicitim from the 1928 San Francisquito Dam disaster.

Thus, with the exception of this burial, all artifacts and human remains from CA-LAN-2241 have been removed from the site area. There are currently no extant portions of this site still in existence, although a disturbed burial of unknown origin is present in the arroyo bottom on the western side of the site.

CA-LAN-2235 (NLF3) consists of a subsurface archaeological deposit measuring approximately 3800 m^2 in size. It was found to represent a small, probably seasonally occupied camp or habitation, most likely used by a single extended family during their seasonal subsistence rounds. Artifacts from the site indicate that it dates to the Intermediate Period; chronometric assays on obsidian flakes from this locale, however, suggest an occupation beginning immediately before the start of the Intermediate Period, at 2250 BC, and extending to AD 940. Although the earlier obsidian dates from this site are slightly anomolous, they nonetheless are generally consistent with the temporal assignment based on the nature of the artifact assemblage recovered during the testing.

CA-LAN-2235 is currently in poor condition. A modern house, driveway and leach field are located within the approximate middle of the site, and have resulted in the complete destruction of approximately 20% of the site, while the remainder has been less severely impacted by modern land-use around this house.

CA-LAN-2234 (NLF4) was found to comprise introduced fill used to control erosion near the east bank of Martinez Chico Canyon. This fill was derived from the southern portion of nearby site CA-LAN-2233, and thus was itself artifact-bearing. Although a small quantity of archaeological artifacts and specimens was, accordingly, recovered from this putative site, these are out-of-original context, therefore entirely lacking in context and integrity, and thus of little or no scientific value.

CA-LAN-2233 (NLF5) consists of two components or loci, now separated by Highway 126. To the north is a subsurface archaeological deposit covering approximately 9000 m^2. This deposit contains a small habitation site apparently related to nearby site CA-LAN-2235. As at CA-LAN-2235, the northern portion of CA-LAN-2233 appears to represent a seasonally occupied single family camp. Artifacts from the deposit indicate that it dates to the Intermediate Period. This is confirmed by obsidian hydration ages from the site, which

indicate an occupation range of at least AD 236 to AD 808. A single human burial was exposed, recorded and re-buried in-situ on CA-LAN-2233 during the Phase II test. This was located adjacent to Highway 126. Subsequent to the Phase II fieldwork it has been determined that this burial falls within the highway right-of-way, and therefore outside of the study area, per se.

The northern portion of CA-LAN-2233 is in moderate condition. Its southern end has been truncated by Highway 126; plowing and disking have impacted its upper levels; and the development and ultimate removal of a historical walnut orchard has resulted in considerable stratigraphic mixing within the subsurface deposit at the site.

The southern portion of CA-LAN-2233 was determined to be a low density surface lithic scatter that had been very seriously and adversely impacted: a portion of it had been borrowed and used as fill on CA-LAN-2234; a railroad track and frontage road had been placed across the site, with the rail line subsequently removed; it has been plowed and disked for a number of years; and portions of it have been buried by Highway 126. Surface collecting during the Phase II test resulted in the recovery of all extant archaeological remains at this locale. Thus, there are no longer any extant archaeological remains within the southern portion of CA-LAN-2233.

CA-LAN-2236 (NLF6) was found to consist of a small, very low density surface lithic scatter. No temporally diagnostic artifacts or chronometrically datable materials were found on this site. It appears to have served as a non-specialized chipping station, probably created in concert with some other economic activity, such as plant gathering or hunting. Phase II fieldwork at this site resulted in the collection of all extant archaeological remains from this locale.

CA-LAN-2240 (NLF7) represents a small rockshelter that was inferred would contain archaeological remains. Subsurface excavation in this shelter demonstrated that no archaeological remains of any kind are still extant at this locale. That is, CA-LAN-2240 does not represent an extant cultural resource.

CA-LAN-2242 (NLF8) is a small cave. Test excavations within this cave indicate that it had been used to cache tools and implements, perhaps as late as the early part of the nineteenth century. However, the vast majority of the cave had been thoroughly looted. Only a few archaeological specimens were still present in the cave when test excavated during the current project. All of these were collected during this Phase II program; there are, thus, no longer any extant archaeological remains at this locale.

5.2 Final recommendations for CA-LAN-2133 (NLF1)

CA-LAN-2133 was found to contain a subsurface archaeological deposit and intact prehistoric artifacts that can contribute to the scientific reconstruction of prehistoric lifeways in the Santa Clara River Valley. Development at this locale has the potential to result in adverse impacts to cultural resources. Following the guidelines provided by Appendix K of the California Environmental Quality Act (CEQA), therefore, we recommend that any such adverse impacts to this site be mitigated by avoidance and preservation. Should preservation of this site be unfeasible, however, we recommend that a Phase III data recovery (salvage excavation) project be completed at CA-LAN-2133, to collect and preserve the scientific information contained therein.

5.3 Final recommendations for CA-LAN-2241 (NLF2)

Archaeological site CA-LAN-2241 was found to consist of a destroyed small prehistoric site, dating from sometime after 3500 years B.P. The site contained a handful of groundstone artifacts and two human burials, all of which were located in disturbed contexts at the time of the fieldwork. That is, subsurface testing demonstrated that no intact deposit is present on this site. Phase II surface collecting resulted in the recovery of all extant artifacts from this site, along with the

few fragmentary human bones constituting Burial 1. A second burial was also observed on this site. This had eroded out of an arroyo sidewall and had fallen into a stream bed. Subsequent arroyo wall collapse prior to an opportunity to record and stabilize this burial have re-buried this interment under a very considerable volume of soil. Efforts to re-expose it through hand-excavation were unsuccessful. Although it is assumed that Burial 2 on CA-LAN-2241 is aboriginal in origin, it apparently eroded out of Santa Clara River flood deposits. Thus, it must be recognized that this burial may instead represent one of the many unrecovered bodies of the victims of the 1928 San Francisquito Dam disaster.

Although there is no longer an extant archaeological site at this locale, a burial of unknown origin is still present in a disturbed context within the site area. Development of this area, therefore, has the potential to result in adverse impacts to archaeological remains (whether ultimately historical or prehistoric in age). Following the guidelines of CEQA, we recommend that any such adverse effects be mitigated through site avoidance and preservation. Should this prove unfeasible, we recommend that an effort be made to re-locate, analyze and re-inter the extant burial in the arroyo bottom at some more appropriate and environmentally secure locale within the region.

5.4 Final recommendations for CA-LAN-2235 (NLF3)

CA-LAN-2235 proved to be a subsurface archaeological deposit covering approximately 3800 m^2 in size. Artifacts recovered from the site and chronometric assays conducted on obsidian indicate that this site dates to the Intermediate Period, perhaps including the transitional period immediately before the beginning of this temporal phase, or from approximately 2250 BC to AD 940. It is thus at least partly coeval with CA-LAN-2133, as well as with CA-LAN-2233.

CA-LAN-2235 was found to be heavily disturbed, with at least 24% of it completely destroyed by the construction of a modern house, driveway and leach field within the approximate middle of the deposit. Nonetheless, the site has the potential to contribute to our scientific reconstruction of the prehistory of this region; further development on this site therefore has the potential to result in adverse impacts to cultural resources. Following Appendix K of CEQA, accordingly, we recommend that any additional adverse impacts to this site be mitigated by avoidance and preservation. Should this prove unfeasible, we recommend that a Phase III data recovery be conducted at this site to collect and preserve the scientific information contained therein.

5.5 Final recommendations for CA-LAN-2234 (NLF4)

The location designated CA-LAN-2234 was determined to comprise an area of imported fill. This fill was itself obtained from a nearby surface lithic scatter; hence the original recording of this locale as archaeological site CA-LAN-2234.

This location, accordingly, does not constitute a cultural resource with integrity. Given the fact that the few extant artifacts at this location are entirely out of original context, they have little potential to contribute to the scientific reconstruction of prehistoric lifeways in the region. Development of this locale, therefore, will not result in adverse impacts to significant cultural resources. We recommend that no additional archaeological work be required at this locale.

5.6 Final recommendations for CA-LAN-2233 (NLF5)

Due to the construction of Highway 126 through the site, CA-LAN-2233 is best considered in reference to two components: a southern portion, located south of the highway; and a northern portion, found in agricultural fields north of the highway.

The southern portion of CA-LAN-2233 was found to represent a very low density surface lithic scatter. It has been seriously

disturbed by the construction and then removal of a railroad line across this portion of the site; the grading of a dirt frontage road along the rail line course; the borrowing of fill eventually taken to the locale of CA-LAN-2234; plowing and disking for an unknown number of years; and the partial burial of the site component by the highway.

Phase II fieldwork determined that the southern portion of CA-LAN-2233 is solely a surface scatter of lithic tools, and resulted in the recovery of all extant surface artifacts at this locale, thus yielding scientifically consequential information from and about this component of this cultural resource. This has served to completely and satisfactorily mitigate any adverse impacts that might result from the development of that portion of CA-LAN-2233 lying south of Highway 126. Accordingly, we recommend that no additional archaeological work be required at this locale. However, following the guidelines of CEQA, it is recommended that an archaeologist be present for topsoil grading and removals at this location, to record, stabilize and evaluate any archaeological remains that might be uncovered during such activities.

The northern portion of CA-LAN-2233, in contrast, was found to contain a subsurface archaeological deposit covering approximately 9000 m^2. As with CA-LAN-2133 and -2235, this deposit was found to date to the Intermediate Period, with

chronometric assays indicating an occupation between AD 236 and 808. Furthermore, this northern portion of CA-LAN-2233 was determined to represent a small seasonal camp, probably occuppied by a single extended family during portions of their yearly subsistence round.

The condition of the subsurface deposit constituting the northern portion of CA-LAN-2233 was found to be moderate: its southern end has been truncated by Highway 126, while plowing and the develop and subsequent removal of a walnut orchard have contributed to a mixing of the stratigraphic layers at the site in certain areas. Nonetheless, the site has the potential to yield information valuable for the scientific reconstruction of prehistoric lifeways in this region. Moreover, a single human burial was uncovered and then re-buried on the site during the Phase II fieldwork. Although this was subsequently determined to fall outside of the project area, per se, and to be located in a road right-of-way, it is clearly of religious importance to local Native American groups. Development of the northern portion of CA-LAN-2233, therefore, has the potential to result in adverse impacts to cultural resources.

Following the guidelines of CEQA, we recommend that any adverse impacts to this site be mitigated by avoidance and preservation. Should this be unfeasible with reference to the entirety of the northern component of CA-LAN-2233, we

recommend that the human burial located within the site be preserved in-situ, and that adverse impacts to other portions of this component of the site be mitigated by a Phase III data recovery program.

5.7 Final recommendations for CA-LAN-2236 (NLF6)

Phase II testing at CA-LAN-2236 demonstrated that this site was a small, very low density surface lithic scatter. This fieldwork resulted in the recovery of all extant artifacts at this site, thus resulting in the recovery of scientifically consequential information from and about this cultural resource. This has served to completely and adequately mitigate all adverse impacts to this site that might accrue due to development at this locale. Accordingly, we recommend that no additional archaeological work be required at this locale. However, following Appendix K of CEQA, it is recommended that an archaeological monitor be present on this site for topsoil grading and removals, to identify, record and evaluate any archaeological remains that might be uncovered during such activities.

5.8 Final recommendations for CA-LAN-2240 (NLF7)

CA-LAN-2240 was recorded as a small rockshelter that was presumed to contain archaeological materials. Phase II testing failed to obtain any evidence that extant archaeological remains are present at this locale. Accordingly, CA-LAN-2240 does not constitute a cultural resource. Development at this locale, accordingly, will not result in adverse impacts to cultural resources. Based on this fact, we recommend that no additional archaeological work be required at this locale.

5.9 Final recommendations for CA-LAN-2242 (NLF8)

CA-LAN-2242 is a small cave that once was used to cache work tools and supplies. Based on the results of the Phase II testing of this cave, it was apparently very heavily looted at some time in the historical past. Our test excavations, accordingly, discovered only a small portion of the original contents of this site, which were localized in a small, and apparently overlooked area, at the mouth of the cave. There are currently no extant archaeological remains at this site, with the Phase II test having resulted in the recovery of scientifically consequential information from and about it. This has served to completely and adequately mitigate any adverse impacts that might accrue to this cultural resource due to development at this locale. We

recommend that no additional archaeological work be required at this cave site, therefore, following the guidelines of CEQA.

6.0
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7.0
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TABLE 1: CA-LAN-2133 ARTIFACT CATALOG

Cat#/2133-	Unit/level	Material	L x W x T	Weight (gm)	Number	Type
1	1/0-10	Lithic	---------	0.9	1	Debitage
2	1/10-20	Lithic	---------	22.7	1	Debitage
3	1/20-30	Lithic	---------	4.6	3	Debitage
4	1/30-40	Lithic	---------	2.1	2	Debitage
5	1/40-50	Bone	---------	2.6	16	Faunal remains
6	1/40-50	Lithic	---------	1.6	5	Debitage
7	1/50-60	Bone	---------	3.3	8	Faunal remains
8	1/50-60	Lithic	---------	0.1	1	Debitage
9	1/60-70	Bone	---------	0.4	4	Faunal remains
10	1/60-70	Lithic	---------	0.2	2	Debitage
11	1/60-70	Chert	4.01x3.19x2.2	19.4	1	Biface edge
12	1/70-80	Bone	---------	2.8	18	Faunal remains
13	1/70-80	Lithic	---------	10.4	3	Debitage
14	1/80-90	Bone	---------	0.6	2	Faunal remains
15	1/80-90	Lithic	---------	0.1	1	Debitage
16	1/90-100	Bone	---------	5.2	25	Faunal remains
17	1/100-120	Bone	---------	5	8	Faunal remains
18	1/100-110	Lithic	---------	3.5	2	Debitage
19	1/110-120	Bone	---------	2.5	18	Faunal remains
20	2/0-10	Lithic	---------	11.4	5	Debitage
21	2/10-20	Bone	---------	1.2	3	Faunal remains
22	2/10-20	Lithic	---------	1.5	4	Debitage
23	2/20-30	Lithic	----------	0.3	3	Debitage
24	2/30-40	Lithic	---------	19.6	8	Debitage
25	2/40-50	Bone & shell	---------	3.1	9	Faunal remains
26	2/40-50	Lithic	---------	6.2	6	Debitage
27	2/50-60	Bone	---------	1.1	5	Faunal remains
28	2/50-60	Lithic	---------	6	5	Debitage
29	2/50-60	Fused shale	1.2x1.1x0.4	0.3	1	Proj pt tip
30	2/60-70	Lithic	---------	0.7	7	Debitage
31	2/80-90	Bone	---------	0.4	1	Faunal remains
32	2/90-100	Bone	---------	0.7	3	Faunal remains
33	2/90-100	Lithic	---------	0.5	2	Debitage
34	2/100-110	Bone	---------	1.9	1	Faunal remains
35	2/100-110	Lithic	---------	9.4	5	Debitage
36	3/0-10	Bone	---------	1.3	14	Faunal remains
37	3/0-10	Lithic	---------	54.8	19	Debitage
38	3/10-20	Bone	---------	2	9	Faunal remains
39	3/10-20	Lithic	----------	28.8	17	Debitage
40	3/20-30	Bone	---------	4.4	13	Faunal remains
41	3/20-30	Lithic	---------	6	9	Debitage
42	3/30-40	Bone	---------	5.7	27	Faunal remains
43	3/30-40	Lithic	---------	7.5	6	Debitage

TABLE 1: CA-LAN-2133 ARTIFACT CATALOG

44	3/40-50	Bone	---------	20.5	146	Faunal remains
45	3/40-50	Lithic	---------	21.4	15	Debitage
46	3/50-70	Bone	---------	3.9	291	Faunal remains
47	3/50-70	Bone	1.7x0.5x0.3	0.1	1	Awl fragment
48	3/70-80	Lithic	---------	12.6	16	Debitage
49	3/80-90	Bone	---------	7.4	24	Faunal remains
50	Deleted	---------	---------	---------	---------	---------
51	3/90-100	Bone	---------	5	25	Faunal remains
52	3/90-100	Lithic	---------	9.6	4	Debitage
53	3/100-110	Bone	---------	5.7	19	Faunal remains
54	3/100-110	Lithic	---------	1.2	8	Debitage
55	3/110-120	Bone	---------	5.3	18	Faunal remains
56	3/110-120	Lithic	---------	3.5	4	Debitage
57	3/120-130	Bone	---------	4.3	25	Faunal remains
58	5/0-10	Lithic	---------	3.3	6	Debitage
59	5/10-20	Bone	---------	0.9	2	Faunal remains
60	5/10-20	Lithic	---------	19.4	8	Debitage
61	5/20-30	Bone	---------	0.4	2	Faunal remains
62	5/20-30	Lithic	---------	9.2	10	Debitage
63	5/30-40	Bone	---------	0.8	3	Faunal remains
64	5/30-40	Lithic	---------	19.5	13	Debitage
65	5/40-50	Lithic	---------	105.3	33	Debitage
66	5/50-60	Bone	---------	6.9	5	Faunal remains
67	5/50-60	Lithic	---------	42.3	23	Debitage
68	5/50-60	Schist	14.4x10.6x2.4	587.5	1	Mano
69	5/60-70	Steatite	1.12x0.41	0.1	1	Bead fragment
70	5/60-70	Lithic	---------	65.9	28	Debitage
71	5/70-80	Bone	---------	0.3	2	Faunal remains
72	5/70-80	Lithic	---------	63.1	21	Debitage
73	8/0-10	Lithic	---------	1.3	4	Debitage
74	8/10-20	Bone	---------	1.6	1	Faunal remains
75	8/10-20	Lithic	---------	10	5	Debitage
76	8/20-30	Lithic	---------	15.1	9	Debitage
77	Deleted	---------	---------	---------	---------	---------
78	8/30-40	Lithic	---------	3.3	9	Debitage
79	8/40-50	Bone	---------	0.4	4	Faunal remains
80	8/40-50	Lithic	---------	43.1	7	Debitage
81	8/50-60	Bone	---------	2.1	3	Faunal remains
82	8/50-60	Lithic	---------	36.3	4	Debitage
83	8/60-70	Bone	---------	0.5	2	Faunal remains
84	8/60-70	Lithic	---------	3.5	5	Debitage
85	5/80-90	Bone	---------	3.4	5	Faunal remains
86	5/80-90	Lithic	---------	63.2	40	Debitage
87	5/80-90	Sandstone	5.8x5.3x6.9	335.7	1	Pestle frag

TABLE 1: CA-LAN-2133 ARTIFACT CATALOG

88	5/90-100	Bone	---------	0.2	3	Faunal remains
89	5/90-100	Lithic	---------	101.9	25	Debitage
90	6/0-10	Bone	---------	0.1	1	Faunal remains
91	6/0-10	Lithic	---------	15.5	5	Debitage
92	6/10-20	Bone	---------	0.8	8	Faunal remains
93	6/10-20	Lithic	---------	10.4	7	Debitage
94	6/20-30	Bone	---------	3.9	8	Faunal remains
95	6/20-30	Lithic	---------	3.4	7	Debitage
96	6/30-40	Bone	---------	0.2	1	Faunal remains
97	6/30-40	Lithic	---------	38.2	4	Debitage
98	6/40-50	Bone	---------	0.6	5	Faunal remains
99	6/40-50	Lithic	---------	6	8	Debitage
100	6/50-60	Bone	---------	3.5	16	Faunal remains
101	6/50-60	Lithic	---------	1.4	6	Debitage
102	6/60-70	Lithic	---------	82.1	8	Debitage
103	6/60-70	Bone	---------	6.2	34	Faunal remains
104	6/70-80	Bone	---------	4.4	26	Faunal remains
105	6/70-80	Lithic	---------	17	12	Debitage
106	6/80-90	Bone	---------	4.8	37	Faunal remains
107	6/80-90	Lithic	---------	9.5	6	Debitage
108	6/80-90	Sandstone	7.0x9.5x5.5	495.2	1	Mano fragment
109	6/80-90	Schist	---------	81.4	7	Misc. grndstn
110	6/90-100	Bone	---------	2.8	13	Faunal remains
111	6/50-60	Sandstone	6.3x6.3x3.0	134.1	1	Pestle frag
112	9/10-20	Lithic	---------	0.8	1	Debitage
113	9/10-20	Bone	---------	0.3	1	Faunal remains
114	9/20-30	Lithic	---------	1.8	3	Debitage
115	9/30-40	Bone	---------	0.2	1	Faunal remains
116	9/30-40	Lithic	---------	4.3	6	Debitage
117	9/40-50	Lithic	---------	1.6	7	Debitage
118	9/50-60	Lithic	---------	5.9	6	Debitage
119	9/50-60	Lithic	---------	0.4	3	Faunal remains
120	10/0-10	Lithic	---------	2.1	3	Debitage
121	10/10-20	Bone	---------	0.7	2	Faunal remains
122	10/10-20	Lithic	---------	12.5	8	Debitage
123	10/20-30	Bone	---------	0.1	1	Faunal remains
124	10/20-30	Lithic	---------	5.9	10	Debitage
125	10/20-30	Sandstone	11.5x8.4x5.4	896.1	1	Mano
126	10/30-40	Bone	---------	0.3	6	Faunal remains
127	10/30-40	Lithic	---------	1.4	5	Debitage
128	10/40-50	Bone	---------	0.7	5	Faunal remains
129	10/40-50	Lithic	---------	3.8	5	Debitage
130	10/50-60	Metal	---------	---------	1	Fence staple
131	10/50-60	Bone	---------	1.6	8	Faunal remains

TABLE 1: CA-LAN-2133 ARTIFACT CATALOG

132	10/50-60	Lithic	---------	11.5	5	Debitage
133	11/0-10	Lithic	---------	0.9	2	Debitage
134	11/10-20	Lithic	---------	2.6	4	Debitage
135	11/10-20	Bone	---------	0.3	2	Faunal remains
136	11/20-30	Lithic	---------	0.4	1	Debitage
137	11/30-40	Lithic	---------	3.7	3	Debitage
138	11/50-60	Lithic	---------	1.1	4	Debitage
139	11/60-70	Bone	---------	0.1	1	Faunal remains
140	11/60-70	Lithic	---------	0.2	2	Debitage
141	12/0-10	Bone	---------	1.1	1	Faunal remains
142	12/0-10	Lithic	---------	0.1	1	Debitage
143	12/30-40	Bone	---------	0.1	1	Faunal remains
144	12/30-40	Lithic	---------	3	1	Debitage
145	12/40-50	Lithic	---------	26.6	3	Debitage
146	12/50-60	Bone	---------	4.7	2	Faunal remains
147	12/50-60	Lithic	---------	0.1	1	Debitage
148	12/50-60	Sandstone	13.6x4.4x4.5	423.1	1	Pestle fragm
149	15/0-10	Lithic	---------	0.5	3	Debitage
150	15/10-20	Lithic	---------	1	2	Debitage
151	16/0-10	Bone	---------	0.5	1	Faunal remains
152	16/0-10	Lithic	---------	0.8	3	Debitage
153	16/10-20	Lithic	---------	2.4	3	Debitage
154	16/20-30	Bone	---------	0.7	11	Faunal remains
155	16/20-30	Lithic	---------	0.2	2	Debitage
156	16/20-30	Metal	---------	---------	1	Tack
157	16/30-40	Lithic	---------	0.9	2	Debitage
158	15/30-40	Lithic	---------	0.9	1	Debitage
159	15/40-50	Bone	---------	1.2	1	Faunal remains
160	15/50-60	Lithic	---------	0.6	1	Debitage
161	16/70-80	Lithic	---------	2.2	1	Debitage
162	14/0-10	Lithic	---------	1.6	2	Debitage
163	14/0-10	Bone	---------	0.4	1	Faunal remains
164	14/10-20	Bone	---------	0.9	3	Faunal remains
165	14/10-20	Lithic	---------	7.8	2	Debitage
166	14/20-30	Bone	---------	0.4	3	Faunal remains
167	14/20-30	Lithic	---------	8.6	5	Debitage
168	14/30-40	Bone	---------	0.8	5	Faunal remains
169	14/30-40	Lithic	---------	4.6	2	Debitage
170	14/40-50	Lithic	---------	21.4	4	Debitage
171	14/40-50	Bone	---------	1.7	4	Faunal remains
172	14/50-60	Bone	---------	0.3	3	Faunal remains
173	14/50-60	Lithic	---------	1.9	2	Debitage
174	3/50-70	Quartzite	7.1x6.4x6.6	446.1	1	Metate frag
175	3/70-80	Quartzite	6.1x3.8x4.3	117.7	1	Mano fragment

TABLE 1: CA-LAN-2133 ARTIFACT CATALOG

176	3/70-80	Quartzite	11.5x6.1x3.9	407.8	1	Mano fragment
177	3/90-100	Quartzite	8.3x4.7x3.4	104.5	1	Uniface edge
178	7/50-60	Lithic	---------	19.2	4	Debitage
179	7/50-60	Bone	---------	4.3	7	Faunal remains
180	7/60-70	Bone	---------	1.3	8	Faunal remains
181	7/60-70	Lithic	---------	3.3	1	Debitage
182	7/70-80	Bone	---------	0.7	2	Faunal remains
183	7/70-80	Lithic	---------	5.8	2	Debitage
184	7/80-90	Bone	---------	0.3	2	Faunal remains
185	18/0-10	Chert	1.4x1.6x1.7	2.4	1	Biface frag
186	18/20-30	Quartz	3.9x3.3x1.6	22.9	1	Biface edge
187	18/30-40	Lithic	---------	4.5	6	Debitage
188	18/40-50	Quartzite	6.3x3.5x4.9	150.8	1	Hammerstone
189	19/50-60	Meta-volcanic	5.7x5.9x4.4	156.3	1	Biface chopper
190	20/40-50	Quartzite	5.5x4.1x2.4	61.7	1	Mano fragment
191	3/50-60	Bone	---------	---------	1	Tooth fragment
192	3/70-80	Bone	---------	---------	1	Tooth fragment
193	6/80-90	Bone	2.8x0.7x0.4	0.7	1	Awl fragment
194	14/60-70	Bone	---------	2.7	3	Faunal remains
195	19/0-10	Bone	---------	0.3	3	Faunal remains
196	19/0-10	Lithic	---------	2.6	3	Debitage
197	19/10-20	Lithic	---------	3.6	4	Debitage
198	19/10-20	Bone	---------	0.1	1	Faunal remains
199	19/20-30	Lithic	---------	0.7	1	Debitage
200	19/30-40	Bone	---------	2.6	4	Faunal remains
201	19/30-40	Lithic	---------	7.5	4	Debitage
202	19/40-50	Bone	---------	9.8	6	Faunal remains
203	19/40-50	Lithic	---------	5.4	7	Debitage
204	Deleted	----------	----------	----------	----------	----------
205	19/50-60	Bone	---------	6.1	7	Faunal remains
206	19/50-60	Lithic	---------	11.9	4	Debitage
207	16/40-50	Bone	---------	2.5	9	Faunal remains
208	16/40-50	Lithic	---------	2.4	3	Debitage
209	16/50-60	Bone	---------	3.3	17	Faunal remains
210	16/50-60	Lithic	---------	7.3	7	Debitage
211	16/60-70	Bone	---------	12.9	62	Faunal remains
212	16/60-70	Lithic	---------	168.3	12	Debitage
213	16/70-80	Bone	---------	8	29	Faunal remains
214	Deleted	----------	----------	----------	----------	----------
215	17/10-20	Bone	---------	1.4	2	Faunal remains
216	17/10-20	Lithic	---------	9.6	10	Debitage
217	17/20-30	Bone	---------	6.9	5	Faunal remains
218	17/20-30	Lithic	---------	18.6	6	Debitage
219	17/30-40	Bone	---------	0.4	1	Faunal remains

TABLE 1: CA-LAN-2133 ARTIFACT CATALOG

220	17/30-40	Lithic	---------	1.7	3	Debitage
221	17/40-50	Bone	---------	0.8	2	Faunal remains
222	17/60-70	Bone	---------	4.5	15	Faunal remains
223	17/60-70	Lithic	---------	2.5	7	Debitage
224	18/0-10	Lithic	---------	5	5	Debitage
225	18/0-10	Bone	---------	1.4	3	Faunal remains
226	18/10-20	Bone	---------	1.2	5	Faunal remains
227	18/10-20	Lithic	---------	0.6	5	Debitage
228	18/20-30	Bone	---------	0.2	8	Faunal remains
229	18/20-30	Lithic	---------	11.2	5	Debitage
230	18/30-40	Bone	---------	0.4	4	Faunal remains
231	18/40-50	Bone	---------	0.9	4	Faunal remains
232	18/40-50	Lithic	---------	2.4	6	Debitage
233	18/50-60	Lithic	---------	0.3	3	Debitage
234	18/50-60	Bone	---------	0.2	2	Faunal remains
235	20/0-10	Bone	---------	0.1	1	Faunal remains
236	20/0-10	Lithic	---------	3.7	5	Debitage
237	20/10-20	Bone	---------	0.1	1	Faunal remains
238	20/10-20	Lithic	---------	16.6	7	Debitage
239	20/10-20	Metal	---------	---------	1	Fence staple
240	20/20-30	Bone	---------	0.1	1	Faunal remains
241	20/20-30	Lithic	---------	15.1	8	Debitage
242	20/30-40	Bone	---------	0.5	2	Faunal remains
243	20/30-40	Lithic	---------	9.6	2	Debitage
244	20/40-50	Bone	---------	0.2	1	Faunal remains
245	20/40-50	Lithic	---------	18.6	3	Debitage
246	20/50-60	Bone	---------	0.8	2	Faunal remains
247	20/50-60	Lithic	---------	3.6	4	Debitage
248	17/60-70	Metal	---------	---------	1	Nail
249	Deleted	----------	----------	----------	----------	----------
250	9/30-40	Sandstone	9.0x8.5x5.4*	548.3	1	Mano
251	SA#1	Lithic	---------	1.6	1	Debitage
252	SA#2	Lithic	---------	6.4	1	Debitage
253	SA#3	Lithic	---------	2.6	1	Debitage
254	SA#4	Lithic	---------	5.3	1	Debitage
255	SA#5	Lithic	---------	3.8	1	Debitage
256	SA#6	Lithic	---------	6.4	1	Debitage
257	SA#7	Lithic	---------	5.1	1	Debitage
258	SA#11	Lithic	---------	0.2	1	Debitage
259	SA#12	Lithic	---------	4	1	Debitage
260	SA#13	Lithic	---------	7.1	1	Debitage
261	SA#14	Lithic	---------	1.6	1	Debitage
262	SA#15	Lithic	---------	1.9	1	Debitage
263	SA#16	Lithic	---------	13.9	1	Debitage

TABLE 1: CA-LAN-2133 ARTIFACT CATALOG

264	SA#19	Lithic	---------	59.3	1	Debitage

TABLE 2: CA-LAN-2241 ARTIFACT CATALOG

Cat#/2241	Unit/level	Material	L x W x T	Weight (gm)	Number	Type
1	SA#1	Schist	14x9.4x1.6"	345.2	1	Misc grndstn
2	SA#2	Steatite	13x8x2.7"	563.2	1	Bowl
3	SA#3	Sandstone	17.6x13.6x6.7	1360.7	1	Bowl
4	SA#4	Sandstone	16.9x18.3x16.	1122.3	1	Pestle
5	SA#5	Sandstone	12.4x12.9x6.4	1571.8	1	Basket-hopper

TABLE 3: CA-LAN-2235 ARTIFACT CATALOG

Cat#/2235	Unit/level	Material	L x W x T	Weight (gm)	Number	Type
1	1/40-50	Bone	---------	0.4	1	Faunal remains
2	1/40-50	Lithic	---------	6.4	3	Debitage
3	SA#15	Lithic	---------	5.8	1	Debitage
4	2/0-10	Lithic	---------	0.6	1	Debitage
5	2/10-20	Lithic	---------	1.5	3	Debitage
6	2/20-30	Lithic	---------	15.1	1	Debitage
7	2/20-30	Lithic	---------	1.6	3	Debitage
8	3/20-30	Lithic	---------	3.4	4	Debitage
9	3/30-40	Lithic	---------	16.4	8	Debitage
10	3/40-50	Lithic	---------	0.4	1	Debitage
11	3/50-60	Lithic	---------	1.9	2	Debitage
12	3/60-70	Lithic	---------	4.3	3	Debitage
13	6/20-30	Lithic	---------	15.9	3	Debitage
14	6/30-40	Lithic	---------	1.4	1	Debitage
15	SA#15	Quartzite	1.1x6.0x4.5	173.1	1	Hammerstone
16	6/60-70	Lithic	---------	2.1	3	Debitage
17	8/10-20	Lithic	---------	4.6	2	Debitage
18	8/20-30	Lithic	---------	13.4	6	Debitage
19	8/30-40	Lithic	---------	10.4	7	Debitage
20	8/30-40	Quartzite	7.8x3.8x4.2*	175.2	1	Mano
21	8/30-40	Quartzite	11.7x6.7x4.4*	412.8	1	Mano
22	8/40-50	Lithic	---------	3.4	10	Debitage
23	8/50-60	Lithic	---------	24.3	8	Debitage
24	8/60-70	Lithic	---------	23.2	7	Debitage
25	8/70-80	Lithic	---------	16.3	4	Debitage
26	9/0-10	Lithic	---------	2.4	2	Debitage
27	9/10-20	Lithic	---------	11.8	11	Debitage
28	9/20-30	Lithic	---------	13.8	6	Debitage
29	9/30-40	Lithic	---------	6.7	4	Debitage
30	9/30-40	Meta-volcanic	12.3x8.4x8.4*	572.4	1	Mano
31	Deleted	---------	---------	---------	---------	---------
32	9/40-50	Lithic	---------	10	7	Debitage
33	9/50-60	Lithic	---------	25.9	4	Debitage
34	9/60-70	Lithic	---------	15.2	14	Debitage
35	9/70-80	Lithic	---------	15.8	6	Debitage
36	9/80-90	Lithic	---------	2.4	3	Debitage
37	11/0-10	Lithic	---------	72.1	2	Debitage
38	11/10-20	Lithic	---------	53.6	16	Debitage
39	11/20-30	Lithic	---------	21.4	10	Debitage
40	11/20-30	Bone	---------	0.3	3	Faunal remains
41	11/30-40	Lithic	---------	4.1	11	Debitage
42	11/30-40	Bone	---------	0.2	2	Faunal remains
43	11/40-50	Lithic	---------	7.9	8	Debitage

TABLE 3: CA-LAN-2235 ARTIFACT CATALOG

44	11/50-60	Lithic	---------	8.2	8	Debitage
45	11/50-60	Bone	---------	1.5	7	Faunal remains
46	11/60-70	Lithic	---------	21.3	12	Debitage
47	11/60-70	Bone	---------	0.4	2	Faunal remains
48	11/70-80	Lithic	---------	16.9	14	Debitage
49	11/70-80	Bone	---------	0.1	1	Faunal remains
50	11/80-90	Lithic	---------	9	16	Debitage
51	11/80-90	Bone	---------	0.7	5	Faunal remains
52	11/90-100	Bone	---------	0.3	1	Faunal remains
53	11/90-100	Lithic	---------	8.2	11	Debitage
54	11/100-110	Bone	---------	0.4	2	Faunal remains
55	11/100-110	Lithic	---------	2.1	1	Debitage
56	1/0-10	Lithic	---------	3.1	1	Debitage
57	1/10-20	Lithic	---------	1.6	2	Debitage
58	1/20-30	Bone	---------	0.1	1	Faunal remains
59	3/0-10	Lithic	---------	8.8	3	Debitage
60	SA#11	Chert	4.7x3.9x2.2	46.5	1	Core
61	5/0-10	Bone	---------	0.3	2	Faunal remains
62	5/10-20	Bone	---------	0.1	1	Faunal remains
63	5/20-30	Bone	---------	0.8	1	Faunal remains
64	6/0-10	Lithic	---------	1.7	1	Debitage
65	6/10-20	Lithic	---------	2.8	1	Debitage
66	SA#10	Lithic	---------	0.5	1	Debitage
67	8/0-10	Lithic	---------	5.7	6	Debitage
68	10/0-10	Lithic	---------	1.4	3	Debitage
69	10/10-20	Lithic	---------	15.2	12	Debitage
70	10/20-30	Lithic	---------	7.3	11	Debitage
71	10/30-40	Lithic	---------	17.4	18	Debitage
72	10/40-50	Lithic	---------	8.7	13	Debitage
73	10/50-60	Lithic	---------	26.2	17	Debitage
74	10/60-70	Lithic	---------	13	10	Debitage
75	10/70-80	Lithic	---------	0.4	2	Debitage
76	12/0-10	Lithic	---------	12.6	7	Debitage
77	12/10-20	Lithic	---------	30	9	Debitage
78	12/20-30	Lithic	---------	7	9	Debitage
79	12/30-40	Lithic	---------	5.4	2	Debitage
80	12/40-50	Lithic	---------	4.1	2	Debitage
81	12/40-50	Bone	1.5x0.4x0.4*	0.2	1	Awl
82	3/20-30	Chert	2.9x1.6x0.7*	2.1	1	Projectile pt
83	8/10-20	Chert	6.6x4.4x1.7	36.8	1	Uniface edge
84	8/20-30	Quartzite	7.4x5.5x4.3	187.2	1	Hammerstone
85	8/70-80	Plastic	---------	---------	1	Pipe frag
86	9/60-70	Chert	6.1x6.0x2.1	101.8	1	Uniface edge
87	10/0-10	Chert	1.6x1.1x0.4*	0.5	1	Projectile pt

TABLE 3: CA-LAN-2235 ARTIFACT CATALOG

88	10/70-80	Chert	1.7x1.0x0.5*	0.6	1	Biface
89	Surface	Metavolcanic	5.2x3.7x1.7	22.6	1	Utilized flake
90	SA#1	Quartzite	7.1x7.8x6.0	377.6	1	Hammerstone
91	SA#2	Lithic	---------	2.1	1	Debitage
92	SA#3	Lithic	---------	1.6	1	Debitage
93	SA#4	Lithic	---------	7.9	1	Debitage
94	SA#5	Lithic	---------	5.7	1	Debitage
95	SA#6	Lithic	---------	1.3	1	Debitage
96	SA#7	Sandstone	9.8x7.8x4.7*	454.2	1	Metate
97	SA#8	Schist	11.8x10.1x2.(	385.5	1	Comal (?)
98	SA#9	Sandstone	8.0x5.8x6.2*	312	1	Mano

TABLE 4: CA-LAN-2234 ARTIFACT CATALOG

Cat#/2234	Unit/level	Material	L x W x T	Weight (gm)	Number	Type
1	1/0-10	Bone	---------	0.4	1	Faunal remains
2	1/10-20	Lithic	---------	0.3	2	Debitage
3	1/20-30	Lithic	---------	0.2	1	Debitage
4	1/30-40	Lithic	---------	1.1	2	Debitage
5	1/50-60	Bone	---------	0.3	1	Faunal remains
6	1/50-60	Lithic	---------	0.4	1	Debitage
7	2/10-20	Shell	---------	0.1	1	Haliotis bead
8	3/0-10	Lithic	---------	5.6	1	Debitage
9	3/10-20	Lithic	---------	2.6	3	Debitage
10	3/20-30	Lithic	---------	0.1	1	Debitage
11	3/30-40	Lithic	---------	0.1	1	Debitage
12	4/0-10	Bone	---------	0.3	1	Faunal remains
13	4/0-10	Lithic	---------	1.6	5	Debitage
14	4/10-20	Lithic	---------	0.4	3	Debitage
15	4/20-30	Lithic	---------	1.7	2	Debitage
16	4/20-30	Bone	---------	0.4	1	Faunal remains
17	5/0-10	Bone	---------	0.6	1	Faunal remains
18	5/0-10	Lithic	---------	0.1	1	Debitage
19	5/10-20	Lithic	---------	0.3	1	Debitage
20	6/0-10	Bone	---------	0.2	2	Faunal remains
21	6/0-10	Lithic	---------	9.1	5	Debitage
22	6/10-20	Bone	---------	0.3	1	Faunal remains
23	6/10-20	Lithic	---------	1.2	2	Debitage
24	6/20-30	Lithic	---------	0.1	1	Debitage
25	6/30-40	Lithic	---------	2.1	1	Debitage
26	6/40-50	Lithic	---------	1.4	1	Debitage
27	9/0-10	Lithic	---------	12.7	3	Debitage
28	3/20-30	Chert	3.4x1.1x0.8	2.7	1	Drill
29	6/0-10	Bone	2.3x0.4x0.4*	0.4	1	Awl
30	SA#1	Quartzite	20.3x7.9x6.5	>2500.0	1	Pestle
31	SA#2	Lithic	----------	23.6	6	Debitage

TABLE 5: CA-LAN-2233 ARTIFACT CATALOG

Cat#/2233	Unit/level	Material	L x W x T	Weight (gm)	Number	Type
1	1/0-10	Bone	---------	0.4	1	Faunal remains
2	1/0-10	Lithic	---------	0.4	2	Debitage
3	1/0-10	Bone	---------	0.3	1	Faunal remains
4	1/10-20	Lithic	---------	0.5	1	Debitage
5	1/20-30	Bone	---------	1.1	6	Faunal remains
6	1/20-30	Lithic	---------	7.3	1	Debitage
7	2/10-20	Lithic	---------	5.7	3	Debitage
8	2/20-30	Lithic	---------	3.4	3	Debitage
9	2/20-30	Bone	---------	0.9	2	Faunal remains
10	3/0-10	Lithic	---------	0.9	2	Debitage
11	3/10-20	Lithic	---------	1.7	5	Debitage
12	4/0-10	Bone	---------	0.7	3	Faunal remains
13	4/0-10	Lithic	---------	0.3	2	Debitage
14	4/10-20	Bone	---------	0.1	1	Faunal remains
15	4/10-20	Lithic	---------	1.8	3	Debitage
16	4/20-30	Bone	---------	2.3	5	Faunal remains
17	4/20-30	Lithic	---------	6.2	5	Debitage
18	4/30-40	Bone	---------	1.5	16	Faunal remains
19	4/30-40	Lithic	---------	5.4	7	Debitage
20	4/40-50	Bone	---------	4.1	14	Faunal remains
21	4/40-50	Lithic	---------	15.8	11	Debitage
22	4/50-60	Bone	---------	6.3	37	Faunal remains
23	4/50-60	Lithic	---------	1.9	5	Debitage
24	4/60-70	Bone	---------	3.3	31	Faunal remains
25	4/60-70	Lithic	---------	8.4	1	Debitage
26	4/70-80	Bone	---------	2.4	10	Faunal remains
27	4/70-80	Lithic	---------	0.4	1	Debitage
28	6/0-10	Bone	---------	0.3	3	Faunal remains
29	6/10-20	Lithic	---------	0.4	1	Debitage
30	6/20-30	Bone	---------	1.2	4	Faunal remains
31	6/20-30	Lithic	---------	0.6	1	Debitage
32	6/30-40	Bone	---------	0.5	3	Faunal remains
33	6/30-40	Lithic	---------	8.5	6	Debitage
34	6/40-50	Bone	---------	3	12	Faunal remains
35	6/40-50	Lithic	---------	19.8	6	Debitage
36	6/50-60	Bone	---------	3	21	Faunal remains
37	6/50-60	Lithic	---------	5.6	5	Debitage
38	6/60-70	Bone	---------	4.1	16	Faunal remains
39	6/60-70	Lithic	---------	7.8	4	Debitage
40	6/70-80	Bone	---------	4.9	37	Faunal remains
41	6/70-80	Lithic	---------	0.3	3	Debitage
42	6/80-90	Bone	---------	4.6	23	Faunal remains
43	6/80-90	Lithic	---------	4.1	4	Debitage
44	7/50-60	Quartzite	8.5x7.3x5.1	331.3	1	Hammerstone

TABLE 5: CA-LAN-2233 ARTIFACT CATALOG

45	7/50-60	Bone	---------	0.1	1	Faunal remains
46	7/50-60	Lithic	---------	3.6	2	Debitage
47	7/60-70	Bone	---------	0.2	3	Faunal remains
48	7/60-70	Lithic	---------	0.6	2	Debitage
49	7/70-80	Bone	---------	0.6	4	Faunal remains
50	7/80-90	Lithic	---------	3.4	1	Debitage
51	7/90-100	Bone	---------	0.6	3	Faunal remains
52	7/90-100	Lithic	---------	0.3	1	Debitage
53	7/100-110	Bone	---------	1.3	13	Faunal remains
54	7/100-110	Lithic	---------	3.3	3	Debitage
55	7/100-110	Bone	---------	3.9	12	Faunal remains
56	7/110-120	Lithic	---------	0.7	2	Debitage
57	7/130-140	Bone	---------	1.2	4	Faunal remains
58	7/130-140	Lithic	---------	13.4	9	Debitage
59	7/140-150	Bone	---------	0.5	5	Faunal remains
60	7/140-150	Lithic	---------	16.8	9	Debitage
61	7/150-160	Bone	---------	3	17	Faunal remains
62	7/150-160	Lithic	---------	15.4	9	Debitage
63	7/160-170	Bone	---------	2.2	9	Faunal remains
64	7/160-170	Lithic	---------	5.9	13	Debitage
65	7/170-180	Lithic	---------	0.1	1	Debitage
66	7/180-190	Lithic	---------	5.1	2	Debitage
67	7/0-10	Bone	---------	1.2	1	Faunal remains
68	7/20-30	Bone	---------	0.4	1	Faunal remains
69	7/30-40	Bone	---------	0.8	8	Faunal remains
70	7/30-40	Lithic	---------	0.5	4	Debitage
71	7/30-40	Quartzite	7.7x4.3x5.1*	323.8	1	Pestle
72	7/40-50	Lithic	---------	5.1	1	Debitage
73	8/0-10	Bone	---------	0.1	1	Faunal remains
74	8/0-10	Lithic	---------	4.6	3	Debitage
75	8/10-20	Bone	---------	0.1	1	Faunal remains
76	8/20-30	Lithic	---------	11	3	Debitage
77	8/30-40	Bone	---------	0.5	1	Faunal remains
78	8/30-40	Lithic	---------	3.5	2	Debitage
79	8/40-50	Quartzite	13.9x8x6	1077.6	1	Mano
80	8/40-50	Bone	---------	1.7	4	Faunal remains
81	8/40-50	Lithic	---------	0.7	2	Debitage
82	8/50-60	Bone	---------	0.3	3	Faunal remains
83	8/50-60	Lithic	---------	0.3	1	Debitage
84	8/60-70	Bone	---------	0.2	2	Faunal remains
85	8/70-80	Bone	---------	0.9	5	Faunal remains
86	8/70-80	Lithic	---------	3.1	4	Debitage
87	8/80-90	Bone	---------	1.9	8	Faunal remains
88	8/80-90	Lithic	---------	4.1	1	Debitage
89	8/90-100	Bone	---------	0.6	3	Faunal remains

TABLE 5: CA-LAN-2233 ARTIFACT CATALOG

90	8/90-100	Plastic	---------	---------	---------	Fragments
91	8/100-110	Bone	---------	4.5	21	Faunal remains
92	8/100-110	Lithic	---------	3.6	3	Debitage
93	8/110-120	Bone	---------	4.4	24	Faunal remains
94	8/110-120	Lithic	---------	28.5	20	Debitage
95	8/130-140	Bone	---------	2.5	17	Faunal remains
96	8/130-140	Lithic	---------	5.8	8	Debitage
97	8/130-140	Quartzite	14.8x9.7x6.9	1640.4	1	Mano
98	8/140-150	Bone	---------	4.8	8	Faunal remains
99	8/140-150	Lithic	---------	16.8	6	Debitage
100	8/150-160	Bone	---------	6.2	8	Faunal remains
101	8/150-160	Lithic	---------	17	7	Debitage
102	8/160-170	Bone	---------	2.4	5	Faunal remains
103	8/160-170	Lithic	---------	18.2	9	Debitage
104	8/170-180	Lithic	---------	0.1	1	Debitage
105	8/180-190	Bone	---------	0.1	2	Faunal remains
106	8/190-200	Bone	---------	0.1	1	Faunal remains
107	9/0-10	Lithic	---------	0.8	2	Debitage
108	9/10-20	Bone	---------	0.2	2	Faunal remains
109	9/10-20	Lithic	---------	20.8	1	Debitage
110	9/20-30	Lithic	---------	1.6	1	Debitage
111	9/30-40	Bone	---------	0.1	2	Faunal remains
112	9/30-40	Lithic	---------	33.2	2	Debitage
113	9/30-40	Meta-volcanic	11.3x7x5.7	638.7	1	Mano
114	9/40-50	Lithic	---------	5.6	2	Debitage
115	9/40-50	Quartzite	4.1x4.1x5.7*	179.7	1	Mano
116	9/50-60	Lithic	---------	29.6	3	Debitage
117	9/60-70	Bone	---------	5.6	16	Faunal remains
118	9/60-70	Lithic	---------	6.1	4	Debitage
119	9/70-80	Bone	---------	2.8	13	Faunal remains
120	9/70-80	Lithic	---------	4.9	4	Debitage
121	9/80-90	Bone	---------	5	11	Faunal remains
122	9/80-90	Lithic	---------	0.2	1	Debitage
123	9/90-100	Bone	---------	2.3	19	Faunal remains
124	9/90-100	Lithic	---------	8.2	1	Debitage
125	9/100-110	Bone	---------	0.4	5	Faunal remains
126	11/10-20	Lithic	---------	0.3	1	Debitage
127	11/20-30	Lithic	---------	0.4	1	Debitage
128	11/40-50	Lithic	---------	1.4	2	Debitage
129	11/50-60	Lithic	---------	6.7	2	Debitage
130	11/50-60	Bone	---------	1.1	5	Faunal remains
131	11/50-60	Schist	6.7x6.7x1.7	120.1	1	Incised plaque
132	11/60-70	Lithic	---------	5.9	4	Debitage
133	11/60-70	Bone	---------	1.4	5	Faunal remains
134	11/70-80	Lithic	---------	8.1	1	Debitage

TABLE 5: CA-LAN-2233 ARTIFACT CATALOG

135	11/80-90	Quartzite	10.2x6.8x5.3*	325.9	1	Mano
136	11/80-90	Bone	---------	2.7	13	Faunal remains
137	11/80-90	Lithic	---------	3.2	4	Debitage
138	11/90-100	Bone	---------	7.2	16	Faunal remains
139	11/90-100	Lithic	---------	24.3	4	Debitage
140	11/100-110	Bone	---------	2.6	15	Faunal remains
141	11/100-110	Lithic	---------	6.6	2	Debitage
142	11/110-120	Bone	---------	1.8	6	Faunal remains
143	11/110-120	Lithic	---------	2.9	4	Debitage
144	11/110-120	Quartzite	6.4x5.4x5.6*	170.1	1	Mano
145	11/120-130	Bone	---------	4.1	11	Faunal remains
146	11/120-130	Lithic	---------	0.3	4	Debitage
147	11/130-140	Bone	---------	2.2	9	Faunal remains
148	Deleted	---------	---------	---------	---------	---------
149	11/140-150	Bone	---------	0.6	7	Faunal remains
150	Deleted	---------	---------	---------	---------	---------
151	11/150-160	Bone	---------	0.2	2	Faunal remains
152	11/150-160	Lithic	---------	4.9	2	Debitage
153	11/160-170	Bone	---------	0.9	4	Faunal remains
154	11/160-170	Lithic	---------	3.3	2	Debitage
155	12/0-10	Lithic	---------	4.9	2	Debitage
156	Deleted	---------	---------	---------	---------	---------
157	12/30-40	Lithic	---------	2.1	2	Debitage
158	12/40-50	Lithic	---------	4.2	2	Debitage
159	Deleted	---------	---------	---------	---------	---------
160	1/20-30	Chert	1.6x1.3x0.7*	1.2	1	Biface
161	7/160-170	Chert	2.4x1.2x0.5*	1.2	1	Drill
162	8/20-30	Chert	2.2x1.5x0.7*	1.5	1	Biface
163	8/80-90	Obsidian	2.5x2.0x1.3	1.7	1	Biface
164	8/130-140	Chert	3.4x2.5x3.4	3.2	1	Projectile pt
165	6/20-30	Bone	---------	---------	1	Tooth
166	6/50-60	Bone	---------	---------	2	Misc. frags
167	6/70-80	Bone	---------	---------	4	" "
168	7/50-60	Bone	4.6x0.5x0.4*	0.7	1	Awl
169	7/50-60	Bone	2.2	0.1	1	Awl frag
170	8/160-170	Bone	7x0.72x0.68	4.6	1	Misc worked fr
171	11/130-140	Bone	3.7x0.4x0.4	0.9	1	Needle
172	SA#1	Lithic	---------	3.7	1	Debitage
173	SA#2	Sandstone	9.2x5.8x6.3*	400.9	1	Metate
174	SA#4	Lithic	---------	2.9	1	Debitage
175	SA#5	Sandstone	6.4x8.8x6.2*	380.3	1	Mano
176	SA#7	Quartzite	7.4x6.1x4.4	331.6	1	Hammerstone
177	SA#8	Sandstone	7.8x3.5x5*	206.4	1	Mano
178	SA#9	Chert	3.9x3.6x2.6	31.9	1	Core
179	SA#11	Lithic	---------	4.2	1	Debitage

TABLE 5: CA-LAN-2233 ARTIFACT CATALOG

180	SA#13	Lithic	---------	2.8	1	Debitage
181	SA#15	Sandstone	7.4x7.2x6.2"	482.9	1	Metate
182	SA#16	Lithic	---------	6.8	1	Debitage
183	SA#17	Lithic	---------	7.2	1	Debitage
184	SA#18	Lithic	---------	4.4	1	Debitage
185	SA#20	Schist	16.3x10x3"	673.2	1	Misc grndstn

TABLE 6: CA-LAN-2236 ARTIFACT CATALOG

Cat#/2236	Unit/level	Material	L x W x T	Weight (gm)	Number	Type
1	1/0-10	Lithic	---------	4.1	2	Debitage
2	SA#1	Lithic	---------	21.6	1	Debitage
3	SA#2	Lithic	---------	67.1	1	Debitage
4	SA#5	Lithic	---------	1.3	1	Debitage
5	SA#6	Lithic	---------	0.2	1	Debitage

TABLE 7: CA-LAN-2242 ARTIFACT CATALOG

Cat#/	Unit/level	Material	L x W x T	Weight (gm)	Number	Type
1	1/10-20	Asphaltum		3.3	4	Basket impres.
2	1W/30-40	Bone	---------	1.9	5	Faunal remains
3	1W/20-30	Shell	0.7x0.7x0.2	0.2	3	Beads
4	1W/30-40	Asphaltum	----------	1.7	1	Basket impres.
5	1W/40-50	Asphaltum	----------	12.6	1	Basket impres.
6	2/0-10	Asphaltum	----------	7.6	1	Basket impres.
7	2/10-20	Wood	---------	---------	1	Match
8	2/20-sterile	Bone	16.2x2.4x1.2	24.7	1	Awl
9	2/20-sterile	Bone	---------	2.1	1	Faunal remains
10	2/20-sterile	Shell	9.6x5.9x0.5*	22.1	1	Pendant
11	2/20-sterile	Asphaltum	----------	0.3	1	Basket impres.
12	2/20-sterile	Wood	---------	---------	1	Match
13	2/20-sterile	Bone	---------	1.5	1	Faunal remains
14	1W/20-30	Asphaltum	----------	2.7	4	Chunk
15	2W/10-20	Bone	---------	27.4	6	Faunal remains
16	2W/20-30	Steatite	5.4x4.2x4.5*	58.9	1	Bowl
17	2W/20-30	Shell & bone	---------	5.1	22	Faunal remains
18	2W/30-40	Asphaltum	----------	4.3	4	Basket impres.
19	2W/30-40	Shell	---------	4.2	1	Fragments
20	2W/30-40	Steatite	4.9x3.9x2.2	75.6	1	Straightener
21	3/0-10	Metal	---------	---------	1	Strap
22	3/10-sterile	Plastic	---------	---------	---------	Sheet frags
23	3W/20-30	Bone	---------	16.9	1	Faunal remains

TABLE 8: CA-LAN-2133 LITHIC TOOLS & MISCELLANEOUS ARTIFACTS

Cat.#/2133	Unit/level	Material	Description/type
GROUNDSTONE TOOLS:			
68	5/50-60	Schist	Type 4B mano
87	5/80-90	Sandstone	Pestle fragment
108	6/80-90	Sandstone	Type 4B mano
109	6/80-90	Schist	Mano or plaque fragment
111	6/50-60	Sandstone	Pestle fragment
125	10/20-30	Sandstone	Type 4A mano
148	13/50-60	Sandstone	Pestle
174	3/50-60	Sandstone	Untypable metate fragment
175	3/70-80	Quartzite	Untypable mano fragment
176	3/70-80	Quartzite	Type 4B mano
190	20/40-50	Quartzite	Untypable mano fragment
250	9/30-40	Sandstone	Type 4B mano fragment
CORE/COBBLE COMPLEX TOOLS:			
188	18/40-50	Quartzite	Type 2A hammerstone
189	19/50-60	Meta-volcanic	Biface chopper
FLAKED STONE TOOLS:			
11	1/60-70	Chert	Biface edge
29	2/50-60	Chert	Projectile point tip
177	3/90-100	Quartzite	Uniface edge
185	18/0-10	Chert	Biface mid-section fragment
186	18/20-30	Quartz	Biface edge
MISCELLANEOUS ARTIFACTS:			
47	3/50-70	Bone	Awl tip
70	5/60-70	Steatite	Disk bead fragment
193	6/80-90	Bone	Awl tip

TABLE 9: CA-LAN-2133 DEBITAGE

Cat.#/2133-	Unit/level	Material	#/Wt. (gms)	Type
1	1/0-10	Chert	1/0.9	P-1
2	1/10-20	Quartzite	1/22.9	P-1
3	1/20-30	Chert	3/4.6	P-1, S-2
4	1/30-40	Chert	2/2.1	P-2
6	1/40-50	Chert	3/1.3	S-2, T-1
		Quartzite	1/0.1	T-1
		Fused Shale	1/0.2	T-1
8	1/50-60	Fused shale	1/0/1	T-1
10	1/60-70	Chert	1/0.1	T-1
		Fused shale	1/0.1	T-1
13	1/70-80	Chert	3/10.4	P-1, AS-2
15	1/80-90	Chert	1/0.1	T-1
18	1/100-110	Chert	2/3.5	P-1, S-1
20	2/0-10	Chert	4/9.7	P-1, S-1, T-2
		Fused shale	1/1.7	S-1
22	2/10-20	Chert	2/1.3	P-1, S-1
		Fused shale	1/0.1	T-1
		Obsidian	1/0.1	T-1
23	2/20-30	Fused shale	3/0.3	T-3
24	2/30-40	Chert	4/19.0	P-3, S-1
		Fused shale	3/0.5	T-3
		Quartzite	1/0.1	T-1
26	2/40-50	Chert	5/6.1	S-4, T-1
		Fused shale	1/0.1	T-1
28	2/50-60	Fused shale	3/5.0	P-1, T-1, BTF-1
		Chert	2/1.0	S-1, AS-1
30	2/60-70	Chert	1/0.2	S-1
		Fused shale	5/0.4	T-5
		Obsidian	1/0/1	T-1
33	2/90-100	Chert	1/0.5	S-1
35	2/100-110	Chert	3/7.7	P-1, S-1, AS-1
		Fused shale	2/1.7	P-1, T-1
37	3/0-10	Chert	10/53.4	P-2, S-2, T-1, AS-5
		Fused shale	9/1.4	S-1, T-9
39	3/10-20	Chert	11/26.3	P-4, S-3, T-2, AS-2
		Fused shale	6/2.5	S-2, T-4
41	3/20-30	Chert	5/2.4	S-2, T-2, AS-1
		Fused shale	3/1.5	P-1, S-2
		Quartzite	1/2.1	P-1
43	3/30-40	Chert	6/7.5	S-2, T-3, AS-1
45	3/40-50	Chert	12/19.4	S-4, T-6, AS-2
		Fused shale	3/0.2	T-3

TABLE 9: CA-LAN-2133 DEBITAGE

47	3/50-60	Fused shale	12/3.6	S-1, T-11	
		Chert	26/13.2	P-3, S-3, T-17, AS-17	
48	3/70-80	Chert	4/1.3	S-2, T-2	
		Fused shale	9/0.6	T-9	
		Quartzite	2/11.4	S-2	
		Obsidian	1/0.3	AS-1	
52	3/90-100	Chert	3/5.1	P-2, AS-1	
		Quartzite	1/4.5	P-1	
54	3/100-110	Chert	8/1.2	T-8	
56	3/110-120	Chert	2/2.5	S-1, AS-1	
		Obsidian	1/0.1	T-1	
		Fused shale	1/0.9	T-1	
58	3/120-130	Chert	5/3.2	S-3, T-2	
		Fused shale	1/0.1	T-1	
60	5/10-20	Chert	6/14.3	P-2, T-2, AS-2	
		Quartzite	2/5.1	S-2	
62	5/20-30	Chert	5/7.9	P-1, S-1, T-2, AS-2	
		Fused shale	5/1.2	T-4, BTF-1	
64	5/30-40	Fused shale	10/1.3	S-1, T-9	
		Metavolcanic	2/16.8	P-2	
		Quartzite	1/0.4	S-1	
65	5/40-50	Chert	20/12.9	P-2, S-5, T-11, BTF-1, AS-1	
		Metavolcanic	4/90.4	P-2, S-2	
		Quartzite	2/0.4	T-2	
		Obsidian	1/0.1	T-1	
		Fused shale	6/1.5	S-2, T-4	
67	5/50-60	Chert	11/13.2	P-3, S-1, T-2, AS-5	
		Quartzite	2/19.2	P-2	
		Metavolcanic	6/9.5	P-3, S-3	
		Fused shale	4/0.4	T-4	
70	5/60-70	Chert	21/13.7	S-9, T-10, AS-2	
		Fused shale	3/0/2	T-3	
		Metavolcanic	2/11.1	AS-2	
		Quartzite	2/40.9	P-2	
72	5/70-80	Metavolcanic	2/37.9	S-1, AS-1	
		Quartzite	3/14.6	P-3	
		Fused shale	2/0.3	T-3	
		Chert	14/10.3	P-1, S-4, T-5, AS-3	
86	5/80-90	Chert	23/14.7	S-6, T-11, AS-6	
		Fused shale	10/4.4	S-1, T-9	
		Quartzite	2/0.5	T-2	
		Metavolcanic	4/43.5	S-3, AS-1	
		Obsidian	1/0.1	T-1	

TABLE 9: CA-LAN-2133 DEBITAGE

89	5/90-100	Chert	12/11.9	S-2, T-7, As-3
		Fused shale	5/2.6	S-1, T-4
		Quartzite	3/73.9	S-2, T-1
		Metavolcanic	5/14.5	S-2, As-3
91	6/0-10	Chert	4/3.1	S-2, T-2
		Quartzite	1/12.4	P-1
93	6/10-20	Chert	6/4.4	S-4, T-2
		Quartzite	1/6.0	P-1
95	6/20-30	Chert	7/3.4	S-3, T-4
97	6/30-40	Chert	2/36.7	T-1, As-1
		Metavolcanic	1/1.3	S-1
		Fused shale	1/0.2	T-1
99	6/40-50	Chert	1/0.7	S-1
		Fused shale	7/5.3	P-2, T-5
101	6/50-60	Chert	4/0.7	T-4
		Fused shale	2/0.7	S-1, T-1
102	6/60-70	Chert	6/2.1	S-2, AS-4
		Fused shale	1/1.1	T-1, AS-1
		FG volcanic	1/78.9	C-1
105	6/70-80	Chert	8/16.2	P-1, T-6, AS-1
		Fused shale	4/0.8	T-4
107	6/80-90	Fused shale	1/0.1	T-1
		Chert	5/9.4	S-1, T-4
109	6/90-100	Chert	3/0.3	T-3
		Metavolcanic	2/77.6	P-1, AS-1
		Fused shale	1/0.1	T-1
		Quartzite	1/3.4	AS-1
178	7/50-60	Chert	3/19.1	T-2, AS-1
		Fused shale	1/0.1	T-1
181	7/60-70	Chert	1/3.3	S-1
183	7/70-80	Chert	2/5.8	T-1, AS-1
73	8/0-10	Chert	1/1.1	S-1
		Fused shale	3/0.2	T-3
75	8/10-20	Chert	5/10.0	S-3, AS-2
76	8/20-30	Chert	5/3.6	S-1, T-3, AS-1
		Fused shale	2/0.5	T-2
		Metavolcanic	2/11.0	S-1, AS-1
78	8/30-40	Chert	4/2.7	P-1, S-1, T-1, AS-1
		Fused shale	5/3.6	S-1, T-4
80	8/40-50	Chert	4/4.4	P-1, S-1, T-2
		Fused shale	1/0.1	T-1
		Metavolcanic	2/38.6	P-1, T-1
82	8/50-60	Metavolcanic	1/25.2	P-1

TABLE 9: CA-LAN-2133 DEBITAGE

		Chert	3/11.1	P-1, S-2	
84	8/60-70	Metavolcanic	3/3.3	S-2, T-1	
		Fused shale	2/0.2	T-2	
112	9/10-20	Chert	1/0.8	P-1	
114	9/20-30	Chert	2/1.6	P-1, T-1	
		Fused shale	1/0.2	T-1	
116	9/30-40	Chert	3/1.8	T-1, AS-2	
		Fused shale	3/2.7	T-2, AS-1	
117	9/40-50	Chert	3/0.9	T-3	
		Fused shale	2/0.3	T-2	
		Quartzite	1/0.2	T-1	
		Metavolcanic	1/0.2	T-1	
118	9/50-60	Chert	4/5.3	P-2, S-1, T-1	
		Fused shale	2/0.4	T-1, AS-1	
120	10/0-10	Chert	3/2.1	P-1, T-2	
122	10/10-20	Chert	5/4.4	S-1, T-1, AS-2	
		Metavolcanic	1/3.3	S-1	
		Quartzite	1/0.3	T-1	
		Quartz	1/3.7	S-1	
124	10/20-30	Chert	6/3.8	T-3, AS-3	
		Metavolcanic	2/1.8	P-1, T-1	
		Fused shale	1/0.2	T-1	
		Obsidian	1/0.1	T-1	
127	10/30-40	Fused shale	3/0.5	T-3	
		Metavolcanic	1/0.7	S-1	
		Obsidian	1/0.2	T-1	
129	100/40-50	Chert	3/3.5	S-2, T-1	
		Fused shale	1/0.1	T-1	
		Quartzite	!/0.2	T-1	
132	10/50-60	Chert	3/1.3	T-2, AS=1	
		Fused shale	1/0.1	T-1	
		Quartzite	1/10.4	P-1	
133	11/0-10	Chert	1/0.6	S-1	
		Fused shale	1/0.3	T-1	
134	11/10-20	Chert	2/2.4	T-1, AS-1	
		Fused shale	2/0.2	T-2	
136	11/20-30	Fused shale	1/0.4	T-1	
137	11/30-40	Chert	1/0.4	AS-1	
		Fused shale	2/3.3	S-1, T-1	
138	11/50-60	Chert	3/0.7	T-3	
		Fused shale	1/0.4	T-1	
140	11/60-70	Fused shale	2/0.2	T-2	
142	12/0-10	Fused shale	1/0.1	T-1	

TABLE 9: CA-LAN-2133 DEBITAGE

144	12/30-40	Chert	1/3.0	S-1	
145	12/40-50	Chert	3/26.6	S-2, AS-1	
147	12/50-60	Chert	1/0.1	T-1	
162	14/0-10	Chert	2/1.6	AS-2	
165	14/10-20	Chert	1/0.1	AS-1	
		Quartzite	1/7.1	P-1	
167	14/20-30	Chert	3/0.5	T-3	
		Fused shale	1/0.1	T-1	
		Metavolcanic	1/8.0	S-1	
169	14/30-40	Metavolcanic	1/4.5	S-1	
		Chert	1/0.1	T-1	
170	14/40-50	Chert	2/20.4	AS-2	
		Fused shale	2/1.0	T-2	
173	14/50-60	Metavolcanic	1/1.4	S-1	
		Quartz	1/0.5	T-1	
149	15/0-10	Chert	2/0.4	T-2	
		Fused shale	1/1.1	T-1	
150	15/10-20	Chert	2/1.0	T-2	
158	15/30-40	Chert	1/0.9	S-1	
160	15/50-60	Chert	1/0.6	T-1	
161	15/70-80	Chert	1/2.2	AS-1	
152	16/0-10	Chert	2/0.7	T-2	
		Fused shale	1/0.1	T-1	
153	16/20-30	Chert	3/2.4	T-2, AS-1	
155	16/20-30	Chert	1/0.1	T-1	
		Fused shale	1/0.1	T-1	
157	16/30-40	Chert	2/0.9	S-1, T-1	
208	16/40-50	Chert	2/6.1	P-1, T-1	
		Fused shale	1/0.2	BTF-1	
		Quartzite	2/1.4	S-1, T-1	
210	16/50-60	Chert	4/2.7	T-2, AS-2	
		Fused shale	1/0.1	T-1	
		Quartzite	2/6.5	S-1, T-1	
212	16/60-70	Chert	3/46.5	T-1, AS-1, C-1	
		Metavolcanic	2/1.1	T-2	
		Quartzite	2/120.2	T-1, C-1	
		Fused shale	5/0.5	T-4, BTF-1	
214	16/70-80	Chert	2/6.9	S-1, T-1	
		Fused shale	1/0.1	T-1	
216	17/10-20	Chert	4/2.9	S-3, T-1	
		Metavolcanic	2/3.1	S-1, T-1	
		Quartzite	1/3.2	S-1	
		Fused shale	2/0.3	T-2	

TABLE 9: CA-LAN-2133 DEBITAGE

		Quartz	1/0.1	T-1	
218	17/20-30	Chert	2/0.4	T-2	
		Metavolcanic	2/16.0	P-2	
		Fused shale	2/2.2	S-1, T-1	
220	17/30-40	Chert	1/1.3	AS-1	
		Fused shale	2/0.4	T-2	
223	17/60-70	Chert	4/1.3	T-4	
		Fused shale	2/0.4	T-2	
		Metavolcanic	1/0.8	S-1	
224	18/0-10	Chert	3/0.9	T-3	
		Metavolcanic	1/3.9	P-1	
		Fused shale	1/0.2	T-1	
227	18/10-20	Chert	4/0.5	T-4	
		Fused shale	1/0/1	T-1	
229	18/20-30	Chert	4/11.1	S-1, T-1, AS-2	
		Fused shale	1/0.1	T-1	
187	18/30-40	Chert	5/4.1	S-2, T-3	
		Quartz	1/0.1	T-1	
232	18/40-50	Chert	3/1.9	S-2, T-1	
		Fused shale	3/0.5	T-3	
233	18/50-60	Fused shale	3/0.3	T-3	
196	19/0-10	Chert	2/2.2	S-1, T-1	
		Quartz	1/0/4	T-1	
197	19/10-20	Quartzite	2/3.4	S-1, T-1	
		Fused shale	1/0.1	T-1	
		Obsidian	1/0.1	T-1	
199	19/20-30	Chert	1/0.7	S-1	
201	19/30-40	Chert	3/5.9	P-1, T-1, AS-1	
		Metavolcanic	1/1.6	S-1	
203	19/40-50	Chert	3/4.1	S-2, T-1	
		Fused shale	3/1.0	T-3	
		Quartzite	1/0.3	T-1	
206	19/50-60	Chert	2/10.4	S-1, AS-1	
		Metavolcanic	2/1.5	S-1, AS-1	
		Fused shale	6/3.3	S-2, T-4	
		Quartz	1/0.1	T-1	
236	20/0-10	Chert	4/3.6	S-2, T-2	
		Fused shale	1/0.1	T-1	
238	20/10-20	Chert	4/16.1	S-2, AS-2	
		Fused shale	3/0.5	T-1, AS-2	
241	20/20-30	Chert	8/15.1	P-1, T-2, AS-5	
243	20/30-40	Chert	1/7.5	AS-1	
		Metavolcanic	1/2.1	S-1	

TABLE 9: CA-LAN-2133 DEBITAGE

245	20/40-50	Chert	3/18.6	S-2, AS-1	
247	20/50-60	Chert	3/2.0	S-2, T-1	
		Fused shale	1/1.6	AS-1	
KEY:					
P - Primary	S- Secondary	T - Tertiary	AS - Angular shatter		
BTF - Biface thinning flake		C - Core			

TABLE 10: CA-LAN-2133 FAUNAL REMAINS

Cat.#/2133-	Unit/level	#/Wt. (gms)	Description
5	1/40-50	11/1.2	Small mammal (some modern)
		3/0.2	Medium mammal
		2/1.2	Large mammal (shaft fragments)
7	1/50-60	5/0.4	Small mammal (some modern)
		2/0.2	Medium mammal
		1/2.7	Large mammal (shaft fragment)
9	1/60-70	4/0.4	Small mammal
12	1/70-80	17/2.2	Small mammal (some modern)
		1/0.6	Medium mammal
14	1/80-90	2/0.6	Medium mammal
16	1/90-100	18/2.7	Small mammal (some modern)
		2/0.6	Medium mammal
		3/1.6	Large mammal (shaft fragments)
		2/0.3	Bird
17	1/100-110	3/0.3	Small mammal
		2/0.5	Medium mammal
		3/4.2	Lg mammal (shaft & immature vert frags)
19	1/110-120	17/2.1	Small mammal (shaft fragments)
		1/0.4	Large mammal (shaft fragments)
21	2/10-20	3/1.2	Large mammal (shaft fragments)
25	2/40-50	1/0.2	Small mammal
		4/1.2	Medium mammal
		2/0.9	Large mammal
		2/0.8	Bird
27	2/50-60	2/0.4	Small mammal
		3/0.7	Large mammal (1 tooth & 1 burnt shaft frags)
32	2/90-100	2/0.7	Large mammal (shaft fragments)
34	2/100-110	1/1.9	Large mammal (burnt shaft frags)
36	3/0-10	2/0.8	Large mammal (shaft fragments)
		12/0.5	Unidentifiable (pulverized)
38	3/10-20	7/1.1	Small mammal
		2/0.9	Large mammal (shaft fragments)
40	3/20-30	4/0.8	Small mammal
		1/0.4	Medium mammal
		5/2.1	Large mammal (shaft fragments)
		3/1.1	Unidentifiable
42	3/30-40	15/2.2	Small mammal
		4/0.8	Medium mammal
		3/1.7	Large mammal (shaft fragments)
		5/1.0	Unidentifiable
44	3/40-50	136/9.9	Small mammal (some modern)
		8/9.9	Large mammal

TABLE 10: CA-LAN-2133 FAUNAL REMAINS

		2/0.7	Bird
46	3/50-70	267/2.1	Small mammal (some modern, some burnt)
		21/0.9	Large mammal (shaft fragments)
		3/0.9	Bird
49	3/80-90	22/5.2	Small mammal (some burnt)
		2/2.2	Large mammal (shaft fragments)
51	3/90-100	22/1.9	Small mammal (some burnt)
		3/3.1	Large mammal (shaft fragments)
53	3/100-110	10/0.4	Small mammal
		6/4.2	Large mammal
		3/1.1	Bird
55	3/110-120	14/3.4	Small mammal (some burnt)
		4/1.9	Large mammal (shaft fragments)
57	3/120-130	19/3.7	Small mammal (some burnt)
		6/4.2	Medium mammal (burnt)
59	5/10-20	2/0.9	Large mammal
61	5/20-30	2/0.4	Large mammal
63	5/30-40	3/0.8	Large mammal
66	5/40-50	5/6.9	Large mammal (shaft & epiphysis fragments)
71	5/70-80	2/0.3	Unidentifiable
85	5/80-90	5/2.8	Large mammal
		1/0.4	Medium mammal
		2/0.2	Unidentifiable
88	5/90-100	3/0.2	Medium mammal
90	6/0-10	1/0.1	Unidentifiable
92	6/10-20	6/0.3	Small mammal
		2/0.5	Large mammal (shaft fragments)
94	6/20-30	5/3.3	Large mammal
		3/0.6	Unidentifiable
96	6/30-40	1/0.2	Unidentifiable
98	6/40-50	5/0.6	Small mammal
100	6/50-60	2/1.7	Large mammal
		14/1.8	Small mammal
103	6/60-70	29/4.4	Small mammal
		5/1.8	Medium mammal (shaft & canine tooth frags)
104	6/70-80	20/2.1	Small mammal
		3/1.2	Large mammal (shaft fragments)
		3/1.1	Bird
106	6/80-90	33/3.4	Small mammal
		2/0.8	medium mammal
		2/0.6	Bird
110	6/90-100	10/1.9	Small mammal
		3/0.9	Large mammal (shaft fragments)

