STID 664

GETTLER-RYAN INC.

TRANSMITTAL

AUG 14 2001

TO: Mr. Thomas Bauhs
Chevron Products Company
P.O. Box 6004
San Ramon, California 94583

DATE: August 9, 2001
PROJ. #: DG94930C.4C01
SUBJECT: Chevron Station #9-4930
3369 Castro Valley Blvd.
Castro Valley, California

FROM:
Tony P. Mikacich
Project Geologist
Gettler-Ryan Inc.
3140 Gold Camp Drive, Suite 170
Rancho Cordova, California 95670

WE ARE SENDING YOU:

COPIES	DATED	DESCRIPTION
1	August 9, 2001	*Site Data Review, Confirmation Groundwater Sampling, and Closure Request*, dated August 9, 2001.

THESE ARE TRANSMITTED as checked below:

[ ] For review and comment [ ] Approved as submitted [ ] Resubmit _ copies for approval

[ ] As requested [ ] Approved as noted [ ] Submit _ copies for distribution

[ ] For approval [ ] Return for corrections [ ] Return __ corrected prints

[X] For your files

COMMENTS:
Copies of the above referenced document will be distributed to the following:

Mr. Amir Gholami, Alameda County Health Care Services, Dept. of Environmental Health, 1131 Harbor Bay Parkway, Alameda, CA 94502-6577
Ms. Anna Counelis and Tula Gallanes, 109 Casa Vieja, Orinda, CA 94563
Mr. James Brownell, Delta Environmental Consultants, Inc.,3164 Gold Camp Dr., Suite 200, Rancho Cordova, CA 95670-6021

If you have any questions please call us in Rancho Cordova at 916.631.1300.

Delta
Environmental
Consultants, Inc.

3164 Gold Camp Drive
Suite 200
Rancho Cordova, California 95670-6021
916/638-2085
FAX: 916/638-8385

AUG 14 2001

August 9, 2001

Mr. Thomas Bauhs
Chevron Products Company
P.O. Box 5004
San Ramon, California 94583

Subject: **Site Data Review, Confirmation Groundwater Sampling, and Closure Request for Former Chevron Station #9-4930, 3369 Castro Valley Boulevard, Castro Valley, California**

Dear Mr. Bauhs:

At the request of Chevron Products Company (Chevron) Delta Environmental Consultants, Inc. Network Associate Gettler-Ryan Inc. (GR) has prepared the following document summarizing previous work performed at the site, summarizing confirmation groundwater samples, and requesting closure of the environmental investigation at the subject site.

Site Description

The site is located on the southeast corner of the intersection of Castro Valley Boulevard and Wilbeam Avenue in Castro Valley, California (Resna Plate 1, Attachment A). Based on information provided by Chevron two site configurations have been utilized for the former service station facilities. The original site layout included four underground storage tanks (USTs), two product dispenser islands, a station building, and one underground used oil storage tank. These facilities were located in the central to northeastern portion of the site. The station was subsequently remodeled to include three USTs and two product islands in the western portion of the site, and a car wash facility in the central to northeastern portion of the site. The car wash facility included underground water reclamation tanks. All subsurface and aboveground facilities have been demolished and removed from the site. The site is currently being utilized by Boston Market Food Outlet. Pertinent site features are shown on Resna Figure 2, Attachment A.

Water Well Receptor Survey

Investigative activities at the site were initiated in November 1992 by Resna Industries, Inc. (Resna). Work performed by Resna included the performance of a water well survey, which identified 58 documented wells within ½ mile of the site. The closest identified domestic water well is located at 20036 Anita Avenue, approximately 1,500 feet west from the site. Additionally, two known leaking UST sites are located between the subject site and the domestic well. No municipal water wells were identified within the specified search radius at the time of the survey. The water well survey data is presented in Attachment B.

Resna also performed an off-site source search, which documented the presence of five leaking fuel tank sites within 750 feet of the Chevron site. These sites include (1) Arnold Property at 3234 Castro Valley Boulevard; (2) Sal's Foreign Car Service at 3343 Castro Valley Boulevard; (3)

Sal's Foreign Car Service at 20845 Wilbeam Avenue; (4) Xtra Oil at 3495 Castro Valley Boulevard; and (5) a Shell-branded service station at 3496 Castro Valley Boulevard. The Xtra Oil and the Shell service station are located to the north and east of the subject site and are potentially upgradient; Sal's Foreign Car Service (both locations) is located to the south and west of the site. The Arnold Property is located west of the site. An Extended Site Plan is presented in Attachment A.

Subsurface Investigations, Fueling System and Source Area Removal

In November 1992, field investigations performed by Resna included the drilling of exploratory soil borings B-1 through B-10, and the installation of temporary well casings in borings B-1 through B-4. Resna also drilled hand-auger soil borings H-1 through H-6. Petroleum hydrocarbons were present in soil samples collected from B-1, B-3, B-4, B-8 and H-5 with a maximum concentration of 2,500 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHg) detected in B-4, located in the center of the former UST complex near the eastern border of the site. Benzene was not detected in any of the soil samples collected and analyzed. Total oil and grease (TOG) was detected in H-5 at 57 ppm. No halogenated volatile organic compounds (HVOCs) were detected in H-5. Dissolved hydrocarbons were detected in groundwater samples collected from the four temporary wells, with maximum concentrations of 800 parts per billion (ppb) benzene and 23,000 ppb TPHg detected in B-3. A site map and table summarizing the investigation is presented in Attachment C.

In February 1993, Chevron demolished the service station building and car wash located at the site. In March 1993, GR removed three fiberglass 10,000-gallon USTs, associated product piping, and the car wash waste water reclaim tanks (WWRTs). Touchstone observed the condition of the USTs and collected soil samples during removal. No holes were observed in the product piping. One water sample and eight soil samples were collected from the UST excavation. Four soil samples were collected from the WWRT excavation and thirteen soil samples were collected from beneath the removed product piping. Hydrocarbons were detected at a maximum concentration of 720 ppm in soil sample P-10-4.5' from a depth of 4.5 feet below surface grade (bsg). A site map and table summarizing the investigation is presented in Attachment D.

Over-excavation activities were performed by GR and observed by Touchstone. The entire northern portion of the site, where the first and second generations of service station facilities had been located, was excavated to depths of approximately 8 to 15 feet bgs. Approximately 7,500 cubic yards of soil were excavated and transported to Redwood Landfill, Inc. in Novato, California. Soil samples collected from the over-excavation procedures indicate that no detectable hydrocarbons remain in the unsaturated soil. Details of the removal of the service station facilities and subsequent over-excavation activities were described in Touchstone's *Tank/Line Removal and Over-Excavation Report* dated June 5, 1993. Site maps and tables summarizing the investigation are presented in Attachment E.

In October 1993 Resna drilled additional soil borings B-11 through B-14 at the site. These borings were converted to monitoring wells MW-1 through MW-4 by the installation of 2-inch diameter PVC well casings. The wells range in depths from 20.5 to 21.5 feet. TPHg was detected in soil samples collected at a maximum concentration of 530 ppm in boring B-14 at 6 feet bsg.

Groundwater monitoring wells MW-1, MW-2 and MW-4 have been on a quarterly monitoring program since they were installed in October 1993. MW-3 was put on a semi-annually monitoring program in September 1994 as a result of very low dissolved hydrocarbon concentrations. Groundwater on-site has varied from a depth of approximately 4 to 8 feet bsg. The groundwater flow direction has been predominantly toward the south-southwest.

Risk-Based Corrective Action (RBCA) – Tier 2 Analysis

The June 20, 1996 Final Tier 2 Risk-Based Corrective Action (RBCA), the July 16, 1996, Revised Draft Final Tier 2 RBCA site evaluation report, as well as revised Tier 2 RBCA Worksheet 5.1 and Output Table 1, were prepared by Chevron Research and Technology Company (CRTC) and submitted to the appropriate regulatory agencies.

In a letter dated August 22, 1996, Alameda County Health Care Services personnel reviewed all of the above mentioned documents and concluded that the reported estimated multipathway risk for workers in the on-site commercial facilities is substantially below the target risk value of 1E-04. They also indicated that the reported estimated risk for off-site residents was at an acceptable risk management level for the site based on the conservative nature of the evaluation and the cumulative evidence presented. Copies of the Alameda County letter and RBCA documents are presented in Attachment F.

Confirmation Groundwater Sampling

On May 31, 2001, GR performed a groundwater monitoring and confirmation sampling event at the site. Groundwater samples were collected and analyzed for TPHg, BTEX, and MtBE by EPA Methods 8015/8020. Ethanol, TBA, MtBE, DIPE, EtBE, TAME, 1,2-DCA, EDB and methanol were analyzed by EPA Methods 8260B and 8015 Modified. Confirmation sampling was performed to help support the nearly eight years of groundwater monitoring and sampling data that suggests the dissolved petroleum hydrocarbon plume is limited and essentially delineated, stable, and has shown a generally decreasing trend in concentration over time.

TPHg was detected in samples collected from MW-1, MW-2, and MW-3 at a maximum of 230 ppb from MW-3. TPHg was not detected in samples collected from MW-4. Benzene was detected in MW-1 at a concentration of 1.5 ppb and in MW-2 at 3.0 ppb, above the maximum contaminant level (MCL) of 1ppb, and below MCL in MW-4 at a concentration of 0.63 ppb. Benzene was not detected in samples collected from MW-3. MtBE was detected in confirmation samples collected from MW-1 (2.1 ppb), MW-2 (26 ppb), and MW-3 (2.4 ppb). MtBE was not detected above the MCL in MW-4. Groundwater chemical analytical results are summarized and presented in Table 1, Attachment G.

Discussion

In March 1993, the fueling system equipment, including UST's and associated product piping and car wash WWRTs were removed from the subject site.

The impacted source areas have been removed from the site as a result of the over-excavation procedures and soil samples collected at the furthest extent of the over-excavation indicate that no

detectable hydrocarbons remain in the unsaturated soil. Soil was removed to depths between 8 and 15 feet during the over-excavation activities.

Dissolved hydrocarbons (TPHg) detected in downgradient monitoring wells MW-3 and MW-4, have been consistently non-detectable (ND) to low concentrations with 230 ppb and ND, respectively, from the most recent sampling event for each well. TPHg was detected in upgradient wells MW-1 and MW-2 at concentrations as low as 97 ppb and 120 ppb, respectively. MtBE concentrations were ND (<2.0 ppb) from well MW-4, 2.1 ppb and 2.4 ppb in wells MW-1 and MW-3, respectively, and a maximum concentration of 26 ppb in samples collected from MW-2.

An off-site source search documented the presence of five leaking fuel tank sites within 750 feet of the former Chevron site including two located directly upgradient from the subject site and two located directly across Wilbeam Avenue, cross gradient from the site. The likelihood of an up- to cross-gradient source, at minimum, adding to the groundwater impacts beneath the site can not be completely ruled out. Based on non-detectable concentrations of Halogenated Volatile Organic Compounds (HVOC's) analyzed in soil samples collected from beneath the waste water reclaim tanks or the waste-oil UST, it is unlikely that the elevated concentrations of HVOC's (1,2-DCE, TCE, DCFM, and PCE) detected in groundwater samples are from the subject site. It is possible that the HVOC's are from the Arnold Property (cleaners) directly across Wilbeam Avenue.

The Resna water well search indicates that the closest domestic water well is located approximately 1,500 feet west from the site and is cross-gradient. Two known leaking UST sites are located between the subject site and the closest known domestic water well. Dissolved hydrocarbon from the site is unlikely to impact the identified domestic well. No municipal wells were identified within the search radius. Based on these data, it appears unlikely that potential receptors are in jeopardy from impact due to hydrocarbons from the site. This site appears to pose very little risk to human health or the environment.

Conclusions and Recommendations

All potential sources of the petroleum hydrocarbons have been removed. Only residual concentrations of petroleum hydrocarbons remain in soil at the site at depths greater than 13 feet bsg, and no detected impacted soil remains in the unsaturated zone as a result of over-excavation activities performed at the site. These residual hydrocarbons appear to be of very limited horizontal and vertical extent, and in samples collected do not extend vertically deeper than 15 feet bsg. Groundwater in the site vicinity is at a depth of approximately 5 feet bsg. These residual hydrocarbons appear to pose very little risk of impacting human health or the environment. RBCA analysis supports the conclusion that residual hydrocarbons do not pose a risk. Further investigation of hydrocarbon impact or remedial actions are not warranted, and the environmental investigation at this site should be closed.

Following receipt of written concurrence with this recommendation, GR will obtain the appropriate permits and schedule the proper abandonment of the groundwater monitoring wells, and will submit a report documenting the work performed.

If you have any question, please call us in our Rancho Cordova office at (916) 631-1300.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.
Network Associate **GETTLER-RYAN INC.**

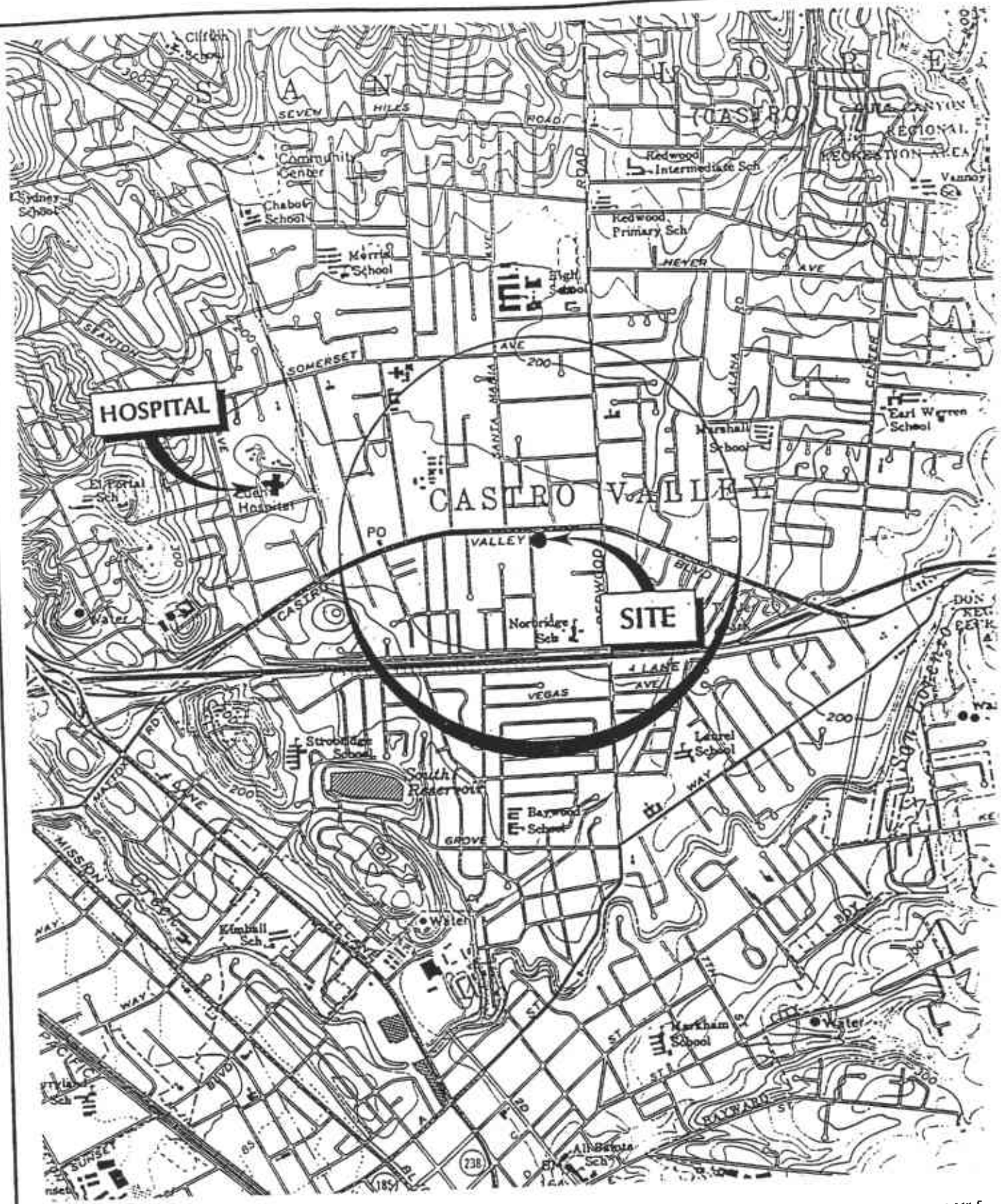
Tony P. Mikacich
Project Geologist

Stephen J. Carter
Senior Geologist
R.G. 5577

REGISTERED GEOLOGIST
STEPHEN J. CARTER
No. 5577
STATE OF CALIFORNIA

Attachment A: Vicinity Map, Site Plan, and Extended Site Plan
Attachment B: Water Well Survey Data
Attachment C: Soil Boring, Hand-Auger, and Investigation Data
Attachment D: UST, Product Piping and WWRT Removal and Sampling Data
Attachment E: Over-Excavation Data
Attachment F: ACHCS RBCA Evaluation Letter, dated August 22, 1996 and RBCA
Attachment G: Table 1 - Groundwater Chemical Analytical Data (Confirmation Sampling)

ATTACHMENT A



0 1/2 1 MILE

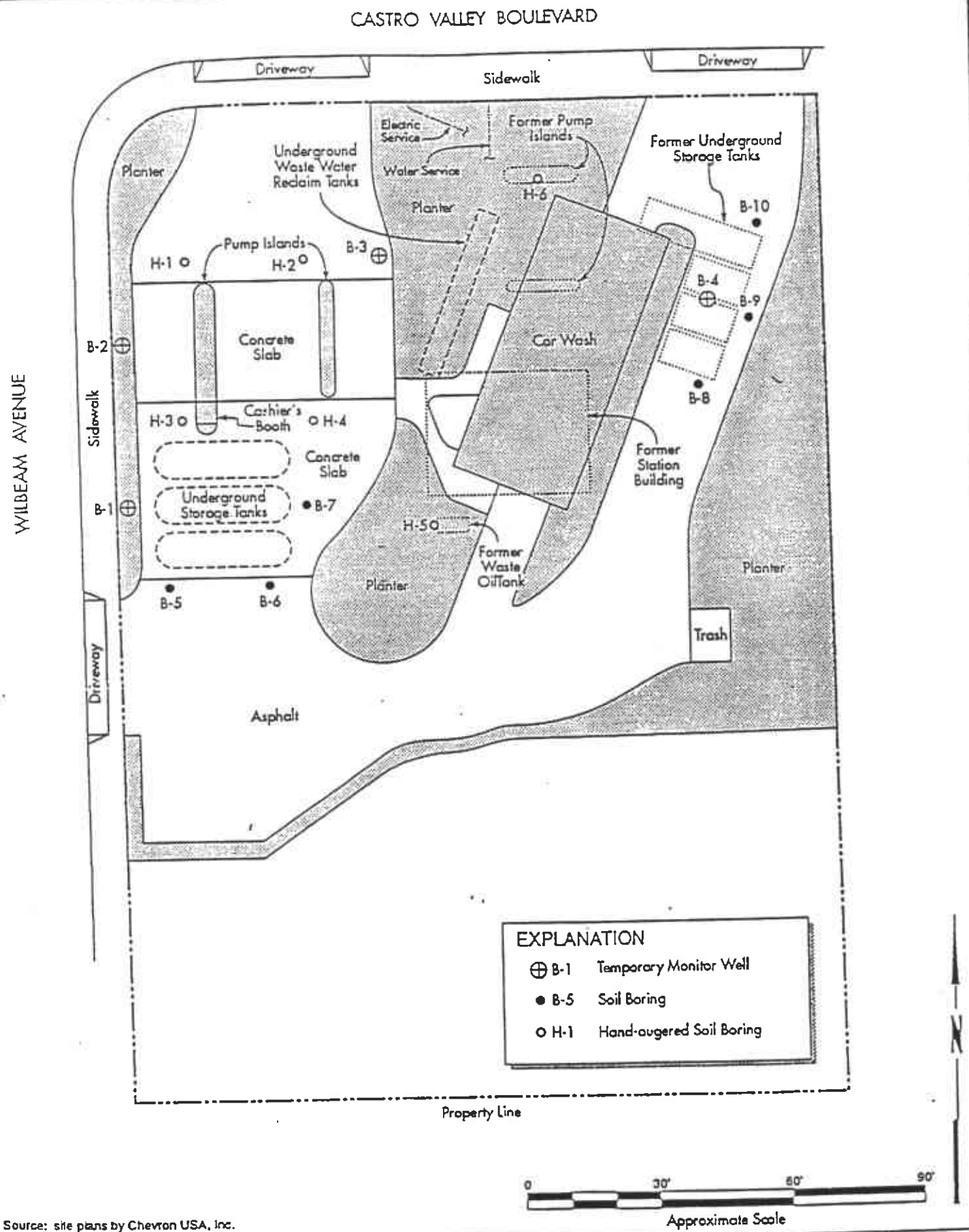
Source: USGS Topographic Map, 7.5 minute series, Hayward, Calif. quadrangle, 1980

RESNA

SITE VICINITY MAP

Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California

PLA
1



Source: site plans by Chevron USA, Inc.