TABLE 10: CA-LAN-2133 FAUNAL REMAINS

179	7/50-60	4/0.4	Small mammal		
		3/3.9	Large mammal		
180	7/60-70	6/0.8	Small mammal		
		2/0.5	Medium mammal		
182	7/70-80	1/0.3	Medium mammal		
		1/0.4	Large mammal		
184	7/80-90	2/0.3	Small mammal		
74	8/10-20	1/1.6	Large mammal		
77	8/20-30				
79	8/40-50	4/0.4	Small mammal (some burnt)		
81	8/50-60	1/0.2	Small mammal		
		1/1.1	Large mammal		
		1/0.8	Bird		
83	8/60-70	2/0.5	Bird		
113	9/20-30	1/0.3	Large mammal (shaft fragments)		
115	9/30-40	1/0.2	Clemmys marmorata scute		
119	9/50-60	1/0.1	Small mammal		
		2/0.3	Medium mammal		
121	10/10-20	2/0.7	Large mammal		
123	10/20-30	1/0.1	Small mammal		
126	10/30-40	6/0.3	Small mammal (some modern)		
128	10/40-50	4/0.4	Small mammal		
		1/0.3	Medium mammal		
131	10/50-60	8/1.6	Small mammal (some burnt)		
135	11/10-20	2/0.3	Small mammal		
139	11/60-70	1/0.1	Small mammal		
141	12/0-10	1/1.1	Small mammal (prob. modern, cranial frags)		
143	12/30-40	1/0.1	Small mammal (prob. modern)		
146	12/50-60	2/4.7	Large mammal		
163	14/0-10	1/0.4	Large mammal (burnt)		
164	14/10-20	3/0.9	Large mammal (burnt)		
166	14/20-30	2/0.2	Small mammal		
		1/0.2	Medium mammal (burnt)		
168	14/30-40	2/0.2	Small mammal		
		1/0.3	Medium mammal (burnt)		
		1/0.2	Unidentifiable		
171	14/40-50	1/0.1	Small mammal		
		2/1.5	Large mammal (burnt)		
		1/0.1	Clemmys marmorata scute		
172	14/50-60	3/0.3	Small mammal		
194	14/60-70	2/0.2	Small mammal (prob. modern)		
		1/2.5	Large mammal (burnt shaft frags)		
159	15/40-50	1/1.2	Large mammal		

TABLE 10: CA-LAN-2133 FAUNAL REMAINS

151	16/0-10	1/0.5	Medium mammal (burnt)
154	16/20-30	10/0.3	Small mammal
		1/0.4	Large mammal (shaft fragments)
207	16/40-50	5/0.7	Small mammal
		2/1.3	Large mammal
		2/0.5	Unidentifiable
209	16/50-60	10/1.9	Small mammal (some modern, some burnt)
		3/0.8	Medium mammal
		4/2.6	Large mammal (shaft frags, some burnt)
211	16/60-70	56/6.4	Small mammal (some burnt, some modern)
		6/6.5	Large (some burnt, shaft frags)
213	16/70-80	22/2.6	Small mammal (some burnt, some modern)
		7/5.4	Large mammal (some burnt)
215	17/10-20	1/0.1	Small mammal
		1/1.3	Large mammal (shaft fragment)
217	17/20-30	4/6.7	Large mammal (burnt shaft frags)
		1/0.2	Bird
219	17/30-40	1/0.4	Medium mammal (burnt shaft fragment)
221	17/40-50	2/0.8	Large mammal (shaft fragments)
222	17/60-70	11/1.3	Small mammal (some modern, some burnt)
		4/3.2	Large mammal (unfused long-bone articulation)
225	18/0-10	3/1.4	Large mammal (shaft fragments)
226	18/10-20	3/0.6	Small mammal (prob. modern)
		1/0.4	Large mammal (shaft fragment)
		1/0.2	Unidentifiable
228	18/20-30	3/0.2	Small mammal
230	18/30-40	3/0.2	Small mammal
		1/0.2	Unidentifiable
231	18/40-50	3/0.8	Large mammal (shaft fragments)
233	18/50-60	1/0.1	Small mammal
		1/1.1	Unidentifiable
195	19/0-10	3/0.3	Small mammal
198	19/10-20	1/0.1	Small mammal
200	19/30-40	2/0.7	Medium mammal (shaft & cranial frags)
		2/1.9	Large mammal (shaft fragments)
202	19/40-50	3/0.4	Small mammal
		3/9.4	Lg mammal (burnt cannon bone articulation frag
205	19/50-60	6/0.7	Small mammal (prob. modern)
		1/5.4	Large mammal (burnt distal tibia frag)
235	20/0-10	1/0.1	Small mammal
237	20/10-20	1/0.1	Small mammal
240	20/20-30	1/0.1	Small mammal
242	20/30-40	2/0.5	Large mammal (shaft fragments)

TABLE 10: CA-LAN-2133 FAUNAL REMAINS

244	20/40-50	1/0.2	Small mammal		
246	20/50-60	1/0.3	Small mammal		
		1/0.5	Large mammal (shaft fragments)		

TABLE 11: CA-LAN-2133 SHELLFISH REMAINS

Cat.#/2133	-Unit/level	#/Wt (gm)	Description	
25	2/40-50	1/1.7	Conus californicus	
		1/0.1	Unidentifiable	
38	3/10-20	1/0.1	Unidentifiable	
42	3/10-20	1/0.1	Unidentifiable	
44	3/40-50	1/0.1	Unidentifiable	
46	3/50-60	3/0.3	Unidentifiable	
179	7/50-60	3/0.5	Unidentifiable	

TABLE 12: CA-LAN-2235 ARTIFACTS

Cat.#/2235	Unit/level	Material	Description/type
GROUNDSTONE TOOLS			
20	8/30-40	Quartzite	Type 4B mano fragment
21	8/40-50	Quartzite	Type 3C mano fragment
30	9/30-40	Metavolcanic	Type 3B mano fragment
CORE/COBBLE COMPLEX TOOLS			
84	8/20-30	Metavolcanic	Type 3 hammerstone
FLAKED STONE TOOLS			
89	Surface	Metavolcanic	Utilized flake
82	3/20-30	Chert	Atlatl point, leaf-shaped
83	8/10-20	Chert	Uniface edge
86	9/60-70	Chert	Uniface edge
87	10/0-10	Chert	Arrow point, Rose Spring
88	10/70-80	Chert	Biface fragment
MISCELLANEOUS ARTIFACTS			
81	12/40-50	Bone	Awl tip

TABLE 13: CA-LAN-2235 DEBITAGE

Cat.#/2235	Unit/level	Material	#/Wt. (gms)	Type	
56	1/0-10	Chert	1/3.1	S-1	
57	1/10-20	Chert	2/1.6	S-2	
2	1/40-50	Chert	3/6.4	S-2, T-1	
4	2/0-10	Chert	1/0.6	T-1	
5	2/10-20	Chert	2/1.2	T-1, AS-1	
		Metavolcanic	1/0.3	T-1	
6	2/20-30	Quartzite	1/15.1	S-1	
7	2/30-40	Chert	2/0.9	T-2	
		Metavolcanic	1/0.7	T-1	
59	3/0-10	Chert	3/8.8	S-2, AS-1	
8	3/20-30	Chert	4.3.4	S-1, T-2, AS-1	
9	3/30-40	Chert	8/16.4	S-1, T-5, AS-1	
10	3/40-50	Chert	1/0.4	T-1	
11	3/50-60	Chert	2/1.9	S-1, T-1	
12	3/60-70	Chert	3/4.3	T-1. AS-2	
64	6/0-10	Fused shale	1/1.7	S-1	
65	6/10-20	Chert	1/2.8	P-1	
13	6/20-30	Chert	3/15.9	P-1, S-2	
		Obsidian	1/0.2	T-1	
14	6/30-40	Chert	1/1.4	P-1	
16	6/60-70	Chert	3/2.1	3/2.1	S-1, T-2
		Metavolcanic	1/0.9	P-1	
67	8/0-10	Chert	5/5.6	P-1, T-4	
		Quartz	1/0.1	T-1	
17	8/10-20	Chert	2/4.7	S-1, T-1	
18	8/20-30	Chert	6/13.4	P-1, S-3, T-2	
19	8/30-40	Chert	7/10.4	S-3, T-4	
22	8/40-50	Chert	8/17.3	S-3, T-3, AS-2	
		Metavolcanic	2/2.1	S-1, T-1	
23	8/50-60	Chert	6/10.1	S-2, T-2, AS-2	
		Metavolcanic	1/10.1	S-1	
24	8/60-70	Chert	5/11.2	S-2, T-1, AS-1	
		Quartzite	2/12.0	S-1, T-1	
25	8/70-80	Chert	4/16.3	S-2, T-1, AS-1	
26	9/0-10	Chert	2/2.4	S-1, T-1	
27	9/10-20	Obsidian	1/0.4	T-1	
		Chert	10/11.4	P-2, S-4, T-4	
28	9/20-30	Chert	6/13.8	S-2, T-4	
29	9/30-40	Chert	4/6.7	S-2, T-1, AS-1	
32	9/40-50	Chert	7/10.0	S-3, T-3, AS-1	
33	9/50-60	Chert	3/23.7	P-1, S-2	
		Metavolcanic	1/2.2	S-1	

TABLE 13: CA-LAN-2235 DEBITAGE

34	9/60-70	Chert	14/15.2	S-4, T-8, AS-2
35	9/70-80	Chert	2/3.5	AS-2
		Metavolcanic	4/12.3	P-1, S-3
36	9/80-90	Chert	1/0.5	S-1
		Quartzite	1/1.3	S-1
		Metavolcanic	1/0.6	T-1
68	10/0-10	Chert	2/1.2	S-1, AS-1
		Fused shale	1/0.2	T-1
69	10/10-20	Chert	11/14.6	P-3, S-4, T-4
		Metavolcanic	1/0.6	T-1
70	10/20-30	Chert	7/5.4	S-3, T-4
		Metavolcanic	2/1.4	S-2
		Fused shale	2/0.9	T-2
71	10/30-40	Chert	11/9.2	P-s, S-1, T-4, AS-4
		Metavolcanic	4/6.9	P-2, S-2
		Obsidian	1/0.1	T-1
		Quartzite	2/1.2	T-2
72	10/40-50	Chert	11/7.9	S-3, T-7, AS-1
		Fused shale	2/0.8	T-2
73	10/50-60	Chert	12/21.7	S-3, T-6, AS-3
		Metavolcanic	2/2.2	S-1, T-1
		Quartzite	1/2.1	S-1
		Obsidian	2/0/2	T-2
74	10/60-70	Chert	6/6.1	S-1, T-3, AS-3
		Metavolcanic	2/0.5	T-2
		Quartzite	1/6.0	S-1
		Obsidian	1/0.4	AS-1
75	10/70-80	Chert	1/0.3	T-1
		Fused shale	1/0.1	T-1
37	11/0-10	Quartzite	2/72.1	P-1, AS-1
38	11/10-20	Chert	16/53.6	P-3, S-3, T-9, AS-1
39	11/20-30	Chert	7/15.0	P-1, T-5, AS-1
		Metavolcanic	3/6.4	P-1, S-2
41	11/30-40	Chert	9/2.8	S-3, T-6
		Obsidian	1/0.9	T-1
		Quartzite	1/0.4	T-1
43	11/40-50	Chert	8/7.9	S-2, T-4, AS-2
44	11/60-70	Chert	12/21.3	S-4, T-6, AS-2
48	11/70-80	Chert	13/13.8	S-5, T-8
		Metavolcanic	1/3.1	S-1
		Quartzite	2/4.8	S-1, T-1
50	11/80-90	Chert	15/6.9	P-1, S-2, T-10, AS-2
		Metavolcanic	1/2.1	S-1

TABLE 13: CA-LAN-2235 DEBITAGE

53	11/90-100	Chert	10/5.1	S-1, T-9	
		Metavolcanic	1/3.1	P-1	
55	11/100-110	Chert	1/2.1	S-1	
76	12/0-10	Chert	5/9.9	P-1, S-3, T-1	
		Quartzite	1/1.2	S-1	
		Metavolcanic	1/1.5	S-1	
77	12/0-10	Chert	9/30.0	P-1, S-2, T-5, AS-1	
78	12/20-30	Chert	9/7.0	S-2, T-7	
79	12/30-40	Chert	2/5.4	S-1, AS-1	
80	12/40-50	Chert	2/4.1	S-2	
KEY:					
P - Primary	S - Secondary	T- Tertiary	AS - Angular shatter		

TABLE 14: CA-LAN-2235 FAUNAL REMAINS

Cat.#/2235	Unit/level	#/Wt. (gms)	Description		
58	1/20-30	1/0.1	Small mammal		
1	1/40-50	1/0.4	Large mammal		
61	5/0-10	2/0.3	Large mammal (weathered & burnt)		
62	5/10-20	1/0.1	Small mammal		
63	5/10-20	1/0.8	Large mammal (skull fragment)		
40	11/20-30	3/0.3	Unidentifiable		
42	11/30-40	2/0.2	Small mammal		
45	11/50-60	7/1.5	Large mammal (weathered shaft fragments)		
47	11/60-70	1/0.1	Small mammal		
		1/0.3	Unidentifiable		
49	11/70-80	1/0.1	Small mammal		
51	11/80-90	2/0.4	Large mammal (weathered & burnt)		
		3/0.3	Unidentifiable		
52	11/90-100	1/0.3	Large mammal		
54	11/100-110	2/0.4	Large mammal (burnt)		

TABLE 15: CA-LAN-2234 ARTIFACTS

Cat.#/2234	Unit/level	Material	Description/type
28	3/20-30	Chert	Biface drill
7	2/10-20	Shell	Haliotis bead, square
29	6/0-10	Bone	Awl tip, burnt
30	SA #1	Quartzite	Pestle fragment

TABLE 16: CA-LAN-2234 DEBITAGE

Cat.#/2234	Unit/level	Material	#/Wt. (gms)	Type
2	1/10-20	Fused shale	2/0.3	T-2
3	1/20-30	Fused shale	1/0.2	T-1
4	1/30-40	Chert	2/1.1	T-2
6	1/50-60	Chert	1/0.4	P-1
8	3/0-10	Fused shale	1/5.6	AS-1
9	3/10-20	Chert	3/2.6	S-2, T-1
10	3/20-30	Fused shale	1/0.1	T-1
11	3/30-40	Chert	1/0.1	T-1
13	4/0-10	Chert	4/1.5	P-1, T-3
		Fused shale	1/0.1	T-1
14	4/10-20	Chert	3/0.4	T-2, AS-1
15	4/20-30	Chert	2/1.7	S-1, T-1
18	5/0-10	Fused shale	1/0/1	T-1
19	5/10-20	Fused shale	1/0.3	AS-1
21	6/0-10	Chert	5/9.1	S-2, T-3
23	6/10-20	Metavolcanic	1/1.0	S-1
		Chert	1/0.2	T-1
24	6/20-30	Chert	1/0.1	T-1
25	6/30-40	Chert	1/2.1	S-1
		Metavolcanic	1/1.4	S-1
26	6/40-50	Chert	1/0.5	T-1
		Metavolcanic	1/2.6	S-1
		Quartzite	1/9.6	S-1
27	9/0-10	Obsidian	1/0.1	T-1
KEY:				
P - Primary	S - Secondary	T - Tertiary	AS - Angular shatter	

TABLE 17: CA-LAN-2234 FAUNAL REMAINS

Cat.#/2234	Unit/level	#/Wt. (gms)	Description		
1	1/0-10	1/0.4	Large mammal (burnt shaft fragment)		
5	1/50-60	1/0.3	Large mammal		
12	4/0-10	1/0.3	Large mammal (burnt shaft fragment)		
22	4/10-20	1/0.3	Large mammal		
16	4/20-30	1/0.4	Medium mammal		
17	5/0-10	1/0.6	Large mammal (burnt shaft fragment)		
20	6/0-10	2/0.2	Small mammal		

TABLE 18: CA-LAN-2233 ARTIFACTS

Cat.#/2233	Unit/level	Material	Description/type
GROUNDSTONE TOOLS			
71	7/30-40	Quartzite	Pestle fragment
79	8/40-50	Quartzite	Type 3A mano
97	8/130-140	Quartzite	Type 7 mano
113	9/30-40	Metavolcanic	Type 3A mano
115	9/40-50	Quartzite	Type 4B mano
135	11/80-90	Quartzite	Type 4B mano
144	11/110-120	Quartzite	Untypable mano fragment
CORE/COBBLE COMPLEX TOOLS			
44	7/50-60	Quartzite	Type 2A hammerstone
FLAKED STONE TOOLS			
160	1/20-30	Chert	Biface fragment
161	7/160-170	Chert	Biface drill fragment
162	8/20-30	Chert	Biface fragment
164	8/130-140	Chert	Bifurcate-stemmed atlatl point
MISCELLANEOUS ARTIFACTS			
131	11/50-60	Schist	Incised plaque, w/ ochre
BONE ARTIFACTS			
168	7/50-60	Bone	Awl fragment
169	7/50-60	Bone	Awl fragment
170	8/160-170		Misc. worked fragment
171	11/130-140	Bone	Misc. worked fragment

TABLE 19: CA-LAN-2233 DEBITAGE

Cat.#/2233	Unit/level	Material	#/Wt. (gms)	Type
2	1/0-10	Chert	2/0.4	P-1, S-1
4	1/10-20	Chert	1/0.5	S-1
6	1/20-30	Metavolcanic	1/7.3	S-1
7	2/10-20	Chert	3/5.7	AS-3
8	2/20-30	Chert	2/3.3	T-1, AS-1
		Obsidian	1/0.1	T-1
10	3/0-10	Fused shale	2/0.9	S-1, T-1
11	3/10-20	Chert	3/1.4	T-2, AS-1
		Fused shale	2/0.3	T-2
13	4/0-10	Chert	3/0.7	T-1, AS-2
15	4/10-20	Chert	3/1.8	S-1, T-2
17	4/20-30	Chert	5/6.2	P-1, S-1, T-3
19	4/30-40	Chert	7/5.4	S-2, T-4, AS-1
21	4/40-50	Chert	10/15.6	S-2, T-6, AS-2
		Fused shale	1/0.2	T-1
23	4/50-60	Chert	5/1..9	S-1, T-3, AS-1
25	4/60-70	Chert	1/8.4	S-1, T-1
27	4/70-80	Chert	1/0.4	T-1
29	6/10-20	Chert	1/0.4	T-1
31	6/20-30	Chert	2/0.6	T-2
33	6/30-40	Chert	5/8.3	S-2, T-2, AS-1
		Quartzite	1/0.2	T-1
35	6/40-50	Chert	6/19.8	S-2, T-2, AS-2
37	6/50-60	Chert	5/5.6	P-1, S-2, T-2
39	6/60-70	Chert	4/7.8	S-2, T-2
41	6/70-80	Chert	3/0.3	T-3
43	6/80-90	Chert	4/4.1	S-1, T-3
70	7/30-40	Chert	4/0.5	T-4
72	7/40-50	Chert	1/5.1	AS-1
46	7/50-60	Chert	2/3.6	S-1, T-1
		Metavolcanic	1/5.2	S-1
48	7/60-70	Chert	2/0.6	T-3
50	7/80-90	Quartzite	1/3.4	S-1
52	7/90-100	Fused shale	1/0.3	S-1
54	7/100-110	Chert	3/3.3	S-3
56	7/110-120	Chert	2/0.7	T-1, AS-1
52	7/90-100	Fused shale	1/0.3	S-1
54	7/100-110	Chert	3/3.3	S-3
56	7/110-120	Chert	2/0.7	T-1, AS-1
58	7/130-140	Chert	9/13.4	S-5, T-2, AS-2
60	7/140-150	Chert	9/16.8	S-6, T-3
62	7/150-160	Chert	8/15.3	S-2, T-4, AS-2
		Obsidian	1/0.1	T-1
64	7/160-170	Chert	13/5.9	S-5, T-6, AS-2

TABLE 19: CA-LAN-2233 DEBITAGE

66	7/180-190	Metavolcanic	2/5.1	S-1, T-1	
74	8/0-10	Chert	3/4.6	S-2, AS-1	
76	8/20-30	Chert	3/11.0	S-2, T1	
78	8/30-40	Chert	2/3.5	T-1, AS-1	
81	8/40-50	Chert	1/0.4	T-1	
		Fused shale	1/0.3	T-1	
83	8/50-60	Chert	1/0.3	T-1	
86	8/70-80	Chert	2/0.2	T-2	
		Fused shale	1/2.8	AS-1	
		Obsidian	1/0.1	T-1	
88	8/80-90	Chert	1/4.1	AS-1	
92	8/100-110	Chert	3/3.6	S-2, AS-1	
94	8/110-120	Chert	13/19.9	S-5, T-6, AS-2	
		Metavolcanic	7/8.6	S-6, T-1	
96	8/130-140	Chert	8/5.8	S-3, T-4, AS-2	
99	8/140-150	Chert	5/8.9	P-1, S-3, T-1	
		Metavolcanic	1/7.9	S-1	
101	8/150-160	Chert	3/4.4	S-3	
		Metavolcanic	4/12.6	P-1, S-3, T-1	
103	8/160-170	Chert	4/6.1	S-2, T-2	
		Metavolcanic	5/12.1	S-5	
104	8/170-180	Chert	!/0/1	T-1	
107	9/0-10	Chert	2/0.8	S-1, T-1	
109	9/10-20	Chert	1/20.8	P-1	
110	9/20-30	Chert	!/1.6	S-1	
112	9/30-40	Chert	1/0/1	T-1	
		Metavolcanic	1/33.1	P-1	
114	9/40-50	Chert	2/5.6	S-2	
116	9/50-60	Chert	3/29.6	AS-3	
118	9/60-70	Chert	4/6.1	S-2, T-1, AS-1	
120	9/70-80	Chert	4/4.9	S-2, T-1, AS-1	
122	9/80-90	Chert	1/0.2	T-1	
124	9/90-100	Chert	1/8.2	AS-1	
126	11/10-20	Chert	1/0.3	AS-1	
127	11/20-30	Chert	1/0.4	T-1	
128	11/40-50	Chert	2/1.4	T-2	
129	11/50-60	Chert	1/0.8	AS-1	
		Quartzite	1/5.9	S-1	
132	11/60-70	Chert	3/5.4	S-1, AS-2	
		Metavolcanic	1/0.5	T-1	
134	11/70-80	Chert	1/8.1	P-1	
137	11/80-90	Chert	4/3.2	S-1, T-3	
139	11/90-100	Chert	1/0.2	T-1	
141	11/100-110	Chert	1/5.4	AS-1	
		Metavolcanic	1/1.2	S-1	

TABLE 19: CA-LAN-2233 DEBITAGE

143	11/110-120	Chert	4/2.9	T-3, AS-1	
146	11/120-130	Chert	4/0.3	T-4	
152	11/150-160	Chert	2/4.9	P-1, S-1	
154	11/160-170	Chert	2/3.3	S-1, T-1	
155	12/0-10	Chert	2/4.9	S-1, T-1	
157	12/30-40	Chert	2/2.1	S-1, AS-1	
158	12/40-50	Chert	2/4.2	S-1, AS-1	
KEY:					
P - Primary	S - Secondary	T - Tertiary	AS - Angular shatter		

TABLE 20: CA-LAN-2233 FAUNAL REMAINS

Cat.#/2233	Unit/level	#/Wt. (gms)	Description
1	1/0-10	1/0.4	Large mammal (shaft fragment)
3	1/10-20	1/0.3	Medium mammal (shaft fragment)
5	1/20-30	6/1.1	Small mammal (prob. modern)
9	2/20-30	2/0.9	Small mammal (prob. modern)
12	4/0-10	2/0-.3	Medium mammal (burnt)
		1/0.4	Large mammal (shaft fragment)
14	4/10-20	1/0.1	Small mammal
16	4/20-30	1/0.1	Small mammal
		4/2.2	Large mammal (shaft fragments)
18	4/30-40	11/0.5	Small mammal
		4/0.6	Medium mammal (shaft fragments, burnt)
		1/0.4	Large mammal (shaft fragment)
20	4/40-50	10/1.1	Small mammal some modern)
		4/3.0	Large mammal (shaft fragments)
22	4/50-60	31/3.1	Small mammal (some modern)
		1/1.1	Medium mammal (shaft fragments)
		5/2.1	Large mammal (shaft fragments)
24	4/60-70	30/2.9	Small mammal (modern)
		1/0.4	Large mammal (shaft fragments, burnt)
26	4/70-80	3/1.1	Small mammal (prob. modern)
		2/0.9	Large mammal (shaft fragments, burnt)
		3/0.4	Unidentifiable
28	6/0-10	3/0.3	Small mammal
30	6/20-30	2/0.6	Small mammal
		2/0.6	Large mammal (shaft fragments)
32	6/30-40	3/0.5	Small mammal
34	6/40-50	5/0.9	Small mammal
		6/1.9	Large mammal
		1/0.2	Unidentifiable
36	6/50-60	19/2.4	Small mammal (prob. modern)
		2/0.6	Medium mammal (burnt)
38	6/60-70	8/0.9	Small mammal
		3/2.4	Large mammal (shaft fragments, burnt)
		5/0.8	Unidentifiable
40	6/70-80	30/1.8	Small mammal (some modern)
		7/3.1	Large mammal
42	6/80-90	23/4.6	Small mammal (some modern)
67	7/0-10	1/1.2	Large mammal
68	7/20-30	1/0.4	Medium mammal
69	7/30-40	8/0.8	Small mammal
45	7/50-60	1/0.1	Small mammal
		4/0.5	Large mammal
		2/0.2	Unidentifiable
47	7/60-70	3/0.2	Small mammal

TABLE 20: CA-LAN-2233 FAUNAL REMAINS

49	7/70-80	4/0.6	Small mammal (some burnt)		
51	7/90-100	2/0.3	Small mammal		
		1/0.3	Large mammal (shaft fragment)		
53	7/100-110	5/0.5	Small mammal		
		8/0.8	Unidentifiable		
55	7/110-120	7/0.8	Small mammal		
		5/3.1	Large mammal		
57	7/130-140	1/0.1	Small mammal		
		1/0.7	Large mammal		
		2/0.4	Unidentifiable		
59	7/140-150	5/0.5	Small mammal		
61	7/150-160	6/0.8	Small mammal		
		3/1.4	Large mammal		
		8/0.8	Unidentifiable		
63	7/160-170	4/0.4	Small mammal		
		4/1.5	Large mammal (some burnt)		
		1/0.3	Unidentifiable		
65	7/170-180	1/0.1	Unidentifiable		
73	8/0-10	1/0.1	Small mammal		
75	8/10-20	1/0.1	Small mammal		
77	8/30-40	5/0.5	Small mammal		
80	8/40-50	2/1.5	Large mammal (shaft fragments)		
		2/0.2	Unidentifiable		
82	8/50-60	3/0.3	Small mammal		
84	8/60-70	2/0.2	Small mammal		
85	8/70-80	2/0.6	Large mammal (shaft fragments)		
		3/0.3	Unidentifiable		
87	8/80-90	4/0.4	Small mammal		
		2/0.6	Medium mammal (skull fragment)		
		2/0.9	Large mammal (shaft fragment)		
89	8/90-100	1/0.2	Small mammal		
		1/0.3	Large mammal (shaft fragment, burnt)		
		1/0.1	Unidentifiable		
91	8/100-110	4/0.4	Small mammal		
		4/3.2	Large mammal (shaft fragment, burnt)		
		13/0.9	Unidentifiable		
93	8/110-120	17/1.7	Small mammal (some burnt)		
			Large mammal (shaft fragments)		
95	8/130-140	5/0.6	Small mammal		
		3/1.1	Large mammal		
		9/0.8	Unidentifiable		
98	8/140-150	3/0.3	Small mammal		
		4/4.4	Large mammal (shaft fragments, burnt)		
		1/0.1	Unidentifiable		
100	8/150-160	3/0.2	Small mammal		

TABLE 20: CA-LAN-2233 FAUNAL REMAINS

		1/0.4	Medium mammal		
		4/5.6	Large mammal (shaft fragments, burnt)		
102	8/160-170	1/0.3	Small mammal		
		1/0.5	Clemmys marmorata scute		
		3/1.6	Unidentifiable		
105	8/180-190	2/0.1	Small mammal		
106	8/190-200	1/0.1	Small mammal		
108	9/10-20	2/0.2	Small mammal		
111	9/30-40	2/0.1	Small mammal		
117	9/60-70	12/1.5	Small mammal		
		4/4.1	Large mammal (shaft & articulated ends, burnt		
119	9/70-80	9/0.9	Small mammal (some modern)		
		4/1.9	Large mammal (shaft fragments, burnt)		
121	9/80-90	9/0.9	Small mammal		
		2/4.1	Large mammal (shaft fragments)		
123	9/90-100	17/1.5	Small mammal		
		2/0.8	Large mammal (shaft fragments)		
125	9/100-110	5/0.4	Small mammal		
130	11/50-60	5/1.1	Medium mammal		
133	11/70-80	5/1.4	Medium mammal (burnt)		
136	11/80-90	7/0.6	Small mammal		
		6/2.1	medium mammal (burnt)		
138	11/90-100	8/0.8	Small mammal (some burnt)		
		6/6.2	Large mammal (some skull frags; burnt)		
		2/0.2	Unidentifiable		
140	11/100-110	2/0.2	Small mammal		
		3/0.9	Large mammal		
		10/1.5	Unidentifiable		
142	11/110-120	2/0.2	Small mammal		
		1/0.9	Large mammal		
		3/0.7	Unidentifiable		
145	11/120-130	7/0.7	Small mammal		
		1/2.9	Large mammal (shaft fragments, burnt)		
		3/0.5	Unidentifiable		
147	11/130-140	4/0.4	Small mammal (some burnt)		
		1/1.2	Large mammal		
		4/0.6	Unidentifiable		
149	11/140-150	3/0.2	Small mammal		
		2/0.3	Large mammal (shaft fragments)		
		2/0.1	Unidentifiable		
151	11/150-160	2/0.2	Unidentifiable		
153	11/160-170	1/0.1	Small mammal		
		1/0.6	Large mammal (shaft fragment)		
		2/0.2	Unidentifiable		

TABLE 21: CA-LAN-2242 FAUNAL AND SHELLFISH REMAINS

Cat.#/2242	Unit/level	#/Wt. (gms)	Description
2	1W/10-20	5/1.9	Large mammal
9	2/20-sterile	1/24.0	Large mammal
15	2W/10-20	4/27.0	Large mammal
		1/0.1	Small mammal
		1/0.3	Clemmys marmorata
17	2W/20-30	10/1.6	Large mammal
		10/0.3	Small mammal
		1/0.6	Clemmys marmorata
		1/2.6	Conus californicus
19	2W/30-40	1/4.2	Pectin
23	3WW/20-30	1/16.9	Large mammal

INTRODUCTION

The following presents the results of RMW's assessment of the paleontological resources of the Newhall Ranch. The study area consists of approximately 12,000 acres of hilly terrain west of Valencia, California. A series of east - west trending ridges and valleys, which become progressively more rugged in southern portion of the property, cross the site. Several large flat terraces are present along the south side of Santa Clara River. Hillsides, terraces, and valley floors are covered by grassland or chaparral. The site is bordered on the north in part by Highway 126 and undeveloped land, on the eastside the boundary is approximately one-half mile west of Interstate 5, and on the west the boundary is the Los Angeles Ventura County line, and the southern boundary by undeveloped land (Figure 1).

METHODS

The purpose of this report is to assess the known and potential paleontological resources within the study area. Pertinent geological/paleontological literature was reviewed for this study. A records search of records was done at, the Los Angeles County Museum of Natural History, (which includes the California Institute of Technology and the University of California Berkeley Museum of Paleontology locality data). A walkover survey of the property was conducted by Mr. Dave Stevens and Mr. Rod Raschke during August 1994. During the survey natural and manmade exposures of the various rock units were examined. Our efforts were concentrated in areas likely to be developed, this was generally north of Salt Canyon. In addition to our field survey, samples from 13 horizons within the Saugus Formation were sampled and screen washed to locate microvertebrate remains. Samples were taken from several different stratigraphic levels within the formation to determine if fossils are present throughout the formation or not. Samples were taken only from the Saugus Formation, because it had the most likely sediment types to contain microvertebrate fossils and it's history of producing microvertebrates near the study area. These samples consisted of fifty to one-hundred pound samples of rock that were processed through one-eighth inch screens and 20 mesh screen after being soaked for several hours in water. All but three of the samples broke down sufficiently to be processed through the screens. The results of these efforts are discussed below.

PALEONTOLOGY and STRATIGRAPHY

The Newhall Ranch study area is underlain by rocks ranging in age from the late Miocene Epoch (approximately 8 million years B.P.) to the Recent. Newhall Ranch is at the eastern margin of the Ventura structural basin. This region was studied in detail by Winterer and Durham who published their results in 1962. We used their map as the basis for our study, because they appear to have accurately reflected the geology of the region based on our limited field observations. The pre-Quaternary rock units were deposited during the final retreat of the sea from the Ventura basin. These rock units record the transition from deep marine basin to non-marine flood plain environments over a period of several million years. The Quaternary age rock units are deposits of more recent stream, river, and runoff waters. The geologic units, in ascending order, are the Modelo Formation, Towsley Formation, the Pico Formation, the Saugus Formation, Quaternary terrace deposits, Quaternary older alluvium, and Recent alluvium/colluvium.

Modelo Formation

The Modelo Formation is exposed along the southern boundary of the study parcel. Exposures of the Modelo Formation are in an area that is to remain as open space and not subject to development. Therefore, our efforts in the area of the Modelo Formation were limited to a brief examination of natural exposures. The Modelo Formation is composed primarily of sandstones and shales and represents deposition under deeper water marine conditions. A late Miocene Epoch (12 to 8 million years ago) marine unit, the Modelo Formation is known for its fish, bird, and marine mammal fossils. Mollusks, plants, and foraminifera (microscopic animal members of the marine plankton) have also been collected from this unit. A fossil walrus was collected in Gillibrand Canyon, to the southwest of the study area in Ventura County (Lander, 1988). Fossil fish scales were found in the Modelo Formation in the study area during our field survey.

Towsley Formation

Exposures of the Towsley Formation are in Rawhide Canyon and high country areas in the south central portion of the study area. Exposures of the Towsley Formation are in an area that is to remain in open space. Therefore, our efforts in the area of the Towsley Formation exposures were limited to a brief examination of a few road cuts and natural exposures. The Towsley Formation is a latest Miocene to early Pliocene (8 to 4 million years ago) marine deposit. The shales, sandstones, and conglomerates of the Towsley Formation were deposit in a gradually shallowing marine basin. Portions of this unit were deposited as submarine sediment flows, bring sand and rocks up to boulder size into the deep seas. Fossil marine vertebrates and invertebrates are known from exposures of this formation east of the study area along Interstate 14. At these occurrences the remains of fossil whales, sea cows (manatees), a distant relative of the walrus, and numerous invertebrates were collected. No fossils were located during our brief examination of the Towsley Formation.

Pico Formation

The Pico Formation is exposed in Long Canyon, Potrero Canyon, Salt Canyon, Graves Canyon, and west of Chiquito Canyon to the project boundary. The Pico Formation was deposited in a shallowing marine basin. The base of the Pico Formation was deposited in deep waters, while the top of the formation was deposited in shallow marine or lagoonal waters. At the top of this formation the Pico Formation interfingers with the overlying Saugus Formation. The siltstones, sandstones, and conglomerates of this formation span the period between 4 and 2 million years ago. These rocks are known to contain the remains of numerous invertebrates and occasional vertebrates. Immediately adjacent to the study area an extensive invertebrate fauna has been reported and there is at least one recorded vertebrate locality reported. Within the study area invertebrates were found at several localities in Potrero Canyon, Long Canyon, and Chiquito Canyon. A fragmentary fossilized bone was discovered in the transition zone between the Pico Formation and the Saugus Formation, near the mouth of Long Canyon. Screen washing of matrix from this locality produced a rodent tooth and fragmentary microvertebrate remains.

Saugus Formation

The Saugus Formation is exposed on the westside of Chiquito Canyon and northeast of Long Canyon as far east as Magic Mountain. Oil field operations have created extensive exposures of this unit, allowing for examination of large part of the unit. The Saugus Formation records deposition in the region between the late Pliocene Epoch (2 million years ago) and the early Pleistocene (1.6 million years ago to 200,000 years ago). The age of the Saugus Formation is in debate, because of the lack of age diagnostic fossils, especially in the upper portion of the formation. In the study area, the Saugus Formation interfingers with the underlying Pico Formation and contains some marine or brackish water deposits in the lower portion of the unit, before becoming exclusively non-marine in the upper portion of the formation. The marine deposits have also been referred to the Pico Formation. The assignment of these rocks to a particular formation is less important than understanding the events that surrounded their formation. The Saugus Formation records the last withdrawal of the sea from the Santa Clarita Valley approximately 2 million years ago. This gradual shallowing of the sea that had covered the region since the Miocene, some 15 million years, resulted from the rise of the Santa Susana Mountains and Simi Hills. Marine invertebrates are well known from these deposits in the Moorpark and Simi Valley areas. A diverse assemblage of marine and non-marine vertebrates including extinct horses, large cats, dogs, elephants, turtles, peccaries, deer, and sharks is known from other exposures of the Saugus Formation in Simi Valley. Grading at the Valencia Commerce Center, northeast of the study area, produced the remains of an extinct relative of the zebra and a variety of micro-vertebrates including rodents, rabbits, and lizards (Landers 1991). Fossil horse teeth were reported from the Saugus Formation near the Del Valle oil field north of the study area (Winterer and Durham 1962). During our field survey the unidentifiable vertebrate remains were located at two horizons, one near the top of the formation and the other in the transition zone between the Saugus and Pico Formations. The later appears to be a fragment of a marine mammal skull based on its size and curvature. Our screen washing efforts produced bones and teeth at 9 horizons scattered throughout the formation. These fossils include rodent teeth, a shell plate from a turtle, a possible bird bone fragment, a fragment of a tooth of a small carnivore, and several unidentifiable bone fragments. The abundance and diversity of fossils discovered is surprising considering the small size of samples processed during our screen washing activities. Four occurrences

(localities 13,13A, 14, and 25) represent significant fossil occurrences, because of the presence of abundant identifiable remains in small samples.

Quaternary terrace deposits

Quaternary age terrace deposits are exposed in the area surrounding Magic Mountain in the eastern portion of the study area and the large mesas in the site such as Airport Mesa, Potrero Mesa, etc. Quaternary terrace deposits represent the deposits of streams and runoff waters that have flowed across the region during the past 1.6 million years. As many as seven elevated terraces have been recognized in the vicinity of the study area. In the Santa Clarita River Valley, just north of the study area, a tooth of a *Bison* was collected from rocks assigned to either terrace deposits or the older Saugus Formation. *Bison* are considered age diagnostic, as they first appear in the fossil record of North America no more than 500,000 years ago and probably less than 200,000 years ago. This specimen was identified as a late form of *Bison* strongly suggesting that it came from the terrace deposits and not the Saugus Formation. No fossils were observed in these deposits within the study area.

Quaternary older alluvium

Elevated deposits that appear to be older alluvial valley fills are scattered throughout the study area, but are most obvious in Long Canyon. These most likely represent older valley fills that are now elevated above the current valley floors. This would suggest that they represent a significant span of time. No fossils were observed in these deposits during our field survey.

Quaternary alluvium

Recent alluvium covers the canyon floors within the study area. These materials are the deposits of the streams that have flowed across the region during the past 10,000 years. Recent alluvium is too young geologically to contain significant fossils. However, occasionally older alluvium is found buried beneath these younger deposits and they can contain fossils. No fossils were observed in the alluvial deposits during our survey.

PALEONTOLOGIC SENSITIVITIES AND IMPACTS

The purpose of assessing paleontological resources within a study area is to determine the potential impacts the proposed project will have on the region's paleontological resources. A way of determining impacts is to estimate the potential for the discovery of fossils. Potential for discovery is a measure of the likelihood that fossils will be discovered during excavations into a given rock unit. This potential is based on the past discovery of fossils from that rock unit. Paleontological potential does not measure the significance of individual fossils present within the study area, because it is impossible to accurately predict what individual fossils will be discovered.

To evaluate the paleontologic potential of rock units a five-tiered classification system of sensitivity for paleontological resources has been developed. The data used to define these potentials came from a review of pertinent paleontological information and literature both within the study site and the surrounding areas, discussion with professional paleontologists, and field experience in southern California. Each sensitivity rating reflects the potential for the discovery of fossil resources during site development. The five sensitivity ratings are:

NO potential.
This rating applies to igneous rocks whose molten origins preclude fossil remains being preserved.
LOW potential.
Rocks that are too young geologically to contain significant fossils, are altered, or have a poor record of fossil recovery.
MODERATE potential.
Units that fall within this rating contain sedimentary rocks with histories of producing only limited numbers of fossils at many locations.
HIGH potential.
Units that have well-established histories of containing significant fossils and/or fossils located on the study site.
INDETERMINATE potential.
This classification applies to rock units where there is little or no history of fossil discoveries because of a lack of systematic exploration of rock exposures.

Development can have both adverse and positive impacts on paleontological resources. Adverse impacts are the destruction of paleontological resources because of the increase in activity in the area. Direct adverse impacts occur from brushing, grading, trenching, and other

earthmoving activities. Indirect adverse impacts result from increased accessibility resulting in unauthorized fossil collecting by amateur collectors, especially in the open space areas. However, indirect impacts are typically insignificant. Development can have positive impacts on the region's paleontological resources, if proper measures are implemented during development. These positive impacts result when a paleontologist can monitor grading of a site and salvage exposed fossils of possible scientific significance. Similar efforts throughout southern California have resulted in the collection of thousands of important fossils and have greatly enhanced our knowledge of the history of life on Earth. However, if monitoring and salvage efforts are not implemented development can result in the destruction of many significant fossils.

The potential for significant of impacts on paleontological resources depends on the potential for the discovery of fossils in a rock unit and the amount of grading to take place in the rock unit. This is because a rock unit that has produced fossils is likely to continue to produce fossils at a similar rate and as more of the unit that is exposed by grading, the more likely fossils are to be exposed.

Based on the results of our field survey, screen washing efforts, literature review, and records search, the Newhall Ranch study area is underlain by geologic units rated from HIGH to LOW paleontologic potential. The potential for fossil production of the individual formations in the study area is discussed below. Potential impacts on paleontological resources are directly related to the potential for the discovery of fossils in a rock unit and the amount of development in a rock unit.

The Modelo Formation is well known for its well-preserved fish and bird skeletons, as well as marine mammals, mollusks, plants, and microplankton. The Modelo Formation is considered to have a HIGH paleontologic potential. Since exposures of the Modelo Formation are restricted to future open space areas, the potential for significant impacts on paleontological resources is low.

The Towsley Formation is known to produce numerous remains of invertebrates and the occasional remains of marine vertebrates. These fossils occur in locally abundant concentrations or horizons. Although this unit has been examined in only a few areas fossils appear to occur throughout the formation. Therefore, the unit is assigned a HIGH paleontological potential. Exposures of the Towsley Formation are restricted to future open space areas, therefore, the potential for significant impacts on paleontological resources is low.

The Pico Formation contains numerous invertebrates within the study area and is known to contain occasional marine vertebrates in other areas. Therefore, this unit is assigned a HIGH potential for the discovery of fossils during development. Much of the proposed development of Newhall Ranch will take place on exposures of the Pico Formation, this suggests that there is a high potential for significant impacts on paleontological resources.

The Saugus Formation has an extensive record of producing important invertebrates and vertebrate remains at several localities within and near the study area. It is assigned a HIGH paleontological potential. Large portions of the development of Newhall Ranch will take place on exposures of the Saugus Formation, suggesting a high potential for significant impacts on paleontological resources. Additional fossils from this unit would be significant in that they would aid in the determination of the age of this deposit. This information would provide information on the movement of faults in the region.

The Quaternary terrace deposits are assigned a MODERATE paleontologic potential, based on their record of fossil production in the region. Much of the development of Newhall Ranch will take place on exposures of Quaternary terrace deposits. This suggests a high potential for significant impacts on paleontological resources. Additional fossils from this unit would be significant in that they would aid in the determination of the age of this deposit. This information would provide information on the movement of faults in the region.

The Quaternary age older alluvium is assigned a MODERATE potential, based on their apparent relationship to terrace deposits. These units are underlain by older highly

fossiliferous deposits and are in areas where there is likely to be extensive grading, therefore, there is a high potential for impacts in these units.

The recent alluvial deposits are assigned a LOW potential, only because of the possibility for the discovery of older deposits buried beneath them. Regardless of the amount of development in these deposits the potential for significant impacts is low.

TABLE 1

Geologic Unit	Paleontologic Potential	Potential for Impacts
Modelo Formation	HIGH	LOW*
Towsley Formation	HIGH	LOW*
Pico Formation	HIGH	HIGH
Saugus Formation	HIGH	HIGH
Terrace Deposits	MODERATE	HIGH
Older Alluvium	MODERATE	HIGH
Young Alluvium	LOW	LOW

* exposed only in future open space, if development occurs in these areas potential for impacts is high

Based on the presence of numerous fossils in the study area and potential for the discovery of fossils in the rock units to be excavated during development, it is likely that significant fossils will be exposed during development. Unless proper mitigation measures are implemented these fossils will be destroyed by grading operations. The destruction of paleontological resources by development is a significant adverse impact on the region's paleontological resources, because fossil remains are a non-renewable resource. Development of a project of this size, with the rocks units of moderate to high potential for the discovery of fossil remains, could have significant impacts on the region's paleontological resources. The following mitigation measures are suggested to reduce adverse impacts of development on paleontological resources to a less than significant level.

MITIGATION MEASURES

The following mitigation measures are derived from the Los Angeles County guidelines for paleontological resources and CEQA guidelines for the protection of scientific resources. Both documents require that reasonable efforts be made to reduce significant impacts on paleontological resources to levels that are less than significant. These documents provide generalized mitigation measures to meet this goal and serve as the framework for the following measures. More specific measures are based on professional standards established by the Society of Vertebrate Paleontology and are accepted as adequate to meet the

requirements of Los Angeles County and CEQA. These measures have been used successfully elsewhere in southern California to help protect paleontological resources for future scientific study and public education, while allowing the timely completion of projects.

The County of Los Angeles mitigation measures include, notification of appropriate scientific/museum personnel that grading is to begin, presence of an on-site monitor at all times of original cutting of undisturbed fossil bearing rock units, diversion of grading activities to allow for salvage, collection of appropriate materials, and donation to a public non-profit educational institution.

The following measures are designed to meet these requirements and to address the specific conditions within Newhall Ranch.

1. A qualified paleontologist shall be retained to monitor, and if necessary, salvage scientifically significant fossil remains. The duration of these inspections depends on the potential for the discovery of fossils (Table 1), the rate of excavation, and the abundance of fossils.

   a) Geologic formations (like the Saugus Formation) with a HIGH potential will initially require full time monitoring during grading activities.
   b) Geologic formations (like the Quaternary terrace deposits) with a MODERATE potential will initially require half time monitoring.

   Because of the large size and long duration of this project, it is necessary to periodically review the paleontological potential assigned to each rock unit. This should be done at the end of each phase of grading. This reassessment of potential will be used to develop mitigation plans for future phases of development. If fossil production is lower than expected the duration of monitoring efforts should be reduced.

2. The paleontologist in consultation with the grading contractor, developer, and Los Angeles County inspector shall have the power to temporarily divert or direct grading efforts in the area of an exposed fossil to allow evaluation and, any necessary, salvage of exposed fossils.

3. Because of the known presence of microvertebrates in the Saugus Formation, within the study area, and the likelihood that they are present in other rock units it is necessary to periodically sample these rock units. Appropriate materials for this type of collection are samples of at least 2000 pounds of rock from likely horizons. These samples can be stockpiled to allow processing later to avoid delays in grading activities. The frequency of these samples will be determined based on field conditions.

4. Pre-grading salvage is necessary at localities 13, 13A, 14, and 23, because these occurrences appear to represent significant fossil discoveries. At least, 2000 pounds of rock should be collected at each site, stockpiled, and screen washed before grading begins at these localities.

5. Scientific specimens are to become the property of a public, non-profit educational institution, such as the Los Angeles County Museum of Natural History or similar institution. Most institutions are now requiring, as conditions for accepting the materials, that significant fossils be prepared, identified to a reasonable level, and cataloged before donation. Therefore, to meet these requirements it is recommended that prior to development an agreement should be reached with a suitable scientific repository regarding acceptance of the fossil collection.

6. Locations of recorded fossil deposits shall remain confidential and shall be disclosed only on a "need to know" basis.

7. To assure compliance with the Los Angeles County guidelines and CEQA, a final report summarizing the results the mitigation efforts is necessary. To adequately report the results of the mitigation efforts the report shall include; an itemized inventory of the fossils, pertinent geologic and stratigraphic data, field notes of the collectors, and indication of the repository. Because Newhall Ranch will be developed in phases, a final report should be prepared at the end of each phase of grading. This report should provide the information necessary to reassess the paleontological potential of each rock unit graded and should include recommendations for future monitoring efforts in those rock units.

If you have any questions or if we can be of further assistance, please contact us at the above address.

Respectfully,

Rodney Raschke
Certified Paleontologist

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APPENDIX 4.23

Global Climate Change

Climate Change Technical Report
Landmark Village

Prepared for:
The Newhall Land and Farming Company
Valencia, California

Prepared by:
ENVIRON International Corporation
Emeryville, California

Date:
September 30, 2009

Project Number:
03-17245A2

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Acronyms

AB 1493	Assembly Bill No. 1493
AB 32	California Global Warming Solutions Act of 2006
ACM	Alternative Compliance Method
AF	Acre feet
AFY	Acre feet per year
AVAQMD	Antelope Valley Air Quality Management District
BAAQMD	Bay Area Air Quality Management District
BARBD	Building America Research Benchmark Definition
BAP	Building America Program
CAFE	Corporate Average Fuel Economy
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CARB 2020 NAT	California Air Resources Board Scoping Plan projections for 2020 if 'no actions are taken'
CBECS	Commercial Building Energy Consumption Survey
CCAR	California Climate Action Registry
CCF	California Code of Regulations
ccf/yr	hundred cubic feet per year
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEUS	California Commercial End-Use Survey
CF_4	tetrafluoromethane
CFC	chlorinated fluorocarbons
CH_4	methane
CHP	combined heat and power
CO_2	carbon dioxide
CO_2e	CO_2 equivalents
CNRA	California Natural Resource Agency
CPUC	California Public Utilities Commission
DEIR	Draft Environmental Impact Report
DHW	domestic hot water
DOE	Department of Energy
DOT	Department of Transportation
DU	Dwelling unit
EEMIS	Enterprise Energy Management Information System
EIA	United States Energy Information Administration
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EMFAC	emissions estimation software programs
ENVIRON	ENVIRON International Corporation
ET	Evapotranspiration
FCV	fuel cell vehicle
FFV	flexible fuel vehicle
GDP	gross domestic product

GHGs	greenhouse gases
GRP	General Reporting Protocol
GWP	global warming potential
H_2O	water
HFC	hydrofluorocarbons
HVAC	Heating Ventilation and Air Conditioning
IPCC	Intergovernmental Panel on Climate Change
IRWD	Irvine Ranch Water District
ISD	Climate Change Internal Services Department
kWh	kilowatt
kWh/yr	kilowatt hours/year
LA	Los Angeles
lbs	pounds
LCA	Life Cycle Assessment
LCFS	Low Carbon Fuel Standard
LDA	light-duty auto
LDT	light-duty truck
LEED	Leadership in Energy and Environmental Design
LEV	Low-Emission Vehicle
LID	Low Impact Development
MA	Massachusetts
MMBTU	Million British thermal units
MELs	Miscellaneous energy loads
$MMTCO_2e$	Million metric tonnes of CO_2 equivalent
MN	Minnesota
MPO	Metropolitan Planning Organization
MTO	Metropolitan Transportation Commission
MW	Megawatts
MWh	Megawatt-hour
NEV	Neighborhood Electric Vehicle
NHTSA	National Highway Traffic Safety Administration
NREL	National Renewable Energy Laboratory
N_2O	nitrous oxide
O_2	oxygen
OPR	Office of Planning and Research
PC	passenger car
PFC	perfluorocarbon
PHEVs	plug-in hybrid electric vehicles
ppb	parts per billion
ppm	parts per million
RCBP	Recycled content building products
RCx	Facility Retrocommissioning
RECS	Residential Energy Consumption Survey
RFS	Renewable Fuels Standard

RPS	Renewable Portfolio Standard
RTP	Regional Transit Plan
S. 280	Climate Stewardship and Innovation Act of 2007
S. 309	Global Warming Pollution Reduction Act
S. 317	Electric Utility Cap and Trade Act of 2007
S. 485	Global Warming Reduction Act of 2007
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SF_6	sulfur hexafluoride
SIPs	structural insulated panels
SWP	State Water Project
sf	square feet
TBD	to be determined
TCR	The Climate Registry
TDV	Time Dependent Valuation
tonnes	Metric tonnes; 1,000 kilograms
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
URBEMIS	Urban Emissions Model
US	United States
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
VMT	vehicle miles traveled
WCI	Western Climate Initiative
WMO	World Meteorological Organization

Executive Summary

Landmark Village is a proposed mixed use community within the approved Newhall Ranch Specific Plan area to be built in the northern, unincorporated area of Los Angeles County within the Santa Clarita Valley planning area. The Landmark Village development will contain 1,444 residences, including 308 single-family homes and 1,136 multi-family units, as well as up to 1,033,000 square feet of commercial and mixed-use space, an elementary school, fire station, public and private recreation facilities, trails, and various road improvements. This development will result in both one-time and annual direct and indirect emissions of greenhouse gases (GHGs). The term "direct emissions of GHGs" refers to GHGs that are emitted directly as a result of the project and include land use change and construction emissions. Indirect emissions are those emissions that the project entitlement will enable, but that are not controlled by the project proponent. This report discusses the scientific and regulatory developments surrounding global climate change and provides an inventory surveying the emissions that would result from approving Landmark Village.

There is a general scientific consensus that most current global warming is the result of human activity on the planet. This man-made, or anthropogenic, warming is primarily caused by increased emissions of GHGs that keep the earth's surface warm. This is called "the greenhouse effect" and contributes to global climate change.

Lawmakers at the national, state and local levels have introduced legislation and regulations aimed at better tracking and controlling GHGs. On the national level, there are some incentives for businesses and individuals to take voluntary steps to limit GHG emissions. On September 22, 2009, EPA Administrator Jackson signed a final rule mandating annual reporting of GHG emissions by suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions. This rule was created in response to the mandate established by the 2008 Consolidated Appropriations Act, on April 10, 2009. Over two years ago, California enacted the California Global Warming Solutions Act of 2006 (Assembly Bill 32 or AB 32), which established mandatory reductions in state-wide GHG emissions by 2020. The California Legislature passed Senate Bill (SB) 97, which addresses GHG analysis under the California Environmental Quality Act (CEQA). SB 97 requires that the California Natural Resources Agency adopt guidelines for the mitigation of GHG emissions and their effects by January 1, 2010.

Residents and the employees and patrons of commercial and municipal buildings and services use electricity, heating, and are transported by motor vehicles. These activities directly or indirectly emit GHGs. The largest contributors of GHG emissions resulting from such residential developments are emissions of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). GHG emissions are typically measured in terms of tonnes of CO_2 equivalents (CO_2e), calculated as the product of the mass emitted of a given GHG and its specific global warming potential (GWP).

The emissions inventory presented in this report is consistent with the methodologies established by the California Climate Action Registry (CCAR), where possible. The Landmark

Village emissions inventory considers eight categories of GHG emissions: emissions due to vegetation changes, emissions from construction activities, residential building emissions, commercial building emissions, mobile source emissions, swimming pool operations emissions, area source emissions, and municipal emissions. The emissions from construction and vegetation/land use change are one-time emissions events. The other emissions occur annually throughout the life of the project. The electrical power for the Landmark Village development will be supplied by Southern California Edison (SCE). Accordingly, indirect GHG emissions from electricity usage are calculated using the SCE carbon-intensity factor adjusted for future mandated renewable energy requirements.

A variety of methods are employed to develop a complete GHG emissions inventory. In addition to well-established emission factors for certain activities and emission estimates based on similar activities in other representative communities, several emissions estimation software programs are used. These include EMFAC, OFFROAD, Urban Emissions Model (URBEMIS), Building America Research Benchmark Definition (BARBD), California Commercial End-Use Survey, and Micropas.

Emissions from the various aspects of Landmark Village full buildout are presented in Table ES-1. Both the one-time emissions and emissions that are expected to occur each year after build-out of the Landmark Village development are presented. There are 43,934 tonnes of CO_2e one-time emissions. The annual emissions from the use of the development amount to 20,193 tonnes CO_2e/year. Of the annual emissions, 35% result from vehicular emissions associated with residential and commercial activities, and 57% result from the energy use associated with residential and non-residential buildings. If the one-time emissions are annualized assuming a 40-year development life (which is likely low), then the one-time emissions account for approximately 1,098 tonnes, or 5% of the annualized emissions. Taking these annualized one-time emissions into account, the annual emissions are 21,291 tonnes/year.

Landmark Village emissions of CO_2e from all annual sources are 31.2% below the level that would be expected if the Project were constructed consistent with the assumptions in the California Air Resources Board (CARB) Scoping Plan ("Scoping Plan") projections for 2020 if 'no actions are taken' (CARB 2020 NAT). Even counting vegetation and construction, Landmark Village is still 30.1% below the level of CARB 2020 NAT. The Scoping Plan also notes that a reduction of 29% below CARB 2020 NAT is required to meet the goals of AB 32; therefore this project will not impede the implementation of AB 32 as its reduction is greater than that required in the Scoping Plan. Landmark Village's project design features, along with improved vehicle fuel efficiency and cleaner electricity, enable the project to exceed AB 32's 29% reduction, as shown in Table ES-1 below.

These inventories were prepared as a worst-case analysis. For example, it assumes that all emissions from Landmark Village are "new," in the sense that, absent the development of Landmark Village, these emissions would not occur. Given the global nature of GHG emissions, "new" global GHG emissions are those caused by economic growth and population growth (births); local development projects accommodate such growth.

Table ES-1: Summary of Greenhouse Gas (GHG) Emissions for Landmark Village

Source	GHG Emissions			Improvement over CARB 2020 NAT[9]
	Unit	Project	CARB 2020 NAT	(%)
Vegetation[1]	tonnes CO_2e / year	7,625	7,625	N/A
Construction[2]		36,309	36,309	N/A
Total (one-time emissions)		**43,934**	**43,934**	**N/A**
Residential[3]	tonnes CO2e / year	3,656	5,138	29%
Non-Residential[4]		7,858	10,130	22%
Mobile[5]		7,074	9,500	26%
Municipal[6]		1,040	1,803	42%
Recreational (Pools)[7]		386	2,592	85%
Area[8]		180	180	0%
Total (annual emissions)		**20,193**	**29,341**	**31.2%**
Annualized Total[10]	**tonnes CO2e / year**	**21,291**	**30,439**	**30.1%**

Notes:

1. Vegetation emissions are one-time emissions resulting from the removal of existing vegetation in Landmark Village. The emissions are estimated assuming that all carbon currently sequestered in the biomass of the vegetation is released to the atmosphere upon removal of the vegetation. A total of 940 acres of existing vegetation is considered to be removed for development purposes. These emissions are partially offset by the planting of trees, which sequester CO2. A total of 2,500 trees will be planted at Landmark Village. Data for emissions calculations are primarily from the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories.
2. Construction emissions are one-time emissions reported in total metric tonnes. Emissions are calculated using URBEMIS default values, EMFAC2007, and with model inputs prepared by Newhall. Sources of emissions include construction equipment and vehicles associated with worker commuting and vendor trips.
3. Residential emissions for single family, attached, and apartment dwelling units include emissions associated with electricity and natural gas use. Emissions estimates were developed from Micropas model runs and the Building America Research Benchmark Definition. As specified in the Newhall Ranch Specific Plan, a total of 1,444 dwelling units are considered.
4. Non-Residential emissions for retail, offices, grocery, restaurants, hotel lodging, and schools account for electricity and natural gas use. Emissions estimates for non-residential buildings were developed from the 2006 California Commercial End-Use Survey (CEUS), performed by Itron under contract to the California Energy Commission.
5. Mobile source emissions were calculated using EMFAC with model inputs prepared by Austin Foust Associates and Newall Land. Mobile source emissions account for residential trips. CO_2 emissions were scaled to reflect CO2e emissions based on data from the US Environmental Protection Agency (USEPA).
6. Municipal emissions account for emissions due to energy production associated with water supply, public/street lighting, and municipal vehicles. Energy use estimates for water supply are based primarily on a California Energy Commission (CEC) study of electricity required to supply, treat and distribute water in Southern California (Refining Estimates of Water-Related Energy Use in California, 2006). Emissions from street lighting and municipal vehicles were based upon studies of other cities.
7. ENVIRON assumed an outdoor competition-size swimming pool as the main source of GHGs in an aquatic/recreation center. The average energy consumption of five Oakland pools was used to calculate the baseline energy use of a Landmark Village pool. For both Project and CARB 2020 NAT scenarios, ENVIRON adjusted the natural gas usage to account for savings from the use of high-efficiency heaters and the temperature difference between Oakland and Newhall.
8. Area emissions were calculated using URBEMIS and include hearth fuel combustion such as fireplaces and landscape fuel combustion such as mowing a lawn.
9. Percentages only apply to annual CO_2e emissions; annual and one-time CO_2e emissions cannot be directly compared.
10. One-time emissions (vegetation and construction) are "annualized" by dividing by an annualization factor (40). One-time emissions are not annualized in their respective rows above.

1 Introduction

The Landmark Village development will result in one-time and annual (direct and indirect) emissions of greenhouse gases (GHGs). Direct emissions of GHGs refer to GHGs that are emitted directly as a result of the project and include land use change and construction emissions. Indirect emissions are those emissions that the project entitlement will enable, but that are not controlled by the project proponent. This report discusses the scientific and regulatory developments surrounding global climate change and provides an estimate of an emissions inventory that would result from entitling Landmark Village. This report also places the emissions inventory from Landmark Village, at full build out, into context.

Residents, employees, and patrons of commercial and municipal buildings use electricity, heat their homes and water (typically with natural gas), and are transported in motor vehicles, all of which directly or indirectly emit GHGs. The principal greenhouse gases resulting from such developments are emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). CO_2 is considered the most important GHG, due primarily to the large quantity of emissions produced by fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles. CH_4 and N_2O are also emitted by fossil fuel combustion, though their emissions are much less significant than CO_2. CH_4 is also emitted from the transmission, storage, and incomplete combustion of natural gas.

The effect that each of these gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound for pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHGs than CO_2, with GWPs of 21 and 310, respectively.[1] In emissions inventories, GHG emissions are typically reported in terms of pounds (lbs) or tonnes[2] of CO_2 equivalents (CO_2e). CO_2e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e, both from residential developments and human activity in general.

The Landmark Village project is located within the South Coast Air Quality Management District's (SCAQMD) jurisdiction. However, because SCAQMD guidelines for the preparation of GHG inventories have not yet been developed, this inventory has been developed consistent with the methodologies established by the California Climate Action Registry (CCAR) where possible. When guidance from the CCAR is lacking, methodologies established by the Intergovernmental Panel on Climate Change (IPCC)[3] and best available science are used. Legislation and rules regarding climate change, as well as the scientific understanding of the

[1] GWP values from IPCC's Second Assessment Report (SAR, 1996) are still used by international convention and are used in this protocol, even though more recent (and slightly different) GWP values were developed in the IPCC's Third Assessment Report (TAR, 2001)

[2] In this report, "tonnes" will be used to refer to metric tonnes (1,000 kilograms). "Tons" will be used to refer to short tons (2,000 pounds).

[3] The WMO and the UNEP established the IPCC in 1988; it is open to all members of the United Nations and WMO.

extent to which different activities emit GHGs, continue to evolve; as such, the inventory in this report is a reflection of the guidance and knowledge currently available.

At the entitlement stage of a development, while the number of homes, the approximate size of commercial areas and the locations of both are known, the exact designs of the homes, businesses and facilities are not. Even so, the types of buildings and the types of facilities at the future Landmark Village site can be used for developing an estimate of the project's anticipated GHG emissions. Energy used in a building depends in part on the built environment; however, actual future emissions from the site will depend heavily upon the future homeowners' and business owners' habits. Because the actual future occupants and their habits are not yet known, average current behavior is assumed. That assumption is likely to be a "worst-case" assumption. Given the current regulatory environment and the media focus on global climate change, it is likely that the actual future occupants will be more sensitive to the GHG emissions caused by their activities and, therefore, their activities will result in lower GHG emissions than average current behavior shows.

1.1 Emissions Inventory

The Landmark Village emissions inventory considers the following categories of GHG emissions:

- emissions due to land use (vegetation) changes,
- emissions from construction activities,
- residential building operations emissions,
- non-residential building operations emissions,
- mobile source operations emissions,
- swimming pool operations emissions,
- area source emissions, and
- municipal operations emissions.

In addition, an estimate of “life-cycle” GHG emissions from building materials is presented. Life cycle emissions include all of the emissions caused by the existence of a product or project; for example, GHG emissions from the processes used to manufacture and transport materials used in the buildings and infrastructure. This estimate is to be used for comparison purposes only and is not included in the final inventory as these emissions would be accounted for under California's Global Warming Solutions Act of 2006 (AB 32) in other industry sectors. For a life cycle analysis for building materials, somewhat arbitrary boundaries must be drawn to define the processes considered in the life cycle analysis.[4] Although life cycle emission estimates can

[4] For instance, in the case of building materials, the boundary could include the energy to make the materials, the energy used to make the machine that made the materials, and the energy used to make the machine that made the machine that made the materials.

provide a broader view of a project's emissions, life cycle analyses often double count emissions that might be attributable to other sectors in a comprehensive analysis.

The inventory does not consider GHG emissions from sources outside of Landmark Village that may indirectly service Landmark Village residents (e.g., a landfill) or whether the emissions from Landmark Village are "new" in the sense that, absent the development of Landmark Village, these emissions may not occur. However, emissions from electricity use and construction worker commuting are included.

The timeframe over which GHGs are emitted varies from category to category, which is taken into consideration in the emissions inventory. For most of the categories, GHGs will be emitted every year that the development is inhabited. For these categories (residential buildings, non-residential buildings, mobile sources, swimming pools, area sources, and municipal services), the inventory includes estimates of annual GHG emissions from ongoing development operations. GHG emissions from two of the categories, construction and changes in vegetation, are one-time events that will not be part of the development's ongoing activity. These one-time emissions can be divided by the estimated lifetime of the project to allow direct comparison of these two emissions classes. The inventory presents estimates of these one-time emissions, converts them to annualized estimates, and integrates them into an annual inventory.

The GHG emissions estimates contained in this report incorporate reductions in emissions from electricity generation and vehicle travel that will occur between now and full buildout from promulgated regulations. For example, the emissions estimated for electricity consumption assumes that there will be an increase in energy production from renewables or non-GHG producing sources given the requirements of the Renewable Portfolio Standard (RPS). This is further discussed in Section 4 of this report.

A variety of methods are employed to develop a complete GHG emissions inventory. In addition to well established emission factors for certain activities and emission estimates based on similar activities in other representative communities, several emissions estimation software programs are used. These include EMFAC, OFFROAD, Urban Emissions Model (URBEMIS), Building America Research Benchmark Definition (BARBD), the California Commercial End-Use Survey (CEUS), and Micropas. Later sections of the report describe these models and other estimation methods. The major emissions sources that exist in residential developments are described later in this report.

1.2 Comparison of GHG Emissions

Because, to date, the SCAQMD has not adopted significance thresholds for GHG emissions from residential and commercial projects under the California Environmental Quality Act (CEQA), the proposed GHG emissions from Landmark Village are compared to other inventories to gain perspective on the impact these emissions may have. To evaluate the significance of Landmark Village's GHG emissions, the Landmark Village inventory is compared with the California Air Resources Board Scoping Plan projections for 2020 if "no actions are taken" (CARB 2020 NAT) scenario. In addition to absolute emissions, emissions per capita and per dwelling unit are compared with the current average per capita and per dwelling unit

emissions of California residents. Finally, to understand Landmark Village's GHG emissions in a broader context, the inventory is compared to state, national and global inventories.

1.3 Report Description

This report contains seven sections. Following this introduction, Sections 2 and 3 detail the regulatory setting and the state of climate change science. Section 4 presents the results of the Landmark Village GHG Inventory at full build out. Section 4 also includes the quantitative effects of currently promulgated regulations on Landmark Village's GHG emissions. Section 5 compares these results to various benchmarks to gain perspective on what impact the Landmark Village development at full build out will have on overall GHG emissions. Section 6 outlines the expected de-carbonization of the fuel supply and its relationship to California's 2050 GHG goals. Finally, the main findings from the report are summarized in the conclusion.

2 Regulatory Setting

Climate change has only recently been widely recognized as a threat to the global climate, economy and population. As a result, the climate change regulatory setting – federal, state and local – is complex and evolving. This section identifies key legislation, executive orders, and seminal court cases related to climate change germane to Landmark Village project GHG emissions.

2.1 Federal Action on Greenhouse Gas Emissions

2.1.1 Federal Action on Greenhouse Gas Emissions

In 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tons of GHG emissions per million dollars of gross domestic product) of the US economy by 18% by 2012. No binding reductions were associated with the goal. Rather, the United States Environmental Protection Agency (USEPA) administers a variety of voluntary programs and partnerships with GHG emitters in which the USEPA partners with industries producing and utilizing synthetic GHGs to reduce emissions of these particularly potent GHGs.

2.1.2 April 2007 Supreme Court Ruling

In *Massachusetts et al. vs. Environmental Protection Agency et al.* (April 2, 2007) the US Supreme Court ruled that the Clean Air Act authorizes the USEPA to regulate CO_2 emissions from new motor vehicles. The Court did not mandate that the USEPA enact regulations to reduce GHG emissions, but found that the only instances where the USEPA could avoid taking action were if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change. On April 24, 2009 the USEPA issued a proposed endangerment finding, stating that high atmospheric levels of greenhouse gases "are the unambiguous result of human emissions, and are very likely the cause of the observed increase in average temperatures and other climatic changes." The USEPA further found that "atmospheric concentrations of greenhouse gases endanger public health and welfare within the meaning of Section 202 of the Clean Air Act." The finding itself does not impose any requirements on industry or other entities. The public comment period for this proposed endangerment finding ended June 23, 2009, and the finding is now under final review.[5]

2.1.3 Corporate Average Fuel Efficiency Standards

In response to the *Massachusetts et al. vs. Environmental Protection Agency et al.* ruling, the Bush Administration issued an executive order on May 14, 2007, directing the USEPA and Departments of Transportation (DOT) and Energy (DOE) to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) (discussed below) was signed into law, which requires an increased Corporate Average Fuel Economy (CAFE) standard of 35 miles per gallon for the combined fleet of cars and light trucks by model

[5] Available at http://www.epa.gov/climatechange/endangerment.html

year 2020. EISA requires establishment of interim standards (from 2011 to 2020) that will be the "maximum feasible average fuel economy" for each fleet. On October 10, 2008, the National Highway Traffic Safety Administration (NHTSA) released a final environmental impact statement analyzing proposed interim standards for model years 2011 to 2015 passenger cars and light trucks. NHTSA issued a final rule for model year 2011 on March 23, 2009.[6]

On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the US auto industry. The proposed rulemaking is a collaboration between the DOT and USEPA with the support of the United Auto Workers. The proposed federal standards apply to passenger cars, light-duty trucks, and medium duty passenger vehicles built in model years 2012 through 2016. If finalized, the proposed rule would surpass the 2007 CAFE standards and require an average fuel economy standard of 35.5 mpg in 2016. On May 22, 2009, the DOT and USEPA issued a notice of upcoming joint rulemaking on this issue.[7,8] On June 30, 2009 the USEPA granted the waiver for California for its greenhouse gas emission standards for motor vehicles; this is described in more detail below.

2.1.4 Energy Independence and Security Act of 2007

In addition to setting increased CAFE standards for motor vehicles, the EISA includes other provisions:

- Renewable Fuel Standard (RFS) (Section 202);
- Appliance and Lighting Efficiency Standards (Section 301–325);
- Building Energy Efficiency (Sections 411–441).

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

2.1.5 Reporting Requirements

Congress passed "The Consolidated Appropriations Act of 2008" (HR 2764) in December 2007, which includes provisions requiring the establishment of mandatory GHG reporting requirements. The measure directs USEPA to publish draft rules by September 2008, and final rules by June 2009 mandating reporting "for all sectors of the economy." On September 22, 2009, EPA Administrator Jackson signed a final rule mandating annual reporting of GHG emissions by suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions. This rule was created in response to the mandate established by the 2008 Consolidated Appropriations Act, on April 10, 2009.

[6] See http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.43ac99aefa80569eea57529cdba046a0/
[7] See http://yosemite.epa.gov/opa/admpress.nsf/6fa790d452bcd7f58525750100565efa/451902cb77d4add5852575bb006d3f9b!OpenDocument
[8] See http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.43ac99aefa80569eea57529cdba046a0/

2.2 Regional Agreements

2.2.1 Western Regional Climate Action Initiative (WCI)

The WCI is a partnership among seven states, including California, and four Canadian provinces that are implementing a regional, economy-wide cap-and-trade system to reduce global warming pollution. The WCI will cap the region's electricity, industrial, and transportation sectors with the goal of reducing the heat-trapping emissions that cause global warming 15% below 2005 levels by 2020. California is working closely with the other states and provinces to design a regional GHG reduction program that includes a cap-and-trade approach. CARB plans to develop a cap-and-trade program that will link California and the other member states and provinces.

2.3 California Legislation

California has enacted a variety of legislation that relates to climate change, much of which sets aggressive goals for GHG reductions within the state. However, none of this legislation provides definitive direction regarding the treatment of climate change in environmental review documents prepared under the CEQA.

2.3.1 Assembly Bill 32 (Statewide GHG Reductions)

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires CARB to develop and enforce regulations for the reporting and verification of statewide greenhouse gas emissions. CARB is directed to set a greenhouse gas emission limit, based on 1990 levels, to be achieved by 2020. The bill sets a timeline for adopting a scoping plan for achieving greenhouse gas reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that statewide GHG emissions must be reduced to 1990 levels by 2020. California needs to reduce GHG emissions by approximately 28.5% below business-as-usual predictions of year 2020 GHG emissions to achieve this goal.[9] The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. Key AB 32 milestones are as follows:

- June 30, 2007—Identification of discrete early action greenhouse gas emissions reduction measures. On June 21, 2007, CARB satisfied this requirement by approving three early action measures. These were later supplemented by adding six other discrete early action measures.

[9] (596 - 427) / 596 = 28.35%. In this report we conservatively assume 28.5% or 29%. "ARB staff estimated 2020 business-as-usual GHG emissions, which represent the emissions that would be expected to occur in the absence of any GHG reductions actions. ARB staff estimates the statewide 2020 business-as-usual greenhouse gas emissions will be 596 MMTCO2E. Emission reductions from the recommended measures in the Scoping Plan total 169 $MMTCO_2E$, allowing California to attain the 2020 emissions limit of 427 MMTCO2E." http://www.arb.ca.gov/cc/inventory/data/forecast.htm

- January 1, 2008—Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline.
- January 1, 2009—Adoption of a scoping plan for achieving GHG emission reductions. On October 15, 2008, CARB issued a "discussion draft" Scoping Plan entitled "Climate Change Draft Scoping Plan: A Framework for Change" (Draft Scoping Plan). CARB adopted the Draft Scoping Plan at its December 11, 2008 meeting.
- January 1, 2010—Adoption and enforcement of regulations to implement the “discrete” actions.
- January 1, 2011—Adoption of GHG emissions limits and reduction measures by regulation.
- January 1, 2012—GHG emissions limits and reduction measures adopted in 2011 become enforceable.

2.3.2 Executive Order S-3-05 (Statewide GHG Targets)

California Executive Order S-03-05 (June 1, 2005) mandates a reduction of GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. Although the 2020 target is the core of AB 32, and has effectively been incorporated into AB 32, the 2050 target remains the goal of the Executive Order.

2.3.3 Low Carbon Fuel Standard (LCFS)

Executive Order S-01-07 (January 18, 2007) requires a 10% or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB. CARB identified the LCFS as a Discrete Early Action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009.[10]

2.3.4 Senate Bill 1368 (GHG Emissions Standard for Baseload Generation)

Senate Bill (SB) 1368 prohibits any retail seller of electricity in California from entering into a long-term financial commitment for baseload generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant. This performance standard applies to electricity generated out-of-state as well as in-state, and to publicly owned as well as investor-owned electric utilities.

2.3.5 Assembly Bill 1493 (Mobile Source Reductions)

AB 1493 requires CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks of model year 2009 and thereafter. The bill requires the CCAR to develop and adopt protocols for the reporting and certification of greenhouse gas emissions reductions from mobile sources for use by CARB in

[10] See http://www.arb.ca.gov/fuels/lcfs/lcfs.htm

granting emission reduction credits. The bill authorizes CARB to grant emission reduction credits for reductions of greenhouse gas emissions prior to the date of enforcement of regulations, using model year 2000 as the baseline for reduction.

In 2004, CARB applied to the USEPA for a waiver under the federal Clean Air Act to authorize implementation of these regulations. The waiver request was formally denied by the USEPA in December 2007 after California filed suit to prompt federal action. In January 2008 the State Attorney General filed a new lawsuit against the USEPA for denying California's request for a waiver to regulate and limit GHG emissions from these automobiles. In January 2009, President Barack Obama issued a directive to the USEPA to reconsider California's request for a waiver. On June 30, 2009, the USEPA granted the waiver for California for its greenhouse gas emission standards for motor vehicles. As part of this waiver, EPA specified the following provision: CARB may not hold a manufacturer liable or responsible for any noncompliance caused by emission debits generated by a manufacturer for the 2009 model year.