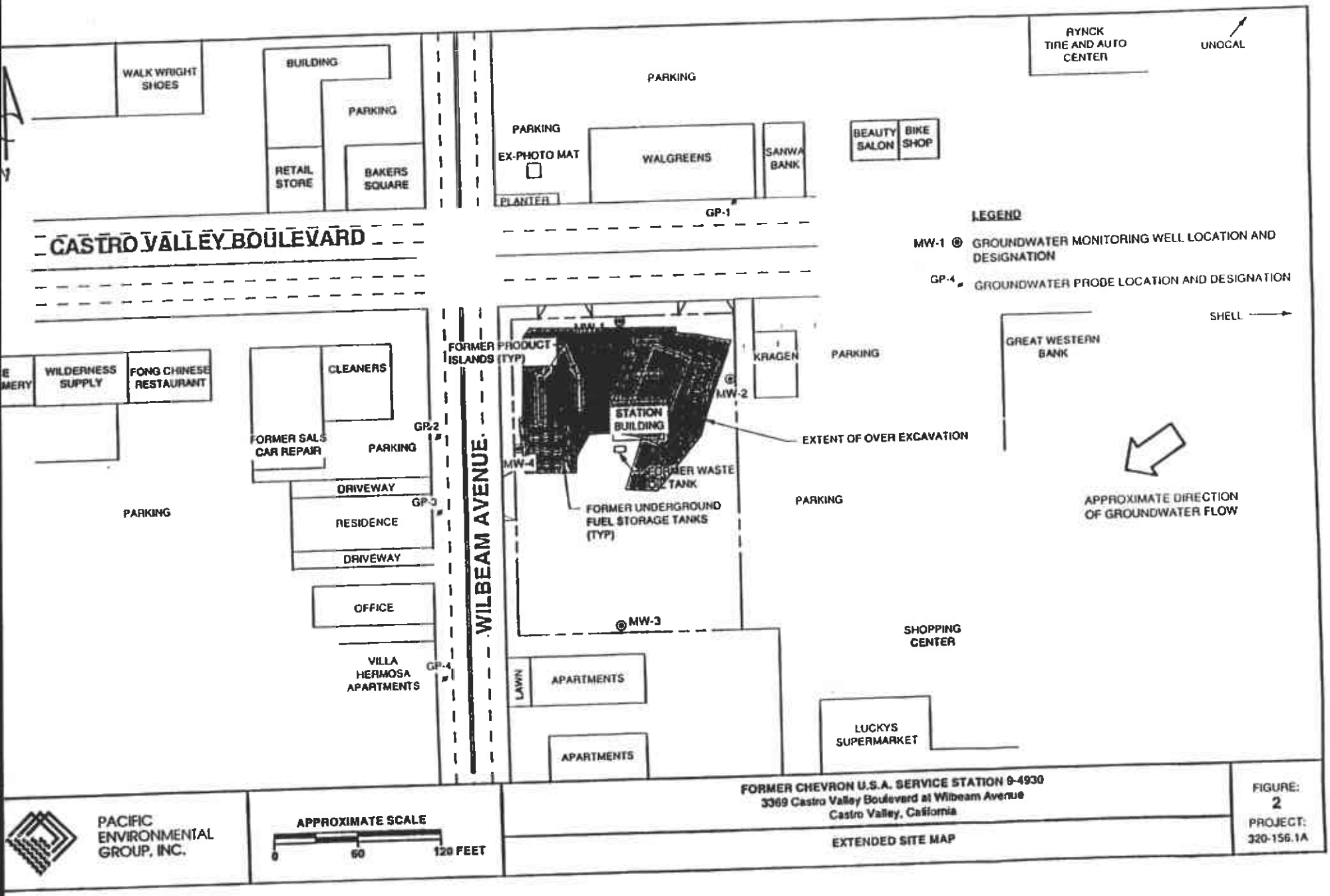
RESNA

PROJECT NO. 17068.01 | 11/92

GENERALIZED SITE PLAN

Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California

FIGURE 2



PACIFIC ENVIRONMENTAL GROUP, INC.

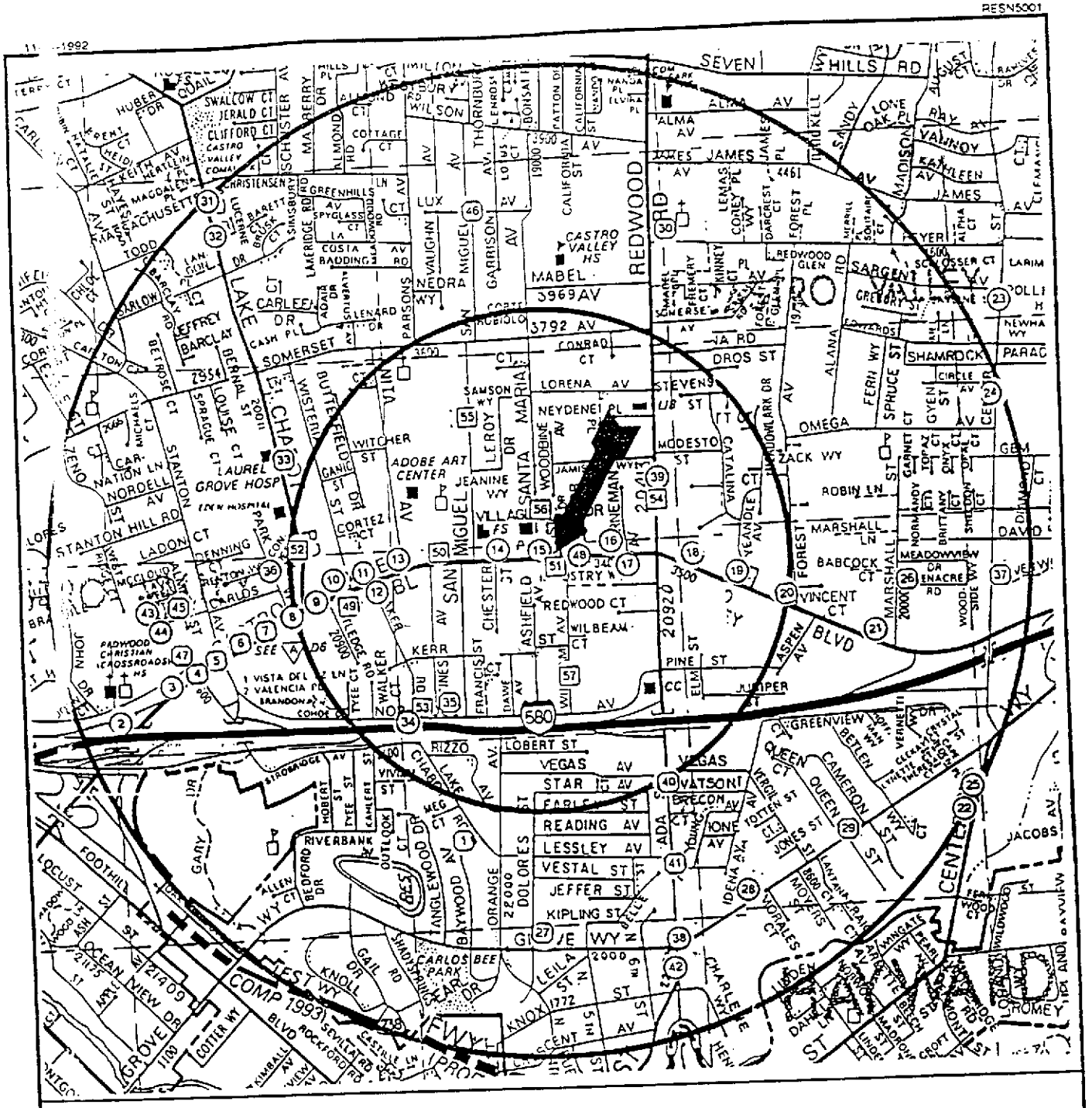
APPROXIMATE SCALE
0 60 120 FEET

FORMER CHEVRON U.S.A. SERVICE STATION 9-4930
3369 Castro Valley Boulevard at Wilbeam Avenue
Castro Valley, California

EXTENDED SITE MAP

FIGURE: 2
PROJECT: 320-156.1A

ATTACHMENT B



ENVIRONMENTAL CONCERNS - HIGH PRIORITY WITHIN 1 MILE

ENVIRONMENTAL CONCERNS WITHIN 1 MILE

ENVIRONMENTAL CONCERNS - WITH A 'NO FURTHER ACTION' STATUS WITHIN 1 MILE

OPERATING PERMITS ONLY, WITHIN 1/2 MILE

3.3 inches to 1 mile

APPROXIMATE LOCATION OF IDENTIFIED SITES IN THE VICINITY OF
3369 CASTRO VALLEY BLVD, CASTRO VALLEY

1.	DESIGNS BY DE RON	21505 BAYWOOD AVE
2.	UNOCAL	2445 CASTRO VALLEY BLVD
3.	THRIFTY OIL	2504 CASTRO VALLEY BLVD
4.	R & J QUICK CLEAN CENTER	2522 CASTRO VALLEY BLVD
5.	JOSEPH NESBITT COMPANY INC	2544 CASTRO VALLEY BLVD
6.	ONE HOUR MARTINIZING	2676 CASTRO VALLEY BLVD
7.	VALLEY COIN LAUNDRY	2678 CASTRO VALLEY BLVD
8.	UNKNOWN	2691 CASTRO VALLEY BLVD
9.	SHELL	2724 CASTRO VALLEY BLVD
10.	ARCO	2770 CASTRO VALLEY BLVD
11.	MINIT LUBE	2896 CASTRO VALLEY BLVD
12.	CHEVRON	2920 CASTRO VALLEY BLVD
13.	ADOBE PLAZA	3098 CASTRO VALLEY BLVD
14.	ARNOLD PROPERTY	3234 CASTRO VALLEY BLVD
15.	SAL'S FOREIGN CAR SERVICE	3343 CASTRO VALLEY BLVD
16.	XTRA OIL	3495 CASTRO VALLEY BLVD
17.	SHELL	3496 CASTRO VALLEY BLVD
18.	MOBIL	3519 CASTRO VALLEY BLVD
19.	RUDY'S DONUT	3692 CASTRO VALLEY BLVD
20.	HELIUM TECHNOLOGY	3738 CASTRO VALLEY BLVD
21.	TEXACO	3940 CASTRO VALLEY BLVD
22.	CALTRANS	2115 CENTER ST
23.	ANTHONY'S AUTO SERVICE	19592 CENTER ST
24.	HAYWARD MAINTENANCE CENTER	21195 CENTER ST
25.	ARCO	22141 CENTER ST
26.	RELIABLE MOVERS	4070 GREENACRE RD
27.	GARBERS PAINTING	1911 GROVE WAY
28.	CHEVRON	2416 GROVE WAY
29.	RETHREAD INC	2870 GROVE WAY
30.	CLYDE ROBIN SEED COMPANY INC	4233 HEYER AVE
31.	UNOCAL	18950 LAKE CHABOT RD
32.	HERTLEIN RESIDENCE	19051 LAKE CHABOT RD
33.	EDEN TOWNSHIP HOSPITAL	20103 LAKE CHABOT RD
34.	CLARK'S WOODWORKING	2620 NORBRIDGE AVE
35.	STRAND ELECTRONICS LTD	21175 NUNES AVE
36.	CASTRO VALLEY AUTOHAUS	20697 PARK WAY
37.	JIM'S MOTOR EXPRESS	4116 RAVENSWOOD DR
38.	CHEVRON	REDWOOD & GROVE
39.	TIEN'S UNOCAL	20405 REDWOOD RD
40.	JESS SPENCER MORTUARY	21228 REDWOOD RD
41.	IDEAL PEST CONTROL	21701 REDWOOD RD
42.	BEACON	22315 REDWOOD RD
43.	RJ QUICK CLEAN	2517 SAN CARLOS AVE
44.	EAST BAY SCAFFOLDING	2552 SAN CARLOS AVE
45.	ANTHONYS TERMITE CONTROL	2566 SAN CARLOS AVE
46.	MIZER & SON TREE AND GARDEN SP	19121 SAN MIGUEL AVE
47.	UNOCAL	STROBRIDGE & CASTRO VLY
48.	SAL'S FOREIGN CAR SERVICE	20845 WILBEAM AVE
49.	QUALITY TUNE UP	2780 CASTRO VALLEY BLVD
50.	ROCKY AUTO BODY AND PAINTING	3142 CASTRO VALLEY BLVD
51.	94830	3369 CASTRO VALLEY BLVD
52.	QUIK STOP # 88	20757 LAKE CHABOT RD
53.	PACIFIC BELL (P5-200)	2610 NORBRIDGE AVE
54.	EXXON SERVICE STATION	20450 REDWOOD RD
55.	CASTRO VALLEY FIRE PROTECTION	20336 SAN MIGUEL AVE
56.	R.T. NAHAS	3336 VILLAGE DR
57.	CORPORATION YARD	21000 WILBEAM AVE

UNKNOWN LOCATIONS

ODS SITE #2 CASTRO VALLEY BLVD

OLYMPIC SERVICE STATION UNKNOWN

INDEX OF SITES LISTED BY MAP NUMBERS

ENVIRONMENTAL RECORDS SEARCH

SUMMARY

LISTED BY STREET

ENVIRONMENTAL RECORDS SEARCH FOR
CHEVRON STN # 9-4930
3369 CASTRO VALLEY BLVD, CASTRO VALLEY

Page: 1
Job: RESN5001
Date: 11-21-1992

LOCATION	ADDRESS		CITY	MAP LOC	SOURCE	STATUS
DESIGNS BY DE RON	21605	BAYWOOD AVE	CASTRO VALLEY	1	AS	NFA
ODS SITE #2		CASTRO VALLEY BLVD	CASTRO VALLEY		LR	0
ODS SITE #2		CASTRO VALLEY BLVD	CASTRO VALLEY		LT	0
ODS SITE #2		CASTRO VALLEY BLVD	CASTRO VALLEY		Cs	WCRBT
UNOCAL	2445	CASTRO VALLEY BLVD	CASTRO VALLEY	2	LR	5C
UNOCAL	2445	CASTRO VALLEY BLVD	CASTRO VALLEY	2	LT	5C
THRIFTY OIL	2504	CASTRO VALLEY BLVD	CASTRO VALLEY	3	LR	5R
THRIFTY OIL	2504	CASTRO VALLEY BLVD	CASTRO VALLEY	3	LT	5R
THRIFTY OIL	2504	CASTRO VALLEY BLVD	CASTRO VALLEY	3	Cs	WCRBT
R & J QUICK CLEAN CENTER	2522	CASTRO VALLEY BLVD	CASTRO VALLEY	4	AS	NFA
JOSEPH NESBITT COMPANY INC	2544	CASTRO VALLEY BLVD	CASTRO VALLEY	5	AS	NFA
ONE HOUR MARTINIZING	2676	CASTRO VALLEY BLVD	CASTRO VALLEY	6	AS	NFA
VALLEY COIN LAUNDRY	2678	CASTRO VALLEY BLVD	CASTRO VALLEY	7	AS	NFA
UNKNOWN	2691	CASTRO VALLEY BLVD	CASTRO VALLEY	8	LR	0
UNKNOWN	2691	CASTRO VALLEY BLVD	CASTRO VALLEY	8	LT	0
UNKNOWN	2691	CASTRO VALLEY BLVD	CASTRO VALLEY	8	Cs	WCRBT
SHELL	2724	CASTRO VALLEY BLVD	CASTRO VALLEY	9	LR	5C
SHELL	2724	CASTRO VALLEY BLVD	CASTRO VALLEY	9	LT	5C
SHELL	2724	CASTRO VALLEY BLVD	CASTRO VALLEY	9	Cs	WCRBT
ARCO	2770	CASTRO VALLEY BLVD	CASTRO VALLEY	10	LR	3B
ARCO	2770	CASTRO VALLEY BLVD	CASTRO VALLEY	10	LT	3B
ARCO	2770	CASTRO VALLEY BLVD	CASTRO VALLEY	10	Cs	WCRBT
MINIT LUBE	2896	CASTRO VALLEY BLVD	CASTRO VALLEY	11	LR	3A
MINIT LUBE	2896	CASTRO VALLEY BLVD	CASTRO VALLEY	11	LT	3A
MINIT LUBE	2896	CASTRO VALLEY BLVD	CASTRO VALLEY	11	Cs	WCRBT
CHEVRON	2920	CASTRO VALLEY BLVD	CASTRO VALLEY	12	LR	3B
CHEVRON	2920	CASTRO VALLEY BLVD	CASTRO VALLEY	12	LT	3B
ADOBE PLAZA	3098	CASTRO VALLEY BLVD	CASTRO VALLEY	13	LR	3B
ADOBE PLAZA	3098	CASTRO VALLEY BLVD.	CASTRO VALLEY	13	LT	3B
ADOBE PLAZA	3098	CASTRO VALLEY BLVD	CASTRO VALLEY	13	Cs	WCRBT
ARNOLD PROPERTY	3234	CASTRO VALLEY BLVD	CASTRO VALLEY	14	LR	3B
ARNOLD PROPERTY	3234	CASTRO VALLEY BLVD	CASTRO VALLEY	14	LT	3B
SAL'S FOREIGN CAR SERVICE	3343	CASTRO VALLEY BLVD	CASTRO VALLEY	15	LR	0
SAL'S FOREIGN CAR SERVICE	3343	CASTRO VALLEY BLVD	CASTRO VALLEY	15	LT	0
XTRA OIL	3495	CASTRO VALLEY BLVD	CASTRO VALLEY	16	LR	3B
XTRA OIL	3495	CASTRO VALLEY BLVD	CASTRO VALLEY	16	LT	3B
SHELL	3496	CASTRO VALLEY BLVD	CASTRO VALLEY	17	LR	0
SHELL	3496	CASTRO VALLEY BLVD	CASTRO VALLEY	17	LT	0
SHELL	3496	CASTRO VALLEY BLVD	CASTRO VALLEY	17	Cs	WCRBT
MOBIL	3519	CASTRO VALLEY BLVD	CASTRO VALLEY	18	LR	0
MOBIL	3519	CASTRO VALLEY BLVD	CASTRO VALLEY	18	LT	0
MOBIL	3519	CASTRO VALLEY BLVD	CASTRO VALLEY	18	Cs	WCRBT
RUDY'S DONUT	3692	CASTRO VALLEY BLVD	CASTRO VALLEY	19	LR	0
RUDY'S DONUT	3692	CASTRO VALLEY BLVD	CASTRO VALLEY	19	LT	0
RUDY	3692	CASTRO VALLEY BLVD	CASTRO VALLEY	19	Cs	WCRBT

ENVIRONMENTAL RECORDS SEARCH FOR
CHEVRON STN # 9-4930
3369 CASTRO VALLEY BLVD, CASTRO VALLEY

Job : RESN5001
Date: 11-21-1992

LOCATION	ADDRESS		CITY	MAP LOC	SOU-RCE	STATUS
HELIUM TECHNOLOGY	3738	CASTRO VALLEY BLVD	CASTRO VALLEY	20	AS	NFA
TEXACO	3940	CASTRO VALLEY BLVD	CASTRO VALLEY	21	LR	5C
TEXACO	3940	CASTRO VALLEY BLVD	CASTRO VALLEY	21	LT	5C
TEXACO	3940	CASTRO VALLEY BLVD	CASTRO VALLEY	21	Cs	WCRBT
CALTRANS	2115	CENTER ST	CASTRO VALLEY	22	LR	3B
CALTRANS	2115	CENTER ST	CASTRO VALLEY	22	LT	3B
ANTHONY'S AUTO SERVICE	19592	CENTER ST	CASTRO VALLEY	23	LR	3B
ANTHONY'S AUTO SERVICE	19592	CENTER ST	CASTRO VALLEY	23	LT	3B
HAYWARD MAINTENANCE CENTER	21195	CENTER ST	CASTRO VALLEY	24	LR	0
HAYWARD MAINTENANCE CENTER	21195	CENTER ST	CASTRO VALLEY	24	LT	0
DEPT. OF TRANS./CASTRO VALLEY	21195	CENTER ST	CASTRO VALLEY	24	Cs	WCRBT
ARCO	22141	CENTER ST	CASTRO VALLEY	25	LR	3B
ARCO	22141	CENTER ST	CASTRO VALLEY	25	LT	3B
ARCO	22141	CENTER ST	CASTRO VALLEY	25	Cs	WCRBT
RELIABLE MOVERS	4070	GREENACRE RD	CASTRO VALLEY	26	AS	NFA
GARBERS PAINTING	1911	GROVE WAY	CASTRO VALLEY	27	AS	NFA
CHEVRON	2416	GROVE WAY	CASTRO VALLEY	28	LR	5C
CHEVRON	2416	GROVE WAY	CASTRO VALLEY	28	LT	5C
RETHREAD INC	2870	GROVE WAY	CASTRO VALLEY	29	AS	NFA
CLYDE ROBIN SEED COMPANY INC	4233	HEYER AVE	CASTRO VALLEY	30	AS	NFA
UNOCAL	18950	LAKE CHABOT RD	CASTRO VALLEY	31	LR	5C
UNOCAL	18950	LAKE CHABOT RD	CASTRO VALLEY	31	LT	5C
UNOCAL	18950	LAKE CHABOT RD	CASTRO VALLEY	31	Cs	WCRBT
HERTLEIN RESIDENCE	19051	LAKE CHABOT RD	CASTRO VALLEY	32	LR	3B
HERTLEIN RESIDENCE	19051	LAKE CHABOT RD	CASTRO VALLEY	32	LT	3B
HERTLEIN RESIDENCE	19051	LAKE CHABOT RD	CASTRO VALLEY	32	Cs	WCRBT
EDEN TOWNSHIP HOSPITAL	20103	LAKE CHABOT RD	CASTRO VALLEY	33	AS	NFA
CLARK'S WOODWORKING	2620	NORBRIDGE AVE	CASTRO VALLEY	34	LR	0
CLARK'S WOODWORKING	2620	NORBRIDGE AVE	CASTRO VALLEY	34	LT	0
STRAND ELECTRONICS LTD	21175	NUNES AVE	CASTRO VALLEY	35	AS	NFA
CASTRO VALLEY AUTOHAUS	20697	PARK WAY	CASTRO VALLEY	36	LR	3B
CASTRO VALLEY AUTOHAUS	20697	PARK WAY	CASTRO VALLEY	36	LT	3B
CASTRO VALLEY AUTOHAUS	20697	PARK WAY	CASTRO VALLEY	36	NT	
JIM'S MOTOR EXPRESS	4116	RAVENSWOOD DR	CASTRO VALLEY	37	AS	NFA
CHEVRON		REDWOOD & GROVE	CASTRO VALLEY	38	LR	0
CHEVRON		REDWOOD & GROVE	CASTRO VALLEY	38	LT	0
CHEVRON		REDWOOD & GROVE	CASTRO VALLEY	38	Cs	WCRBT
TIEN'S UNOCAL	20405	REDWOOD RD	CASTRO VALLEY	39	LR	3A
TIEN'S UNOCAL	20405	REDWOOD RD	CASTRO VALLEY	39	LT	3A
JESS SPENCER MORTUARY	21228	REDWOOD RD	CASTRO VALLEY	40	AS	NFA
IDEAL PEST CONTROL	21701	REDWOOD RD	CASTRO VALLEY	41	AS	NFA
BEACON	22315	REDWOOD RD	CASTRO VALLEY	42	LR	3B
BEACON	22315	REDWOOD RD	CASTRO VALLEY	42	LT	3B
BEACON	22315	REDWOOD RD	CASTRO VALLEY	42	Cs	WCRBT
RJ QUICK CLEAN	2517	SAN CARLOS AVE	CASTRO VALLEY	43	LR	0

ENVIRONMENTAL RECORDS SEARCH FOR
CHEVRON STN # 9-4930
3369 CASTRO VALLEY BLVD, CASTRO VALLEY

Job : RESN5001
Date: 11-21-1992

LOCATION	ADDRESS		CITY	MAP LOC	SOU-RCE	STATUS
RJ QUICK CLEAN	2517	SAN CARLOS AVE	CASTRO VALLEY	43	LT	0
EAST BAY SCAFFOLDING	2552	SAN CARLOS AVE	CASTRO VALLEY	44	LR	0
EAST BAY SCAFFOLDING	2552	SAN CARLOS AVE	CASTRO VALLEY	44	LT	0
ANTHONYS TERMITE CONTROL	2566	SAN CARLOS AVE	CASTRO VALLEY	45	AS	NFA
MIZER & SON TREE AND GARDEN SP	19121	SAN MIGUEL AVE	CASTRO VALLEY	46	AS	NFA
UNOCAL		STROBRIDGE & CASTRO VLY	CASTRO VALLEY	47	Cs	WCRBT
OLYMPIC SERVICE STATION		UNKNOWN	CASTRO VALLEY		Cs	WCRBT
SAL'S FOREIGN CAR SERVICE	20845	WILBEAM AVE	CASTRO VALLEY	48	LR	0
SAL'S FOREIGN CAR SERVICE	20845	WILBEAM AVE	CASTRO VALLEY	48	LT	0
SAL	20845	WILBEAM AVE	CASTRO VALLEY	48	Cs	WCRBT

OPERATING PERMITS SEARCH FOR
CHEVRON STN # 9-4930
3369 CASTRO VALLEY BLVD, CASTRO VALLEY

Page: 1
Job : RESN5001
Date: 11-21-1992

LOCATION	ADDRESS		CITY	MAP LOC	SOU-RCE	STATUS
SHELL STATION #204-1381-0407	2724	CASTRO VALLEY BLVD , LAKE CHAB	CASTRO VALLEY	8	HW	
JACK EDWARDS	2724	CASTRO VALLEY BLVD	CASTRO VALLEY	9	UT	
JACK EDWARDS	2724	CASTRO VALLEY BLVD	CASTRO VALLEY	9	UT	
A J & H E PELKEY	2770	CASTRO VALLEY BLVD	CASTRO VALLEY	10	UT	
QUALITY TUNE UP	2780	CASTRO VALLEY BLVD	CASTRO VALLEY	49	UT	
WALTZ EXXON SERVICE	2896	CASTRO VALLEY BLVD	CASTRO VALLEY	11	UT	
JACK EDWARDS CHEVRON	2920	CASTRO VALLEY BLVD	CASTRO VALLEY	12	HW	
96991	2920	CASTRO VALLEY BLVD	CASTRO VALLEY	12	UT	
CASTRO VALLEY CARWASH	3098	CASTRO VALLEY BLVD	CASTRO VALLEY	13	HW	
SCRUB-A-LUV CAR WASH	3098	CASTRO VALLEY BLVD	CASTRO VALLEY	13	UT	
ROCKY AUTO BODY AND PAINTING	3142	CASTRO VALLEY BLVD	CASTRO VALLEY	50	HW	
94930	3369	CASTRO VALLEY BLVD	CASTRO VALLEY	51	UT	
MOBIL SERVICE STATION	3519	CASTRO VALLEY BLVD	CASTRO VALLEY	18	UT	
QUIK STOP #88	20757	LAKE CHABOT RD	CASTRO VALLEY	52	UT	
PACIFIC BELL (P5-200)	2610	NORBRIDGE AVE	CASTRO VALLEY	53	UT	
CASTRO VALLEY AUTOHAUS	20697	PARK WAY	CASTRO VALLEY	36	HW	
UNION OIL SS #5201	20405	REDWOOD RD	CASTRO VALLEY	39	UT	
FRANK TIEN	20405	REDWOOD RD	CASTRO VALLEY	39	UT	
UNION OIL SS# 5201	20405	REDWOOD RD	CASTRO VALLEY	39	UT	
EXXON SERVICE STATION	20450	REDWOOD RD	CASTRO VALLEY	54	UT	
BEACON STATION #574	22315	REDWOOD RD	CASTRO VALLEY	42	UT	
CASTRO VALLEY FIRE PROTECTION	20336	SAN MIGUEL AVE	CASTRO VALLEY	55	UT	
R.T. NAHAS	3336	VILLAGE DR	CASTRO VALLEY	56	HW	
SAL'S FOREIGN CAR SERVICE INC	20845	WILBEAM AVE	CASTRO VALLEY	48	HW	
CORPORATION YARD	21000	WILBEAM AVE	CASTRO VALLEY	57	UT	

REFERENCED SOURCES

FEDERAL SOURCES

NL National Priority List (06/17/92)

CC Comprehensive Environmental Response, Compensation, and Liability System CERCLIS (06/17/92)

NFA No Further Action

FF Federal Facilities (06/17/92)

LI Superfund Liens - LIENS (03/13/92)

CALIFORNIA STATE SOURCES

BP Annual Work Plan (formerly BEP) (06/29/92)

AWP	Active Annual Work Plan site
BKLG	Backlog, potential AWP site
COM	Certified, but in Operation & Maintenance mode
CERT	Certified, site has been remediated
DLIST	Delisted
REFRC	Former AWP site, referred to RCRA
REFRW	Former AWP site, referred to RWQCB

AS CALSITES (formerly ASPIS) (06/29/92)

PEAR	Preliminary Endangerment Assessment
SSR	Site Screening Required
HRR	Hazard Ranking Required
PRPR	Potential Responsible Party search Required
NFA	No Further Action
EPA	Federal EPA lead
RCRA	RECRA permitting program lead
RWQC	Regional Water Quality Board lead
CNTY	County lead
OAL	Other Agency lead

(Suffixes L,M or H indicates Low, Medium or High Priority)

CS Office of Planning and Research, State of California - CORTESE

WCRBT	Tank leaks.
DHS1	Abandoned hazardous waste site.
DHS2	Contaminated public drinking wells serving less than 200 connections.
DHS3	Contaminated public drinking wells serving more than 200 connections.
DHS5	Sites pusuant to section 25356 of the Health and Safety Code (see BEP)
WMB	Solid waste disposal sites with known migration of hazardous waste.

ST Solid Waste Assessment Test, California State - SWAT(S) (11/6/91)

Facilities or sites are ranked within each region on a scale 1-15 according to priority.

SS Solid Waste Information System - SWIS (1/92)

LT Leaking Underground Storage Tanks, California State - LUST(S) (May 92)

0	No action
1	Leak being confirmed
3A	Prel site assessment workplan submitted
3B	Prel site assessment underway
5C	Pollution characterization
5R	Remediation plan
7	Remedial action underway
8	Post remedial action monitoring
9	Case closed

REGIONAL SOURCES (updated quarterly)

LR Leaking Underground Storage Tanks, Regional - LUST(R)

0	No action
1	Leak being confirmed
3A	Prel site assessment workplan submitted
3B	Prel site assessment underway
5C	Pollution characterization
5R	Remediation plan
7	Remedial action underway
8	Post remedial action monitoring
9	Case closed

NT Non-Tank or Unauthorized Releases

1	Leak being confirmed
2	Spill Response
3	Preliminary Assessment
3A	Prel Site Assessment plan submitted
3B	Prel Site Assessment underway
5	Remedial Investigation
6A	Remediation Plan Submitted
6B	Remediation Underway
7	Post Remedial Monitoring
9	Case Closed

TP Toxic Pits, Regional

SR Solid Waste Assessment Test, Regional - SWAT(R)

Priority Ranking 1-15

WP Well Investigation Program

1A	Organics exceeding action levels
1B	Organics with set action levels
2	Inorganics exceeding action level

OPERATING PERMITS

HW Hazardous Waste Information System - HWIS (11/1990)

EPA Permit number

UT Underground Storage Tank Permits (1987)

Reference to tank permit

ENVIRONMENTAL RECORDS SEARCH

LISTED BY SOURCE

CHEVRON STN # 9-4930
3369 CASTRO VALLEY BLVD, CASTRO VALLEY

INTRODUCTION

The following government sources have been searched for sites within one mile radius, unless otherwise stated, of the subject location.

BBL has used its best effort but makes no claims as to the completeness or accuracy of the referenced government sources or the completeness of the search. Our records are frequently updated but only as current as their publishing date and may not represent the entire field of known or potential hazardous waste or contaminated sites. To ensure complete coverage of the subject property and surrounding area, sites may be included in the list if there was any doubt as to the location because of discrepancies in map location, zip code, address, or other information in our sources.

FEDERAL SOURCES

NPL National Priority List

EPA has prioritized sites with significant risk to human health and the environment. These sites receive remedial funding under the Comprehensive Environmental Response Conservation and Liability Act (CERCLA).

No listings within the specified range.

CERCLIS Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS is a data base used by the EPA to track activities conducted under the Comprehensive Environmental Response, and Liability Act CERCLA (1980) and the amendment the Superfund A and Reauthorization Act, SARA (1986).

Sites to be included are identified primarily by the reporting requirements of hazardous substances Treatment, Storage and Disposal (TSD) facilities and releases larger than specific Reportable Quantaties (RQ), established by EPA.

Using the National Oil and Hazardous Substance Pollution Contingency Plan (National Contingency Plan) EPA set priorities for cleanup.

EPA rates National Contingency Plan sites according to a quantitive Hazard Ranking System (HRS) based on the potential health risk via any one or more potential pathways; ground-water, surface water, air, direct contact, and fire /explosion.

EPA and state agencies seek to identify potentially responsible parties (PRP) and ultimately

Responsible Parties (RP) who can be required to finance cleanup activities, either directly or through reimbursement of federal Superfund expenditures.

Status Codes: *NFA - No Further Action*

No listings within the specified range.

FEDFAC Federal Facilities

As part of the CERCLIS program, federal facilities with known or suspected environmental problems, Federal Facilities Hazardous Waste Compliance Docket, are tracked separately to comply with a Federal Court order.

No listings within the specified range.

LIENS Superfund Liens

A current list of Federal Superfund Liens as compiled by the Office of Enforcement and Compliance Monitoring (OECM), EPA, Washington, D.C. based upon information submitted by EPA's ten Regional Offices. The EPA and the OECM make no representations regarding the accuracy or completeness of the list.

No listings within the specified range.

CALIFORNIA STATE SOURCES

AW Annual Work Plan (previously known as Bond Expenditure Plan)

The California Health and Safety code, as amended by AB 129, requires the California Environmental Protection Agency to develop a site-specific expenditure plan as the basis for an appropriation of California Hazardous Substance Cleanup Bond Act of 1984 funds.

The Agency is also required to update the report annually and report any significant adjustments to the Legislature on an ongoing basis. The plan identifies California hazardous waste sites targeted for cleanup by responsible parties, the California and the Federal Environmental Protection Agencies over the next five years.

Status Codes:

BKLG	Backlog, Potential Annual Work Plan Site
AWP	Active Annual Work Plan site
COM	Certified, but still in Operation & Maintenence mode
CERT	Certified after remediation
DLIST	Delisted from the AWP
REFRC	Former AWP site referred to RCRA
REFRW	Former AWP site referred to the Regional Water Quality Board

No listings within the specified range.

CALS CALSITES (previously known as The Abandoned Sites Program Information System ASPIS)

The Historical Abandoned Site Survey Program identified certain potential hazardous waste sites. These sites determinations were generally not made via sampling and site characterization. They were made as a result or file searches and windshield surveys. Some of the sites may have had a site inspection with sampling.

The information has been compiled into this database by California Environmental Protection Agency, Department of Toxic Substance Control (DTSC) in accordance with Section 253596 of the California Health and Safety Code.

Status Codes:

PEARL	*Preliminary Endangerment Assessment Required, Low Priority*
PEARM	*Preliminary Endangerment Assessment Required, Medium Priority*
PEARH	*Preliminary Endangerment Assessment Required, High Priority*
SSR	*Site Screening Required*
HRR	*Hazard Ranking Required*
PRPR	*Potential Responsible Party Search Required*
NFA	*No Further Action for DTSC*
EPA	*EPA is the lead agency*
RCRA	*Mitigated under the RCRA permitting program*
RWQCB	*Mitigated under the lead of the Regional Water Quality Board.*
CNTY	*County Lead*
OAL	*Other Agency Lead*

Site:	DESIGNS BY DE RON
Address:	21605 BAYWOOD AVE
City:	CASTRO VALLEY
Map Loc:	1
Status:	*NFA - No Further Action for DTSC*

Site:	R & J QUICK CLEAN CENTER
Address:	2522 CASTRO VALLEY BLVD
City:	CASTRO VALLEY
Map Loc:	4
Status:	*NFA - No Further Action for DTSC*

Site: JOSEPH NESBITT COMPANY INC
Address: 2544 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 5
Status: *NFA - No Further Action for DTSC*

Site: ONE HOUR MARTINIZING
Address: 2676 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 6
Status: *NFA - No Further Action for DTSC*

Site: VALLEY COIN LAUNDRY
Address: 2678 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 7
Status: *NFA - No Further Action for DTSC*

Site: HELIUM TECHNOLOGY
Address: 3738 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 20
Status: *NFA - No Further Action for DTSC*

Site: RELIABLE MOVERS
Address: 4070 GREENACRE RD
City: CASTRO VALLEY
Map Loc: 26
Status: *NFA - No Further Action for DTSC*

Site: GARBERS PAINTING
Address: 1911 GROVE WAY
City: CASTRO VALLEY
Map Loc: 27
Status: *NFA - No Further Action for DTSC*

Site: RETHREAD INC
Address: 2870 GROVE WAY
City: CASTRO VALLEY
Map Loc: 29
Status: *NFA - No Further Action for DTSC*

Site: CLYDE ROBIN SEED COMPANY INC
Address: 4233 HEYER AVE
City: CASTRO VALLEY
Map Loc: 30
Status: *NFA - No Further Action for DTSC*

Site: EDEN TOWNSHIP HOSPITAL
Address: 20103 LAKE CHABOT RD
City: CASTRO VALLEY
Map Loc: 33
Status: *NFA - No Further Action for DTSC*

Site: STRAND ELECTRONICS LTD
Address: 21175 NUNES AVE
City: CASTRO VALLEY
Map Loc: 35
Status: *NFA - No Further Action for DTSC*

Site: JIM'S MOTOR EXPRESS
Address: 4116 RAVENSWOOD DR
City: CASTRO VALLEY
Map Loc: 37
Status: *NFA - No Further Action for DTSC*

Site: JESS SPENCER MORTUARY
Address: 21228 REDWOOD RD
City: CASTRO VALLEY
Map Loc: 40
Status: *NFA - No Further Action for DTSC*

Site: IDEAL PEST CONTROL
Address: 21701 REDWOOD RD
City: CASTRO VALLEY
Map Loc: 41
Status: *NFA - No Further Action for DTSC*

Site: ANTHONYS TERMITE CONTROL
Address: 2566 SAN CARLOS AVE
City: CASTRO VALLEY
Map Loc: 45
Status: *NFA - No Further Action for DTSC*

Site: MIZER & SON TREE AND GARDEN SP
Address: 19121 SAN MIGUEL AVE
City: CASTRO VALLEY
Map Loc: 46
Status: *NFA - No Further Action for DTSC*

CORTESE State of California Office of Planning and Research

This database is a consolidation of information from various sources. It is maintained by the State Office of Planning and Research and lists potential and confirmed hazardous waste or

substances sites. This source was last updated by the government in November 1990.