2.3.6 Senate Bills 1078 and 107 (Renewables Portfolio Standard)

Established in 2002 under SB 1078 and accelerated in 2006 under SB 107, California's RPS requires retail suppliers of electric services to increase procurement from eligible renewable energy resources by at least 1% of their retail sales annually, until they reach 20% by 2010.

2.3.7 Executive Order S-14-08 (Renewables Portfolio Standard)

California Executive Order S-14-08 (November 11, 2008) mandates retail suppliers of electric services to increase procurement from eligible renewable energy resources to 33% by 2020. This is a further increase in RPS over SBs 1078 and 107.

2.3.8 Executive Order S-21-09 (Renewables Portfolio Standard)

California Executive Order S-21-09 (September 15, 2009) mandates that "the ARB, under its AB 32 authority, shall adopt a regulation consistent with the 33 percent renewable energy target established in Executive Order S-14-08 by July 31, 2010."[11]

2.3.9 Senate Bill 375 (Land Use Planning)

SB 375 provides for a new planning process to coordinate land use planning, regional transportation plans and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs) relevant to the project area (including the Southern California Association of Governments [SCAG])[12], to incorporate a "sustainable communities strategy" in their regional transportation plans that will achieve GHG emission reduction targets set by CARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit oriented development. SB 375 will be implemented over the next several years.

[11] http://gov.ca.gov/executive-order/13269/

[12] See http://www.scag.ca.gov/region/index.htm

SB 375 is similar to the Regional Blueprint Planning Program, established by the California Department of Transit, which provides discretionary grants to fund regional transportation and land use plans voluntarily developed by MPOs working in cooperation with Council of Governments. The Metropolitan Transportation Commission (MTC) is currently developing its 2009 Regional Transit Plan (RTP) with AB 32 goals in mind, and its 2013 RTP will be its first plan subject to SB 375. The Scoping Plan adopted by CARB in December of 2008 relies on the requirements of SB 375 to implement the carbon emission reductions anticipated from land use decisions.

2.3.10 Energy Conservation Standards

Energy Conservation Standards for new residential and non-residential buildings were first adopted by California Energy Resources Conservation and Development Commission in June 1977 and most recently revised in 2008 (Title 24, Part 6 of the California Code of Regulations [CCF]).[13] In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The California Energy Commission adopted the 2009 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608), on December 3, 2008, the California Office of Administrative Law approved them on July 10, 2009.[14] The regulations include standards for both federally-regulated appliances and non-federally regulated appliances. These regulations exceed the standards imposed by other states and reduce GHG emissions by reducing energy demand.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). Part 11 establishes voluntary standards, that will become mandatory in the 2011 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

2.3.11 Office of Planning and Research Advisory on CEQA and Climate Change

In June 2008, the OPR published a Technical Advisory entitled *CEQA and Climate Change: Addressing Climate Change Through CEQA* (OPR Advisory). This guidance, which is purely advisory, proposes a three-step analysis of GHG emissions:

1. *Mandatory Quantification of GHG Project Emissions.* The environmental impact analysis must include quantitative estimates of a project's GHG emissions from different types of air emission sources. These estimates should include both construction-phase emissions, as well as completed operational emissions, using one of a variety of available modeling tools.

[13] Although new building energy efficiency standards were adopted in April 2008, these standards do not go into effect until January 1, 2010. Thus, the 2005 standards that went into effect on October 1, 2005 remain the current Title 24 standards.

[14] www.energy.ca.gov/appliances/

2. *Continued Uncertainty Regarding "Significance" of Project-Specific GHG Emissions.* Each environmental impact report (EIR) document should assess the significance of the project's impacts on climate change. The OPR Advisory recognizes uncertainty regarding what GHG impacts should be determined to be significant and encourages agencies to rely on the evolving guidance being developed in this area. According to the OPR Advisory, the environmental analysis should describe a "baseline" of existing (pre-project) environmental conditions, and then add project GHG emissions on to this baseline to evaluate whether impacts are significant.
3. *Mitigation Measures.* According to the OPR Advisory, "all feasible" mitigation measures or project alternatives should be adopted if an impact is significant, defining feasibility in relation to scientific, technical, and economic factors. If mitigation measures cannot sufficiently reduce project impacts, the agency should adopt whatever measures are feasible and include a fact-based statement of overriding considerations explaining why additional mitigation is not feasible. OPR also identifies a menu of GHG emissions mitigation measures, ranging from balanced "mixed use" master-planned project designs to construction equipment and material selection criteria and practices.

In addition to this three-step process, the OPR Advisory contains more general policy-level guidance. It encourages agencies to develop standard GHG emissions reduction and mitigation measures. The OPR Advisory also directs CARB to recommend a method for setting the GHG emissions threshold of significance, including both qualitative and quantitative options.

2.3.12 Senate Bill 97 (CEQA Guidelines)

SB 97 requires that OPR prepare guidelines to submit to the California Resources Agency regarding the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions as required by CEQA. The Resources Agency is required to certify and adopt these revisions to the State CEQA Guidelines by January 1, 2010. The Guidelines will apply retroactively to any incomplete environmental impact report, negative declaration, mitigated negative declaration, or other related document.[15]

The CNRA received recommended Amendments to the CEQA Guidelines for greenhouse gas emissions from the Governor's Office of Planning and Research on April 13, 2009. On July 3, 2009, the CNRA commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code section 21083.05. During the process, CRNA will hold public hearings, receive oral comments, consider both written and oral comments, and publish the final rule, which will take into consideration comments made.

The July 2009 proposed amendments state that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

- Extent the project increases or reduces GHG emissions relative to the existing setting.

[15] Senate Bill No. 97. CHAPTER 185. An act to add Section 21083.05 to, and to add and repeal Section 21097 of, the Public Resources Code, relating to the California Environmental Quality Act. http://www.opr.ca.gov/ceqa/pdfs/SB_97_bill_20070824_chaptered.pdf

- Extent the project exceeds a threshold of significance that the lead agency determines applies.
- Extent the project complies with requirements adopted to implement a plan for the reduction or mitigation of GHG emissions.

No specific methodologies for performing an assessment are indicated, but rather it is left to the lead agency to determine the appropriate methodologies in context of a particular project.

The proposed amendments indicate that lead agencies should consider all feasible means of mitigating greenhouse gas emissions that substantially reduce energy consumption or GHG emissions. These potential mitigation measures may include carbon sequestration. If off-site or carbon offset mitigation measure are proposed they must be part of reasonable plan of mitigation that the agency itself is committed to implementing. No threshold of significance or any specific mitigation measures are indicated.

Among other things, CRNA noted in its Public Notice for these changes, was that impacts of GHG emissions should be considered in the context of a cumulative impact, rather than a project impact. The Public Notice states:

> "While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CRNA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable."

2.3.13 CARB Preliminary Draft Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases Under the California Environmental Quality Act (Draft CARB Thresholds)

In October 2008, CARB released a draft proposal for identifying CEQA thresholds of significance for industrial, commercial and residential developments. The Draft CARB Thresholds propose a framework for developing thresholds of significance that rely upon the incorporation of a variety of performance measures to reduce GHG emissions associated with a project, as well as a numerical threshold of significance above which a project must include detailed GHG analysis in an EIR and incorporate all feasible mitigation measures. Although CARB proposed a 7,000 tons per year threshold for industrial projects, a numerical threshold for commercial and residential projects was not proposed, but is under development. In addition, the Draft CARB Thresholds incorporate SB 375 by providing that commercial and residential projects that comply with a previously approved plan, which, essentially, satisfies SB 375 and for which a certified final CEQA document has been prepared, is presumed to have a less than significant impact related to climate change. As of this time, CARB has suspended its work on CEQA thresholds.

2.4 Local Air Quality Management District (SCAQMD) Policies

On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for projects where the SCAQMD is the lead agency (i.e., industrial (stationary source) projects). To achieve a policy objective of capturing 90% of GHG emissions from new residential/commercial development projects and implement a "fair share" approach to reducing emission increases from each sector, SCAQMD staff has proposed combining performance standards and screening thresholds. The performance standards suggested have primarily focused on energy efficiency measures beyond Title 24 Part 6, California's building energy efficiency standards, and an undetermined screening level of tonnes CO_2e per year based on direct operational emissions. Above this screening level, project design features designed to reduce GHGs must be implemented to reduce the impact to below a level of significance. SCAQMD staff are performing additional analyses to further define the performance standards and quantitative screening level.

2.5 Los Angeles County Policies

Los Angeles County (LA County) does not have any rules or regulations directly governing the emission of GHGs. However, there are several LA County policies and regulations that bear on GHG emissions. These are described below.

2.5.1 Countywide Energy and Environmental Policy (January 2007)

In January 2007, the LA County Board of Supervisors adopted the Countywide Energy and Environmental Policy which provides guidelines for sustainability and green building design within County departments. The Policy states that the County will join the CCAR to establish goals for reducing GHG emissions. In addition, the policy incorporates a sustainable building program into County capital improvement projects and seeks to integrate energy efficient and sustainable designs into future County building plans.[16]

For example, as of January 16, 2007, the County's Capital Construction Program must achieve Leadership in Energy and Environmental Design (LEED) Silver Certification for new County (government) buildings greater than 10,000 square feet (sq ft); this included 53 projects in the 2007-2008 Capital Program.

2.5.2 Los Angeles County's Green Building Ordinances

In November 2008, LA County adopted green building, low impacted development, and drought-tolerant landscaping ordinances. With respect to green building, the County requires buildings to consume 15% less energy than authorized per the 2005 Title 24 standards. In addition, for building permit applications filed on or after January 1, 2010, the ordinance requires that LEED or LEED-equivalent ratings be met. In sum, the various requirements imposed by the green building ordinance conserve water, conserve energy, conserve natural resources, divert waste from landfills, minimize impacts to existing infrastructure, and promote a healthier environment. For more information, please see Title 21 and 22 of the LA County Code.

[16] http://lacounty.info/bos/sop/supdocs/29480.pdf and http://lacounty.info/bos/sop/supdocs/29932.pdf (ENVIRON 2008).

2.5.3 Los Angeles County Board of Supervisors Meeting, January 13, 2009

In 2009, LA County Board of Supervisors directed the Chief Executive Officer (CEO) to take actions towards increasing the use of the renewable energy.[17] The actions focused upon cost-benefit analyses. One study would examine Los Angeles County offsetting between10% and 100% of current electrical needs through the use of renewable energy, including the purchase of renewable energy credits. Another would compare costs and benefits of purchasing electricity from renewable energy sources to the costs and benefits of investing money in improving the energy efficiency of the County's operations.

The county would also conduct a cost analysis, feasibility assessment and recommendations regarding constituent-focused initiatives to be included in the Program. The proposal would include an analysis of community choice aggregation, home energy audits, financing of residential renewable energy products, and other initiatives as deemed appropriate.

[17] Board minutes on January 13, 2009. http://file.lacounty.gov/bos/supdocs/47117.pdf

3 State of Science

This section summarizes the scientific issues surrounding climate change and global warming. It also provides a discussion of the actions and phenomena that contribute to climate change and puts into context global, national, and state emissions of GHGs.

3.1 Global Climate Change

Global warming and *global climate change* are both terms that describe changes in the earth's climate. *Global climate change* is a broad term used to describe any worldwide, long-term change in the earth's climate. This change could be, for example, an increase or decrease in temperatures, the start or end of an ice age, or a shift in precipitation patterns. The term *global warming* is more specific than *global climate change* and refers to a general increase in temperatures across the earth. Though global warming is characterized by rising temperatures, it can cause other climatic changes, such as a shift in the frequency and intensity of rainfall or hurricanes. Global warming does not necessarily imply that all locations will be warmer. Some specific, unique locations may be cooler even though the world, on average, is warmer. All of these changes fit under the umbrella of global climate change.[18]

While global warming can be caused by natural processes, there is a general scientific consensus that most current global warming is the result of human activity on the planet.[19] This man-made, or anthropogenic, warming is primarily caused by increased emissions of "GHGs" that keep the earth's surface warm. This is called "the greenhouse effect." The greenhouse effect and the role GHGs play in it are described below.

3.2 The Greenhouse Effect

Greenhouses allow sunlight to enter and then capture some of the heat generated by the sunlight's impact on the earth's surface. The earth's atmosphere acts like a greenhouse by allowing sunlight in, but trapping some of the heat that reaches the earth's surface. When solar radiation from the sun reaches the earth, much of it penetrates the atmosphere to ultimately reach the earth's surface; this solar radiation is absorbed by the earth's surface and then re-emitted as heat in the form of infrared radiation.[20] Whereas the GHGs in the atmosphere let solar radiation through, the infrared radiation is trapped by greenhouse gases, resulting in the warming of the earth's surface.[21] This phenomenon is referred to as the "greenhouse effect".

The earth's greenhouse effect has existed far longer than humans have and has played a key role in the development of life. Concentrations of major GHGs, such as CO_2, CH_4, N_2O, and

[18] Other definitions of "Greenhouse Effect" and "Global Warming" can be found on Merriam-Webster online: http://www.m-w.com/. A definition for "Climate Change" can be found on dictionary.com which uses Webster's New Millennium™ Dictionary of English, Preview Edition (v 0.9.6).

[19] From the IPCC "Climate Change 2007: The Physical Science Basis, Summary for Policymakers." Available online at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf

[20] All light, be it visible, ultraviolet, or infrared, carries energy.

[21] Infrared radiation is characterized by longer wavelengths than solar radiation. Greenhouse gases reflect radiation with longer wavelengths. As a result, instead of escaping back into space, greenhouse gases reflect much infrared radiation (i.e., heat) back to Earth.

water vapor have been naturally present for millennia at relatively stable levels in the atmosphere, adequate to keep temperatures on Earth hospitable. Without these GHGs, the earth's temperature would be too cold for life to exist.

As human industrial activity has increased, atmospheric concentrations of certain GHGs have grown dramatically. Figure 2-1 shows the increase in concentrations of CO_2 and CH_4 over time. In the absence of major industrial human activity, natural processes have maintained atmospheric concentrations of GHGs, and, therefore, global temperatures at constant levels over the last several centuries.[22] As the concentrations of GHGs increase due to human activity, more infrared radiation is trapped, and the earth is heated to higher temperatures. This is the process that is described as human-induced global warming.

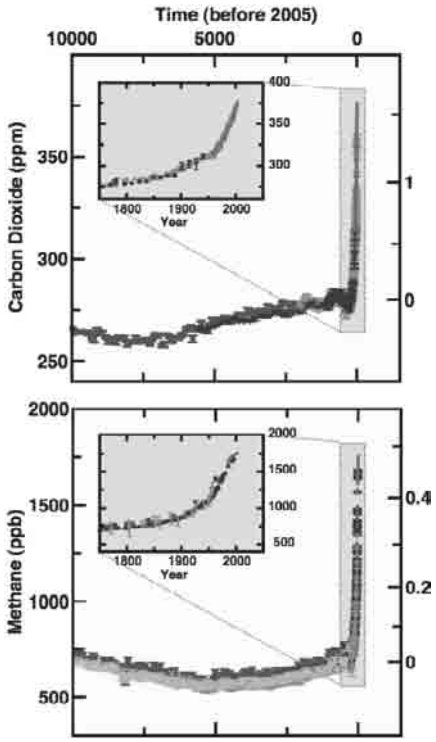

Figure 2-1. Carbon dioxide and methane concentrations have increased dramatically since the industrial revolution.[23]

In 2007, the IPCC began releasing components of its Fourth Assessment Report on climate change. In February 2007, the IPCC provided a comprehensive assessment of climate change science in its Working Group I Report.[24] It states that there is a scientific consensus that the global increases in GHGs since 1750 are mainly due to human activities such as fossil fuel use,

[22] Examples of natural processes include the addition of GHGs to the atmosphere from respiration, fires, and decomposition of organic matter. The removal of greenhouse gases is mainly from plant and algae growth and absorption by the ocean.

[23] Adapted from figure SPM-1 of the IPCC "Climate Change 2007: The Physical Science Basis, Summary for Policymakers." Available online at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf

[24] Available online at: http://www.ipcc.ch/ipccreports/ar4-wg1.htm

land use change (e.g., deforestation), and agriculture. In addition, the report states that it is likely that these changes in greenhouse gas concentrations have contributed to global warming. Confidence levels of claims in this report have increased since 2001 due to the large number of simulations run and the broad range of available climate models.

3.3 Greenhouse Gases and Sources of Their Emissions

The term "GHGs" includes gases that contribute to the natural greenhouse effect, such as CO_2, CH_4, N_2O, and water, as well as gases that are only man-made and that are emitted through the use of modern industrial products, such as hydrofluorocarbons (HFCs), chlorinated fluorocarbons (CFCs), and sulfurhexafluoride (SF_6). These last three families of gases, while not naturally present in the atmosphere, have properties that also cause them to trap infrared radiation when they are present in the atmosphere, thus making them GHGs. These six gases comprise the major GHGs that are recognized by the Kyoto Accords (water is not included).[25] There are other GHGs that are not recognized by the Kyoto Accords, due either to the smaller role that they play in climate change or the uncertainties surrounding their effects. Atmospheric water vapor is not recognized by the Kyoto Accords because there is not an obvious correlation between water concentrations and specific human activities. Water appears to act in a positive feedback manner; higher temperatures lead to higher water concentrations, which in turn cause more global warming.[26]

The effect each of these gases has on global warming is a combination of the volume of their emissions and their GWP. GWP indicates, on a pound for pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent than CO_2, with GWPs of 21 and 310, respectively. However, these natural GHGs are nowhere near as potent as SF_6 and fluoromethane, which have GWPs of up to 23,900 and 6,500 respectively.[27] GHG emissions are typically measured in terms of mass of CO_2e. CO_2e are calculated as the product of the mass of a given GHG and its specific GWP.

The most important greenhouse gas in human-induced global warming is CO_2. While many gases have much higher GWPs than the naturally occurring GHGs, CO_2 is emitted in such vastly higher quantities that it accounts for 85% of the GWP of all GHGs emitted by the United States.[28] Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions and thus substantial increases in atmospheric CO_2 concentrations. In 2005, atmospheric CO_2 concentrations were about 379 parts per million (ppm), over 35 percent higher than the pre-industrial concentrations

[25] This Kyoto Protocol sets legally binding targets and timetables for cutting the greenhouse-gas emissions of industrialized countries. The US has not approved the Kyoto treaty.

[26] From the IPCC Third Assessment Report: http://www.grida.no/climate/ipcc_tar/wg1/143.htm and http://www.grida.no/climate/ipcc_tar/wg1/268.htm

[27] California Climate Action Registry General Reporting Protocol - Reporting Entity-Wide Greenhouse Gas Emissions. SAR values, Appendix C. http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

[28] Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006, US Environmental Protection Agency. Available online at: http://epa.gov/climatechange/emissions/downloads/08_CR.pdf

of about 280 ppm.[29] In addition to the sheer increase in the volume of its emissions, CO_2 is a major factor in human-induced global warming because of its lifespan in the atmosphere of 50 to 200 years.

Concentrations of the second most prominent GHG, CH_4, have also increased due to human activities such as rice production, degradation of waste in landfills, cattle farming, and natural gas mining. In 2005, atmospheric levels of CH_4 were more than double pre-industrial levels, up to 1774 parts per billion (ppb) as compared to 715 ppb.[30] CH_4 has a relatively short atmospheric lifespan of only 12 years, but has a higher GWP than CO_2.

Nitrous oxide concentrations have increased from about 270 ppb in pre-industrial times to about 319 ppb by 2005.[31] Most of this increase can be attributed to agricultural practices (such as soil and manure management), as well as fossil-fuel combustion and the production of some acids. Nitrous oxide's 120-year atmospheric lifespan increases its role in global warming.

Besides CO_2, CH_4, and N_2O; there are several gases and categories of gases that were not present in the atmosphere in pre-industrial times but now exist and contribute to warming. These include CFCs, used often as refrigerants, and their more stratospheric-ozone-friendly replacements, HFCs. Fully fluorinated species, such as SF_6 and tetrafluoromethane (CF_4), are present in the atmosphere in relatively small concentrations, but have extremely long life spans of 50,000 and 3,200 years each, making them potent GHGs.

3.4 Current and Projected Climatic Impacts of Global Warming

A strong indication that global warming is currently taking place is the fact that the top seven warmest years since the 1890s occurred after 1997. Furthermore, a warming of about 0.2°C per decade is projected by currently accepted models.

There is a scientific consensus that global climate change will increase the frequency of heat extremes, heat waves, and heavy precipitation events. Other likely direct effects include an increase in the areas affected by drought and by floods, an increase in tropical cyclone activity, a rise in sea level, and recession of polar ice caps. The impacts of global warming have already been demonstrated by substantial ice loss in the Arctic.[32] Figure 2-2 shows the rise of global temperatures, the global rise of sea level, and the loss of snow cover from 1850 to the present.

[29] Page 2 of the IPCC "Climate Change 2007: The Physical Science Basis, Summary for Policymakers."
[30] Page 4 of the IPCC "Climate Change 2007: The Physical Science Basis, Summary for Policymakers."
[31] Page 4 of the IPCC "Climate Change 2007: The Physical Science Basis, Summary for Policymakers."
[32] Statistics from IPCC Working Group I and II Reports.

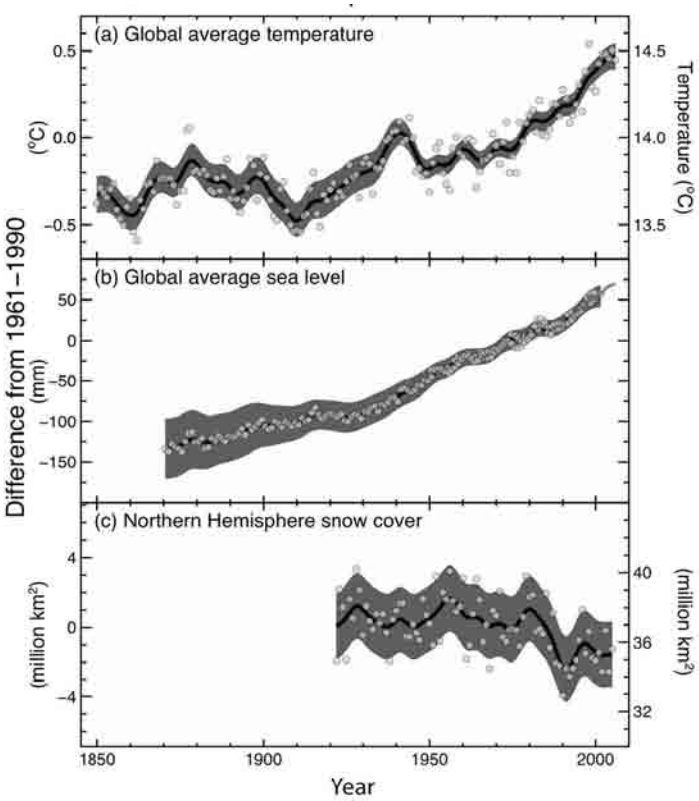

Figure 2-2. Global warming trends and associated sea level rise and snow cover decrease.[33]

3.5 Socioeconomic Impacts of Global Warming

Global temperature increases may have significant negative impacts on ecosystems, natural resources, and human health. Ecosystem structure and biodiversity will be compromised by temperature increases and associated climatic and hydrological disturbances.[34] The availability and quality of potable water resources may be compromised by increased salinisation of ground water due to sea-level rises, decreased supply in semi-arid and arid locations, and poorer water quality arising from increased water temperatures and more frequent floods and droughts.[35] These impacts on freshwater systems, in addition to the effects of increased drought and flood frequencies, can reduce crop productivity and food supply.

In addition to compromising food and water resources, there are other means through which climatic changes associated with global warming can affect human health and welfare. Warmer temperatures can cause more ground-level ozone, a pollutant that causes eye irritation and respiratory problems. Ranges of infectious diseases will likely increase, and some areas will face greater incidences of illness and mortality associated with increased flooding and drought events.

[33] Figure SPM-3 of the IPCC "Climate Change 2007: The Physical Science Basis, Summary for Policymakers."

[34] From the IPCC Working Group II Report.

[35] From the IPCC Technical Paper VI: "Climate Change and Water". Available online at: http://www.ipcc.ch/pdf/technical-papers/climate-change-water-en.pdf

In its April 2007 Working Group II Report, the IPCC provided an assessment of the "current scientific understanding of impacts of climate change on natural, managed and human systems, the capacity of these systems to adapt and their vulnerability".[36] Here, the IPCC states that although some people will gain and some will lose because of global climate change, the overall change will be one of social and economic losses. California in particular is an area that could be negatively impacted by global warming. Global warming could alter the seasonal pattern of snow accumulation and snowmelt, which serve as primary sources for California's drinking water and irrigation water supplies. The scientific community projects extensions in the periods of high forest fire risk. Climatic changes would also affect agriculture, a major California industry, which could result in economic losses. For example, the heat wave in July 2006 is estimated to have cost the California dairy industry in excess of one billion dollars.[37]

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It is important to recognize that the climatic conditions experienced by the Project over its designed lifetime are likely to be substantially different from those observed over the past century. Consequently, it is useful to consider the implications of changing climatic conditions for Project performance. Scenarios[38] for 2100 modeled in the IPCC Fourth Assessment Report (FAR) include:

Temperature Increase

- Low Emissions Scenario: 1.8°C (best estimate), with a range of 1.1°C to 2.9°C
- High Emissions Scenario: 4.0°C (best estimate), with a range of 2.4°C to 6.4°C

Sea Level Rise

- Low Emissions Scenario: 0.18 to 0.38 meters (range)
- High Emissions Scenario: 0.26 to 0.59 meters (range)

Potential implications for the Project include:

Sea level: Rising sea levels are unlikely to directly impact the proposed Project due to its distance from the coast and relative elevation.

[36] Available online at: http://www.ipcc-wg2.org/index.html

[37] Office of the Governor.

[38] Future GHG emissions are the product of very complex dynamic systems, determined by driving forces such as demographic development, socio-economic development, and technological change. Their future evolution is highly uncertain. Scenarios are alternative images of how the future might unfold and are an appropriate tool with which to analyze how driving forces may influence future emission outcomes and to assess the associated uncertainties. They assist in climate change analysis, including climate modeling and the assessment of impacts, adaptation, and mitigation. The possibility that any single emissions path will occur as described in scenarios is highly uncertain. More information on the IPCC's selection of scenarios is available at http://www.ipcc.ch/ipccreports/sres/emission/index.htm.

Temperature: Rising temperatures could have a variety of impacts, including stress on sensitive populations (e.g., sick and elderly), additional burden on building systems (e.g., demand for conditioning), and, indirectly, increasing emissions of greenhouse gases and criteria pollutants associated with energy generation. It is not possible to reliably quantify these risks at this time.

Precipitation: Climate change is expected to alter seasonal and inter-annual patterns of precipitation. These changes continue to be one of the most uncertain aspects of future scenarios. For this Project, the most relevant direct impacts are likely to be changes in the timing and volume of storm water runoff and changes in demand for irrigation. It is not possible to reliably quantify the implications of these changes at this time.

Wildfire: Changes in temperature and precipitation may combine to alter risks of wildfire. Changes in wildfire hazard have the potential to impact the Project; however, it is not possible to reliably quantify the implications of these changes at this time.

Water supply reliability: Changes in temperature and precipitation may also influence seasonal and inter-annual availability of water supplies. Consequently, it is reasonable to consider that climate change may affect water supply reliability. It is not possible to reliably quantify these risks for the Project at this time. For more information on the Project's water supply, please refer to Section 5.18, Water Resources, and the Water Supply Assessment in the EIR.

3.6 Impacts from Climate Change

The CNRA[39] recently prepared a document that discusses the impacts of climate change upon California, as well as California's climate adaptation strategy. The categories below are topics emphasized in the November 2008 Executive Order (S-13-08) which called on state agencies to develop California's first strategy to identify and prepare for these expected climate impacts. Adaptation strategies are addressed in the next section of this technical report.

3.6.1 Rising Temperatures

CRNA described new projections by MIT modelers predict a median probability of surface warming of 5.2 C by 2100, which is much higher than previous modeling completed in 2003. [40] Researchers modeled temperature changes specifically related to California.[41] The model predicted greater temperature increases in summer than winter, and larger increases inland compared to the coast.

[39] 2009 California Climate Adaptation Strategy. Discussion Draft. California Natural Resources Agency.

[40] Chandler, D. 2009. Climate change odds much worse than thought: New analysis shows warming could be double previous estimates. MIT News Office. May 19, 2009. Website: http://web.mit.edu/newsoffice/2009/roulette-0519.html

[41] Incorporated by reference. Moser, Susanne, Guido Franco, Sarah Pittiglio, Wendy Chou and Dan Cayan (2008). The Future is Now: An Update on Climate Change Science Impacts and Response Options for California. 2008 Climate Change Impacts Assessment Project - Second Biennial Science Report to the California Climate Action Team, CEC-500-2008-071, Sacramento, CA.

3.6.2 Tipping Elements

The CNRA emphasized "tipping elements", which bring about "abrupt changes that could push natural systems past thresholds beyond which they could not recover". According to the CNRA, there are four main events that could bring about abrupt environmental changes. Each of these four has a particular tipping temperature at which the event is likely to occur. The consequence of crossing each threshold could cause a 7-12 m rise in sea level over the course of several centuries as shown in the table below.

Tipping elements that could trigger abrupt environmental changes.

Additional Warming (ºF)	Environmental Change	Length of Time
1-3	Rapid Arctic sea ice melt	10 years
2-4	Irreversible melting of the Greenland Ice Sheet	300 years or more
5-9	Irreversible melting of the West Antarctic Ice Sheet	300 years or more
5-7	Amazon forest die-back	None given
6-11	Intensification of El Niño-Southern Oscillation cycles	None given

3.6.3 Extreme Natural Events

In addition, CRNA listed extreme natural events are likely to occur, including higher nighttime temperatures and longer, more frequent heat waves overall; 12-35% decrease in precipitation levels by mid- to late-21st century; increased evaporation and faster incidences of snowmelt that will increase drought conditions, and more precipitation in the form of rain as compared to snow that will decrease water storage in California during the dry season and increase flood events during the wet season.[42]

3.6.4 Precipitation Changes and Rivers

CNRA also stated that climate change will intensify California's "Mediterranean climate pattern", with the majority of annual precipitation occurring between November and March and drier conditions during the summer.[43] This will increase droughts and floods and will affect river systems. One of the ways to quantify potential impacts related to river system was through calculating a rise in water temperature and its effects on fisheries resources.[44]

[42] Cayan, Dan, Mary Tyree, Mike Dettinger, Hugo Hidalgo, Tapash Das, Ed Maurer, Peter Bromirski, Nicholas Graham, and Reinhard Flick (2009). Climate Change Scenarios and Sea Level Rise Estimates for the California 2008 Climate Change Scenarios Assessment. PIER Research Report, CEC-500-2009-014, Sacramento, CA: California Energy Commission.

[43] Cayan et al. 2009

[44] Crossin, G.T., S.G. Hinch, S.J. Cooke, D.W. Welch, D.A. Patterson, S.R.M. Jones, A.G. Lotto, R.A. Leggatt, M.T. Mathes, J.M. Shrimpton, G. Van Der Kraak and A.P. Farrell. 2008. Exposure to high temperature influences the behaviour, physiology, and survival of sockeye salmon during spawning migration. Canadian Journal of Zoology. 86(2): 127-140.

3.6.5 Sea Level Rise

CNRA states that sea level rise can cause damage to coastal communities and loss of land, which could reach tens of billions of dollars per year in direct costs and trillions of dollars of assets in collateral risk.[45] Current calculations of sea level rise from 1900 to 2000 estimate approximately 7 inches along the California coast.[46] Further, up to 55 inches of sea-level rise globally by the end of the 21st century is predicted under the business as usual scenario.

3.6.6 Low Sea Ice Levels

The CNRA states says that substantial sea ice melting from Greenland and the West Antarctic Ice Sheet has the potential to further raise sea levels. The sea ice extent in the Western Nordic Seas (i.e., Greenland, Norway, and Iceland Seas) is at the lowest level observed in the last 800 years. The implication being that a substantial reduction in sea ice in the Arctic sea promotes alterations in atmospheric circulation and precipitation patterns that extend to the mid-latitudes (e.g., the California coast). Additionally, it was reported that the variations in sea ice extent are correlated with changes in sea surface temperatures and atmospheric and ocean heat transport from the North Atlantic.[47]

The West Antarctic Ice Sheet is a marine-based ice sheet with edges that flow into floating ice shelves. Both the main sheet and the surrounding shelves have been showing signs of shrinking and collapsing due to global warming. Researchers have tracked the fate of at least nine shelves that have receded or collapsed around the Antarctic peninsula in the past 50 years.[48]

3.6.7 Ocean Chemistry

The CRNA also notes that an emerging effect from climate change may be acidification of the ocean. In turn, acidification will affect the ability of hard-shelled invertebrates to create their skeletal structures.[49] The implications of this change being major losses to shellfish industries, and shifts in food resources for ocean fisheries. The primary contributing factors were cited as increasing level of CO_2 and weather pattern shifts (Griffith et al. 2008). Increases in CO_2 result in increased uptake by the oceans, which result in decreased pH (acidification). Weather pattern shifts change the amount of calcium carbonate being delivered by rivers from sources stored in rocks, which further exacerbates the ability of invertebrates to form calcified shells.[50]

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[45] Kahrl, F. and D. Roland-Holst (2008). California Climate Risk and Response. Berkeley, CA: University of California-Berkeley, Department of Agricultural and Resource Economics.

[46] Cayan et al. 2009

[47] Fauria, M.M., A. Grinsted, S. Helama, J. Moore, M. Timonen, T. Martma, E. Isaksson, and E. Eronen. 2009. Unprecedented low twentieth century winter sea ice extent in the Western Nordic Seas since A.D. 1200. Climate Dynamics. Published online: 12 June 2009.

[48] Doyle, A. 2009. Antarctic ice shelf set to collapse due to warming. Roche, A. (ed) In Reuters UK. Thomas Reuters. January 19, 2009. Website: http://uk.reuters.com/articlePrint?articleId=UKTRE50I4G520090119

[49] Risien, J. (ed.). 2009. West Coast Regional Marine Research and Information Needs. Corvallis, Oregon: Oregon Sea Grant. ORESU-Q-09-001.

[50] Griffith, E.M., A. Paytan, K. Caldeira, T. D. Bullen and E. Thomas. 2008. A dynamic marine calcium cycle during the past 28 million years. Science. December 12, 2008.

One of the main contributing factors to CO_2, outside of human influences, is melting permafrost. When permafrost thaws, it releases carbon into soil or beneath lakes and releases CO_2 and methane into the atmosphere. Scientists are now estimating that there is more than twice the total amount of carbon stored in permafrost as there is in atmospheric carbon dioxide, and "could amount to roughly half those resulting from global land-use change during this century". [51]

3.7 California-specific Adaptation Strategies

The CNRA[52] discusses California's climate adaptation strategy. General themes from the report regarding adaptation strategies are summarized below although the report also includes many specific examples of how California may adapt to a changing climate.

Because climate change is already affecting California and current emissions will continue to drive climate change in the coming decades, regardless of any mitigation measured that may be adopted, the necessity of adaptation to the impacts of climate change is recognized by the state of California. The *2009 California Climate Adaption Strategy Discussion Draft* begins what will be on-going process of adaptation, as directed by Gov. Schwarzenegger's Executive Order S-13-08. The goals of the strategy are to analyze risks and vulnerabilities and identify strategies to reduce the risks. Once the strategies are identified and prioritized, government resources would be identified. Finally, the strategy includes identifying research needs and educating the public.

Climate change risks are evaluated using two distinct approaches: (1) projecting the amount of climate change that may occur using computer-based global climate models and (2) assessing the natural or human system's ability to cope with and adapt to change by examining past experience with climate variability and extrapolating this to understand how the systems may respond to the additional impact of climate change. The major anticipated climate changes expected in the State of California include increases in temperature, decreases in precipitation, particularly as snowfall, and increases in sea level, as discussed above. These gradual changes will also lead to an increasing number of extreme events, such as heat waves, wildfires, droughts, and floods. This would impact public health, ocean and coast resources, water supply, agriculture, biodiversity and the transportation and energy infrastructure.

Key preliminary adaptation recommendations included in the *Strategy* are as follows:

- Appointment of a Climate Adaption Advisory Panel;
- Improved water management in anticipation of reduced water supplies, including a 20% reduction in per capita water use by 2020;
- Consideration of project alternatives that avoid significant new development in areas that cannot be adequately protected from flooding due to climate change;
- Preparation of agency-specific adaptation plans, guidance or criteria by September 2010;
- Consideration of climate change impacts for all significant state projects;

[51] Schuur, E.A.G. et al. 2008. Vulnerability of Permafrost Carbon to Climate Change: Implications for the Global Carbon Cycle. BioScience. 58(8): 701-714.

[52] 2009 California Climate Adaptation Strategy. Discussion Draft. California natural Resources Board.

- Assessment of climate change impacts on emergency preparedness;
- Identification of key habitats and development of plans to minimize adverse effects from climate change;
- Development of guidance by the California Department of Public Health by September 2010 for use by local health departments to assess adaptation strategies;
- Amendment of Plans to assess climate change impacts and develop local risk reduction strategies by communities with General Plans and Local Coastal Plans; and
- Inclusion of climate change impact information into fire program planning by state fire fighting agencies.

3.8 Global, National, and California-wide GHG Emissions Inventories

Worldwide emissions of GHGs in 2004 were 26.8 billion tonnes of CO_2e.[53] In 2007, the US emitted about 7 billion tonnes of CO_2e or about 24 tonnes of CO_2e per year per person.[54] Over 80% of the GHG emissions in the US are comprised of CO_2 emissions from energy related fossil fuel combustion. In 2004, California emitted 0.492 billion tonnes of CO_2e, or about 7% of the US emissions.[55] If California were a country, it would be the 16th largest emitter of GHGs in the world.[56] This large number is due primarily to the sheer size of California. Compared to other states, California has one of the lowest per capita GHG emission rates in the country. This is due to California's higher energy efficiency standards, its temperate climate, and the fact that it relies on substantial out-of-state energy generation.

In 2004, 81% of greenhouse gas emissions (in CO_2e) from California were comprised of CO_2 emissions from fossil fuel combustion, with 4% comprised of CO_2 from process emissions. CH_4 and N_2O accounted for 5.7% and 6.8% of total CO_2e respectively, and high GWP gases[57] accounted for 2.9% of the CO_2e emissions. Transportation is by far the largest end-use category of GHG emissions. Transportation includes that used for industry (i.e., shipping) as well as residential use.

3.9 Potential for Reduction of GHG Emissions

In May 2007, the IPCC produced its Working Group III Report on the "scientific, technological, environmental, economic and social aspects" of reducing GHG emissions to alleviate climate change.[58] The report concluded that, even with current policies for sustainable development

[53] Sum of Annex I and Annex II countries without counting Land-Use, Land-Use Change and Forestry (LULUCF) http://unfccc.int/ghg_emissions_data/predefined_queries/items/3814.php For countries for which 2004 data was unavailable, the most recent year was used.

[54] 2006 Inventory of US Greenhouse Gas Emissions and Sinks. Available online at: http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/RAMR6MBLP4/$File/06ES.pdf

[55] California Air Resources Board. Note that 2004 is typically the most recent inventory year presented by the ARB; as such, USA- and world-wide emissions from 2004 are presented here to keep the comparison years the same.

[56] Anywhere between the 12th and 16th depending upon methodology. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. California Energy Commission.

[57] Such as HFCs and PFCs.

[58] Available online at: http://www.ipcc.ch/ipccreports/ar4-wg3.htm

and mitigation of climate change, global GHG emissions will continue to grow over the next several decades.

4 Greenhouse Gas Inventory

This section describes the methods that ENVIRON International Corporation (ENVIRON) used to estimate GHG emissions from Landmark Village after development and full build out and presents the results of that analysis. ENVIRON evaluated GHG emissions from some aspects that are fully within the control of the Newhall Land and Farming Company, such as grading and the placement of utilities, some aspects that are in control of the individuals building the houses and commercial buildings, such as construction emissions, and some aspects in which control over emissions is shared by the developers, builders, and the residents, such as energy use in the built environment and emissions from traffic by the development's future residents and employees in the business parks. In addition, an estimate of "life-cycle" GHG emissions (i.e., GHG emissions from the processes used to manufacture and transport materials used in the buildings and infrastructure) is presented. This life-cycle estimate is to be used for comparison purposes only and is not included in the final inventory as these emissions would be attributable to other industry sectors under AB 32. Each aspect of the GHG inventory is described in this section. The inventory does not consider GHG emissions from most sources outside of Landmark Village that may indirectly service the residents (e.g., a landfill).

4.1 Evaluation of "New" Emissions

Whereas criteria pollutants have impacts on a local or regional basis, GHG emissions' impacts are on a global basis. Accordingly, the methods used to analyze GHG emissions vary somewhat from those used to analyze criteria pollutants. This is discussed in this section, and begins with an explanation of the traditional analyses used in environmental documents for criteria pollutants, and goes on to discuss how the inventory of GHG emissions should be characterized.

4.1.1 Traditional Analyses for Criteria Pollutants

The calculation of "project" criteria pollutants (oxides of nitrogen, sulfur oxides, carbon monoxide, volatile organic compounds, lead, and particulate matter) in air quality emissions inventories for use in EIRs has a long history. The SCAQMD first published a comprehensive manual on the analysis of air quality impacts in 1993, and the Bay Area Air Quality Management District (BAAQMD) followed in 1999. Other smaller districts have prepared detailed guidance documents that describe the methods that should be used to calculate emissions inventories for EIRs from projects, including residential and commercial projects.

The goal of estimating emissions of criteria pollutants from projects is to understand whether there are significant new emissions in California's air basins, which have a limited ability to absorb additional criteria pollutant emissions without adverse air quality impacts.

When evaluating the air quality impacts for a new project, such as a residential development, the vehicular emissions associated with the residents as they work and shop within the basin are counted as new emissions in traditional air quality analyses, even if those new residents would have moved from another house in the same air basin. The typical rationale for this approach is that the new residential development represents growth in the basin. As a result, all

emissions associated with its residents' vehicle travel should be counted as new emissions, even if this might lead to some over-counting of criteria pollutant emissions from the project.

A review of how air quality analyses dealt with the issue of whether emissions are "new" might be instructive as to how to deal with the emissions of GHGs. However, while a similar approach for criteria pollutants and GHGs may be warranted, the impacts of GHG emissions are a function of their global concentrations, rather than local concentrations.

4.1.2 Regional Impacts of Criteria Pollutants Compared to Global Impacts of GHG Emissions

If construction results in new emissions of criteria pollutants in the air basin, even if there is a reduction in criteria emissions elsewhere, these emissions are new to the basin and therefore counted. For GHGs, if the emissions simply moved from one basin to another, the emissions would not be new on a global scale. However, it is not clear how one can determine whether emissions are relocated, or whether they are the result of new growth.

Standard methodologies for evaluating the airborne criteria pollutant impacts of new projects have already, in a sense, addressed the issue of what is "new." However, the impacts of GHG emissions differ from those of criteria pollutants in that GHG emissions are a function of global concentrations rather than local concentrations. Thus, the question of whether or not a project's GHG impacts are significant, both on a project basis and on a cumulative basis, must be asked based on global, rather than basin-wide, increases in emissions.

4.1.3 GHG Emissions Growth Results from Population Increase and Increased Standard of Living

The increase of new GHG emissions globally is caused by economic and population growth. Emission growth rates are the highest among developing countries. While CO_2 emissions in developed countries were unchanged over the 1990-2002 period, emissions increased by 47% in developing countries during that same time period. Emissions in China grew about 50% during that time period -- preliminary estimates show that China's GHG emissions increased 35% in 2003 and 2004 alone. This increase in developing country GHG emissions is due to the increasing demand for higher standards of living as a result of GDP growth, requiring more vehicles and greater electricity demand. Also, developing countries often lack the technology or capital to utilize energy efficient products or to construct cleaner burning power plants. CO_2 emissions in China are growing slightly faster than primary energy use as the fuel mix increasingly favors coal, a high-carbon fuel. China accounts for 39% of the projected increase between 2004 and 2030, and will overtake the United States as the world's biggest emitter before 2010.[59]

4.1.4 Determining Which Emissions are Associated with New Residences

As noted earlier, GHG increases are directly tied to population growth and increased standards of living. New housing in California is a response to both population increase, and increasing

[59] http://www.iea.org/textbase/weo/fact_sheets/fs_GlobalEnergyTrends.pdf (accessed June 12, 2007) World Energy Outlook 2006: Fact Sheet- Global Energy Trends The World's Energy Future: Where Are We Headed?

standard of living for new California residents that moved from areas that were less economically developed. Therefore, operational emissions (including vehicular emissions) from new residences should be considered as growth, or new emissions, as residences are rarely removed from the housing supply once constructed.[60]

In addition, activities associated with new residences, such as the building envelope operational emissions from commercial and retail establishments that are built to support new residences, are also accounted for. Traffic between new residences and new retail is also accounted for, as these trips are directly associated with the new residences. However, traffic associated with new commercial or retail and existing residences is not new[61], and is not accounted for in this report. That traffic already exists from the existing residences, and the construction of new commercial or retail does not increase traffic, unless the average trip distance to that commercial or retail establishment increases as a result of the new construction.

In this report, emissions associated with construction and vegetation change are counted. Emissions associated with the electricity and natural gas use in all buildings is counted. Emissions associated with delivering water to the site and from treating wastewater are counted. All home-based car travel made by Landmark Village residents are counted as Landmark Village emissions, even if the vehicles leave the site. A small number of pass-by trips made by Landmark Village residents may not be considered using this method. However, the additional VMT, and therefore emissions, is estimated to be small. Emissions from non-Landmark Village vehicles that enter to project site are not counted because those emissions would have occurred absent Landmark Village. For instance, workers that live in Bakersfield but will now work in Landmark Village will commute to work in Landmark Village. These workers commuted before the existence of Landmark Village – perhaps within Bakersfield or to Los Angeles. Therefore, in this analysis, it is assumed that these workers commute the same distances, on average, as before the existence of Landmark Village and therefore they do not contribute to any net new GHG emissions.

4.2 Units of measurement: Tonnes of CO_2 and CO_2e

The term “GHGs” includes gases that contribute to the natural greenhouse effect, such as CO_2, CH_4, N_2O, and water, as well as gases that are only man-made and that are emitted through the use of modern industrial products, such as HFCs and CFCs. The most important greenhouse gas in human-induced global warming is CO_2. While many gases have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for 85% of the GWP of all GHGs emitted by the United States.[62]

[60] There are exceptions, such as when one housing development replaces another, and, in those cases, the replacement residential development need not be considered growth.

[61] If, however, the new commercial area results in longer trips for its workers and residents than they would have previously made, then it adds GHGs emissions. Commercial development that could potentially increase VMT would be facilities that draw trips from far away that otherwise would not be made. A theme park, for example, may be viewed as such a development.

[62] Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2004, US Environmental Protection Agency. Available online at: http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/RAMR6MBSC3/$File/06_Complete_Report.pdf

The effect each of these gases has on global warming is a combination of the mass of their emissions and their GWP. GWP indicates, on a pound for pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent than CO_2, with GWPs of 21 and 310, respectively. GHG emissions are typically measured in terms of mass of CO_2e. CO_2e are calculated as the product of the mass of a given GHG and its specific GWP.

In many sections of this report, including the final summary sections, emissions are presented in units of CO_2e either because the GWPs of CH_4 and N_2O were accounted for explicitly, or the CH_4 and N_2O are assumed to contribute a negligible amount of GWP when compared to the CO_2 emissions from that particular emissions category.

In this report, tonnes will be used to refer to metric tonnes (1,000 kilograms). Tons will be used to refer to short tons (2,000 lbs).

Additionally, exact totals presented in all tables and report sections may not equal the sum of components due to independent rounding of numbers.

4.3 Resources

To estimate GHG emissions from Landmark Village, ENVIRON directly or indirectly relied primarily on five different types of resources:

1) emissions estimation guidance from government-sponsored organizations,
2) government-commissioned studies of energy use patterns,
3) energy surveys by other consulting firms,
4) emissions estimation software, and
5) building energy modeling software.

These sources are described below.

4.3.1 Emissions Estimation Guidance

This inventory was developed using guidance from two government-sponsored organizations to assist in the estimation of GHG emissions. The first is the CCAR, which was established by the California Legislature to assist willing parties in estimating and recording their GHG emissions to use as a baseline for meeting future emissions reduction requirements. Publications by the CCAR include not only recommendations on how to compile a GHG emissions inventory, but also relevant data on energy use and emissions that are utilized in this protocol. The second organization is the IPCC, which was established in 1988 by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO). The IPCC's main role is to assess information on climate change which is detailed in IPCC reports, including

methodology reports. These reports also include relevant emission factors and specific scientific data that can be used to estimate GHG activities from various activities.

4.3.2 Emissions and Energy Use Studies

For estimating emissions based on electrical and natural gas energy use, literature information on patterns of energy use must often be employed. Studies commissioned by the United States Energy Information Administration (EIA) and the California Energy Commission (CEC) provide data on energy use patterns associated with municipal activities, natural resource distribution, and other activities that will take place in Landmark Village. These data were used to estimate energy use patterns which were applied to the specific characteristics of Landmark Village to estimate GHG emissions. In addition to EIA and CEC studies, studies performed by individual municipalities or scientific organizations are also used in this report.

4.3.3 Emissions Estimation Software

CARB, the SCAQMD, and other public and private organizations have developed several software programs to facilitate the calculation of emissions from construction, motor vehicles, and urban developments by streamlining emissions estimation from these sources. This inventory was developed using several models to estimate GHG emissions from the Landmark Village development. These are the OFFROAD2007 model, the EMFAC model, the URBEMIS model, the Building America Research Benchmark Definition (BARBD), and the Micropas model. The features of each of these models are described below.

OFFROAD – OFFROAD2007 is the most recent version of a model developed by CARB to estimate the activity and emissions of off-road mobile emissions sources, such as construction equipment. OFFROAD contains a database of default values for horsepower, load factor, and hours per day of operation and can calculate emission factors based on the type of equipment and year of use.

EMFAC – EMFAC, also developed by CARB, compiles real fleet data on the county-level for the state of California, including vehicle model year distributions, vehicle class (e.g., light-duty auto (LDA), medium-duty truck, heavy-heavy-duty truck) distributions, and emission rate information to generate fleet-average emission factors for most criteria pollutants and CO_2. EMFAC2007 is the newest version of the program. Emission factors from EMFAC depend on the vehicle class, vehicle technology, speed, year of operation, average ambient air temperature, and relative humidity.

URBEMIS – The URBEMIS software was created by SCAQMD, although it is used by other air districts as well. It estimates emissions associated with different aspects of urban development. The Operational Data module in URBEMIS calculates emissions from mobile sources operating during the use of a development based on emission factors from EMFAC and traffic use information specific to a development. Mobile source emissions during the construction phase are calculated separately in the construction module of URBEMIS. URBEMIS provides county, air district / air basin, or state wide averages for number of daily trips per housing unit and per student at an elementary school in the absence of more specific information from traffic engineers.

URBEMIS also provides air district-specific default values for vehicle fleet characteristics (vehicle class distribution and technology categories) and travel conditions (average trip length, trip speed, and relative frequency of each type of trip). URBEMIS (Versions 9.2.2 and 9.2.4),[63] uses EMFAC2007 emission factors and calculates CO_2 emissions using District-specific default parameters for various inputs including vehicle fleet characteristics and travel conditions.

In addition to mobile source emissions, URBEMIS can also calculate emissions associated with the construction phase of a development and emissions from area sources, such as fireplaces, once the development is operational. The URBEMIS construction module enables separate emissions calculations from each of the three typical stages of any construction project: demolition, site grading, and building construction. Based on the timing of construction and size of the development, URBEMIS defaults can be used to estimate emissions. Alternatively, the user can override these defaults by entering specific information about the construction project, such as what types and numbers of equipment are going to be used. In terms of area sources, URBEMIS is equipped to estimate GHG emissions from three types of GHG-emitting area sources based either on program defaults or more specific project information inputted by the user. These uses are natural gas fuel combustion, hearth fuel combustion, and landscaping equipment.

Building America Research Benchmark Definition (BARBD) – BARBD was developed by the National Renewables Energy Laboratory (NREL) in consultation with home developers and builders within the Building America Program. This benchmark tool was developed to provide a means for tracking progress toward residential energy savings. The model includes a series of user profiles, intended to represent the behavior of a typical set of occupants. This benchmark is frequently updated with the most recent benchmark model having been released December 20, 2007. This information was used to determine the energy use for appliances and plug in energy use in homes.

Micropas – Micropas 7.3[64] is a building energy efficiency modeling package approved by the California Energy Commission as a 2005 Title 24 residential alternative compliance method (ACM). The Micropas software calculates the energy use per square foot per year and the Time Dependent Valuation (TDV) of the energy use per square foot per year to determine Title 24 compliance. Micropas is typically used for residential buildings.

4.4 Impact of Regulatory Developments on Landmark Village's GHG Inventory

Promulgated regulations that will affect Landmark Village's emissions are accounted for in this inventory. In particular, the Pavley Standards and the RPS will be in effect at build out of Landmark Village and therefore are accounted for in the Landmark Village emission

[63] All versions of URBEMIS 9.2.x follow the same methodologies and do not contain any relevant differences.

[64] Micropas version 7.3 is available for purchase at: http://www.micropas.com/

calculations. This section provides an overview on the impact of the two rules (RPS and Pavley) that are quantitatively accounted for in Landmark Village's GHG inventory.

The RPS and the Pavley standards and associated emission factors are quantitatively accounted for in the Landmark Village inventory and further discussed in Section 4.7.1.4 of this report.

4.4.1 Renewable Power Requirements

A major component of California's Renewable Energy Program is the RPS established under SBs 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity are required to increase the amount of renewable energy each year by at least 1% until 20% by December 31, 2010. California is now considering an even higher goal of 33% by 2020, however, this has not been promulgated. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from Landmark Village because electricity production from renewable sources is generally considered "carbon neutral."[65] For purposes of this analysis, ENVIRON assumes that the production of electricity from these renewable sources does not produce any net emissions of CO_2.

As noted above, indirect GHG emissions are created as a result of electricity use. The electricity used in a building is typically generated offsite at the power plant; electricity use in a building generally causes emissions in an indirect manner. The Landmark Village development is supplied power by Southern California Edison (SCE). The 2007 SCE carbon-intensity factor is 631 lbs of CO_2e per megawatt hour (MWh)[66] and the 2004 SCE carbon-intensity factor is 679 lbs of CO_2e per MWh. These emission factors take into account the mix of energy sources used to generate electricity for SCE[67] and the relative carbon intensities of these sources.[68] SCE's 2007 mix of energy sources contains 13% of renewable sources. The RPS requires that utilities increase this mix to 20% by 2020.[69] Thus, at full build out, it is anticipated that the carbon intensity factor will be 583 lb/MW-hr. The details of the calculation of the carbon intensity factor are presented later in this section. All calculations in this section accounting for the indirect GHG emissions from electricity use will use the carbon-intensity anticipated with implementation of the 20% renewable portfolio.

[65] There is some debate on the carbon neutrality of using biomass and biogas for electricity production. While some may argue that the carbon released as CO_2 from biomass or biogas combustion originated from the atmosphere and thus does not contribute any net additional carbon to the atmosphere, others argue that the combustion still releases CO_2 into the atmosphere and thus cannot be ignored. For sake of the analysis presented here, we assume that electricity production from renewable sources is carbon neutral.

[66] California Climate Action Registry (CCAR) Database. Southern California Edison PUP Report. 2007.

[67] Natural gas, nuclear, coal, wind, solar, biomass, hydropower, and geothermal.

[68] When calculating indirect emissions due to electricity usage, it is important to consider that indirect emissions from using a given amount of electricity will vary with the fuel-mix used to produce electricity. For example, CO_2 emissions per kWh from a coal-fired power plant are significantly higher than CO_2 emissions per kWh from a natural gas-fired power plant. Therefore, to most accurately estimate GHG emissions from the Landmark Village development, the carbon intensity of the specific mix of energy sources SCE uses to generate electricity was used to calculate emissions since SCE is the most likely source of electricity for Landmark Village.

[69] The RPS requires 33%, but currently, only the commitment to 20% is law. 2002 Senate Bill 1078 and 2006 Senate Bill 107.

If the proposed 33% renewables target for 2020 were achieved, the CO_2 emission factor would decrease even further to 488 lbs CO_2/MWh. This 33% renewables goal was conservatively not accounted for in this analysis because it has not yet become law.

4.4.2 Vehicle Emissions Standards/Improved Fuel Economy

The two regulatory measures considered in this section are the vehicle GHG emission standards enacted under AB 1493 (Pavley) and the increased fuel economy standards under the EISA. The Pavley standards require GHG emission reductions from vehicles equivalent to approximately 30% by 2016.[70] This accounts for an approximately 20% reduction in GHG emissions across the passenger car and light duty truck fleet in California in 2020. The EISA requires that manufacturers achieve a CAFE of 35 mpg by 2020. USEPA is preparing a joint rulemaking to establish vehicle GHG emissions and new CAFE standards that are similar to Pavley through 2016.

4.5 Vegetation Change

This section presents the calculation of the positive and negative GHG emissions associated with vegetation removal and re-vegetation at the Landmark Village development. The removal of existing vegetation can contribute to net GHG increases by reducing existing carbon sequestration capacity.[71] Following buildout of the Landmark Village project, many privately owned areas will become re-vegetated with trees, shrubs and other vegetation. These re-vegetated areas could potentially sequester more CO_2 from the atmosphere than they did pre-development. The difference between the total before-development sequestered CO_2 and the after-development sequestered CO_2 is the one-time CO_2 released from clearing the vegetation less the CO_2 sequestered by new plantings.[72] The overall CO_2 emissions due to vegetation change will result from two processes: 1) the change in the amount of CO_2 sequestered by vegetation, which would lead to a one-time GHG release, and 2) the amount that can be expected to be sequestered by new plantings. Both issues are discussed in this section.

In this section of this report, the units CO_2 and CO_2e are used interchangeably. CH_4 and N_2O are assumed to contribute a negligible amount of GWP when compared to the CO_2 emissions from vegetation change.

[70] The standards start in model year 2009, and ramp up to a 30 percent reduction in greenhouse gas emissions for vehicles sold in model year 2016 and beyond. Source: Comparison of Greenhouse Gas Reductions for the United States and Canada Under US CAFE Standards and California Air Resources Board Greenhouse Gas Regulations, California Air Resources Board an Enhanced Technical Assessment February 25, 2008. http://www.arb.ca.gov/cc/ccms/reports/pavleycafe_reportfeb25_08.pdf

[71] In this section, it is assumed that all mature land-types (at least 20 years old) are at steady-state. See The World Resource Institute (WRI) "Land Use, Land-Use Change, and Forestry Guidance for GHG Project Accounting" protocol available online at: http://www.ghgprotocol.org/DocRoot/97hb6BCSAAG2bImO7c9d/LULUCF%20Final.pdf

[72] In this section we assume that mature ecosystems do not have a net flux of carbon into or out of them.

4.5.1 Quantifying the One-Time Release by Changes in Carbon Sequestration Capacity

The one-time release of GHGs due to changes in carbon sequestration capacity was calculated using the following four steps:[73]

1. Identify and quantify the change in area of various land types due to the development (i.e. alluvial scrub, non-native grassland, agricultural, etc.). – These area changes include not only the area of land that will be converted to houses or commercial, but also areas disrupted by the construction of utility corridors, water tank sites, and associated borrow and grading areas. Areas temporarily disturbed that will eventually[74] recover to become vegetated will not be counted as vegetation removed as there is no net change in vegetation or land use.[75]

2. Estimate the biomass associated with each land type. – For the purposes of this protocol, ENVIRON has listed the land types that are present at the Landmark Village development site and characterized them using the available general vegetation types found in the IPCC publication Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines).[76] This characterization is shown in Table 4-A-1. The general IPCC vegetation types are as follows:

   Forest Land;

   Grass Land;

   Wetland;

   Cropland; and

   Settlements.

   California vegetation is heavily dominated by scrub and chaparral vegetation which may not be accurately characterized by default forest or grass land properties. Consequently, ecological zones and biomass based subdivisions identified in the IPCC Guidelines were used to sub-categorize the vegetation. The biomass values for each vegetation type are based on these categories which relate the Landmark Village vegetation to the IPCC vegetation types. Forest land, grass land and crop land categories and subcategories were used to determine the CO_2 emissions resulting from land use impacts at Landmark Village. The total impacted area

[73] This section follows the IPCC guidelines, but has been adapted for ease of use for the Landmark Village development.

[74] In this section, it is assumed that all mature land-types (at least 20 years old) are at steady-state. See The World Resource Institute (WRI) "Land Use, Land-Use Change, and Forestry Guidance for GHG Project Accounting" protocol available online at: http://www.ghgprotocol.org/DocRoot/97hb6BCSAAG2bImO7c9d/LULUCF%20Final.pdf

[75] This assumption facilitates the calculation as a yearly growth rate and CO_2 removal rate does not have to be calculated. As long as the disturbed land will indeed return to its original state, this assumption is valid for time periods over 20 years.

[76] Available online at http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm

occupied by wetlands and settlements was negligible, hence GHG emissions from these areas were also assumed to be negligible.

3. Calculate CO_2 emissions from the net change of vegetation. – When vegetation is removed, it may undergo biodegradation,[77] or it may be combusted. Either pathway results in the carbon (C) present in the plants being combined with oxygen (O_2) to form CO_2. To estimate the mass of carbon present in the biomass, biomass weight is multiplied by the carbon fraction, 0.47.[78] The mass of carbon is multiplied by 3.67[79] to calculate the final mass of CO_2, assuming all of this carbon is converted into CO_2. The results of this calculation are shown in Table 4-A-1 for each type of vegetation.

4. Calculate the overall change in sequestered CO_2. – For all types of land that change from one type of land to another,[80] initial and final values of sequestered CO_2 are calculated using the equation below.

Overall Change in Sequestered CO_2 [tonne CO_2]

$$= \sum_i (SeqCO_2)_i \times (area)_i - \sum_j (SeqCO_2)_j \times (area)_j$$

Where:

$SeqCO_2$	=	mass of sequestered CO_2 per unit area [tonne CO_2/acre]
area	=	area of land for specific land use type [acre]
i	=	index for final land use type
j	=	index for initial land use type

Table 4-A-1 shows the effective change in the amount of sequestered CO_2 due to the change in land use of the developed area for each land type. The total equivalent CO_2 emissions attributable to the net change of vegetation are approximately 9,396 tonnes.

4.5.2 Calculating CO_2 Sequestration by Trees

Planting individual trees on residential property will sequester CO_2. Changing vegetation as described above results in a one-time carbon-stock change. Planting trees is also considered to result in a one-time carbon-stock change. Table 4-A-2 presents default annual CO_2 sequestration rates on a per tree basis, based on values provided by the IPCC. The numbers given are for 10 likely species classes in urban areas and range from a high of 0.052 tonne CO_2 per year in hardwood maple to a low of 0.012 tonne CO_2 per year in juniper trees. Alternatively,

[77] Cleared vegetation may also be deposited in a landfill or compost area, where some anaerobic degradation which will generate CH_4 may take place. However, for the purposes of this section, we are assuming that only aerobic biodegradation will take place which will result in CO_2 emissions, only.

[78] The fraction of the biomass weight that is carbon. From Table 4.3 of IPCC (2006), default forestland and agricultural land ratio. Here, a carbon fraction of 0.47 is used for all vegetation types. CCAR assumes a similar value of 0.5 in its Forest Sector Protocol.

[79] The ratio of the molecular mass of CO_2 to the molecular mass of carbon is 44/12 or 3.67.

[80] For example from forestland to grassland, or from cropland to permanently developed.

an average of 0.035 tonne CO_2 per year per tree can be assumed for trees planted, if the tree type is not known.

Urban trees are only net carbon sinks when they are actively growing. The IPCC assumes an active growing period of 20 years. Thereafter, the accumulation of carbon in biomass slows with age, and will be completely offset by losses from clipping, pruning, and occasional death. Of course, actual active growing periods are subject to, among other things, species, climate regime, and planting density. In this report, the IPCC default value of 20 years will be assumed. Note that trees may also be replaced at the end of the 20-year cycle, which will result in additional years of carbon sequestration. However, this will be offset by the potential net release of carbon from the removal of the replaced tree.

Approximately 2,500 new net trees will be planted in Landmark Village.[81] Planting these trees will sequester approximately 1,771 tonnes of CO_2. This was calculated by using the average tree sequestration rate of 0.035 tonne CO_2 per year per tree and assuming 20 years of growth. This sequestration brings the net CO_2 emissions from vegetation to: 9,396 tonnes (vegetation removal) – 1,771 tonnes (2,500 net new trees) = 7,625 tonnes.

4.6 Construction Activities

This section describes the estimation of GHG emissions from construction activities at Landmark Village. There are three major construction phases for an urban development: 1) demolition, 2) site grading, and 3) building construction. There will not be a demolition phase for this development since the construction will occur on previously undeveloped land. The building construction phase can be broken down into three subphases: 1) building construction, 2) architectural painting, and 3) asphalt paving. GHG emissions from these construction phases are largely attributable to fuel use from construction equipment and worker commuting. [82]

Three programs, the URBEMIS[83] model, the OFFROAD2007[84] model, and the EMFAC2007[85] model, have the capability to calculate construction CO_2 emissions. URBEMIS estimates emissions associated with different aspects of urban development. The Construction Data module in URBEMIS Version 9.2.4 calculates emissions from construction sources based on emission factor data from OFFROAD2007, EMFAC2007, and construction equipment use information specific to the development.

In this section of this report, the units CO_2 and CO_2e are used interchangeably for diesel construction equipment because CH_4 and N_2O are assumed to contribute a negligible amount of

[81] Personal communications with Newhall Land.

[82] GHG emissions from painting / coating is from worker commuting only. Worker commuting during the painting phase is typically a very small and is not included in this analysis.

[83] Urban Emissions Model (URBEMIS) (Version 8.7 – 2002 / Version 9.2.4 – 2008). Jones & Stokes Associates. Prepared for: South Coast Air Quality Management District. http://www.urbemis.com

[84] California Air Resources Board Mobile Source Emissions Inventory Program. December 2006. http://www.arb.ca.gov/msei/offroad/offroad.htm

[85] EMission FACtors (EMFAC2007) model (Version 2.3). November 2006. California Air Resources Board. http://www.arb.ca.gov/msei/onroad/latest_version.htm

GWP when compared to the CO_2 emissions from construction equipment. For worker commuting, CH_4 and N_2O are explicitly calculated and therefore CO_2 and CO_2e for worker commuting are not equal.

4.6.1 Estimating GHG Emissions from Grading

GHG Emissions for the grading phase of construction are estimated using spreadsheet calculations based on URBEMIS methodology. The next sections discuss the emission calculations from construction equipment, vendor trucks (on-highway trucks), and worker commutes.

4.6.1.1 GHG Emissions from Construction Equipment and On-Highway Vehicles

ENVIRON calculated emissions from site grading using the URBEMIS methodology. The number of equipment-hours and type of offroad equipment to be used in the grading phase of Landmark Village was provided by Impact Sciences.[86] An equipment-hour is defined as one hour of a piece of equipment being used. Table 4-B-1 contains specifications for each type of construction equipment (horsepower, load factor, and GHG emission factor) provided by OFFROAD2007 and describes the detailed GHG calculations. CO_2 emissions for each type of construction equipment are calculated as follows:

> Equipment Emissions [grams] = Total equipment-hours * emission factor [grams per brake horsepower-hour] * equipment brake horsepower * load factor

The contribution of CH_4 and N_2O to overall GHG emissions is likely small (< 1% of total CO_2e) from diesel construction equipment,[87] and was therefore not included in this calculation.

Emissions for on-highway trucks are also included in Table 4-B-1. The methodology for calculating GHG emissions from on-highway trucks is different from the offroad equipment listed in this table. Details on the calculations are shown in Table 4-B-2. GHGs are emitted from on-highway truck trips in two ways: running emissions, produced by driving the vehicle, and startup emissions, produced by turning the vehicle on. Typically, over 95% of emissions are running emissions. Thus, this section does not include on highway truck startup emissions.

The number of on-highway truck trips was based on the amount of imported earth for the project.[88] The calculations assume that each truck can handle a load of 20 cubic yards of imported earth per trip. The VMT is calculated as the total number of round trips multiplied by the roundtrip length (4 miles). The VMT can be further divided into VMT associated with infrastructure activities (e.g., bank stabilization) and project emissions. After total VMT for Landmark Village is calculated, CO_2 emissions from mobile running for this development can be calculated from the following equation:

[86] Received from Impact Sciences. 8/2/2007.

[87] California Climate Action Registry (CCAR). 2007. General Reporting Protocol. Version 2.2. March. Page 38. ENVIRON estimates these emissions to be less than 1% of total GHG contributions for diesel fueled equipment.

[88] Data on imported earth provided by Impact Sciences.

CO_2 emissions from mobile running = VMT * EF_{HHD}

Where: VMT = vehicle miles traveled

EF_{HHD} = emission factor of heavy heavy-duty trucks

The CO_2 calculation involves the following assumptions:

a. URBEMIS defaults assume that vendor trips use heavy heavy-duty trucks (HHDs).[89]
b. The emission factor depends upon the speed of the vehicle. The URBEMIS default value of 30 miles per hour was used.
c. EMFAC emission factors were used for EF_{HHD}.

The total amount of GHG emissions from grading construction equipment and on-highway trucks is a one-time emission of approximately 14,449 tonnes CO_2.

4.6.1.2 GHG Emissions from Worker Commuting

GHGs are emitted from worker vehicles in two ways: running emissions, produced by driving the vehicle, and startup emissions, produced by turning the vehicle on. The majority of worker commute emissions are running emissions. Table 4-B-3 details emission calculations for worker commutes for grading operations.

Running Emissions – Total running emissions from worker commuting was calculated by estimating the total trips and vehicle miles travelled (VMT) by construction workers and multiplying this value by the representative GHG emission factors for the vehicles they are expected to drive. Based on the proximity of the development to nearby population centers, URBEMIS calculated the length of the average one-way commute distance to be 12.7 miles. For grading, URBEMIS estimates that the number of worker-days needed for a development is equal to the number of equipment-days multiplied by 1.25. Therefore, for each development, the total number of VMT by construction workers is the product of the number of equipment days, the factor 1.25, factor of 2 to account for round-trip, and the average one-way commute length. Assuming that equipment is operated 8 hours per day, the number of equipment-days for Landmark Village equals the total equipment-hours divided by 8 hours per day. After total VMT for Landmark Village is calculated, GHG emissions for this development can be calculated from the following equation:

CO_2 running emissions =

$$VMT * [0.5 * EF_{Running,\ LDA} + 0.25 * (EF_{Running,\ LDT1} + EF_{Running,\ LDT2})]$$

Where: VMT = vehicle miles traveled
$EF_{running,\ LDA}$ = running emission factor of light duty autos

[89] Page A-12 of the URBEMIS user manual.

$EF_{running,\ LDT1}$ = running emission factor of light duty trucks: up to 6000 GVW
$EF_{running,\ LDT2}$ = running emission factor of light duty trucks: up to 8500 GVW

The CO_2 calculation involves the following assumptions:

a. URBEMIS defaults assume that half of the workers commute with light duty trucks (LDTs) and half commute in light duty autos (LDAs).[90]
b. Half of the LDTs were assumed to be Type 1 and the other half Type 2.
c. The emission factor depends upon the speed of the vehicle. The URBEMIS default value of 30 miles per hour was used.
d. EMFAC emission factors from the year 2010 were used for EF_{LDA}, EF_{LDT1}, and EF_{LDT2}.

Startup Emissions –Startup emissions are CO_2 emitted from starting a vehicle and are calculated as follows:

CO_2 startup emissions =

$$\text{Worker Trips} * [0.5 * EF_{Startup,\ LDA} + 0.25 * (EF_{Startup,\ LDT1} + EF_{Startup,\ LDT2})]$$

Where: VMT = vehicle miles traveled
$EF_{startup,LDA}$ = emission factor of light duty autos
$EF_{startup,LDT1}$ = emission factor of light duty trucks: up to 6000 GVW
$EF_{startup,LDT2}$ = emission factor of light duty trucks: up to 8500 GVW

Startup emissions were calculated using the following assumptions:

e. The number of round trips were equal to the number of worker-days,
f. The breakdown in vehicles was 50% light duty autos and 50% light duty trucks,
g. Two engine startups per day with a 12-hour wait before each startup.[91]

The USEPA recommends assuming that CH_4, N_2O, and HFCs account for 5% of GHG emissions from on-road vehicles, taking into account their GWPs.[92] To incorporate these additional GHGs into the calculations, the total GHG footprint was calculated by dividing the CO_2 emissions by 0.95.

The total amount of GHG emissions from worker commuting during grading is a one-time emission of 262 tonnes CO_2e. These estimates do not account for improvements in fuel efficiency due to Pavley because some of the construction of the Project may occur before the Pavley standards affect the fuel efficiency of the fleet.

[90] Page A-9 of the URBEMIS user manual.
[91] The emission factor grows with the length time the engine is off before each ignition.
[92] USEPA. 2005. Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle. Office of Transportation and Air Quality. February.

4.6.2 Estimating GHG Emissions from Building Construction

Impact Sciences provided ENVIRON with URBEMIS runs for Landmark Village construction from 2008 – 2012 (see Appendix A for details). URBEMIS calculates CO_2 emissions from offroad construction equipment, worker commuting, and vendor trips based on the size and type of buildings specified by the user and URBEMIS defaults.[93] The total amount of GHG emissions from the building construction phase is a one-time emission of 21,598 tonnes CO_2.

Table 4-B-4 presents the overall construction emissions for Landmark Village. The total amount of GHG emissions from grading and building construction, including worker commuting during those phases is 36,309 tonnes CO_2.

4.6.3 Uncertainties in Construction GHG Emissions Calculations

URBEMIS inputs for phase length and number of construction equipment during construction of buildings were supplied by Impact Sciences. These values represent URBEMIS default values and settings. As such, these values are first-order approximations only. Updating these parameters with actual construction estimator estimates will provide more refined emissions.

4.7 GHG Emissions Associated with Residential Buildings

Residential buildings include single-family homes of various sizes, attached homes, apartments, and condominiums. This section describes the methods used to estimate the GHGs associated with activities in those buildings.[94] As discussed earlier in Section 4.4.1, the RPS will increase the renewable fraction of electricity deliveries to 20%, and that is incorporated into the estimation of GHGs from electricity in this section.

The amount of energy, and, therefore, the associated GHG emissions emitted per dwelling unit, varies with the type of residential building. Accordingly, some information on the type of residential buildings that are planned for Landmark Village is needed to estimate GHG emissions. The Newhall Land and Farming Company provided data summarizing the main residential building categories for Landmark Village. The major types of residential buildings are:

a. Single-family homes;
b. Attached townhouses or condominiums (i.e., duplexes, triplexes, etc.); and
c. Apartments.

GHGs are emitted as a result of activities in residential buildings when electricity and natural gas are used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; when this occurs in a residential building, it is a direct emission source[95] associated with that building. GHGs are also emitted during the generation of

[93] URBEMIS generated values for vendor trip length, vendor trips per building built, and number of pieces of equipment.

[94] The emissions per unit energy (electricity) used in this section incorporates the renewables energy requirement from the RPS as discussed in the previous sections of this report.

[95] California Climate Action Registry (CCAR) General Reporting Protocol (GRP), Version 3.1 (January). Available at:

electricity from fossil fuels. When electricity is used in a residential building, the electricity generation typically takes place offsite at the power plant; electricity use in a residential building generally causes emissions in an indirect manner.

While fuel combustion generates CH_4 and N_2O, the emissions of these GHGs typically comprise less than 1% of CO_2e emissions from electricity generation and natural gas consumption.[96] Fuel oil, kerosene, liquefied petroleum gas, and wood can also be used as fuels but will likely contribute only in small amounts as combustion sources within residential buildings. Wood burning hearths are addressed in the area sources section of this report.

Energy use in residential buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as plug-in appliances. In California, Title 24 governs energy consumed by the built environment. This includes the HVAC system, water heating, and some fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, lighting, etc.). Energy use for each was calculated separately, as described in the following sections. GHG emissions were calculated as the product of the resulting energy use and the appropriate emission factors, incorporating information on local electricity production and future renewable resource supplies, as discussed in Section 4.4.1 and shown in Tables 4-1 and 4-2.

The resulting energy use quantities were then converted to GHG emissions by multiplying by the appropriate emission factors, incorporating information on local electricity production.[97]

In this section of this report, the units CO_2 and CO_2e are used interchangeably for residential buildings because CH_4 and N_2O are assumed to contribute a negligible amount of GWP when compared to the CO_2 emissions from residential buildings.