Status Codes:	*WRCBT*	*Tank leaks. Compiled by Water Resource Control Board.*
	DHS1	*Abandoned hazardous waste site. Compiled by Toxic Substance Control Div. of DHS.*
	DHS2	*Contaminated public water drinking wells serving less than 200 connections. Compiled by Env. Health Div. of DHS.*
	DHS3	*Contaminated public water drinking wells serving more than 200 connections.*
	DHS5	*Sites pusuant to section 25356 of the Health and Safety Code (see BEP)*
	CWMB	*Solid waste disposal sites with known migration of hazardous waste.*

Site: ODS SITE #2
Address: CASTRO VALLEY BLVD
City: CASTRO VALLEY
Status: *WCRBT - Leaking Tank*

Site: THRIFTY OIL
Address: 2504 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 3
Status: *WCRBT - Leaking Tank*

Site: UNKNOWN
Address: 2691 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 8
Status: *WCRBT - Leaking Tank*

Site: SHELL
Address: 2724 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 9
Status: *WCRBT - Leaking Tank*

Site: ARCO
Address: 2770 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 10
Status: *WCRBT - Leaking Tank*

Site: MINIT LUBE
Address: 2896 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 11
Status: *WCRBT - Leaking Tank*

Site: ADOBE PLAZA
Address: 3098 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 13
Status: *WCRBT - Leaking Tank*

Site: SHELL
Address: 3496 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 17
Status: *WCRBT - Leaking Tank*

Site: MOBIL
Address: 3519 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 18
Status: *WCRBT - Leaking Tank*

Site: RUDY
Address: 3692 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 19
Status: *WCRBT - Leaking Tank*

Site: TEXACO
Address: 3940 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 21
Status: *WCRBT - Leaking Tank*

Site: DEPT. OF TRANS./CASTRO VALLEY
Address: 21195 CENTER ST
City: CASTRO VALLEY
Map Loc: 24
Status: *WCRBT - Leaking Tank*

Site: ARCO
Address: 22141 CENTER ST
City: CASTRO VALLEY
Map Loc: 25
Status: *WCRBT - Leaking Tank*

Site: UNOCAL
Address: 18950 LAKE CHABOT RD
City: CASTRO VALLEY
Map Loc: 31
Status: *WCRBT - Leaking Tank*

Site: HERTLEIN RESIDENCE
Address: 19051 LAKE CHABOT RD
City: CASTRO VALLEY
Map Loc: 32
Status: *WCRBT - Leaking Tank*

Site: CHEVRON
Address: REDWOOD & GROVE
City: CASTRO VALLEY
Map Loc: 38
Status: *WCRBT - Leaking Tank*

Site: BEACON
Address: 22315 REDWOOD RD
City: CASTRO VALLEY
Map Loc: 42
Status: *WCRBT - Leaking Tank*

Site: UNOCAL
Address: STROBRIDGE & CASTRO VLY
City: CASTRO VALLEY
Map Loc: 47
Status: *WCRBT - Leaking Tank*

Site: OLYMPIC SERVICE STATION
Address: UNKNOWN
City: CASTRO VALLEY
Status: *WCRBT - Leaking Tank*

Site: SAL
Address: 20845 WILBEAM AVE
City: CASTRO VALLEY
Map Loc: 48
Status: *WCRBT - Leaking Tank*

LUST(S) Leaking Underground Storage Tanks - California State

The Leaking Underground Storage Tanks Information System is maintained by the State Water Resource Board pursuant to Section 25295 of the Health and Safety Code.

Status Codes:		
	0	*No action*
	1	*Leak being confirmed*
	3A	*Prel site assessment workplan submitted*
	3B	*Prel site assessment underway*
	5C	*Pollution characterization*
	5R	*Remediation plan*

7	Remedial action underway
8	Post remedial action monitoring
9	Case closed

Site: ODS SITE #2
Address: CASTRO VALLEY BLVD
City: CASTRO VALLEY
Status: *0 - No Action Taken.*

Site: UNOCAL
Address: 2445 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 2
Status: *5C - Pollution characterization.*

Site: THRIFTY OIL
Address: 2504 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 3
Status: *5R - Remediation Plan submitted.*

Site: UNKNOWN
Address: 2691 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 8
Status: *0 - No Action Taken.*

Site: SHELL
Address: 2724 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 9
Status: *5C - Pollution characterization.*

Site: ARCO
Address: 2770 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 10
Status: *3B - Prelim Site Assessment underway.*

Site: MINIT LUBE
Address: 2896 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 11
Status: *3A - Prelim Site Assessment workplan submitted.*

Site: CHEVRON
Address: 2920 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 12
Status: *3B - Prelim Site Assessment underway.*

Site: ADOBE PLAZA
Address: 3098 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 13
Status: *3B - Prelim Site Assessment underway.*

Site: ARNOLD PROPERTY
Address: 3234 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 14
Status: *3B - Prelim Site Assessment underway.*

Site: SAL'S FOREIGN CAR SERVICE
Address: 3343 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 15
Status: *0 - No Action Taken.*

Site: XTRA OIL
Address: 3495 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 16
Status: *3B - Prelim Site Assessment underway.*

Site: SHELL
Address: 3496 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 17
Status: *0 - No Action Taken.*

Site: MOBIL
Address: 3519 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 18
Status: *0 - No Action Taken.*

Site: RUDY'S DONUT
Address: 3692 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 19
Status: *0 - No Action Taken.*

Site: TEXACO
Address: 3940 CASTRO VALLEY BLVD
City: CASTRO VALLEY
Map Loc: 21
Status: *5C - Pollution characterization.*

Site: CALTRANS
Address: 2115 CENTER ST
City: CASTRO VALLEY
Map Loc: 22
Status: *3B - Prelim Site Assessment underway.*

Site: ANTHONY'S AUTO SERVICE
Address: 19592 CENTER ST
City: CASTRO VALLEY
Map Loc: 23
Status: *3B - Prelim Site Assessment underway.*

Site: HAYWARD MAINTENANCE CENTER
Address: 21195 CENTER ST
City: CASTRO VALLEY
Map Loc: 24
Status: *0 - No Action Taken.*

Site: ARCO
Address: 22141 CENTER ST
City: CASTRO VALLEY
Map Loc: 25
Status: *3B - Prelim Site Assessment underway.*

Site: CHEVRON
Address: 2416 GROVE WAY
City: CASTRO VALLEY
Map Loc: 28
Status: *5C - Pollution characterization.*

Site: UNOCAL
Address: 18950 LAKE CHABOT RD
City: CASTRO VALLEY
Map Loc: 31
Status: *5C - Pollution characterization.*

Site: HERTLEIN RESIDENCE
Address: 19051 LAKE CHABOT RD
City: CASTRO VALLEY
Map Loc: 32
Status: *3B - Prelim Site Assessment underway.*

Site:	CLARK'S WOODWORKING
Address:	2620 NORBRIDGE AVE
City:	CASTRO VALLEY
Map Loc:	34
Status:	*0 - No Action Taken.*

Site:	CASTRO VALLEY AUTOHAUS
Address:	20697 PARK WAY
City:	CASTRO VALLEY
Map Loc:	36
Status:	*3B - Prelim Site Assessment underway.*

Site:	CHEVRON
Address:	REDWOOD & GROVE
City:	CASTRO VALLEY
Map Loc:	38
Status:	*0 - No Action Taken.*

Site:	TIEN'S UNOCAL
Address:	20405 REDWOOD RD
City:	CASTRO VALLEY
Map Loc:	39
Status:	*3A - Prelim Site Assessment workplan submitted.*

Site:	BEACON
Address:	22315 REDWOOD RD
City:	CASTRO VALLEY
Map Loc:	42
Status:	*3B - Prelim Site Assessment underway.*

Site:	RJ QUICK CLEAN
Address:	2517 SAN CARLOS AVE
City:	CASTRO VALLEY
Map Loc:	43
Status:	*0 - No Action Taken.*

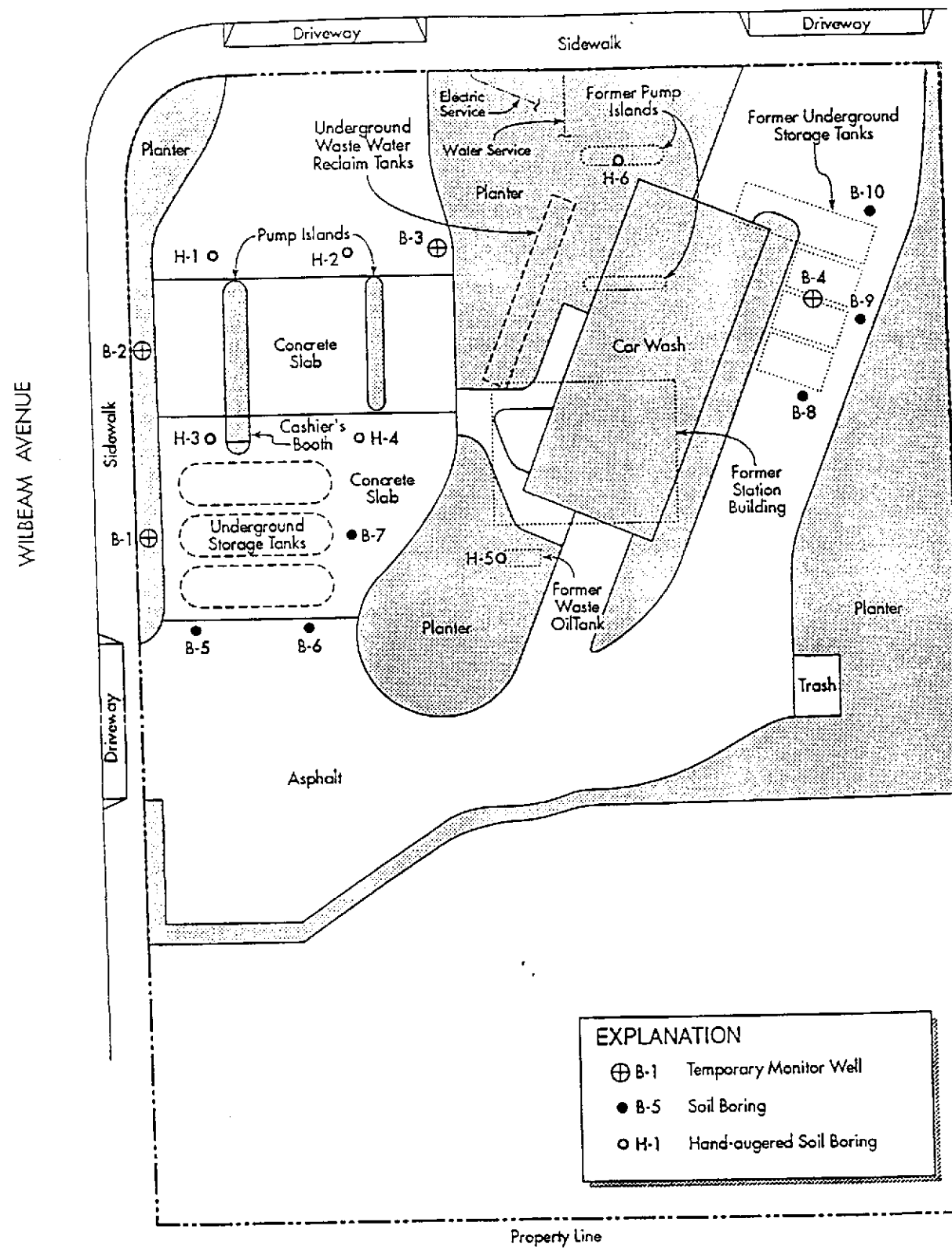
Site:	EAST BAY SCAFFOLDING
Address:	2552 SAN CARLOS AVE
City:	CASTRO VALLEY
Map Loc:	44
Status:	*0 - No Action Taken.*

Site:	SAL'S FOREIGN CAR SERVICE
Address:	20845 WILBEAM AVE
City:	CASTRO VALLEY
Map Loc:	48
Status:	*0 - No Action Taken.*

WATER WELL INVENTORY

OWNER	OWNER'S ADDRESS	YEAR DRILLED	USE
Wolfe	Forest Ave., Castro Valley	1949	Domestic/Unknown
Martin's Nursery	20115 Forest Ave., Castro Valley	1953	Irrigation
Martin's Nursery	20115 Forest Ave., Castro Valley	1953	Irrigation
Martin's Nursery	20115 Forest Ave., Castro Valley	1953	Irrigation
Martin's Nursery	20115 Forest Ave., Castro Valley	1949	Unknown
Jack Luse	19910 Forest Ave.	1977	Irrigation
Adobe Plaza	3098 Castro Valley Blvd.	1989	MW
Adobe Plaza	3098 Castro Valley Blvd.	1989	MW
Adobe Plaza	3098 Castro Valley Blvd.	1989	MW
Ted Sims Extra Oil Co.-Shell Station	2307 Pacific Ave., Alameda, CA	1990	MW
Ted Sims Extra Oil Co.-Shell Station	2307 Pacific Ave., Alameda, CA	1990	MW
Ted Sims Extra Oil Co.-Shell Station	2307 Pacific Ave., Alameda, CA	1990	MW
Mitzi Stockel	Unknown	1990	5-MWs
R.T. Nahas Co. - Unocal	Unknown	1989	5-MWs
Curtis or Breed	Near Breed Property, near Milford Gardens	1928	Unknown
Seamoor Lodge Curtis	Possibly Breed Property, below Mulford Gardens	1957	Unknown
Robert D. Rousey	20283 Yeandle Avenue, Castro Valley	1977	Irrigation
Howard W. Buckhart	20551 Forest Avenue, Castro Valley	1950	Unknown
Mr. Ornedas	20287 Marshal Street, Castro Valley	1977	Irrigation
William Smith	8045 Louna, Castro Valley	1956	Irrigation
Mrs. Wilson	8878 Redwood Road, Castro Valley	1954	Test Well
Henry Hertlien	8878 Redwood Road, Castro Valley	1988	MW
William Duncan	Unknown	1950	Unknown
Bill Jensen	3223 Leonard Drive, Hayward	1980	Domestic
Louis Floyd	20036 Anita Ave., Castro Valley	1953	Domestic
Eden Township Hosp.- McLenahan Co.	2301 Palm Ave., San Mateo	1953	Test
Eden Township Hosp.- McLenahan Co.	2301 Palm Ave., San Mateo	1952	Domestic
Eden Township Hosp.- McLenahan Co.	2301 Palm Ave., San Mateo	1952	Cooling System
Thrifty Oil Company	2504 Castro Valley Blvd., Castro Valley	1988	1-7 MWs
Anthony B. Varini	22771 Main Street, Hayward, CA	1988	Test
Unocal Corporation	2000 Crow Canyon Place, #400, San Ramon	1990	3 Test MWs 1-3
Unocal Corporation	2000 Crow Canyon Place, #400, San Ramon	1990	1 MW #4
BP Oil Company	2818 Prospect Park Drive, Rancho Cordova, CA	1990	3 MWs
Texaco Refining and Marketing Inc.	10 Universal City Place, Universal City, CA	1987	MW 1-3
SAA	Unknown	1990	MW 4-5
Weinke	Unknown	1949	Unknown
Centennial Bank	Unknown	1983	Destruction

ATTACHMENT C



Source: site plans by Chevron USA, Inc.

RESNA

GENERALIZED SITE PLAN

Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California

FIGURE 2

Table 1

SOIL ANALYTICAL RESULTS
Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California
(page 1 of 2)

Sample Number	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd	TOG	HVO
B-1 6.0	11/24/92	<0.1	0.087	1.0	1.9	79	---	---	---
B-1 11.25	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
B-2 11.25	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
B-3 10.25	11/24/92	<0.025	<0.025	0.063	3.5	96	---	---	---
B-4 11.25	11/24/92	<0.5	5.1	20	130	2,500	---	---	---
B-5 10.75	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
B-6 10.6	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
B-7 10.6	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
B-8 10.5	11/24/92	~~<0.50~~ 0.05	0.056	0.47	1.4	36	---	---	---
B-9 5.5	11/24/92	<0.005	<0.005	<0.005	~~0.10~~ 0.01	<1	---	---	---
B-9 11.0	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
B-10 11.5	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
H-1 5.5	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
H-2 5.5	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
H-3 5.5	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
H-4 1.0	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---
H-5 5.5	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	<10	57	---
H-5 10.5	11/24/92	<0.005	~~<0.005~~ 0.014	~~<0.005~~ 0.013	~~<0.005~~ 0.027	~~<1~~ 15	<10	<50	ND
H-6 5.5	11/24/92	<0.005	<0.005	<0.005	<0.005	<1	---	---	---

Notes: See page 2 of 2

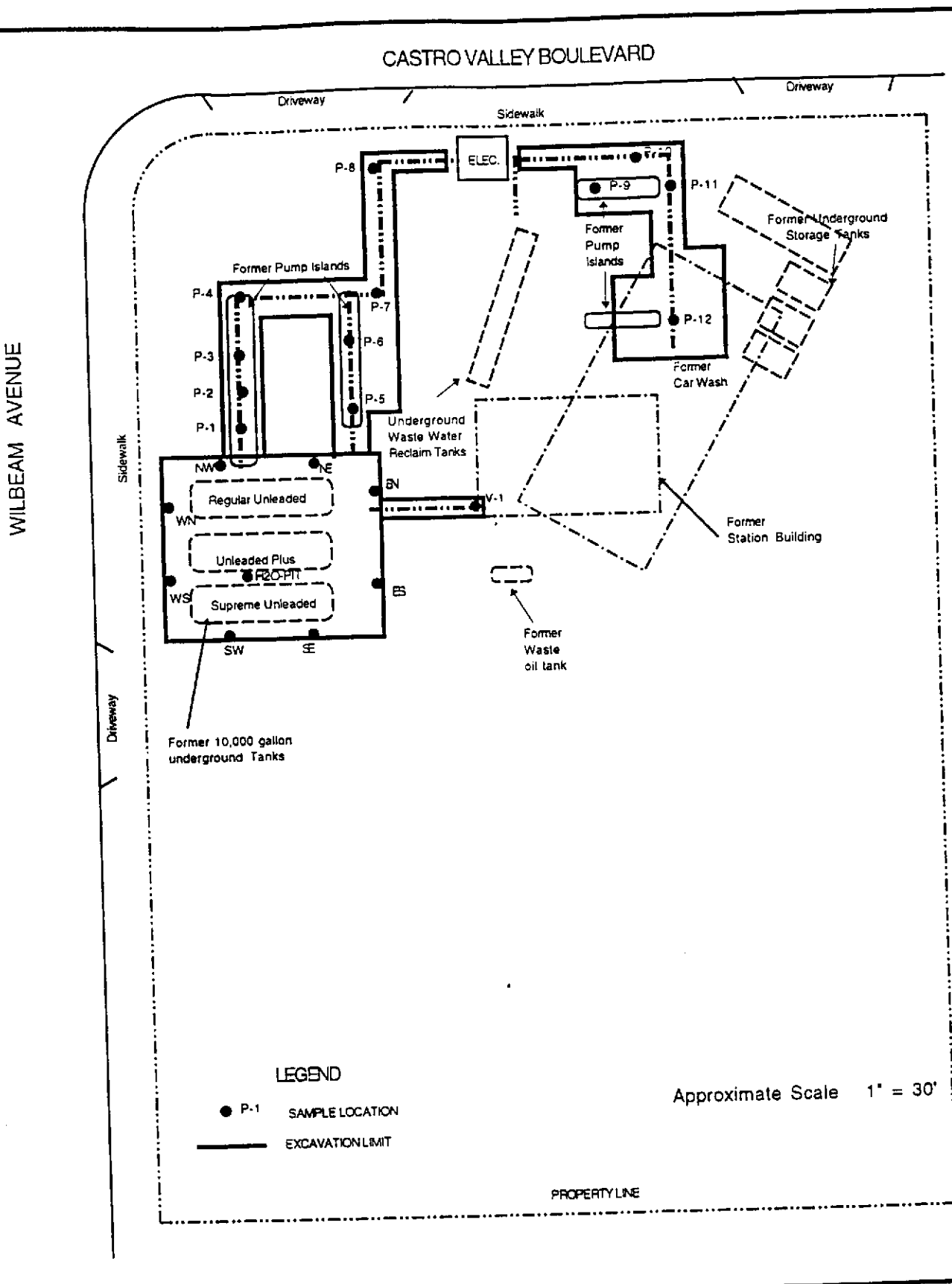
Table 1

SOIL ANALYTICAL RESULTS
Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California
(page 2 of 2)

Sample Number	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd	TOG	HVO
A,B,C,D,*	8/10/92	0.008	0.024	0.008	.053	ND<1	---	---	---

All results in parts per million (ppm)
TPHg = Total Petroleum Hydrocarbons as Gasoline.
TPHd = Total Petroleum Hydrocarbons as Diesel
TOG = Total Oil and Grease
HVO = Halogenated Volatile Organics
ND = Not Detected
--- = Not analyzed
< = Less than detection limit established by the laboratory
* = Cuttings

ATTACHMENT D



Touchstone Developments
Environmental Management

UGST & Pipeline Sample Location Map

Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California

Figure 2

03-11-93 | mjt

Project # 4930-1

TABLE A: UGST/Piping and Waste Water Reclaim Tank Sampling Results

Analytical Results in Parts Per Million (ppm) Unless Noted

UGST SAMPLE RESULTS

Sample ID	Date Sampled	Laboratory	TPH as Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Lead
H2O-Pit	3-10-93	Superior	3900*	180*	110*	170*	380*	ND
SE-9'	3-10-93	Superior	ND	ND	ND	ND	ND	NA
SW-6'	3-10-93	Superior	ND	ND	ND	ND	ND	NA
WS-9'	3-10-93	Superior	ND	ND	ND	ND	ND	NA
ES-6'	3-10-93	Superior	ND	ND	ND	ND	ND	NA
EN-9'	3-10-93	Superior	ND	ND	ND	.014	.024	NA
NE-6'	3-10-93	Superior	430	.056	.64	7.7	33	NA
NW-8'	3-10-93	Superior	620	.15	.75	11	53	NA
WN-6'	3-10-93	Superior	240	ND	.57	4.9	4.0	NA

PIPE TRENCH SAMPLE RESULTS

Sample ID	Date Sampled	Laboratory	TPH as Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Lead
V-1	3-10-93	Superior	ND	ND	ND	ND	ND	NA
P-1	3-10-93	Superior	ND	ND	ND	ND	ND	NA
P-2	3-10-93	Superior	ND	ND	ND	ND	ND	NA
P-3	3-10-93	Superior	ND	ND	ND	ND	ND	NA
P-4	3-10-93	Superior	ND	ND	ND	ND	ND	NA
P-5	3-10-93	Superior	ND	ND	ND	ND	ND	NA
P-6	3-10-93	Superior	ND	.020	.020	ND	ND	NA
P-7	3-10-93	Superior	ND	ND	.018	ND	.019	NA
P-8	3-10-93	Superior	14	.39	2.3	.32	1.8	ND
P-9-5'	3-10-93	Superior	1.5	.074	.007	.007	.011	7
P-10-4.5'	3-10-93	Superior	720	2.3	17	9	49	6
P-11-5'	3-10-93	Superior	3.0	.079	.01	.025	.03	6
P-12-6'	3-10-93	Superior	1.6	ND	.011	.036	.007	6

WASTE WATER RECLAIM TANK SAMPLE RESULTS

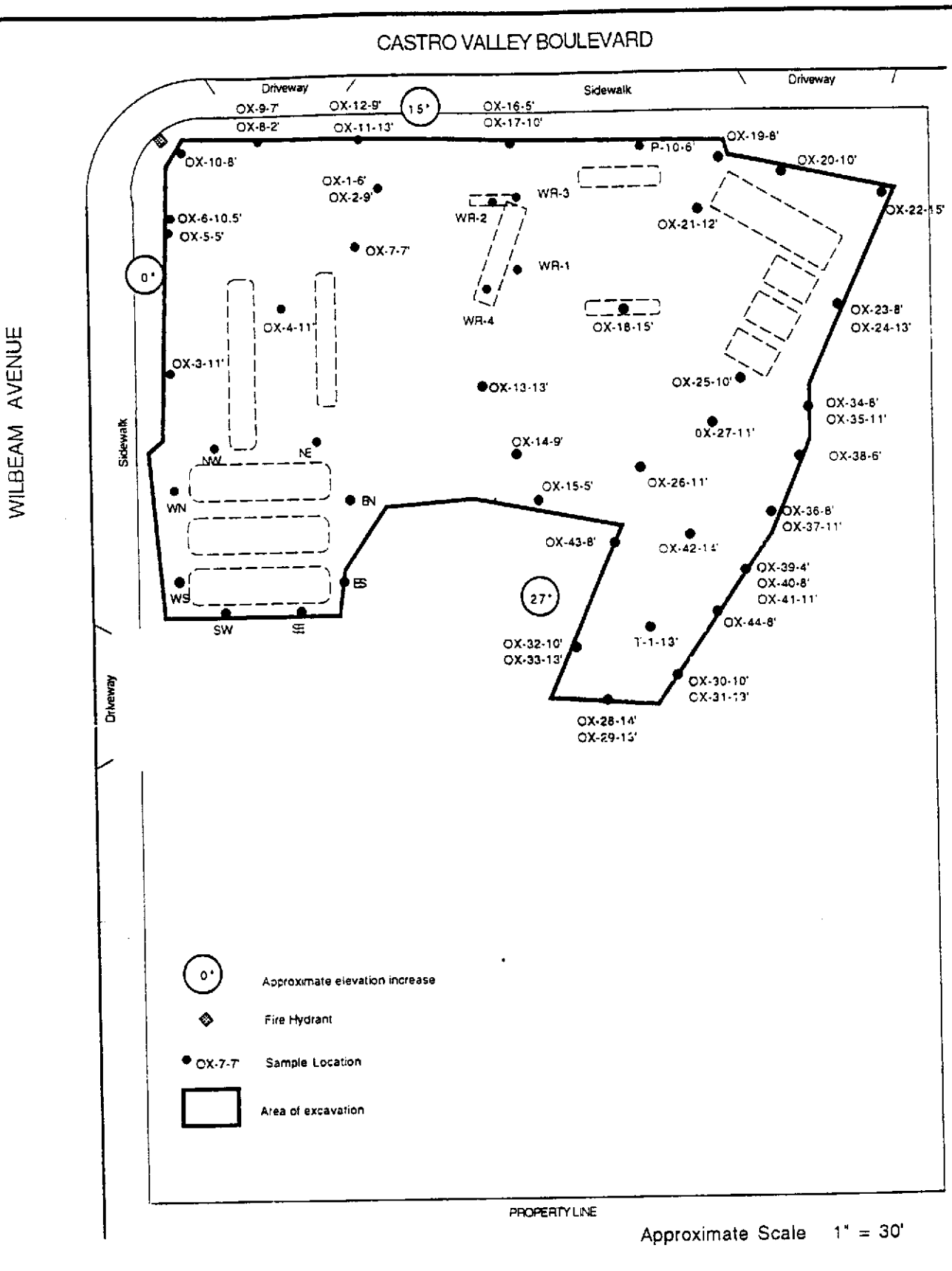
Sample ID	Date Sampled	Laboratory	TPH as Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Oil and Grease
WWR-1-9'	3-15-93	Superior	8	ND	.019	.078	.36	ND
WWR-2-9'	3-15-93	Superior	230	ND	.17	2.2	4.5	ND
WWR-3-12'	3-15-93	Superior	ND	ND	ND	ND	ND	ND
WWR-4-12'	3-15-93	Superior	ND	ND	ND	ND	ND	ND
SP-WWR-1A-D	3-15-93	Superior	28	ND	ND	.17	.96	ND
SP-WWR-2A-D	3-15-93	Superior	17	ND	.023	.057	.38	ND

Sample ID	Date Sampled	Laboratory	8010	TPH as Diesel	Cadmium	Chromium	Lead	Zinc	Nickel
WWR-1-9'	3-15-93	Superior	ND	ND	ND	28	10	48	29
WWR-2-9'	3-15-93	Superior	ND	ND	ND	31	5	100	31
WWR-3-12'	3-15-93	Superior	ND	ND	ND	26	5	41	32
WWR-4-12'	3-15-93	Superior	ND	ND	ND	33	6	46	28
SP-WWR-1A-D	3-15-93	Superior	ND	ND	ND	31	12	49	30
SP-WWR-2A-D	3-15-93	Superior	ND	ND	ND	29	10	61	32

Sample ID	Date Sampled	Laboratory	TCLP TPH as Gasoline	TCLP Benzene	TCLP Toluene	TCLP Ethyl Benzene	TCLP Xylenes	TCLP TPH as Diesel
SP-WWR-1A-D	3-15-93	Superior	770*	3.3*	1.5*	27*	150*	ND
SP-WWR-2A-D	3-15-93	Superior	200*	2.9*	.8*	1.6*	13*	ND

TPH as Gasoline = Total petroleum Hydrocarbons calculated as gasoline
TPH as Diesel = Total petroleum Hydrocarbons calculated as diesel
ND = Not Detected at or above the laboratory detection limit
NA = Not Analyzed
* = Results shown in parts per billion (ppb)

ATTACHMENT E



Touchstone Developments
Environmental Management

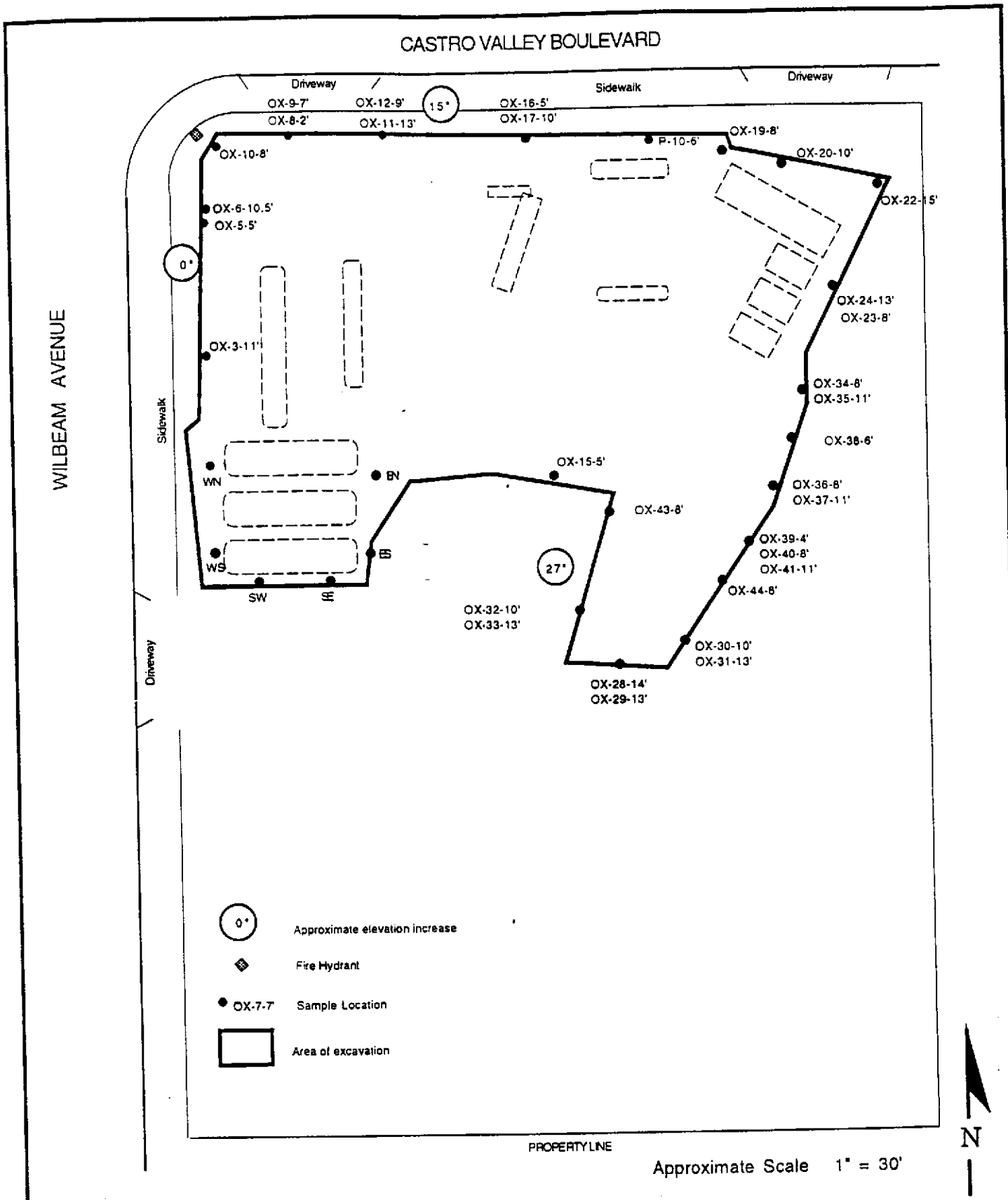
Over-excavation Sample Location Map

Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California

Figure 3

05-10-93 | mjt

Project # 4930-2



Touchstone Developments
Environmental Management

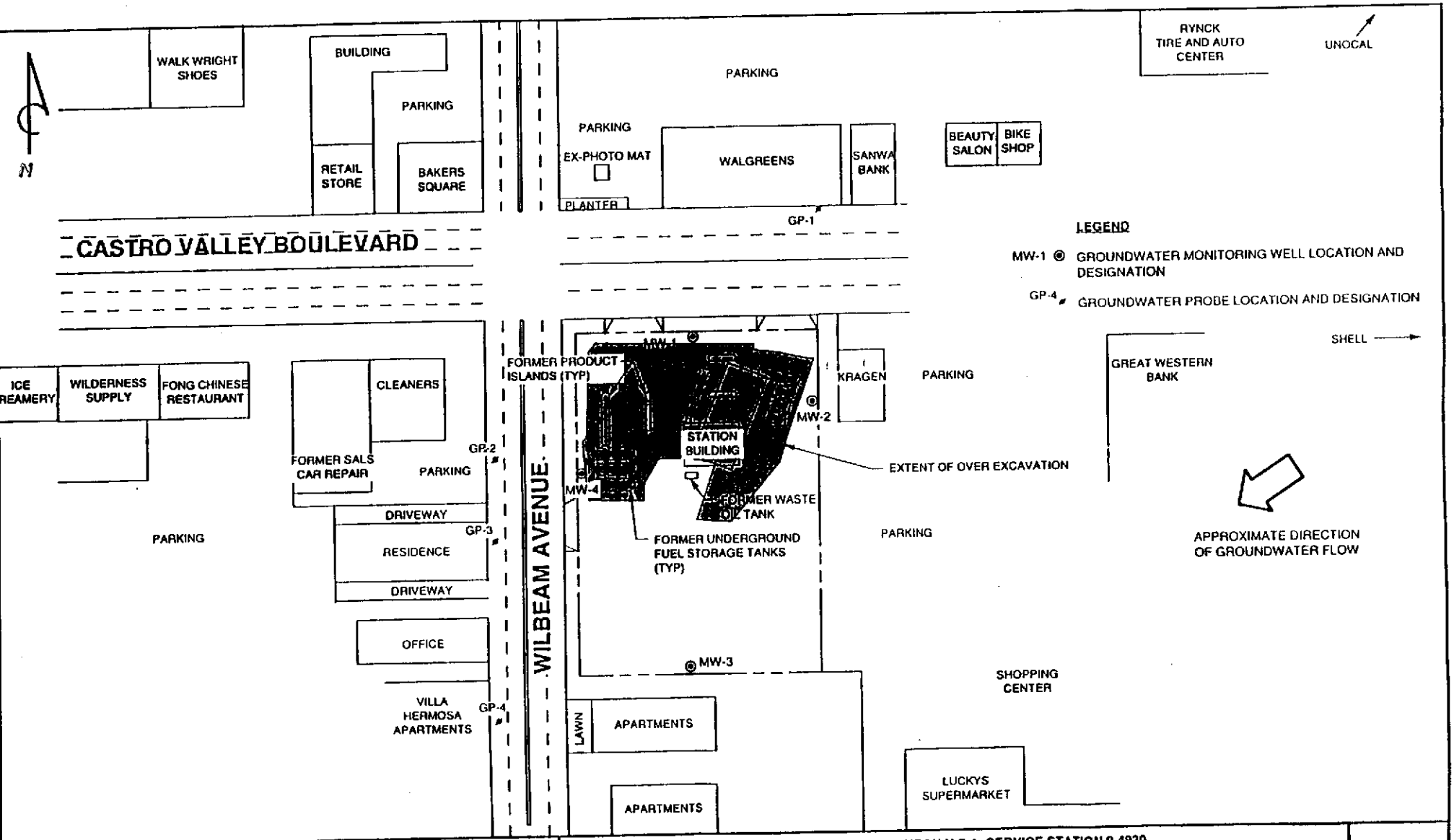
Sidewall Sample Location Map

Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California

Figure 4

05-12-93 | mjt

Project # 4930-2



PACIFIC ENVIRONMENTAL GROUP, INC.