4.7.1 Estimate of Residential Energy Use Intensity

ENVIRON developed CO_2 intensity values (CO_2 emissions per Dwelling Unit per year) for the three residential building types found in Landmark Village using Micropas 7.3 energy modeling results (Appendix B) and estimation methods presented in the Department of Energy technical report entitled, 'Building America Research Benchmark Definition'.[98] All houses were assumed to be single-family detached and categorized based on the square footage. This assumption provided a conservative estimate of the emissions, as single family homes have high energy

http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf Chapter 8

[96] Ibid., Tables C1 and C2. The methane and nitrous oxide emission factors are negligible compared to the total CO_2 emission factor for electricity generation in California.

[97] The Southern California Edison specific emission factor for electricity deliveries is 665.72 lbs CO_2/MWh. From the California Climate Action Registry Database. Southern California Edison PUP Report. 2005. Although this emission factor accounts for only CO_2, the emissions associated with N_2O and CH_4 contribute to less than 1% of the electricity generation CO_2e emissions. Available at: http://www.climateregistry.org/CarrotDocs/26/2005/SCEPUP05.xls

[98] Robert Hendron. "Building America Research Benchmark Definition, Updated December 20, 2007". National Renewable Energy Laboratory Technical Report. NREL/TP-550-42662. January 2008. Available at: http://apps1.eere.energy.gov/buildings/publications/pdfs/building_america/42662.pdf

intensity. Three building types representative of the planned residences at Landmark Village were modeled in Micropas: a single-family detached dwelling ("single-family home"), a multi-family building with 8 attached dwelling units ("attached home"), and a multi-family apartment building with 16 attached dwelling units ("apartment home"). All emissions estimates presented in this section assume that SCE electricity will meet the 20% renewable requirement in the RPS as outlined earlier in Section 4.4.1 and quantified later in this section. The methods that were used and the assumptions that were made in estimating energy use are described below.

4.7.1.1 Energy Use in the Built Environment

As described above, the Micropas software is used to calculate the built-environment energy use per square foot per year and the TDV of the energy use per square foot per year to determine Title 24 compliance. TDV energy use is a parameter that speaks to the electricity burden that a building puts on the electrical system. In general, there is a larger demand on the electricity supply system during the day (peak times) than at night (off peak). This results in a higher stress on the electricity delivery system per marginal unit electricity delivered at peak times. Therefore, the calculation of TDV weights energy used at different times at different values. For instance, for the same annual electricity use, a building that uses more electricity during the peak mid-day electrical usage period will have a higher TDV value. Title 24 compliance is based on TDV and not on annual energy use.

Title 24 determines compliance by comparing the energy use of a modeled, or "proposed home", to a minimally Title 24 compliant "standard home" of equal dimensions; Title 24 focuses on building energy efficiency per square foot. It places no limits upon the size of the house or the actual energy used per dwelling unit. When a proposed home is designed and modeled in Micropas, a standard home based upon the specifications of the wall area, window area, and square footage of the proposed home is also modeled. The standard Title 24 compliant home for each house type was used to estimate energy use.

Table 4-C-1 presents the general specifications for each dwelling unit modeled. Table 4-C-2 summarizes energy use related to appliances and plug-ins. Appendix C provides the Micropas input files where details of the modeled houses can be found.

Version 7.3 of the Micropas software estimates annual energy use for Title 24-regulated uses (space heating, space cooling, and domestic hot water systems) based on the 2005 version of the Title 24 standards. Updates to the Title 24 standards were released 2008 and will be effect beginning January 1, 2010. At this time, no software is available for estimating emissions based on the 2008 Title 24 updates. Because the 2008 standards are more stringent than the 2005 ones, energy use for buildings built in accordance with the new 2008 standards will be overestimated by Version 7.3 Micropas software.

Landmark Village will be constructed 15% better than 2008 Title 24 standards. The CEC has published a report estimating the additional reductions in energy use resulting from the new 2008 standard, relative to the 2005 standard.[99] ENVIRON used Micropas to determine minimally

[99] California Energy Commission. 2007. Impact Analysis: 2008 Update to the California Energy Efficiency

2005 Title 24-compliant energy use, and then applied the CEC energy use reductions to estimate energy use for minimally 2008 Title 24 compliant homes at Landmark Village.

The Micropas analysis provides annual electricity use for the HVAC system and annual natural gas usage for the heating and domestic hot water (DHW) systems per building. Although track lighting is covered under Title 24[100], it is not taken into account when determining TDV per square foot; as such, track lighting energy use is not calculated during an ACM run such as Micropas. These energy use values were divided by the number of dwelling units per building to calculate annual energy use of each dwelling unit type for electricity (in kilowatt hours per year [kWh/yr]) and for natural gas in hundred cubic feet per year (ccf/yr). HVAC electricity use and natural gas use from the Micropas runs are presented in Table 4-C-3. Built-in lighting covered by Title 24 was calculated using values from BARBD for hard-wired lighting. The specifications for built-in lighting for Title 24 are less prescriptive than the building envelope and do not have a specific energy use budget or comparison to a standard compliant unit. The regulations require some of the lighting to use high efficacy fixtures (a high ratio of light intensity to wattage) or to control the lighting with specific types of switches/sensors. Title 24 requires that at least 50% of the wattage used in a kitchen must be from high efficacy fixtures.

Electricity use in 2008 Title 24 compliant single-family homes, attached homes, and apartment homes are 6,841; 4,634; and 4,051 kWh hours per dwelling unit per year respectively. Natural gas use in Title 24 compliant single-family homes, attached homes, and apartment homes are 47, 30, and 26 million British thermal units (MMBTU) per dwelling unit per year.

The Newhall Land and Farming Company has committed to making all new homes 15% more energy efficient than the 2008 Title 24 standards, or 15% more energy efficient on a TDV basis. Although ENVIRON is aware that annual energy and TDV energy do not necessarily scale linearly with each other,[101] ENVIRON assumed that all sources covered by Title 24 that are modeled in the ACM would uniformly use 15% less annual energy. These calculations are shown in Table 4-C-3. For each type of home, the 2005 Title 24 compliant energy use was calculated with Micropas and BARBD as described above. These calculations include energy use for heating, air conditioning, DHW, and built-in lighting. These energy use numbers were then adjusted to estimate energy use for minimally 2008 Title 24 compliant homes, using the CEC estimates of the differences between the 2005 and the 2008 standards discussed previously. The resulting values were then each multiplied by 0.85 to account for Newhall Land's commitment to a 15% energy efficiency improvement over 2008 Title 24. This improvement over 2008 Title 24 reduces the electricity use for single-family homes, attached homes, and apartment homes to 6,297; 4,334; and 3,788 kWh hours per dwelling unit per year respectively. This improvement over 2008 Title 24 reduces the natural gas use for single-family homes, attached homes, and apartment homes to 41, 26, and 23 MMBTU per dwelling unit per year respectively. Since Title 24 does not address the plug-in energy use, a reduction of 15%

Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07_IMPACT_ANALYSIS.PDF

[100] Track lighting must comply to a set of prescribed measures.

[101] Energy use in dwelling units does not necessarily scale linearly with square footage because the surface area exposed to the outside where heat losses and gains occur does not double for every doubling of square footage.

over Title 24 only reduces the energy use in the built environment. Refrigerators and non-hard-wired lighting are assumed to still use the same amount of electricity as a minimally Title 24 compliant home. The calculations for major appliances and plug-in energy use are discussed in the next section below.

4.7.1.2 Building America Research Benchmark Definition – Major Appliances

Micropas does not calculate energy use from major household appliances such as refrigerators, clothes washers and dryers, dishwashers, and cooking ranges. These are typical appliances provided with a new residential unit that the developer and builder have some control over. The energy use for these major appliances was estimated using guidance from the Department of Energy's BARBD. This technical manual presents empirical equations for electricity usage derived using data from the 2001 Residential Energy Consumption Survey (RECS). The electricity usage of the major appliances was estimated using equations based on the number of bedrooms per dwelling unit; however, electricity usage of refrigerators was set to one value for all residence types because it was assumed not to be influenced by the floor area or number of bedrooms of the dwelling unit. For dryers and cooking ranges, which can be either gas or electric, it is assumed that 50% of the houses will use electric and 50% will use natural gas appliances. Therefore, values provided represent 50% of natural gas usage for natural gas models, and 50% electricity usage for both electric and natural gas (if applicable) models.

Table 4-C-3 summarizes the estimated major appliance energy use for the three residential types. The annual electricity use of major appliances for single-family homes, attached homes, and apartment homes is 1,916; 1,738; and 1,560 kWh hours per dwelling unit per year respectively. In addition the annual natural gas use of major appliances for single-family homes, attached homes, and apartment homes is 6, 5, and 4 MMBTU per dwelling unit per year.

Table 4-C-3 shows the calculations for the improvement in energy use from the Newhall Land's commitment to a 15% improvement over 2008 Title 24.

4.7.1.3 Building America Research Benchmark Definition – Plug-in Energy Use

Additional energy use from loads such as lighting, office equipment, plug-in cooking equipment, and electronics are also part of the anticipated energy use for a residential development. Similar to the major appliances above, energy use values for plug-in appliances, lighting and miscellaneous energy loads (MELs) were estimated using guidance from the Department of Energy's BARBD.[102] Plug-in lighting energy use was determined by the finished floor area, whereas the electricity usage for miscellaneous energy loads (e.g. home entertainment devices, computers, and small kitchen appliances) were determined by equations involving the number of bedrooms, finished floor area, and a California-specific load multiplication factor.

[102] Robert Hendron. "Building America Research Benchmark Definition, Updated December 20, 2007". National Renewable Energy Laboratory Technical Report. NREL/TP-550-42662. January 2008. Available at: http://apps1.eere.energy.gov/buildings/publications/pdfs/building_america/42662.pdf

Table 4-C-3 summarizes the estimated plug-in energy use for the three residence types. The annual electricity use for plug-in appliances, lighting, and miscellaneous energy loads for single-family homes, attached homes, and apartment homes is 1,298; 896; and 737 kWh hours per dwelling unit per year respectively. Table 4-C-3 also summarizes the combined energy use including the Title 24 systems, major appliances, and plug ins. It should be noted that the estimates for residential plug-in energy-use presented here are likely overestimates. The estimates are based upon currently available technologies, which are likely less energy-efficient than future equipment models will be. If future Landmark residents install Energy Star appliances, use more energy efficient equipment, and replace incandescent lights with fluorescent lights, the actual electricity use for plug-ins will be lower than is estimated here. Conversely, future residents may have more small plug-ins (e.g. MP3 player, cell phone, miscellaneous equipment) that could somewhat offset the savings from more energy efficient equipment. However, because refrigerators, lighting, and large appliances contribute to the bulk of the electricity load, and these types of equipment will likely improve in energy efficiency in the future, the estimates presented here are still likely overestimates.

4.7.1.4 Estimation of Annual Greenhouse Gas Emissions from Residential Buildings

Energy use data from Table 4-C-3 were multiplied by the emission factors presented in Tables 4-1 and 4-2 to generate CO_2 intensity values (i.e., CO_2 emissions per dwelling unit) for each building type. As discussed earlier in Section 4.4.1, the RPS will increase the renewable fraction of electricity deliveries to 20%.

The Landmark Village development is supplied power by SCE. The 2007 SCE carbon-intensity factor is 631 pounds (lbs) of CO_2e per megawatt hour (MWh)[103] as outlined in Table 4-1. This emission factor takes into account the mix of energy sources used to generate electricity for SCE[104] and the relative carbon intensities of these sources.[105] SCE's 2007 energy sources are comprised of 13% of renewables as outlined in Table 4-1. The RPS requires that utilities increase this fraction to 20% by 2010.[106] Thus, at full build out, it is anticipated that the carbon-intensity factor will be 583 lb/MWh. The following equation illustrates these calculations:

$$\text{Buildout emission factor} = \frac{\text{SCE 2007 emission factor} \times (1 - \text{RPS}_{\text{renewable}}\ \text{fraction})}{(1 - \text{SCE 2007}_{\text{renewable fraction}})}$$

The above equation calculates the new emission factor if 20% of the electricity would be provided by renewable sources instead of the 2007 fraction of 13%. Note that if the proposed

[103] California Climate Action Registry (CCAR) Database. Southern California Edison PUP Report. 2007.

[104] Natural gas, nuclear, coal, wind, solar, biomass, small hydropower, and geothermal.

[105] Indirect emissions due to electricity usage will vary with the fuel-mix used to produce electricity. For example, CO_2 emissions per kWh from a coal-fired power plant are significantly higher than CO_2 emissions per kWh from a natural gas-fired power plant. Therefore, to most accurately estimate GHG emissions from the Landmark Village development, the carbon intensity of the specific mix of energy sources SCE uses to generate electricity was used to calculate emissions since SCE is the source of electricity for Landmark Village.

[106] The RPS requires 33%, but currently, only the commitment to 20% is law. 2002 Senate Bill 1078 and 2006 Senate Bill 107.

33% renewables target for 2020 were achieved, the CO_2 emission factor would decrease even further to 488 lbs CO_2/MWh. This 33% renewables goal was conservatively not accounted for in this analysis because it has not yet been promulgated.

The builder has control over a portion of the estimated energy use for a residential building, the built environment and the initial major appliances. As shown in Table 4-C-4, the homes that are 15% more energy efficient than 2008 Title 24 have lower CO_2 emissions. When combined with appliances and all MELs, as shown in Table 4-C-4 the single-family, attached, and apartment homes emit less CO_2 per year, respectively, than standard homes for the built environment and major appliances.

Table 4-C-5 shows the yearly CO_2 emissions from Landmark Village by incorporating the aforementioned emission factors and the number of dwelling units for each building type for Title 24 systems and all plug-in energy. Total CO_2 emissions would be 5,138 tonnes per year for the CARB 2020 NAT scenario of minimally compliant 2005 Title 24 dwelling units. With a 15% improvement over 2008 Title 24, the total emissions would be 3,929 tonnes per year, which represents a 24% reduction in GHG emissions. As noted above, all emissions estimates presented here assume that the RPS goal of 20% renewables is achieved by SCE.

Newhall has committed to using renewable electricity equivalent to putting photovoltaic systems (i.e., solar panels) on all of the single family detached residences.[107] Here, it is conservatively assumed that a 2-kilowatt (kWh) system would be installed, although larger systems (2.3 kWh) may be more common. An industry source[108] estimates that a 2-kWh system in Santa Clarita will generate 3,356 kWh per year.[109] The energy produced by the photovoltaic systems is renewable and is assumed, for the purposes of this estimate to result in zero GHG emissions. Accordingly, the quantity of energy supplied by photovoltaic systems was subtracted from the single family residence electricity-use to estimate GHG emissions reductions from installing solar panels. As seen in Table 4-C-5, with 15% improvements over 2008 Title 24 and with renewable energy, the 308 single-family homes emit a total of 912 tonnes CO_2 per year – 688 tonnes less CO_2 then minimally 2005 Title 24 compliant single-family homes without renewable energy. Table 4-C-5 lists the CO_2 emissions reductions from the renewable energy and from the 15% improvement over 2008 Title 24. The total CO_2 emissions for all dwelling units, if minimally 2005 Title 24 compliant and without renewable energy, would be 5,138 tonnes per year. The total CO_2 emissions for all dwelling units, if minimally 2005 Title 24 compliant and with renewable energy, would be 4,820 tonnes per year; a 6% reduction in GHG emissions. The total CO_2 emissions for all dwelling units, if 15% better than 2008 Title 24 and without renewable energy, would be 3,929 tonnes per year; a 24% reduction in GHG emissions. The total CO_2 emissions for all dwelling units, if 15% better than 2008 Title 24 and with renewable energy, would be 3,656 tonnes per year; a 29% reduction in GHG emissions.

[107] Newhall has also committed to renewable energy for non-residential buildings.

[108] Sunpower Solar Calculator, Sunpower Company. Available at: http://www.sunpowercorp.com/For-Homes/How-To-Buy/Solar-Calculator.aspx

[109] A kWh is one kilowatt of power for one hour.

With the improvements over 2008 Title 24 and the solar panels, Newhall is estimated to reduce GHG emissions associated with residential buildings by a total of 29%, or 1482 tonnes per year, as shown in Table 4-C-6.

4.7.2 Additional Project Design Features to Reduce GHG Emissions

Newhall is committed to working with Southern California Edison and Southern California Gas Company to assess the feasibility of smart meter installation. According to the SCE website, SCE has started to implement the SmartConnect metering system[110] and the Itron "openway" meter has been selected for assessment.[111] No authoritative reference was found that outlined the overall energy savings from using smart meters.[112] There were numerous studies that suggest that smart meters can reduce peak demand by 10-20%[113] and energy costs from appliance use by approximately 10%.[114]

Overall energy savings from employing smart meters may differ from peak demand savings because some of the electricity use may simply be shifted to another time of day. Additionally, allowing the consumer to immediately see how their actions affect usage enables them to make more energy- conscious decisions and may decrease overall energy consumption.

Based upon the limited available information, ENVIRON assumed that a 10% decrease in overall energy usage, and therefore greenhouse gas emissions, at Landmark homes may be realized by the use of smart meters.

In addition, smart meters enable the meters to transmit usage directly to the utility provider eliminating the need for door-to-door meter reading. This results in an additional reduction of greenhouse gases associated with vehicle emissions during door-to-door readings.

Due to the preliminary estimate of the GHG savings from smart meters, this reduction in GHG emissions was not incorporated into the analysis. Also note that although Newhall has committed to working with Southern California Edison and Southern California Gas Company to assess the feasibility of smart meter installation, it is not certain at this point how many homes will install the smart meters.

[110] http://www.sce.com/NR/rdonlyres/62A69851-BFFB-48A7-9373-F231769B4E1B/0/EdisonSmartConnectFactSheet_1207.pdf

[111] www.itron.com

[112] The study from the Pacific Northwest National Laboratory states that the differences in mean energy consumption were small but measurable and that the variances in the measurements were large. Page 7.6 of http://gridwise.pnl.gov/docs/op_project_final_report_pnnl17167.pdf

[113] Pacific Northwest National Laboratory. Available online at: http://gridwise.pnl.gov/docs/pnnl_gridwiseoverview.pdf, http://gridwise.pnl.gov/ Institute of Electrical and Electronics Engineers online. Available at: http://www.spectrum.ieee.org/aug04/3824

[114] "Dynamic energy-consumption indicators for domestic appliances: environment, behaviour and design." G. Wood, M. Newborough. *Energy and Buildings 35* (2003) 821–841 This report focuses mainly upon cooking appliances and finds approximately a 10% decrease in energy usage; the elasticity of other energy needs in the home (lighting, cooling) may be more or less elastic to changes in prices.

4.7.3 Uncertainties in Residential Building GHG Calculations

Several factors lead to uncertainties in the above analysis. These are described below.

Although all buildings in the development will be Title 24 compliant, Title 24 does not specify building dimensions (e.g., size, height, or orientation). Title 24 also provides significant flexibility for window types, window amounts, insulation choice, and other parameters. This uncertainty is expected to neither over- nor underestimate emissions. Title 24 grants enough flexibility that if a designer puts in more windows than is “allowed” under the prescriptive measures, the energy efficiency losses can be offset by improving the window quality, or installing a more efficient HVAC system. Although it is unknown how exactly the buildings will be designed, each home will be Title 24 compliant, and thereby all design features of the home that make it less energy efficient will be offset by design features that make it more energy efficient.

Energy use will vary considerably depending upon the design of the home. The residential units to be built in Landmark Village will vary considerably in size, layout, and overall design. The parameters used here are intended to represent the upper quartile of homes relative to sizes in each category. As such, energy use from the homes that will actually be built in Landmark Village are anticipated to be lower.

Built environment energy use will vary considerably depending upon the home owners’ habits regarding energy use. For instance, homeowners determine the set point of thermostats, the duration of showers, the usage of lights, if they are to have a second refrigerator, and the temperature of the refrigerator, among other things. Newhall Land will have little, if any, influence over homeowner behavior. Current median behavior attributes are presented here. To the extent that individuals are becoming more energy conscious, this will tend to overestimate energy use in the future.

Plug-in energy use will vary considerably depending upon the appliances, lights, and other plug-ins installed by the homeowner. Newhall Land will have little, if any, influence over these choices made by the homeowner. As above, the current median behavior attributes are presented here. To the extent that individuals are becoming more energy conscious, or appliances are becoming more energy efficient, this will tend to overestimate energy use in the future.

4.8 GHG Emissions Associated with Non-Residential Buildings

Non-residential buildings include all structures except residences that may exist in a development such as government, municipal, commercial, retail, and office space. This section describes the methods used to estimate the GHGs associated with activities in non-residential buildings. As discussed earlier in Section 4.4.1, the RPS will increase the renewable fraction of electricity deliveries to 20%.

The amount of energy used and the associated GHG emissions emitted per square foot of available space vary with the type of non-residential building. For example, food stores are far more energy intensive than non-refrigerated warehouses, which have little climate-conditioned space. Newhall Land provided data summarizing the general non-residential building categories planned and the area of floor space planned for each building type. For new developments, the

exact types of buildings are typically unknown. As such, not all building categories that may actually exist in Landmark Village are represented below. However, all of the non-residential building area is accounted for, and the tables provided in this section present the differences in energy intensities from building type to building type. The types of non-residential buildings as provided to ENVIRON are:

1) Grocery
2) Miscellaneous Retail / Commercial / Office
    a. Restaurant (20%)
    b. Office (25%)
    c. Retail (55%)
3) Hotel
4) Public Safety
    a. Fire Station (100%)
5) Institutional
    a. Schools (100%)

Similar to the case for residential buildings, GHGs are emitted as a result of activities in non-residential buildings for which electricity and natural gas are used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; when this occurs in a non-residential building this is a direct emission source[115] associated with that building. GHGs are also emitted during the generation of electricity from fossil fuels. When electricity is used in a non-residential building, the electricity generation typically takes place offsite at the power plant; electricity use in a non-residential building generally causes emissions in an indirect manner.

While fuel combustion generates CH_4 and N_2O, the emissions of these GHGs typically comprise less than 1% of CO_2e emissions from electricity generation and natural gas consumption.[116] Fuel oil, kerosene, liquefied petroleum gas, and wood can also be used as fuels, but generally contribute only in small amounts as combustion sources within non-residential buildings. As such, these minor emissions are not accounted for here.

Similar to energy use in residential buildings, energy use in non-residential buildings is divided into energy consumed by the built environment and energy consumed by uses that are

[115] California Climate Action Registry (CCAR) General Reporting Protocol (GRP), Version 3.1 (January). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf Chapter 8

[116] Ibid., Tables C1 and C2. The methane and nitrous oxide emission factors are negligible compared to the total CO_2 emission factor for electricity generation in California.

independent of the construction of the building such as plug-in appliances. In California, Title 24 governs energy consumed by the built environment, mechanical systems, and some fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.). The following two steps were performed to quantify the energy use due to non-residential buildings:

1. Calculate energy use from systems covered by Title 24[117] (HVAC system, water heating system, and the lighting system).
2. Calculate energy use from office equipment, plug-in lighting, and other sources not covered by Title 24.

The resulting energy use quantities were then converted to GHG emissions by multiplying by the appropriate emission factors obtained by incorporating information on local electricity production.[118] The total GHG emissions for non-residential buildings in Landmark Village is estimated to be 7,858 tonnes CO_2 per year. The following sections describe the methodologies employed to estimate GHG emissions.

In this section of this report, the units CO_2 and CO_2e are used interchangeably for non-residential buildings because CH_4 and N_2O are assumed to contribute a negligible[119] amount of GWP when compared to the CO_2 emissions from non-residential buildings.

4.8.1 Estimate of Non-residential Energy Use Intensity

ENVIRON developed CO_2 intensity values (CO_2 emissions per sqft per year) for building types found in Landmark using data from the California CEUS.[120] The methods that were used to estimate these emissions for Landmark Village are described below.

4.8.1.1 CEUS Database

The overall electricity use for the building types was calculated based on data provided by the CEC.[121] The building types and subcategories are shown in Table 4-D-1. Table 4-D-1 also provides the scheme used to relate Landmark Village building types to CEUS building types.

The CEUS data is based on a survey conducted in 2002 of existing buildings. Each building type has a characteristic electricity and natural gas use per square foot of building space.

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[117] Title 24, Part 6, of the California Code of Regulations: California's Energy Efficiency Standards for Residential and Nonresidential Buildings. http://www.energy.ca.gov/title24/

[118] The Southern California Edison specific emission factor for electricity deliveries is 631 lbs CO_2/MWh. From the California Climate Action Registry Database. Southern California Edison PUP Report. 2007. This has been adjusted to account for the 20% Renewable Energy Portfolio Standard required for utilities to meet by 2010.

[119] The Southern California Edison specific emission factor for electricity deliveries is 631 lbs CO_2/MWh. From the California Climate Action Registry Database. Pacific Gas and Electric PUP Report. 2007. Although this emission factor accounts for only CO_2, the emissions associated with N_2O and CH_4 contribute to less than 1% of the electricity generation CO_2e emissions.

[120] California Energy Commission (CEC). California Commercial End-Use Survey Results. Data available from Itron Inc. at http://capabilities.itron.com/CeusWeb/Chart.aspx

[121] Workbooks for "SCE – FCZ09" downloaded from http://capabilities.itron.com/CeusWeb/Chart.aspx for all building categories.

Electricity use per square foot (electricity intensity) for each building sample was determined from the CEUS data. Similarly, the natural gas use per square foot (natural gas intensity) for each building sample was also determined.

For this analysis, energy use was based upon buildings in California forecasting climate zone 9. Table 4-D-2 lists the breakdown of electricity use among several end uses for electricity in various non-residential building types. Table 4-D-3 lists the percentage breakdown of end uses for natural gas in various non-residential building types. The end use data provide an estimate of the percent of the total energy use comprised by Title 24 regulated (built environment) and plug-in electricity in each building type.

Baseline Title 24 usage rates from the CEUS database shown in this table have been adjusted to reflect improvements in Title 24 building codes since the survey was conducted. CEC discusses average savings for improvements from 2002 to 2005 ("Impact Analysis for 2005 Energy Efficiency Standards") as well as from 2005 to 2008 ("Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings"). ENVIRON used these CEC average savings percentages as presented in Table 4-D-4 to account for reductions in energy use due to the Title 24 updates.

The Title 24-regulated electricity use (cooling, space heating, water heating, lighting, ventilation) and the non-built electricity use (office equipment, refrigeration, cooking, etc.) are presented in Table 4-D-5. The Title 24-regulated natural gas use and the non-built natural gas use (primarily from cooking) are also presented in Table 4-D-5.

4.8.2 Estimation of Annual Greenhouse Gas Emissions from Energy Use in Non-Residential Buildings

Landmark Village has committed to making all new non-residential buildings 15% more energy efficient than Title 24 2008 standards, or 15% more energy efficient on a TDV basis. Although ENVIRON is aware that annual energy use and TDV energy do not necessarily scale linearly with each other, as discussed in the residential section, ENVIRON assumed that all sources covered by Title 24 would uniformly use 15% less annual energy. These calculations are shown in Table 4-D-5. Non-Title 24 regulated energy use is assumed to still use the same amount of energy as a minimally Title 24 compliant building. There is no credit taken for any Energy Star appliances in the non-residential building category since it is difficult to determine which appliances may be present in the various non-residential building categories. In addition these are generally not supplied with the building. Baseline Title 24 usage rates shown in this table have been adjusted to reflect improvements in Title 24 building codes presented in Table 4-D-4. This methodology results in a reduction of energy use for all building types. Because plug-ins are not covered under Title 24, the decrease in energy use is typically less than 15%, yet still substantial.

Energy use data from Table 4-D-5 was multiplied by the emission factors presented in Table 4-2 to generate CO_2 intensity values (CO_2 emissions per sf building area). The results are shown in Table 4-D-6. The CO_2 intensity values presented in Table 4-D-6 represent the non-residential building types in Landmark Village described earlier.

Table 4-D-6 also shows the yearly CO_2 emissions from Landmark Village by incorporating the CO2 intensity developed as discussed above and the square footage of each of the main building categories. In addition, Newhall Land has committed to solar systems for the non-residential buildings. As a result, overall CO_2 emissions associated with non-residential energy use are 7,858 tonnes CO_2 per year.

4.8.3 Additional Project Design Features to Reduce GHG Emissions

Because of the LA county Green Building Ordinance, several buildings may be LEED Silver certified. LEED certification is a performance-oriented rating system where building projects earn points for satisfying criterion designed to address environmental impacts inherent in the design, construction, operations and management of buildings. As LEED Silver is for buildings that obtain approximately half of the overall possible LEED points, it may be appropriate to assume that the LEED Silver building would obtain half of the possible points in the 'optimize energy performance' category as well as half of the points from each of the other categories. To obtain half of the possible 'energy' points, the building would need to be approximately 30% better than 2005 Title 24.[122]

A 30% improvement over commercial 2005 Title 24 is more energy efficient than Newhall's commitment to a 15% improvement over 2008 Title 24 because 2008 Title 24 is approximately 5-10% more energy efficient than the commercial 2005 standards. Due to the preliminary nature of the GHG savings from the LEED buildings, these GHG emissions were not incorporated into this analysis. The percentage saving from LEED and Title 24 improvements varies between commercial and residential buildings because of different energy end-use patterns.

4.8.4 Uncertainties in Non-residential Building GHG Calculations

Several factors lead to uncertainties in the above analysis. These are described below.

- For new developments, the exact types of buildings are typically unknown. As such, not all building categories that may actually exist in Landmark Village are represented in this analysis. However, all of the commercial building area is accounted for and the best available assessment of the building type composition of Landmark Village was used. The tables provided in this section present the differences in energy intensities from building type to building type.
- Although it is unknown exactly how the buildings will be designed, each building will be Title 24 compliant. Therefore all design features of the building that make it less energy efficient will be offset by design features that make it more energy efficient.

4.9 Mobile Sources

This section estimates GHG emissions from mobile sources in Landmark Village. The mobile source emissions considered for this project will be from the typical daily operation of motor vehicles by Landmark Village residents. Mobile source emissions associated with the travel of

[122] LEED 2009 for New Construction and Major Renovations. USGBC Member Approved November 2009.

residents living outside Landmark Village are not counted. This section first reviews the rationale for counting only the Landmark Village residents' emissions as detailed in Section 4.1, and then explains, in detail, calculation methodologies.

4.9.1 Evaluation of "New" Emissions For Mobile Sources

As noted earlier, GHG increases are directly tied to population growth and increased standards of living. New housing in California is a response to both population increase, and increasing standard of living for new California residents that moved from areas that were less economically developed. Therefore, operational emissions (including vehicular emissions) from new residences should be considered as growth, or new emissions, as residences are rarely removed from the housing supply once constructed.[123]

Traffic between new residences and new retail is accounted for, as these trips are directly associated with the new residences. However, traffic associated with new commercial or retail and existing residences is not new[124], and is not accounted for in this report. That traffic already exists from the existing residences, and the construction of new commercial or retail does not increase traffic, unless the average trip distance to that commercial or retail establishment increases as a result of the new construction.

All car travel made by Landmark Village residents are counted as Landmark Village emissions, even if the vehicles leave the site. Emissions from non-Landmark Village vehicles that enter to project site are not counted because those emissions would have occurred absent Landmark Village. For instance, workers that live in Bakersfield but will now work in Landmark Village will commute to work in Landmark Village. These workers commuted before the existence of Landmark Village – perhaps within Bakersfield, to Santa Clarita, or to Los Angeles. Therefore, in this analysis, it is assumed that these workers commute the same distances, on average, as before the existence of Landmark Village and therefore they do not contribute to any net new GHG emissions.

4.9.2 Estimating VMT from Mobile Sources

VMT for the Landmark Village development was calculated by the methodology outlined in Tables 4-E-1 through 4-E-3. ENVIRON estimated GHG emissions based upon all miles traveled by Landmark Village residents that start or end from a Landmark Village home regardless of internal or external destinations or purpose of trip. Trip rates are from the Austin Foust Traffic Report[125] and trip lengths are directly from Austin-Foust (Appendix D).[126]

[123] There are exceptions, such as when one housing development replaces another, and, in those cases, the replacement residential development need not be considered growth.

[124] If, however, the new commercial area results in longer trips for its workers and residents than they would have previously made, then it adds GHGs emissions. Commercial development that could potentially increase VMT would be facilities that draw trips from far away that otherwise would not be made. A theme park, for example, may be viewed as such a development.

[125] NEWHALL RANCH RMDP AND SCP EIR/EIS TRAFFIC ANALYSIS DECEMBER 2008

[126] Austin-Foust Associates, Inc. 105.363: 11/2/2007: AveTripLengthCalcs for Ps Only.xls

The VMT calculated includes all VMT generated by Landmark Village residents. This VMT was multiplied by the appropriate emission factors in the next section to calculate GHG emissions from mobile sources at Landmark Village.

The analysis in this section uses trip generation rates and trip lengths specific to the Proposed Project. This approach provides an accurate representation of VMT at full build out.

In an effort to include only trips made by Landmark Village residents, as opposed to trips associated only with the commercial development, only trips originating or ending at Landmark Village homes are analyzed. This approach avoids counting trips made by residents of other cities that visit Landmark Village. These trips are not counted because, as discussed above, these trips do not represent true growth; they would have been made in the absence of the population growth accommodated by Landmark Village.

4.9.3 Estimating GHG Emissions from Mobile Sources

This section of the report describes the estimation of GHG emissions from the VMT estimates developed in the previous section. To develop the appropriate emission factor for the estimation of GHG emissions, ENVIRON incorporated promulgated regulatory actions that will affect GHG emissions factors.

The USEPA recently granted the waiver for California for its greenhouse gas emission standards for motor vehicles. Accordingly, the Pavley Standards, as discussed earlier in Section 4.4.2, will be in effect at build out of Landmark Village and therefore are accounted for in the Landmark Village automobile and light duty truck emission factors. The Pavley standards require GHG emission reductions from vehicles equivalent to approximately 30% by 2016.[127] Although new vehicle emissions factors will be reduced by 30% in 2016, the fleet average emissions reduction in 2020 will be less than that, due to vehicle phase in. The Pavley Standards are expected to reduce total emissions for automobiles and light trucks by 20% relative to the scenario without Pavley or CAFE by the year 2020.[128] Table 4-E-3 outlines, in detail, these calculations.

The CO_2 emissions from mobile sources were calculated with the trip rates, trip lengths and emission factors for running and starting emissions from EMFAC2007 as follows:

$$CO_2 \text{ emissions} = \text{VMT} * EF_{running} + \text{Annual Trips} * EF_{start}$$

[127] The standards start in model year 2009, and ramp up to a 30 percent reduction in greenhouse gas emissions for vehicles sold in model year 2016 and beyond. Source: Comparison of Greenhouse Gas Reductions for the United States and Canada Under US CAFE Standards and California Air Resources Board Greenhouse Gas Regulations, California Air Resources Board an Enhanced Technical Assessment February 25, 2008. http://www.arb.ca.gov/cc/ccms/reports/pavleycafe_reportfeb25_08.pdf

[128] By 2020, the combination of the adopted Pavley 1 and anticipated Pavley 2 rules are expected to reduce the 496,000 tons per day of CO2e emitted by light duty vehicles in California by 20 percent, or 100,500 tons per day. The baseline (496,000 tons per day) CO2e emissions are state-wide emissions (including running and startup emissions) at 2020 retrieved from EMFAC2007, assuming no Pavley Standards are implemented. Comparison of Greenhouse Gas Reductions for the United States and Canada Under US CAFE Standards and California Air Resources Board Greenhouse Gas Regulations, California Air Resources Board an Enhanced Technical Assessment February 25, 2008. http://www.arb.ca.gov/cc/ccms/reports/pavleycafe_reportfeb25_08.pdf

Where: VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

EF_{start} = emission factor for startup emissions

The CCAR general reporting protocol (GRP)[129] recommends estimating GHG emissions from mobile sources at an individual vehicle level, assuming knowledge of the fuel consumption rate for each vehicle as well as the miles traveled per car. Since these parameters are not known for a future development, the CCAR guidance is too specific to use as recommended.

The CO_2 calculation involves the following assumptions:

- The emission factor depends upon the speed of the vehicle. ENVIRON assumed 35 miles per hour.
- EMFAC emission factors from the year 2020 were used for $EF_{running}$ based on Los Angeles County fleet mix of light duty vehicles.
- Startup emissions are CO_2 emitted from starting a vehicle. Startup emissions were calculated using the following assumptions:
    1. The number of starts is equal to the number of trips made annually.
    2. The breakdown in vehicles was EMFAC fleet mix of light duty vehicles for LA County in 2020.
    3. The emission factor for startup was calculated based on an average wait between starts.

Fleet distribution types from EMFAC2007 from the year 2020 were used. Table 4-E-3 shows the CO_2 emissions from vehicles associated with residents of Landmark Village as calculated according to the methodology described above. In order to account for the reductions in emissions due to the newly proposed Pavley Standards, the emissions calculated using the 2020 emission factor were decreased by 20% as shown in Table 4-E-3 and discussed earlier in this section.

Nitrous oxide (N_20), CH_4, and HFCs[130] are also emitted from mobile sources. The USEPA recommends assuming that CH_4, N_2O, and HFCs account for 5% of mobile source GHG emissions, taking into account their GWPs.[131] Therefore, CO_2 emissions in Table 4-E-3 were divided by 0.95 to account for non-CO_2 GHGs. Vehicles associated with the Landmark Village development will emit approximately 7,074 tonnes CO_2e per year.

129 California Climate Action Registry (CCAR) General Reporting Protocol (GRP), Version 3.1 (January). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

130 HFCs can be emitted from air conditioning systems.

131 USEPA. 2005. *Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle.* Office of Transportation and Air Quality. February. (http://www.epa.gov/otaq/climate/420f05004.pdf)

4.10 Area Sources

This section estimates GHG emissions from area source emissions at the Landmark Village development. The area emissions considered for this project are from hearths[132] and landscaping fuel combustion sources such as lawn mowers. GHG emissions due to natural gas combustion are excluded from this section since they are covered in residential emissions. URBEMIS 9.2.2[133] was used to calculate area source GHG emissions for the Landmark Village development.

In this section of this report, the units CO_2 and CO_2e are used interchangeably for area sources because methane and nitrous oxide are assumed to contribute a negligible amount of global warming potential when compared to the carbon dioxide emissions from area sources.

4.10.1 Estimating GHG Emissions from Area Sources

GHG emissions from area sources (Table 4-F-1) were calculated using URBEMIS 9.2.2 and the land use information specified in Sections 4.7 and 4.8. The location of the project as specified in URBEMIS determines the factors used to calculate the hearth fuel use. In Landmark, it is estimated that hearths will emit 169 tonnes CO_2 per year. Landscape maintenance emissions will emit approximately 11 tonnes CO_2 per year. Table 4-F-1 presents the GHG emissions from area sources associated with Landmark Village developments.[134] In total, area sources from Landmark Village account for approximately 180 tonnes CO_2 per year. Because area sources account for such a small percentage of the overall landmark CO_2 emissions, the contribution of methane and nitrous oxides to overall project GHG emissions was assumed to be small, and therefore was not calculated. The area source URBEMIS run is given in Appendix E.

4.10.2 Uncertainties in Area Source GHG Emissions Calculations

GHG emissions from hearths include natural gas fireplaces. As all natural gas consumed in residential homes is accounted for in the residential section of this report, some double counting (overestimation) of emissions occurs here.

4.11 Water/Sewage

The majority of estimated GHG emissions from water supply and sewage treatment are due to the energy used to convey, treat and distribute water. Thus, these emissions are generally indirect emissions from the production of electricity to power these systems. Additional emissions from wastewater treatment include CH_4 and N_2O, which are emitted directly from the wastewater. In general, the water /sewage category is the major source of municipal sector GHG emissions.

According to the Landmark Village DEIR, the development would generate a total water demand of 989 acre-feet (AF) per year. Of these 989 AF, 622 AF will be potable groundwater pumped from an underlying aquifer and 367 AF will be non-potable reclaimed water produced

[132] wood stoves, fireplaces, and natural gas fired stoves

[133] Urban Emissions Model (URBEMIS) (Version 8.7 – 2002 / Version 9.2.2 – 2007). Jones & Stokes Associates. Prepared for: South Coast Air Quality Management District.

[134] Assumes full buildout.

by the Newhall Ranch Water Reclamation Plant.[135] To supply potable water to residential and commercial users, three processes are necessary: the supply and conveyance of the water from the source, the treatment of the water to make it acceptable for consumption, and the distribution of the water to individual users. After use, the wastewater is treated either for disposal or reuse as reclaimed water. Any reclaimed water is generally redistributed to users via pumping. The emission factors and GHG emissions for all these processes are shown in Table 4-G-1. Note that the emissions factors here account for the 20% renewables expected from the RPS as described earlier in Section 4.4.1 and detailed in the residential section.

4.11.1 Potable Water Supply and Conveyance

Water is typically supplied to communities from several sources including the local underground aquifer, the State Water Supply, and recycled and reclaimed water.

To supply the annual demand for 622 AF of potable water Landmark Village will draw upon a local supply of water from an underground aquifer. [136] The energy needed to supply and convey Landmark Village's water will be used to pump this water from the ground and distribute it throughout the development. Typical sources of water for Southern California are from Northern California and the Colorado River. Pumping water to Southern California from these typical sources emits more CO_2 per AF of water delivered as compared to local sourcing (see emission factors in Table 4-G-1).[137] For the supply of water of 622 AF from an underground aquifer, the Electric Power Research Institute has estimated that, nationwide, the amount of energy required to pump water from the ground ranges from 228 to 587 kWh per AF.[138] Pumping groundwater in Southern California is typically more energy-intensive than in other areas of the state and nation because its aquifers are relatively deep; in Southern California's Chino Basin, it has been estimated that 950 kWh of electricity are needed to supply one AF of groundwater.[139] To be conservative, it was assumed that it would require 950 kWh of electricity to extract one AF of water from the aquifer underlying Landmark Village.[140] Using this emission factor, the expected potable water demand, and the SCE carbon-intensity factor adjusted for the RPS, GHG emissions from potable water supply and conveyance were calculated as shown in Table 4-G-1. A more refined estimate taking into account the actual aquifer depth and the physical properties

[135] Information provided by Newhall 2/8/2008.

[136] Landmark Village Draft EIR. Section 4.10: Water Service. Page 4.10-1.

[137] The CEC estimates that 50% of Southern California's water is supplied by importing water from Northern California and the Colorado River. California Energy Commission. (CEC) 2005. California's Water-Energy Relationship. Final Staff Report. CEC-700-2005-011-SF. November. Page 112.

[138] Ibid. Page 26.

[139] Ibid. Page 26. The Chino Basin represents a worst-case scenario for energy needs for pumping water.

[140] Ibid. The amount of energy required to supply and convey water depends heavily both on how the water is extracted and on the distance between the water source and the end user. At least half of the potable water consumed in Southern California is drawn from surface water in Northern California or nearby states and supplied to the south via aqueducts. Pumping this water over great distances and sometimes high elevations to the end user can be very energy-intensive (CEC 2005). It has been estimated that the average amount of electricity necessary to supply and convey one AF of water suitable for indoor use to Southern California is 3,170 kWh, taking into consideration the large portion of water that is imported from hundreds of miles away (CEC 2006). However, since it is known that Landmark Village will be using the less energy-intensive process of pumping groundwater to supply its potable water needs, it is appropriate to use a groundwater specific emission factor and not the generic average emission factor for Southern California.

of the aquifer would likely lower the estimate of CO_2 emissions from groundwater pumping slightly.

4.11.2 Potable Water Treatment and Distribution

For water intended for indoor use in Southern California, it is estimated that 36 kWh of electricity is necessary to treat one AF of water and an additional 414 kWh is necessary to distribute that water to the end users.[141] Based on the estimated potable water demand, these emission factors, and the SCE-carbon intensity factor, GHG emissions from potable water treatment and distribution were calculated as shown in Table 4-G-1. The estimate presented here may double-count some of the pumping energy requirements already accounted for in the groundwater pumping section. This is because the water may already be at the required pressure to distribute after being pumped from the aquifer. As such, the estimate provided here is likely conservative (high); a more refined analysis will likely yield lower emissions.

4.11.3 Wastewater Treatment

Landmark Village will also contain a Water Reclamation Plant that serves all of Newhall Ranch. It expected to treat an average of 21 AF per day of wastewater and accommodate a peak flow of 42 AF per day.[142] Only a fraction of the water treated is associated with Landmark Village. . For the purposes of this inventory, only emissions attributable to wastewater generated as a result of the development of Landmark Village are considered. Emissions associated with wastewater treatment include indirect emissions necessary to power the treatment process and direct emissions from the organic material in the wastewater. The Landmark Village DEIR estimates that the proposed project would generate a worst-case average total of 459 AF per year of wastewater[143] This number is smaller than the total amount of water demanded by and supplied to Landmark Village (989 AF per year) because not all of the water used by the community is captured and treated as wastewater[144]

Indirect GHG emissions from the electricity necessary to power the wastewater treatment process were calculated for Landmark Village. The electricity required to operate a wastewater treatment plant in Southern California is estimated to be 623 kWh per AF.[145] This is a conservative estimate because it assumes a level of treatment necessary for potable water. As not all wastewater treated at the reclamation plant will be treated to this level, the actual amount of electricity required will likely be lower. Based on the expected amount of wastewater requiring treatment (459 AF per year), this emission factor and the SCE carbon-intensity factor adjusted for 20% renewables in accordance with the RPS, indirect emissions due to wastewater treatment were calculated as shown in Table 4-G-1.

[141] California Energy Commission. (CEC) 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Page 22.
[142] Landmark Village Draft EIR. Section 4.11: Wastewater Disposal. Page 4.11-1.
[143] Landmark Village DEIR Page 4.11-1. The DEIR reports an expected worst-case average total of 0.41 MG per day of wastewater.
[144] Landmark Village DEIR. Page 4.11-1.
[145] CEC 2006. Page 22.

Direct emissions from wastewater treatment include emissions of CH_4 and N_2O. A per capita emission factor for these GHG emissions was developed based on a 2005 US GHG inventory for domestic wastewater treatment (25 teragrams CO_2e/year or 25 million tonnes CO_2e/year)[146] and the 2005 US population (approximately 296,410,404). Direct emissions from wastewater treatment were calculated using the emission factor developed from this data (0.084 tonnes CO_2e per capita per year) and the projected population at Landmark Village (3,680 residents) as shown in Table 4-G-1.[147]

4.11.4 Non-Potable Recycled Water Distribution

The Landmark Village DEIR estimates that non-potable water needs will be equal to 367 AF per year, which will be provided from reclaimed water.[148] Once treated at the wastewater treatment plant, this water will need to be re-pumped through the development to supply it to end users. Estimates of the amount of energy needed to redistribute and, if necessary, additionally treat reclaimed water vary from 391 to 978 kWh per AF.[149] To be conservative, the high-end energy intensity estimate was used in this inventory. Based on the estimated demand for reclaimed water, the estimated electricity demand and the SCE carbon-intensity factor adjusted for 20% renewables per the RPS, non-potable reclaimed water redistribution emissions were calculated as shown in Table 4-G-1.

In total, all water and wastewater supply, treatment and distribution for Landmark Village is expected to produce 711 metric tonnes of CO_2e annually.

4.11.5 Energy Savings from Pumping from Aquifer

Typical sources of water for Southern California are from Northern California and the Colorado River; based on CEC estimates for energy demand, pumping water to Southern California from these typical sources emits approximately 0.84 tonnes CO_2 per AF of water delivered.[150] If Landmark Village were to acquire all of its water from these typical sources, the GHG emissions associated with pumping the water would be higher, as discussed in Section 5 of this report. However, since Landmark Village will obtain most of its water from the local underground aquifer and from the reclamation plant, most of the water will not need to be pumped long distances to the project site. Therefore, the energy demand, and thus the GHG emissions, is lower than if the development were to obtain all of its water from the typical sources.

4.12 Public Lighting

GHG emissions from public lighting sources are due to indirect emissions associated with the production of the electricity that powers these lights. Lighting sources considered in this source category include streetlights, traffic signals, area lighting for parks and lots, and lighting in public

[146] USEPA. 2007. Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2005. #430-R-07-002. April. http://epa.gov/climatechange/emissions/downloads06/07Waste.pdf

[147] Population estimate detailed in Landmark Village Draft EIR, Section 2: Environmental and Regulatory Setting, Page 2.0-19.

[148] Note that the air quality section conservatively assumes a population of 65,000, which results in a higher estimate for non-potable reclaimed water.

[149] CEC 2006. Page 24.

[150] CEC 2006. Page 112.

buildings. The emissions and emission factor for public lighting is shown in Table 4-G-1. Data from a report by the City of Duluth[151] shows that the amount of electricity demanded for all types of public lighting is 149 kWh per capita per year.[152] Using this study, the SCE-specific carbon-intensity emission factor adjusted for 20% renewables per the RPS and the expected Landmark Village population of 3,680, emissions from public lighting were calculated.[153]

4.13 Municipal Vehicles

GHG emissions from municipal vehicles are due to direct emissions from the burning of fossil fuels. Municipal vehicles considered in this source category include vehicles such as police cars, fire trucks, and garbage trucks. The emission factor for municipal vehicles is shown in Table 4-G-1. Data from reports by Medford, MA; Duluth, MN; Northampton, MA; and Santa Rosa, California[154] show that the CO_2 emissions from municipal vehicles would be approximately[155] 0.05 tonnes per capita per year. Data from a wide variety of municipalities, both based on size and location, indicate that CO_2 emissions from municipal vehicles are small. Using these studies and the expected Landmark Village population of 3,680[156], emissions from municipal vehicles in Landmark Village were calculated as shown in Table 4-G-1.

4.14 GHG Emissions Associated with Pools and Recreation Centers

It is assumed that four recreation centers will be built in Landmark Village.[157] Recreation centers may include various pools, spas, and restroom buildings; ENVIRON assumed that pools are the main consumers of energy in recreation centers. This section describes the methods used to estimate the GHGs associated with pools in recreation centers.

The energy used to heat and maintain a swimming pool depends on several factors, including (but not limited to): whether the pool is indoors or outdoors, size of the pool (surface area and depth), water temperature, energy efficiency of pool pump and water heater, and whether solar heating is used. By making assumptions for these parameters and using known or predicted

[151] Duluth, while in a different environment, provides the best comparable data and represents conservative estimates.

[152] Skoog., C. 2001. This factor was calculated by summing the total electricity needs for municipal uses and dividing by the Duluth population. The Duluth population was calculated by dividing the city's reported GHG emissions by its reported per capita emissions.

[153] Population estimate detailed in Landmark Village Draft EIR, Section 2: Environmental and Regulatory Setting, Page 2.0-19.

[154] City of Medford. 2001. Climate Action Plan. October. http://www.massclimateaction.org/pdf/MedfordPlan2001.pdf

City of Northampton. 2006. Greenhouse Gas Emissions Inventory. Cities for Climate Protection Campaign. June. http://www.northamptonma.gov/uploads/listWidget/3208/NorthamptonInventoryClimateProtection.pdf

City of Santa Rosa. Cities for Climate Protection: Santa Rosa. http://ci.santa-rosa.ca.us/City_Hall/City_Manager/CCPFinalReport.pdf

Skoog., C. 2001. Greenhouse Gas Inventory and Forecast Report. City of Duluth Facilities Management and The International Council for Local Environmental Initiatives. October.http://www.ci.duluth.mn.us/city/information/ccp/GHGEmissions.pdf

[155] In an effort to be conservative, the largest per capita number from these four reports was used.

[156] Population estimate detailed in Landmark Village Draft EIR, Section 2: Environmental and Regulatory Setting, Page 2.0-19.

[157] Landmark EIR, pg 1.0-38.

values for energy use, ENVIRON estimated the electricity and natural gas use of an outdoor pool.

In this section of this report, the units CO_2 and CO_2e are used interchangeably for pools and recreation centers because methane and nitrous oxide are assumed to contribute a negligible amount of global warming potential when compared to the carbon dioxide emissions from pools and recreation centers.[158]

4.14.1 Recreation Center Characterization

ENVIRON assumed that the proposed pools will be outdoor pools with dimensions 50 meters by 25 yards (a typical, competition-size pool). ENVIRON based electricity calculations on a pool that ran its standard (not high-efficiency) water filter for 24 hours per day, 365 days per year. The large pool size and standard operating equipment allow for a conservative (high) energy use estimate that would decrease with a smaller pool or more efficient equipment.

As there is little data publicly available on the energy use of commercial swimming pools, ENVIRON extrapolated energy consumption from information obtained from two sources: 1) data on electricity and natural gas use for five pools in Oakland, California and 2) data from the US Department of Energy.

4.14.2 Electricity Use of Recreation Centers

To estimate the baseline electricity usage factors for Landmark Village pools, ENVIRON calculated the average annual electricity usage of five Oakland pools and scaled it to reflect the larger size of the Landmark Village proposed pools as shown in Tables 4-H-1 and 4-H-2. As the electricity use largely reflects pumps used to circulate the pool water, the climatic differences between Oakland and Landmark Village are not expected to impact this estimate.

4.14.3 Natural Gas Use of Recreation Centers

The public pools in Landmark Village will be heated by solar water heaters. Solar water heaters can provide up to 100% of the heating needs for the pool.[159] Tables 4-H-1 through 4-H-3 and the description below detail the natural gas calculations.

ENVIRON calculated the average annual natural gas usage for five pools from the City of Oakland Preliminary Facility Reports[160] and then scaled this usage to reflect the larger size of the Landmark Village proposed pools. ENVIRON also adjusted the natural gas usage to account for savings from high-efficiency heaters and for the difference in average ambient temperature between Newhall and Oakland.

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[158] Only CO2 emissions are estimated and are assumed to be equivalent to total GHG emissions since the contributions from methane (CH_4) and nitrous oxide (N_2O) are negligible compared to total GHG for emissions associated with electricity generation and natural gas combustion. The emission factors in the California Climate Action Registry General Reporting Protocol show that CH4 and N2O emissions (in CO2e) are less than 1% of CO2 emissions for these processes.

[159] http://www.rlmartin.com/rspec/factsheets/indoor.htm

[160] Energy Efficient Commercial Pool Program; Preliminary Facility Reports for DeFremery Pool, Fremont Pool, Live Oak Pool, Lyons Pool, and Temescal Pool. City of Oakland / Oakland Unified School District. October 2006.

4.14.4 Conversion of Electricity and Natural Gas Use to Greenhouse Gas Emissions

Tables 4-H-2 and 4-H-3 show the results of these calculations for electricity and natural gas use. ENVIRON used emission factors from Table 4-2 to calculate the total CO_2 emissions for each pool. Based upon these assumptions, an outdoor competition-size pool emits approximately 632 tonnes of CO_2 per year (97 tonnes from electricity used to pump water and 535 tonnes from natural gas used to heat the pool). However, each Landmark pool will have solar water heating, thereby reducing GHG emissions to only 97 tonnes per year per pool.

Assuming that there will be four solar heated competition-sized pools in Landmark Village, the total yearly CO_2 emissions from recreation centers in Landmark Village is 386 tonnes per year.

4.15 Summary of Emissions from Landmark Village

Emissions from the various aspects of Landmark Village are presented in Table 4-I-1. One-time vegetation emissions are estimated to be 7,625 tonnes CO_2. One-time construction emissions are estimated to be 36,309 tonnes CO_2e. Total annual emissions are estimated to be 20,193 tonnes CO_2e. Emissions from residential buildings are estimated to be 3,656 tonnes CO_2e per year. Emissions from non-residential buildings are estimated to be 7,858 tonnes CO_2e per year. Emissions from mobile sources are estimated to be 7,074 tonnes CO_2e per year. Emissions from municipal sources (water distribution, public lighting, and municipal vehicles) are estimated to be 1,040 tonnes CO_2e per year. Emissions from area sources are estimated to be 180 tonnes CO_2e per year. Emissions from recreational centers are estimated to be 386 tonnes CO_2e per year.

Also noted in Table 4-I-1 is whether the emissions are attributable to a one-time action or are anticipated to occur on an annual basis, during each year after the full build-out of the development. The only one-time emissions are associated with construction and land use change emissions. There are 43,934 tonnes of CO_2e one-time emissions. The annual emissions from the use of the development amount to 20,193 tonnes of CO_2e. If the one-time emissions are annualized assuming a 40-year development life (which is likely low) then the one-time emissions account for approximately 1,098 tonnes of CO_2e.

As noted in Section 2.3.1 of this report, AB 32 requires that GHG emissions from California be reduced to 1990 levels by 2020. This represents a reduction of approximately 28.5% from CARB 2020 NAT. The goals of AB 32 are likely to be reached by increasing renewable or non-carbon producing electricity production, and improving the fuel efficiency of vehicles. As such, these measures were accounted for in calculating Landmark's emissions for comparison to CARB 2020 NAT.

4.16 Life Cycle Emissions of Building Materials

An estimate of "life-cycle" GHG emissions (i.e., GHG emissions from the processes used to manufacture and transport materials used in the buildings and infrastructure) is presented in this section and attached as Appendix F. This estimate is to be used for comparison purposes only and is not included in the final inventory as these emissions would be attributable to other

industry sectors under AB 32. For instance, the concrete industry is required by law to report emissions and undergo certain early action emission reduction measures under AB 32. Manufacturing of cement is specifically addressed in CARB's climate change proposed scoping plan.[161] Furthermore, for a life-cycle analysis for building materials, somewhat arbitrary boundaries must be drawn to define the processes considered in the life-cycle analysis.[162] In support of this approach, the California Air Pollution Control Officers Association (CAPCOA) white paper, discussed earlier, states: "The full life-cycle of GHG emissions from construction activities is not accounted for in the modeling tools available, and the information needed to characterize GHG emissions from manufacture, transport, and end-of-life of construction materials would be speculative at the CEQA analysis level."

The calculations and results discussed here and presented more fully in Appendix F are estimates and should be used only for a general comparison to the overall GHG emissions estimated in the Climate Change Technical Report. Life Cycle Assessment (LCA) emissions vary based on input assumptions and assessment boundaries (e.g., how far back to trace the origin of a material). Assumptions made in this report are generally conservative. However, due to the open-ended nature of LCAs, the analysis is highly uncertain.

Appendix F is an ENVIRON report that evaluates the life cycle GHG emissions associated with the building materials for this project. The life cycle GHG emissions include the embodied energy from the materials manufacture and the energy used to transport those materials to the site. The report then compares the life cycle GHG emissions to the overall annual operational emissions. The materials analyzed in the report include materials for 1) residential and non-residential buildings, 2) site infrastructure, and 3) the water reclamation plant. This report calculates the overall life cycle emissions from construction materials to be approximately 1.3-7.7% of the overall emissions.

The report estimated the life cycle GHG emissions for buildings by conducting an analysis of available literature on LCAs for buildings. According to these studies, approximately 75 - 97% of GHG emissions from buildings are associated with energy usage during the operational phase; the other 3 - 25% of the GHG emissions are due to material manufacture and transport. Using an approximate[163] GHG emissions from the operation of buildings, 3% to 25% of building emissions corresponds to approximately 0.9-7.3% of the project emissions.

The report calculated the life cycle GHG emissions for certain components of infrastructure (roads, storm drains, utilities, gas, electricity, and cable). This analysis considered the manufacture and transport of concrete and asphalt only, as ENVIRON assumed that other construction materials such as steel would be present in much smaller quantities. Because the

[161] Climate Change Proposed Scoping Plan: a Framework for Change. October 2008. ARB. November.

[162] For instance, in the case of building materials, the boundary could include the energy to make the materials, the energy used to make the machine that made the materials, and the energy used to make the machine that made the machine that made the materials.

[163] The final value depends upon the emission factors assumed in the Landmark Village study as well as in the LCA studies of the cited literature. Approximate values are presented here that are based upon an emission factor of 0.666 lb CO_2/kWh. Changes from this value will change the results somewhat, but the general range of the results is still applicable.

manufacture of concrete has a higher CO_2 emission factor and most construction estimates higher quantities of concrete than asphalt, the majority of the emissions for infrastructure result from the manufacture of concrete. Because the asphalt and concrete are locally sourced,[164] the transportation emissions are relatively small. If a 40 year lifespan of the infrastructure is assumed, the total annualized emissions from embodied energy in infrastructure materials are approximately 0.2% of the project emissions.

The report calculated the life cycle GHG emissions for the water reclamation plant based upon the estimated amount of concrete used to construct the WRP. Based on this analysis, the transport of the concrete for the WRP leads to a negligible amount of the Landmark Village project emissions. Because the concrete is locally sourced, the transportation emissions are relatively small. The total annualized emissions from embodied energy in the water reclamation plant are approximately 0.2% of the project emissions.

The overall life cycle emissions, annualized by 40 years, are 1.3 - 7.7% of the annualized GHG emissions from the Landmark Village project. The bulk of these emissions, 0.9 – 7.3%, are from general life cycle analysis studies and do not reflect specific information from Landmark Village.

Again, note that the calculations and results presented in this life cycle report are estimates and should be used only for a general comparison to the overall GHG emissions estimated in the Climate Change Technical Report. LCA emissions vary based on input assumptions and assessment boundaries (e.g., how far back to trace the origin of a material). Assumptions made in this report are generally conservative. However, due to the open-ended nature of LCAs, and the fact that literature evaluation, not site specific studies were used to analyze the embodied energy, the analysis should be considered to yield highly uncertain results. Additionally, these estimates likely double count emissions from other industry sectors.

[164] ENVIRON assumed that half of the concrete and asphalt come from the Santa Clarita Valley source and the other half come from the San Fernando Valley source. The petroleum used in the asphalt comes from the Port of Los Angeles. Asphalt is roughly 92% by weight aggregate, so ENVIRON assumed that the remaining 8% is representative of the mass of petroleum transported from the Port of Los Angeles.

5 Inventory in Context

5.1 Overview of GHG Reduction Goals and Development of Significance Thresholds

There are currently no adopted GHG emission thresholds of significance for new residential or commercial developments in the SCAQMD or LA County. The following sections summarize possible GHG emission significance thresholds that are being considered, and GHG reduction goals that have been set by various regulatory agencies.

South Coast Air Quality Management District

The SCAQMD has adopted interim significance thresholds for GHG emissions applicable to industrial projects, and is considering a five-tiered decision tree approach for residential/commercial projects that includes performance standards and screening thresholds or mitigation requirements.[165] Tier 1 would evaluate if a project is subject to exemption status under CEQA. Tier 2 would determine non-significance if a project is subject to a local general GHG reduction plan. Tier 3 would determine non-significance if a project's emissions fall under the applicable screening threshold, and would mandate specific energy and water efficiency measures for projects that are below the applicable threshold. Tier 4 would determine if a project is not significant based on three types of compliance options: demonstration of a some as-yet-unspecified reduction over the CARB 2020 NAT scenario (referred to as BAU here by SCAQMD), early compliance with AB 32, or demonstration of compliance with sector-based performance standards. At this time these standards and screening thresholds for residential/commercial projects are under active consideration.

California Air Resources Board

On October 24, 2008, the CARB released a "Preliminary Draft Staff Proposal" for the "Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act." On Monday, October 27, 2008, the CARB conducted a public workshop to discuss the *Preliminary Draft Staff Proposal*. On December 9th, 2008, CARB released a presentation that elaborated on the staff proposal. The CARB reportedly received numerous comments on the preliminary draft staff proposal presented in December and has yet to respond. The future of the CARB threshold development process is currently unclear.

There are three main approaches that CARB presented in which a residential project could show less than significant impacts: 1) the project is exempt from further analysis under existing statutory or categorical exemptions, 2) the project complies with a regional plan for GHG reductions, or 3) the project meets yet-to-be-determined performance and threshold criteria. Approaches 2 and 3 are described more fully below.

[165] Document dated October, 2008. Significance threshold diagram (Figure 3-1) dated August 27, 2008. Available online at: http://www.aqmd.gov/ceqa/handbook/GHG/oct22mtg/GHGguidance.pdf

Approach 2. A project's contribution to global climate change would not be significant on a cumulative basis if it complies with the requirements of a previously adopted GHG emission reduction plan or mitigation program that meets several criteria. Some of these include:

- Meeting a community level GHG target consistent with the statewide emissions limit (i.e., AB 32),
- Being consistent with a transportation- related GHG reduction target pursuant to SB 375,
- Including GHG inventory and monitoring and specific, enforceable GHG requirements,
- Allowing the plan to be revised, and
- Having a certified final CEQA document.

Approach 3. Alternatively, a project could comply with performance standards for building energy efficiency, transportation, water, waste, and construction and total GHG emissions lower than a set threshold. This threshold has not yet been set, but preliminary draft guidelines included performance standards for water, waste, and transportation.

Assembly Bill 32

As noted earlier, AB 32 requires that statewide GHG emissions by 2020 be reduced to 1990 levels (427 million tonnes[166]). To understand what percentage reduction in emissions would be required to achieve this goal, the CARB estimated the emissions that would be generated in 2020, assuming forecasted population growth, current trends, and no changes in energy efficiency or regulation in GHG emissions beyond that already legislated.[167] This forecast is termed CARB 2020 NAT. CARB's 2020 NAT prediction for 2020 emissions is 596 million tonnes. A decrease from 596 to 427 tonnes is equivalent to a 28.5% emissions reduction. Thus, the AB32 goal is a 28.5% reduction in emissions relative to the CARB's 2020 NAT scenario.

AB 32 will be reducing emissions in a variety of ways, including increasing energy efficiency and introducing more renewable energy sources. It is difficult to compare the Project emissions intensity to the AB 32 goals as it is not clear how the reductions will be distributed among the different sectors, what portion of reductions will be achieved from energy efficiency, and what fraction will be achieved by renewable resources. However, assuming that the emissions reductions are distributed evenly among the sectors, a reduction of 28.5% from a CARB 2020 NAT scenario would satisfy AB 32 goals.

[166] http://www.arb.ca.gov/cc/inventory/data/forecast.htm#summary_forescast

[167] "The 2020 business-as-usual forecast does not take any credit for reductions from measures… including the Pavley greenhouse gas emissions standards for vehicles, full implementation of the Renewables Portfolio Standard beyond current levels of renewable energy, or the solar measures." Climate Change Proposed Scoping Plan: a framework for change. California Air Resources Board, October 2008. Available at: http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm

5.2 California Air Resources Board Scoping Plan projections for 2020 if no actions are taken Scenario

As discussed in the introduction, because the SCAQMD has not yet established CEQA GHG significance thresholds, this section compares Project emissions with the requirements for emissions reductions for the State of California described in the CARB Scoping Plan.

In order to evaluate the emissions reductions that would be required within California to meet the goals of AB 32, the CARB prepared a Scoping Plan. This Scoping Plan contained an estimate of the GHG emissions that would result in 2020, considering population growth, if 'no actions were taken' to reduce GHG emissions (CARB 2020 NAT).[168] The Scoping Plan noted that emissions must be reduced by 29% from the CARB 2020 NAT if the state were to meet the GHG emissions goals of AB 32.

The CARB 2020 NAT relies on specific assumptions such as electricity generation, vehicle fuel efficiency, and building energy efficiency codes. In particular, the CARB 2020 NAT assumes that all new electricity generation will be supplied by natural gas plants, building energy efficiency codes are held at 2005 Title 24, and vehicle fuel efficiency is not affected by any regulatory action.

This section provides an estimate of the emissions from the project if it were consistent with the assumptions in the Proposed Project's CARB 2020 NAT scenario.

In this section, we compare the Landmark Village emissions to a CARB 2020 NAT scenario that is derived from the CARB 2020 NAT scenario used by CARB in the Scoping Plan. For the CARB 2020 NAT scenario, we estimate emissions that would occur from a project similar in size and scope as Landmark Village but built under CARB 2020 NAT conditions, and then compare Landmark Village's emissions with these CARB 2020 NAT estimates.

We estimate the CARB 2020 NAT scenario in a manner similar to that used by CARB in its 2020 projection provided in the Scoping Plan.[169] Accordingly, the CARB 2020 NAT scenario assumes that energy usage rates (on a per person, per household or per square foot basis) remain at current levels; no new emission reduction measures are enacted; and no project design features or commitments made by Newhall Land and Farming are included, beyond those required by regulation considered in constructing the CARB's 2020 NAT inventory. As described earlier, AB 32 goals can be expressed as a 28.5% reduction relative to the 2020 CARB 2020 NAT scenario. Therefore, our comparison can illustrate to what degree the project fulfills the AB 32 emissions reduction goal if it were applied on a project basis.

[168] The term "CARB 2020 NAT" is used only in this report; the acronym did not exist when the February 2009 Technical Report was published. Many other reports refer to CARB 2020 NAT as the "business as usual scenario" or "BAU scenario". This report uses the new terminology to avoid confusion with the term BAU as it is used in other GHG regulatory context; e.g. the Kyoto Accords. The CARB 2020 NAT relies on specific CARB assumptions for projecting the projects year 2020 emissions.

[169] AB 32 Scoping Plan. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm

All categories of the annual GHG emission inventory--residential and non-residential buildings, mobile sources, water sources, municipal vehicles, public lighting, pools, and area sources--are considered separately, and then combined for an overall comparison.

The approach for the CARB 2020 NAT assessment varies from sector to sector and will be discussed in each section in turn.

5.2.1 Residential CARB 2020 NAT Results

The residential CARB 2020 NAT scenario presented in this report uses the SCE 2004 electricity emission factor, assumes no improvement over Title 24, and assumes no solar power installations on individual homes.

Project design features and cleaner electricity required by the RPS reduce residential emissions 29% below CARB 2020 NAT (Table 4-C-6).

5.2.2 Non-Residential CARB 2020 NAT Results

The non-residential CARB 2020 NAT scenario presented in this report uses the SCE 2004 electricity emission factor, assumes no improvement over Title 24, and assumes no solar power installations on buildings.

Project design features and cleaner electricity required by the RPS reduce non-residential emissions 22% below CARB 2020 NAT (Table 4-D-6 and Table 5-D-2).

5.2.3 Mobile Source CARB 2020 NAT Results

The CARB 2020 NAT scenario incorporates the assumption that development is at the density consistent with future development projected in the Santa Clarita Valley. Because vehicle trip rates are a function of housing density, this results in an approximately 6.6% increase in vehicle trips for the CARB 2020 NAT scenario (Table 5-E-1) over the project estimation.

Landmark's denser development and the Pavley vehicle efficiency reduce mobile source emissions 26% below CARB 2020 NAT (Table 5-E-2).

5.2.4 Area Source CARB 2020 NAT Results

The area source CARB 2020 NAT scenario presented in this report is identical to the project scenario.

5.2.5 Municipal CARB 2020 NAT Results

The municipal CARB 2020 NAT scenario presented in this report uses the SCE 2004 electricity emission factor and assumes no recycled water. Table 5-G-1 present the calculations, methodologies, and final results.

Water recycling, local sourcing of water, and the RPS reduce municipal emissions 42% below CARB 2020 NAT (Table 4-G-1 and Table 5-G-1).

5.2.6 Recreational (Pools) CARB 2020 NAT Results

The recreational (pools) CARB 2020 NAT scenario presented in this report uses the SCE 2004 electricity emission factor and assumes no solar heating. Cleaner electricity also reduces emissions from the CARB 2020 NAT scenario.

Solar heating and cleaner electricity required by the RPS reduce recreational (pool) emissions 85% below CARB 2020 NAT (Table 4-H-3 and Table 5-H-2).

5.3 Summary of CARB 2020 NAT Results

The sections above discuss the calculations and assumptions made in calculating the CARB 2020 NAT scenario. The CARB 2020 NAT analysis only includes annual emissions, and not the one-time vegetation and construction emissions. Table 4-I-1 adds the project emissions from all sources and compares to the sum of the CARB 2020 NAT emissions from these sources. Table 4-I-1 shows that, overall, the project is 31.2% better than the CARB 2020 NAT scenario and exceeds AB 32's 28.5% reduction for all design alternatives.

Even if the project emissions for vegetation and construction are included[170] in the overall project CARB 2020 NAT scenario, Landmark is still over 30% better than the CARB 2020 NAT scenario.

[170] Annualized by 40 years. Note that this is highly conservative as Newhall is taking measures to reduce emissions from these sources. Also, because vegetation is not included in the ARB scoping plan, vegetation should likely not be included here.

6 Executive Order S-3-05 (Statewide GHG Targets)

Executive order S-03-05 mandates that California emit 80% less GHGs in 2050 than it emitted in 1990. As of 2004, California was emitting 12% more GHG emissions than in 1990. For California to emit 80% less than it emitted in 1990, the emissions would be only 18% of the 2004 emissions. Accounting for a population growth from 35,840,000 people in 2004 to approximately 55,000,000 people in 2050, the emissions per capita would have to be only 12% of what they were in 2004. This means 88% reductions in per capita GHG emissions from today's emissions intensities must be realized in order to achieve California's 2050 GHG goals. Clearly, energy efficiency and reduced vehicle miles traveled will play important roles in achieving this aggressive goal, but the decarbonization of fuel will also be necessary.

The extent to which GHG emissions from traffic at (Landmark Village) will change in the future depends on the quantity (e.g. number of vehicles, average daily mileage) and quality (i.e. carbon content) of fuel that will be available and required to meet both regulatory standards and residents' needs. As discussed above, renewable power requirements, the low carbon fuel standard, and vehicle emissions standards will all decrease GHG emissions per unit of energy delivered or per vehicle mile traveled. In this section we discuss the impact that future regulated fuel decarbonization may have on vehicular emissions at Landmark Village.

The California Energy Commission (CEC) published "State Alternative Fuels Plan"[171] in which it noted the existence of "challenging but plausible ways to meet 2050 [transportation] goals." The main finding from this analysis is that reducing today's average per capita driving miles by about 5 percent (or back to 1990 levels), in addition to the decarbonization strategies listed below, would achieve S-03-05 goals of 80% below 1990 levels. The approach described below is directly[172] from the CEC report.

An 80 percent reduction in GHG emissions associated with personal transportation can be achieved even though population grows to 55 million, an increase of 50 percent. The following set of measures could be combined to produce this result:

1. Lowering the energy needed for personal transportation by tripling the energy efficiency of on-road vehicles in 2050 with:
    a. Conventional gas, diesel, and flexible fuel vehicles (FFVs) averaging more than 40 miles per gallon (mpg).
    b. Hybrid gas, diesel, and FFVs averaging almost 60 mpg.
    c. All electric and plug-in hybrid electric vehicles (PHEVs) averaging well over 100 mpg (on a greenhouse gas equivalents [GGE] basis) on the electricity cycle.
    d. Fuel cell vehicles (FCVs) averaging over 80 mpg (on a GGE basis).

[171] State Alternative Fuels Plan. December 2007 CEC-600-2007-011-CMF. Available online at: http://www.energy.ca.gov/2007publications/CEC-600-2007-011/CEC-600-2007-011-CMF.PDF
[172] Ibid. Page 67 and 68.

2. Moderating growth in per capita driving, reducing today's average per capita driving miles by about 5 percent or back to 1990 levels.
3. Changing the energy sources for transportation fuels from the current 96 percent petroleum-based to approximately:
   a. 30 percent from gasoline and diesel from traditional petroleum sources or lower GHG emission fossil fuels such as natural gas.
   b. 30 percent from transportation biofuels.
   c. 40 percent from a mix of electricity and hydrogen.
4. Producing transportation biofuels, electricity, and hydrogen from renewable or very low carbon-emitting technologies that result in, on average, at least 80 percent lower life cycle GHG emissions than conventional fuels.
5. Encouraging more efficient land uses and greater use of mass transit, public transportation, and other means of moving goods and people.

The measures described above are the types of measures that will yield required reductions. Although these types of measures are expected to occur and are consistent with the Landmark development plan, Landmark is not claiming any credit for these measures.

Executive Order S-01-07[173] (January 18, 2007) initiated the Low Carbon Fuel Standard (LCFS) as a Discrete Early Action under AB 32, which requires implementation by January 2010. The LCFS requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by the ARB.[174] The LCFS requires a reduction in carbon intensity of transportation fuels by at least 10% by 2020. The LCFS encompasses the life cycle emissions for fuels (i.e., "well-to-wheel"). Thus, not only does it include the vehicle tailpipe emissions from the use of the fuel, it also includes all the energy used to produce, process, and transport the fuel. By design, the implementation of the LCFS would decrease the overall GHG emissions for California. However, its impact on vehicle tailpipe emissions is not obvious. As the Landmark GHG inventory only considers the vehicle tailpipe emissions, and not the life cycle emissions for transportation, it is difficult to quantitatively assess the impacts of the LCFS on the inventory.

The Scoping Plan States "Reducing our greenhouse gas emissions by 80 percent will require California to develop new technologies that dramatically reduce dependence on fossil fuels, and shift into a landscape of new ideas, clean energy, and green technology."

[173] The text of Executive Order S-01-07 can be found here: http://www.arb.ca.gov/fuels/lcfs/eos0107.pdf

[174] ARB's Proposed Concept Outline for the California Low Carbon Fuel Standard Regulation (March 2008) is available here: http://www.arb.ca.gov/fuels/lcfs/032008lcfs_reg_outline.pdf

7 Conclusions

ENVIRON prepared an emissions inventory for the Landmark Village development. This emissions inventory was prepared consistent with the methodologies established by the CCAR where possible. The Landmark Village emissions inventory considers eight categories of GHG emissions: emissions due to vegetation/land use changes, emissions from construction activities, residential emissions, commercial building emissions, mobile source emissions, municipal emissions, area source emissions, and recreation center emissions. The emissions from construction and land use change would be one-time emissions events, while the other emissions would occur annually, throughout the life of the project. A quantitative assessment of the impact of a few key laws, rules and regulations to reduce GHG intensity in electricity production and vehicle use was also included.

A variety of methods were employed to develop the GHG emissions inventory. In addition to well established emission factors for certain activities and emission estimates based on similar activities in other representative communities, several different estimation software programs were used. These included EMFAC, OFFROAD, BARBD, and URBEMIS. For energy use in buildings, Micropas energy modeling software was used.

Emissions from the various aspects of the Landmark Village development are presented in Table 4-I-1. This table highlights the one-time emissions that would be attributable to project entitlement, and the annual emissions expected to occur each year after the full build out of the development. There are approximately 43,934 tonnes of CO_2e one-time emissions. The annual emissions from the use of the development amount to approximately 20,193 tonnes. Of this amount, 35% result from vehicular emissions associated with residential and commercial activities, and 57% result from the energy use associated with residential and non-residential buildings. If the one-time emissions are annualized assuming a 40-year development life (which is likely low), then the one-time emissions account for approximately 5% of the overall emissions.

This inventory was prepared assuming that all emissions from Landmark Village are “new,” in the sense that, absent the development of Landmark Village, these emissions would not occur. It is also important to note that these emissions are estimated assuming that the carbon intensity of the electricity supply system and transportation system change in the future due to state and federal laws in both areas – specifically the Pavley standards for vehicles and the RPS of 20% for electricity.

Landmark Village residential GHG emissions per dwelling unit are calculated to be 29% lower than the emissions from a minimally 2005 Title 24 compliant home of the same size. Landmark Village non-residential GHG emissions per square foot are calculated to be 22% lower than emissions from a minimally Title 24 compliant building, assuming the same mix of building uses and square footages.

Landmark Village mobile sources emit 42% less GHG emissions when compared to a CARB 2020 NAT scenario where the development followed standard northern LA county development

practices (i.e. Palmdale Lancaster) and the GHG emissions from vehicles was as assumed for the 2030 scenario in the Scoping Plan. Counting both the reduced VMT as compared to current northern Los Angeles County and the 20% decrease in GHG emissions per VMT of the vehicle fleet in 2030 indicate that Landmark Village would be 42% better than CARB 2020 NAT on a GHG basis when compared to buildout VMT in Santa Clarita.

Landmark Village water use may be 51% better in GHG emissions than a comparative CARB 2020 NAT for a similar Southern California development. The GHG savings are mainly from recycling water and obtaining water from local sources.

Landmark Village pool use will be 85% better in GHG emissions than a comparative CARB 2020 NAT for a similar Southern California development. The GHG savings are mainly from using solar heating.

It is yet unclear as to how to compare construction and vegetation change emissions to AB 32 mandated goals. Overall, the reductions in emissions from the residential, non-residential, transportation, municipal, area, and recreational sectors of Landmark Village represent a 31.2% decrease from CARB 2020 NAT emissions; thus, Landmark Village exceeds the AB 32 reduction standards of 28.5%. Even counting vegetation and construction, Landmark Village is still 30.1% below the level of CARB 2020 NAT.

Anticipated state and federal regulatory developments will have various effects on Landmark Village's GHG inventory. Both the Pavley vehicle emissions standards and the increased CAFE standards under the Energy Independence and Security Act of 2007 (EISA) will result in a decrease in Landmark Village's GHG inventory as tailpipe emissions would be lower. California's Renewables Portfolio Standard (RPS) 20% target for 2010 and anticipated 33% target for 2020 will also decrease Landmark Village's GHG inventory from electricity use. Reaching the 2010 target will decrease the indirect emissions from electricity use. The Pavley Standards and the RPS 2020 20% target were both were quantitatively accounted for in this inventory.

The Low Carbon Fuel Standard (LCFS) is unlikely to have a large effect on Landmark Village's GHG inventory because the inventory only accounts for tailpipe emissions whereas the LCFS addresses the life cycle emissions for each fuel. Tailpipe emissions would decrease as a result of LCFS only if there is a significant shift from gasoline to alternative fuels that have a combination of fuel efficiency and carbon content that result in lower CO_2 emissions per mile driven. While the LCFS may not lead to a significant change in the vehicle tailpipe emissions, it will lead to a decrease in California GHG emissions because it also accounts for emissions from production, processing, and the transport of fuels. The LCFS was not quantitatively accounted for in this inventory.

The CEC published[175] a "challenging but plausible ways to meet 2050 [transportation] goals." The main finding from this analysis is that reducing today's average per capita driving miles by

[175] STATE ALTERNATIVE FUELS PLAN. December 2007 CEC-600-2007-011-CMF. Available online at: http://www.energy.ca.gov/2007publications/CEC-600-2007-011/CEC-600-2007-011-CMF.PDF

about 5 percent (or back to 1990 levels), in addition to decarbonization strategies, would achieve S-03-05 goals of 80% below 1990 levels. We would anticipate that similar decarbonization of the electricity supply would have a similar impact on the other sources major sources of GHGs from the development, such as the residential and commercial GHG emissions.

Table 4-1
GHG Emissions from Renewable Power Standards
Landmark Village
Newhall Ranch, CA

Renewable Energy Source[1]	Energy Delivered[1] [million kWh]	Percentage of Renewable Energy Delivered [%]
Wind	2,359	21%
Small hydro	449	4%
Biogas	0	0%
Solar	0	6%
Biomass	786	7%
Geothermal	6,965	62%
Total[2]	11,234	100%
% of Total Energy From Renewables[1]	13%	
% of Total Energy From Non-Renewables	87%	
Total Energy Delivery[2]	83,958,770	MWh
from renewables	11,234,288	MWh
from non-renewables	72,724,482	MWh
CO_2 Emissions per Total Energy Delivered	630.89	lbs CO_2/MWh delivered
Total CO_2 Emissions[3]	24,026,108	metric tonnes CO_2
CO_2 Emissions per Total Non-Renewable Energy[4]	728.34	lbs CO_2/MWh delivered
Estimated Emission Factors for Total Energy Delivered[5]		
2010 RPS (20%)	582.7	lbs CO_2/MWh delivered
2020 RPS (33%)	488.0	lbs CO_2/MWh delivered

Notes:

1. The renewable energy portfolio for Southern California Edison, the power utility that is most likely to provide power to the development. The renewable energy distribution is based on 2007 data available from the SCE PUP report.

2. Total energy value reported for 2007 by Southern California Edison in California Climate Action Registry PUP report.

3. The amount of CO2 emissions is provided in Southern California Edison's Power/Utility Protocol (PUP) Report for 2007.

4. The emissions metric presented here is calculated based on the total CO_2 emissions divided by the energy delivered from non-renewable sources.

5. The emission factors for total energy delivered are estimated by multiplying the percentage of energy delivered from non-renewable energy by the CO2 emissions per total non-renewable energy metric calculated above. Two emission factors are presented here for the current 20% RPS goal for 2010 and the presumed 33% RPS for 2020. The estimate provided here and the 2006 PUP report issued by Southern California Edison assume that renewable energy sources do not result in any CO2 emissions. This is not necessarily true for biogas- and biomass-sourced energy but some consider these sources to be "carbon neutral."

Abbreviations:

CO_2 = carbon dioxide
kWh = kilowatt-hour
lbs = pounds
MWh = Megawatt-hour
PUP = Power/Utility Protocol
RPS = Renewables Portfolio Standard
SCE = Southern California Edison

Table 4-2
Emission Factors by Energy Source
Landmark Village
Newhall Ranch, CA

Energy Source	Scenario	Unit	Conversion Factor [lb CO_2/Unit]	Conversion Factor [tonne CO_2/Unit]
Electricity	2004 emission factor[1]	kWh	0.679	3.08E-04
	2007 emission factor[1]		0.631	2.86E-04
	2010 RPS (20%)[3]		0.583	2.64E-04
Natural Gas[2]	-	kBTU	0.117	5.31E-05

Notes:
1. Emission factor for electricity provided by Southern California Edison for the year 2004 and 2007, obtained from the California Climate Action Registry Database.
2. Emission factor for natural gas obtained from California Climate Action Registry Reporting Protocol, Table C7.

3. Estimated emission factor for total energy delivered after implementation of the Renewables Portfolio Standard. Emission factor has been adjusted to reflect 20% of power provided by renewables by multiplying the SCE 2007 emission factor by (1-RPS renewable %) / (1-SCE 2007 renewable %). RPS renewable % is 20% and the SCE 2007 renewable % is 13%.

Abbreviations:
CO_2e - carbon dioxide equivalent
kBTU - 1000 British thermal units
kWh - kilowatt-hour
lb - pound
RPS - Renewables Portfolio Standard

Sources:
California Climate Action Registry General Reporting Protocol, Version 3.1 (January 2009). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

California Climate Action Registry Database: Southern California Edison Company 2007 PUP Report. 2008. Available at: https://www.climateregistry.org/CARROT/public/Reports.aspx

Table 4-A-1
Change in CO_2 Sequestration Due to Change in Land Use Type
Landmark Village
Newhall Ranch, California

Landmark Village Land Designation[A]	Mapped IPCC Land Designation[B]	Ratio of Above Ground / Below Ground Biomass[C]	Notes	Above Ground Biomass[D]	Notes	Total Biomass[E]	Notes	Tonnes Dry Matter Carbon/Acre[F]	Sequestered CO_2 / Acre[G]	Total Developed Area	Change in CO_2 Sequestered
				[tonne d.m./acre]		[tonne d.m./acre]		[tonne/acre]	[tonne/acre]	[acres]	[tonne]
Agricultural	Cropland	--		--		4.0	L	1.9	7	341	2,378
Non-native grassland	Grassland	--		--		2.5	M	1.2	4	116	493
Cottonwood willow riparian forest	Forest land	4.35	H	53	J	65		30	112	8.8	979
Live oak woodland	Forest land	4.35	H	53	J	65		30	112	4.3	480
Coastal sage scrub	Forest land	2.17	I	5.7	K	8		4	14	267.3	3,856
Coastal sage Chaparral scrub	Forest land	2.17	I	5.7	K	8		4	14	11.9	172
Elderberry scrub	Forest land	2.17	I	5.7	K	8		4	14	7.7	112
Arrow weed scrub	Forest land	2.17	I	5.7	K	8		4	14	5.7	83
Mulefat scrub	Forest land	2.17	I	5.7	K	8		4	14	10.9	157
Southern willow scrub	Forest land	2.17	I	5.7	K	8		4	14	0.6	8
River wash	--	--		--		0	N	0	0	1.7	0
Freshwater marsh	--	--		--		0	N	0	0	0.1	0
Alluvial scrub	Forest land	2.17	I	5.7	K	8		4	14	0.1	1
Great basin scrub	Forest land	2.17	I	5.7	K	8		4	14	2.5	36
Scalebroom scrub	Forest land	2.17	I	5.7	K	8		4	14	4.3	62
Other land	--	--		--		0		0	0	20.7	0
Ruderal vegetation	Grassland	--		--		2.5	O	1.2	4.3	136.0	579
Total										940	**9,396**

Notes:

A. Land types shown here represent vegetation that will be potentially removed upon development. Land designations from the Landmark Village Excecutive Summary of DEIR, page ES-43.

B. Landmark Village land types are mapped to generalized IPCC Land Designations (IPCC 2006).

C. This value is used to calculate total biomass when data is only available for the above-ground biomass for a particular land type.

D. Numbers listed are used in conjunction with above ground/below ground ratios to calculate total biomass per acre. Values from source converted to tonne/acre.

E. Total biomass is either 1.) Listed directly in the IPCC protocol, or 2.) Calculated from above ground biomass and the Above Ground / Below Ground biomass ratios as follows: Total = Above + (Above / Ratio). Values from source converted to tonne/acre as necessary.

F. Total biomass multiplied by carbon fraction in plant material (0.47) to calculate carbon content. From IPCC (2006), default value for Forest Land (Table 4.3 of IPCC). Here, it is assumed that agricultural vegetation has the same carbon fraction as other vegetation types.

G. It is conservatively assumed that all carbon is eventually converted into CO_2. Multiply the mass of carbon by 3.67 to calculate the final mass of CO_2 (the molecular mass of CO_2 / the molecular mass of carbon is 44/12 or 3.67).

H. The value for the ratio of above ground/below ground biomass for forest land corresponds to the IPCC value for temperate mountain/continental systems (other broadleaf above-ground biomass 75-150 tonnes/hectare)(Table 4.4 of IPCC).

I. The value for the ratio of above ground/below ground biomass for various scrub types corresponds to the IPCC value for temperate mountain/continental systems (other broadleaf above-ground biomass <75 tonnes/hectare)(Table 4.4 of IPCC). This value is likely to be conservative since scrub is a type of shrub which is likely to have a smaller ratio than for trees.

J. The value for above ground biomass for forest land corresponds to the IPCC value for temperate mountain/continental systems (North and South America > 20 years)(Table 4.7 of IPCC).

K. The value for above ground biomass applied to various scrub types is based on a value of 1,417 g biomass/m^2 (or 5.7 tonne biomass/acre) for coastal sage scrub (Gray and Schlesinger). It is assumed that all scrub types will have similar values.

L. Total biomass for agricultural land corresponds to IPCC value for cropland (Table 8.4 of IPCC).

M. Total biomass for non-native grassland corrsponds to IPCC value for grassland in warm temperate-dry climates (Table 6.4 of IPCC).

N. There is limited data on biomass content of river wash and freshwater marsh. For the purposes of this inventory, it will be assumed that these land types have negligible biomass associated with them. Any changes in GHG emissions are expected to be de minimis because the amount of these land types is very low.

O. Ruderal vegetation is generally the first type to occupy disturbed land. It is assumed here that ruderal vegetation will generally be different types of grass.

Abbreviations:

CO_2 - carbon dioxide
d.m. - dry matter
DEIR - Draft Environmental Impact Report
IPCC - Intergovernmental Panel on Climate Change

Sources:

2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4 Agriculture, Forestry and Other Land Use. Available online at http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm
Draft Environmental Impact Report of Landmark Village, Los Angeles County Department of Regional Planning. Available online at http://planning.lacounty.gov/spLandmark.htm
Gray, J.T and W.H. Schlesinger. 1981. Biomass, Production, and Litterfall in the Coastal Sage Scrub of Southern California. *Amer. J. Bot.* 68(1):24-33.

Table 4-A-2
Average Annual CO_2 Sequestration Per Tree
Landmark Village
Newhall Ranch, California

Species Class	Annual CO_2 Sequestered Per Tree[1] [tonne CO_2/year]
Aspen	0.035
Soft Maple	0.043
Mixed Hardwood	0.037
Hardwood Maple	0.052
Juniper	0.012
Cedar/Larch	0.026
Douglas Fir	0.045
True Fir/Hemlock	0.038
Pine	0.032
Spruce	0.034
Average Default	0.035
Species Class	**Total CO_2 Sequestered by All Trees Planted at Landmark Village[2] [tonne CO_2]**
Average Default (2,500 trees)	1,771

Notes:

1. Annual mass of carbon accumulated is converted into mass of CO_2 sequestered based on the assumption that all carbon accumulated in the tree represents an equivalent amount of CO_2. Annual carbon accumulation rates provided in IPCC (2006) in Table 8.2 of the settlements section. When the Species Class is not provided, an Average Default value of 0.035 for annual CO_2 sequestered per tree is used.

2. Total mass of CO_2 sequestered = average default value of annual CO_2 sequestered per tree (0.035 tonne CO2/year) x number of trees planted at Landmark Village (2,500 trees) x total CO_2 sequestration time (20 years - age at which tree matures and CO_2 sequestration reaches a saturation point).

Abbreviations:

CO_2 - carbon dioxide

Source:

2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories, Volume 4 Agriculture, Forestry and Other Land Use. Available online at http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm

Table 4-B-1
Landmark Village Grading Equipment GHG Emissions
Landmark Village
Newhall Ranch, California

	Equipment-Hours	Horsepower[1]	Load Factor[1]	Emission Factor[1] (g/bhp-hr)	CO_2e Emission[2,3] (tonne)
Scrapers	56,517	313	0.72	568.3	7,238
Crawler Tractors (Dozers)	18,500	147	0.64	568.3	989
Rubber Tired Dozer	11,500	357	0.59	568.3	1,377
Off-Highway Water Trucks	24,500	189	0.5	568.3	1,316
Grader	8,674	174	0.61	568.3	523
Loader/Backhoe	3,736	108	0.55	568.3	126
Excavator	3,278	168	0.57	568.3	178
Off-Highway Trucks[4]	4,300	479	0.57	568.3	667
On-Highway Trucks[5]	10,500	N/A	N/A	N/A	1,793
Crushing/Processing Equipment	1,000	142	0.78	568.3	63
Rollers	2,347	95	0.56	568.3	71
Cranes	203	399	0.43	568.3	20
Drill/Bore Rigs	96	291	0.75	568.3	12
Pavers	26	100	0.62	568.3	1
On-Highway Water Trucks[4]	1,399	189	0.5	568.3	75
Total	**146,576**				**14,449**

Notes:
1. The values of Horsepower, Load Factor, and Emission Factor of each type of equipment are from OFFROAD2007 defaults.
2. The CO_2 Emission calculation formula for each piece of equipment is:
   CO_2 Emission = Total Hours of Operation x HP x Load Factor x Emission Factor x Unit Conversion Factor
3. Assume CO_2 = CO_2e because the contribution of CH_4 and N_2O to overall GHG emissions is likely small (< 1% of total CO_2e) from diesel construction equipment.
4. The horsepower, load factor, and emission factor of off-highway water trucks (from OFFROAD2007) are assumed to be the same as water trucks running under different road conditions.
5. The CO_2 emission calculation of on-highway trucks is different from other offroad equipment. See next table for detailed calculation methodology.

Abbreviations:
bhp - break horsepower
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalent
GHG - greenhouse gas
hr - hour
N/A - see footnote 5
N_2O - nitrous oxide

Table 4-B-2
Landmark Village On-Highway Trucks GHG Emissions Calculation During Grading
Landmark Village
Newhall Ranch, California

Equipment-Hours	Imported Earth[1]	VMT_{total}[2]	CO_2e Emission[3]
	(cubic yard)	(mile)	(tonne)
10,500	4,800,000	960,000	1,793

Notes:
1. The quantity of imported earth for the project was provided by Impact Sciences.
2. The VMT associated with the project is calculated by assuming 20 cubic yards of imported earth per truck and that each truck has a roundtrip travel distance of 4 miles. VMT includes vendor trips associated with infrastructure-related activities (e.g., bank stabilization) and activities directly associated with the project.
3. GHG emissions are calculated as follows

GHG Emissions (CO2) = VMT * EF_{HHD}

The emission factor for on-highway trucks (EF_{HHD} = 1867.8 g/mile) was given by EMFAC2007 under the following conditions:

i. Vehicle Speed: 30 mph - following the default speed of URBEMIS 9.2.4 in the worker commute section.

ii. Ambient Temperature: 75 F, estimated based on the available historical average maximum temperature (77.1F) of Newhall, CA (1989- 97) Http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6165

iii. Relative Humidity: 56% - the mean annual relative humidity of Los Angeles City was used. Http://www.wrcc.dri.edu/htmlfiles/westcomp.rhaft.html

Abbreviations:
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalent
EF - Emission Factor
EMFAC - vehicle emission factor model
F - Fahrenheit
g - gram
GHG - Greenhouse Gas
HHD - Heavy-Heavy Duty Truck
mph - miles per hour
URBEMIS - Urban Emissions Model
VMT - Vehicle Miles Traveled

Table 4-B-3
Landmark Village GHG Emissions from Worker Commutes During Grading
Landmark Village
Newhall Ranch, California

Worker Trips[1]	VMT[2]	EF^{3}_{LDA}		EF_{LDT1}[4]		EF_{LDT2}[4]		GHG Emissions[5]		Total CO_2 Emissions	Total CO_2e Emissions[6,7]
		Running	Startup	Running	Startup	Running	Startup	Running	Startup		
	(miles)	(g/mile)	(g/trip)	(g/mile)	(g/trip)	(g/mile)	(g/trip)	(tonne)			
22,902	581,723	366	209	452	254	454	260	238	11	249	262

Notes:

1. Worker trips were calculated as follows:
   a. Operation hours for each piece of machine = 8 hr per day
   b. Number of working days for each type of equipment = total hours of operation / 8hr per day
   c. Trips per working day = 1.25
   d. Worker Round Trips = Number of working days x 1.25
2. Vehicle Miles Traveled = Worker Round Trips x 12.7 miles per one-way trip x 2. 12.7 miles per one way trip is the default value from URBEMIS 9.2.4
3. The running emission factor depends on the speed of the vehicle. The emission factor used in this calculation refers to the URBEMIS 9.2.4 default vehicle speed: 30 MPH.
   The startup emission factor depends on the settling period before driving. The startup emissions were conservatively calculated based on a 12 hour wait before each engine startup.
4. LDT1: up to 6000 GVW; LDT2: up to 8500 GVW
5. GHG Running Emission calculation formula: GHG Emission = VMT x $(0.5 \times EF_{LDA} + 0.25 \times EF_{LDT1} + 0.25 \times EF_{LDT2})_{Running}$
   GHG Startup Emission calculation formula: GHG Emission = Worker Trips x $(0.5 \times EF_{LDA} + 0.25 \times EF_{LDT1} + 0.25 \times EF_{LDT2})_{Startup}$
   URBEMIS 9.2.4 assumes that LDA and LDT have a 50:50 mixing ratio.
6. $CO_2e = CO_2 / 0.95$: The United States Environmental Protection Agency (USEPA) recommends assuming that CH_4, N_2O, and HFCs account for 5% of GHG emissions from on-road vehicles, taking into account their global warming potentials.
7. The emission factor values of 2010 were used for all calculations.

Abbreviations:

CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalent
g - gram
GHG - Greenhouse Gas
EF - Emission Factor
GVW - Gross Vehicle Weight
HFC - hydrofluorocarbons
hr - hour
LDA - Light Duty Auto
LDT - Light Duty Truck
URBEMIS - Urban Emissions Model
VMT - Vehicle Miles Traveled

Table 4-B-4
Landmark Village Overall Construction GHG Emissions
Landmark Village
Newhall Ranch, California

Location	Grading[1]	Building[2]	Total GHG Emissions
	(tonnes CO_2e)		
Landmark Village	14,711	21,598	**36,309**

Notes:
1. See previous tables for detailed calculations.
2. Impact Sciences provided ENVIRON with URBEMIS 9.2.2 runs for Landmark Village construction from 2008 - 2012. URBEMIS calculates CO_2 emissions from off-road construction equipment, worker commuting, and vendor trips based on the size and type of buildings specified by the user and URBEMIS defaults.

Abbreviations:
CO_2e - carbon dioxide equivalent
GHG - Greenhouse Gas

Table 4-C-1
Specifications for Homes Modeled using Micropas
Landmark Village
Newhall Ranch, CA

Specification	Units	Micropas[1]		
		Apartment	Attached	Single Family
Climate Zone		California Climate Zone 9		
Number of Dwelling Units per Building	DU	16	8	1
Dwelling Unit Size[2]	SF	1,260	1,764	3,322

Notes:

1. Micropas 7.3 is a building energy efficiency modeling package approved by the California Energy Commission as a 2005 Title 24 residential Alternative Compliance Method (ACM). The Micropas software calculates the site energy use per square foot per year and the Time Dependent Valuation (TDV) of the energy use per square foot per year to determine Title 24 compliance. Micropas version 7.3 is available for purchase at http://www.micropas.com/

2. The Micropas specifications are for the actual home modeled in Micropas whose square footage is closest to the average square footage per dwelling unit as specified by Newhall. The following dwelling unit sizes are those specified by Newhall:
   a. The large-end apartments will be 1,250 square feet.
   b. The large-end attached homes will be 1,750 feet.
   c. The large-end single family home will be 3,300 square feet.

Abbreviations:
DU - Dwelling Unit
SF - Square Feet

Table 4-C-2
Energy Use per Residential Dwelling Unit: Appliances and Plug-ins
Landmark Village
Newhall Ranch, CA

		Dwelling Size		Electricity Delivered (kWh/DU/year)[3]									Natural Gas Delivered (MMBTU/DU/yr)[3]		
Type	**Type**	**Square Footage / DU[1]**	**Bedrooms / DU[2]**	**Refrigerator**	**Clothes Washer**	**Clothes Dryer (Electric)[4]**	**Dishwasher**	**Cooking Range (Electric)[5]**	**Total Major Appliances**	**Plug-in Lighting**	**MELs**	**Total**	**Cooking Range (Gas)[6]**	**Clothes Dryer (Gas)[7]**	**Total**
Standard Appliances	Apartment	1,250	2.0	669	88	380	172	252	1,560	291	446	2,296	1.9	2.2	4.1
	Attached	1,750	3.0	669	105	456	206	303	1,738	371	525	2,634	2.3	2.6	4.9
	Single Family	3,300	4.0	669	123	531	240	353	1,916	619	679	3,214	2.6	3.1	5.7

Notes:
1. Square footage per dwelling unit as specified by Newhall.
2. ENVIRON conservatively assumed a high number of bedrooms per dwelling unit, as a higher number of bedrooms results in higher energy usage.
3. Energy use per residential dwelling unit is based on information in BARBD Table 12.
4. Dryers may be either electric or natural-gas fueled. This value represents 1/2 the electricity required for electric dryers.
5. Cooking ranges may be either electric or natural-gas fueled. This value represents 1/2 the electricity required for electric stoves.
6. This value represents 1/2 the natural gas required for natural gas stoves.
7. This value represents 1/2 the natural gas required for natural gas dryers.

Abbreviations:
BARBD - Building America Research Benchmark Definition
DU - Dwelling Unit
kWh - kilowatt-hour
MMBTU - million british thermal units
MEL - Miscellaneous electric load

Source:
R. Hendron. Building America Research Benchmark Definition. Technical Report NREL/TP-550-42662. January 2008.

Table 4-C-3
Energy Use per Residential Dwelling Unit
Landmark Village
Newhall Ranch, CA

	Dwelling Sizes		Electricity Delivered						Natural Gas Delivered			
			Micropas[2]	Micropas[2]	BARBD[3]	BARBD[3]	BARBD[3]		Micropas[2]	Micropas[2]	BARBD[3]	
Title 24 Compliance	**Type**	**Square Footage / DU[1]**	**Heating**	**Cooling**	**Hard Wired Lighting**	**Major Appliances[4,5]**	**Lighting and Plug-ins[6]**	**Total**	**Heating**	**Domestic Hot Water**	**Gas Dryers and Oven Ranges[4,5]**	**Total**
			[kWh / DU / year]						**(MMBTU natural gas / DU / year)**			
Minimally 2005 Title 24 Compliant	Apartment	1,250	0	671	1,514	1,560	737	4,481	4	20	4	28
	Attached	1,750	0	656	1,834	1,738	896	5,124	5	23	5	32
	Single Family	3,300	0	1,867	2,826	1,916	1,298	7,907	21	25	6	52
Minimally 2008 Title 24 Compliant[7]	Apartment	1,250	0	539	1,216	1,560	737	4,051	4	18	4	26
	Attached	1,750	0	527	1,473	1,738	896	4,634	4	21	5	30
	Single Family	3,300	0	1,443	2,184	1,916	1,298	6,841	19	23	6	47
15% better than 2008 Title 24[8]	Apartment	1,250	0	458	1,033	1,560	737	3,788	3	16	4	23
	Attached	1,750	0	448	1,252	1,738	896	4,334	4	18	5	26
	Single Family	3,300	0	1,227	1,857	1,916	1,298	6,297	16	19	6	41

Notes:
1. Square footage per dwelling unit as specified by Newhall.
2. The Minimally 2005 Title 24 Compliant scenario shows energy use from a 2005 Title 24 compliant house. Data obtained from Micropas 7.3 software.
3. Estimated using guidance provided by the US Department of Energy (Table 12 of "Building America Research Benchmark Definition, Updated December 20, 2007").
4. Cooking may be performed on an electric range or a natural gas stove. The values shown in these columns are 50% of the energy/heat used for each stove type.
5. Dryers and ovens may be electric or gas. The values presented in this table represent 50% of the electricity and/or natural gas use for each equipment type.
6. "Lighting and Plug-ins" refers to electricity use associated with plug-in lighting, plug-in appliances, and miscellaneous electric loads. This energy use is calculated using guidance from BARBD. Energy use for each dwelling type is based on the number of bedrooms, total finished floor area, and a California-specific plug load multiplier. Refer to the previous table for load-specific energy estimates.
7. Based on California Energy Commission report on estimated first-year electricity and gas savings due to 2008 standards for single-family and multi-family homes, relative to 2005 standards. Reductions are taken with the assumption that the Micropas estimate reflects heating/cooling/hot water electricity use for homes that are minimally compliant with 2005 Title 24 standards.
8. Newhall has committed to a 15% improvement in energy use in the building envelope over 2008 Title 24 standards.

Abbreviations:
BARBD - Building America Research Benchmark Definition
DU - Dwelling Unit
kWh - kilowatt-hour
MMBTU - million British thermal units

Source:
R. Hendron. Building America Research Benchmark Definition. Technical Report NREL/TP-550-42662. January 2008.
California Energy Commission. 2007. Impact Analysis: 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07_IMPACT_ANALYSIS.PDF

Table 4-C-4
CO_2 Emissions per Dwelling Unit
Landmark Village
Newhall Ranch, CA

Title 24[1] Compliance	Type	Square Footage / DU[2]	Title-24 Systems[1]		Title-24 Systems and Major Appliances		Title-24 Systems and All MELs		Title-24 Systems	Title-24 Systems and Major Appliances	Title-24 Systems and All MELs
			CO_2 Electricity[3]	CO_2 Natural Gas[4]	CO_2 Electricity[3]	CO_2 Natural Gas[4]	CO_2 Electricity[3]	CO_2 Natural Gas[4]	CO_2 Total	CO_2 Total	CO_2 Total
			(lbs / DU / year)						(tonnes / DU / year)		
Minimally 2005 Title 24 Compliant[5]	Apartment	1,250	1,483	2,786	2,542	3,263	3,042	3,263	1.9	2.6	2.9
	Attached	1,750	1,690	3,184	2,870	3,757	3,479	3,757	2.2	3.0	3.3
	Single Family	3,300	3,186	5,415	4,487	6,083	5,368	6,083	3.9	4.8	5.2
Minimally 2008 Title 24 Compliant[6]	Apartment	1,250	1,022	2,591	1,931	3,068	2,360	3,068	1.6	2.3	2.5
	Attached	1,750	1,165	2,961	2,178	3,534	2,700	3,534	1.9	2.6	2.8
	Single Family	3,300	2,114	4,874	3,230	5,542	3,986	5,542	3.2	4.0	4.3
15% better than 2008 Title 24[6,7]	Apartment	1,250	869	2,202	1,778	2,680	2,207	2,680	1.4	2.0	2.2
	Attached	1,750	990	2,517	2,003	3,090	2,525	3,090	1.6	2.3	2.5
	Single Family	3,300	1,797	4,143	2,913	4,810	3,669	4,810	2.7	3.5	3.8

Notes:
1. Title 24 - California Code of Regulations (CCR), Title 24, also known as the California Building Standards Code.
2. Square footage per dwelling unit as specified by Newhall.
3. Converted from kWh to lb CO2 using emission factor from the California Climate Action Registry Database: Southern California Edison Company PUP Report.
4. Converted from MMBTU to lb CO2 using emission factor from California Climate Action Registry General Reporting Protocol (CCAR GRP).
5. Emission factor for electricity provided by Southern California Edison for year 2004, obtained from the California Climate Action Registry Database. Emission factor for natural gas obtained from California Climate Action Registry Reporting Protocol, Table C7.
6. Emission factor for electricity provided by Southern California Edison, obtained from the California Climate Action Registry Database. This has been adjusted to account for the 20% Renewable Portfolio Standard required for utilities to meet by 2010. Emission factor for natural gas obtained from California Climate Action Registry Reporting Protocol, Table C7.
7. Newhall has committed to a 15% improvement in energy use in the building envelope over 2008 Title 24 standards.

Abbreviations:
CO2 - carbon dioxide
DU - Dwelling Unit
kWh - kilowatt-hour
lb - pound
SF - Square Feet

Sources:
California Climate Action Registry General Reporting Protocol, Version 3.1 (January 2009). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf
California Climate Action Registry Database: Southern California Edison Company 2007 PUP Report. 2008. Available at: Available at: https://www.climateregistry.org/CARROT/public/Reports.aspx

Table 4-C-5
CO_2 Emissions from Electricity and Natural Gas Usage in Residential Dwelling Units
Landmark Village
Newhall Ranch, CA

Title 24[1] Compliance	Housing Type	# Dwelling Units[2]	Title-24 Systems			Title-24 Systems and Major Appliances			Title-24 Systems and All MELs (Total Emissions)			Total Emissions With Renewable Source[3]		
			CO_2 Emission Factor	Total CO_2 Emissions		CO_2 Emission Factor	Total CO_2 Emissions		CO_2 Emission Factor	Total CO_2 Emissions		CO_2 Emission Factor	Total CO_2 Emissions	
			(tonne CO_2 / DU / year)	(tonne CO_2 / year)		(tonne CO_2 / DU / year)	(tonne CO_2 / year)		(tonne CO_2 / DU / year)	(tonne CO_2 / year)		(tonne CO_2 / DU / year)	(tonne CO_2 / year)	
Minimally 2005 Title 24 Compliant	Apartment	451	1.9	873	**3,590**	2.6	1,188	**4,723**	2.9	1,290	**5,138**	2.9	1,290	**4,820**
	Attached	685	2.2	1,515		3.0	2,059		3.3	2,248		3.3	2,248	
	Single Family	308	3.9	1,202		4.8	1,477		5.2	1,600		4.2	1,281	
Minimally 2008 Title 24 Compliant	Apartment	451	1.6	739	**2,997**	2.3	1,023	**4,023**	2.5	1,111	**4,379**	2.5	1,111	**4,105**
	Attached	685	1.9	1,282		2.6	1,775		2.8	1,937		2.8	1,937	
	Single Family	308	3.2	976		4.0	1,225		4.3	1,331		3.4	1,058	
15% better than 2008 Title 24	Apartment	451	1.4	628	**2,548**	2.0	912	**3,573**	2.2	1,000	**3,929**	2.2	1,000	**3,656**
	Attached	685	1.6	1,090		2.3	1,582		2.5	1,745		2.5	1,745	
	Single Family	308	2.7	830		3.5	1,079		3.8	1,185		3.0	912	

Notes:
1. Title 24 - California Code of Regulations (CCR), Title 24, also known as the California Building Standards Code.
2. From Newhall Ranch Specific Plan.
3. Newhall has committed to using renewable electricity equivalent to putting photovoltaic systems on all Single Family detached residences. For this calculation, Single Family dwelling units are assumed to be provided with a 2.0 kW solar system from Sunpower company. The yearly electricity savings are estimated to be 3356 kWh for a 2 kW solar system with a 30 degree roof slope and a south roof direction as provided for the City of Santa Clarita, CA.

Abbreviations:
CO_2 - carbon dioxide
DU - Dwelling Units
MEL - Miscellaneous electric loads

Source:
California Climate Action Registry General Reporting Protocol, Version 3.1 (January 2009). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf
California Climate Action Registry Database: Southern California Edison Company 2007 PUP Report. 2008. Available at: Available at: https://www.climateregistry.org/CARROT/public/Reports.aspx
Sunpower Solar Calculator, Sunpower Company. Available at: http://www.sunpowercorp.com/For-Homes/How-To-Buy/Solar-Calculator.aspx

Table 4-C-6
CO_2 Emissions from Electricity and Natural Gas Usage in Residential Dwelling Units with Renewable Sources
Landmark Village
Newhall Ranch, CA

Title 24 and Renewable Scenario[1,2]	Final CO_2 (Tonnes CO_2 / year)	Total % Improvement over 2005 Title 24
Minimally 2005 Title 24 Compliant	5,138	
Minimally 2008 Title 24 Compliant	4,379	15%
15% better than Minimally 2008 Title 24 Compliant, no renewables	3,929	24%
15% better than Minimally 2008 Title 24 Compliant, with renewables	3,656	29%

Notes:
1. Title 24 - California Code of Regulations (CCR), Title 24, also known as the California Building Standards Code.
2. Newhall has committed to using renewable electricity equivalent to putting photovoltaic systems on all Single Family detached residences. For this calculation, Single Family dwelling units are assumed to be provided with a 2.0 kW solar system from Sunpower company. The yearly electricity savings are estimated to be 3356 kWh for a 2 kW solar system with a 30 degree roof slope and a south roof direction as provided for the City of Santa Clarita, CA.

Abbreviations:
CO_2 - carbon dioxide

Source:
Sunpower Solar Calculator, Sunpower Company. Available at: http://www.sunpowercorp.com/For-Homes/How-To-Buy/Solar-Calculator.aspx

Table 4-D-1
Land Use Categories Present in Landmark Village (Non-Residential)
Landmark Village
Newhall Ranch, California

General Building Type[1]	Building Area (Landmark) (SF)	%[2]	Refined Building Type[3]	%[4]	Modeled CEUS Building Category[5]	Building Area (SF)
Grocery	41,784	100%	-	100%	Grocery	41,784
Misc Retail / Commercial / Office	968,002	25%	Office	50%	Large Office	121,000
				50%	Small Office	121,000
		20%	Restaurant	100%	Restaurant	193,600
		55%	Retail	100%	Retail	532,401
Hotel	23,213	100%	-	100%	Lodging	23,213
Public Safety	31,500	100%	-	100%	Miscellaneous	31,500
Institutional (schools, library, etc.)	25,965	100%	-	100%	School	25,965

Notes:
1. Five main building types provided by Newhall.
2. The percentage of each Refined Building Type present in the General Building Type.
3. The subcategories of General Building Type provided by Newhall.
4. The percentage of each Modeled Building Category present in the Refined Building Type.
5. The CEUS building type used in modeling that represents each Refined Building Type.

Abbreviations:
CEUS - California Commercial End-Use Survey
CO_2 - carbon dioxide
SF - Square Feet

Sources:
Land use breakdown provided by Newhall, presented as it maps to CEUS building types.

Table 4-D-2
Non-Residential Electricity End-Use
Landmark Village
Newhall Ranch, California

		CEUS Building Type							
End Use[1]	**Title 24 System[2]**	**Restaurant**	**Retail**	**Small Office**	**Grocery**	**Large Office**	**Lodging**	**Miscellaneous**	**School**
Air Compressor	No	0%	0%	1%	0%	1%	0%	4%	0%
Cooking	No	29%	1%	1%	5%	1%	8%	2%	2%
Cooling	Yes	14%	17%	21%	8%	20%	25%	14%	16%
Exterior Lighting	No	9%	9%	11%	3%	5%	6%	11%	9%
Heating	Yes	0%	0%	0%	0%	2%	6%	1%	2%
Interior Lighting	No	12%	39%	25%	19%	23%	24%	21%	36%
Miscellaneous	No	3%	6%	8%	2%	2%	7%	12%	4%
Motors	No	1%	1%	6%	1%	4%	4%	14%	1%
Office Equipment	No	2%	2%	12%	1%	17%	3%	2%	4%
Process	No	0%	0%	0%	0%	0%	0%	0%	0%
Refrigeration	No	22%	8%	4%	54%	3%	9%	10%	9%
Ventilation	Yes	8%	15%	10%	6%	22%	9%	8%	13%
Water Heating	Yes	0%	1%	1%	0%	0%	0%	1%	2%

Notes:
1. All end use percentages for each CEUS Building Type are taken directly from CEUS database.
2. Only end uses regulated by Title 24 are included in the Title 24 building envelope energy budget. Hard-wired lighting (exterior lighting and some interior lighting) are part of Title 24, but are not considered part of the building envelope energy budget.

Abbreviations:
CEUS - California Commerical End-Use Survey

Source:
California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: Available at: http://www.energy.ca.gov/ceus/

Table 4-D-3
Non-Residential Gas End-Use
Landmark Village
Newhall Ranch, California

		CEUS Building Type							
End Use[1]	**Title 24 System[2]**	**Restaurant**	**Retail**	**Small Office**	**Grocery**	**Large Office**	**Lodging**	**Miscellaneous**	**School**
Gas Cooking	No	80%	18%	5%	52%	2%	14%	4%	8%
Gas Cooling	Yes	0%	0%	0%	0%	3%	0%	12%	0%
Gas Heating	Yes	4%	43%	62%	20%	87%	21%	25%	49%
Gas Water Heating	Yes	16%	31%	33%	28%	8%	64%	41%	42%
Gas Miscellaneous	No	0%	4%	0%	0%	0%	2%	2%	1%
Gas Process	No	0%	5%	0%	0%	0%	0%	16%	0%

Notes:
1. All end use percentages for each CEUS Building Type are taken directly from CEUS database.
2. Only end uses regulated by Title 24 are included in the Title 24 building envelope energy budget.

Abbreviations:
CEUS - California Commerical End-Use Survey

Source:
California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: Available at: http://www.energy.ca.gov/ceus/

Table 4-D-4
Title 24 Improvements by End Use
Landmark Village
Newhall Ranch, California

End Use	Reduction from 2001 to 2005[2]	Reduction from 2005 to 2008[2]
Air Compressors	0.0%	0.0%
Cooking	0.0%	0.0%
Cooling	6.7%	8.3%
Exterior Lighting[1]	9.8%	11.7%
Gas Cooking	0.0%	0.0%
Gas Cooling	10.4%	9.3%
Gas Heating	3.1%	15.9%
Gas Hot Water	0.0%	0.0%
Gas Miscellaneous	0.0%	0.0%
Gas Process	0.0%	0.0%
Heating	4.9%	37.2%
Interior Lighting[1]	4.9%	5.9%
Miscellaneous	0.0%	0.0%
Motors	0.0%	0.0%
Office Equipment	0.0%	0.0%
Process	0.0%	0.0%
Refrigeration	0.0%	0.0%
Ventilation	5.0%	1.5%
Water Heating	0.0%	0.0%

Notes:

1. Exterior lighting was assumed to be covered by Title 24 lighting and therefore has the reduction taken. Interior lighting was assumed to be 50% Title 24 and 50% non-Title 24 uses. Therefore only half of the reduction for lighting was applied.

2. The percentage reductions for each end use category are taken directly from the CEC's "Impact Analysis for 2005 Energy Efficiency Standards" (2002 to 2005) as well as from the "Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings" (2005 to 2008). This represents the percentage to adjust each end use to reflect improvements in Title 24 building codes since 2002. ENVIRON used the 2002 CEUS data to represent energy use for buildings that are minimally compliant with the 2001 Title 24 standards. CEUS did not collect information on the ages of the buildings surveyed. Because older buildings tend to be less energy efficient, and the majority of the buildings in the survey were likely constructed before 2001, the 2002 CEUS data likely overestimates energy use for a 2001 Title 24-compliant building.

Abbreviations:

CEC - California Energy Commission
CEUS - California Commercial End-Use Survey

Sources:

California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: Available at: http://www.energy.ca.gov/ceus/

California Energy Commission. 2003. Impact Analysis: 2005 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2005standards/archive/rulemaking/documents/2003-07-11_400-03-014.PDF

California Energy Commission. 2007. Impact Analysis: 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07_IMPACT_ANALYSIS.PDF

Table 4-D-5
Non-Residential Energy Use
Landmark Village
Newhall Ranch, California

Building Type	CEUS Building Type	Energy Type	Units	T24 Energy Use Base[1,2]	T24 Energy Use 2008[2,3]	15% Better than 2008 T24 Energy Use [2,4]	Non-Title 24 Energy Use[1,5]	Project Energy Use[6]
				[Unit/SF/yr]				
Grocery	Grocery	Electricity	kWh	15.08	13.29	11.30	25.89	37.19
		Gas	kBTU	11.22	10.36	8.81	12.24	21.05
Hotel	Lodging	Electricity	kWh	6.58	5.62	4.78	2.90	7.67
		Gas	kBTU	21.96	20.96	17.82	4.06	21.88
Institutional (schools, library, etc.)	School	Electricity	kWh	5.84	5.12	4.35	1.60	5.95
		Gas	kBTU	10.90	9.82	8.34	1.08	9.43
Misc Retail / Commercial / Office	Large Office	Electricity	kWh	12.59	11.12	9.45	4.80	14.25
		Gas	kBTU	12.17	10.11	8.59	0.19	8.78
Misc Retail / Commercial / Office	Restaurant	Electricity	kWh	21.56	18.76	15.95	28.16	44.11
		Gas	kBTU	46.85	45.24	38.45	187.78	226.24
Misc Retail / Commercial / Office	Retail	Electricity	kWh	13.52	11.95	10.16	3.23	13.39
		Gas	kBTU	1.36	1.21	1.03	0.49	1.52
Misc Retail / Commercial / Office	Small Office	Electricity	kWh	9.48	8.26	7.02	4.40	11.42
		Gas	kBTU	12.68	11.15	9.48	0.67	10.15
Public Safety	Miscellaneous	Electricity	kWh	7.26	6.31	5.37	5.76	11.12
		Gas	kBTU	15.77	14.37	12.21	4.45	16.67

Notes:

1. Baseline usage rates were taken from the 2006 California Commercial End-Use Survey (CEUS), performed by Itron under contract to the California Energy Commission (CEC). Energy use rates are based on 2002 consumption data. ENVIRON used data for Southern California Edison (SCE), Zone 9, which is the sector in which the Entrada would be located.
2. Includes Title 24-regulated building envelope uses of electricity (heating, cooling, ventilation, water heating) and gas (heating, water heating) and all lighting.
3. ENVIRON multiplied the T24 Energy Use Base for each T24 end use category by the reduction factors for 2001 to 2005 and 2005 to 2008 and summed all applicable end use categori
4. Entrada has committed exceed the 2008 Title 24 building code by 15% for all building envelope uses. This includes heating, cooling, ventilation, and water heating. It does not include lighting.
5. Includes all other uses of electricity (cooking, refrigeration office equipment, miscellaneous, process, motors, air compressors) and gas (cooling, cooking, miscellaneous, process) not included in the Title 24-regulated building envelope or lighting.
6. Project Energy Use sums the previous two columns (15% Better than 2008 T24 Energy Use and Non-Title 24 Energy Use).

Abbreviations:

CEC - California Energy Commission
CEUS - California Commerical End-Use Survey
kBTU - kilo (1000) British thermal units
kWh - kilowatt hou
SCE - Southern California Edison
SF - square feet
T24 - Title 24
yr - year

Sources:

California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: Available at: http://www.energy.ca.gov/ceus/
California Energy Commission. 2003. Impact Analysis: 2005 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2005standards/archive/rulemaking/documents/2003-07-11_400-03-014.PDF
California Energy Commission. 2007. Impact Analysis: 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07_IMPACT_ANALYSIS.PDF

Table 4-D-6
GHG Emissions from Non-Residential Buildings
Landmark Village
Newhall Ranch, California

Building Type	CEUS Building Type	Size	Energy Type	Unit	15% Better than 2008 T24 Energy Use [1]	CO_2e Emissions[2]	Total CO_2e Emissions[3]
		[SF]			[Unit/SF/yr]	[tonnes CO_2e/SF/yr]	[tonnes CO_2e/yr]
Grocery	Grocery	41784	Electricity	kWh	37.19	9.83E-03	411
			Gas	kBTU	21.05	1.12E-03	47
Hotel	Lodging	23213	Electricity	kWh	7.67	2.03E-03	47
			Gas	kBTU	21.88	1.16E-03	27
Institutional (schools, library, etc.)	School	25965	Electricity	kWh	5.95	1.57E-03	41
			Gas	kBTU	9.43	5.00E-04	13
Misc Retail / Commercial / Office	Large Office	121000	Electricity	kWh	14.25	3.77E-03	456
			Gas	kBTU	8.78	4.66E-04	56
Misc Retail / Commercial / Office	Restaurant	193600	Electricity	kWh	44.11	1.17E-02	2258
			Gas	kBTU	226.24	1.20E-02	2324
Misc Retail / Commercial / Office	Retail	532401	Electricity	kWh	13.39	3.54E-03	1885
			Gas	kBTU	1.52	8.08E-05	43
Misc Retail / Commercial / Office	Small Office	121000	Electricity	kWh	11.42	3.02E-03	365
			Gas	kBTU	10.15	5.39E-04	65
Public Safety	Miscellaneous	31500	Electricity	kWh	11.12	2.94E-03	93
			Gas	kBTU	16.67	8.85E-04	28
						Total Emissions	**8,160**
						Total Savings from Solar Panels[4]	**302**
						Final Emissions	**7,858**

Notes:

1. Baseline usage rates were taken from the 2006 California Commercial End-Use Survey (CEUS), performed by Itron under contract to the California Energy Commission (CEC). Energy usage rates are based on 2002 consumption data. ENVIRON used data for Southern California Edison (SCE), Zone 9, which is the sector in which the Landmark Village would be located.
ENVIRON used the 2002 CEUS data to represent energy use for buildings that are minimally compliant with the 2001 Title 24 standards. Title 24 usage rates have been adjusted to reflect improvements in Title 24 building codes from 2002 to 2005 according to CEC's "Impact Analysis for 2005 Energy Efficiency Standards", as well as from 2005 to 2008 according to the "Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings".
Landmark Village has committed to exceed the 2008 Title 24 building code by 15% for all building envelope uses. This includes heating, cooling, ventilation, and water heating and lighting.
3. GHG emission factors are calculated by multiplying the corresponding usage rates or usages by the conversion factors.
4. The total GHG emissions are calculated by multiplying the corresponding usage rates or usages by the conversion factors and the total square footage of the buildings.
5. For this calculation, it is assumed that a 2.0 Kw photovoltaic unit from Sunpower company will be mounted on every 1,600 square feet of roof space (this would cover approximately 8% of the rooftop building space). Here, we assume that the rooftop space available is approximately half of the total square footage. The yearly electricity savings are estimated to be 3,356 Kwh for a 2 Kw solar system with a 30 degree roof slope and a south roof direction as provided for the City of Santa Clarita, CA in http://sunpower1.cleanpowerestimator.com/default.aspx Number of systems = (commercial square footage) / (1,600 sqft per system) / 2 (sqft roof space per sqft building space).

Abbreviations:

CEC - California Energy Commission
CEUS - California Commerical End-Use Survey
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalent
GHG - greenhouse gas
kBTU - kilo (1000) British thermal units
kWh - kilowatt hour
SCE - Southern California Edison
SF - square feet
T24 - Title 24
tonnes - metric tonnes
yr - year

Sources:

California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: Available at: http://www.energy.ca.gov/ceus/
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California Energy Commission. 2007. Impact Analysis: 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07_I

Table 4-E-1
Unit Parameters for Calculating Mobile Source GHG Emissions
Landmark Village
Newhall Ranch, California

Unit Category from DEIR[1]	Amount[1]		Daily Productions[2]				Number of Daily Trips[6]
			ADT Rate/Unit[3]	% Home-Based Productions[4]	Effective Resident Productions[5]	Units	
Single family housing	591	Dwelling Units	9.90	64%	**6.34**	trips/dwelling unit	**3,745**
Apartments low rise	455	Dwelling Units	6.90	71%	**4.90**	trips/dwelling unit	**2,229**
Condo/townhouse general	398	Dwelling Units	8.00	71%	**5.68**	trips/dwelling unit	**2,261**

Notes:
1. Land use types and amounts described in the Landmark Village DEIR.
2. Productions for each unit type from the Santa Clarita Valley Consolidated Traffic Model (SCVCTM) 2004 Validation Report table 2-3. These represent the number of vehicle trips associated with each type of land use.
3. Unadjusted daily trips associated with a single dwelling unit of the specified type.
4. Percentage of home-based trips that are attributed to the residents of that particular home. A trip made by a delivery truck or a friend visiting from out of town is not counted as a trip for that home. Percentages from the Santa Clarita Valley Consolidated Traffic Model (SCVCTM) 2004 Validation Report table 2-3.
5. Number of trips made by residents of the dwelling unit.
6. Amount of each dwelling unit type multiplied by the effective daily trip rate.

Abbreviations:
ADT - Average Daily Trip
DEIR - Draft Environmental Impact Report
GHG - Greenhouse Gas

Source:
Westside Santa Clarita Valley Roadway Phasing Analysis, November 2006, Austin Foust Associates.
Santa Clarita Valley Consolidated Traffic Model (SCVCTM) 2004 Validation Report, 2004, Austin Foust Associates.
Final Environmental Impact Report. Landmark Village. Prepared by Impact Sciences, Inc. Nov 2007.

Table 4-E-2
Vehicle Miles Traveled for Landmark Village Residents
Landmark Village
Newhall Ranch, California

	Units	Home Based[5]			
		Home-Work	**Home-Shop**	**Home-Other**	**Total[6]**
Urban Trip Length[1]	(miles)	10.7	5.2	7	7.7
% Trips Landmark[2]	(trips/day)	29%	24%	47%	100%
Landmark Resident Trips[3]		2,386	1,975	3,873	8,234
VMT Landmark[4]	(VMT/day)	25,534	10,270	27,110	62,914
	(VMT/year)	9,320,069	3,748,682	9,894,993	22,963,744

Notes:
1. Urban Trip lengths from the Austin-Foust traffic study (2006).
2. % of trips is the percentage of that type of trip (residential, elementary school, etc.) that are home-work, home-shop, commute, etc. Based upon Austin-Foust traffic study (2006).
3. Total Landmark trips calculated from the trip generation rates from each housing type. For each category, the total trips multiplied by the percentage above.
4. Number of trips multiplied by average trip length.
5. Trips with a beginning or end at a home. Home-other includes home-school. Only home-based trips are counted in an effort to include only trips from Landmark Village residents.
6. Landmark Village total trips may not sum exactly due to independent rounding.

Abbreviations:
DEIR - Draft Environmental Impact Report
VMT - Vehicle Miles Traveled

Source:
Westside Santa Clarita Valley Roadway Phasing Analysis, November 2006, Austin Foust Associates.

Table 4-E-3
Mobile Source Greenhouse Gas Emissions
Landmark Village
Newhall Ranch, California

Trips	Daily Trips	Annual VMT	Emission Factor Running (g/mile)[1]	Emission Factor Starts (g/start)[2]	CO_2 Emissions Running (tonne)	CO_2 Emissions Starts (tonne)	Total CO_2 Emissions (tonne)	Total CO_2e Emissions (tonne)[3]
Landmark Trips	8,234	22,963,744	353	106	8,108	319	8,427	8,870
Total Annual VMT		**22,963,744**	*Subtotal*					*8,870*
			Pavley standard emissions reduction percentage[4]					**20%**
			Total Emissions					**7,074**

Notes:
1. Emission factors for vehicles based on weighted average of EMFAC estimates for all LDA, LT1, LT2, MDV and MCY classes in 2020 for Los Angeles County, evaluated at 35 mph.
2. Starting emission factors based on the weighted average distribution of time between trip starts from URBEMIS defaults and EMFAC emission estimates for each time period (i.e., 5 min, 10 min, and so on).
3. $CO_2e = CO_2 / 0.95$: The United States Environmental Protection Agency (USEPA) recommends assuming that CH_4, N_2O, and HFCs account for 5% of GHG emissions from on-road vehicles, taking into account their global warming potentials
4. Estimated 2020 emissions reduction resulting from California fuel efficiency regulation adopted by Air Resources Board in their final form on August 4, 2005 pursuant to AB1493 (Pavley) signed into law in 2002. The percentage reduction calculated by dividing 100.5 tons/day of reduction by 496.4 tons/day of baseline emissions presented in Table 11 of ARB (2008).

Abbreviations:
ADT - Average Daily Trip
ARB - California Air Resources Board
CH_4 - Methane
CO_2 - Carbon Dioxide
CO_2e - Carbon Dioxide Equivalent
EMFAC - EMission FACtors model
GHG - Greenhouse Gas
HFC - Hydro fluorocarbon
LDA - Light Duty Automobile as defined in EMFAC
LDT1 - Light Duty Trucks Class I as defined in EMFAC
LDT2 - Light Duty Trucks Class II as defined in EMFAC
MDV - Medium Duty Trucks as defined in EMFAC
MCY - Motocycle
N_2O - Nitrous oxide
URBEMIS - URBan EMISsions model
VMT - Vehicle Miles Traveled

Source:
Comparison of Greenhouse Gas Reductions for the United States and Canada under U.S. CAFÉ Standards and California Air Resources Board Greenhouse Gas Regulations, February 2008. California Air Resources Board.

Table 4-F-1
Greenhouse Gas Emissions from Area Sources[1]
Landmark Village
Newhall Ranch, California

Annual CO_2 Emissions[2]
(Tonnes CO_2/year)
180

Notes:

1. Area Source includes hearth fuel combustion such as fireplaces, and landscape fuel combustion such as mowing a lawn.
2. Assume CO_2 = CO_2e because the contribution of CH_4 and N_2O to overall GHG emissions is likely small (< 1% of total CO_2e) from diesel construction equipment.

Abbreviations:

CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalent
GHG - Greenhouse Gas
N_2O - nitrous oxide

Table 4-G-1
GHG Emissions for Municipal Sources
Landmark Village
Newhall Ranch, California

Source[1]	Energy Requirements	Units	Emission Factor	Units	Source Quantity	Units	Total CO_2e Emission [Tonne CO_2e per year]
Lighting							
Public Lighting[2]	148.7	kWh/capita/year	0.039	tonne CO_2e/capita/year	3680	residents (capita)	145
						Lighting Total:	**145**
Municipal Vehicles							
Municipal Vehicles[3]	--	--	0.05	tonne CO_2e/capita/year	3680	residents (capita)	184
						Municipal Vehicles Total:	**184**
Water and Wastewater							
Groundwater Supply and Conveyance (Potable)[4]	950	kWh/acre-foot	0.25	tonne CO_2e/acre-foot	622	acre-feet/year	156
Average Southern California Supply And Conveyance[5]	3,170	kWh/acre-foot	0.84	tonne CO_2e/acre-foot	0.0	acre-feet/year	0
Water Treatment (Potable)[6]	36	kWh/acre-foot	0.01	tonne CO_2e/acre-foot	622	acre-feet/year	6
Water Distribution (Potable)[7]	414	kWh/acre-foot	0.11	tonne CO_2e/acre-foot	622	acre-feet/year	68
Wastewater Treatment (Indirect Emissions)[8]	623	kWh/acre-foot	0.16	tonne CO_2e/acre-foot	459	acre-feet/year	76
Wastewater Treament Plant (Direct Emissions)[9]	--	--	0.084	tonne CO_2e/capita/year	3,680	residents (capita)	310
Recycled Water Distribution (Non-Potable)[10]	978	kWh/acre-foot	0.26	tonne CO_2e/acre-foot	367	acre-feet/year	95
						Water and Wastewater Total:	**711**
						All Municipal Total:	**1,040**

Notes:

1. Public Lighting includes streetlights, traffic signals, area lighting and lighting municipal buildings. Emissions from the Water and Wastewater category are primarily due to the energy required for supply, treatment and distribution. GHG emissions attributed to electricity use are calculated using the Southern California Edison 2007 carbon-intensity factor with adjustment to reflect 20% of power provided by renewables (2010 RPS).

2. Emission factor for public lighting is based on a study of energy usage and GHG emissions from Duluth, MN and the Southern California-specific electricity generation emission factor from Southern California Edison with adjustment to reflect 20% of power provided by renewables.

3. Emission factors for municipal vehicles are based on the most conservative number from studies of GHG emission for four cities of different sizes: Medford, MA; Duluth, MN; Northampton, MA; and Santa Rosa, CA. Population data provided by the US Census (2000).

4. Emission factor for groundwater supply and conveyance is based on the estimated energy necessary to pump and convey 1 million gallons of groundwater in Southern California's Chino Basin and the Southern California-specific electricity generation emission factor from Southern California Edison with adjustment to reflect 20% of power provided by renewables. This factor is applied to potable water demand.

5. Emission factor accounts for the various ways water is supplied, the energy intensities of those methods and the amount each method is used. The CEC estimates that 50% of Southern California's water is supplied by importing water from Northern California and the Colorado River. This factor is provided only for purposes of comparison and was not used in the Landmark Village inventory.

6. Emission factor for water treatment is based on a Navigant Consulting refinement of a CEC study on the energy necessary to initially treat 1 million gallons of water and the Southern California-specific electricity generation emission factor from Southern California Edison with adjustment to reflect 20% of power provided by renewables. This factor is applied to potable water demand.

7. Emission factor for water distribution is based on a Navigant Consulting refinement of a CEC study on the energy necessary to distribute 1 million gallons of treated water and the Southern California-specific electricity generation emission factor from Southern California Edison with adjustment to reflect 20% of power provided by renewables. This factor is applied to potable water demand.

8. Emission factor for wastewater treatment is based on a Navigant Consulting refinement of a CEC study on the energy necessary to treat 1 million gallons of wastewater for indoor (i.e., potable or other household) use and the Southern California-specific electricity generation emission factor from Southern California Edison with adjustment to reflect 20% of power provided by renewables.

9. Emission factor for the wastewater treatment plant accounts for direct methane and nitrous oxide emissions from wastewater. The value used here is based on the 2005 US inventory of GHG emissions for domestic wastewater treatment plants (USEPA) divided by the 2005 US population. (25 Tg CO_2e/year/296,410,404 people = 0.093 ton CO_2e/capita/year)

10. Emission factor for recycled water distribution is based on an estimate of the energy necessary to redistrubute 1 million gallons of reclaimed water (i.e., treated wastewater) and the Southern-California specific electricity generation emission factor from Southern California Edison with adjustment to reflect 20% of power provided by renewables. This factor is applied to non-potable water demand.

Abbreviations:

CEC - California Energy Commission
CO_2e - carbon dioxide equivalent
GHG - Greenhouse Gas
kW-hr - kilowatt hour
MW-hr - megawatt hour
RPS - Renewables Portfoilo Standard
Tg - teragram
USEPA - United States Environmental Protection Agency

References:

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Table 4-H-1
Energy Use from Recreation Centers
Landmark Village
Newhall Ranch, California

Facility Name[1]	Pool Volume[1]	Number of Heaters[1]	Heater Rating[1]	Operation Schedule[1]		Annual Natural Gas Usage[2]	Average Annual Natural Gas Usage[3]	Annual Electricity Usage[4]	Average Annual Electricity Usage[5]
	(gal)		(BTU/hr)	(hrs / day)	(days / yr)	(MMBTU / yr)	(MMBTU / gal / yr)	(kWh / yr)	(kWh / gal / yr)
Fremont Pool	215,000	4	350,000	12	243	4,088	0.023	106,872	0.496
DeFremery Pool	226,659	1	1,738,800	10	243	4,231		105,120	
Live Oak Pool	260,000	4	350,000	12	365	6,132		95,309	
Lyons Pool	240,000	4	350,000	12	365	6,132		110,376	
Temescal Pool	227,605	4	350,000	12	365	6,132		162,060	

Notes:

1. To estimate the baseline electricity and natural gas energy usage factors for Landmark Village pools, ENVIRON calculated the energy consumption of filter pumps and water heaters of 5 pools in Oakland, California and scaled them to present energy consumption per year per volume of the pool. Oakland pools data including pool volume, number of heaters, heater rating, operation schedule, and annual electricity usage are provided in the City of Oakland Energy Efficient Commercial Pool Program Preliminary Facility Reports.

2. Annual Natural Gas Usage calculated by multiplying the following factors: (Number of hrs/day) x (Number of days/yr) x (Number of Heaters) x (Heater Rating). Each of these factors were taken from the City of Oakland Preliminary Facility Reports for DeFremery Pool, Fremont Pool, Live Oak Pool, Lyons Pool, and Temescal Pool.

3. Average Annual Natural Gas Usage calculated from the Annual Natural Gas Usage of all 5 pools divided by the total Pool Volume of all 5 pools.

4. Annual Electricity Usage for each pool is shown as reported in the City of Oakland Preliminary Facility Reports for DeFremery Pool, Fremont Pool, Live Oak Pool, Lyons Pool, and Temescal Pool.

5. Average Annual Electricity Usage calculated from the Annual Electricity Usage of all 5 pools divided by the total Pool Volume of all 5 pools.

Abbreviations:

kWh - kilowatt-hour
MMBTU - Million British Thermal Units
hr - hour
yr - year

Source:

Energy Efficient Commercial Pool Program; Preliminary Facility Reports for DeFremery Pool, Fremont Pool, Live Oak Pool, Lyons Pool, and Temescal Pool. City of Oakland / Oakland Unified School District. October 2006.

Table 4-H-2
Greenhouse Gas (GHG) Emissions from Recreation Centers[1]
Landmark Village
Newhall Ranch, California

Energy Use Factors (Oakland pools)[2]			Energy Use Factors (adjusted for Landmark Village pools)[3,4]			Pool Volume[5] (gal)	Annual Energy Use		Emission Factors[6] (lb CO_2 / source unit)	Source Units	Total Emissions per Pool[7] Without Solar Heating (tonnes CO_2 / yr)	Total Emissions per Pool Assuming Solar Heating[8] (tonnes CO_2 / yr)
Electricity	0.496	(kWh / gal / yr)	Electricity	0.496	(kWh / gal / yr)	736,263	365,049	(kWh / yr)	0.583	(kWh)	632	96
Natural Gas	0.023	(MMBTU / gal / yr)	Natural Gas	0.014	(MMBTU / gal / yr)		10,090	(MMBTU / yr)	117	(MMBTU)		

Notes:

1. ENVIRON assumed an outdoor competition-size swimming pool as the main source of GHGs in an aquatic/recreation center. Only CO_2 emissions are estimated and are assumed to be equivalent to total GHG emissions since the contributions from methane (CH_4) and nitrous oxide (N_2O) are negligible compared to total GHG for emissions associated with electricity generation and natural gas combustion. The emission factors in the California Climate Action Registry General Reporting Protocol show that CH_4 and N_2O emissions (in CO_2e) are less than 1% of CO_2 emissions for these processes.

2. The weighted energy consumption of 5 Oakland pools is used to calculate the baseline energy use of an average sized pool within the project site.

3. ENVIRON adjusted the natural gas usage to account for savings from high-efficiency heaters. ENVIRON conservatively assumed that the Oakland pools used 78% efficient heaters, which is the minimum efficiency legally required (see 10 CFR Part 431). According to the U.S. Department of Energy, newer pools are likely to use heaters with 89-95% efficiency (see http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=13170). ENVIRON conservatively assumed 90% efficiency for Landmark Village pool heaters, resulting in a 12% savings over the Oakland pools.

4. ENVIRON adjusted the natural gas usage to account for the difference in average ambient temperature in Newhall and Oakland. The natural gas usage was multiplied by the following adjustment factor: (typical pool temperature - Newhall average ambient temperature) / (typical pool temperature - San Francisco-Richmond average ambient temperature) = (80 deg F - 63.3 deg F) / (80 deg F - 55.5 deg F). Typical pool temperature based on information from the Department of Energy, available at: http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=13300. Average ambient temperatures for Newhall and San Francisco-Richmond were obtained from the Western Regional Climate Center: http://www.wrcc.dri.edu/.

5. ENVIRON assumed an outdoor competition-size (50 m x 25 yd x 8 ft) swimming pool.

6. Emission factor for electricity is provided by Southern California Edison, obtained from the California Climate Action Registry Database. The electricity generation emission factor was adjusted to reflect 20% of power provided by renewables (2010 RPS). Emission factor for natural gas is obtained from California Climate Action Registry Reporting Protocol, Table C7.

7. Emissions for a single competition-size pool, assuming no solar heating.

8. Emissions for a single competition-size pool, assuming solar heating replaces all natural gas heating. This value now includes electricity from pumping only.

Abbreviations:

RPS - Renewables Portfolio Standard
CO_2 - carbon dioxide
CH_4 - methane
ft - foot
kWh - kilowatt-hour
lb - pound
MMBTU - Million British Thermal Units
N_2O - nitrous oxide
yr - year

Sources:

California Climate Action Registry General Reporting Protocol, Version 3.1 (January 2009). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

California Climate Action Registry Database: Southern California Edison Company 2007 PUP Report. 2008. Available at: https://www.climateregistry.org/CARROT/public/Reports.aspx

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Table 4-H-3

Greenhouse Gas (GHG) Emissions from Recreation Centers[1]

Landmark Village

Newhall Ranch, California

Number of Pools	Total Emissions Without Solar Heating[2]	Total Emissions Assuming Solar Heating[3]
	(Tonnes CO_2 / year)	(Tonnes CO_2 / year)
4	2,528	386

Notes:

1. ENVIRON assumed an outdoor competition-size (50 m x 25 yd x 8 ft) swimming pool as the main source of GHGs in an aquatic/recreation center.
2. Emissions for four recreation centers in Landmark Village, assuming no solar heating.
3. Emissions for four recreation centers in Landmark Village assuming solar heating replaces all natural gas heating. This value now includes electricity from pumping only.

Abbreviations:

CO_2 - carbon dioxide
ft - foot
GHG - Greenhouse Gas
m - meter
yd - yard
yr - year

Sources:

California Climate Action Registry General Reporting Protocol, Version 3.1 (January 2009). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

California Climate Action Registry Database: Southern California Edison Company 2007 PUP Report. 2008. Available at: https://www.climateregistry.org/CARROT/public/Reports.aspx

Energy Efficient Commercial Pool Program; Preliminary Facility Reports. Available at: http://www.oaklandpw.com/Page50.aspx

Table 4-I-1
Summary of Greenhouse Gas Emissions for Landmark Village
Landmark Village
Newhall, California

Source	GHG Emissions			Improvement over CARB 2020 NAT
	Unit	Project	CARB 2020 NAT	(%)
Vegetation	tonnes CO_2e / year	7,625	7,625	N/A
Construction		36,309	36,309	N/A
Total (one-time emissions)		**43,934**	**43,934**	**N/A**
Residential	tonnes CO2e / year	3,656	5,138	29%
Non-Residential		7,858	10,130	22%
Mobile		7,074	9,500	26%
Municipal		1,040	1,803	42%
Recreational (Pools)		386	2,592	85%
Area		180	180	0%
Total (annual emissions)		**20,193**	**29,341**	**31.2%**
Annualized Total	**tonnes CO2e / year**	**21,291**	**30,439**	**N/A**

Abbreviations:
CARB 2020 NAT - California Air Resources Board Scoping Plan projections for 2020 if no actions are taken
CO_2e - carbon dioxide equivalent
GHG - Greenhouse Gas

Table 5-D-1
CARB 2020 NAT Non-Residential Energy Use
Landmark Village
Newhall Ranch, California

Building Type	CEUS Building Type	Energy Type	Units	T24 Energy Use Base[1,3]	T24 Energy Use 2005[2,3]	Non-Title 24 Energy Use[1,4]	Total CARB 2020 NAT Energy Use[5]
				[Unit/SF/yr]			
Grocery	Grocery	Electricity	kWh	15.08	14.22	25.89	40.11
		Gas	kBTU	11.22	11.08	12.24	23.32
Hotel	Lodging	Electricity	kWh	6.58	6.19	2.90	9.08
		Gas	kBTU	21.96	21.79	4.06	25.86
Institutional (schools, library, etc.)	School	Electricity	kWh	5.84	5.50	1.60	7.09
		Gas	kBTU	10.90	10.72	1.08	11.80
Misc Retail / Commercial / Office	Large Office	Electricity	kWh	12.59	11.87	4.80	16.66
		Gas	kBTU	12.17	11.80	0.19	11.99
Misc Retail / Commercial / Office	Restaurant	Electricity	kWh	21.56	20.17	28.16	48.33
		Gas	kBTU	46.85	46.58	187.78	234.36
Misc Retail / Commercial / Office	Retail	Electricity	kWh	13.52	12.74	3.23	15.97
		Gas	kBTU	1.36	1.33	0.49	1.83
Misc Retail / Commercial / Office	Small Office	Electricity	kWh	9.48	8.89	4.40	13.28
		Gas	kBTU	12.68	12.42	0.67	13.09
Public Safety	Miscellaneous	Electricity	kWh	7.26	6.81	5.76	12.57
		Gas	kBTU	15.77	15.36	4.45	19.81

Notes:
1. Baseline usage rates were taken from the 2006 California Commercial End-Use Survey (CEUS), performed by Itron under contract to the California Energy Commission (CEC). Energy use rates are based on 2002 consumption data. ENVIRON used data for Southern California Edison (SCE), Zone 9, which is the sector in which the Landmark Village would be located.
2. ENVIRON multiplied the T24 Energy Use Base for each T24 end use category by the reduction factors for 2001 to 2005 and summed all applicable end use categories.
3. Includes Title 24-regulated building envelope uses of electricity (heating, cooling, ventilation, water heating) and gas (heating, water heating) and all lighting.
4. Includes all other uses of electricity (cooking, refrigeration office equipment, miscellaneous, process, motors, air compressors) and gas (cooling, cooking, miscellaneous, process) not included in the Title 24-regulated building envelope or lighting.
5. Total CARB 2020 NAT Energy Use sums the previous two columns (T24 Energy Use 2005 and Non-Title 24 Energy Use).

Abbreviations:
CARB 2020 NAT - California Air Resources Board Scoping Plan projections for 2020 if no actions are taken.
CEC - California Energy Commission
CEUS - California Commerical End-Use Survey
kBTU - kilo (1000) British thermal units
kWh - kilowatt hour
SCE - Southern California Edison
SF - square feet
T24 - Title 24
yr - year

Sources:
California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: Available at: http://www.energy.ca.gov/ceus/
California Energy Commission. 2003. Impact Analysis: 2005 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2005standards/archive/rulemaking/documents/2003-07-11_400-03-014.PDF
California Energy Commission. 2007. Impact Analysis: 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07_IMPACT_ANALYSIS.PDF

Table 5-D-2
CARB 2020 NAT GHG Emissions from Non-Residential Buildings
Landmark Village
Newhall Ranch, California

Building Type	CEUS Building Type	Size	Energy Type	Unit	CARB 2020 NAT Energy Use[1]	CO_2e Emissions[2]	Total CARB 2020 NAT CO_2e Emissions[3]
		[SF]			[Unit/SF/yr]	[tonnes CO_2e/SF/yr]	[tonnes CO_2e/yr]
Grocery	Grocery	41784	Electricity	kWh	40.11	1.24E-02	516
			Gas	kBTU	23.32	1.24E-03	52
Hotel	Lodging	23213	Electricity	kWh	9.08	2.80E-03	65
			Gas	kBTU	25.86	1.37E-03	32
Institutional (schools, library, etc.)	School	25965	Electricity	kWh	7.09	2.19E-03	57
			Gas	kBTU	11.80	6.26E-04	16
Misc Retail / Commercial / Office	Large Office	121000	Electricity	kWh	16.66	5.13E-03	621
			Gas	kBTU	11.99	6.36E-04	77
Misc Retail / Commercial / Office	Restaurant	193600	Electricity	kWh	48.33	1.49E-02	2882
			Gas	kBTU	234.36	1.24E-02	2408
Misc Retail / Commercial / Office	Retail	532401	Electricity	kWh	15.97	4.92E-03	2619
			Gas	kBTU	1.83	9.69E-05	52
Misc Retail / Commercial / Office	Small Office	121000	Electricity	kWh	13.28	4.09E-03	495
			Gas	kBTU	13.09	6.95E-04	84
Public Safety	Miscellaneous	31500	Electricity	kWh	12.57	3.87E-03	122
			Gas	kBTU	19.81	1.05E-03	33
						Total	**10,130**

Notes:

1. Baseline usage rates were taken from the 2006 California Commercial End-Use Survey (CEUS), performed by Itron under contract to the California Energy Commission (CEC). Energy use rates are based on 2002 consumption data. ENVIRON used data for Southern California Edison (SCE), Zone 9, which is the sector in which the Landmark Village would be located.

The CARB 2020 NAT scenario uses 2005 Title 24 building standards since this is what ARB used in their Scoping Plan. ENVIRON used the 2002 CEUS data to represent energy use for buildings that are minimally compliant with the 2001 Title 24 standards. Title 24 usage rates have been adjusted to reflect improvements in Title 24 building codes from 2002 to 2005 according to CEC's "Impact Analysis for 2005 Energy Efficiency Standards" .

2. GHG emission factors are calculated by multiplying the corresponding usage rates or usages by the conversion factors.

3. The total GHG emissions are calculated by multiplying the corresponding usage rates or usages by the conversion factors and the total square footage of the buildings.

Abbreviations:

CARB 2020 NAT - California Air Resources Board Scoping Plan projections for 2020 if no actions are taken.
CEC - California Energy Commission
CEUS - California Commerical End-Use Survey
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalent
GHG - greenhouse gas
kBTU - kilo (1000) British thermal units
kWh- kilowatt hour
SCE - Southern California Edison
SF - square feet
tonnes - metric tonnes
yr - year

Sources:

California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: Available at: http://www.energy.ca.gov/ceus/
California Energy Commission. 2003. Impact Analysis: 2005 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2005standards/archive/rulemaking/documents/2003-07-11_400-03-014.PDF
California Energy Commission. 2007. Impact Analysis: 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07_IMPACT_ANALYSIS.PDF

Table 5-E-1
CARB 2020 NAT Mobile Source Housing Density Adjustment
Landmark Village
Newhall Ranch, California

Trip Rates			Landmark		Santa Clarita Valley[1]	
Land UseType	Unit Type	ADT Rate/Unit[2]	Units[2]	Trips[2]	Units[3]	Trips[3]
SF Residential	DU	9.9	591	5,851	79117	775,575
MF Residential	DU	7.4	853	6,324	46,276	356,606
Total			1,444	12,174	125,393	1,132,181
Trip per DU			8.4		9.0	
Trip Reductions			**6.6%**			

Notes:
1. The area of Santa Clarita Valley at full build-out, excluding the Newhall Ranch development, represents the CARB 2020 NAT scenario. Landmark Village has a larger percentage of multifamily homes (59% MF) as compared to the rest of Santa Clarita (37% MF), which results in a lower trip rate.
2. Number of DU and trip rate for each land use type for Landmark Village presented in previous tables.
3. Number of DU and total trips for each land use type for Santa Clarita Valley obtained from the Austin Faust traffic study (2006) at full build-out, subtracting the contributions from Newhall Ranch development. Number of DU and total trips for each land use type for Newhall Ranch and Entrada from Climate Change Technical Report prepared by ENVIRON (2009).