APPROXIMATE SCALE
0 60 120 FEET

FORMER CHEVRON U.S.A. SERVICE STATION 9-4930
3369 Castro Valley Boulevard at Wilbeam Avenue
Castro Valley, California

EXTENDED SITE MAP

FIGURE: 2
PROJECT: 320-156.1A

TABLE B: Over-excavation Sampling Results

Analytical Results in Parts Per Million (ppm) Unless Noted

UGST SAMPLE RESULTS

Sample ID	Date Sampled	Laboratory	TPH as Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Oil & Grease	TPH/D
OX-1-6'	3-19-93	Superior	340	ND	.33	4.4	15	NA	NA
OX-2-9'	3-19-93	Superior	97	ND	ND	1.8	9	NA	NA
OX-3-11'	3-22-93	Superior	ND	.026	ND	.006	ND	NA	NA
OX-4-11'	3-22-93	Superior	11	.38	.30	.31	1	NA	NA
OX-5-5'	3-22-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-6-10.5'	3-22-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-7-7'	3-22-93	Superior	11	ND	.045	ND	.083	NA	NA
OX-8-2'	3-25-93	Superior	4	.010	.006	.031	.36	NA	NA
OX-9-7'	3-25-93	Superior	990	ND	2.1	8	43	ND	NA
OX-10-8'	3-26-93	Superior	110	ND	.14	.39	1.3	NA	NA
OX-11-13'	3-26-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-12-9'	3-26-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-13-13'	3-30-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-14-9'	4-02-93	Superior	340	ND	.18	5.8	28	NA	NA
OX-15-5'	4-02-93	Superior	ND	ND	.008	ND	ND	ND	2
OX-16-5'	4-07-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-17-10'	4-07-93	Superior	290	ND	.65	4.6	21	NA	NA
OX-18-15'	4-09-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-19-8'	4-09-93	Superior	760	.5	4	17	76	NA	NA
OX-20-10'	4-09-93	Superior	74	.032	.18	2.2	1.8	NA	NA
OX-21-12'	4-09-93	Superior	850	2.6	14	17	80	NA	NA
OX-22-15'	4-19-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-23-8'	4-19-93	Superior	160	ND	.29	2.2	4.2	NA	NA
OX-24-13'	4-19-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-25-10'	4-19-93	Superior	5100	3.9	6.6	77	360	NA	NA
OX-26-11'	4-20-93	Superior	510	.59	3.6	9.7	51	NA	NA
OX-27-11'	4-20-93	Superior	310	.3	.98	4.9	18	NA	NA
OX-28-14'	4-22-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-29-13'	4-22-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-30-10'	4-22-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-31-13'	4-22-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-32-10'	4-22-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-33-13'	4-22-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-34-8'	4-28-93	Superior	89	ND	.15	1.5	3.1	NA	NA
OX35-11'	4-28-93	Superior	8	ND	.011	.15	.31	NA	NA
OX-36-8'	4-28-93	Superior	18	ND	.065	.34	.86	NA	NA
OX-37-11'	4-28-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-38-6'	4-28-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-39-4'	4-30-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-40-8'	4-30-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-41-11'	4-30-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-42-14'	4-30-93	Superior	ND	ND	ND	ND	ND	NA	NA
OX-44-8'	5-03-93	Superior	ND	ND	ND	ND	ND	NA	NA
T-1-13'	4-20-93	Superior	1600	.98	18	34	140	NA	NA

			8010	**Ca**	**Cr**	**Pb**	**Zn**	**Ni**	**8270(2-Methylnapthalene)**
OX-15-5'	4-02-93	Superior	ND	ND	22	6	39	21	280

TPH as Gasoline = Total petroleum Hydrocarbons calculated as gasoline
TPH as Diesel = Total petroleum Hydrocarbons calculated as diesel
ND = Not Detected at or above the laboratory detection limit
NA = Not Analyzed
* = Results shown in parts per billion (ppb)

TABLE C: Summary of Stockpile Sample Results

Analytic Results in Parts Per Million (ppm) Unless Noted

STOCKPILE SAMPLE RESULTS

Sample ID	Date Sampled	Laboratory	TPH as Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Organic Lead
SP-1A-D	3-10-93	Superior	86	.051	.2	1.4	4	ND
SP-2A-D	3-10-93	Superior	27	ND	.14	.14	.43	NA
SP-3A-D	3-10-93	Superior	ND	ND	ND	ND	ND	NA
SP-4A-D	3-10-93	Superior	4	.024	.21	.06	.47	NA
SP-5A-D	3-15-93	Superior	ND	ND	ND	ND	ND	NA
SP-6A-D	3-19-93	Superior	8.6	ND	.17	.19	2.1	NA
SP-7A-D	3-19-93	Superior	39	ND	.21	.38	2.1	NA
SP-8A-D	3-19-93	Superior	42	ND	.19	.4	2.4	NA
SP-9A-D	3-19-93	Superior	47	ND	.42	.58	3.3	NA
SP-10A-D	3-19-93	Superior	66	ND	.18	.67	3.1	NA
SP-11A-D	3-26-93	Superior	ND	ND	ND	ND	ND	NA
SP-12A-D	3-26-93	Superior	4	ND	ND	.033	.23	NA
SP-13A-D	3-26-93	Superior	32	ND	.061	.11	.83	NA
SP-14A-D	3-26-93	Superior	21	ND	.39	.070	.49	NA
SP-15A-D	3-26-93	Superior	43	ND	.13	.35	2	NA
SP-16A-D	3-26-93	Superior	100	ND	.66	1.4	6.6	NA
SP-17A-D	3-26-93	Superior	42	.091	.087	.48	2.5	NA
SP-18(A-D)	3-30-93	Superior	12	ND	ND	.025	.2	NA
SP19(A-D)	3-30-93	Superior	31	ND	.05	.09	.61	NA
SP-20(A-D)	3-30-93	Superior	93	ND	.17	.21	2.3	NA
SP-21(A-D)	3-30-93	Superior	44	ND	.13	.36	2.3	NA
SP-22(A-D)	3-30-93	Superior	34	ND	.05	.12	1	NA
SP-23(A-D)	3-30-93	Superior	120	ND	.48	2	9.9	NA
SP-24(A-D)	3-30-93	Superior	24	ND	.009	.16	1.5	NA
SP-25(A-D)	3-30-93	Superior	33	ND	.056	.17	1.3	NA
SP-18A-D	4-02-93	Superior	24	ND	ND	.089	.37	NA
SP19A-D	4-02-93	Superior	200	ND	.17	.33	5.4	NA
SP-20A-D	4-02-93	Superior	45	ND	.14	.095	1.2	NA
SP-21A-D	4-02-93	Superior	190	ND	.13	.36	11	NA
SP-22A-D	4-02-93	Superior	94	ND	.54	.23	2.7	NA
SP-23A-D	4-02-93	Superior	120	ND	.28	.2	3.4	NA
SP-24A-D	4-05-93	Superior	30	ND	.064	.74	.53	NA
SP-25A-D	4-05-93	Superior	22	ND	.065	.011	.095	NA
SP-26A-D	4-06-93	Superior	89	.12	.032	.92	5.5	NA
SP-27A-D	4-06-93	Superior	38	.058	.044	ND	2.2	NA
SP-28A-D	4-06-93	Superior	120	.084	.68	1.5	8.4	NA
SP-29A-D	4-06-93	Superior	51	.054	.072	.16	1.7	NA
SP-30A-D	4-06-93	Superior	56	.058	.038	.39	1.2	NA
SP-31A-D	4-07-93	Superior	120	ND	.54	1.1	6.1	NA
SP-32A-D	4-07-93	Superior	81	ND	.3	.74	4	NA
SP-33A-D	4-07-93	Superior	30	ND	.14	.29	1.5	NA
SP-34A-D	4-07-93	Superior	130	ND	.64	1.5	7.6	NA
SP-35A-D	4-07-93	Superior	150	.035	.96	1.5	7.9	NA
SP-36A-D	4-23-93	Superior	13	.029	.08	.07	.52	NA
SP-37A-D	4-23-93	Superior	39	.086	.062	.14	1.5	NA
SP-38A-D	4-23-93	Superior	15	.018	.052	.061	.98	NA
SP-39A-D	4-23-93	Superior	18	.032	.099	.12	1.1	NA
SP-40A-D	4-23-93	Superior	30	.062	.062	.064	1.1	NA
SP-41A-D	4-23-93	Superior	72	.15	.18	.5	3	NA
SP-42A-D	4-23-93	Superior	56	.13	.12	.23	2	NA
SP-43A-D	4-23-93	Superior	49	.11	.19	.33	2.7	NA
SP-44A-D	4-23-93	Superior	14	.042	.053	.031	.22	NA
SP-45A-D	4-23-93	Superior	53	ND	.096	.19	1.3	NA
SP-46A-D	4-29-93	Superior	2	ND	.008	.008	.045	NA
SP-47A-D	4-29-93	Superior	1	ND	.006	ND	.024	NA
SP-48A-D	4-29-93	Superior	2	ND	.007	.007	.064	NA
SP-49A-D	4-29-93	Superior	5	ND	.018	.012	.069	NA
SP-50A-D	4-29-93	Superior	4	ND	.012	.007	.046	NA
SP-51A-D	4-29-93	Superior	6	ND	.052	.062	.36	NA
SP-52A-D	4-29-93	Superior	10	ND	.031	.02	.18	NA
SP-53A-D	4-30-93	Superior	1	ND	.01	ND	ND	NA
SP-54A-D	4-30-93	Superior	ND	ND	ND	ND	.016	NA
SP-55A-D	4-30-93	Superior	1	ND	ND	.011	.063	NA
WOSP-1A-D	4-01-93	Superior	ND	ND	ND	ND	ND	NA

Sample ID	Date Sampled	Laboratory	TPH@D	TOG	8010	8270	Ca	Cr	Pb	Zn	Ni
WOSP-1A-D	4-01-93	Superior	ND	ND	ND	ND	ND	33	8	50	27

TABLE C: Summary of Stockpile Sample Results (continued)

Analytic Results in Parts Per Million (ppm) Unless Noted

STOCKPILE SAMPLE RESULTS

Sample ID	Date Sampled	Laboratory	TPH as Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Organic Lead
SP-56A-D	5-03-93	Superior	3	ND	.027	ND	ND	NA
SP-57A-D	5-04-93	Superior	1	ND	ND	ND	ND	NA
SP-58A-D	5-04-93	Superior	ND	ND	ND	ND	ND	NA
BSP-1A-D	4-09-93	Superior	14	ND	ND	ND	ND	NA
BSP-2A-D	4-09-93	Superior	70	ND	.025	.067	.36	NA
BSP-3A-D	4-09-93	Superior	80	ND	.67	.96	5	NA
R-1A-D	4-09-93	Superior	13	ND	ND	ND	.23	NA
R-2A-D	4-09-93	Superior	10	ND	.026	.009	.12	NA
R-3A-D	4-09-93	Superior	12	ND	ND	ND	ND	NA
R-4A-D	4-09-93	Superior	24	ND	.039	.074	.77	NA
RSP-4A-D	3-26-93	Superior	14	ND	.049	.05	.41	NA
RSP-5A-D	3-26-93	Superior	22	ND	.049	.05	.41	NA
RSP-6A-D	3-26-93	Superior	20	ND	.066	.056	.39	NA
RSP-7A-D	3-26-93	Superior	5	ND	ND	.024	.19	NA
RSP-8A-D	3-26-93	Superior	4.1	ND	.01	.006	.053	NA
RSP-9A-D	3-26-93	Superior	7.3	ND	.011	.036	.25	NA

R-1A-D thru R-4A-D represent resampling of soil that were not accepted by Redwood Landfill because of high TPH as Gasoline levels

TOG = Total Oil and Grease
TPH-gas = Total petroleum Hydrocarbons calculated as gasoline
ND = Not Detected at or above the laboratory detection limit
NA = Not Analyzed
ppb = parts per billion
*= Diesel range concentration reported. The pattern of peaks observed in the chromatogram shows hydrocarbons heavierr than diesel.

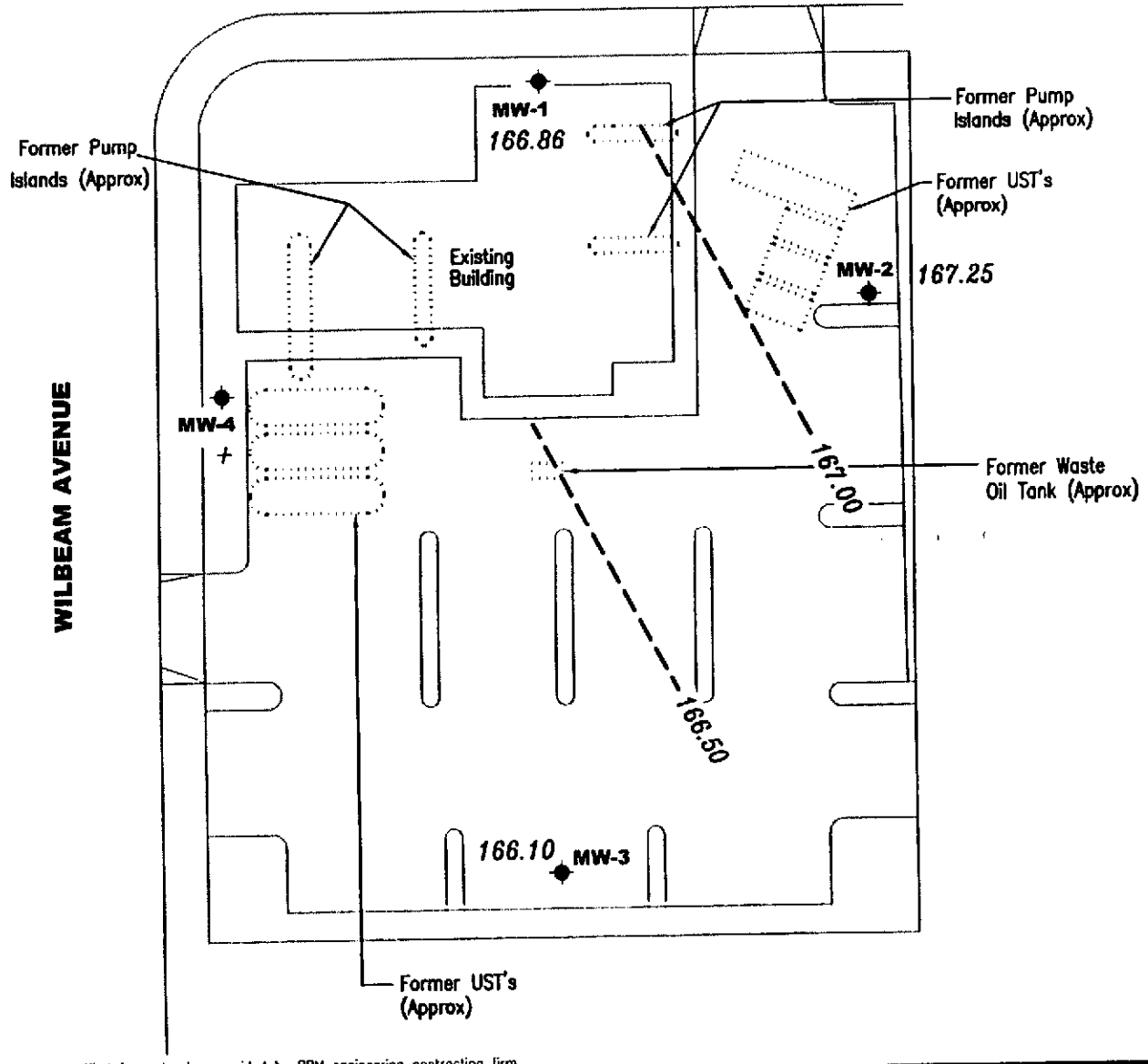
TABLE D: Summary of Stockpile Sample Results

Analytic Results in Parts Per Million (ppm) Unless Noted

STOCKPILE SAMPLE RESULTS

Sample ID	Date Sampled	Laboratory	TPH as Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes
CSP-1A-D	3-24-93	Superior	ND	ND	ND	.006	ND
CSP-2A-D	3-24-93	Superior	ND	ND	ND	ND	ND
CSP-3A-D	3-24-93	Superior	ND	ND	ND	ND	ND
CSP-4A-D	4-13-93	Superior	ND	ND	ND	ND	ND
CSP-5A-D	4-13-93	Superior	ND	ND	ND	ND	ND
CSP-6A-D	4-13-93	Superior	ND	ND	ND	ND	ND
CSP-7A-D	5-03-93	Superior	ND	ND	ND	ND	ND
CSP-8A-D	5-03-93	Superior	ND	ND	ND	ND	ND
CSP-9A-D	5-03-93	Superior	ND	ND	ND	ND	ND
CSP-10A-D	5-03-93	Superior	ND	ND	ND	ND	ND
CSP-11A-D	5-04-93	Superior	ND	ND	ND	ND	ND
CSP-12A-D	5-04-93	Superior	ND	ND	ND	ND	ND

TOG = Total Oil and Grease
TPH-gas = Total petroleum Hydrocarbons calculated as gasoline
ND = Not Detected at or above the laboratory detection limit
NA = Not Analyzed
ppb = parts per billion
*= Diesel range concentration reported. The pattern of peaks observed in the chromatogram shows hydrocarbons heavierr than diesel.



EXPLANATION

- Groundwater monitoring well
- 99.99 — Groundwater elevation in feet referenced to Mean Sea Level (MSL)
- 99.99 — Groundwater elevation contour, dashed where inferred.
- \+ — Unable to locate

Approximate groundwater flow direction at a gradient of 0.009 Ft./Ft.

N

0 40

Scale in Feet

Source: Figure modified from drawing provided by RRM engineering contracting firm.

FIGURE 1

GETTLER - RYAN INC.
6747 Sierra Ct., Suite J
Dublin, CA 94568
(925) 551-7555

POTENTIOMETRIC MAP
Former Chevron Station #9-4930
3369 Castro Valley Boulevard
Castro Valley, California

PROJECT NUMBER
386509

REVIEWED BY

DATE
February 15, 2001

REVISED DATE

FILE NAME: P:\Enviro\Chevron\9-4930\001-9-4930.DWG | Layout Tab: Pat1

RESNA
Working to Restore Nature

Table 2

SOIL ANALYTICAL RESULTS
Former Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California

Sample	Date	TPHg	B	T	E	X
S-6.0-B11	10/25/93	<1	<0.005	<0.005	<0.005	<0.015
S-5.8-B12	10/25/93	<1	<0.005	<0.005	<0.005	<0.015
S-8.0-B12	10/25/93	100	<0.05	0.18	0.45	3.6
S-5.8-B13	10/25/93	<1	<0.005	<0.005	<0.005	<0.015
S-8.0-B13	10/25/93	<1	<0.005	<0.005	<0.005	<0.015
S-6.0-B14	10/25/93	530	<0.25	0.48	4.5	18

Notes:

All results in parts per million (ppm)

S = Soil sample
6.5 = Sample depth in feet
B-11 = Boring 11
TPHg = Total petroleum hydrocarbons as gasoline.
B = Benzene
T = Toluene
E = Ethyl-benzene
X = Total xylenes
< = Less than indicated detection limit established by the laboratory

ATTACHMENT F

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

Alameda County CC458
Environmental Protection Divisic
1131 Harbor Bay Parkway, Room 25
Alameda CA 94502-6577

August 22, 1996

STID 664

Mr. Phillip Briggs
Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, CA 94583-0804

RE: CHEVRON STATION #9-4930, 3369 CASTRO VALLEY BOULEVARD, CASTRO VALLEY - TIER 2 RISK-BASED CORRECTIVE ACTION EVALUATION

Dear Mr. Briggs:

This office has reviewed the June 20, 1996 *Final* Tier 2 Risk-Based Corrective Action (RBCA) evaluation for the subject site, as submitted under both Chevron Research and Technology Company (CRTC) and Chevron U.S.A. Products Company ("Chevron") covers dated June 21 and June 26, 1996, respectively. We have additionally reviewed the July 16, 1996 *Revised Draft Final* Tier 2 RBCA evaluation, submitted under CRTC cover dated July 16, 1996, as well as *revised* Tier 2 RBCA Worksheet 5.1 and Output Table 1, submitted under CRTC cover dated August 14, 1996.

This Tier 2 RBCA evaluation, as revised, considered potential exposure risk to both workers in the on-site commercial facilities, and residential receptors located off-site, by fuel vapor intrusion into buildings from residual contamination in both underlying ground water and soil. In addition, potential on-site worker exposure and consequent cumulative (multipathway) risk through ingestion of impacted ground water was also considered as part of this evaluation.

Site specific target levels (SSTL) for both contaminant media were calculated using 95th upper confidence limit (UCL) concentrations. SSTL values for residential receptors were calculated with the conservative assumption that such receptors were located on-site. Target excess cancer risks for benzene exposures to on-site workers and off-site residents were 1E-04 and 1E-05, respectively. Target chronic hazard indices (HI) for noncarcinogens (i.e., toluene, ethylbenzene, and total xylene isomers) were 1.

Results of the Tier 2 RBCA evaluation, as revised, indicate benzene concentrations in soil and ground water do not exceed SSTLs for on-site workers. The estimated multipathway excess cancer risk to on-site workers is reported to be 6.2E-05, well below the 1E-04 target. The reported HI for potential on-site worker exposure to noncarcinogens is 6E-03, well below the acceptable HI of 1.

Benzene concentrations in ground water do not exceed the SSTL for on-site residents. Soil concentrations do exceed the SSTL for on-site residents, however. Consequently, the estimated excess cancer risk to on-site residents is reported to be 2.5E-05, above the target of 1E-05. The reported HI for potential on-site residential receptor exposure to noncarcinogens is 1E-03, also below the acceptable HI of 1.