Abreviations:
ADT - Average Daily Trip
CARB 2020 NAT - California Air Resources Board Scoping Plan projections for 2020 if no actions are taken.
DU - Dwelling Unit
MF - MultiFamily
SF - Single Family

Source:
Newhall Ranch RMDP and SCP EIR/EIS, Traffic Analysis, November 2006, Austin Foust Associates.
Climate Change Technical Report, Resource Management and Development Plan, Spineflower Conservation Plan, January 2009, ENVIRON

Table 5-E-2
CARB 2020 NAT Mobile Source Greenhouse Gas Emissions
Landmark Village
Newhall Ranch, California

Trips	Daily Trips[1]	Annual VMT[2]	Emission Factor Running (g/mile)[3]	Emission Factor Starts (g/start)[4]	CO_2 Emissions Running (tonne)	CO_2 Emissions Starts (tonne)	Total CO_2 Emissions (tonne)	Total CO_2e Emissions (tonne)[3]	Pavley Reduction (-)[5]	Final CO_2e Emissions (tonne)
Landmark Trips	8,234	22,963,744	353	106	8,108	319	8,427	8,870	20%	7,074
CARB 2020 NAT Trips	8,818	24,592,620	353	106	8,683	341	9,025	9,500	-	9,500
							Reduction over CARB 2020 NAT			**26%**

Notes:
1. Daily trips calculated by dividing Landmark trips presented in table 4-E-2 by (1- reduction% presented in table 5-E-1).
2. Annual VMT calculated by dividing Landmark VMT presented in table 4-E-2 by (1-reduction% presented in table 5-E-1).
3. Emission factors for vehicles based on weighted average of EMFAC estimates for all LDA, LT1, LT2, MDV and MCY classes in 2020 for Los Angeles County, evaluated at 35 mph.
4. Starting emission factors based on the weighted average distribution of time between trip starts from URBEMIS defaults and EMFAC emission estimates for each time period (i.e., 5 min, 10 min, and so on).
5. Estimated 2020 emissions reduction resulting from California fuel efficiency regulation adopted by Air Resources Board in their final form on August 4, 2005 pursuant to AB1493 (Pavley) signed into law in 2002. The percentage reduction calculated by dividing 100.5 tons/day of reduction by 496.4 tons/day of baseline emissions presented in ARB (2008).

Abbreviations:
ADT - Average Daily Trip
ARB - California Air Resources Board
CARB 2020 NAT - California Air Resources Board Scoping Plan projections for 2020 if no actions are taken.
CH_4 - Methane
CO_2 - Carbon Dioxide
CO_2e - Carbon Dioxide Equivalent
EMFAC - EMission FACtors model
GHG - Greenhouse Gas
HFC - Hydro fluorocarbon
LDA - Light Duty Automobile as defined in EMFAC
LDT1 - Light Duty Trucks Class I as defined in EMFAC
LDT2 - Light Duty Trucks Class II as defined in EMFAC
MDV - Medium Duty Trucks as defined in EMFAC
MCY - Motocycle
N_2O - Nitrous oxide
URBEMIS - URBan EMISsions model
VMT - Vehicle Miles Traveled

Source:
Comparison of Greenhouse Gas Reductions for the United States and Canada under U.S. CAFÉ Standards and California Air Resources Board Greenhouse Gas Regulations, February 2008. California Air Resources Board.

Table 5-G-1
GHG Emissions for Municipal Sources - CARB 2020 NAT
Landmark Village
Newhall Ranch, California

Source[1]	Energy Requirements	Units	Emission Factor	Units	Source Quantity	Units	Total CO_2e Emission [Tonne CO_2e per year]
Lighting							
Public Lighting[2]	148.7	kW-hr/capita/year	0.046	tonne CO_2e/capita/year	3680	residents (capita)	168
						Lighting Total:	**168**
Municipal Vehicles							
Municipal Vehicles[3]	--	--	0.05	tonne CO_2e/capita/year	3680	residents (capita)	184
						Municipal Vehicles Total:	**184**
Water and Wastewater							
Groundwater Supply and Conveyance (Potable)[4]	950	kW-hr/acre-foot	0.29	tonne CO_2e/acre-foot	0	acre-feet/year	0
Average Southern California Supply And Conveyance[5]	3,170	kW-hr/acre-foot	0.98	tonne CO_2e/acre-foot	989	acre-feet/year	965
Water Treatment (Potable)[6]	36	kW-hr/acre-foot	0.01	tonne CO_2e/acre-foot	622	acre-feet/year	7
Water Distribution (Potable)[7]	414	kW-hr/acre-foot	0.13	tonne CO_2e/acre-foot	622	acre-feet/year	79
Wastewater Treatment (Indirect Emissions)[8]	623	kW-hr/acre-foot	0.19	tonne CO_2e/acre-foot	459	acre-feet/year	88
Wastewater Treament Plant (Direct Emissions)[9]	--	--	0.084	tonne CO_2e/capita/year	3,680	residents (capita)	310
Recycled Water Distribution (Non-Potable)[10]	978	kW-hr/acre-foot	0.30	tonne CO_2e/acre-foot	0	acre-feet/year	0
						Water and Wastewater Total:	**1450**
						All Municipal Total:	**1,803**

Notes:

1. Public Lighting includes streetlights, traffic signals, area lighting and lighting municipal buildings. Emissions from the Water and Wastewater category are primarily due to the energy required for supply, treatment and distribution. GHG emissions attributed to electricity use are calculated using the Southern California Edison carbon-intensity factor in 2004.

2. Emission factor for public lighting is based on a study of energy usage and GHG emissions from Duluth, MN and the Southern California-specific electricity generation emission factor from Southern California Edison.

3. Emission factors for municipal vehicles are based on the most conservative number from studies of GHG emission for four cities of different sizes: Medford, MA; Duluth, MN; Northampton, MA; and Santa Rosa, CA. Population data provided by the US Census (2000).

4. Emission factor for groundwater supply and conveyance is based on the estimated energy necessary to pump and convey 1 million gallons of groundwater in Southern California's Chino Basin and the Southern California-specific electricity generation emission factor from Southern California Edison. This factor is not applicable to the BAU scenario but was used in the Landmark Village inventory and is provided here for comparison.

5. Emission factor accounts for the various ways water is supplied, the energy intensities of those methods and the amount each method is used. The CEC estimates that 50% of Southern California's water from the State Water Project is supplied by importing water from Northern California and the Colorado River. For the BAU scenario, ENVIRON assumed that all water is sourced from the State Water Project. This factor is applied to total water demand.

6. Emission factor for water treatment is based on a Navigant Consulting refinement of a CEC study on the energy necessary to initially treat 1 million gallons of water and the Southern California-specific electricity generation emission factor from Southern California Edison. This factor is applied to potable water demand.

7. Emission factor for water distribution is based on a Navigant Consulting refinement of a CEC study on the energy necessary to distribute 1 million gallons of treated water and the Southern California-specific electricity generation emission factor from Southern California Edison. This factor is applied to potable water demand.

8. Emission factor for wastewater treatment is based on a Navigant Consulting refinement of a CEC study on the energy necessary to treat 1 million gallons of wastewater for indoor (i.e., potable or other household) use and the Southern California-specific electricity generation emission factor from Southern California Edison.

9. Emission factor for the wastewater treatment plant accounts for direct methane and nitrous oxide emissions from wastewater. The value used here is based on the 2005 US inventory of GHG emissions for domestic wastewater treatment plants (USEPA) divided by the 2005 US population. (25 Tg CO_2e/year/296,410,404 people = 0.093 ton CO_2e/capita/year)

10. Emission factor for recycled water distribution is based on an estimate of the energy necessary to redistrubute 1 million gallons of reclaimed water (i.e., treated wastewater) and the Southern-California specific electricity generation emission factor from Southern California Edison. For the BAU scenario, ENVIRON assumed that no water is recycled.

Abbreviations:

CARB 2020 NAT - California Air Resources Board Scoping Plan projections for 2020 if no actions are taken
CEC - California Energy Commission
CO_2e - carbon dioxide equivalent
GHG - Greenhouse Gas
kW-hr - kilowatt hour
MW-hr - megawatt hour
Tg - teragram
USEPA - United States Environmental Protection Agency

References:

California Climate Action Registry Database. Southern California Edison PUP. 2007. Available at: http://www.climateregistry.org/CarrotDocs/26/2007/SCEPUP07r3.xls. Accessed on July, 2, 2009.

California Energy Commission. 2005.*California's Water-Energy Relationship* . Final Staff Report. CEC-700-2005-011-SF.

California Energy Commission. 2006.*Refining Estimates of Water-Related Energy Use in California.* PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December.

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City of Northampton. 2006. Greenhouse Gas Emissions Inventory. Cities for Climate Protection Campaign. June. http://www.northamptonma.gov/uploads/listWidget/3208/NorthamptonInventoryClimateProtection.pdf

City of Santa Rosa. Cities for Climate Protection: Santa Rosa. http://ci.santa-rosa.ca.us/City_Hall/City_Manager/CCPFinalReport.pdf

M/J Industrial Solutions. 2003. Municipal Wastewater Treatment Plant Energy Baseline Study. June. www.cee1.org/ind/mot-sys/ww/pge1.pdf

Skoog., C. 2001. Greenhouse Gas Inventory and Forecast Report. City of Duluth Facilities Management and The International Council for Local Environmental Initiatives. October.http://www.ci.duluth.mn.us/city/information/ccp/GHGEmissions.pdf

USEPA. 2007. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005. #430-R-07-002. April. http://epa.gov/climatechange/emissions/downloads06/07Waste.p

Table 5-H-1
Greenhouse Gas (GHG) Emissions from Recreation Centers[1] - CARB 2020 NAT
Landmark Village
Newhall Ranch, California

Energy Use Factors (Oakland pools)[2]			Energy Use Factors (adjusted for Landmark Village pools)[3,4]			Pool Volume[5]	Annual Energy Use		Emission Factors[6]		Total Emissions per Pool[7]
						(gal)			(lb CO_2 / source unit)	Source Units	(tonnes CO_2 / yr)
Electricity	0.496	(kWh / gal / yr)	Electricity	0.496	(kWh / gal / yr)	736,263	365,049	(kWh / yr)	0.679	(kWh)	648
Natural Gas	0.023	(MMBTU / gal / yr)	Natural Gas	0.014	(MMBTU / gal / yr)		10,090	(MMBTU / yr)	117	(MMBTU)	

Notes:

1. ENVIRON assumed an outdoor competition-size swimming pool as the main source of GHGs in an aquatic/recreation center. Only CO_2 emissions are estimated and are assumed to be equivalent to total GHG emissions since the contributions from methane (CH_4) and nitrous oxide (N_2O) are negligible compared to total GHG for emissions associated with electricity generation and natural gas combustion. The emission factors in the California Climate Action Registry General Reporting Protocol show that CH_4 and N_2O emissions (in CO_2e) are less than 1% of CO_2 emissions for these processes.

2. The weighted energy consumption of 5 Oakland pools is used to calculate the baseline energy use of an average sized pool within the project site.

3. ENVIRON adjusted the natural gas usage to account for savings from high-efficiency heaters. ENVIRON conservatively assumed that the Oakland pools used 78% efficient heaters, which is the minimum efficiency legally required (see 10 CFR Part 431). According to the U.S. Department of Energy, newer pools are likely to use heaters with 89-95% efficiency (see http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=13170). ENVIRON conservatively assumed 90% efficiency for Landmark Village pool heaters, resulting in a 12% savings over the Oakland pools.

4. ENVIRON adjusted the natural gas usage to account for the difference in average ambient temperature in Newhall and Oakland. The natural gas usage was multiplied by the following adjustment factor: (typical pool temperature - Newhall average ambient temperature) / (typical pool temperature - San Francisco-Richmond average ambient temperature) = (80 deg F - 63.3 deg F) / (80 deg F - 55.5 deg F). Typical pool temperature based on information from the Department of Energy, available at: http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=13300. Average ambient temperatures for Newhall and San Francisco-Richmond were obtained from the Western Regional Climate Center: http://www.wrcc.dri.edu/.

5. ENVIRON assumed an outdoor competition-size (50 m x 25 yd x 8 ft) swimming pool.

6. Emission factor for electricity is provided by Southern California Edison, obtained from the California Climate Action Registry Database. Emission factor for natural gas is obtained from California Climate Action Registry Reporting Protocol, Table C7.

7. Emissions for a single competition-size pool, assuming no solar heating.

Abbreviations:

CARB 2020 NAT - California Air Resources Board Scoping Plan projections for 2020 if no actions are taken

CO_2 - carbon dioxide

CH_4 - methane

ft - foot

kWh - kilowatt-hour

lb - pound

MMBTU - Million British Thermal Units

N_2O - nitrous oxide

yr - year

Sources:

California Climate Action Registry General Reporting Protocol, Version 3.1 (January 2009). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

California Climate Action Registry Database: Southern California Edison Company 2007 PUP Report. 2008. Available at: https://www.climateregistry.org/CARROT/public/Reports.aspx

Energy Efficient Commercial Pool Program; Preliminary Facility Reports for DeFremery Pool, Fremont Pool, Live Oak Pool, Lyons Pool, and Temescal Pool. City of Oakland / Oakland Unified School District. October 2006.

Managing Swimming Pool Water Temperature for Energy Efficiency (September 2009). U.S. Department of Energy. Available at: http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=13300

Determining Gas Swimming Pool Heater Energy Efficiency (September 2009). U.S. Department of Energy. Available at: http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=13170

Energy Efficiency Program for Certain Commercial and Industrial Equipment: Efficiency Standards for Commercial Heating, Air-Conditioning, and Water-Heating Equipment. U.S. Department of Energy, 10 CFR Part 431. Available at: http://www1.eere.energy.gov/buildings/appliance_standards/commercial/pdfs/ashrae_final_rule_030707.pdf

Table 5-H-2
Greenhouse Gas (GHG) Emissions from Recreation Centers[1] - CARB 2020 NAT
Landmark Village
Newhall Ranch, California

Number of Pools	Total Emissions[2] (Tonnes CO_2 / year)
4	2,592

Notes:
1. ENVIRON assumed an outdoor competition-size (50 m x 25 yd x 8 ft) swimming pool as the main source of GHGs in an aquatic/recreation center.

2. Emissions for four recreation centers in Landmark Village, assuming no solar heating.

Abbreviations:
CARB 2020 NAT - California Air Resources Board Scoping Plan projections for 2020 if no actions are taken
CO_2 - carbon dioxide
ft - foot
GHG - Greenhouse Gas
m - meter
yd - yard
yr - year

Sources:
California Climate Action Registry General Reporting Protocol, Version 3.1 (January 2009). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

California Climate Action Registry Database: Southern California Edison Company 2007 PUP Report. 2008. Available at: https://www.climateregistry.org/CARROT/public/Reports.aspx

Energy Efficient Commercial Pool Program; Preliminary Facility Reports. Available at: http://www.oaklandpw.com/Page50.aspx

APPENDIX A
Building Construction URBEMIS Runs Received from Impact Sciences

Appendix A

Building Construction URBEMIS Report

Urbemis 2007 Version 9.2.2

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: U:\Newhall Ranch\From Impact Sciences\URBEMIS Building Construction\Landmark (1)\Landmark 2008-2012.urb9

Project Name: Landmark Village Construction 2008-2012

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	CO2
2008	1,624.03
Asphalt 10/01/2008-12/19/2008	97.32
Paving Off-Gas	0.00
Paving Off Road Diesel	41.15
Paving On Road Diesel	51.66
Paving Worker Trips	4.51
Building 10/01/2008-08/31/2012	1,526.71
Building Off Road Diesel	74.56
Building Vendor Trips	344.52
Building Worker Trips	1,107.64
2009	6,049.35
Building 10/01/2008-08/31/2012	6,035.39
Building Off Road Diesel	294.84
Building Vendor Trips	1,362.53
Building Worker Trips	4,378.02
Coating 02/02/2009-12/31/2012	13.96
Architectural Coating	0.00
Coating Worker Trips	13.96

Appendix A
Building Construction URBEMIS Report

2010	6,049.22
Building 10/01/2008-08/31/2012	6,033.99
Building Off Road Diesel	294.84
Building Vendor Trips	1,362.60
Building Worker Trips	4,376.55
Coating 02/02/2009-12/31/2012	15.24
Architectural Coating	0.00
Coating Worker Trips	15.24
2011	6,025.13
Building 10/01/2008-08/31/2012	6,009.95
Building Off Road Diesel	293.71
Building Vendor Trips	1,357.40
Building Worker Trips	4,358.85
Coating 02/02/2009-12/31/2012	15.18
Architectural Coating	0.00
Coating Worker Trips	15.18
2012	4,059.87
Building 10/01/2008-08/31/2012	4,044.64
Building Off Road Diesel	197.69
Building Vendor Trips	913.64
Building Worker Trips	2,933.32
Coating 02/02/2009-12/31/2012	15.23
Architectural Coating	0.00
Coating Worker Trips	15.23

Appendix A

Building Construction URBEMIS Report

Phase Assumptions

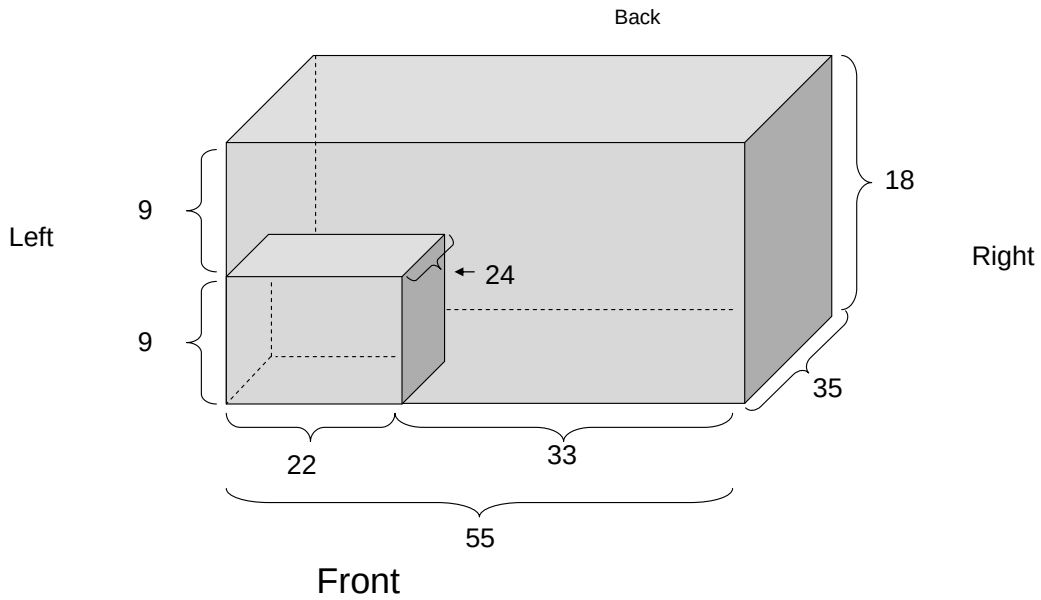
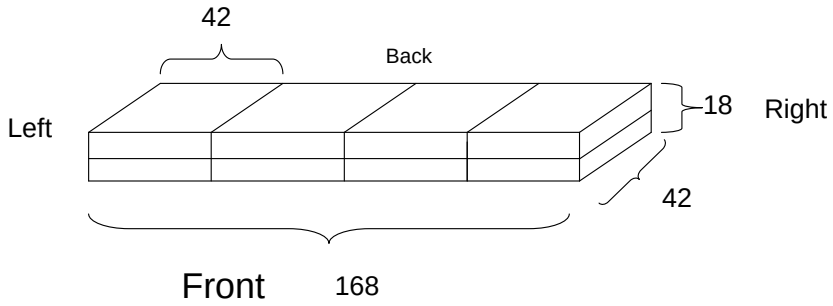
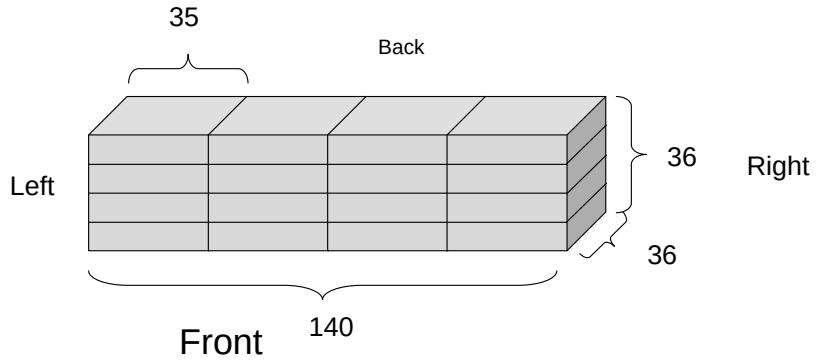
Phase: Paving 10/01/2008 - 12/19/2008 - Default Paving Description
Acres to be Paved: 67.91
Off-Road Equipment:
1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 10/01/2008 - 08/31/2012 - Default Building Construction Description
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day
3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 02/02/2009 - 12/31/2012 - Default Architectural Coating Description
Rule: Residential Interior Coatings begins 01/01/2005 ends 06/30/2008 specifies a VOC of 100
Rule: Residential Interior Coatings begins 07/01/2008 ends 12/31/2040 specifies a VOC of 50
Rule: Residential Exterior Coatings begins 01/01/2005 ends 06/30/2008 specifies a VOC of 250
Rule: Residential Exterior Coatings begins 07/01/2008 ends 12/31/2040 specifies a VOC of 100
Rule: Nonresidential Interior Coatings begins 01/01/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Exterior Coatings begins 01/01/2005 ends 12/31/2040 specifies a VOC of 250

APPENDIX B
Schematic Drawings of Residential Buildings Modeled in Micropas 7.3

Appendix B
Drawings of Buildings
(Not to Scale. All Dimensions are in Feet)

Single Family with Attached Garage: 20% of wall space is windows	
8 Dwelling Unit Apartment: 25% of wall space is windows	
16 Dwelling Unit Apartment: 25% of wall space is windows	

APPENDIX C
Micropas input Files for Residential Buildings

```
==============================================================================
|      MICROPAS7 v7.30  File-TEDSF2  Wth-CTZ09S05  Program-FORMAT             |
|                 Run-TedSFam  Project-TedSFam  Date-09/27/07                 |
------------------------------------------------------------------------------

Input file 'TEDSF2' last edited on 09/27/07

BUILDING
========

RUN FEATURES

RUN
 1> RUN TITLE (25 char) ............................ TedSFam
 2> PROJECT TITLE (25 char) ........................ TedSFam
 3> DOCUMENTATION AUTHOR (25 char) .................. Ted Bowie
BUILDING
 4> TYPE (Single, SingleAttached, MultiFamily) ...... Single
 5> CONSTRUCTION (New, Existing+Add+Alter, etc) ..... New
 6> FRONT ORIENTATION (Compass deg or Cardinal) ..... Cardinal
 7> NUMBER OF STORIES (1 or more) ................... 2
 8> FUEL TYPE (NaturalGas, Propane) ................. NaturalGas
 9> COMPLIANCE RUN (Compliance, Research, C-HERS) ... Compliance

SITE AND WEATHER DATA

 1> WEATHER DATA TYPE (FullYear) .................... FullYear
 2> CEC CLIMATE ZONE (01 thru 16) ................... 09

HVAC SIZING

 1> SIZING LOCATION (25 char) ....................... NEWHALL SOLEDAD

CALCULATIONS AND REPORTS

CALCULATIONS
 1> COMPUTER PERFORMANCE TYPE (Both,Stand,Prop) ..... Both
 2> COMPUTER PERFORMANCE CALCULATION (Yes, No) ...... Yes
 3> WATER HEATING CALCULATION (Yes, No) ............. Yes
 4> HVAC SIZING CALCULATION (Yes, No) ............... Yes
COMPLIANCE REPORTS
 5> PRINT CF-1R REPORT (Yes, No) .................... Yes
 6> PRINT MF-1R REPORT (Yes, No, Name) .............. Yes
 7> PRINT WS-5R LIGHTING WORKSHEET (Yes, No, Name) .. Yes
 9> PRINT HVAC SIZING REPORT (Yes, No, Detailed) .... Yes
OTHER
 10> PRINT INPUT DATA (Yes, No, Unformatted) ........ Yes
 12> STANDARD DESIGN INPUT DATA (Save, NoSave) ...... Save

ZONE
====

ZONES

 #> NUMBER OF ZONES (15 maximum) ..................... 1
```

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==============================================================================
|      MICROPAS7 v7.30  File-TEDSF2  Wth-CTZ09S05  Program-FORMAT             |
|                 Run-TedSFam  Project-TedSFam  Date-09/27/07                 |
------------------------------------------------------------------------------
```

ZONE 'HOUSE'

```
 1> ZONE NAME ........................................ HOUSE
 2> CONDITIONED (Yes, No) ........................... Yes
 3> ZONE TYPE ........................................ Residence
 4> FLOOR AREA (sf) .................................. 3322
 5> VOLUME (cuft) .................................... 29898
 6> NUMBER OF DWELLING UNITS ......................... 1
CREDITS
 7> HOUSEWRAP/VERIFIED AIR LEAKAGE (Yes,No,SLA) ..... No
 8> RADIANT BARRIER (Yes, No, CoolRoof) ............. Yes
 9> VERIFIED INSULATION QUALITY (Yes, No) ........... No
HVAC SYSTEM
 10> NUMBER OF SYSTEMS SERVING ZONE ................. 1
 11> HEATING SYSTEM NAME ............................ FURN
 12> COOLING SYSTEM NAME ............................ AC
 13> DUCT SYSTEM NAME ............................... DUCT
 14> NATURAL VENTILATION SYSTEM NAME ................ VENT
 15> FAN VENTILATION SYSTEM NAME ..................... None
 16> THERMOSTAT NAME ................................ Setback
HVAC SIZING
 17> NUMBER OF PEOPLE/UNIT (occupants/unit) ......... 4
```

OPAQUE
======

OPAQUE SURFACES

#> NUMBER OF SURFACES (100 maximum) 11

	OPAQUE SURFACE NAME	AREA OR LENGTH	TILT	PLAN AZIMUTH	SOLAR GAINS (Y/N)	OPAQUE CHARAC-TERISTICS	ZONE OR OPAQUE NAME	LOCATION/ COMMENTS
	---1----	--2---	--3--	---4---	--5--	------6------	---7----	------8-------
1>	RWALL	630	Vert	Right	Yes	WALL.R13	HOUSE	Right Wall
2>	FWALL	792	Vert	Front	Yes	WALL.R13	HOUSE	Front Wall
3>	LWALL	414	Vert	Left	Yes	WALL.R13	HOUSE	Left Wall
4>	BWALL	990	Vert	Back	Yes	WALL.R13	HOUSE	Back Wall
5>	RWALLI	216	Vert	Right	No	WALL.R13	HOUSE	Right Int Wall
6>	BWALLI	198	Vert	Right	No	WALL.R13	HOUSE	Rear Int Wall
7>	ACEIL	1925	Horz	n/a	Yes	ROOF.R30	HOUSE	Attic Ceiling
8>	FDOOR	24.5	Vert	Front	Yes	DOOR	FWALL	Front Door
9>	BDOOR	24.5	Vert	Back	Yes	DOOR	BWALL	Back Door
10>	GFLOOR	528	Horz	n/a	No	FLOORX.R19	HOUSE	Garage Floor
11>	EDGE	180	n/a	n/a	No	EDGE	HOUSE	Exposed Edge

OPAQUE CHARACTERISTICS

#> NUMBER OF CHARACTERISTICS (50 maximum) 11

```
==============================================================================
|      MICROPAS7 v7.30  File-TEDSF2  Wth-CTZ09S05  Program-FORMAT             |
|                Run-TedSFam  Project-TedSFam  Date-09/27/07                  |
------------------------------------------------------------------------------
```

	OPAQUE CHARAC-TERISTIC	OPAQUE SURFACE TYPE	FRAME TYPE	CAV-ITY R-VAL	SHEATH-ING R-VAL	U-FAC OR F-VAL	APP IV LOOKUP	APPENDIX IV LOOKUP NAME
	------1------	----2-----	--3--	--4--	---5---	--6---	--7---	------8-------
1>	WALL.R13	Wall	Wood	13	n/a	0.102	Yes	W.13.2X4.16
2>	WALL.R19	Wall	Wood	19	n/a	0.074	Yes	W.19.2X6.16
3>	WALL.R21	Wall	Wood	21	n/a	0.069	Yes	W.21.2X6.16
4>	ROOF.R19	Roof	Wood	19	n/a	0.049	Yes	R.19.16
5>	ROOF.R30	Roof	Wood	30	n/a	0.032	Yes	R.30.16
6>	ROOF.R38	Roof	Wood	38	n/a	0.026	Yes	R.38.16
7>	DOOR	Door	n/a	0	n/a	0.50	Yes	DOOR
8>	FLOORX.R13	FloorExt	Wood	13	n/a	0.046	Yes	FX.13.2X6.16
9>	FLOORX.R19	FloorExt	Wood	19	n/a	0.037	Yes	FX.19.2X8.16
10>	EDGE	SlabEdge	n/a	0	n/a	0.73	Yes	EDGE.EXT
11>	EDGE.R7	SlabEdge	n/a	0	n/a	0.56	Yes	EDGE.EXT.R7

GLAZING

GLAZING SURFACES

#> NUMBER OF SURFACES (100 maximum) 4

	GLAZING SURFACE NAME	AREA (sf)	TILT	PLAN AZIMUTH	GLAZING CHARAC-TERISTICS	OVERHANG SIDE FIN NAME	INT/EXT SHADE NAME	ZONE OR OPAQUE NAME
	---1----	--2---	-3--	---4---	------5------	----6----	----7----	---8----
1>	RGLASS	126	Vert	Right	WINDOW	None	None	RWALL
2>	FGLASS	158.4	Vert	Front	WINDOW	None	None	FWALL
3>	LGLASS	82.8	Vert	Left	WINDOW	None	None	LWALL
4>	BGLASS	198	Vert	Back	WINDOW	None	None	BWALL

GLAZING CHARACTERISTICS

#> NUMBER OF CHARACTERISTICS (100 maximum) 1

	GLAZING CHARAC-TERISTICS	GLAZING SURFACE TYPE	U-FACTOR	SHGC	DESCRIPTION
	-----1------	---2----	---3---	---4---	----------5----------
1>	WINDOW	Window	0.67	0.40	

MASS

MASS SURFACES

#> NUMBER OF SURFACES (50 maximum) 3

```
==============================================================================
|      MICROPAS7 v7.30  File-TEDSF2  Wth-CTZ09S05  Program-FORMAT             |
|                Run-TedSFam  Project-TedSFam  Date-09/27/07                 |
------------------------------------------------------------------------------
```

	MASS SURFACE NAME ----1----	AREA (sf) ---2---	MASS CHARAC-TERISTICS ------3------	ZONE NAME ----4----	LOCATION/COMMENTS ----------5----------
1>	ESLAB	279	SLAB.EXP	HOUSE	Exposed Slab
2>	CSLAB	1118	SLAB.CVR	HOUSE	Covered Slab
3>	RMASS	0	RAISED.MASS	HOUSE	Raised Floor Mass

MASS CHARACTERISTICS

#> NUMBER OF CHARACTERISTICS (25 maximum) 3

	MASS CHARAC-TERISTIC ------1------	MASS TYPE ------2-------	THICK NESS (in) --3--	SURF-ACE R-VAL --4--	VOLUME HEAT CAP --5---	CON-DUCT-IVITY --6---	UIMC --7--
1>	SLAB.EXP	SlabOnGrade	3.5	0.0	28	0.98	4.6
2>	SLAB.CVR	SlabOnGrade	3.5	2.0	28	0.98	1.8
3>	RAISED.MASS	InteriorHorz	2.0	0.0	28	0.98	2.5

HVAC
====

HEATING SYSTEMS

#> NUMBER OF HEATING SYSTEMS (25 maximum) 1

	HEATING SYSTEM NAME -----1------	HEATING SYSTEM TYPE ----2----	GAS AFUE --3---	HEATPUMP ELECTRIC HSPF ----4-----	HYDRONIC WATER HEATING SYSTEM NAME ------5------
1>	FURN	Furnace	0.78	n/a	None

COOLING SYSTEMS

#> NUMBER OF COOLING SYSTEMS (25 maximum) 1

	COOLING SYSTEM NAME -----1------	COOLING SYSTEM TYPE ----2----	SEER -3--	VERIF EER --4--	VERIF REFRIG OR TXV --5---	VERIF AIR FLOW --6--	VERIF FAN --7--	VERIF COOL CAP --8--
1>	AC	ACSplit	13	No	Yes	No	No	No

DUCT SYSTEMS

#> NUMBER OF DUCTS (25 maximum) 1

	DUCT SYSTEM NAME ------1------	DUCT INSUL R-VALUE ---2---	HEATING DUCT LOCATION ------3------	COOLING DUCT LOCATION ------4------	VERIF LEAKAGE ---5----	VERIF SURFACE AREA ---6---	VERIF BURIED DUCT --7---
1>	DUCT	6	Attic	Attic	Yes	No	No

NATURAL VENTILATION SYSTEMS

```
==============================================================================
|      MICROPAS7 v7.30  File-TEDSF2  Wth-CTZ09S05  Program-FORMAT             |
|                 Run-TedSFam  Project-TedSFam  Date-09/27/07                 |
------------------------------------------------------------------------------

      NATURAL       NATURAL      INLET     HEIGHT
      VENTILATION   VENTILATION  AREA      DIFF
      SYSTEM NAME   TYPE         PER ZONE  (ft)
      ------1------ -----2------ ----3---- ---4---
 1>   VENT          Standard     0         8.0

WATER HEATING
=============

WATER HEATING SYSTEMS

 #> NUMBER OF WATER HEATING SYSTEMS (25 maximum) .... 1
      WATER         WATER                        # OF            HYDRONIC/
      HEATING       HEATING       HEATER/BOILER HEATERS/BOILERS RECIRC
      NAME          TYPE          SYSTEM NAME   INSTALLED       SYSTEM NAME
      ------1------ ------2------ ------3------ -------4------- ------5------
 1>   WH1           DHW           GAS.STOR      1               None

HEATER/BOILER SYSTEMS

 #> NUMBER OF HEATER/BOILER SYSTEMS (25 maximum) .... 1

HEATER/BOILER SYSTEM 'GAS.STOR'

 1> HEATER/BOILER SYSTEM NAME ....................... GAS.STOR
 2> TANK TYPE (Storage, Instantaneous, etc.) ........ Storage
 3> HEATER ELEMENT TYPE (Electric, Gas, HeatPump) ... Gas
 4> DISTRIBUTION TYPE (Standard, PointOfUse, etc.) .. Standard
 5> ENERGY FACTOR ................................... 0.575
 6> TANK VOLUME (gallons) ........................... 50
 7> RATED INPUT (Btu/hr) ............................ n/a
 12> RECOVERY EFFICIENCY (fraction) ................. n/a
 13> STANDBY LOSS (fraction) ........................ n/a
WATER HEATING CREDIT
 14> CREDIT TYPE (None, Solar, WoodStove) ........... None

HYDRONIC/RECIRCULATION SYSTEMS

 #> NUMBER OF HYDRONIC/RECIRC SYSTEMS (25 maximum) .. 0
```

```
==============================================================================
|                 MICROPAS7 v7.30  Date-10/09/07  Program-MENU                |
|         Run-09 MF 8DU QA  Project-8 Unit Apartment QA  Date-10/09/07        |
------------------------------------------------------------------------------

Input file '09MF8DUQ' last edited on 10/09/07

BUILDING
========

RUN FEATURES

RUN
 1> RUN TITLE (25 char) ............................ 09 MF 8DU QA
 2> PROJECT TITLE (25 char) ........................ 8 Unit Apartment QA
 3> DOCUMENTATION AUTHOR (25 char) .................. Loren Bentley
BUILDING
 4> TYPE (Single, SingleAttached, MultiFamily) ...... MultiFamily
 5> CONSTRUCTION (New, Existing+Add+Alter, etc) ..... New
 6> FRONT ORIENTATION (Compass deg or Cardinal) ..... Cardinal
 7> NUMBER OF STORIES (1 or more) ................... 2
 8> FUEL TYPE (NaturalGas, Propane) ................. NaturalGas
 9> COMPLIANCE RUN (Compliance, Research, C-HERS) ... Compliance

SITE AND WEATHER DATA

 1> WEATHER DATA TYPE (FullYear) .................... FullYear
 2> CEC CLIMATE ZONE (01 thru 16) ................... 09

HVAC SIZING

 1> SIZING LOCATION (25 char) ....................... NEWHALL SOLEDAD

CALCULATIONS AND REPORTS

CALCULATIONS
 1> COMPUTER PERFORMANCE TYPE (Both,Stand,Prop) ..... Both
 2> COMPUTER PERFORMANCE CALCULATION (Yes, No) ...... Yes
 3> WATER HEATING CALCULATION (Yes, No) ............. Yes
 4> HVAC SIZING CALCULATION (Yes, No) ............... Yes
COMPLIANCE REPORTS
 5> PRINT CF-1R REPORT (Yes, No) .................... Yes
 6> PRINT MF-1R REPORT (Yes, No, Name) .............. No
 7> PRINT WS-5R LIGHTING WORKSHEET (Yes, No, Name) .. Yes
 9> PRINT HVAC SIZING REPORT (Yes, No, Detailed) .... No
OTHER
 10> PRINT INPUT DATA (Yes, No, Unformatted) ........ No
 12> STANDARD DESIGN INPUT DATA (Save, NoSave) ...... NoSave

ZONE
====

ZONES

 #> NUMBER OF ZONES (15 maximum) ..................... 1
```

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==============================================================================
|                 MICROPAS7 v7.30  Date-10/09/07  Program-MENU                |
|         Run-09 MF 8DU QA  Project-8 Unit Apartment QA  Date-10/09/07       |
------------------------------------------------------------------------------
```

ZONE 'HOUSE'

```
 1> ZONE NAME ....................................... HOUSE
 2> CONDITIONED (Yes, No) ........................... Yes
 3> ZONE TYPE ....................................... Residence
 4> FLOOR AREA (sf) ................................. 14112
 5> VOLUME (cuft) ................................... 127008
 6> NUMBER OF DWELLING UNITS ........................ 8
CREDITS
 7> HOUSEWRAP/VERIFIED AIR LEAKAGE (Yes,No,SLA) ..... No
 8> RADIANT BARRIER (Yes, No, CoolRoof) ............. Yes
 9> VERIFIED INSULATION QUALITY (Yes, No) ........... No
HVAC SYSTEM
 10> NUMBER OF SYSTEMS SERVING ZONE ................. 8
 11> HEATING SYSTEM NAME ............................ FURN
 12> COOLING SYSTEM NAME ............................ AC
 13> DUCT SYSTEM NAME ............................... DUCT
 14> NATURAL VENTILATION SYSTEM NAME ................ VENT
 15> FAN VENTILATION SYSTEM NAME .................... None
 16> THERMOSTAT NAME ................................ Setback
HVAC SIZING
 17> NUMBER OF PEOPLE/UNIT (occupants/unit) ......... 3
```

OPAQUE
======

OPAQUE SURFACES

#> NUMBER OF SURFACES (100 maximum) 9

	OPAQUE SURFACE NAME ---1----	AREA OR LENGTH --2---	TILT --3--	PLAN AZIMUTH ---4---	SOLAR GAINS (Y/N) --5--	OPAQUE CHARAC-TERISTICS ------6------	ZONE OR OPAQUE NAME ---7----	LOCATION/ COMMENTS ------8-------
1>	RWALL	756	Vert	Right	Yes	WALL.R13	HOUSE	Right Wall
2>	FWALL	3024	Vert	Front	Yes	WALL.R13	HOUSE	Front Wall
3>	LWALL	756	Vert	Left	Yes	WALL.R13	HOUSE	Left Wall
4>	BWALL	3024	Vert	Back	Yes	WALL.R13	HOUSE	Back Wall
5>	ACEIL	7056	Horz	n/a	Yes	ROOF.R30	HOUSE	Attic Ceiling
6>	FDOOR	196	Vert	Front	Yes	DOOR	FWALL	Front Doors
7>	FLOOR	0	Horz	n/a	No	FLOORX.R19	HOUSE	Floor
8>	EDGE	420	n/a	n/a	No	EDGE	HOUSE	Exposed Edge
9>	BDOOR	196	Vert	Back	Yes	DOOR	BWALL	Back Doors

OPAQUE CHARACTERISTICS

#> NUMBER OF CHARACTERISTICS (50 maximum) 11

	OPAQUE CHARAC-TERISTIC ------1------	OPAQUE SURFACE TYPE ----2-----	FRAME TYPE --3--	CAV-ITY R-VAL --4--	SHEATH-ING R-VAL ---5---	U-FAC OR F-VAL --6---	APP IV LOOKUP --7---	APPENDIX IV LOOKUP NAME ------8-------
1>	WALL.R13	Wall	Wood	13	n/a	0.102	Yes	W.13.2X4.16
2>	WALL.R19	Wall	Wood	19	n/a	0.074	Yes	W.19.2X6.16

3>	WALL.R21	Wall	Wood	21	n/a	0.069	Yes	W.21.2X6.16
4>	ROOF.R19	Roof	Wood	19	n/a	0.049	Yes	R.19.16
5>	ROOF.R30	Roof	Wood	30	n/a	0.032	Yes	R.30.16
6>	ROOF.R38	Roof	Wood	38	n/a	0.026	Yes	R.38.16
7>	DOOR	Door	n/a	0	n/a	0.50	Yes	DOOR
8>	FLOORX.R13	FloorExt	Wood	13	n/a	0.046	Yes	FX.13.2X6.16
9>	FLOORX.R19	FloorExt	Wood	19	n/a	0.037	Yes	FX.19.2X8.16
10>	EDGE	SlabEdge	n/a	0	n/a	0.73	Yes	EDGE.EXT
11>	EDGE.R7	SlabEdge	n/a	0	n/a	0.56	Yes	EDGE.EXT.R7

GLAZING

GLAZING SURFACES

#> NUMBER OF SURFACES (100 maximum) 4

	GLAZING SURFACE NAME ---1----	AREA (sf) --2---	TILT -3--	PLAN AZIMUTH ---4---	GLAZING CHARAC-TERISTICS ------5------	OVERHANG SIDE FIN NAME ----6----	INT/EXT SHADE NAME ----7----	ZONE OR OPAQUE NAME ---8----
1>	RGLASS	189	Vert	Right	WINDOW	None	None	RWALL
2>	FGLASS	756	Vert	Front	WINDOW	None	None	FWALL
3>	LGLASS	189	Vert	Left	WINDOW	None	None	LWALL
4>	BGLASS	756	Vert	Back	WINDOW	None	None	BWALL

GLAZING CHARACTERISTICS

#> NUMBER OF CHARACTERISTICS (100 maximum) 1

	GLAZING CHARAC-TERISTICS -----1------	GLAZING SURFACE TYPE ---2----	U-FACTOR ---3---	SHGC ---4---	DESCRIPTION ----------5----------
1>	WINDOW	Window	0.67	0.40	

MASS

MASS SURFACES

#> NUMBER OF SURFACES (50 maximum) 2

	MASS SURFACE NAME ----1----	AREA (sf) ---2---	MASS CHARAC-TERISTICS ------3------	ZONE NAME ----4----	LOCATION/COMMENTS ----------5----------
1>	ESLAB	1411	SLAB.EXP	HOUSE	Exposed Slab
2>	CSLAB	5645	SLAB.CVR	HOUSE	Covered Slab

MASS CHARACTERISTICS

#> NUMBER OF CHARACTERISTICS (25 maximum) 3

```
|                 MICROPAS7 v7.30  Date-10/09/07  Program-MENU                |
|         Run-09 MF 8DU QA  Project-8 Unit Apartment QA  Date-10/09/07        |
```

	MASS CHARAC-TERISTIC	MASS TYPE	THICK NESS (in)	SURF-ACE R-VAL	VOLUME HEAT CAP	CON-DUCT-IVITY	UIMC
	------1------	------2-------	--3--	--4--	--5---	--6---	--7--
1>	SLAB.EXP	SlabOnGrade	3.5	0.0	28	0.98	4.6
2>	SLAB.CVR	SlabOnGrade	3.5	2.0	28	0.98	1.8
3>	RAISED.MASS	InteriorHorz	2.0	0.0	28	0.98	2.5

HVAC

HEATING SYSTEMS

#> NUMBER OF HEATING SYSTEMS (25 maximum) 1

	HEATING SYSTEM NAME	HEATING SYSTEM TYPE	GAS AFUE	HEATPUMP ELECTRIC HSPF	HYDRONIC WATER HEATING SYSTEM NAME
	-----1------	----2----	--3---	----4-----	------5------
1>	FURN	Furnace	0.78	n/a	None

COOLING SYSTEMS

#> NUMBER OF COOLING SYSTEMS (25 maximum) 1

	COOLING SYSTEM NAME	COOLING SYSTEM TYPE	SEER	VERIF EER	VERIF REFRIG OR TXV	VERIF AIR FLOW	VERIF FAN	VERIF COOL CAP
	-----1------	----2----	-3--	--4--	--5---	--6--	--7--	--8--
1>	AC	ACSplit	13	No	Yes	No	No	No

DUCT SYSTEMS

#> NUMBER OF DUCTS (25 maximum) 1

	DUCT SYSTEM NAME	DUCT INSUL R-VALUE	HEATING DUCT LOCATION	COOLING DUCT LOCATION	VERIF LEAKAGE	VERIF SURFACE AREA	VERIF BURIED DUCT
	------1------	---2---	------3------	------4------	---5----	---6---	--7---
1>	DUCT	6	Attic	Attic	Yes	No	No

NATURAL VENTILATION SYSTEMS

	NATURAL VENTILATION SYSTEM NAME	NATURAL VENTILATION TYPE	INLET AREA PER ZONE	HEIGHT DIFF (ft)
	------1------	-----2------	----3----	---4---
1>	VENT	Standard	0	8.0

WATER HEATING

WATER HEATING SYSTEMS

```
==============================================================================
|                 MICROPAS7 v7.30  Date-10/09/07  Program-MENU                |
|         Run-09 MF 8DU QA  Project-8 Unit Apartment QA  Date-10/09/07       |
------------------------------------------------------------------------------

 #> NUMBER OF WATER HEATING SYSTEMS (25 maximum) .... 1
      WATER         WATER                       # OF            HYDRONIC/
      HEATING       HEATING       HEATER/BOILER HEATERS/BOILERS RECIRC
      NAME          TYPE          SYSTEM NAME   INSTALLED       SYSTEM NAME
      ------1------ ------2------ ------3------ -------4------- ------5------
 1>   WH1           DHW           GAS.STOR      8               None

HEATER/BOILER SYSTEMS

 #> NUMBER OF HEATER/BOILER SYSTEMS (25 maximum) .... 1

HEATER/BOILER SYSTEM 'GAS.STOR'

 1> HEATER/BOILER SYSTEM NAME ....................... GAS.STOR
 2> TANK TYPE (Storage, Instantaneous, etc.) ........ Storage
 3> HEATER ELEMENT TYPE (Electric, Gas, HeatPump) ... Gas
 4> DISTRIBUTION TYPE (Standard, PointOfUse, etc.) .. Standard
 5> ENERGY FACTOR ................................... 0.575
 6> TANK VOLUME (gallons) ........................... 50
 7> RATED INPUT (Btu/hr) ............................ n/a
 12> RECOVERY EFFICIENCY (fraction) ................. n/a
 13> STANDBY LOSS (fraction) ........................ n/a
WATER HEATING CREDIT
 14> CREDIT TYPE (None, Solar, WoodStove) ........... None

HYDRONIC/RECIRCULATION SYSTEMS

 #> NUMBER OF HYDRONIC/RECIRC SYSTEMS (25 maximum) .. 0
```

```
==============================================================================
|                 MICROPAS7 v7.30  Date-10/10/07  Program-MENU                |
|             Run-20KFinlA  Project-20160sft 16DU  Date-10/10/07              |
------------------------------------------------------------------------------

Input file '20KFINLA' last edited on 10/10/07

BUILDING
========

RUN FEATURES

RUN
 1> RUN TITLE (25 char) ............................ 20KFinlA
 2> PROJECT TITLE (25 char) ........................ 20160sft 16DU
 3> DOCUMENTATION AUTHOR (25 char) .................. David Weaver
BUILDING
 4> TYPE (Single, SingleAttached, MultiFamily) ...... MultiFamily
 5> CONSTRUCTION (New, Existing+Add+Alter, etc) ..... New
 6> FRONT ORIENTATION (Compass deg or Cardinal) ..... Cardinal
 7> NUMBER OF STORIES (1 or more) ................... 3
 8> FUEL TYPE (NaturalGas, Propane) ................. NaturalGas
 9> COMPLIANCE RUN (Compliance, Research, C-HERS) ... Compliance

SITE AND WEATHER DATA

 1> WEATHER DATA TYPE (FullYear) .................... FullYear
 2> CEC CLIMATE ZONE (01 thru 16) ................... 09

HVAC SIZING

 1> SIZING LOCATION (25 char) ....................... NEWHALL SOLEDAD

CALCULATIONS AND REPORTS

CALCULATIONS
 1> COMPUTER PERFORMANCE TYPE (Both,Stand,Prop) ..... Both
 2> COMPUTER PERFORMANCE CALCULATION (Yes, No) ...... Yes
 3> WATER HEATING CALCULATION (Yes, No) ............. Yes
 4> HVAC SIZING CALCULATION (Yes, No) ............... Yes
COMPLIANCE REPORTS
 5> PRINT CF-1R REPORT (Yes, No) .................... Yes
 6> PRINT MF-1R REPORT (Yes, No, Name) .............. Yes
 7> PRINT WS-5R LIGHTING WORKSHEET (Yes, No, Name) .. Yes
 9> PRINT HVAC SIZING REPORT (Yes, No, Detailed) .... Yes
OTHER
 10> PRINT INPUT DATA (Yes, No, Unformatted) ........ Yes
 12> STANDARD DESIGN INPUT DATA (Save, NoSave) ...... NoSave

ZONE
====

ZONES

 #> NUMBER OF ZONES (15 maximum) ..................... 1
```

```
|                 MICROPAS7 v7.30  Date-10/10/07  Program-MENU                |
|             Run-20KFinlA  Project-20160sft 16DU  Date-10/10/07              |
```

ZONE 'HOUSE'

```
 1> ZONE NAME ..................................... HOUSE
 2> CONDITIONED (Yes, No) ......................... Yes
 3> ZONE TYPE ..................................... Residence
 4> FLOOR AREA (sf) ............................... 20160
 5> VOLUME (cuft) ................................. 181440
 6> NUMBER OF DWELLING UNITS ...................... 16
CREDITS
 7> HOUSEWRAP/VERIFIED AIR LEAKAGE (Yes,No,SLA) ..... No
 8> RADIANT BARRIER (Yes, No, CoolRoof) ............ Yes
 9> VERIFIED INSULATION QUALITY (Yes, No) ........... No
HVAC SYSTEM
 10> NUMBER OF SYSTEMS SERVING ZONE ................ 16
 11> HEATING SYSTEM NAME ........................... FURN
 12> COOLING SYSTEM NAME ........................... AC
 13> DUCT SYSTEM NAME .............................. DUCT
 14> NATURAL VENTILATION SYSTEM NAME ............... VENT
 15> FAN VENTILATION SYSTEM NAME ................... None
 16> THERMOSTAT NAME ............................... Setback
HVAC SIZING
 17> NUMBER OF PEOPLE/UNIT (occupants/unit) ......... 3
```

OPAQUE
======

OPAQUE SURFACES

#> NUMBER OF SURFACES (100 maximum) 10

	OPAQUE SURFACE NAME ---1----	AREA OR LENGTH --2---	TILT --3--	PLAN AZIMUTH ---4---	SOLAR GAINS (Y/N) --5--	OPAQUE CHARAC-TERISTICS ------6------	ZONE OR OPAQUE NAME ---7----	LOCATION/ COMMENTS ------8-------
1>	RWALL	1296	Vert	Right	Yes	WALL.R13	HOUSE	Right Wall
2>	FWALL	5040	Vert	Front	Yes	WALL.R13	HOUSE	Front Wall
3>	LWALL	1296	Vert	Left	Yes	WALL.R13	HOUSE	Left Wall
4>	BWALL	5040	Vert	Back	Yes	WALL.R13	HOUSE	Back Wall
5>	ACEIL	5040	Horz	n/a	Yes	ROOF.R30	HOUSE	Attic Ceiling
6>	RDOOR	0	Vert	Right	Yes	DOOR	RWALL	North Door
7>	LDOOR	0	Vert	Left	Yes	DOOR	LWALL	North Door
8>	FDOOR	392	Vert	Front	Yes	DOOR	FWALL	North Door
9>	BDOOR	392	Vert	Back	Yes	DOOR	BWALL	North Door
10>	EDGE	352	n/a	n/a	No	EDGE	HOUSE	Exposed Edge

OPAQUE CHARACTERISTICS

#> NUMBER OF CHARACTERISTICS (50 maximum) 11

```
==============================================================================
|                 MICROPAS7 v7.30  Date-10/10/07  Program-MENU                |
|            Run-20KFinlA  Project-20160sft 16DU  Date-10/10/07              |
------------------------------------------------------------------------------
```

	OPAQUE CHARAC-TERISTIC	OPAQUE SURFACE TYPE	FRAME TYPE	CAV-ITY R-VAL	SHEATH-ING R-VAL	U-FAC OR F-VAL	APP IV LOOKUP	APPENDIX IV LOOKUP NAME
	------1------	----2-----	--3--	--4--	---5---	--6---	--7---	------8-------
1>	WALL.R13	Wall	Wood	13	n/a	0.102	Yes	W.13.2X4.16
2>	WALL.R19	Wall	Wood	19	n/a	0.074	Yes	W.19.2X6.16
3>	WALL.R21	Wall	Wood	21	n/a	0.069	Yes	W.21.2X6.16
4>	ROOF.R19	Roof	Wood	19	n/a	0.049	Yes	R.19.16
5>	ROOF.R30	Roof	Wood	30	n/a	0.032	Yes	R.30.16
6>	ROOF.R38	Roof	Wood	38	n/a	0.026	Yes	R.38.16
7>	DOOR	Door	n/a	0	n/a	0.50	Yes	DOOR
8>	FLOORX.R13	FloorExt	Wood	13	n/a	0.046	Yes	FX.13.2X6.16
9>	FLOORX.R19	FloorExt	Wood	19	n/a	0.037	Yes	FX.19.2X8.16
10>	EDGE	SlabEdge	n/a	0	n/a	0.73	Yes	EDGE.EXT
11>	EDGE.R7	SlabEdge	n/a	0	n/a	0.56	Yes	EDGE.EXT.R7

GLAZING

GLAZING SURFACES

#> NUMBER OF SURFACES (100 maximum) 4

	GLAZING SURFACE NAME	AREA (sf)	TILT	PLAN AZIMUTH	GLAZING CHARAC-TERISTICS	OVERHANG SIDE FIN NAME	INT/EXT SHADE NAME	ZONE OR OPAQUE NAME
	---1----	--2---	-3--	---4---	------5------	----6----	----7----	---8----
1>	RGLASS	324	Vert	Right	WINDOW	None	None	RWALL
2>	FGLASS	1260	Vert	Front	WINDOW	None	None	FWALL
3>	LGLASS	324	Vert	Left	WINDOW	None	None	LWALL
4>	BGLASS	1260	Vert	Back	WINDOW	None	None	BWALL

GLAZING CHARACTERISTICS

#> NUMBER OF CHARACTERISTICS (100 maximum) 1

	GLAZING CHARAC-TERISTICS	GLAZING SURFACE TYPE	U-FACTOR	SHGC	DESCRIPTION
	-----1------	---2----	---3---	---4---	----------5----------
1>	WINDOW	Window	0.67	0.40	

MASS

MASS SURFACES

#> NUMBER OF SURFACES (50 maximum) 2

```
==============================================================================
|                 MICROPAS7 v7.30  Date-10/10/07  Program-MENU                |
|            Run-20KFinlA  Project-20160sft 16DU  Date-10/10/07              |
------------------------------------------------------------------------------

      MASS              MASS
      SURFACE   AREA    CHARAC-       ZONE
      NAME      (sf)    TERISTICS     NAME      LOCATION/COMMENTS
      ----1---- ---2--- ------3------ ----4---- ------------5------------
 1>   CSLAB     4032    SLAB.CVR      HOUSE     Covered Slab
 2>   ESLAB     1008    SLAB.EXP      HOUSE     Covered Slab

MASS CHARACTERISTICS

 #> NUMBER OF CHARACTERISTICS (25 maximum) .......... 3
      MASS                          THICK SURF- VOLUME CON-
      CHARAC-                       NESS  ACE   HEAT   DUCT-
      TERISTIC      MASS TYPE       (in)  R-VAL CAP    IVITY  UIMC
      ------1------ ------2------- --3-- --4-- --5--- --6--- --7--
 1>   SLAB.EXP      SlabOnGrade     3.5   0.0   28     0.98   4.6
 2>   SLAB.CVR      SlabOnGrade     3.5   2.0   28     0.98   1.8
 3>   RAISED.MASS   InteriorHorz    2.0   0.0   28     0.98   2.5

HVAC
====

HEATING SYSTEMS

 #> NUMBER OF HEATING SYSTEMS (25 maximum) .......... 1
      HEATING      HEATING          HEATPUMP   HYDRONIC
      SYSTEM       SYSTEM    GAS    ELECTRIC   WATER HEATING
      NAME         TYPE      AFUE   HSPF       SYSTEM NAME
      -----1------ ----2---- --3--- ----4----- ------5------
 1>   FURN         Furnace   0.78   n/a        None

COOLING SYSTEMS

 #> NUMBER OF COOLING SYSTEMS (25 maximum) .......... 1
      COOLING      COOLING              VERIF  VERIF       VERIF
      SYSTEM       SYSTEM         VERIF REFRIG AIR   VERIF COOL
      NAME         TYPE      SEER EER   OR TXV FLOW  FAN   CAP
      -----1------ ----2---- -3-- --4-- --5--- --6-- --7-- --8--
 1>   AC           ACSplit   13   No    Yes    No    No    No

DUCT SYSTEMS

 #> NUMBER OF DUCTS (25 maximum) ..................... 1
      DUCT          DUCT    HEATING       COOLING                VERIF   VERIF
      SYSTEM        INSUL   DUCT          DUCT          VERIF    SURFACE BURIED
      NAME          R-VALUE LOCATION      LOCATION      LEAKAGE  AREA    DUCT
      ------1------ ---2--- ------3------ ------4------ ---5---- ---6--- --7---
 1>   DUCT          6       Attic         Attic         Yes      No      No

NATURAL VENTILATION SYSTEMS
```

```
==============================================================================
|                 MICROPAS7 v7.30  Date-10/10/07  Program-MENU                |
|            Run-20KFinlA  Project-20160sft 16DU  Date-10/10/07              |
------------------------------------------------------------------------------

      NATURAL       NATURAL      INLET     HEIGHT
      VENTILATION   VENTILATION  AREA      DIFF
      SYSTEM NAME   TYPE         PER ZONE  (ft)
      ------1------ -----2------ ----3---- ---4---
 1>   VENT          Standard     0         8.0

WATER HEATING
=============

WATER HEATING SYSTEMS

 #> NUMBER OF WATER HEATING SYSTEMS (25 maximum) .... 1
      WATER         WATER                        # OF            HYDRONIC/
      HEATING       HEATING       HEATER/BOILER HEATERS/BOILERS RECIRC
      NAME          TYPE          SYSTEM NAME   INSTALLED       SYSTEM NAME
      ------1------ ------2------ ------3------ -------4------- ------5------
 1>   WH1           DHW           GAS.STOR      16              None

HEATER/BOILER SYSTEMS

 #> NUMBER OF HEATER/BOILER SYSTEMS (25 maximum) .... 1

HEATER/BOILER SYSTEM 'GAS.STOR'

 1> HEATER/BOILER SYSTEM NAME ....................... GAS.STOR
 2> TANK TYPE (Storage, Instantaneous, etc.) ........ Storage
 3> HEATER ELEMENT TYPE (Electric, Gas, HeatPump) ... Gas
 4> DISTRIBUTION TYPE (Standard, PointOfUse, etc.) .. Standard
 5> ENERGY FACTOR ................................... 0.575
 6> TANK VOLUME (gallons) ........................... 50
 7> RATED INPUT (Btu/hr) ............................ n/a
 12> RECOVERY EFFICIENCY (fraction) ................. n/a
 13> STANDBY LOSS (fraction) ........................ n/a
WATER HEATING CREDIT
 14> CREDIT TYPE (None, Solar, WoodStove) ........... None

HYDRONIC/RECIRCULATION SYSTEMS

 #> NUMBER OF HYDRONIC/RECIRC SYSTEMS (25 maximum) .. 0
```

APPENDIX D
Trip Lengths from Traffic Studies

Home-Based Production Trip Length Averages by Purpose

Newhall Land & Lennar Westside Area

Purpose	Total Trips	Trip-Miles	Ave. Trip Length (Miles)
Home-Based Work Productions	44,708	478,200	*10.7*
Home-Based Shopping Productions	37,002	191,640	*5.2*
Home-Based Other Productions	72,555	510,780	*7.0*
Total Home-Based Productions	*154,265*	*1,180,620*	*7.7*

Non-Westside Area (Remainder of Santa Clarita Valley)

Purpose	Total Trips	Trip-Miles	Ave. Trip Length (Miles)
Home-Based Work Productions	281,950	4,672,380	*16.6*
Home-Based Shopping Productions	281,204	3,035,400	*10.8*
Home-Based Other Productions	488,749	5,411,700	*11.1*
Total Home-Based Productions	*1,051,903*	*13,119,480*	*12.5*

source: SCVCTM LRC 4.1.b

APPENDIX E
Area Source URBEMIS Run

Urbemis 2007 Version 9.2.2

Detail Report for Annual Area Source Unmitigated Emissions (Tons/Year)

File Name: U:\Landmark Village\Report 2 LV\Source Files 2 LV\URBEMIS files and outputs\Operational & Area Emissions.urb9

Project Name: Landmark Village Operational and Area Emissions

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

Source	CO2
Natural Gas	
Hearth	186.24
Landscape	11.70
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	197.94

Area Source Changes to Defaults

APPENDIX F
Life Cycle Greenhouse Gas Emissions from Building Materials

Life Cycle Greenhouse Gas Emissions from Building Materials

Prepared for:

Newhall Land
Valencia, CA

Prepared by:

ENVIRON International Corporation
Emeryville, CA

November 2008

ENVIRON
www.environcorp.com

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Table 8 Summary of Life Cycle Greenhouse Gas (GHG) Emissions from Buildings, Infrastructure, and the Water Reclamation Plant for Landmark Village

Acronyms

AP-42	Compilation of Air Pollutant Emission Factors
$CaCO_3$	limestone
CaO	calcium oxide
CCAR	California Climate Action Registry
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DOE	Department of Energy
EERE	Energy Efficiency and Renewable Energy
EIA	Energy Information Administration
ENVIRON	ENVIRON International Corporation
ft^2	square feet
GHG	greenhouse gas
GRP	General Reporting Protocol
kWh/m^2	kilowatt hour per square meter
LCA	life cycle analyses
MMBTU	million British thermal units
NRSP	Newhall Ranch Specific Plan
VCC	Valencia Commerce Center
WRP	water reclamation plant

1.0 EXECUTIVE SUMMARY

This report evaluates the life cycle greenhouse gas (GHG) emissions associated with the building materials used in the construction of Newhall Ranch.[1] The life cycle GHG emissions include the embodied energy from the materials manufacture and the energy used to transport those materials to the site. This report then compares the life cycle GHG emissions to the overall annual operational emissions of Newhall Ranch.[2] Lastly, the report provides estimates for life cycle GHG emissions specific to Landmark Village based on the analyses performed for Newhall Ranch. The materials analyzed in this report include materials for 1) residential and non-residential buildings, 2) site infrastructure and 3) the water reclamation plant. This report calculates the overall life cycle emissions from construction materials to be 4,000 – 27,200 tonnes per year, or 1.3 – 8.9% of the overall Newhall Ranch project emissions.

ENVIRON estimated the life cycle GHG emissions for buildings by conducting an analysis of available literature on life cycle analyses (LCA) for buildings. According to these studies, approximately 75 - 97% of GHG emissions from buildings are associated with energy usage during the operational phase; the other 3 - 25% of the GHG emissions are due to material manufacture and transport. Using the GHG emissions from the operation of Newhall buildings, 3% to 25% corresponds to 3,200 to 26,400 tonnes CO_2 per year or 1.0 – 8.7% of the NRSP project emissions.

ENVIRON calculated the life cycle GHG emissions for infrastructure (roads, storm drains, utilities, gas, electricity, cable) to be equal to a one time emission of 31,600 tonnes CO_2. This analysis considered the manufacture and transport of concrete and asphalt. Based on this analysis, the transport of the materials leads to 2,100 tonnes of CO_2 emissions and the manufacture of the materials leads to 29,500 tonnes of emissions. Because the manufacture of concrete has a higher CO_2 emission factor and Newhall estimates higher quantities of concrete than asphalt, the majority of the emissions for infrastructure result from the manufacture of concrete. Because the asphalt and concrete are locally sourced, the transportation emissions are relatively small. If a 40 year lifespan of the infrastructure is assumed, the total annualized emissions are 800 tonnes per year or 0.3% of the Newhall Ranch project emissions.

ENVIRON calculated the life cycle GHG emissions for the water reclamation plant (WRP) based upon the estimated amount of concrete used to construct the WRP. Based on this analysis, the transport of the concrete for the WRP leads to 100 tonnes of CO_2 emissions and the manufacture of the materials leads to 2,200 tonnes of CO_2 emissions, the combination of which represent 0.02% of the NRSP project emissions. Because the concrete is locally sourced, the transportation emissions are relatively small.

---

[1] ENVIRON performed calculations specific to the NRSP and estimated emissions for Landmark Village based on total building area.

[2] ENVIRON estimated life cycle GHG emissions from materials in the NRSP and did not include estimates for Entrada and VCC because data was not readily available. The percentages reflect the portion of life cycle GHG emissions compared to the total emissions for the NRSP area.

The overall life cycle emissions from embodied energy in the Newhall Ranch building materials, annualized by 40 years, are 4,000 – 27,200 tonnes CO_2 / year. This represents 1.3 – 8.9% of the annualized GHG emissions from the NRSP area. The bulk of these emissions (1.0% to 8.7%) are from general life cycle analysis studies and do not reflect the details of Newhall Ranch.

ENVIRON estimated life cycle GHG emissions from embodied energy in Landmark Village based on the life cycle GHG emissions from the NRSP and the total building area of Landmark Village. The overall life cycle emissions from embodied energy in Landmark Village, annualized by 40 years, are 400 – 2,100 tonnes CO_2 / year. This represents 1.3 – 7.7% of the annualized GHG emissions from Landmark Village.

2.0 INTRODUCTION

This report evaluates the life cycle greenhouse gas (GHG) emissions associated with the building materials used in the construction of Newhall Ranch. The life cycle GHG emissions include the embodied energy from the materials manufacture and the energy used to transport those materials to the site. This report then compares the life cycle GHG emissions to the overall annual operational emissions of Newhall Ranch. Lastly, the report provides estimates for life cycle GHG emissions specific to Landmark Village based on the analyses performed for Newhall Ranch. The materials analyzed in this report include materials for 1) residential and non-residential buildings, 2) site infrastructure and 3) the water reclamation plant.

2.1 Background on Life Cycle Analysis

LCA is a method developed to evaluate the mass balance of inputs and outputs of systems and to organize and convert those inputs and outputs into environmental themes or categories. In this case, the LCA is related to GHG emissions associated with the different stages of a life cycle. The LCA field is still relatively new, and while there are general standards for goals and general practices for LCAs[3] the specific methodologies and, in particular, the boundaries chosen for the LCA makes inter-comparison of various studies difficult. Simple choices such as the useful life of a building or road, for example, can change the LCA outcome substantially. Additionally, the geographic location, climatic zone and building type significantly influence patterns of energy consumption (and energy efficiency) and therefore determine life cycle GHG emissions, which makes comparisons among different studies difficult.

The calculations and results presented in this report are estimates and should be used only for a general comparison to the overall GHG emissions estimated in the Climate Change Technical Report. LCA emissions vary based on input assumptions and assessment boundaries (e.g., how far back to trace the origin of a material). Assumptions made in this report are generally conservative. However, due to the open-ended nature of LCAs, the analysis is not exact and may be highly uncertain.

3.0 EMISSIONS ESTIMATES

3.1 Life Cycle GHG Emissions from Building Materials

ENVIRON estimated the life cycle GHG emissions for building materials by conducting an analysis of available literature on life cycle analyses (LCA) for buildings. According to these studies, approximately 75 - 97% of GHG emissions from buildings are associated with energy usage during the operational phase; the other 3 - 25% of the GHG emissions are due to building material manufacture and transport. Based on the GHG emissions from the operation of Newhall buildings[4],

[3] ISO 14044 and ISO 14040

[4] Climate Change Technical Report: Newhall Ranch. ENVIRON. January 2008.

3% to 25% corresponds to 3,200 to 26,400 tonnes CO_2 per year, as shown in Table 1. The specific LCA studies used are discussed in the next section.

With the current energy generation mix in the US which relies heavily on fossil fuel based sources, focusing on energy efficiency measures (which ultimately reduces lifetime GHG emissions) is more effective in reducing the overall GHG footprint than focusing on materials with low embodied energy. As the energy generation measures reduce their GHG intensity (shift away from fossil fuel to renewable fuels), material selection will be a more critical factor in a building's GHG emissions over its life cycle.

3.1.1 LCA Studies for Buildings

The LCA literature studies tend to compare the energy used to make and transport building materials, or the embodied energy, with the operational energy use. In this manner, the relative importance of the embodied energy can be assessed. ENVIRON discusses several studies that compare the embodied energy and the operational energy.

A life cycle assessment of a 66,000 ft^2 sustainably-designed university building[5] in the US Mid-west[6] estimated that the GHG emissions associated with its energy use over a 100-year time horizon to be 135,000 metric tones of carbon dioxide equivalent (CO_2e), 96.5% of which result from operations phase activities, 3% from material production (of which ⅓ is cement production) and 0.5% from transportation and decommissioning combined. The study also notes that the GHG emissions closely matches the distribution of life cycle energy distributions, indicating that operational energy requirements are the key factor determining overall GHG emissions, especially when considering fossil fuel based energy generation. This building has a longer estimated life than the Newhall Ranch buildings, which would lead to a lower comparison of embodied energy to operational energy.

A study of single-family homes in the US Mid-west,[7] one built using standard construction techniques and the second incorporating energy efficiency measures, reached similar conclusions. Over the life cycle of the homes (assumed to be 50 years), the conventional home uses 15,000 MMBTU and the energy efficient configuration uses 6,000 MMBTU of energy, representing a 60% reduction in overall energy. As GHG emissions closely match the distribution of life cycle energy distributions, the energy efficient variant resulted in 63% fewer emissions. Of the total energy use over the structure's life cycle, 91% of the conventional house total energy results from energy consumed in the use stage (e.g., operating energy). This value drops to 74% in the energy efficient home as the energy embodied in the building materials stays the same or is slightly higher than that in the conventional home and operating energy is reduced.

---

[5] Includes 4 floors of classroom and open-plan offices and 3 floors of hotel rooms, in this evaluation used as a surrogate for a generic commercial structure.

[6] Scheuer, C., G.A. Keoleian, and P. Reppe. (2003) Life cycle energy and environmental performance of a new university building: Modeling challenges and design implications. *Energy and Buildings*, **35**(10): p. 1049.

[7] Keoleian, G.A., S. Blanchard, and P. Reppe. (2000) Life-cycle energy, costs, and strategies for improving a single-family house. *Journal of Industrial Ecology*, **4**(2): p. 135.

Similarly, a review of 60 case studies of homes from nine European countries in a variety of climates[8] indicated that operating energy represents the largest part of energy demand by a building during its life cycle. In one evaluation the operating energy is reported as between 92 - 95% for conventional construction and 72 - 90% for low-energy buildings[9] (which are also consistent with other literature references[10]). Sartori and Hestnes[26] also note that buildings constructed with energy efficiency measures may have a higher energy (and concomitant GHG emissions) embodied by the materials used in construction (e.g., more insulation, higher thermal mass), but over the lifespan of the building the overall energy use (operating and embodied energy) is dramatically lower due to the large reductions in operating energy. As an example, the embodied energy was estimated to be 1171 kWh/m^2 for a conventional house and 1391 kWh/m^2 for a passive, energy efficient home, an increase of 220 kWh/m^2 or 19%. Over the lifetime of the building, however, the total energy (operating and embodied) of the conventional house was approximately 22,500 kWh/m^2, while the passive house was roughly 5,500 kWh/m^2, a four-fold decrease in the total energy over an assumed 80 year life cycle.

3.1.2 Energy Efficiency vs. Embodied Energy in Buildings

From our analysis of these assessments, we note the following major conclusions:

- To minimize GHG lifetime emissions, optimization of energy efficiency (both thermal and electrical) for the operational phase of a building should be the primary emphasis for design, especially when the energy supplied is generated from fossil fuel sources.

- Passive design measures such as the orientation of structure to maximize solar heating and daylighting as well as natural ventilation; heavy construction to increase the thermal mass of the structure with materials that have a high capacity for absorbing heat and change temperature slowly; and solar control like window shading[11] should be emphasized[12,13,14] as they have a negligible increase in embodied energy (GHG emissions from material production) and can reduce total energy substantially.[15]

- Active energy efficiency measures (e.g., mechanical ventilation, artificial cooling, free cooling) may as much as double the embodied energy of the structure, but can halve overall energy usage.

---

[8] Sartori, I. and A.G. Hestnes. (2007) Energy use in the life cycle of conventional and low-energy buildings: A review article. *Energy and Buildings*, **39**(3): p. 249.

[9] Winther, B.N. and A.G. Hestnes. (1999) Solar versus green: The analysis of a Norwegian row house. *Solar Energy*, **66**(6): p. 387.

[10] Adalberth, K., A. Almgren, and E.H. Petersen. (2001) Life Cycle Assessment of Four Multi-Family Buildings. *International Journal of Low Energy and Sustainable Buildings*, **2**.

[11] United Nations Environment Program 2007 Buildings and Climate Change report whole-house system measures are recommended for the Mediterranean and desert climate zones

[12] Browning, W.D. and J.J. Romm. (1998) *Greening the Building and the Bottom Line*. Snowmass, Colorado: Rocky Mountain Institute.

[13] United Nations Environment Program. (2007) *Buildings and Climate Change: Status, Challenges and Opportunities.*

[14] US Department of Energy Building Technologies Program. (2007) www.eere.energy.gov/buildings/. October.

[15] Sartori, I. and A.G. Hestnes. (2007) Energy use in the life cycle of conventional and low-energy buildings: A review article. *Energy and Buildings*, **39**(3): p. 249.

- With the current energy generation mix in the US which relies heavily on fossil fuel based sources, focusing on energy efficiency measures (which ultimately reduces lifetime GHG emissions) is more effective in reducing the overall GHG footprint than focusing on materials with low embodied energy. As the energy generation measures reduce their GHG intensity (shift away from fossil fuel to renewable), material selection will be a more critical factor in a building's GHG emissions over its life cycle.

One can not evaluate the life cycle emissions of a building product independent of the impact that the building product has on energy use. For example, studies that evaluate the relative embodied energy and GHG emissions associated with the production of structural materials such as steel, concrete or wood generally indicate that the wood products have the lowest GHG emissions as it is produced from a renewable resource that may actually remove CO_2 during its production phase and sequester it during its use phase.[16,17] However, these studies do not account for the effect of the material on overall building energy efficiency, which is often heavily dependent on the climate in which the building is located. In desert climates, the thermal mass of the structure is important for energy savings, as the thermal mass cools at night and keep the house cool during the day during hot weather and conversely heats during the day keeps the house warm during the evening during cool weather. To increase thermal mass, concrete is much more effective than wood. In other types of climates (cooler with less solar heating), wood with insulation has a greater impact at improving overall building efficiency.

For some building products or systems, the net energy savings during the operational portion of the building's life cycle are comparable. If this is the case, then the alternative with the lowest embodied GHG emissions will result in the lowest life cycle GHG emissions.

Building materials with high replacement rates, like carpeting and wiring, can often have a high contribution to the overall GHG emissions as their impact is dependent on renovation schedules. For example, if two building materials have the same embodied energy but one is replaced every 5 years and the second is replaced every 25 years then the first will have five times the embodied energy over the lifetime of the building. As such Scheuer et al.[18] indicate that "[d]esign strategies that maximize the service life of building materials should be maximized." These strategies include designing the structure for minimal material use and choosing materials with low embodied energy, high recycled content, and long life spans.

From our analysis of these product or system specific assessments, we note the following major conclusions:

- Products or systems which have the greatest impact in improving overall building energy efficiency over the building's life cycle should be selected to minimize life cycle

[16] Borjesson, P. and L. Gustavsson. (2000) Greenhouse gas balances in building construction: Wood versus concrete from life-cycle and forest land-use perspectives. *Energy Policy*, **28**(9): p. 575.

[17] Lenzen, M. and G. Treloar. (2002) Embodied energy in buildings: Wood versus concrete - Reply to Borjesson and Gustavsson. *Energy Policy*, **30**(3): p. 249.

[18] Scheuer, C., G.A. Keoleian, and P. Reppe. (2003) Life cycle energy and environmental performance of a new university building: Modeling challenges and design implications. *Energy and Buildings*, **35**(10): p. 1049.

GHG emissions. These alternatives may not necessarily have the lowest embodied GHG emissions.

- When evaluating products or systems that have similar impacts on overall building energy efficiency, alternatives with the lowest embodied GHG emissions should be selected to minimize GHG emissions.

- Materials with high replacement rates (e.g., carpeting, wiring) tend to have higher embodied energy due to their short life cycle, therefore minimizing embodied GHG emissions is most critical for these types of products or systems to minimize overall GHG emissions. Materials with low replacement rates (e.g., piping, air ducts) tend to have lower embodied energy over the life cycle of the building, therefore differences in overall GHG emissions between several alternative are likely to be small.

3.2 GHG Emissions from Manufacture of Infrastructure Materials

ENVIRON evaluated the embodied energies of materials likely to be found in the infrastructure (roads, storm drains, utilities, gas, electricity, cable) of the Newhall development. The embodied energies of different materials vary based upon the transportation distance and manufacturing processes. A material that is locally-sourced may require a large amount of energy to be produced and, on the contrary, a material with a relatively low energy intensity may be sourced from farther away. ENVIRON assumed that concrete and asphalt will be among the dominant materials used in the infrastructure and estimated the embodied energies of these two materials. The manufacture of these materials results in overall CO_2 emissions of 29,500 tonnes. 89% of these emissions (26,200 tonnes) result from the manufacture of concrete because concrete has a higher CO_2 emission factor and is predicted to be used in higher quantities than asphalt.

3.2.1 Embodied Energy in Concrete Production

Concrete is composed primarily of cement, water, and aggregate such as sand and gravel, with small amounts of chemical admixtures. A typical concrete mix contains approximately 15% cement by volume.[19] Because the remaining 85% of concrete is composed of water and aggregate, ENVIRON assumed that all of the manufacture-related embodied energy in concrete stems from the production of cement.

There are two main sources of CO_2 emissions from the production of cement: "calcining" emissions and fossil fuel combustion emissions. Calcining emissions result from the chemical conversion of limestone ($CaCO_3$) to calcium oxide (CaO) and carbon dioxide (CO_2). CaO is a precursor to cement and CO_2 is released to the atmosphere. The emissions from fossil fuel combustion vary based on fuel type, but in general slightly more

[19] Portland Cement Association. Cement and Concrete Basics. http://www.cement.org/basics/concretebasics_concretebasics.asp

than half of the emissions associated with cement production are attributed to calcining emissions and the remainder result from fossil fuel combustion. [20]

ENVIRON used three sources to estimate CO_2 emission factors for the production of cement. The Energy Information Administration (EIA)[21] and AP-42[22] estimate that 0.5 tonnes of CO_2 are emitted from the calcining process for every 1 tonne of cement produced. AP-42 also provides a range (0.75 – 1.19 tonnes CO_2 / tonne cement) of total CO_2 emission factors (including calcining emissions and fossil fuel combustion emissions). The consulting group Battelle[23] estimates a total CO_2 emission factor for cement production in North America of 0.99 tonnes CO_2 / tonne cement. These emission factors are presented in Table 2.

3.2.2 Embodied Energy in Asphalt Production

The manufacture of asphalt is less energy intensive than the manufacture of cement. Asphalt is composed of asphalt cement and aggregate; the aggregate typically constitutes 92% by weight of the asphalt mixture.[24] AP-42 estimates CO_2 emission factors for batch mix (37 pounds CO_2 / short ton asphalt) and drum mix (33 pounds CO_2 / short ton asphalt) hot mix asphalt plants based on fuel usage within the plants.[25] ENVIRON used the average of these two values to represent the embodied energy of asphalt for the Newhall Ranch infrastructure.

3.2.3 Embodied Energy in Infrastructure

ENVIRON used the CO_2 emission factors from cement and asphalt to estimate the embodied energy of the infrastructure materials in Newhall Ranch. Predicted amounts of concrete and asphalt for the infrastructure were provided by Newhall and are shown in Table 3. The estimated emissions from the manufacture of the infrastructure materials are presented in Table 4. Because concrete is 15% cement by volume,[26] the total volume of concrete in Table 3 is multiplied by 15% to yield the volume of cement presented in Table 4. The emissions from the cement manufacture are assumed to be equal to the emissions from concrete manufacture. One-time emissions from concrete and asphalt manufacture for infrastructure materials are estimated to be 26,200 and 3,300 tonnes CO_2, respectively.

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[20] USGS 2005 Minerals Yearbook: Cement. February 2007. pg 16.1-16.2. http://minerals.usgs.gov/minerals/pubs/commodity/cement/cemenmyb05.pdf

[21] EIA Energy Market and Economic Impacts of S.280, the Climate Stewardship and Innovation Act of 2007. August 2007. http://www.eia.doe.gov/oiaf/servicerpt/csia/special_topics.html

[22] EPA AP42 Section 11.6: Portland Cement Manufacturing. http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s06.pdf

[23] Battelle. Humphreys, K. and Mahasenan, M. Climate Change: Toward a Sustainable Cement Industry. March 2002.

[24] EPA AP42 section 11.1: Hot Mix Asphalt Plants. pg 11.1-1. http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s01.pdf

[25] EPA AP42 section 11.1: Hot Mix Asphalt Plants. Tables 11.1-5 and 11.1-7. http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s01.pdf

[26] Portland Cement Association. Cement and Concrete Basics. http://www.cement.org/basics/concretebasics_concretebasics.asp

3.3 Embodied Energy in Water Reclamation Plant Construction Materials

The Water Reclamation Plant (WRP) will require building materials that are not accounted for in the estimates presented in section 3.1 or in the estimated amounts of concrete and asphalt used to determine the embodied energy of the infrastructure. Thus, a separate analysis of the embodied energy in the WRP is presented here. For simplicity, ENVIRON considered only concrete in this first-order approximation; additional building materials such as steel will contribute to the embodied energy.

In order to estimate the embodied energy of the WRP, ENVIRON used the CO_2 emission factor for cement (explained in section 3.2.1) and Newhall's estimate of the amount of concrete required (12,895 cubic yards or 23,400 tonnes) for a 6.8 MGD WRP. As with the infrastructure calculations described previously, the volume of concrete is multiplied by 15% to yield the volume of cement required. The manufacture of this cement will emit approximately 2,200 tonnes of CO_2, as shown in Table 4. These emissions are assumed to be equal to the emissions from the concrete manufacture.

The emissions associated with transport of these materials will be addressed in a later section of this report.

3.4 Transportation of Materials for Infrastructure and Water Reclamation Plant

ENVIRON estimated the emissions from the transportation of the infrastructure and WRP. Newhall provided approximate distances between the materials' source locations and the development site. Using the infrastructure material quantities specified in Table 3 and the quantity of concrete required for the WRP provided by Newhall, ENVIRON estimated emissions of 2,200 tonnes CO_2 from the transportation of the concrete and asphalt in the infrastructure and WRP.[27] Details of the calculations are outlined in Table 5.

3.4.1 Calculation of Emissions from Transportation of Materials for Buildings

Although each particular shipper operates with greater or lesser efficiencies, ENVIRON assumed an average GHG emission rate per tonne-mile[28] for each mode of transportation. Although it is likely that more dense material has a slightly lower GHG shipping intensity than does less dense material, this analysis developed a single emission factor per tonne-mile of material moved, regardless of density, for each mode of transportation.

3.4.1.1 Emissions associated with transporting the material

Emission factors were calculated from DOE EERE energy intensity indicators.[29] EERE data is presented in terms of energy per mile traveled. These were converted using AP-42 conversion factors[30] for energy in different types of fuel, and California Climate Action

[27] For the estimates of emissions from material transportation, ENVIRON conservatively assumed that the entire concrete mix, not just cement, is transported from the source locations to the development site.

[28] A tonne-mile refers to the amount of material (in tonnes) moved a distance of one mile.

[29] Grams CO_2 / tonne mile. See http://intensityindicators.pnl.gov/trend_data.stm Transportation sector data.

[30] AP42 conversions available at http://www.epa.gov/ttn/chief/ap42/appendix/appa.pdf

Registry (CCAR) General Reporting Protocol (GRP)[31] emission factors for mass of CO_2 emitted per gallon of fuel. Trains and trucks are assumed to run on diesel. These emission factors are listed in Table 5. The emission factors developed above were multiplied by the distances traveled by each type of transportation.

3.5 Summary of Emissions from Buildings, Infrastructure, and Water Reclamation Plant

Table 6 presents the summary of the life cycle greenhouse gas (GHG) emissions associated with the building materials used in the construction of Newhall Ranch. The life cycle GHG emissions include the embodied energy from the materials manufacture and the energy used to transport those materials to the site. The materials analyzed include materials for 1) residential and non-residential buildings, 2) site infrastructure and 3) the water reclamation plant. This report calculates the overall life cycle emissions from construction materials to be 4,000 – 27,200 tonnes per year, or 1 – 9% of the overall Newhall Ranch project emissions.

3.6 Summary of Life Cycle GHG Emissions from Landmark Village

ENVIRON used the analyses of the life cycle GHG emissions from the NRSP and a scaling factor based on total building area to estimate the life cycle GHG emissions from Landmark Village. Table 7 shows the buildings areas used to develop the scaling factor. ENVIRON assumed that the amount of infrastructure materials for Landmark Village would scale approximately according to the total residential and non-residential building area. Table 8 summarizes the life cycle GHG emissions from Landmark Village based on this scaling factor. Emissions from buildings and infrastructure materials are scaled from the NRSP emissions. Because the WRP is located within Landmark Village, the emissions from the WRP are equal to the WRP emissions specified for the NRSP. This report calculates the overall life cycle emissions from construction materials to be 400 – 2,100 tonnes CO_2 per year, or 1.3 – 7.7% of the overall Landmark Village project emissions.

[31] The GRP is available online at http://www.climateregistry.org/docs/PROTOCOLS/GRP%20V2-March2007_web.pdf

Table 1
Life Cycle Greenhouse Gas (GHG) Emissions From Materials[1] Used for Buildings
Newhall Land
Newhall California

Residential and Non-Residential Buildings[2]	Embodied Energy as Percentage of Overall Energy[3]	
	3%	25%
(tonnes CO_2 / year)		
105,485	3,165	26,371

Notes:
1. All materials were analyzed. See references below for more details.
2. Represents CO_2 emissions from electricity and natural gas use. From the Newhall Ranch Climate Change Technical Report for Design Alternative 2.
3. Percentages are based upon LCA studies below. The studies compared energy used in the manufacture and transport of materials to energy use from electricity and natural gas. Varying lifetimes of homes were assumed in each study. As homes become more energy efficient, the portion of GHGs from embodied energy increases.

Abbreviations:
CO_2 = Carbon Dioxide
GHG = Greenhouse Gas
LCA = Life Cycle Analysis

Sources:
Scheuer, C., G.A. Keoleian, and P. Reppe. (2003) Life cycle energy and environmental performance of a new university building: Modeling challenges and design implications. *Energy and Buildings* , **35**(10): p. 1049.
Keoleian, G.A., S. Blanchard, and P. Reppe. (2000) Life-cycle energy, costs, and strategies for improving a single-family house. *Journal of Industrial Ecology* , **4**(2): p. 135.
Sartori, I. and A.G. Hestnes. (2007) Energy use in the life cycle of conventional and low-energy buildings: A review article. *Energy and Buildings* , **39**(3): p. 249.

Winther, B.N. and A.G. Hestnes. (1999) Solar versus green: The analysis of a Norwegian row house. *Solar Energy* , **66**(6): p. 387.

Adalberth, K., A. Almgren, and E.H. Petersen. (2001) Life Cycle Assessment of Four Multi-Family Buildings. *International Journal of Low Energy and Sustainable Buildings* , **2**.

Table 2
Greenhouse Gas (GHG) Emission Factors for the Manufacture of Cement
Newhall Land
Newhall Ranch, California

Data Source	Calcining Emissions[4]	Fossil Fuel Emissions[5]
	(tonnes CO_2/tonne cement)	
EIA[1]	0.5	NA
EPA AP-42[2]	0.5	NA
	0.75 - 1.19	
	0.92	
Battelle[3]	0.99	

Notes:

1. From the Energy Market and Economic Impacts of S.280, the Climate Stewardship and Innovation Act of 2007. Calculations are detailed in the Documentation for Emissions of Greenhouse Gases in the United States 2004, pg 35 - 38.
2. From AP-42 section 11.6: Portland Cement Manufacturing. Approximately 500 kg of CO_2 are released per Mg of cement produced during the calcining process; total manufacturing emissions depend on energy consumption (pg 11.6-6). Table 11.6-8 specifies 2,100 lbs CO_2 per ton of clinker produced (ENVIRON used the higher value instead of 1,800 lbs / ton to be conservative). Clinker is a precursor to cement. Using a clinker factor of 0.88 lb clinker/lb cement (from the Battelle report) yields an emission factor of 0.92 tonnes CO_2/tonne cement.
3. From Table 1-2 of the Battelle report. The North American average emission factor is 0.99 kg CO_2/kg cement; the global average is 0.87 kg CO_2/kg cement.
4. There are two main sources of CO_2 emissions from the manufacture of cement: the calcining process and fossil fuel combustion. Calcining emissions result from the chemical reaction of converting limestone ($CaCO_3$) to calcium oxide (CaO) and carbon dioxide (CO_2). CaO is a precursor to concrete and CO_2 is released to the atmosphere.
5. Fossil fuel combustion usually provides the energy necessary to manufacture cement. The emissions from the fossil fuel combustion vary depending on the type of fuel used; in general the combustion accounts for slightly less than half of the CO_2 emissions from the manufacture of cement.

Abbreviations:

AP-42 = Compilation of Air Pollutant Emission Factors
CO_2 = carbon dioxide
EIA = Energy Information Administration
EPA = Environmental Protection Agency
kg = kilogram
NA = Not Available
Mg = megagram = 1,000 kg

Sources:

EIA Energy Market and Economic Impacts of S.280, the Climate Stewardship and Innovation Act of 2007. August 2007. http://www.eia.doe.gov/oiaf/servicerpt/csia/special_topics.html
EPA AP42 Section 11.6: Portland Cement Manufacturing.
http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s06.pdf
Battelle. Humphreys, K. and Mahasenan, M. Climate Change: Toward a Sustainable Cement Industry. March 2002.

Table 3
Quantities of Infrastructure Materials
Newhall Land
Newhall Ranch, California

CONCRETE				
Material[1]	**Length[1]**	**Pipe Diameter[1]**	**Approximate Weight[2]**	**Total Weight[4]**
	(ft/acre)	**(in)**	**(lb/ft)**	**(tonnes/acre)**
Concrete Sewer	125	8	32	1.79
	75	12	100	3.40
Concrete Storm Drain	25	18	180	2.04
	40	30	405	7.35
	40	24	300	5.44
	40	42	672	12.20
	20	48	854	7.74
	20	54	1047	9.50
	20	60	1277	11.59
Material[1]	**Size[1]**	**Base[1]**	**Density[2]**	**Total Weight[4]**
	(sq ft/acre)	**(ft)**	**(lb/ft^3)**	**(tonnes/acre)**
Concrete Block	2,400	0.29	150	47.63
			Total Concrete (tonnes/acre)	108.67
			TOTAL Concrete (tonnes)[5]	**282,551**
			TOTAL Concrete (yd^3)[6]	**155,730**
ASPHALT				
Material[1]	**Size[1]**	**Base[1]**	**Density[3]**	**Total Weight[4]**
	(sq ft/acre)	**(ft)**	**(lb/ft^3)**	**(tonnes/acre)**
Asphalt Block	10,000	0.25	64.11	72.70
			Total Asphalt (tonnes/acre)	72.70
			TOTAL Asphalt (tonnes)[5]	**189,013**
			TOTAL Asphalt (yd^3)[6]	**240,741**

Notes:
1. Materials and sizes are provided by Newhall.
2. Weights and density of concrete provided by the American Concrete Pipe Association Concrete Pipe Design Manual.
3. Density of asphalt and conversion factors provided by AP-42 Appendix A.
4. Total weight (tonnes/acre) calculated by multiplying approximate weight by material length/size.
5. Total material quantities (tonnes) are calculated assuming a total development size of 2,600 acres (data provided by Newhall).
6. Total material quantities (yd^3) are calculated using densities provided by AP-42.

Abbreviations:
ft = foot
in = inch
lb = pound
sq ft = square foot

Sources:
American Concrete Pipe Association. Concrete Design Manual. Illustration 5.2, pgs 84-86.
http://www.concrete-pipe.org/pdf/cp-manual.pdf
AP-42 conversions available at http://www.epa.gov/ttn/chief/ap42/appendix/appa.pdf

Table 4
Greenhouse Gas (GHG) Emissions from Manufacture of Materials
Newhall Land
Newhall Ranch, California

Material	Emission Factor	Volume of Material	Mass of Material	Emissions from Manufacture of Material[5]
	(tonnes CO_2/tonne material)	(yd^3)	(tonnes)	(tonnes CO_2)
Infrastructure[1]				
Cement (in concrete)[2]	0.990	23,359	26,489	26,224
Asphalt[3]	0.018	240,741	189,013	3,308
Water Reclamation Plant[4]				
Cement (in concrete)[2]	0.990	1,934	2,193	2,171
TOTAL				**31,703**

Notes:
1. Quantity of material for infrastructure is provided by Newhall.
2. Concrete is composed of cement, water, aggregate, and chemical admixtures; concrete mixtures are approximately 15% cement by volume (Portland Cement Association). Cement accounts for almost all of the CO_2 emissions associated with the manufacture of conrete. The cement emission factors provided by AP-42 cover a wide range of processing technologies and emission factors, so ENVIRON used the cement emission factor provided by the Battelle report.
3. From AP-42 section 11.1: Hot Mix Asphalt Plants. Tables 11.1-5 and 11.1-7. ENVIRON assumed an average emission factor from batch mix hot asphalt plants and drum mix hot asphalt plants.
4. Mass of material for the Water Reclamation Plant (WRP) is provided by Newhall.
5. Because the manufacture of cement is the main contributor to CO_2 emissions in the production of concrete, ENVIRON assumed that the emissions from the manufacture of cement are equal to the emissions from the overall manufacture of concrete.

Abbreviations:
CO_2 = carbon dioxide
yd^3 = cubic yard
MGD = million gallons per day

Sources:
Battelle. Humphreys, K. and Mahasenan, M. Climate Change: Toward a Sustainable Cement Industry. March 2002.
EPA AP42 section 11.1: Hot Mix Asphalt Plants. Tables 11.1-5 and 11.1-7.
http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s01.pdf
CH2MHill. Conceptual Design Report: Newhall Ranch Water Reclamation Facility, Los Angeles County, California. July 31, 2006.
Portland Cement Association. Cement and Concrete Basics.
http://www.cement.org/basics/concretebasics_concretebasics.asp
Zhang, Z. and Wilson, F. Life-Cycle Assessment of a Sewage-Treatment Plant in South-East Asia. J.CIWEM, 2000, 14, February.
Kiewit. South Bay Water Reclamation Plant. http://www.kiewit.com/markets/pro_2098031.html
AP-42 conversions available at http://www.epa.gov/ttn/chief/ap42/appendix/appa.pdf

Table 5
Greenhouse Gas (GHG) Emissions from Transportation of Infrastructure and Water Reclamation Plant Construction Raw Materials
Newhall Land
Newhall Ranch, CA

Material	Total Mass Transported[2]	Distance from Source Location			Mass-Distance[5]			Emission Factor[6]		Emissions to Transport to Construction Site[7]			
		Santa Clarita Valley[3]	San Fernando Valley[3]	Port of Los Angeles[4]	Santa Clarita Valley	San Fernando Valley	Port of Los Angeles	Rail	Trucks	Santa Clarita Valley	San Fernando Valley	Port of Los Angeles	Total
	(tonnes material)	(miles)			(tonne-miles)			(grams CO_2/tonne-mile)		(tonnes CO_2)			
Infrastructure													
Concrete[1]	282,551	12	20	50	1,695,307	2,825,512	--	26	253	430	716	--	**1,146**
Asphalt	189,013	12	20	50	1,134,078	1,890,130	756,052			287	479	192	**958**
Water Reclamation Plant													
Concrete[1]	23,396	12	20	50	140,378	233,963	--	26	253	36	59	--	**95**
TOTAL													**2,199**

Notes:
1. For manufacturing emissions, only the amount of cement is considered; however, for transportation emissions, the entire mass of concrete is considered because the concrete mix is transported from the source locations.
2. Mass of material is provided by Newhall for infrastructure quantities. Moving a tonne of asphalt is assumed to be as energy intensive as moving a tonne of concrete.
3. Distances from the Santa Clarita Valley and San Fernando locations are provided by Newhall.
4. Distance from the Port of Los Angeles is estimated using Google Earth.
5. Mass distance is the mass of material multipled by the distance traveled. Newhall estimates that half of the concrete and asphalt come from the Santa Clarita Valley source and the other half come from the San Fernando Valley Source. The petroleum used in the asphalt comes from the Port of Los Angeles. Asphalt is roughly 92% by weight aggregate, so ENVIRON assumed that the remaining 8% is representative of the mass of petroleum transported from the Port of Los Angeles.
6. Emission factors for rail and truck calculated from DOE EERE energy intensity indicators. EERE data is presented in Btu / ton mile. These were converted using AP-42 conversion factors for energy in different types of fuel, and CCAR GRP emission factors for mass CO_2 emitted per gallon of fuel. Rail and Trucks are assumed to run on diesel.
7. Emissions calculated by multiplying the mass-distance by the emission factor. Because of the close proximity of the source locations to Newhall, ENVIRON conservatively assumed that all materials will be transported by truck. The emission factor for rail transportation is significantly lower; transporting materials by rail instead of truck will result in lower emissions.

Sources:
DOE EERE energy intensity indicators. http://intensityindicators.pnl.gov/trend_data.stm Transportation sector data.
AP42 conversions available at http://www.epa.gov/ttn/chief/ap42/appendix/appa.pdf

Table 6
Summary of Life Cycle Greenhouse Gas (GHG) Emissions from Buildings, Infrastructure, and the Water Reclamation Plant
Newhall Land
Newhall Ranch, California

Emissions Source[1]		Emissions from Manufacture of Materials[3]	Emissions from Transportation of Materials[4]	Total Emissions	Assumed Lifetime of Emissions Source[5]	Total Annualized Emissions[6]	Total Annual Emissions from NRSP[7]	LCA Fraction of Total Emissions[8]
		(tonnes CO_2)			(years)	(tonnes CO_2 / year)	(tonnes CO_2 / year)	(%)
Buildings[2]	Low Estimate	126,582		126,582	40	3,165	304,459	1.0%
	High Estimate	1,054,849		1,054,849		26,371		8.7%
Infrastructure		29,532	2,104	31,636		791		0.3%
Water Reclamation Plant		2,171	95	2,266		57		0.0%
TOTAL		160,484 - 1,088,752		160,484 - 1,088,752		4,012 - 27,219		1.3% - 8.9%

Notes:
1. ENVIRON estimated LCA emissions from three sources: buildings, infrastructure, and the water reclamation plant (WRP).
2. Emissions from buildings are shown as a range from a low to a high estimate based on the range presented in Table 1. The values in Table 1 are multiplied by the assumed lifetime of of 40 years to yield total emissions in tonnes CO_2.
3. Emissions from the manufacture of materials for infrastructure and the WRP are from Table 4.
4. Emissions from the transportation of materials for infrastructure and the WRP are from Table 5.
5. The assumed lifetime of emissions source may be adjusted; here ENVIRON has assumed a conservatively short lifetime of 40 years.
6. Total emissions are divided by the assumed lifetime of emissions sources to yield the total annualized emissions.
7. From the Climate Change Technical Report. This total includes emissions from NRSP only.
8. The LCA fraction of total emissions is calculated by dividing the total annualized emissions by the total emissions from NRSP.

Abbreviations:
CO_2 = carbon dioxide
LCA = Life Cycle Assessment
NRSP = Newhall Ranch Specific Plan
VCC = Valencia Commerce Center

Sources:
Values are calculated using Tables 1 through 5 and the emissions presented in the Climate Change Technical Report.

Table 7
Calculation of Scaling Factor for Landmark Village
Newhall Land
Newhall Ranch, California

Project	Building Type	Number of Dwelling Units[2]	Size of Dwelling Unit[3] (SF)	Total Building Area[4] (SF)	Scaling Factor[5]
NRSP[1]	All	--	--	51,486,335	
Landmark Village	Non-Residential	--	--	1,090,465	
	Residential - Single Family	308	3300	1,016,400	
	Residential - Attached	685	1750	1,198,750	
	Residential - Apartment	451	1250	563,750	
	All			3,869,365	0.075

Notes:
1. Total building area for the NRSP includes residential and non-residential buildings and is provided by Newhall.
2. From Newhall Ranch Specific Plan.
3. Provided by Newhall.
4. Total non-residential building area for Landmark is provided by Newhall. Total residential building area is calculated by multiplying the number fo dwelling units by the average size of a dwelling unit for each residential building type.
5. The scaling factor is calculated by dividing the total building area of Landmark Village by the total building area of the NRSP.

Abbreviations:
NRSP - Newhall Ranch Specific Plan
SF - Square Feet

Table 8
Summary of Life Cycle Greenhouse Gas (GHG) Emissions from Buildings, Infrastructure, and the Water Reclamation Plant for Landmark Village
Newhall Land
Newhall Ranch, California

Emissions Source[1]		Total Emissions	Assumed Lifetime of Emissions Source[4]	Total Annualized Emissions[5]	Total Annual Emissions from Landmark[6]	LCA Fraction of Total Emissions[7]
			(years)	(tonnes CO_2 / year)	(tonnes CO_2 / year)	(%)
Buildings[2]	Low Estimate	9,513	40	238	27,214	0.9%
	High Estimate	79,275		1,982		7.3%
Infrastructure[2]		2,378		59		0.2%
Water Reclamation Plant[3]		2,266		57		0.2%
TOTAL		14,157 - 83,919		354 - 2,098		1.3% - 7.7%

Notes:
1. ENVIRON estimated LCA emissions from three sources: buildings, infrastructure, and the water reclamation plant (WRP).
2. Emissions from buildings and infrastructure are scaled from NRSP emissions based on total residential and non-residential building square footage.
3. The WRP is located in Landmark Village, so the total life cycle GHG emissions are shown here (emissions are not scaled down from NRSP emissions).
4. The assumed lifetime of emissions source may be adjusted; here ENVIRON has assumed a conservatively short lifetime of 40 years.
5. Total emissions are divided by the assumed lifetime of emissions sources to yield the total annualized emissions.
6. From the Climate Change Technical Report for Landmark Village.
7. The LCA fraction of total emissions is calculated by dividing the total annualized emissions by the total emissions from Landmark Village.

Abbreviations:
CO_2 = carbon dioxide
LCA = Life Cycle Assessment
NRSP = Newhall Ranch Specific Plan
VCC = Valencia Commerce Center

Sources:
Values are calculated using emissions from NRSP and the emissions presented in the Climate Change Technical Report for Landmark Village.

Global Climate Change and its Effects on California Water Supplies

GLOBAL CLIMATE CHANGE AND ITS EFFECTS ON CALIFORNIA WATER SUPPLIES

Future global climatic conditions may affect California's water supplies through potential, though uncertain, changes related to air temperatures and precipitation and their resulting effects on water temperatures, water project operations, reservoir operations, stream runoff, and rise in sea levels affecting Delta water quality. Accordingly, in order to better understand the impacts to California's water supply associated with global climate change, a literature survey, as set forth below, was undertaken.[1]

First, however, before turning to the literature survey it is important to emphasize that the water sources expected to serve the development that would be enabled on the Newhall Ranch Specific Plan site are the project applicant's agricultural water from the local Alluvial groundwater basin, which will be treated and used to meet the project's potable demand, and recycled water from local water reclamation plants, which will be used to meet the project's non-potable demand. The Specific Plan build-out would not rely on imported State Water Project (SWP) supplies. Nonetheless, for other portions of the Santa Clarita Valley that rely, in whole or in part, on SWP supplies, the reliability of SWP water supplies can vary significantly and be reduced in dry years depending upon several factors.

Second, this discussion relies primarily upon information provided by the California Department of Water Resources (DWR). The focus is on DWR's assessment of such global climate change issues because DWR operates the SWP water storage and conveyance system, one of two major water projects that convey potable water to California's population. The other water storage and conveyance project is the federal Central Valley Project (CVP), which is operated by the U.S. Bureau of Reclamation (Reclamation). These two water systems are operated by DWR and Reclamation for water supply, flood management, environmental protection, and recreation.

DWR and Reclamation have formed a work team to address water resources related to issues of global climate change. The mission of the work team is to coordinate with other state and federal agencies to incorporate climate change science into California's water resources planning and management. The team will provide and regularly update information for decision makers on potential impacts and risks of global climate change, flexibility of existing facilities to accommodate climate change, and available mitigation measures.

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[1] Please note that all reports referenced in this discussion are available for public inspection and review at the County of Los Angeles, Department of Regional Planning, 320 West Temple Street, Los Angeles, California, and are incorporated by this reference.

The first product of the work team's efforts is DWR's technical report titled, "Progress on Incorporating Climate Change into Management of California's Water Resources," dated July 2006 (Progress Report). The report responds to the Governor's Executive Order S-3-05, which requires biennial reports on climate change impacts to various areas, including water resources. It provides information on potential impacts of selected climate change scenarios to operations of the SWP and CVP, Delta water quality, flood management, and evapotranspiration. The technical chapters of the report underwent peer review.

DWR's reporting and assessment on global climate changes and its effects on California's water supplies are important, because California's water supplies depend heavily on the accumulation of winter mountain snow melting into spring and summer runoff. As stated by DWR, "[a] warming planet may reduce this natural water storage mechanism . . . [and] [p]rojected increases in air temperature may lead to changes in the timing, amount and form of precipitation -- rain or snow, changes in runoff timing and volume, sea level rise effects on [Sacramento-San Joaquin] Delta water quality, and changes in the amount of irrigation water needed due to modified evapotranspiration rates." (Progress Report, p. 1-2.)

In summary, DWR's planning documents, discussed below, address the uncertainties surrounding global climate change and its effects on California's water supplies. According to information currently available, DWR has reported that California's future hydrologic conditions will likely be different from patterns observed over the past century -- although the precise causes, extent, and timing of the changes remain uncertain. And while DWR has acknowledged that better quantification will be possible as more sophisticated tools are developed and additional studies are completed, DWR currently is incorporating the potential effects of global climate change on water resources into its modeling projections and reliability forecasts.

The following discussion primarily summarizes DWR's plans and reports related to potential impacts of global climate change on California's future water supplies. The discussion also lists and describes other selected reports and studies concerning global climate change and its effects on water supplies. In addition, the discussion identifies the previously adopted mitigation measures relative to water supplies, which conserve water supplies and lessen greenhouse gas emissions that contribute to global climate change.

DWR Plans and Reports

DWR's SWP Delivery Reliability Report (2005)

DWR's 2005 SWP Delivery Reliability Report, April 2006 (Reliability Report), presents information from computer simulation studies of the operation of the SWP. Using the CalSim-II model, DWR has simulated SWP operations, using historical rainfall and runoff data, which is then adjusted for changes in water and

land use that have occurred or may occur in the future. The computer simulations were conducted over a 73-year period (1922-1994) of the adjusted historical rainfall/runoff data. This modeling approach incorporates the assumption that the next 73 years will have the same or similar rainfall/snowmelt amount and pattern, both within-year and from year-to-year, as the historical 1922-1994 period.

Based on this modeling assumption, DWR has noted that, currently, the CalSim-II model does "not incorporate any modifications to account for changes related to climate change" that could disrupt SWP deliveries. (Reliability Report, Chap. 3, p. 7.) Earlier in the Reliability Report, DWR also has acknowledged that that CalSim modeling and study approach includes the assumption that past rainfall-runoff patterns will be repeated in the future and that this assumption has an "inherent uncertainty, especially given the evolving information on the potential effects of global climate change." (*Id.* at p. 4.) Relying upon the 2005 update to the California Water Plan, DWR summarized the potential effects of global climate change on future water supplies, as follows:

> California's water systems have been designed and operated based on data from a relatively short hydrologic record. Mounting scientific evidence suggests that forecasted climate changes could significantly change California's precipitation pattern and amount from that shown by the record. Less snowpack would mean less natural water storage. More variability in rainfall, wetter at times and drier at times, would place more stress on the reliability of existing flood management and water systems. California's high dependence on reservoir storage and snowpack for water supply and flood management makes us particularly vulnerable to these types of projected hydrologic changes.

(*California Water Plan Update*, December 2005, Vol. 1, page 3-15.) DWR also stated in its Reliability Report that:

> Potential changes in climate patterns are becoming better defined and attempts to quantify the resulting impacts to SWP water supply are underway. Broad brush estimates are being developed of the potential impact upon the SWP in 50 to 100 years if no additional conveyance facilities or upstream reservoirs are built. As this information becomes more refined, it will be helpful in guiding the development of statewide strategies for the future management and development of water resources facilities, including the SWP.

(Reliability Report, Chap. 2, p. 4.) In the meantime, however, DWR has confirmed that the results of CalSim-II model studies conducted for the Reliability Report "represent the best available assessment of the delivery capability of the SWP." (Reliability Report, Chap. 3, p. 7.)

In response to concerns about future climate conditions that may affect water supplies, DWR has stated that information pertinent to climate change and its effects on water supplies "is evolving rapidly, but has not reached a level at which it can be quantitatively incorporated into delivery projections of the

SWP."[2] Nonetheless, DWR has acknowledged that the published literature and other information are "helpful in developing strategies for the future management and development of the State's water resources, including improvements to the SWP." (*Ibid.*)

DWR's California Water Plan Update (2005)

DWR's California Water Plan Update of 2005 (2005 Water Plan) also addresses uncertainties associated with global climate change and its potential effect on water supplies. In Chapter 4 of the 2005 Water Plan, DWR summarizes the "predictions" surrounding global climate change, and they "include increased temperatures, reductions to the Sierra snowpack, earlier snowmelt, and a rise in sea level, although the extent and timing of the changes remain uncertain." (*Id*. at p. 32.) DWR further states that these predicted changes "could have major implications for water supply, flood management, and ecosystem health. The prospect of significant climate change warrants examination of how California's water infrastructure and natural systems can be managed to accommodate or adapt to these changes, and whether more needs to be done." (*Ibid*.) DWR also acknowledges that, for over the past ten years, "scientists have been publishing formal, peer-reviewed recommendations for integrating the results of climate change research into policy." (*Ibid*.)

For example, in conjunction with affected state agencies, the Public Interest Energy Research Program (PIER) administered by the California Energy Commission has developed and is implementing a climate change research plan for California. The PIER program established a regional climate change research center with the goals of: (1) improving the understanding of the possible physical and economic impacts of climate change; and (2) developing robust adaptation and mitigation strategies for California. (See, 2005 Water Plan, p. 32, Box 4-9, PIER Program and Climate Change Research.) In support of future updates of the 2005 Water Plan, the newly-created research center is funding: (1) development and maintenance of a comprehensive climatic database for California and the analysis of meteorological and hydrological trends; (2) monitoring of meteorological and hydrological parameters in some key remote locations using innovative remote sensing devices; (3) development of climate projections for the state using regional climate models at levels of resolution appropriate for water resources impact analyses; and (4) study of water resources impacts under different climatic projections. DWR is a key co-sponsor of these research activities, and DWR staff is participating in the modeling efforts. (*Ibid*.)

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[2] See, DWR letter to Mindy McIntyre, Water Program Manager, Planning and Conservation League, dated April 20, 2006 (DWR's April 20, 2006 letter), which is found in Appendix G to DWR's 2005 SWP Delivery Reliability Report (April 2006).

Climate Change Report

DWR's 2005 Water Plan also referenced the work performed by the Pacific Institute for Studies in Development, Environment and Security (Pacific Institute). The Pacific Institute, in a literature search report for DWR, summarized recommendations for coping with and adapting to climate change from key peer-reviewed publications. The Pacific Institute's report is titled, "Climate Change and California Water Resources: A Survey and Summary of the Literature," by Michael Diparsky and Peter H. Gleick, Pacific Institute, July 2003 (Climate Change Report). This report is included in the Volume 4 Reference Guide to the 2005 Water Plan.

In the Climate Change Report, the Pacific Institute surveyed existing literature on climate change and its impacts on water resources in California. This report reviewed projected effects of climate change on the state's water supply, delivery, and quality, and explored the economics involved in meeting the challenges that those effects could bring about. (Climate Change Report, p. vii.) In general, the report confirmed temperature increases and their effects include a snowpack higher in elevation, with either lower or higher precipitation depending upon the information source (*id*. at pp. 6, 10); either greater or lesser amounts of runoff depending upon the information source (*id*. at p. 14); a greater number of extreme flood and drought events (*id*. at p. 13); and reductions or increases in projected water use by plants (*id.* at p. 10), again, depending upon the information source. Thus, depending upon the information presented, California could have more water available due to increased humidity and rainfall, or less water available due to reductions in snowpack, greater evaporation, and no change or slightly less rainfall.

The Climate Change Report concluded that managing water resources to address climate changes could prove different than managing for historical climate variability because: (1) climate changes could produce hydrologic conditions and extremes of a different nature than current systems were designed to manage; (2) they may produce similar kinds of variability but outside of the range for which current infrastructure was designed; (3) traditional water resource management assumes that sufficient time and information will be available before the onset of large or irreversible climate impacts to permit managers to respond appropriately; and (4) traditional management assumes that no special efforts or plans are required to protect against such uncertainties.

The Climate Change Report's literature survey resulted in specific recommendations for the following areas:

- Water planning and management
- Sea level concerns
- Modifying operation of existing systems
- New supply options

- Demand management, conservation, and efficiency
- Economics, pricing, and markets
- State water law
- Hydrologic and environmental monitoring.

The Climate Change Report further recommended that a more comprehensive assessment of all of these areas, supported by multiple state agencies and including the participation of a wide range of stakeholders, would be a valuable tool for policymakers and planners, and it was urged that such an assessment to be undertaken in the near future. (*Ibid*.)

The subject of groundwater also was addressed in the Climate Change Report. The report concedes that the impacts of global climate change on groundwater basins, and groundwater recharge characteristics are largely unknown. For example, the report notes that changes in groundwater recharge will result from changes in effective rainfall as well as a change in the timing of the recharge season. (*Id*. at p. 20.) Increased winter rainfall may be expected in some regions, leading to increased groundwater recharge. Conversely, higher evaporation or shorter rainfall seasons in other regions could mean that soil deficits persist for longer periods of time, shortening recharge seasons, citing Leonard, *et al*., 1999. However, warmer, wetter winters would increase the amount of runoff available for groundwater recharge. This additional runoff in the winter would be occurring at a time when some basins are either being recharged at their maximum capacity or are already "full." (*Ibid.*) On the other hand, reductions in spring runoff and higher evapotranspiration because of higher temperatures, could reduce the amount of water available for recharge.

However, "[t]he extent to which climate will change and the impact of that change are both unknown." (*Ibid*.) Overall, the recommendation is that possible climate changes may require more sophisticated conjunctive management programs in which "the aquifers are more effectively used as storage facilities." (*Ibid*.)

Although the data is still developing, the Climate Change Report has confirmed that a consensus in the literature is emerging to suggest that temperatures globally are increasing. Given that climate change is a complex topic, and that the world's climate has changed in cycles for hundreds of thousands, if not yet millions, of years, according to DWR, the cause of these climate changes and their effects have not reached a level at which such information can be quantitatively incorporated into the delivery projections of the SWP.[3]

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[3] DWR's April 20, 2006 letter, p. 2 (*supra* footnote 2).

Accounting for Climate Change Report

In addition, a DWR report on climate change impacts and the recommendations for further research has been prepared and included in the Volume 4 Reference Guide to the 2005 Water Plan. The report is entitled, "Accounting for Climate Change," by Maurice Roos, Chief Hydrologist, DWR (Accounting Report).

The Accounting Report noted that evidence of global climate changes continues to develop, and this developing information has suggested that global climate change can affect the amount, timing, and form of precipitation (whether rain or snow) that California receives, as well as the sea level of the Pacific Ocean. This report disclosed that changes in weather, especially temperature and atmospheric composition, can affect water use and consumption. (Accounting Report, p. 1.) In addition, the Accounting Report indicated that most scientists feel that changes during the last several decades are likely mostly due to human activities, but natural causes and variability cannot be ruled out as significant components. The Accounting Report also stated that projections of the amount of warming and other climate changes during the 21st century are wide-ranging, depending on assumptions and models. The findings summarized in the Accounting Report provide that:

> Whatever the causes, the prospects of significant changes warrant examination of how the State's water infrastructure and natural systems can accommodate or adapt to climate changes and whether more needs to be done to detect, evaluate and respond to water resource system effects. Many uncertainties remain, primarily on the degree of change to be expected. Responsible planning requires that the California water planning community work with climate scientists and others to reduce these uncertainties and to begin to prepare for those impacts that are well understood, already appearing as trends, or likely to appear.

(*Ibid.*)

Modeling Efforts

DWR's 2005 Water Plan also has referenced modeling efforts undertaken by the University of California, Davis (with funding from the Resource Agency, CALFED, and the California Energy Commission). The University used the "CALVIN" model to evaluate how California's water system might adapt to long-term climate warming. This preliminary analytical tool was used to integrate "existing surface water, groundwater, and water demand data in an integrated economic-engineering framework for California's inter-tied water system (covering 92 percent of California's population and 88 percent of its irrigated area)." (2005 Water Plan, p. 33.) Although a useful analytical tool, DWR noted that:

> In developing the computer model [CALVIN], significant weaknesses and gaps in water data were identified and documented. The model and its results have been peer reviewed and show preliminary insights into economically promising possibilities for

> California water management. More importantly, the tool demonstrated concepts in advanced data management, documentation, and analysis that may be useful for future statewide and regional water policy and planning analysis. The CALVIN model has been applied preliminarily to examine statewide potential for regional and statewide water markets and how California's water system might adapt to long-term climate warming (through the [PIER] Program).

(*Ibid*.)

In addition, DWR's 2005 Water Plan has referenced computer modeling of global climate change scenarios, which predict significant future reductions in the Sierra snowpack.[4] (*Id.* at pp. 33-34.) The model's simulation of potential changes in snowpack during the 21st century predicts a 52 percent reduction in the annual April through July runoff for a 2.1 degree C (3.8 F) of warming, which, according to DWR, is "well within the 1.4 to 5.8 degrees C (2.5 - 10.4 F) range predicted by global climate models for this century." (*Id*. at p. 34.) According to DWR, "[c]hanges in the timing of snowfall and snowmelt, as a result of climate change, may make it more difficult to fill reservoir flood control space during late spring and early summer, potentially reducing the amount of surface water available during the dry season. . . . Reductions in snowpack may require changes in the operation of California's water systems and infrastructure, and increase the value of additional flood control space in reservoirs." (*Ibid*.)

DWR's Progress Report (2006)

As stated above, in July 2006, DWR issued its report titled, "Progress on Incorporating Climate Change into Management of California's Water Resources" (Progress Report). In this report, DWR describes progress made on incorporating climate change into existing water resources planning and management techniques and methodologies. The report was prepared in response to the Governor's Executive Order S-3-05, and as an opportunity to begin addressing limitations identified in DWR's 2005 Update to the California Water Plan.

Chapter 2 provides a statewide overview of California's water resources, and includes a summary of potential causes of global climate change with an emphasis on aspects of climate change that pose a potential threat to California's water supplies, including: (i) observed and projected changes in air temperature, precipitation and runoff, and sea level rise, including potential effects on groundwater and Delta water quality; (ii) potential effects of climate change on future water demands, Colorado River basin, and sensitive fish species; (iii) sudden climate change; and (iv) climate change and water supply

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[4] The source of this modeling is cited in the 2005 Water Plan References as: Knowles Noah, and Cayan D., 2002, *Global Climate Change: Potential Effects on the Sacramento/San Joaquin Watershed and the San Francisco Estuary*, *Geophysical Research Letters 29*.

planning challenges. Chapter 3 provides an overview of global climate change studies being conducted by DWR. DWR's study efforts, whenever appropriate, focused on the four climate change scenarios selected by the "Climate Action Team" (CAT), which was formed in response to Executive Order S-3-05. Specifically, DWR's initial studies focused on the potential effects of climate change to four main California water resources areas: (i) SWP and CVP operations; (ii) Delta water quality, including possible increases in sea level; (iii) flood management and water supply forecasting; and (iv) changes in evapotranspiration rates and the consumptive use of irrigation water.

Chapters 4 and 5 are of particular importance because they focus on climate change impacts on SWP and CVP operations and on the Delta. The results of the analysis undertaken in Chapter 4 suggest several potential climate change impacts on overall SWP and CVP operations and deliveries. For example, in three of the four climate scenarios simulated, CVP north-of-Delta reservoirs experienced shortages during droughts. DWR recommends that future studies examine operational changes that could avoid these shortages. At present, DWR concludes it is not clear whether such operational changes "will be insignificant or substantial." (Progress Report, p. III.)

The report also found that changes in annual average SWP south-of-Delta Table A deliveries ranged from a slight increase of about 1% for a wetter scenario to about a 10% reduction for one of the drier climate change scenarios. In three drier climate change scenarios, increased winter runoff and lower Table A allocations resulted in somewhat higher annual average Article 21 deliveries (Article 21 of the SWP long-term water supply contracts permits delivery of water excess to the delivery of Table A water and some other water types to those SWP contractors requesting it). The increase in Article 21 deliveries did not fully offset losses to Table A. In contrast, the wetter scenario with higher Table A allocations results in fewer Article 21 delivery opportunities and decreased annual average Article 21 deliveries. Changes in annual average CVP south-of-Delta deliveries ranged from increases of about 2.5% for the wetter scenario and decreases of up to 10% for drier climate change scenarios. Future studies will have to address how north-of-Delta shortages could impact south-of-Delta CVP deliveries. For both the SWP and CVP, carryover storage (*i.e.*, water stored from one year over the next) was negatively affected in the drier climate change scenarios and slightly increased in the wetter scenario.

DWR also pointed out that sea level rise effects on water project operations were not examined due to lack of existing tools for that type of analysis. DWR noted that future work in this area will include the development of the necessary tools to quantify the impacts of sea level rise on saltwater intrusion and the incremental water supply impacts to repulse greater saltwater intrusion forces into the Delta. Chapter 5 focuses on potential impacts of climate change on Delta water quality and water levels. DWR concluded that while tools are being developed to quantify the incremental impacts of sea level rise on water supplies to counteract increased saltwater intrusion, until such tools become available, DWR's

preliminary analysis provided an indication of the water project operational challenges due to sea level rise.

DWR's Progress Report (2006) is not without its critics. However, DWR is making progress on incorporating global climate change issues into its management of California's water supplies and DWR's efforts are responsive to the directives of both the Governor and the Legislature to make progress toward assessing the impacts to California on global warming, including impacts to water supplies.

In short, the literature cited by DWR, and the most recent report prepared by DWR, confirm that, over time, California water supply managers will need to modify the methods used to manage water supplies in order to build-in the flexibility needed to address a dynamic water supply environment. However, it appears that more information is needed in order to draw definitive conclusions regarding the implications of climate change on water supplies. DWR has also committed to continue to incorporate new information in successive updates to the California Water Plan. At the same time, though, DWR itself concedes that its latest reporting effort is preliminary, incorporates several assumptions, reflects a limited number of climate change scenarios, and does not address the likelihood of occurrence of each scenario. For those reasons, DWR has concluded that the literature and study results to date are not sufficient by themselves to make "policy decisions." (Progress Report, p. II.)

Monterey Plus Draft EIR (October 2007)

In October 2007, DWR issued the Draft EIR for the Monterey Amendments to the State Water Project Contracts (including Kern Water Bank Transfer) and associated actions as part of the Monterey Settlement Agreement (Monterey Plus Draft EIR; SCH No. 2003011118). In Section 12 of the Monterey Plus Draft EIR, DWR considered the impacts of climate change on the proposed project and the impacts of the proposed project on climate change.

When evaluating the potential impacts to water resources in California resulting from global climate change, DWR noted the lack of cohesive results among the various water modeling programs:

> Although current models are broadly consistent in predicting probable increases in global air temperatures and levels of GHGs resulting from human activities, there are considerable uncertainties about precipitation estimates. For example, many regional modeling analyses conducted for the western United States indicate that overall precipitation will increase, but uncertainties remain due to differences among larger-scale General Circulation Models (GCMs). Some researchers believe that climate warming might push the storm track on the West Coast further north, which would result in drier conditions in California. At the same time, relatively newer GCMs,

> including those used in the National Water Assessment, predict increases in California precipitation.

(Monterey Plus Draft EIR, pp. 12-3 through 12-4.) DWR further noted that while GCMs and hydrologic models (*i.e.*, CALSIM) have been utilized in a number of California climate change studies, many of the studies have failed to "address inter-annual variability or scaling issues inherent in mapping GCM model output to more detailed watershed hydrologic models. As a result, such studies do little more than make qualitative statements about the implications of these changes to environmental impacts (e.g., water quality, agriculture, fisheries.)" (*Id*. at. p. 12-4.)

In light of the lack of uniformity between the modeling programs, and the inconsistent results produced by various modeling program, DWR concluded that "[o]ne of the most important areas of research associated with the potential impacts of climate change on California's water resources is the further development of tools to predict changes in the timing or amount of future water availability." (Monterey Plus Draft EIR, p. 12-9.) According to DWR:

> To effectively assess the potential impacts of climate change on California's water system, a model is needed that represents the operation of the system and has the ability to accept input from climate change impact studies related to the Central Valley. The model requires a descriptive, rather than prescriptive approach. A descriptive approach would use observed data in the model without regulatory limits on operations to represent a more realistic view of the operation of California's water system.

(*Id*. at p. 12-10.) DWR further stated that the "major fault" with CALSIM is its "inability to utilize hydrologic data not related to the 73 years of historical data for which the model has been validated." (*Ibid*.)

Accordingly, as no model currently exists to accurately forecast the impacts to water resources resulting from climate change, and because the "degree to which these [climate change] effects will be felt between now and 2020 has not been studied and remains unknown," the Monterey Plus Draft EIR did not incorporate climate change into the CALSIM II modeling. (Monterey Plus Draft EIR, p. 12-12.) Nonetheless, citing its Progress Report, DWR concluded that it is likely that SWP water supplies will become less reliable "under the trends that have been identified with climate change." (*Id*. at p. 12-14.)

The Monterey Plus Draft EIR also briefly considered its carbon footprint, noting that the proposed project "could result in some added GHG emissions as a result of post-Monterey Amendment SWP operations." (Monterey Plus Draft EIR, p. 12-14.) DWR underscored it commitment to reduce its carbon intensity reliance, noting that: (i) it does not intend to renew its contract for power from a coal-fired power plant;

(ii) it recently filed an intent to register with the California Climate Action Registry; and (iii) it is evaluating alternative power sources. (*Ibid*.) However, after concluding that there is no applicable significance threshold, DWR did not prepare an emissions inventory for the proposed project. DWR did conclude in the Monterey Plus Draft EIR, though, that while the proposed project is not significant on a project-specific basis, the proposed project may be cumulatively significant due to "a lack of clear scientific and regulatory criteria for determining the level of significance of the project's contribution." (*Id*. at p. 12-15.)

Citing a recently published California Energy Commission report, titled Climate Change and California Water Resources: A Survey and Summary of the Literature, DWR concluded that managing water resources in light of the changing climate will likely prove to be different than managing for historic variability, particularly due to the lack of "accurate and consistent information about how precipitation patterns, timing, and intensity will change" and the lack of "methodologies and tools to incorporate future climate change scenarios into current hydrologic models." (Monterey Plus Draft EIR, p. 12-16.)

DWR's SWP Delivery Reliability Report (2007)

DWR issued "The State Water Project Delivery Reliability Report 2007" (August 2008) (2007 Reliability Report). The 2007 Reliability Report updates the 2005 Reliability Report, and describes three areas of significant uncertainty to SWP delivery reliability: (a) the recent and significant decline in pelagic organisms in the Delta (open-water fish such as striped bass, Delta smelt, and longfin smelt); (b) climate change and sea level rise; and (c) the vulnerability and potential failure of Delta levees. The inclusion of new areas of uncertainty distinguishes the 2007 Reliability Report from earlier reports by including estimates of the potential reductions to SWP delivery reliability due to the pelagic organism decline and future climate changes.

As described in the 2007 Reliability Report, simulations to evaluate future (2027) SWP delivery reliability incorporate the current interim court-ordered operating rules related to Delta smelt and a range of possible climate change impacts to hydrology in the Central Valley. Therefore, for 2027, ten simulations were used to reflect the four assumed scenarios for climate change and the two levels of operating rules.

The 2007 Reliability Report observes that "climate change can potentially affect SWP delivery by altering the timing and amount of source water." (2007 Reliability Report, p. 31.) In order to evaluate water availability, the report "estimates climate change impact to SWP deliveries by interpolating between future studies that assume no climate change and studies that assume 2050 emissions." (*Id*. at p. 32; see also 2007 Reliability Report, Appendix B.)

Progress Report Update (2008)

In 2008, DWR, in connection with Reclamation and the Department of Land, Air and Water Resources at the University of California, Davis, published an article in *Climatic Change* titled "Progress on Incorporating Climate Change into Management of California's Water Resources" (Progress Report Update). The Progress Report Update presents "preliminary efforts by agencies managing California's water resources to incorporate climate change research into their planning and management tools." (Progress Report Update, p. 1.) The Progress Report Update also provides an "overview" of the efforts documented in the original Progress Report (2006), and presents an impact analysis that focuses on five (5) issues: (1) snowpack; (2) runoff; (3) operations of the SWP and CVP; (4) water quality and water levels in the Sacramento-San Joaquin Delta for both present and future sea level rise conditions; and (5) evapotranspiration rates. (*Ibid*.)

The preliminary impact assessments were conducted using four (4) climate change scenarios that represent two (2) greenhouse gas emission scenarios identified by the Intergovermental Panel on Climate Change that were simulated by two (2) global climate models. (Progress Report Update, p. 5.) In order to examine potential impacts, the authors relied on a sequence of four models -- a global climate model (*i.e.*, GFDL or PCM); a regional downscaling model (*i.e.*, VIC); a SWP-CVP-specific impacts model (*i.e.*, CalSim-II); and a Delta-specific impacts model (*i.e.*, DSM2). (*Ibid*.; see also Figure 6: Approach for Analyzing Potential Water Resources Impacts on Climate Change.)

Anticipated impacts include greater amounts of winter-season runoff, which could lead to greater uncontrolled releases from the SWP and CVP reservoirs (should flood protection rules remain static), and reduced spring-season runoff, which could lead to decreased water supplies and deliveries. (Progress Report Update, p. 16.) The analysis concludes that while there is "general consensus" regarding the expected impacts, "the magnitudes and onset-timing of impacts . . . are uncertain and scenario dependent." (*Ibid*.) Accordingly, the authors recommend that the analytical mindset be expanded from assessing potential impacts to assessing the risk potential associated with individual climate scenarios, and, in that regard, note that DWR, Reclamation, and climate researchers currently are undertaking a project that evaluates how to apply risk assessment principles to the study of climate change impacts. (*Ibid*.)

Managing An Uncertain Future (2008)

In October 2008, DWR issued a new white paper, titled "Managing An Uncertain Future: Climate Change Adaptation Strategies for California's Water" (Managing An Uncertain Future), as part of its update to the

California Water Plan and in connection with the California Resources Agency's preparation of the draft statewide Climate Adaptation Plan.[5] This white paper is not focused on forecasting specific quantities of future water supply or demands, but instead "recommends a series of adaptation strategies for state and local water managers to improve their capacity to handle change." (Managing An Uncertain Future, p. 1.)

The white paper begins with a bulleted list of "[w]hat we know," which includes findings that: "[h]istoric hydrologic patterns can no longer be solely relied upon to forecast the water future;" precipitation and runoff patterns are changing, increasing uncertainty in water supply; additional monitoring and researching is required to understand the connection between the changing climate, water resources, and the environment; "[e]xtreme climatic events will become more frequent;" "[i]mpacts and vulnerability will vary by region;" and, an "array" of adaptation strategies is necessary to ensure that the state responds to climate change as best as possible. (Managing An Uncertain Future, p. 2.) In contrast to findings regarding "[w]hat we know," is the white paper's observation that "the exact conditions of future climate change remain uncertain," further evidencing the general conclusion that the exact implications of climate change on water resources is unknown at this time -- the white paper observes that change is coming; however, the parameters of that change are unknown. (*Id*. at p. 3.) Nonetheless, the white paper highlights some anticipated "challenges ahead," which include: the loss of natural snowpack storage; an increase in the frequency and intensity of drought in some regions; an increase in high frequency flood events in some regions; changes in water quality; an increase in the sea level; and, a reduction in the reliability of California's hydroelectricity operations. (*Id*. at p. 4-7.)

The white paper then proceeds to present 10 climate change adaptation strategies, as summarized below:

1. Provide sustainable funding for statewide and integrated regional water management.
2. Fully develop the potential of integrated regional water management, which provides a "comprehensive approach for determining the appropriate mix of water demand and supply management options and water quality actions. (Managing An Uncertain Future, p. 11.)
3. Aggressively increase water use efficiency in order to meet Governor Schwarzenegger's goal to achieve a statewide 20 percent reduction in per capita water use by 2020. (*Id*. at p. 13.)
4. Practice and promote integrated flood management.
5. Enhance and sustain ecosystems because "integrated systems . . . suffer less damage from, and recover more quickly after, severe natural disruptions." (*Id*. at p. 21.)

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[5] The purpose of the Climate Adaptation Plan is not to develop strategies to reduce GHG emissions, but to develop mechanisms that ensure California is able to efficiently adapt to the changing climate. (See www.climatechange.ca.gov/adaptation.)

6. Expand water storage and conjunctive management of surface and groundwater resources.
7. Fix Delta water supply, quality and ecosystem issues.
8. Preserve, upgrade and increase monitoring, data analysis and management in order to remedy the "large gaps in the hydrologic observational network (e.g., rain and snow gauges) in the areas of California most vulnerable to climate change." (*Id*. at p. 27.)
9. Plan for and adapt to sea level rise.
10. Identify and fund focused climate change impacts and adaptation research and analysis.

As noted in the white paper, "[s]everal of the recommendations . . . are ready for immediate adoption, while others need additional public deliberation and development. Some can be implemented under existing resources and authority, while the majority will require new resources, sustained financial investment and significant collaborative investment." (Managing An Uncertain Future, p. 1.)

Using Future Climate Change Projections (2009)

In April 2009, DWR issued a draft paper, titled "Using Future Climate Projections to Support Water Resources Decision Making in California" (Using Future Climate Change Projections).[6] The key findings of that report, which are based on 12 modeled climate change scenarios, follow:

> Since the 2006 climate change assessment (DWR 2006), several advances have been made in using future climate projection information in water resources planning in California, including improved understanding of how well selected climate models represent historical climate conditions and refined methodologies for representing streamflows, outdoor urban and agricultural water demands, and sea level rise in planning tools. The range of impacts presented in this paper indicates the need for adaptation measures to improve the reliability of future water supplies in California (DWR 2008).
>
> Possible climate change impacts to SWP and CVP operations were assessed using 12 future climate projections (Section 2.2). . . . Uncertainties in the results increase as the projections move further into the future. . . . The reliability of the SWP and CVP water supply systems is expected to be reduced for the range of future climate projections studied (Section 5.2.3).[7]

The report also found, however, that the following additional work is needed to better improve the use of future climate change projection information in water resources planning:

- Improve understanding of the uncertainties associated with future climate projections including relative likelihoods of future greenhouse gas emissions scenarios and sea level rise estimates.

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6 See http://baydeltaoffice.water.ca.gov/climatechange/ClimateChangeApr09.pdf.

7 *Id*. at pp. 2-3.

- Improve understanding about how uncertainties and unknowns in each step of developing the simulations, scaling the data, and representing system operations affect the final information provided to decision makers.

- Develop and apply enhanced downscaling techniques that can account for the physical processes as well as statistical properties.

- Develop a dynamical downscaling technique for the state.

- Develop and apply a meso-scale model (such as MM5) or Weather Research and Forecasting (WRF) Model for California, and archive the data for public dissemination.

- Explore methods for incorporating possible changes in variability in future climate and hydrologic conditions (non-stationarity) into impact analyses.

- Further enhance existing management decision support tools or develop new tools for assessing risks of climate change on California's water systems and for exploring adaptation measures such as possible re-operation of existing or projected future water resources systems to reduce the impacts of climate change.

- Develop guidelines for climate change analysis for selection of future climate projections, proper length of planning horizon, etc.

- Improve cross-sector coordination and integration of climate change related analyses.[8]

As such, DWR's Using Future Climate Change Projections report supports the conclusion that while regional modeling efforts have improved over the years, uncertainty still remains regarding potential climate change effects on water supply reliability.

DWR's SWP Delivery Reliability Report (2009)

In January 2010, DWR released the "Draft State Water Project Delivery Reliability Report" (2009 Draft Reliability Report).[9] As in previous reports, estimates of SWP deliveries are based on operation simulations run with the CalSim II model using an extended record of runoff patterns; these patterns have been adjusted to reflect the levels of development in the source areas and, for future conditions, possible impact due to climate change accompanying sea level rise. The 2009 Draft Reliability Report also incorporates regulatory requirements for SWP and CVP operations in accordance with recent biological opinions from federal agencies.

Per the 2009 Draft Reliability Report, there are "three significant factors contributing to uncertainty" in SWP delivery reliability, one of which includes the "possible effects from climate change and sea level

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8 *Id*. at p. 46.

9 See http://baydeltaoffice.water.ca.gov/swpreliability/DRAFT-DelRelRep2009.pdf.

rise."[10] In order to better understand the potential effects, the 2009 Draft Reliability Report utilized in its modeling a climate change scenario that represents the median effects of 12 scenarios addressed in DWR's Using Future Climate Change Projections report, summarized immediately above. The draft report found that "climate changes have the potential to simultaneously affect the availability of source water, the ability to convey water, and users' demands for water."[11]

Other Selected Reports and Studies

Urban Water Management Plan (December 2005)

The 2005 Urban Water Management Plan (UWMP) for the CLWA service area addresses the potential effects of global warming on California's future water supplies. Relying upon DWR's California Water Plan Update (2005), the UWMP identifies some potential impacts of global warming, based on more than a decade of scientific studies on the subject. The potential impacts include the production of hydrologic conditions, variability, and extremes that are different than what current water systems are designed to manage. Other potential impacts consist of questions on how rapidly impacts may occur to water supplies, and whether water planners and managers can protect against sudden changes.

Like other water purveyors, CLWA is relying upon DWR's commitment to continue to update and refine modeling efforts based on on-going scientific data, and to incorporate that information into future plans, reports, and studies issued by DWR. In the interim, however, CLWA and the retail purveyors in the Santa Clarita Valley have thoroughly described the available water resources in the Valley, including available local groundwater supplies, for the 25-year period covered by the UWMP. By law, the UWMP must be updated every five years, with the next update to occur no later than December 2010. The update also may be amended at any time, based on the discretion of CLWA and the retail purveyors in the Santa Clarita Valley. This five-year updating requirement ensures that global climate change and its effects on local and imported supplies will be taken into account and regularly reported.

As to local groundwater supplies, the UWMP summarizes well-established findings from recent studies and groundwater modeling, which confirm that the local groundwater basin (Alluvial aquifer and Saugus Formation) is operating within sustainable yields and, as such, the basin remains in good operating condition and can continue to support pumping in the operating ranges reflected in the 2005 UWMP, or slightly higher, without adverse results (e.g., long-term water level decline, "overdraft," or degradation of groundwater quality). The primary studies that support these findings are as follows:

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[10] *Id*. at p. 17.

[11] *Id*. at p. 18.

(a) Richard C. Slade & Associates, LLC, "2001 Update Report, Hydrogeologic Conditions in the Alluvial and Saugus Formation Aquifer Systems," prepared for Santa Clarita Valley Water Purveyors (July 2002);

(b) CH2MHill "Regional Groundwater Flow Model for the Santa Clarita Valley, Model Development and Calibration" (April 2004);

(c) CH2MHill, Technical Memorandum "Calibration Update of the Regional Groundwater Flow Model for the Santa Clarita Valley, Santa Clarita, California" (August 2005);

(d) CH2MHill and Luhdorff & Scalmanini, Consulting Engineers, "Analysis of Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County, California" (August 2005);

(e) UWMP, including Appendix C, "Groundwater Resources and Yield in the Santa Clarita Valley" (December 2005); and

(f) 2006 Santa Clarita Valley Water Report (May 2007).

The August 2005 Basin Yield Report described and modeled the groundwater operating plan for the Valley. The model simulated a 78-year period of groundwater pumping, natural groundwater recharge (from rainfall and river storm flows), and natural groundwater flow and discharge that occurs in the basin. This 78-year rainfall record was derived from historical rainfall records dating back to the 1920s. Based on a review of those historical records, the simulated rainfall pattern was derived with two objectives in mind. First, the record was designed to capture historic cycles in rainfall, alternating periods of below-normal rainfall, then periods of above-normal rainfall, followed by periods of below-normal rainfall, etc. The 78-year rainfall record contained four periods of generally below-normal rainfall (ranging in length from seven to 15 years) and five periods of generally above-normal rainfall (ranging in length from six to eight years). Second, the record was designed to have a long-term volume of rainfall equal to the historic long-term average rainfall over the past several decades.

In summary, the rainfall pattern that was used in the modeling analysis was based on actual historic long-term rainfall and historic dry cycles and wet cycles. Thus, changes in climatic conditions over the past 78-year period were taken into account. If future climate change studies are published by DWR that predict changes in the strengths of future droughts and future wet periods, these effects could then be incorporated into the groundwater model to test the potential influence of climate change on the groundwater system; of course, any future studies that attempt to predict climate change effects on future local rainfall patterns are likely to have significant uncertainties. Nonetheless, when such studies are completed and available, CLWA and the local purveyors will consider them in local water planning efforts. Until then, however, CLWA and the local purveyors are relying upon the best available information presented in the reports and studies referenced above.

Emissions Pathway Report (August 2004)

"Emissions Pathways, Climate Change, Impacts on California," by Katharine Hayhoe, *et al*., dated August 24, 2004 (Hayhoe 2004), has discussed the magnitude of future climate changes based on climate projections from the modeling of greenhouse gas emissions scenarios out to the year 2100. This report shows that, by the end of the century, due to increased temperatures, the Sierra snowpack could be reduced by 30-70 percent under one emissions scenario, and as high as 73-90 percent under another emissions scenario. The increased temperatures, along with impacts on runoff and stream flow, combined with modest declines in winter precipitation, could fundamentally disrupt California's water resources. (Emissions Pathway Report, p. 1.)

Pondering a Climate Conundrum

Other literature calls attention to the ongoing debate over global warming and its effects. For example, in an article presented in *Nature* (Online Version) entitled, "Pondering a Climate Conundrum in Antarctic," it has been suggested that there are cooling trends, not necessarily global warming. In that article, the authors noted a "[u]nique, distinct cooling trend discovered on the Earth's southernmost continent Antarctica overall has cooled measurably during the last 35 years - despite a global average increase in air temperature of 0.06 degrees Celsius during the 20th century - making it unique among the Earth's continental landmasses."

Water Management Strategies (July 2007)

The Natural Resources Defense Council has prepared a report summarizing the "broad potential water management impacts of climate change, the many existing climate-related activities of water managers around the West, and a full range of recommendations for water managers and staff to consider as they incorporate global warming into the planning and management of their agencies."[12] After generally surveying the potential impacts of global climate change to water supply, flood management, water quality, aquatic ecosystems, and hydropower, and the effectiveness of presently utilized water management strategies to combat climate change impacts, the report proposes a four-part water management strategy for use by water managers that consists of: (i) evaluation of a water system's potential vulnerabilities at both a local and regional level; (ii) development of responsive strategies; (iii) commitment to global climate change prevention and the endorsement of GHG emissions reductions; and (iv) increased public outreach to improve awareness of global warming and climate change. As part of this strategy, and in order to better understand and prepare for the potential impacts to water resources

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[12] See, Nelson, Barry, et al., July 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming."

as a result of global climate change, the report calls on various entities and individuals to provide additional funding for research.

Climate Warming and Water Management Adaptation for California (June 2006)

Tanaka *et al.* (2006) explore the ability of California's water supply system to adapt to long-term climatic and demographic changes using the California Value Integrated Network (CALVIN), a statewide economic-engineering optimization model of water supply management.[13] The results show agricultural water users in the Central Valley are the most sensitive to climate change, particularly under the driest and warmest scenario (*i.e.*, PCM 2100), and predict a 37% reduction of Valley agricultural water deliveries and a rise in Valley water scarcity costs by $1.7 billion. Though the results of the study are only preliminary, they suggest that California's water supply system appears "physically capable of adapting to significant changes in climate and population, albeit at a significant cost." Such adaptation would entail changes in California's groundwater storage capacity, water transfers, and adoption of new technology.

Trends in Snowfall versus Rainfall in the Western United States (2006)

To better understand the nature of the observed changes in snowpack and streamflow timing in the west, Knowles *et al.* (2006) address historical changes in the relative contributions of rainfall and snowfall.[14] The study documents a regional trend toward smaller ratios of winter-total snowfall water to winter-total precipitation during the period of 1949-2006. The trends toward decreased winter-total snowfall are a response to warming across the region, with the most significant decreases occurring where winter wet-day minimum temperatures were on average warmer than -5° over the study period. The authors suggest that, if warming trends continue, the snowfall fraction of precipitation is likely to continue to decline, which combined with earlier melting of the remaining accumulations of snowpack, will diminish the West's natural freshwater storage capacity. This trend could, in turn, exacerbate tensions between flood control and storage priorities that many western reservoir managers face.

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[13] See, Tanaka, S.K., et al., 2006, "Climate Warming and Water Management Adaptation for California," in *Climatic Change*," Vol. 76, No. 3-4, June 10, 2006.

[14] Knowles, N., and D. R. Cayan, 2002, "Potential Effects of Global Warming on the Sacramento/San Joaquin Watershed and the San Francisco Estuary" in *Geophysical Research Letters* 29(18):1891, doi:10.1029/2001GL014339.

Climate Change Impacts on Water for Agriculture in California: A Case Study in the Sacramento Valley (March 2006)

Joyce *et al.* (2006) employ the Water Evaluation and Planning (WEAP) system, a hydrologic model that was developed for the Sacramento River Basin.[15] The study found that increasing temperatures could put a strain on the basin's water resources. Assuming an increasing urban demand for water, the effects of climate change could be mitigated if the agricultural sector adapts to the new environment. The authors considered the effect of increased irrigation efficiency and shifts in cropping and found that groundwater pumping between 2070 and 2100 was reduced when these practices were adopted.

Climate Scenarios for California (March 2006)

Cayan *et al.* (2006) consider two GHG emissions scenarios, a medium-high and a low.[16] The study found that California will experience a warming trend from 2000 to 2100, with temperatures rising between 1.7 and 5.8° C, depending on the model and the scenario chosen. This increase in temperature could potentially impact snowpack levels as the state experiences less snow and more rain. The results also indicate that snowpack in the Sierra Nevada could be reduced 32-79%, depending on the model and scenario chosen. The study does not consider the ability of California's water supply system to adapt to these potential changes.

Global Climate Change Impacts in the United States (2009)

This report summarizes the science of climate change, and the current and projected impacts of climate change on the United States.[17] With respect to water resources, the report concludes that "[t]he impacts of climate change include too little water in some places, too much water in other places, and degraded water quality."[18] With respect to the southwest regional analysis, the report found that "[w]ater supplies are projected to become increasingly scarce, calling from trade-offs among competing uses, and potentially leaded to conflict."[19] With that said, the report underscores:

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15 Joyce, B., et al., 2006, "Climate Change Impacts on Water for Agriculture in California: A Case Study in the Sacramento Valley" in California Climate Change Center, State of California. White Paper, CEC-5500-2005-194-SF, March 2006.

16 Cayan, D., et al., 2006, "Climate Scenarios for California. California Climate Change Center, State of California. White Paper," CEC-500-2005-203-SF, March 2006.

17 U.S. Global Climate Research Program, 2009, *Global Climate Change Impacts in the United States*.

18 *Id*. at p. 41.

19 *Id*. at p. 129.

> One of the main messages to emerge from the past decade of synthesis and assessments is that while climate change is a global issue, it has a great deal of regional variability. There is an indisputable need to improve understanding of climate system effects at these smaller scales, because these are often the scales of decision making in society. Understanding impacts at local scales will also help to target finite resources for adaptation measures. . . Further work is needed on how to quantify cumulative uncertainties across spatial scales and the uncertainties associated with complex, intertwined natural and social systems.[20]

Analysis of Groundwater Supplies in the Santa Clarita Valley (August 2009)

The Santa Clarita Valley Purveyors (comprised of the Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Water Division of the Castaic Lake Water Agency and Valencia Water Company) recently analyzed the groundwater development potential and possible augmentation of the groundwater operating plan for Santa Clarita Valley. This analysis was undertaken in part for preparation of the next UWMP (anticipated in 2010) and in part because of recent events that are expected to impact the future reliability of the principal supplemental water supply for Santa Clarita Valley (i.e., the State Water Project). The analysis, entitled *Analysis of Groundwater Supplies and Groundwater Basin Yield Upper Santa Clara River Groundwater Basin, East Subbasin*, was published in August 2009.

The primary objective of the updated analysis of groundwater basin yield in the Santa Clarita Valley was to evaluate the planned utilization of groundwater by the Purveyors, after their consideration of potential impacts on traditional supplemental water supplies from the SWP, and with recognition of (i) the ongoing pumping by others for agricultural and other private water supply, (ii) the sustainability of the groundwater resource, and (iii) the physical ability to extract groundwater at desired rates.

A second objective of the updated groundwater basin yield analysis was to investigate and describe potential impacts of expected climate change on the groundwater basin and its yield. A third objective was to consider potential augmentation of basin yield via potential artificial groundwater recharge using storm water runoff in selected areas of the basin as being planned by the Los Angeles County Flood Control District.

With respect to the second objective, and as stated in Section 5.4, Climate Change Summary, of the analysis:

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[20] *Id*. at p. 154.

Examination of the three simulated climate change scenarios was undertaken to provide a level of quantification to the possible impact of climate change on local groundwater basin yield and availability of groundwater as part of overall water supply to the Valley. In light of the range of global climate model output that was considered for development of the local scenarios analyzed herein, it is obvious that there is neither a unique result that can be expected to become a representative hydrologic condition in the Valley, nor is there a unique result that can be expected in terms of basin yield and associated sustainable groundwater supply as an outcome of climate change. Obviously, the Valley does not get to "choose" a future climate scenario, but rather will have to manage within whatever future patterns of rainfall actually occur over time, whether the future rainfall exhibit wet-dry cycles that are similar to or different from historically recorded conditions. Perhaps most useful in the consideration of climate change effects analyzed herein is with respect to results over the UWMP planning horizon of 20 to 25 years. For the range of relatively wet to relatively dry conditions analyzed herein, all three scenarios suggest that the 2008 Operating Plan can be considered sustainable and, with the same local exceptions as simulated through a repetition of historical hydrology (e.g. mainly at and above Mint Canyon), achievable over the UWMP planning horizon. Beyond that horizon, greater uncertainty exists because the global climate models use different emissions scenarios and also become increasingly uncertain over time because of predictive uncertainty pertaining to the forward-looking representation of the many physical processes that affect climate into the future. As a result, for time periods beyond the UWMP planning horizon, some models predict long-term drying and subsequent sustained declines in groundwater levels, which would result in a smaller local groundwater supply over time, while other models predict hydrologic conditions similar to or wetter than those that have been historically observed, in which case the 2008 Operating Plan can be considered sustainable, albeit with some local issues relative to actual pumping capability at certain times (mainly in the Alluvium at the eastern end of the Valley).