Although the estimated excess cancer risk to on-site residential receptors exceeds the 1E-05 target, very conservative assumptions were employed during evaluation of this exposure scenario. To wit, the subject site is currently developed as a *commercial* property (e.g., Boston Market), a zoned use not anticipated to change in the foreseeable future. The closest residential property is some 80 feet southwest of the site's expanded former tank excavation. Soil parameters employed for both worker and residential exposure evaluations were based <u>not</u> on the texture of underlying native materials (silts and clays) encountered in the undisturbed portions of the site and surrounding areas, but rather on the physical nature of imported fill (i.e., Class II aggregate base and 2" drain rock) used to restore the subject site after removal of some 7500 yds^3 of fuel-impacted material. Hence, potential vapor transmission through fill materials is expected to be significantly *greater* than would be expected through native sediments where potential residential receptors are actually located.

Therefore, the reported estimated multipathway risk for workers in the on-site commercial facilities is substantially below the target risk value of 1E-04. Further, reported estimated risk for off-site residents is at an acceptable risk management level for this site based on the conservative nature of the evaluation and the cumulative evidence presented to us.

Please call me at (510) 567-6783 should you have any questions regarding the content of this letter.

Sincerely,

Scott O. Seery, CHMM
Senior Hazardous Materials Specialist

c: Mee Ling Tung,Director, Environmental Health
Tom Peacock, ACDEH LOP
Kevin Graves, RWQCB
Curt Peck, CRTC, P.O. Box 4054, Richmond, CA 94804-0054
Anna Counelis and Tula Gallenas
109 Casa Vieja Place, Orinda, CA 94563
Carl Wesenberg, Boston Market
411 Borel Ave., San Mateo CA 94402

SUMMARY REPORT

❑ TIER 1 / ■ TIER 2 RBCA SITE EVALUATION

REVISED DRAFT FINAL

P R E P A R E D F O R

Former Chevron Service Station No. 9-4930
SITE NAME

3369 Castro Valley Boulevard
Castro Valley, California
LOCATION

Chevron Research and Technology Company
PREPARED BY

July 16, 1996
DATE ISSUED

RBCA SUMMARY REPORT

Table of Contents

Site Name: Former Service Station No. 9-4930 Date Completed: July 16, 1996

Site Location: Castro Valley, California Completed By: CRTC

TIER 1 / TIER 2 RBCA REPORT INDEX

■ = ENCLOSED

		Tier 1	Tier 2
1.0 EXECUTIVE SUMMARY			
1.1	Tier 1 Executive Summary Checklist	☐	
1.2	Tier 2 Executive Summary Checklist	*	■
1.3	Executive Summary Discussion	☐	■ *(u)*
1.4	Baseline Exposure/Control Strategy Flowchart	☐	☐ *(u)*
2.0 SITE HISTORY			
2.1	Site Description	☐	☐ *(u)*
2.2	Site Ownership & Activity Record	☐	☐ *(u)*
2.3	Past Releases or Source Areas	☐	☐ *(u)*
2.4	Summary of Current & Completed Site Activities	☐	☐ *(u)*
2.5	Summary of Potential Near-Term Site Activities	☐	☐ *(u)*
3.0 SITE ASSESSMENT INFORMATION			
3.1	Regional Hydrogeologic Conditions	☐	☐ *(u)*
3.2	Hydrogeologic Site Conditions	☐	☐ *(u)*
3.3	Beneficial Use Summary	☐	☐ *(u)*
3.4	Well Inventory Survey	☐	☐ *(u)*
3.5	Ecological Assessment Summary	☐	☐ *(u)*
4.0 BASELINE EXPOSURE ASSESSMENT			
4.1	Site Classification Summary	☐	☐ *(u)*
4.2	Baseline Exposure Flowchart	☐	■ *(u)*
4.3	Tier 2 Exposure Factor Checklist	☐	☐ *(u)*
4.4	Tier 2 Exposure Pathway Screening	*	■
4.5	Tier 2 Exposure Scenarios & Risk Goals	*	■
5.0 SITE PARAMETERS			
5.1	Site Parameter Checklist for RBSLs	☐	■ *(u)*
5.2	Summary of Media Investigation and Chemical Analyses	☐	☐ *(u)*
5.3	Summary of Source Zone Characteristics	☐	☐ *(u)*
5.4	Surface Soil Concentration Data Summary	☐	☐ *(u)*
5.5	Subsurface Soil Concentration Data Summary	☐	■ *(u)*
5.6	Groundwater Concentration Data Summary	☐	■ *(u)*
5.7	Tier 2 Exposure Pathway Transport Parameters	*	■
6.0 TIER 1 RISK-BASED SCREENING LEVEL EVALUATION			
6.1	Tier 1 RBSL Evaluation: Surface Soil	☐	
6.2	Tier 1 RBSL Evaluation: Subsurface Soil	☐	
6.3	Tier 1 RBSL Evaluation: Groundwater	☐	

* = *Required for Tier 2 Evaluation only* *(u) = For Tier 2, update Tier 1 version as needed.*

Site Name: Former Service Station No. 9-4930 Date Completed: July 16, 1996

Site Location: Castro Valley, California Completed By: CRTC

TIER 1 / TIER 2 REPORT INDEX *continued*

■ = ENCLOSED

		Tier 1	Tier 2
7.0 NATURAL ATTENUATION FACTORS			
7.1	Tier 2 NAF Calculation Methods & Results	*	❑
8.0 TIER 2 BASELINE RISK CALCULATION			
8.1	Tier 2 Exposure Concentration & Intake Calculation	*	■
8.2	Tier 2 Pathway Risk Calculation	*	■
8.3	Tier 2 Baseline Risk Summary Table	*	■
9.0 TIER 2 SSTL EVALUATION			
9.1	Surface Soil SSTL Values	*	❑
9.2	Subsurface Soil SSTL Values	*	■
9.3	Groundwater SSTL Values	*	■
10.0 TIER 1 / TIER 2 CORRECTIVE ACTION ASSESSMENT			
10.1	Exposure Control Flowchart	❑	❑ *(u)*
10.2	Soil Remediation Technology Screening Matrix	❑	❑ *(u)*
10.3	Groundwater Remediation Technology Screening Matrix	❑	❑ *(u)*
ATTACHMENTS			
Figure 1	Site Location Map	❑	■ *(u)*
Figure 2	Extended Site Map	❑	■ *(u)*
Figure 3	Site Plan View	❑	■ *(u)*
Figure 4	Site Photos	❑	❑ *(u)*
Figure 5	Groundwater Elevation Map	❑	■ *(u)*
Figure 6	Geological Cross-Section(s)	❑	❑ *(u)*
Figure 7	Groundwater Plume Maps	*	■
Figure 8	Time Series Groundwater Data	*	■
APPENDICES			
Appendix A	Model Input Parameters	❑	■ *(u)*
Appendix B	Figures	❑	■ *(u)*
Appendix C	Analytical Data	❑	■ *(u)*
	(SPECIFY)		

* = *Required for Tier 2 Evaluation only* *(u) = For Tier 2, update Tier 1 version as needed.*

RBCA SUMMARY REPORT

Worksheet 1.2

Site Name: Former Service Station No. 9-4930 Date Completed: July 16, 1996

Site Location: Castro Valley, California Completed By: CRTC

TIER 2 EXECUTIVE SUMMARY CHECKLIST

TIER 2 SSTL CALCULATION METHOD (■ OR ● TO SELECT)

SSTL Calculation Option

- ☐ Option 1: Site-Specific Screening Levels
- ■ Option 2: Individual Constituent SSTL Values
- ☐ Option 3: Cumulative Constituent SSTL Values

NAF Calculation Method

- ☐ Fate and Transport Modeling:
  - ○ RBCA Spreadsheet System
  - ○ Other Model(s)
- ☐ Empirical NAF Calculation

SITE DATA INVENTORY

Source Zone Investigation Complete:

- ☐ Surface Soil (e.g., ≤ 3 ft BGS)
- ■ Subsurface Soil (e.g., > 3 ft BGS)
- ■ Groundwater

Exposure Pathway Information Compiled:

- ■ Air Pathway
- ■ Groundwater Pathway
- ☐ Soil Pathway
- ☐ Surface Water Pathway
- ☐ Land Use Classification (on-site and off-site)

TIER 1 WORKSHEETS 1.3 - 4.2 AND 5.2 - 5.8 HAVE BEEN UPDATED TO INCLUDE NEW TIER 2 INFORMATION.

TASKS COMPLETED

- ☐ Tier 1 Evaluation
- ☐ Tier 1 Interim Corrective Action
- ■ Tier 2 Evaluation
- ☐ Tier 2 Interim Corrective Action
- ☐ Tier 2 Final Corrective Action
- ☐ Tier 3 Evaluation

CURRENT SITE CLASSIFICATION

Classification No.	Scenario Description	Prescribed Interim Action	Date Implemented

TIER 2 CORRECTIVE ACTION CRITERIA

Affected Medium	Tier 2 SSTL Exceeded ?		Applicable Excess Risk Limits (specify value)				Other Applicable Exposure Limit
	Yes	No	Indiv. Risk	Total Risk	Hazard Index	Hazard Quotient	(specify, if any)
• Surface Soil (≤ 3ft BGS)	☐	☐					
• Subsurface Soil (>3ft BGS)	☐	■	10^{-4}				10^{-5}
• Groundwater	☐	■	10^{-4}				10^{-5}

PROPOSED ACTION

- ■ *No Action:* Tier 2 SSTLs not exceeded. Apply for closure.
- ☐ *Interim Corrective Action:* Address principal, near-term risks sources.
- ☐ *Final Corrective Action:* Remediate/control site to meet Tier 2 criteria.
- ☐ *Tier 3 Evaluation:* Improve baseline risk and SSTL estimates.

NOTE:
Rationale for proposed action documented on Worksheets 1.3 and 10.1-10.3.

ALL WORKSHEETS ENCLOSED IN THIS REPORT ARE IDENTIFIED ON THE TABLE OF CONTENTS FORM

Site Name: Former Service Station No. 9-4930 Date Completed: July 16, 1996

Site Location: Castro Valley, California Completed By: CRTC

EXECUTIVE SUMMARY DISCUSSION

Instructions: *Provide brief description of site history, hydrogeologic conditions, ecological assessment, possible exposure pathways, RBSL / SSTL results, and the scope of work for proposed corrective action activity. Address proposed methods, implementation schedule, cost, and anticipated risk reduction at or near the site.*

SITE DESCRIPTION AND HISTORY

• **Worksheets 2.1 - 2.5** • **Figures 1 - 4**

Briefly discuss site chronology, operations, features of potential concern, and future plans for site use.

In February 1993, the former service station No. 9-4930 and adjacent car wash buildings were demolished. In March 1993, the three underground fuel storage tanks and associated underground piping, product dispenser islands, and car wash wastewater reclamation tanks were removed. As a result of an apparent release from the underground fuel tank system, the entire northern portion of the site was excavated down to depths from 8 to 15 feet below ground surface (bgs). Approximately, 7,500 cubic yards (yd^3) of soil were excavated and removed from the site. Subsequent to excavation activities, four groundwater monitoring wells were installed onsite, and quarterly monitoring and sampling have been performed since October 1993. Historically, contamination has been detected in 3 of the 4 wells. The expected future land use of the site is commercial (specifically, a Boston Market restaurant, Noah's Bagal Shop, and parking lot with landscaping). Current offsite land uses are commerical and residential.

SITE ASSESSMENT INFORMATION

GEOLOGIC AND HYDROGEOLOGIC SUMMARY

• **Worksheets 3.1 - 3.4** • **Figures 5 and 6**

Briefly describe regional site features, climate, vadose zone soils, and groundwater depth, quality, and use.

The site lies at an elevation of approximately 170 feet above mean sea level (MSL). Surface topography at the site slopes toward the south-southwest. Soils underlying the site consist primarily of silty to gravely clay to depths of approximately 8 to 12 feet bgs. Surficial soils are clay underlain by clayey silts. In areas of the 1993 overexcavation activities, the site is underlain by a combination of 2-inch drain rock, geotextile fabric, and Class II aggregate base rock. The depth to groundwater varies from 4.8 to 8 feet bgs, with flow to the south-southwest. The hydraulic gradient ranges from approximately 0.005 to 0.010. No groundwater quality or use data are available. In the area of the site the average mean temperature is about 57°F, and the mean annual precipitation is approximately 19 inches.

BASELINE EXPOSURE ASSESSMENT

COMPLETE EXPOSURE PATHWAYS AND APPLICABLE RECEPTORS

• **Worksheets 4.1 - 4.5**

Discuss current or potentially complete pathways for human or ecological exposure to site constituents.

There are no current complete exposure pathways. Potentially complete future exposure pathways include:

- Onsite worker inhalation of indoor air (i.e., vapor intrusion to buildings from subsurface soils).
- Onsite worker inhalation of indoor air (i.e., vapor intrusion to buildings from groundwater).
- Onsite worker ingestion of groundwater.
- Offsite resident inhalation of indoor air (This pathway was evaluated assuming that future residents are located onsite and are exposed to indoor air vapors from both subsurface soils and groundwater).

There are no identified complete ecological exposure pathways.

ECOLOGICAL ASSESSMENT SUMMARY

• **Worksheet 3.5**

Discuss potentially sensitive ecological receptors and habitat in the vicinity of site, if any.

Areas surrounding the site do not contain wetlands, streams or springs. The nearest surface water to the site is an unnamed tributary of San Lorenzo Creek which flows south-southwest to the San Francisco Bay. The unnamed tributary is located approximately 1,500 feet to the east of the site. Potentially sensitive ecological receptors are not known.

EXECUTIVE SUMMARY DISCUSSION Continued

TIER 1 RBSL OR TIER 2 SSTL EVALUATION

COMPARISON TO SOURCE MEDIA CONCENTRATIONS

• Worksheets 5.1 - 5.7 • Figures 7 and 8

For complete pathways, compare representative source concentrations to applicable RBSL or SSTL values.

Tier 2 Worksheet 9.2a - SSTL value for worker inhalation of benzene in indoor air from subsurface soil (> 3 ft bgs) is 1.2 mg/kg. The representative onsite subsurface soil concentratration of benzene is 0.6 mg/kg.

Tier 2 Worksheet 9.2b - SSTL value for resident inhalation of benzene in indoor air from subsurface soil is 0.27 mg/kg. The representative onsite subsurface soil concentratration of benzene is 0.6 mg/kg.

Tier 2 Worksheet 9.3a - SSTL value for worker exposure to benzene in groundwater is 0.99 mg/L. The representative onsite groundwater concentratration of benzene is 0.073 mg/L.

Tier 2 Worksheet 9.3b - SSTL value for resident exposure to benzene in groundwater is 0.26 mg/L. The representative onsite groundwater concentratration of benzene is 0.073 mg/L.

QUALITATIVE UNCERTAINTY ASSESSMENT

• Worksheets 4.2, 4.4, and 5.1 - 5.7

Discuss uncertainty / conservatism of the site data and calculation methods used in deriving RBSL or SSTL values.

The potential for human or ecological exposure to hydrocarbon impacted soil, air and groundwater is minimal because SSTL values maintain a degree of conservativism that would be protective of human health and the environment. Estimation of SSTL values tend to err on the side of conservativism and likely results in risks below the acceptable excess risk limit range.

SSTL values for potential residential receptors were calculated assuming that residents are located onsite in the future. This assumption is conservative and, given the past and present onsite and offsite land uses, this scenario is expected to be unlikely.

PROPOSED CORRECTIVE ACTION

• Worksheets 10.1 - 10.3

Describe rationale for proposed action (i.e., no action, interim action, final action, or tier upgrade), considering site classification and land use. Discuss basis for remedy selection, if applicable.

The recommended final corrective action for the site is closure. Based on the results of this evaluation, the 95th UCL concentrations of benzene in groundwater and subsurface soils do not exceed SSTLs for potential exposures to onsite workers and residents, with the exception of onsite resident exposure to benzene in subsurface soil. The estimated excess cancer risks for potential onsite workers, 6 x 10^{-5}, and residents, 3 x 10^{-5}, exposed to benzene in groundwater and subsurface soil are within the acceptable excess cancer risk range from 10^{-6} to 10^{-4}. The hazard indices for potential onsite workers, 6 x 10^{-3}, and residents, 1 x 10^{-2}, exposed to ethylbenzene, toluene and xylenes in subsurface soil and groundwater, are less than the acceptable noncancer limit of 1.0. Additionally, groundwater at the site is currently not used as a drinking water source, is not expected to be used as a drinking water source in the future, and is likely to be supplied from a municipal drinking water source. Moreover, there is no continuing source of hydrocarbon emissions. The UST system and associated piplines have been removed, and in the northern portion of the site 7,500 yd^3 of soil have been excavated and removed down to 15 ft bgs. Finally, through natural attenuation, concentrations of chemicals are expected to decrease to lower concentrations than currently detected.

REFERENCE DOCUMENTS

• Appendices

List the document sources for the data cited in this report.

- Blaine Tech Services. 1996. Groundwater Monitoring and Sampling Results. Former Chevron Service Station 9-4930. Project No. 96016-T-1. 2nd Quarter.
- Pacific Environmental Group, Inc. 1996. Soil and Groundwater Investigation. Former Chevron Service Station 9-4930. Project No. 320-156.1A. April 18.
- Touchstone Developments. 1993. Tank/Line Removal and Over-Excavation Report. Former Chevron Service Station 9-4930. Project No. 4930. June 5.

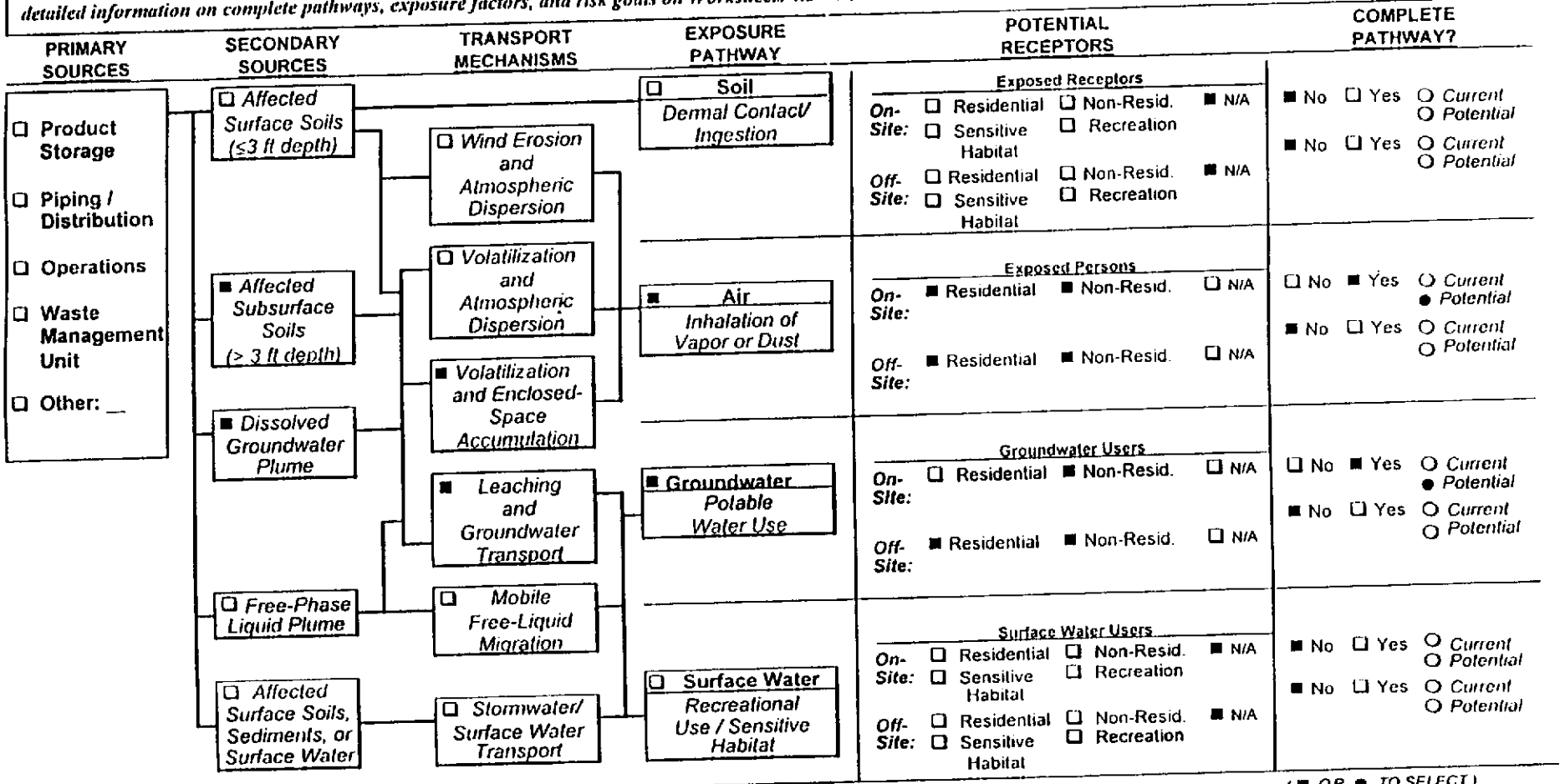
RBCA SUMMARY REPORT

Worksheet 4.2

Site Name: Former Service Station No. 9-4930
Site Location: Castro Valley, California
Date Completed: July 16, 1996
Completed by: CRTC

BASELINE EXPOSURE FLOWCHART

Instructions: *To characterize baseline exposure conditions, check boxes to identify applicable primary sources, secondary sources (affected media), potential transport mechanisms, and current or potential exposure pathways and receptors (■ = applicable to site). Identify types(s) of both on-site and off-site receptors, if applicable. Provide detailed information on complete pathways, exposure factors, and risk goals on Worksheets 4.3 - 4.5.*



Site Name: Former Service Station No. 9-4930
Site Location: Castro Valley, California
Date Completed: July 16, 1996
Completed By: CRTC

TIER 2 EXPOSURE PATHWAY SCREENING

Instructions: *Exposure pathways screening involves the following steps:*

1) Source Medium: Compare maximum constituent concentration in relevant source medium to applicable Tier 1 RBSL value for designated pathway.