Conclusions Reached From Literature Survey

In summary, DWR has not yet fully incorporated parameters to account for the impact of climate change on water supplies and regional impacts remain uncertain. However, as the literature and modeling tools continue to develop in order to assess such risks, DWR will incorporate such information into successive updates to the California Water Plan. In addition, DWR is committed to the preparation of the biennial assessment reports of SWP delivery reliability. In the meantime, DWR advises that the results of its updated reports represent the best available information at this time.

Based on the above data, DWR should continue to utilize on-going studies, as they become available, in developing strategies for the future management and development of California's water resources. At this time, however, it is appropriate to terminate any further analysis of potential future global climatic

changes and their effects on California's water supplies, consistent with Section 15145 of the CEQA Guidelines.

Summary of Selected, Previously Adopted Mitigation Measures Relative to Water Supplies

Despite the present uncertainty regarding the quantification of global climate change's effect on California's water supplies, the approved Newhall Ranch Specific Plan already requires implementation of the following mitigation measures relative to water resources that would conserve water supplies and lessen greenhouse gas emissions within the Specific Plan area that contribute to global climate change:

Previously Adopted Mitigation Measures Relevant to Water Supplies and Reductions in Greenhouse Gas Emissions

Water Service

SP 4.11-1 The proposed Specific Plan shall implement a water reclamation system in order to reduce the Specific Plan's demand for imported potable water. The Specific Plan shall install a distribution system to deliver non-potable reclaimed water to irrigate land uses suitable to accept reclaimed water, pursuant to Los Angeles County Department of Health Standards.

SP 4.11-2 Landscape concept plans shall include a palette rich in drought-tolerant and native plants.

SP 4.11-3 Major manufactured slopes shall be landscaped with materials that will eventually naturalize, requiring minimal irrigation.

SP 4.11-4 Water conservation measures as required by the State of California shall be incorporated into all irrigation systems.

Wastewater Disposal

SP 4.12-1 The Specific Plan shall reserve a site of sufficient size to accommodate a water reclamation plant to serve the Newhall Ranch Specific Plan. (*This measure has been implemented by the Board of Supervisors' approval, in May 2003, of the Newhall Ranch WRP within the boundary of the Specific Plan.*)

Global Climate Change and its Effects on Sensitive Biological Resources

GLOBAL CLIMATE CHANGE AND ITS EFFECTS ON SENSITIVE BIOLOGICAL RESOURCES

Global climate change may affect sensitive biological resources (*e.g.*, endangered, threatened, rare, and/or special-status species) through potential, though uncertain, changes related to future air and water temperatures; such effects may impact the timing of seasons, affect a species' range, and a species' ability to adapt to changing temperatures. At the same time, the ways in which global climate change may impact sensitive species and biological resources are varied and often complicated due to the intersection of numerous causal forces.

In order to better understand and evaluate the potential impacts to sensitive biological resources as a result of global climate change, a literature survey was undertaken, as set forth below.[1] The results of this survey confirm that, at this time, impacts to sensitive biological resources are speculative and cannot be assessed with much certainty. Accordingly, the analysis of sensitive biological resources is terminated under CEQA.

Articles Addressing Global Climate Change And Its Effects On Sensitive Biological Resources

(a) *Rising to the Challenge: Strategic Plan for Responding to Accelerating Climate Change (Draft)* (September 21, 2009) – U.S. Fish and Wildlife Service ("Draft Strategic Plan")

The September 2009 Draft Strategic Plan sets forth the U.S. Fish and Wildlife Service's ("USFWS") programmatic three-part strategy with respect to climate change, which turns on adaptation, mitigation, and engagement. Within each component of the strategy, the following goals are identified:

Adaptation

1. Develop long-term capacity for biological planning and conservation design and apply it to drive conservation at broad, landscape scales.

2. Plan and deliver near-term and long-term landscape conservation actions that support climate change adaptations by fish, plants, wildlife, and habitats of ecological and societal significance.

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1 Please note that all reports referenced in this discussion are available for public inspection and review at the County of Los Angeles, Department of Regional Planning, 320 West Temple Street, Los Angeles, California, and are incorporated by this reference.

3. Develop monitoring and research partnerships that make available complete and objective information to plan, deliver, evaluate, and improve actions that facilitate fish and wildlife adaptations to accelerating climate change.

Mitigation

4. Change agency business practices to achieve carbon neutrality by the Year 2020.

5. To conserve and restore fish and wildlife habitats at landscape scales, build agency capacity to understand, apply, and share biological carbon sequestration science; and work with partners to sequester atmospheric greenhouse gases in strategic locations.

Engagement

6. Engage agency employees; local, state, national, and international partners in the public and private sectors; key constituencies and stakeholders; and everyday citizens in a new era of collaborative conservation in which, together, we seek solutions to the impacts of climate change and other 21st century stressors of fish, wildlife and habitats.

In the Draft Strategic Plan, the USFWS underscores that "[o]ne of the major challenges of addressing climate change effects on fish and wildlife will be identifying and accounting for the uncertainty that remains in our understanding of future climate change and how that change will affect ecological systems." (Draft Strategic Plan, p. 8.) Currently, impacts are assessed from global climate change models; however, the USFWS notes the import of "downscaling" such models to better account for regional and local impacts.[2]

(b) *Global Climate Change Impacts in the United States* (2009) – U.S. Global Climate Research Program ("Impacts in the United States")

This report summarizes the science of climate change, and the current and projected impacts of climate change on the United States. The report observed that "[m]any factors affect biodiversity including: climatic conditions; the influences of competitors, predators, parasites, and diseases; disturbances such as fire; and other physical factors. Human-induced climate change, in conjunction with other stresses, is

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[2] The import of this finding recently was confirmed in the *5-Year Review: Summary and Evaluation for the Unarmored Threespine Stickleback*, issued by the Ventura Fish and Wildlife Office on May 29, 2009. On page 25 of the *5-Year Review*, the USFWS noted that "predictions of climatic conditions for smaller sub-regions, such as California, remain uncertain." Therefore, USFWS concluded that it lacked "adequate information to make accurate predictions" regarding the effects of climate change on this particular species.

exerting major influences on natural environments and biodiversity, and these influences are generally expected to grow with increased warming." (Impacts in the United States, p. 79.) The report further noted that the distribution of species is modulating in response to the timing of the seasons. (*Id*. at pp. 80-82.)

With that said, the report "identifies a number of areas in which inadequate information or understanding hampers our ability to estimate future climate change and its impacts." (*Id*. at p. 11.) The potential impact to sensitive biological resources is one of those areas, as the report found that "[r]esearch on ecological responses to climate change is also limited." (*Ibid*.) The report recommends that additional research focus on improving the models used to project impacts to ecosystems:

> [Ecosystem simulation] models, when rigorously developed and tested, provide powerful tools for exploring the ecosystem consequences of alternative future climates. The incorporation of ecosystem models into an integrated assessment framework that includes socioeconomic, atmospheric and ocean chemistry, and atmosphere-ocean general circulation models should be a major goal of impacts research. This knowledge can provide a base for research studies into ways to manage critical ecosystems in an environment that is continually changing.

(*Id*. at p. 153.) In that regard, the report underscored the "indisputable need" for the development of regional, small scale modeling to enable local decision makers to render informed choices. (*Id*. at p. 154.)

(c) *The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States* (May 2008) -- Synthesis and Assessment Product 4.3 Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research ("CCSP 2008 Report")

This report assesses, among other issues, the effect of climate change on biodiversity, and is one of a series of 21 synthesis and assessment products being produced under the auspices of the U.S. Climate Change Service Program ("CCSP"). The lead sponsor of the CCSP 2008 Report summarized here is the U.S. Department of Agriculture.

The CCSP 2008 Report was prepared following the extensive review of scientific literature, measurements and data collected and published by U.S. government agencies in more than 1,000 separate publications. (CCSP 2008 Report, p. 1.) The overarching conclusions reached as a result of the CCSP's literature survey include findings that:

- Climate change already is affecting biodiversity in the United States;
- Climate change will continue to have significant effects on biodiversity over the next few decades and beyond;

- Many *other* stresses and disturbances, not related to climate change, also affect biodiversity;

- Climate change impacts on ecosystems will affect the services (*e.g.*, carbon sequestration) that ecosystems provide, but we do not yet possess sufficient understanding to project the timing, magnitude, and consequences of these effects -- "there is not yet adequate integrated analysis of how climate change could affect ecosystem services;" "there is no analysis specifically devoted to understanding changes in ecosystem services in the United States from climate change and associated stresses," which constitutes a "significant gap in our knowledge base;" and

- Existing monitoring systems, while useful for many purposes, are *not* optimized for detecting impacts to ecosystems resulting from global climate change.

(*Id*. at pp. 3-4.)

With respect to biodiversity, the report addresses impacts on species diversity and rare and sensitive ecosystems. (CCSP 2008 Report, p. 1.) The basic findings reached with respect to biodiversity include conclusions that:

- There has been a significant lengthening in the growing season and increase in net primary productivity in the high latitudes of North America;

- Many species studied have exhibited shifts in their distributions;

- Coral reefs are suffering major bleaching due to increases in sea surface temperatures and oceanic acidity;

- The rate of warming projected for the next century in the Arctic will reduce snow and ice cover, impacting polar bears;

- There are other possible impacts for which there is not yet a substantial observational database;

- It is difficult to pinpoint changes in ecosystem services that are related to changes in biological diversity, particularly as a specific assessment of changes resulting from climate shifts or other drivers of change has not been done; and

- Current modeling systems have not been developed with climate variability in mind, so the information derived from their results (with respect to climate change) is somewhat limited.

(*Id*. at pp. 9-10.)

(d) *Climate Change 2007: Climate Change Impacts, Adaptation, and Vulnerability* (April 6, 2007) -- Working Group II Contribution to the Intergovernmental Panel on Climate Change, Fourth Assessment Report ("IPCC WGII 2007 Report")

This report addresses the "relationship between observed climate change and recent observed changes in the natural and human environment." (IPCC WGII 2007 Report, p. 2.) Based upon global assessment of data since 1970, the report concludes that "anthropogenic warming has had a discernable influence on many physical and biological systems." (*Id*. at p. 3.) The report notes that recent warming "strongly"

affects terrestrial biological systems, such that there is an earlier timing of spring events, and poleward/upward shifts in the ranges in plant and animal species. (*Id*. at p. 3.) Similarly, with regard to marine and freshwater biological systems, there is evidence that impacts are occurring due to rising water temperatures, which impact ice cover, salinity, oxygen levels, and circulation. (*Ibid*.) The specific impacts to marine and freshwater biological systems include range shifts, the earlier migration of fish in rivers, and changing abundance levels of algal, plankton, and fish in high-latitude oceans and high-altitude lakes. (*Ibid*.) If temperature increases exceed 1.5-2.5°C, major changes are projected for ecosystem structure and function, species' ecological interactions, and species' geographic ranges - all resulting in predominantly negative consequences for biodiversity. (*Id.* at p. 8.)

The IPCC WGII 2007 Report also summarizes, however, the considerable scientific uncertainty associated with global climate change and its causes and effects on sensitive biological resources:

> Limitations and gaps prevent more complete attribution of the causes of observed system responses to anthropogenic warming. First, the available analyses are limited in the number of systems and locations considered. Second, natural temperature variability is larger at the regional than the global scale, thus affecting identification of changes due to external forcing. Finally, at the regional scale other factors (such as land-use change, pollution, and invasive species) are influential.

(*Id*. at p. 4.) Similarly, the report notes that while climate change is beginning to have effects on many natural and human environments, "based on the published literature, the impacts have not yet become established trends." (*Ibid*.)

(e) *Observed Impacts of Global Climate Change in the U.S.* (November 2004), prepared for the PEW Center on Global Climate Change, Camille Parmesan, Hector Galbraith ("Parmesan and Galbraith 2004")

Camille Parmesan and Hector Galbraith undertook a literature review to assess "the scientific evidence compiled to date on the observed ecological effects of climate change in the United States and their consequences" and the strength of that evidence. (Parmesan and Galbraith 2004 at p. iii.) The review included more than 40 studies showing a possible tie between global warming and ecological changes in the United States. In twenty of the studies, the authors found "strong evidence of a direct link" between climate change and observed ecological impacts in the United States. (*Ibid*.)

While the report identified general trends, such as shifts in the timing of ecological events and habitat ranges, it also noted that "many species and ecological systems of interest have yet to be studied (often due to inherent limitations of available data) and the attribution of ecological changes to a particular cause remains challenging." (*Id*. at pp. iii; see also p. 13 [there are "enormous difficulties biologists have encountered in tackling the question of climate change impacts"].) Further, "[m]any if not most of the

ecosystems and organisms in the United States are already suffering from other anthropogenic stressors . . . [and] [a]s yet, scientists do not have a clear idea how climate change might affect this already fragile situation." (*Id.* at p. v.) Accordingly, the report recommends that scientists achieve a "better understanding of which systems or species are most or least susceptible to projected climate change" in order to better evaluate and mitigate potential impacts. (*Id.* at p. 41.)

In response to Parmesan and Galbraith 2004, other scientists have noted that plants and animals have adapted to climate change for millions of years and that it is not surprising to see plants and animals respond to present-day temperature changes.[3] Such responses to climate change do not necessarily show the changes are linked to fossil fuel emissions and human-caused climate change. (*Ibid*.)

Some concern has been articulated that the Edith's, Quino, Bay, and Taylor's checkerspot butterfly species may be adversely impacted by global climate change. However, in a related context, USFWS has rejected similar claims that butterfly species may be endangered or threatened due to global climate change.[4] In the context of the Thorne's Hairstreak Butterfly, USFWS recognized recent evaluations by Parmesan and Galbraith 2004 that whole ecosystems are seemingly being shifted northward; however, USFWS found that the type, magnitude, or temporal effects of ecosystem changes that may be brought about by global climate change are speculative and stated it was not aware of any available documentation that directly links global warming as a threat to the butterfly. (*Ibid*.)

In addition, it should be noted that the butterfly species of concern are not believed to be present on the Project site. For example, the Quino checkerspot butterfly has been identified as a species that is *not* expected to be found on the Project site, because its presence was last documented in Los Angeles County in 1954.

(f) *Status and Trends of the Nation's Biological Resources* (1998), U.S. Department of the Interior, U.S. Geological Survey, Biological Resources Division ("USGS 1998 Status/Trends Report")

A chapter of this report addresses the impacts of climate change on the nation's biological resources. (USGS 1998 Status/Trends, at pp. 89-116.) The report closely considers impacts to avian species, and notes that "the ranges of most species moved north, up mountain slopes, or both." (*Id.* at p. 101.) Accordingly, such range shifts "could cause local extinctions in the more southern portions of the birds' ranges, and, if movement to the north is impossible, extinctions of entire species could occur." (*Ibid.*) The

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[3] Tom Stohlgren, a U.S. Geological Survey ecologist, Fort Collins, Colorado.

[4] See, USFWS 90-day finding on petition to list the Thorne's Hairstreak Butterfly as threatened or endangered (2006 Federal Register, 71 FR 44980-44988).

report also considers impacts to reptiles and amphibians, and notes that they are likely to be impacted because they are especially susceptible to extreme temperature, must remain close to water sources, and are not able to disperse at a rapid rate. (*Ibid*.) In addition, "[i]n general, animals most likely to be affected earliest by climatic change are those in which populations are fairly small and limited to isolated habitats." (*Id*. at p. 102.)

Significantly, this report notes that "[w]hat is most needed to evaluate potential biological effects of temperature change is a regional projection of climatic changes that can be applied to ecosystems at a regional or local scale" and "estimates of climatic variability during the transition to a new equilibrium, particularly at the regional scale." (*Id*. at pp. 94-95.) In addition, "[a] focus of climate research toward changing climatic variability [citations] might be more useful for ecological impact assessments than the current focus among climatic modelers on climatic means." (*Id*. at p. 112.) Finally, these projections, in order to be "more realistic and useful . . . [require a] multiscale, multispecies, multitaxa analysis driven by regionally specific, transient climatic change forecasts." (*Ibid*.)

The report also states that "at present [transient regional changes] are very difficult to predict credibly." (*Id.* at p. 95; see also p. 110 [As contrasted with regional assessments, "[t]he most reliable projects for climatic models are for global-scale temperature changes."].) This point is further underscored by the conclusion that climate forecast models are "fraught with uncertainties," leading to "the perplexing question" of "whether they can be trusted as a reliable basis for altering social policies, such as those governing CO_2 emissions or the shape and location of wildlife reserves." (*Ibid*.)

After disclosing the inadequacies of the projection models, this report assesses the policy implications:

> Climatic change as now envisioned is not necessarily a threat to the well-being of all climate-sensitive species. However, the transient nature of most projected human-induced climatic change scenarios suggests that significant alterations are likely on a scale of decades, whereas the adaptability of many species - especially those upon which faster responding species depend - is on a scale of centuries. . . . The only forecast that seems unassailable is that the more rapidly the climate changes and the more extensively other human disturbances are forced on nature, the higher the probability of substantial disruption and surprise within natural systems.
>
> To forecast possible consequences of the projected climate changes, single-species studies should be guided by the overall effects that climate may have at the large scale or on range limits and abundance patterns, and on the interactions among species. Coupling such results with information from climatologists, geologists, and others will allow interdisciplinary teams to more reliably forecast the possible biological consequences of scenarios of global warming and other global changes. These forecasts can then be used by policy makers and the general public to determine what types of actions might be effective to mitigate potential impacts of forecasted climate changes. Research can help

> put such policy making of a firmer factual basis, but any plausible level of effort is not likely to reduce all important uncertainties before the global change experiment now under way on Earth is played out [citation].

(*Id*. at p. 113.)

(g) *The Regional Impacts of Climate Change: An Assessment of Vulnerability* (1997), Intergovernmental Panel on Climate Change, Special Report ("IPCC 1997 Report")

This report evaluates the regional impacts of climate change across the globe. With regard to impacts to North America, this report concludes that the "characteristics of the subregions and sectors . . . suggest that neither the impacts of climate change nor the response options will be uniform." (IPCC 1997 Report, Chapter 8 Executive Summary.) Nonetheless, the report concludes that reductions in terrestrial biological diversity are likely due to loss of habitat. (*Ibid.*) The same conclusion is reached as to fisheries and aquatic systems because of expected increases to water temperature, changes in freshwater flows and mixing regimes, and alterations to water quality. (*Ibid.*) In spite of the anticipated impacts, the report discloses significant scientific uncertainties:

> Our current understanding of the potential impacts of climate change is limited by critical uncertainties. One important uncertainty relates to the inadequacy of regional-scale climate projections relative to the spatial scales of variability in North American natural and human systems. This uncertainty is compounded further by the uncertainties inherent in ecological, economic, and social models - which thereby further limit our ability to identify the full extent of impacts or prescriptive adaptation measures. *Given these uncertainties, particularly the inability to forecast futures, conclusions about regional impacts are not yet reliable* and are limited to the sensitivity and vulnerability of physical, biological, and socioeconomic systems to climate change and climate variability.

(*Ibid.*, italics added.) More simply, the report concludes "[u]ncertainty exists in our ability to predict ecosystem or individual species responses to elevated CO_2 and global warming at either the regional or global scale." (*Ibid*.)

Conclusions Reached From Literature Survey

In light of the information provided above, evidence exists linking global climate change to ecological effects; however, the precise causes, extent, magnitude, and timing of such effects remain uncertain and preclude reliable forecasts of possible ecological effects resulting from global climate change. Therefore, and again based on the information presented herein, the effect of global climate change on sensitive species and other biological resources is too speculative at this time for any further evaluation. Accordingly, it is appropriate to terminate any further analysis of such effects, consistent with Section 15145 of the CEQA Guidelines.

Sustainability In Action

LANDMARK VILLAGE

NEWHALL RANCH

NEWHALL LAND
A LENNAR/LNR COMPANY

2007

SUSTAINABLE COMMUNITY DESIGN

Landmark Village's balance of new homes, jobs, environmental preservation and transportation solutions showcase the sustainable community design attributes found throughout Newhall Ranch.

As proposed, Landmark Village's 300 acres would include a diverse range of 1,444 new homes for all socio-economic levels. To minimize and shorten car trips, most homes will be within walking distance to the community's commercial and mixed-use areas, elementary school site, community park, trails and natural open space.

Green Building Program

=15% percent better than existing Title 24 requirements

1. All Residential Buildings
   - Improved insulation and ducting
   - Low E glass
   - High efficiency A/C
   - Radiant barrier in attic – as needed to achieve standard
2. All Commercial and Public Buildings
   - Improved insulation and ducting
   - Low E glass
   - High efficiency HVAC equipment
   - Energy efficient lighting design with occupancy sensors

Water Conservation (Community Wide)

- Water efficient fixtures in homes, commercial, and public buildings
- Drought tolerant landscaping
- Use of recycled water for irrigation
- Use of local ground water for potable supply
- Evapo-transpiration irrigation systems (smart sprinklers)

Renewable Energy

Explore and identify renewable energy sources for Newhall Ranch (including Landmark Village). Renewable energy sources could include solar, wind, cogeneration and other feasible sources.

Reduce Impermeable Surfaces / Water Re-use

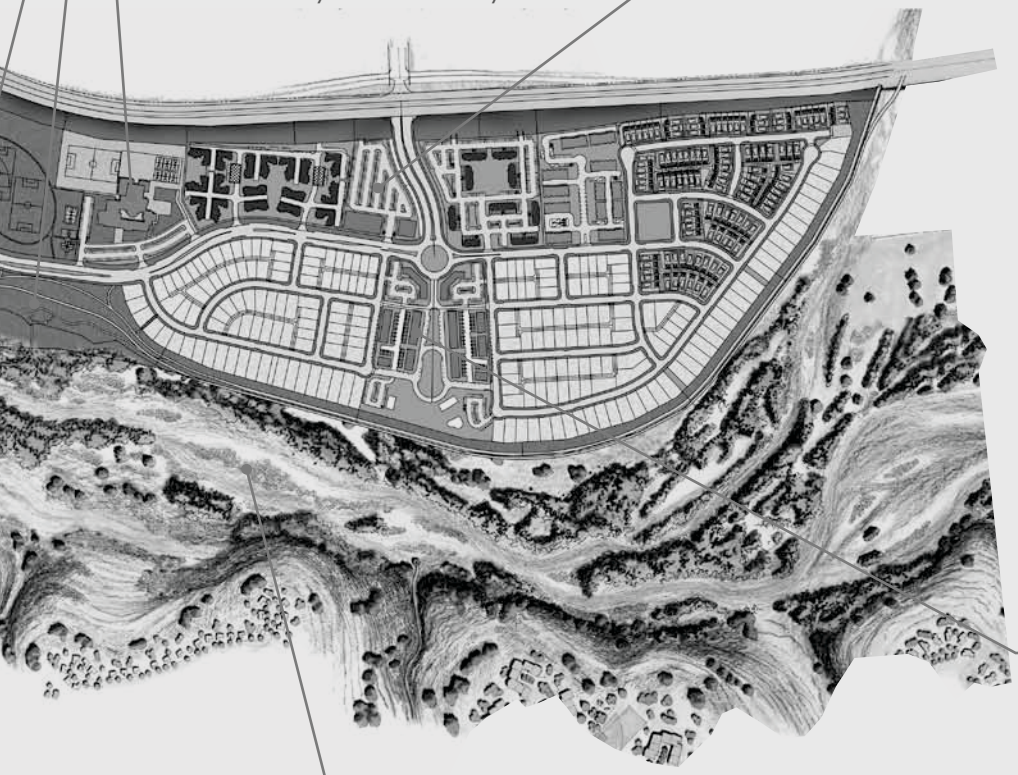
To curtail urban runoff and maximize groundwater recharge, Landmark will utilize open/soft bottom channels, smaller street sections and natural water quality treatment basins. These water quality features will aid percolation of the groundwater recharging process.

Walkability

Landmark Village's design connects jobs, shops, schools, parks and recreation facilities with the community's trail system to promote walking and biking while minimizing car trips.

Recreation

Landmark's sustainable design includes parks for people to play, a neighborhood recreation center to exercise and a two-mile extension of the popular Santa Clara River Trail. The variety of recreational options will allow residents to enjoy an environmentally sustainable way of life.



Transportation Solutions

Landmark's circulation plan can be a model for how to minimize car trips and reduce carbon-dioxide emissions.

- **Convenient mass transit** would be offered through a new transit station, a park-and-ride lot and bus stops. A five-mile right-of-way for a potential Metrolink extension is also included in the plan.
- Trails and bike paths leading to close-to-home jobs, neighborhood serving retail and the school will encourage residents to **leave their cars behind**.
- Newhall Land's commitment to fund $300 million in roadway improvements in the Santa Clarita Valley (in conjunction with Newhall Ranch) will keep traffic moving.

Economy

A number of Newhall Ranch's projected 19,000 new jobs will be offered through Landmark's 37 acres (approximately 1 million sq ft) of mixed-use and commercial areas. A strong local job base is a critical component of sustainable communities because it offers the quality of life and environmental benefits of allowing people to work close to home, while generating tax revenue.

Protection of Natural Resources

As it passes by Landmark Village, the long-term health of the Santa Clara River will be protected with environmentally sensitive bank stabilization and development buffers to preserve the river's natural beauty, its native species, wildlife corridor and water quality.

Environmentally Sustainable Living

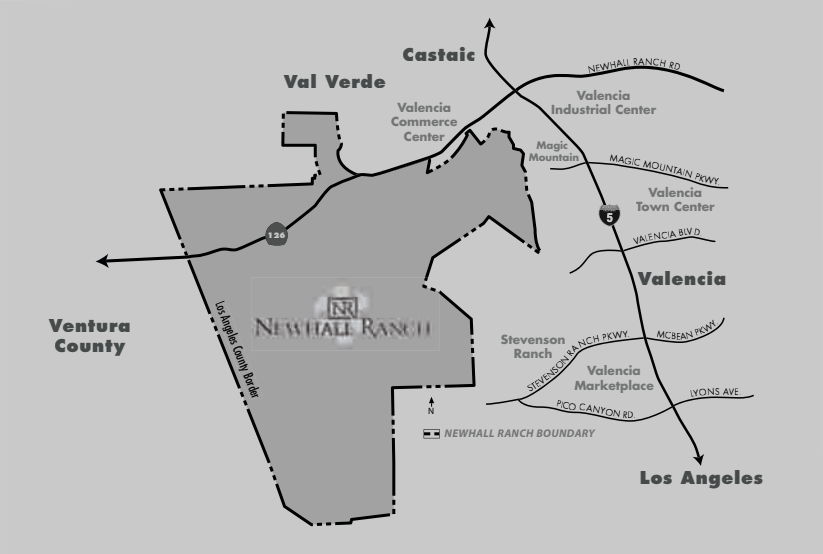
Over 50% of Newhall Ranch will be preserved as open space:

High Country preserve	4,200 acres
Santa Clara River Corridor	1,000 acres
Open space areas within villages	1,100 acres
Salt Creek Corridor on the western edge of Newhall Ranch	1,500 acres
Total open space set aside as a result of Newhall Ranch	**7,800 acres**

Landmark is the first of four planned villages, which will combine to form Newhall Ranch, with its 19,000 new jobs and 21,000 new-home choices, and environmentally sensitive design which permanently preserves 50 percent of the 12,000-acre property.

Much like Newhall Land's renowned community of Valencia, Newhall Ranch will be a sustainable new town thanks to its focus on all aspects of life – from social to economic to the natural environment.

- The Newhall Ranch Nature Preserve protects **high quality habitat**
- An ideal location **near existing jobs and infrastructure**
- A **broad range of homes** for every stage of life
- A **mix of land uses** including commercial, office and public facilities
- The creation of **19,000 jobs**
- Recycled water to meet 51 percent of all water needs: Independent (non State Water Project water) supplies to meet potable water needs
- Drought tolerant native landscaping and evapotranspiration controllers (smart sprinklers) substantially reducing irrigation needs
- Car trips minimized by **convenient mass transit** and by placing homes near jobs and neighborhood retail centers
- Significant improvements to SR-126, I-5 and other local roadways to **reduce traffic congestion** and improve mobility



IDEAL LOCATION: *Newhall Ranch is the logical, close-in location for a new master-planned community because it is adjacent to major job centers, existing infrastructure and development.*

Photograph by Ted Dayton

A WALKABLE COMMUNITY: *Newhall Ranch's sustainable design connects jobs, shops, schools, parks and recreation facilities with the community's trail system to encourage residents to leave their cars behind.*

The information depicted and written about in this document is subject to change and modification.

GSI Technical Memorandum on Potential Effects of Climate Change on Groundwater Supplies for Newhall Ranch; March 18, 2008

Technical Memorandum

To: Susan Tebo – Impact Sciences, Inc.

From: John Porcello – GSI Water Solutions, Inc.

Date: March 18, 2008

Re: Potential Effects of Climate Change on Groundwater Supplies for the Newhall Ranch Specific Plan, Santa Clarita Valley, California

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Introduction

This technical memorandum (TM) evaluates the potential effects of future climate change on the groundwater supplies for the Newhall Ranch Specific Plan (Specific Plan) development. As discussed in the *Newhall Ranch Draft Additional Analysis* (Impact Sciences, 2001), Alluvial Aquifer groundwater wells along the Santa Clara River west of Interstate 5 (I-5) (see Figure 1) will provide 7,038 acre-feet (AF) of water to the Specific Plan development on an annual basis. This water will be provided by converting historical and present-day Alluvial Aquifer groundwater pumping (by The Newhall Land and Farming Company) from agricultural uses to urban uses. Notably, no additional groundwater pumping over historical and present amounts will occur; instead, water currently used to irrigate crops on Newhall Land's property will be treated and used to meet most of the potable water needs of the Specific Plan development's urban uses (e.g., residential; nonresidential; etc.).

GSI Water Solutions, Inc. (GSI) prepared this TM at the request of Impact Sciences, Inc., to specifically address whether future climate change may preclude the Alluvial Aquifer from providing sufficient yield to accommodate the future water demand of the Specific Plan development. The remainder of this TM discusses the following:

- The climate of the Santa Clarita Valley;
- An overview of the current understanding of future potential changes in temperature, annual rainfall, and rainfall timing and intensity (statewide and in southern California);

- The corresponding influence of rainfall and temperature changes on groundwater recharge to the Alluvial Aquifer in the Santa Clarita Valley as understood to date, including ongoing work by the local water purveyors to study this further; and

- A summary of historical data that indicate how the Alluvial Aquifer west of I-5 may be affected in the future (as gathered from records of historical fluctuations in local hydrologic and groundwater conditions).

Local Climate

The climate of the Santa Clarita Valley is discussed by CH2M HILL (2004). The valley has a semi-arid Mediterranean-type climate, characterized by long, dry summers and relatively short, wet winters. Temperatures in the valley range from a minimum of 20 to 30 degrees Fahrenheit (°F) in the winter to a maximum of approximately 100 to 110°F during the summer. Mean monthly temperatures range between approximately 48°F in the winter and 77°F in the summer.

The average rainfall since the 1880s, and also since 1950, has been approximately 18 inches per year, but varies considerably from year to year (ranging from less than 5 inches to nearly 50 inches). Additionally, rainfall is not only variable on an annual basis, but is also highly seasonal. Approximately 80 percent of the annual precipitation in the valley falls between November and March. Most of the precipitation comes from winter storms that last only a few days and are separated by relatively long periods of clear weather. Additionally, as shown in Figure 2, rainfall patterns vary considerably across the watershed because of the considerable variation in topography and the watershed's location between the coastal climates in Ventura County and the inland deserts to the east.

The major sources of natural recharge to Alluvial Aquifer groundwater include deep percolation (infiltration) of direct precipitation within the valley, and percolation of stream runoff flowing into the valley along the Santa Clara River and its tributaries. Recharge occurs primarily in the eastern portion of the valley, as conceptually shown in Figure 3. Natural groundwater discharge occurs primarily in the western portion of the valley (west of Interstate 5 [I-5]), occurring as discharge to the Santa Clara River and evapotranspiration by the riparian vegetation growing along the river corridor.

Global-Scale and Regional-Scale Predictions of Future Rainfall and Temperature Trends

Considerable research and predictive modeling work have been performed by climatologists and other scientists to understand the nature of historic and future global-scale climate changes. The largest body of this work has been conducted under the auspices of the Intergovernmental Panel

on Climate Change (IPCC), which has published four comprehensive assessment reports since 1990, with the most recent reports issued in 2007 (IPCC, 2007a and 2007b).

Additionally, in 2006, the California Department of Water Resources (DWR), the California Climate Change Center (CCCC), and the California Climate Action Team (CAT; an inter-agency team managed by the California Environmental Protection Agency) published several studies evaluating the potential effects of climate change on the water resources of the State of California. These California-specific studies focus primarily on the central and northern parts of the state, where rainfall and snowfall provide water to two statewide water delivery systems (the State Water Project [SWP] and the Central Valley Project [CVP]). However, the state studies and other literature do provide some insight as to the nature of potential future climate changes in southern California. The discussion below focuses on the low-elevation mountains and valleys that are characteristic of much of the South Coast Hydrologic Region (as defined by DWR), which includes the Santa Clara River watershed.

As discussed by CCCC (2006a) and Milly (2007), global climate models (GCMs) have not been designed to support hydrologic analysis. The GCMs describe continental water fluxes and processes at very large scales. For example, two GCMs evaluated by Cayan et al. (2008) rely on a grid containing rectangular cells that are 137 to 186 miles long. The use of a discrete global grid renders the GCMs too coarse to adequately depict the complex structure of temperature and precipitation that characterizes and distinguishes each of the DWR Hydrologic Regions. Additionally, the various GCMs that have been developed by the research community and incorporated into the IPCC assessments vary in design and incorporate varied assumptions, thereby providing different results regarding the potential magnitude of future changes in rainfall and temperature in various parts of the world (including southern California).

In general, the GCMs agree that temperatures will continue to rise globally for the next several decades and that longer-term temperature trends will depend on the magnitude of future greenhouse gas emissions. As noted by the IPCC (2007a), the GCMs also predict that precipitation increases are very likely in high latitudes, while decreases are likely in most subtropical regions. However, there is somewhat less agreement among the GCMs regarding future precipitation changes. As explained by CCCC (2006b), the variability and uncertainty in the GCMs arises in part because of uncertainties about the “feedbacks” that might amplify or lessen global warming. For example, as heat-trapping emissions cause temperatures to rise, the atmosphere can hold more water vapor, which traps heat and raises temperatures further—a positive feedback. Clouds created by this water vapor could absorb and re-radiate outgoing infrared radiation from Earth’s surface (another positive feedback) or reflect more incoming shortwave radiation from the sun before it reaches Earth’s surface (a negative feedback). Because many of these processes and their feedbacks are not yet fully understood, they are represented somewhat differently in each GCM.

The GCMs also do not account for elevation-related differences in rainfall and recharge patterns, which are important at the local scale (e.g., DWR-designated hydrologic regions and individual

watersheds). To account for the importance of elevation at the local scale, researchers have taken the GCMs and "down-scaled" them to create regional models that estimate the spatial variability in future rainfall and temperature trends in California (CCCC, 2006c; DWR, 2006). The down-scaling process consists of using statistical techniques and local, physically based hydrologic models to "downscale" the GCMs to a finer spatial resolution. This procedure "distributes" the GCM predictions over the complex landscape of California. Because the distribution procedure required to acquire local-scale projections is dependent upon the simulation results from the GCMs, the individual regional models (like their GCM counterparts) also create different projections of future climate trends. Nevertheless, taken together, the GCMs and regional-scale models are useful for understanding the general magnitudes of changes in temperature and rainfall patterns that could occur in the future as a result of global warming.

In summary, the regional-scale climatologic modeling work conducted by DWR, CAT, and CCCC indicates the following:

1. On a statewide basis, the various models indicate that there will be relatively little change in annual precipitation, with a tendency toward slightly greater winter precipitation and lower spring precipitation (CAT, 2006). Dettinger (2005) summarized the primary finding from these same models as follows: "The distribution of precipitation changes includes both positive and negative changes that cluster with little change around present-day averages." CCCC (2006a) notes that the models project that (a) variability in precipitation on a year-to-year and decade-to-decade time-scale will continue, as in the past; and (b) the frequency of warm tropical events (El Niños) will remain about the same, creating anomalous precipitation patterns in California. The models, as a group, also project that summer precipitation will change only incrementally, and may even decrease, indicating that there is little evidence for a stronger summer-time monsoon influence (CCCC, 2006a).

2. For southern California, average annual precipitation during the period 2035 through 2064 is projected to decrease only slightly, probably by less than ¼-inch per year, even under the scenario involving the highest IPCC estimate of future greenhouse gas emissions (DWR, 2006). During this period, average temperatures in southern California are projected to be 1.6 to 4.2°F (0.9 to 2.3°C) higher than present-day temperatures. Although these projections were published in 2006 (DWR, 2006), they are based on GCMs (and subsequent down-scaled regional models) that were developed in support of the IPCC's most recent (fourth) assessment of global climate change (IPCC, 2007a and 2007b).

There is evidence that these projected changes are similar to trends in the recent historical record. Specifically:

1. DWR (2006) discusses an analysis of rainfall records across the state from 1890 through 2002, using data compiled by former state climatologist James Goodridge. The analysis

indicates that average annual precipitation on a statewide basis appears to be relatively flat (no increase or decrease) over the entire record. However, the report notes that an upward trend in statewide precipitation may have occurred toward the latter portion of this period. The analysis also identified a very slight decrease in annual precipitation from 1890 through 2002 for both central California and southern California (amounting to about 0.77 inch during a 100-year period).

2. A statistical analysis of water-year (October through September) and April-July flows of four rivers in central-coast and south-coast watersheds found no statistical changes in flow in any of these rivers (DWR, 2006). This analysis included two river systems in metropolitan Los Angeles – the Santa Ana River (based on data from 1901 through 2005) and the Arroyo Seco near Pasadena (based on data from 1911 through 2005). The lack of statistically identifiable changes in the flows of these rivers is consistent with the slight decrease, if any, in southern California annual rainfall that has occurred since 1890.

While the historical data and the projections from GCMs and regional-scale climate models together suggest that a slight decrease in annual rainfall could occur, the possibility that rainfall could increase slightly also cannot be ruled out completely. DWR (2006) notes that the National Weather Service's Climate Prediction Center found evidence that annual precipitation has increased in much of California, the Colorado River Basin, and the West since the mid-1960s. Additionally, some GCMs have suggested that annual average rainfall could increase slightly in southern California (Bachelet et al., 2007, using analyses by Price et al., 2004).

Rainfall Timing and Intensity

Of equal, if not greater, importance to the question of how global climate change potentially could affect aquifer recharge is the timing and intensity of precipitation. As described by CH2M HILL (2004) and CH2M HILL and LSCE (2005), rainfall in the Santa Clarita Valley and southern California occurs predominantly during the winter months, and most groundwater recharge, therefore, occurs during that time of year. Most of the recharge to the Alluvial Aquifer occurs along the Santa Clara River corridor in the eastern part of the valley below the Lang stream gage – several miles east of the Specific Plan development (see Figures 1 and 3). During low flow events, recharge and river flow may occur only a short distance below the Lang gage, whereas during high flow events the river can recharge the groundwater as far downstream as the area between the Saugus water reclamation plant (WRP) and I-5. This recharge occurs mainly in response to heavy rainfall events that are sufficiently strong to create flow in the ephemeral reaches of the Santa Clara River (in the eastern part of the valley). This periodic river flow is an important source of recharge to the Alluvial Aquifer and occurs in some, but not all, years. The historical record shows several multi-year periods of little to no river flow (for example, 1984 through 1991 and 1999 through 2004), followed by brief periods of very high river flows and rapidly rising groundwater elevations in the eastern part of the valley where most of the recharge takes place (as occurred in 1992, 1993, 1998, and late December 2004 through January 2005).

On a global scale, the IPCC's most recent assessment (2007a) concluded that the frequency of heavy precipitation events and/or the proportion of total rainfall from heavy events has "likely" increased over most areas since 1960 and is "a very likely" trend for the 21st century. As discussed previously, CCCC (2006a) concluded that there will continue to be variability in California's precipitation on a year-to-year and decade-to-decade time-scale, as has been observed in the past. DWR (2006) concluded from a statistical analysis of the 1890-2002 historical statewide precipitation data that an increase in the variability of annual precipitation has occurred in the historical record and is a possible continued outcome of global climate change in the future. This finding by DWR was based on a 10-year moving average of mean and standard deviation values for statewide annual average precipitation, which showed end-of-period variability values about 75 percent larger than beginning-of-period values. This indicates that there tended to be more extreme wet and dry years at the end of the 20th century than occurred at the beginning of that century. DWR concluded that this trend may continue with on-going climate change.

DWR (2006) also noted that river flow records show evidence of a change in variability, as manifested by changes in flood flows (which are related to rainfall intensity). Specifically, from examination of streamflow records in another South Coast Basin watershed (the Santa Margarita River near Temecula), DWR found that the 10-year, 50-year, and 100-year flood flows have increased about 22 percent since 1955. Because this river and its watershed are in the same DWR hydrologic region as the Santa Clara River, this may be an indicator that the increasing variability and intensity of rainfall have begun creating larger high-flow events in rivers in southern California, and that this trend may continue in the future (including in the reach of the Santa Clara River that passes through the Santa Clarita Valley). The importance of river flows on groundwater recharge is discussed below.

Potential Effects on Groundwater Recharge (Current Knowledge and Ongoing Studies)

On a watershed scale, the amount of surface water runoff and groundwater recharge generated by individual storm event is controlled primarily by soil infiltration capacity, soil moisture levels, and evapotranspiration (ET) demands. ET consists of evaporation (vaporization) of water from soil and wet plant surfaces, and water uptake and subsequent transpiration by plants. DWR (2006) states that there are two reasons it is difficult to accurately estimate the effect of changes in global temperature on ET. First, no net change in ET will occur as long as the minimum temperature and dew point temperature continue to increase faster than the maximum temperature, as has occurred during the past five decades of global temperature rise. Second, the effect of increased air temperature on plant transpiration is at least partially offset by the increasing CO_2 concentrations that arise from increasing greenhouse gas emissions. Although these observations would suggest that ET demands could be small, it is also possible that ET demands could increase over time because of lengthening of the dry season and the corresponding decrease in the length of the rainy season.

Dettinger and Earman (2007) and Milly (2007) indicate that in general, a reduction in precipitation in the western United States would be expected to reduce runoff, which in turn potentially would decrease groundwater recharge as well. Milly (2007), citing a report by Milly et al. (2005) that discusses global-scale patterns of trends in streamflow and water availability, provides a map of the United States indicating that 90 percent of the GCMs predict decreases in annual runoff of 10 to 20 percent in California, Nevada, Utah, and western Colorado during the period 2041 to 2060, compared with runoff during the period 1900 through 1970.

Christensen and Lettenmaier (2007) down-scaled 11 GCMs to create corresponding regional-scale models for the Colorado River Basin, then used these models to project runoff trends in the basin for two future greenhouse gas emissions scenarios. They projected that on a basin-wide basis: (1) a 10 percent decrease or increase in winter-time rainfall would result in a 13 percent decrease and a 15 percent increase, respectively, in winter-time runoff; and (2) a 10 percent decrease or increase in summer-time rainfall would result in a 7 percent decrease and an 8.5 percent increase, respectively, in summer-time runoff. However, these researchers, as well as Dettinger and Earman (2007), point out that future changes in runoff could differ considerably for mountain ranges versus the alluvial fans and groundwater basins that lie below. This is because global warming would create more rain than snow, thereby reducing the amount of high-elevation snowpack available to recharge mountain groundwater supplies and instead creating unrecharged water that may run off into the fans and basins below. This potentially could increase recharge on fans and basin floors. Alternatively, if the unrecharged water is instead mostly evapotranspired from the mountain soils, then the overall recharge (mountain plus basin) may decline.

Because the boundaries of the Santa Clara River watershed lie in low-elevation mountains, rainfall is a far more significant contributor to the flow of this river than snowfall. Consequently, rainfall runoff from these mountains and from within the Santa Clarita Valley and other valleys can be expected to continue to be the predominant source of flow to the river, and therefore the predominant source of groundwater recharge. Additionally, future groundwater recharge potentially may increase because most recharge occurs during high-rainfall storm events, and climate change may intensify these events. However, the magnitude of potential increases or decreases in recharge is difficult to project.

Dettinger and Earman (2007) conclude that, in general, it is unknown whether groundwater recharge will increase, decrease, or stay the same “at any scale” in the western United States; and, while groundwater supplies may fare well, they also may fare poorly. They conclude that, in general, the tools and data are currently unavailable to allow for confident detection or prediction of groundwater responses to changes in climate. While this may be true in some locations, the water purveyors in the Santa Clarita Valley have a considerable “head start” on this process. Specifically:

- The agricultural and urban water purveyors in the valley have monitored groundwater levels and pumping volumes for many years. This monitoring began in the1940s, when groundwater was pumped exclusively for agricultural purposes, mainly in the western portion of the valley, and mainly from the Alluvial Aquifer. The historical record illustrates how the aquifer systems in the valley have responded over time as groundwater pumping has expanded to include urban uses, with the urban pumping extending into other portions of the valley, as well as into a deeper aquifer system (in the Saugus Formation).

- Rainfall and streamflow records are available in the valley, dating back to the early 1900s. These records have provided important information that the local water purveyors have used to understand the relationship between rainfall, streamflow, and groundwater recharge.

- In 2004, the local water purveyors completed the calibration of a detailed numerical model of the valley's groundwater systems, using the historical data for 1980 through 1999 to calibrate the model. The calibration process, described by CH2M HILL (2004), consisted of adjusting model parameters until the model was able to replicate the time-varying nature of groundwater elevations and streamflows across the valley. A later update (check) of the model's calibration identified that the model also was capable of simulating the hydrologic conditions that were observed from 2000 through 2004 (CH2M HILL, 2005).

The process of calibrating the groundwater model resulted in the derivation of a rainfall-runoff relationship for the Santa Clarita Valley. This relationship, shown in Figure 4, was developed for annual rainfall and runoff, and is based on a relationship derived by Turner (1986) for a large number of watersheds in California. Through the model calibration process, the empirical parameters contained in this relationship were adjusted to improve the model's simulation of recharge patterns and historic groundwater elevations and river flows. As shown in Figure 4, according to the final relationship that was established from this model calibration process, little recharge occurs when annual rainfall is less than 15 inches per year; recharge for the average rainfall of 18 inches per year is only about 2 inches per year; and years with rainfall of 32 inches or more can produce 10 inches per year or more of recharge (for example, as much as 20 inches per year of recharge can occur when rainfall is 45 inches).

During 2008, the local water purveyors will use this model to further evaluate how to manage pumping from the local groundwater system while maintaining its sustainability and will address in more detail the effect of global climate change on rainfall and recharge in the Santa Clarita Valley. Meanwhile, the historical record of rainfall, streamflows, and groundwater elevations in the Santa Clarita Valley provides evidence of how the Alluvial Aquifer has responded to other changes in the hydrologic system in the past. This evidence, which is discussed below, provides insight as to how the portion of the Alluvial Aquifer along the Santa Clara River corridor west of I-5 may respond to future changes in rainfall and recharge.

Evidence from Historical Fluctuations in Local Hydrology and Groundwater Conditions

Before 1970, agriculture was the predominant land use in the Santa Clarita Valley. Agricultural water was supplied by production wells, most of which were completed in the Alluvial Aquifer. Pumping from the Alluvial Aquifer during the 1950s and early 1960s ranged from 35,000 to 44,000 AF per year (AF/yr). Pumping from the Alluvial Aquifer dropped gradually from 40,000 AF/yr in 1967 to less than 30,000 AF/yr by 1983, and did not rise above 30,000 AF/yr again until 1993. Since then, pumping has ranged between about 33,000 and 43,000 AF/yr, and has averaged slightly less than 38,000 AF/yr.

Figure 5 shows trends in groundwater elevations since 1950 in two Alluvial Aquifer wells (NLF-C5 and NLF-C7) located near the western end of the basin (just west of I-5) and two Alluvial Aquifer wells (VWC-N and NLF-S) located 2 to 3 miles east of I-5. The charts in Figure 5 show how Alluvial Aquifer groundwater levels have varied in comparison with fluctuations in Alluvial Aquifer pumping, rainfall, municipal WRP discharges to the Santa Clara River, and seasonal low flows in the river. The charts show the following:

- In the area west of I-5, including the locations of Alluvial Aquifer wells that will provide water to the Specific Plan development, groundwater in the Alluvial Aquifer discharges to the river and is consumed by riparian vegetation located along the river corridor. Additionally, deeper Saugus Formation groundwater discharges to the overlying Alluvial Aquifer. Because this area is a regional groundwater discharge zone for the Saugus Formation (as illustrated in Figure 3), Alluvial Aquifer groundwater levels in this area have been relatively stable over time with only modest seasonal fluctuations, as shown by the hydrographs for wells NLF-C5 and NLF-C7. This stability has occurred despite annual variations in rainfall, increased WRP discharges to the river, and the corresponding increases in the river baseflow (which is displayed in Figure 5 as the flow during the lowest-flow month of each year).

- In the area just east of I-5, Alluvial Aquifer groundwater levels are more variable on a seasonal basis as shown in Figure 5 by the hydrographs for two Alluvial Aquifer wells (VWC-N and NLF-S) that are located in this area. Additionally, groundwater elevations in these wells rose as pumping decreased from the mid-1960s through the 1980s, then were relatively stable during the 1990s despite increased pumping from the Alluvial Aquifer.

The historical hydrographs for these four wells provide insight as to the potential future effects on the aquifer system of climate change-induced variations in groundwater recharge. Specifically, the figures show the historical effect on the Alluvial Aquifer of marked changes in groundwater pumping and surface water flows that began during the 1960s and continue to this

day. The hydrographs show that Alluvial Aquifer groundwater levels west of I-5 have shown little variation over time despite the following changes to the hydrologic system in the valley:

1. Decreased pumping upstream east of I-5 in the 1970s and 1980s, followed by increased pumping in this reach during the 1990s;

2. Fluctuations in annual rainfall;

3. Introduction of treated water discharges to the Santa Clara River during the 1960s and the steady increase in these flows since that time; and

4. Resulting increases in river flows, including summer-time (seasonal low) flows, since the 1960s.

In summary, Alluvial Aquifer groundwater levels along the Santa Clara River corridor west of I-5 are controlled less by pumping than by the discharge of Saugus Formation groundwater into the Alluvial Aquifer. This, in turn, indicates that groundwater levels in this portion of the groundwater system are relatively insensitive to changes in recharge compared with other portions of the valley. As discussed by CH2M HILL (2004), even the remainder of the valley historically has not shown long-term water level declines. Specifically, hydrographs in these areas indicate that after an extended drought and high rates of pumping, Alluvial Aquifer groundwater elevations recover very quickly when normal or above normal rainfall patterns return. Because the western part of the Alluvial Aquifer system (where some of the historical pumping would be converted from agricultural to urban water supplies for the Specific Plan development) occupies the regional groundwater discharge zone in the valley, it is unlikely that significant changes will occur to the aquifer system in this area, especially given that the climate projections indicate a continuance of the periodic large storm events that recharge the groundwater system in the valley.

Conclusions

The historical hydrograph records indicate that the groundwater resources in the western portion of the Santa Clarita Valley are relatively unaffected by local fluctuations in rainfall. Instead, as discussed in detail by CH2M HILL (2004) and CH2M HILL and LSCE (2005), the available data and groundwater modeling simulations indicate that rainfall fluctuations primarily affect groundwater levels and groundwater availability in the easternmost portion of the valley, where most of the recharge occurs to the Alluvial Aquifer. Consequently, if rainfall and groundwater recharge rates were to decline in the future because of climate change, these changes are likely to be fairly small as indicated by the various climatologic studies (discussed previously in this TM) that have been conducted by the various California state agencies involved in water resources management and planning. For this reason, and also because of the well-developed understanding to date of the valley's hydrology and its shallow and deep aquifer systems, it is

anticipated that only minor fluctuations in groundwater levels will occur in the Alluvial Aquifer west of I-5, and that these fluctuations will not reduce the availability or sustainability of Alluvial Aquifer groundwater in this area.

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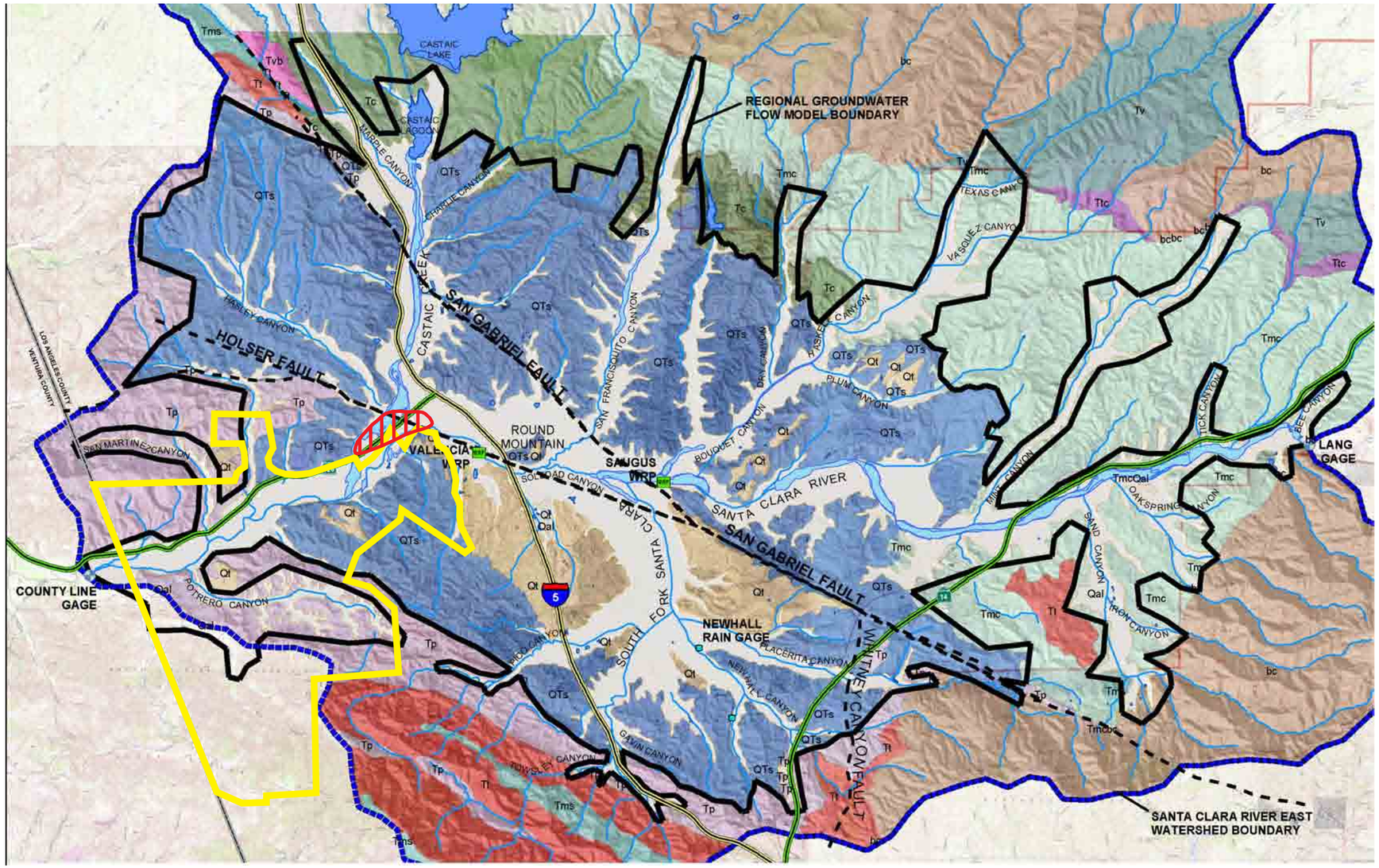

LEGEND

- NEWHALL RANCH
- VALENCIA WATER COMPANY MUNICIPAL WELLS FOR NEWHALL RANCH

GEOLOGY

- UNDIFFERENTIATED ALLUVIUM (Qal)
- TERRACE DEPOSITS (Qt)
- SAUGUS FORMATION (QTs)
- PICO FORMATION (Tp)
- TOWSLEY FORMATION (Tt)
- MODELO FORMATION (Tms)
- CASTAIC FORMATION (Tc)
- VIOLIN BRECCIA (Tvb)
- MINT CANYON FORMATION (Tmc)
- TICK CANYON FORMATION (Ttc)
- VASQUEZ FORMATION (Tv)
- UNDIFFERENTIATED BASEMENT COMPLEX (bc)

HYDROGRAPHY

- LAKE
- STREAM
- STREAM GAGE

MAJOR ROAD

- INTERSTATE
- STATE HIGHWAY

Figure 1

Santa Clarita Valley
Geologic Map

Newhall Land and Farming Company

GSI Water Solutions, Inc.

Prepared From Map By
CH2M HILL (2004)

March 2008

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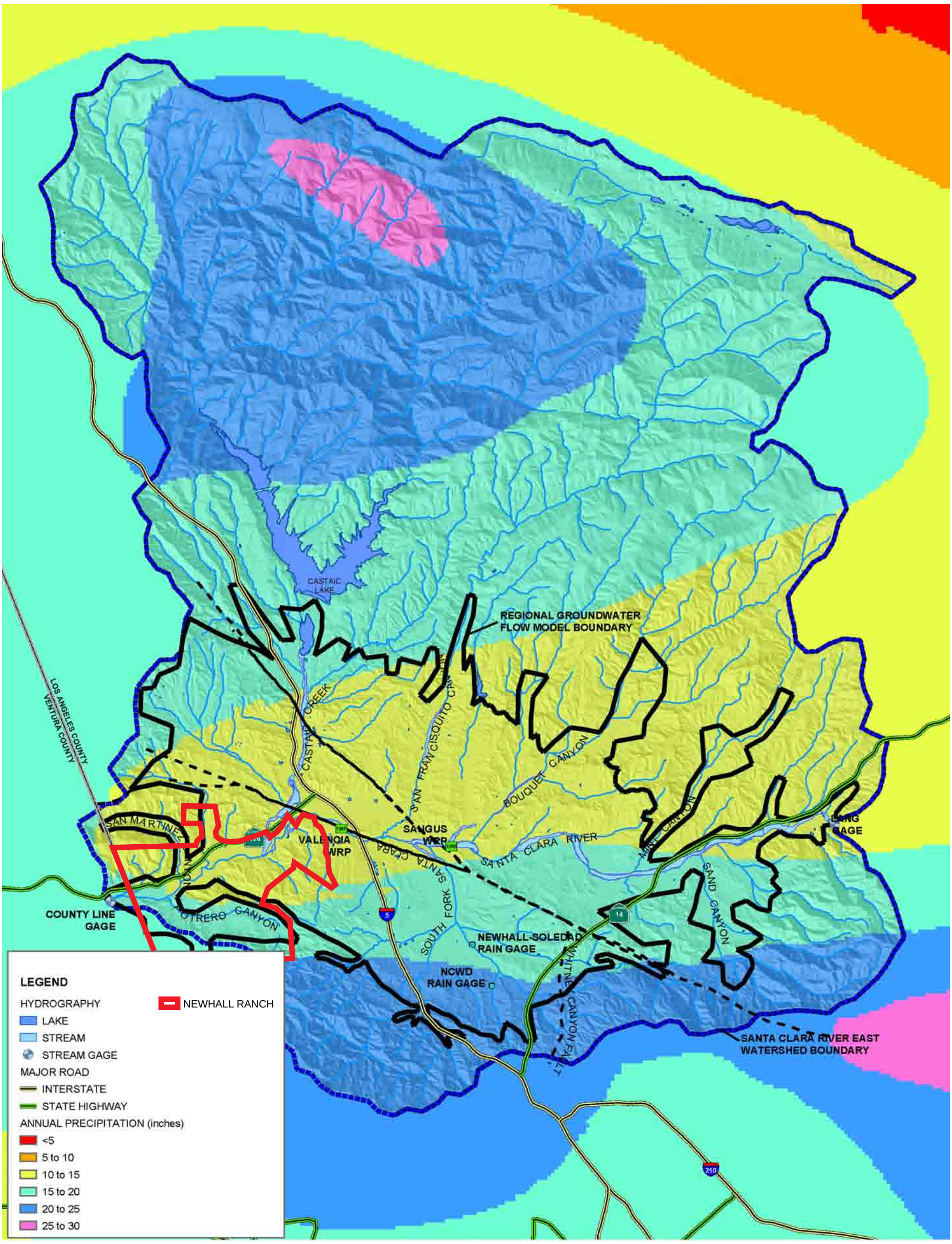

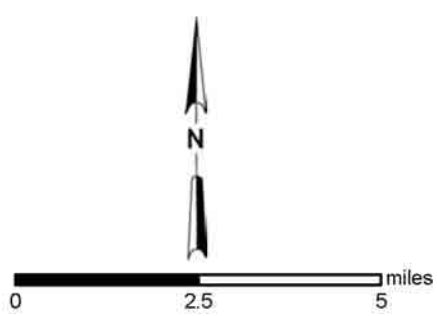

Figure 2

Isohyetal Map Showing Average Annual Precipitation Pattern From 1900 to 1960

Newhall Land and Farming Company

GSI Water Solutions, Inc.

Prepared From Map By CH2M HILL (2004)

March 2008

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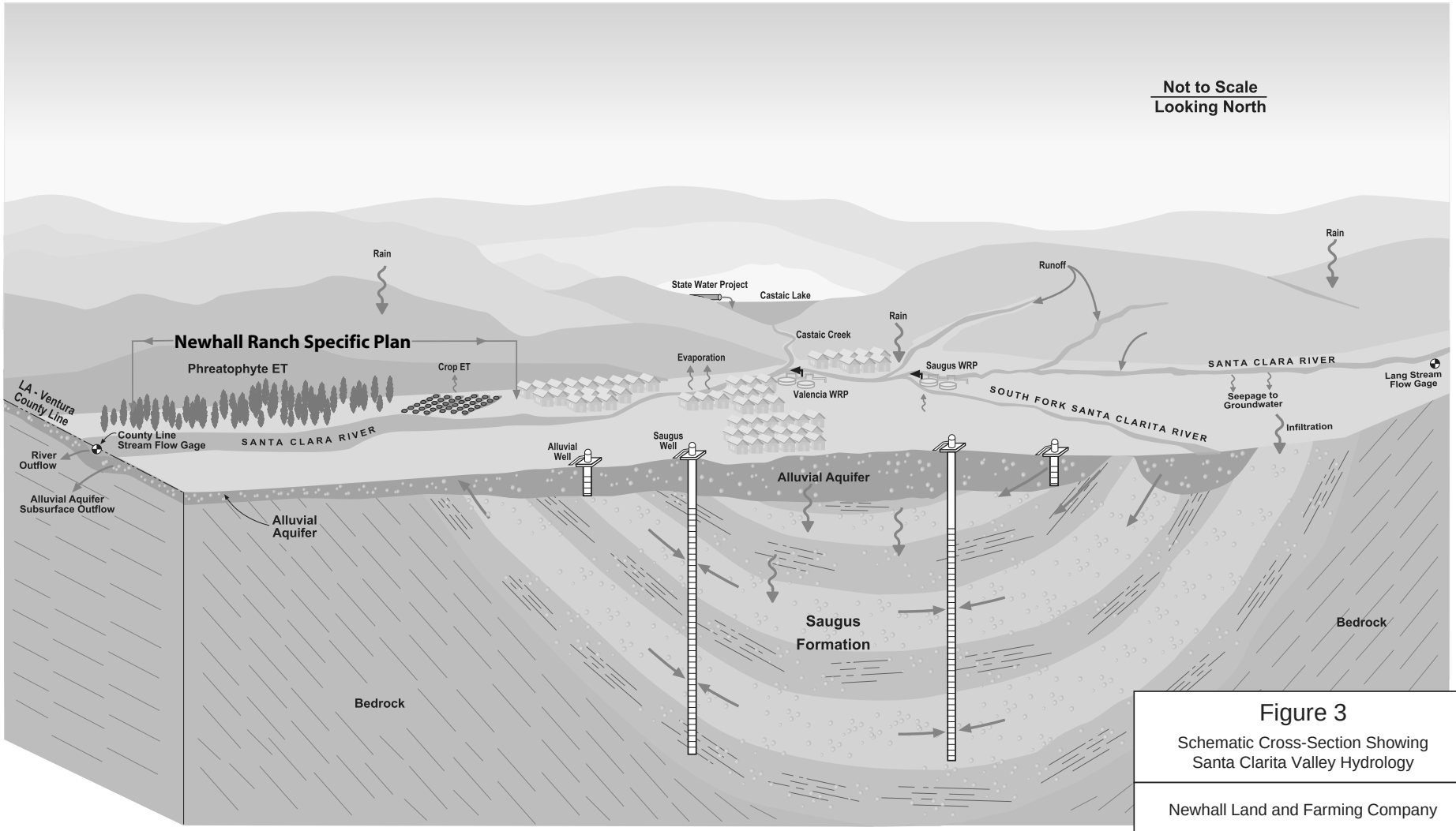

Figure 3

Schematic Cross-Section Showing Santa Clarita Valley Hydrology

Newhall Land and Farming Company

GSI Water Solutions, Inc.

Prepared From Figure By CH2M HILL (2004)

March 2008

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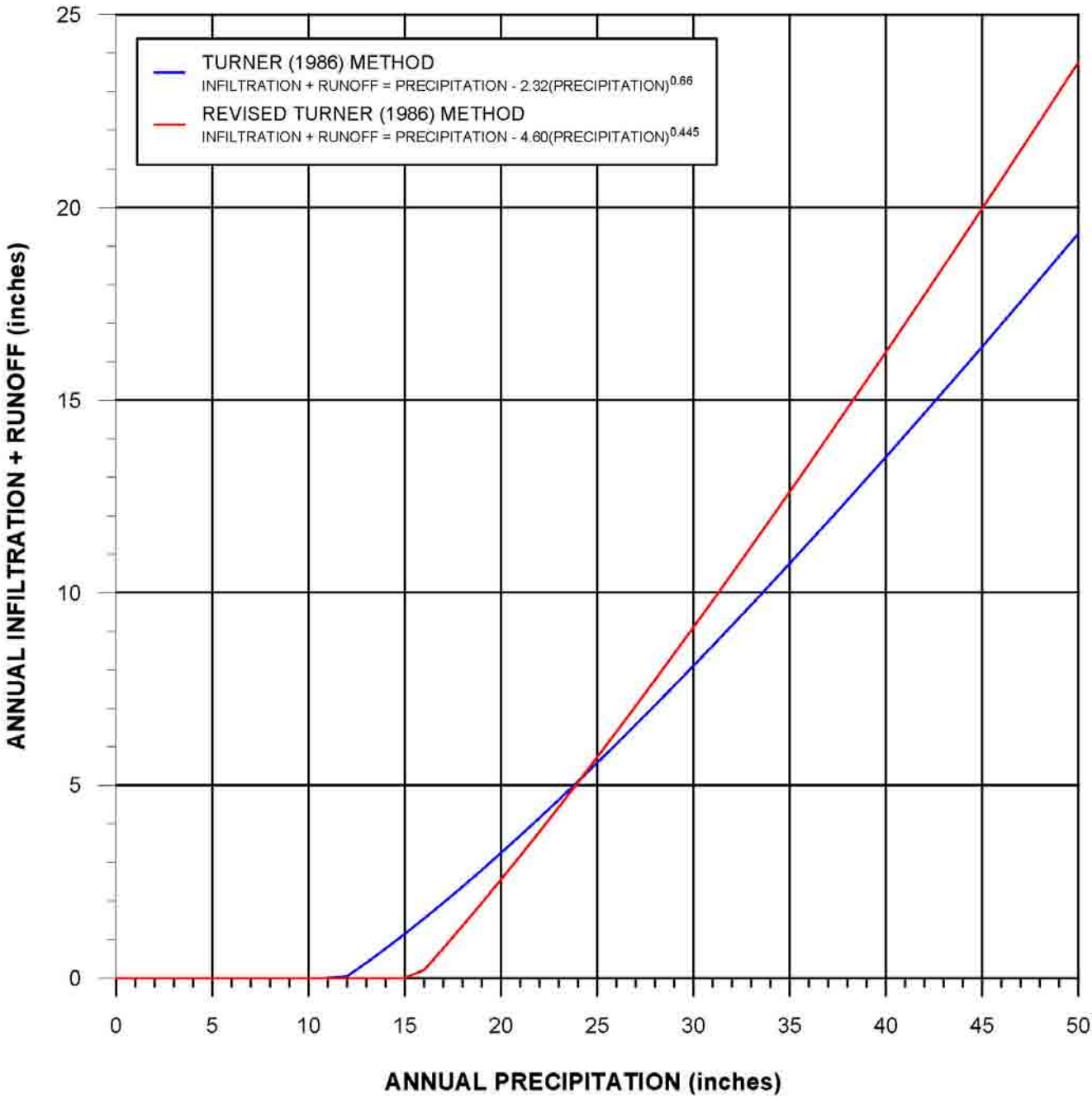

Figure 4

Infiltration and Runoff as a Function of Precipitation in the Santa Clarita Valley

Newhall Land and Farming Company

GSI Water Solutions, Inc.

Prepared From Figure
By CH2M HILL (2004)

March 2008

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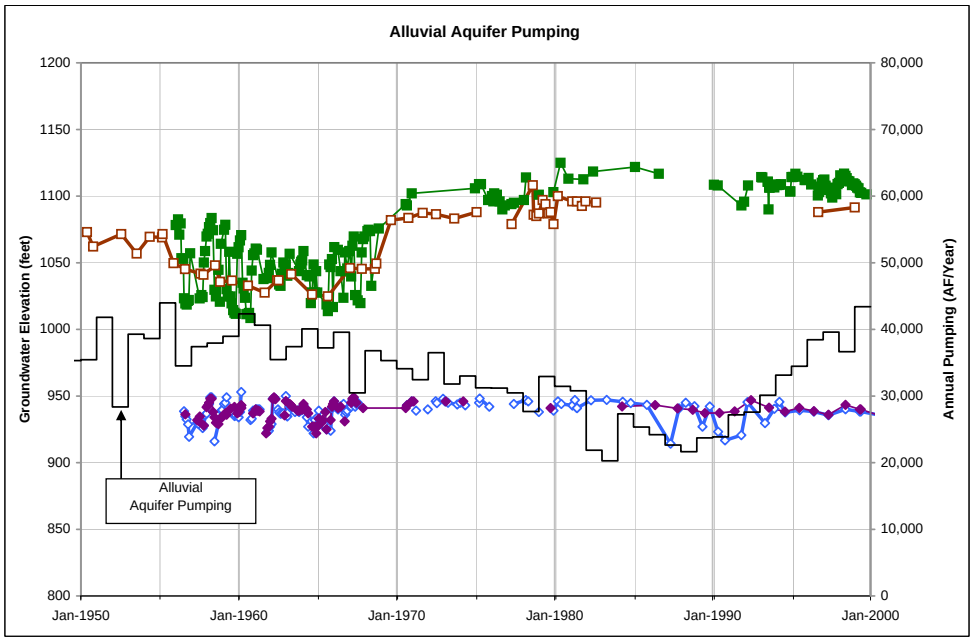

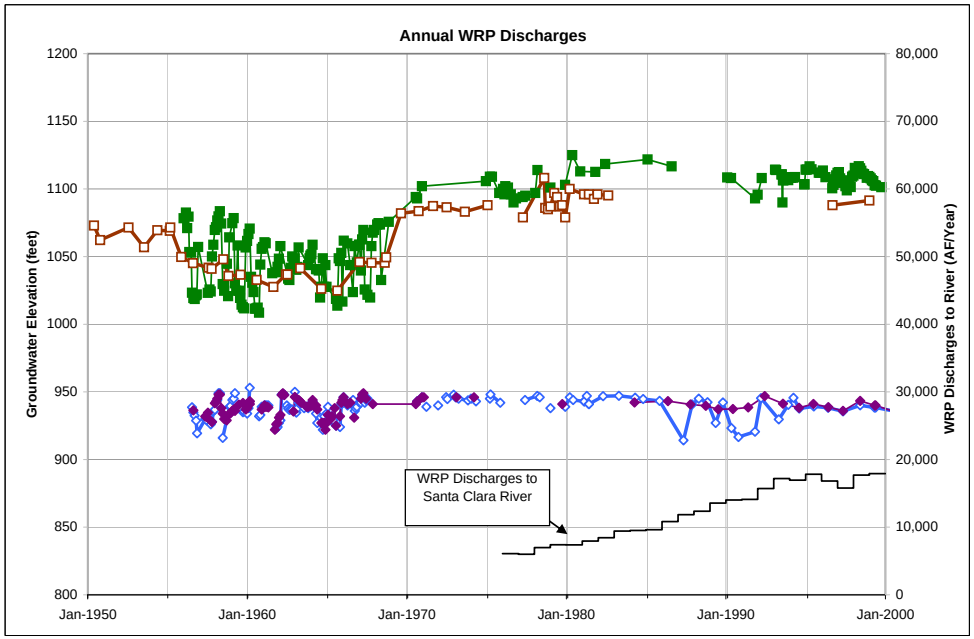

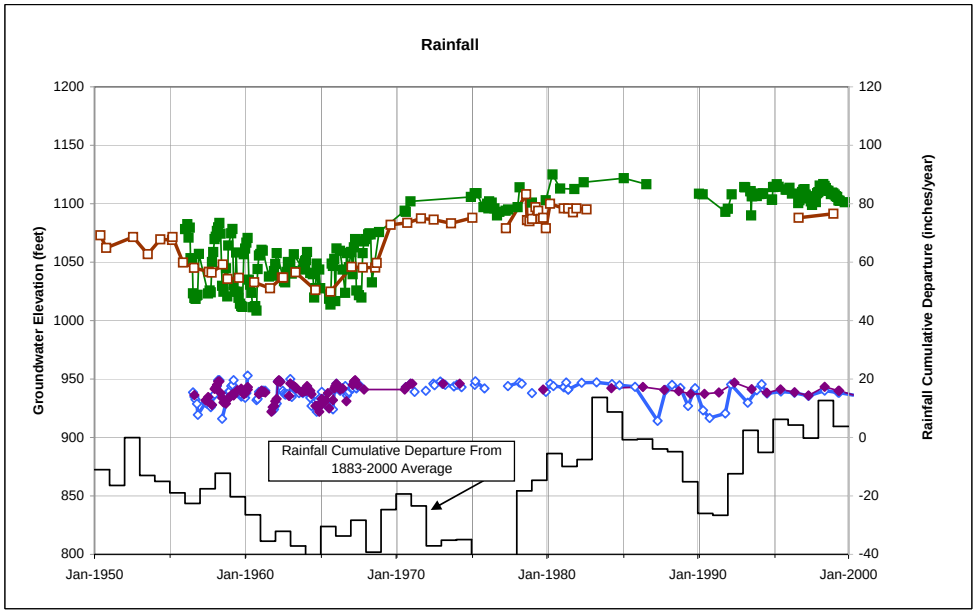

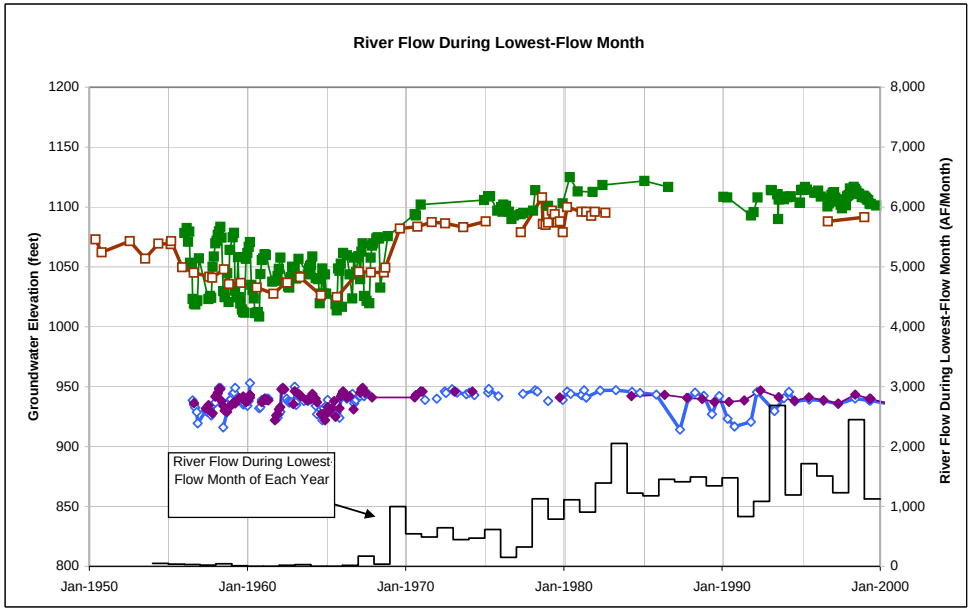

VWC-N
NLF-S
NLF-C5
NLF-C7

NOTE: Wells VWC-N and NLF-S are Just east of I-5, near the mouth of the South Fork Santa Clara River. Wells NLF-C5 and NLF-C7 are west of I-5 and east of the Log Angeles/Ventura County line. WRP = water reclamation plant.

Figure 5
Alluvial Groundwater Elevations versus Groundwater Recharge and Discharge Mechanisms (1950-2000)
Prepared from figures by CH2M HILL (2004).

APPENDIX 5.0

Project Alternatives