2) Transport Mechanism: Transport is active at site if: a) relevant source medium is affected, b) exposure medium or receptor exists, and c) constituent transport from source to receptor could occur under current or anticipated future use.

3) Exposure Medium: For pathways under steady-state transport conditions (e.g., air), compare measured COC concentration at POE to applicable Tier 1 exposure limit for air, groundwater, or soil. Surface water concentrations should be compared to applicable state or federal water quality criteria.

4) Complete Pathway: For screening, pathway considered complete if "Yes" reported in Column A and either Column B or C.

Notes:
RBSL = Risk-Based Screening Level
POE = Point of Exposure
COC = Constituent of Concern
NM = Not Measured

PATHWAY	A) SOURCE MEDIUM: Type	A) SOURCE MEDIUM: Pathway Tier 1 RBSL Exceeded?	B) TRANSPORT MECHANISM: Type	B) TRANSPORT MECHANISM: Active at Site?	C) EXPOSURE MEDIUM: Type	C) EXPOSURE MEDIUM: Exposure Limit Exceeded at POE?	COMPLETE PATHWAY? (Check if yes & specify status)
AIR EXPOSURE PATHWAYS		(■ *TO SELECT*)					
1) *Surface Soils:* Vapor Inhalation and Dust Ingestion	Surface Soil	☐ Yes ■ No	Volatilization /Dust Transport	■ No ☐ Yes - Current ☐ Yes - Future	Ambient Air	■ NM ☐ No ☐ Yes	☐ Current ☐ Potential
2) *Subsurface Soils:* Volatilization to Ambient Air	Subsurface Soil	☐ Yes ■ No	Volatilization	■ No ☐ Yes - Current ☐ Yes - Future	Ambient Air	■ NM ☐ No ☐ Yes	☐ Current ☐ Potential
3) *Subsurface Soils:* Volatilization to Enclosed Space	Subsurface Soil	■ Yes ☐ No	Volatilization	☐ No ☐ Yes - Current ■ Yes - Future	Indoor Air	■ NM ☐ No ☐ Yes	☐ Current ■ Potential
4) *Groundwater:* Volatilization to Ambient Air	Groundwater	☐ Yes ■ No	Volatilization	■ No ☐ Yes - Current ☐ Yes - Future	Ambient Air	■ NM ☐ No ☐ Yes	☐ Current ☐ Potential
5) *Groundwater:* Volatilization to Enclosed Space	Groundwater	■ Yes ☐ No	Volatilization	☐ No ☐ Yes - Current ■ Yes - Future	Indoor Air	■ NM ☐ No ☐ Yes	☐ Current ■ Potential
GROUNDWATER EXPOSURE PATHWAYS							
6) *Soil:* Leaching to Groundwater: Ingestion	Surface or Subsurface Soils	☐ Yes ■ No	Leaching /Groundwater Flow	■ No ☐ Yes - Current ☐ Yes - Future	Groundwater	☐ NM ☐ No ■ Yes	☐ Current ☐ Potential
7) *Dissolved or Free-Phase Groundwater Plume:* Ingestion	Groundwater	■ Yes ☐ No	Groundwater Flow	☐ No ☐ Yes - Current ■ Yes - Future	Groundwater	☐ NM ☐ No ■ Yes	☐ Current ■ Potential
SOIL EXPOSURE PATHWAY							
8) *Surface Soils:* Dermal Contact /Ingestion	Surface Soil	☐ Yes ■ No	Direct Contact	■ No ☐ Yes - Current ☐ Yes - Future	Soil	■ NM ☐ No ☐ Yes	☐ Current ☐ Potential

Site Name: Former Service Station No. 9-4930
Site Location: Castro Valley, California
Date Completed: June 20, 1996
Completed By: CRTC

TIER 2 EXPOSURE PATHWAY SCREENING *CONTINUED*

PATHWAY	A) SOURCE MEDIUM: Type	A) SOURCE MEDIUM: Pathway Tier 1 RBSL Exceeded?	B) TRANSPORT MECHANISM: Type	B) TRANSPORT MECHANISM: Active at Site?	C) EXPOSURE MEDIUM: Type	C) EXPOSURE MEDIUM: Exposure Limit Exceeded at POE?	COMPLETE PATHWAY? (Check if yes & specify status)
SURFACE WATER PATHWAYS							
9) *Soil:* Leaching to Groundwater /Discharge to Surface Water: Recreation or Fish	Surface or Subsurface Soils	☐ Yes ■ No	Leaching /Groundwater Flow	■ No ☐ Yes - Current ☐ Yes - Future	Surface Water	■ NM ☐ No ☐ Yes	☐ Current ☐ Potential
10) *Groundwater Plume:* Discharge to Surface Water: Recreation or Fish	Groundwater	☐ Yes ■ No	Groundwater Flow	■ No ☐ Yes - Current ☐ Yes - Future	Surface Water	■ NM ☐ No ☐ Yes	☐ Current ☐ Potential
11) *Soil :* Leaching to Stormwater / Discharge to Surface Water: Recreation or Fish	Surface Soils	☐ Yes ■ No	Overland Flow	■ No ☐ Yes - Current ☐ Yes - Future	Surface Water	■ NM ☐ No ☐ Yes	☐ Current ☐ Potential

Additional Information: ***Provide necessary background discussion for data provided above. Also, if ecological exposure pathway identified on Worksheet 3.5, identify relevant source medium, transport mechanism, exposure medium, and receptor type below.***

RBCA SUMMARY REPORT | **Worksheet 4.5**

Site Name: Former Service Station No. 9-4930 | Date Completed: July 16, 1996

Site Location: Castro Valley, California | Completed By: CRTC

TIER 2 EXPOSURE SCENARIOS AND RISK GOALS

Instructions: *For each exposure pathway, indicate i) Point of Exposure (POE) location (on-site, off-site, or both), ii) applicable exposure scenario at each POE (residential or commercial / industrial), and iii) applicable risk goals. Distance from source corresponds to shortest lateral distance to applicable POE from point of maximum COC concentration in source medium along possible migration pathway. Provide exposure limit information if applicable (e.g., OSHA Limits, MCLs, etc.).* (■ *TO SELECT*)

EXPOSURE PATHWAY	DISTANCE FROM SOURCE	EXPOSURE SCENARIO AT POE	TARGET RKSKS AT POE: Individual Constituent Effects — Indiv. Risk	Indiv. HQ	Cumulative Constituent Effects — Additive Risk	Additive HI	Other Exposure Limit (specify if applicable)
AIR EXPOSURE PATHWAYS		■ COMPLETE (provide data) ☐ NOT COMPLETE (skip to next pathway)					
■ On-Site POE	0 ft	■ Residential ■ Commercial /Industrial	10^{-5}, 10^{-4}	1.0			☐ PEL/TLV
☐ Off-Site POE	____ ft	☐ Residential ☐ Commercial /Industrial					☐ PEL/TLV
GROUNDWATER EXPOSURE PATHWAYS		■ COMPLETE (provide data) ☐ NOT COMPLETE (skip to next pathway)					
■ On-Site POE	0 ft	☐ Residential ■ Commercial /Industrial	10^{-5}, 10^{-4}	1.0			☐ MCL
☐ Off-Site POE	____ ft	☐ Residential ☐ Commercial /Industrial					☐ MCL
SOIL EXPOSURE PATHWAY		☐ COMPLETE (provide data) ■ NOT COMPLETE (skip to next pathway)					
☐ On-Site POE: (at source)		☐ Residential ☐ Commercial /Industrial					☐ ____
☐ Off-Site POE: (at source)		☐ Residential ☐ Commercial /Industrial					☐ ____
SURFACE WATER EXPOSURE PATHWAYS		☐ COMPLETE (provide data) ■ NOT COMPLETE (skip to next pathway)					
☐ On-Site POE	____ ft	☐ Recreational ☐ Ecological *(specify exp. limit only)*					☐ ____
☐ Off-Site POE	____ ft	☐ Recreational ☐ Ecological *(specify exp. limit only)*					☐ ____

ADDITIONAL INFORMATION:

If exposure limit is specified, provide reference for concentration limits to be applied to each COC (e.g., OSHA limits, water quality criteria, etc.):

RBCA SUMMARY REPORT | **Worksheet 5.1**

Site Name: Former Service Station No.9-4930 | Date Completed: July 16, 1996

Site Location: Castro Valley, California | Completed By: CRTC

SITE PARAMETER CHECKLIST FOR RISK-BASED SCREENING LEVELS

Instructions: *For Tier 1 evaluation (generic screening levels), review specified default parameters (*) to ensure values are conservative for site. For Tier 2 Option 1 SSTL calculation (site-specific screening levels), provide site-specific values for sensitive parameters (§). Indicate parameter value used in evaluation by completing check box (■).*

Note: * Confirm conservatism of these values for Tier 1 evaluation.

§ Provide site-specific measurement or estimate for Tier 2 evaluation.

		Default Value Used	*Site-Specific Value Used*	
Soil Parameters				
	soil type	❑ sandy soil	■ silty sand soil	*§
Θ_T	Soil porosity	❑ 0.38 (dim)	■ 0.48	§
Θ_{ws}	water content - vadose zone	❑ 0.12 (dim)	■ 0.14	§
Θ_{as}	air content - vadose zone (= Θ_T - Θ_{ws})	❑ 0.26 (dim)	■ 0.31	
Θ_{wcap}	water content - capillary fringe	❑ 0.342 (dim)	■ 0.392	
Θ_{acap}	air content - capillary fringe (= Θ_T - Θ_{wcap})	❑ 0.038 (dim)	■ 0.058	
ρ_s	Soil density	■ 1.7 g/cm^3	❑	§
foc	mass fraction of organic carbon in soil	❑ 0.01 (dim)	■ 0.001	§
Ls	Depth to contaminated soil	❑ 100 cm	■ 140 cm	§
Lgw	Depth to groundwater	❑ 300 cm	■ 200 cm	§
h_{cap}	capillary zone thickness	❑ 5 cm	■ 15 cm	
hv	vadose zone thickness (= Lgw - hc)	❑ 295 cm	■ 180 cm	
pH	Soil/water pH	■ 6.5	❑	
Groundwater Parameters				
I	Water infiltration rate	■ 30 cm/yr	❑	§
V_{gw}	groundwater velocity	❑ 82.0 ft/yr	■ 24 cm/yr	*§
δ_{gw}	groundwater mixing zone depth	■ 200 cm	❑	*§
DF	aquifer dilution factor (= 1 + V_{gw} δ_{gw}/ (IW))	❑ 12.1	■ 1.06	
Surface Parameters				
U_{air}	Amb. air velocity in mixing zone	■ 225 cm/s	❑	*§
δ_{air}	Mixing zone height	■ 200 cm	❑	*§
A	Contaminated Area	❑ 2250000 cm^2	■ 8,000,000 cm^2	
W	Width of Contaminated Area	❑ 1500 cm	■ 2,828 cm	§
d	Thickness of Surficial Soils	❑ 100 cm	■ 91.44 cm	§
Pe	Particulate areal emission rate	■ 2.17E-10 g/cm^2-s	❑	§
Building Parameters				
L_{crack}	Foundation crack thickness	■ 15 cm	❑	
η	Foundation crack fraction	■ 0.01 (dim)	❑	
Lb_r	Building Volume/Foundation Area Ratio (res.)	■ 200 cm	❑	
Lb_c	Building Volume/Foundation Area Ratio (com./ind.)	■ 300 cm	❑	
ER_r	Building vapor volume exchange rate (res.)	■ 12 dy^{-1}	❑	
ER_c	Building vapor volume exchange rate (com./ind.)	■ 20 dy^{-1}	❑	

Discussion: *Provide rationale for default parameter revision; discuss additional site-specific features of note; etc.*

Ls. Depth to contaminated soil = Sample location NE-6 with benzene concentration of 0.056 mg/kg.

(continue on next page if needed)

Site Name: Former Service Station No. 9-9430
Site Location: Castro Valley, California

Date Completed: July 16, 1996
Completed By: CRTC

SUBSURFACE SOIL CONCENTRATION DATA SUMMARY (>3 FT BGS)

Instructions: *Indicate type and concentrations of hazardous constituents detected in subsurface soil. Provide statistical data (maximum value, mean value, upper 90% confidence limit on mean) on detectable concentrations only. Do not include non-detects from outside of source zone. Select "representative concentration" value for comparison to cleanup standard (SSTL or RBSL) and calculation of baseline risk. Provide detailed lab data table(s) as Appendix A to this report.*

CONSTITUENTS DETECTED		ANALYTICAL METHOD		SAMPLE POPULATION		DETECTED CONCENTRATIONS			SELECTED REPRESENTATIVE CONC. (mg/kg)
CAS No.	Name	Method No.	Typical Detection Limit (mg/kg)	No. of Samples	No. of Detects	Max Conc. (mg/kg)	Mean Conc. (mg/kg)	Upper 95%CI Conc. (mg/kg)	
71-43-2	Benzene	8020	0.005	25	25	3.9	0.33	0.6	0.6
100-41-4	Ethylbenzene	8020	0.005	25	25	77	2.1	4.5	4.5
108-88-3	Toluene	8020	0.005	25	25	17	0.46	0.93	0.93
1330-20-7	Xylene (mixed isomers)	8020	0.005	25	25	360	7.1	16	16

See Appendix C for analytical data.

Site Name: Former Service Station No. 9-4930
Site Location: Castro Valley, California

Date Completed: July 16, 1996
Completed By: CRTC

GROUNDWATER CONCENTRATION DATA SUMMARY

Instructions: *Indicate type and concentrations of hazardous constituents detected in groundwater. Provide statistical data (maximum value, mean value, upper 90% confidence limit on mean) on detectable concentrations only. Do not include non-detects from outside of source zone. Select "representative concentration" value for comparison to cleanup standard (SSTL or RBSL) and calculation of baseline risk. Provide detailed lab data table(s) as Appendix A to this report.*

CONSTITUENTS DETECTED		ANALYTICAL METHOD		SAMPLE POPULATION		DETECTED CONCENTRATIONS			SELECTED REPRESENTATIVE CONC. (mg/L)
CAS No.	Name	Method No.	Typical Detection Limit (mg/L)	No. of Samples	No. of Detects	Max Conc. (mg/L)	Mean Conc. (mg/L)	Upper 95%CL Conc. (mg/L)	
71-43-2	Benzene	8020	0.005	28	28	0.18	0.057	0.073	0.073
100-41-4	Ethylbenzene	8020	0.005	28	28	0.14	0.039	0.051	0.051
108-88-3	Toluene	8020	0.005	28	28	0.0095	0.0021	0.003	0.003
1330-20-7	Xylene (mixed isomers)	8020	0.005	28	28	0.19	0.006	0.009	0.009

See Appendix C for analytical data.

Site Name: Former Service Station No.9-4930 Date Completed: July 16, 1996

Site Location: Castro Valley, California Completed By: CRTC

TIER 2 EXPOSURE PATHWAY TRANSPORT PARAMETERS

Instructions: *For complete exposure pathways, provide site-specific values for transport parameters. In absence of direct measurements, default values may be selected for some parameters, as shown below. If no default value shown, site-specific value must be provided.*

TRANSPORT PARAMETER		SITE-SPECIFIC VALUE (INPUT VALUE BELOW)	DEFAULT VALUE (■ TO SELECT)
AIR PARAMETERS			
δ_{air}	Air mixing zone height (cm)		■ 200
U_{air}	Ambient air velocity in mixing zone (cm/sec)		■ 225
Pe	Soil particulate areal emission rate (g/cm^2-sec)		■ 2.17E-10
σ_y	Transverse air dispersion coeff. (m)		■ 100
σ_z	Vertical air dispersion coeff. (m)		■ 10
GROUNDWATER PARAMETERS			
δ_{gw}	Groundwater mixing zone depth (cm)		■ 200
I	Water infiltration rate (cm/yr)		■ 30
V_{gw}	Groundwater Darcy velocity (ft/yr)	24 cm/yr	
K	Saturated hydraulic conductivity (cm/sec)	0.0001	
i_{grad}	Lateral groundwater flow gradient (dim)	0.0075	
$(BC)_i$	Available biodegradation capacity of electron acceptors for constituent *I*		
x	Distance to POE from point of maximum COC concentration in groundwater (ft)	0	
α_x	Longitudinal groundwater dispersion coeff. (cm)		■ 10% of x
α_y	Transverse groundwater dispersion coeff. (cm)		■ 33% of α_x
α_z	Vertical groundwater dispersion coeff. (cm)		■ 5% of α_z
SOIL PARAMETERS			
h_{cap}	Capillary zone thickness (cm)	15	☐ 5
h_v	Vadose zone thickness (cm)	180	
ρ_s	Soil bulk density (g/cm^3)		■ 1.7
foc_s	Fraction organic carbon in soil leaching zone (dim)	0.001	☐ 0.01
foc_{gw}	Fraction organic carbon in water-bearing unit (dim)		■ 0.001
L_{gw}	Depth to groundwater (cm)	200	
Θ_T	Soil porosity (dim)	0.45	☐ 0.38
	Soil volumetric water content (dim)		
Θ_{wcap}	• Capillary zone	0.392	☐ 0.342
Θ_{ws}	• Vadose zone	0.14	☐ 0.12
Θ_{wcrack}	• Foundation crack	0.14	☐ 0.12

Site Name: Former Service Station No.9-4930 Date Completed: July 16, 1996

Site Location: Castro Valley, California Completed By: CRTC

TIER 2 EXPOSURE PATHWAY TRANSPORT PARAMETERS *CONTINUED*

TRANSPORT PARAMETER		SITE-SPECIFIC VALUE (INPUT VALUE BELOW)	DEFAULT VALUE (■ TO SELECT)	
SOIL PARAMETERS (Continued)				
	Soil volumetric air content (dim)			
Θ_{acap}	•Capillary zone	0.058	❑ 0.038	
Θ_{as}	•Vadose zone	0.31	❑ 0.26	
Θ_{acrack}	•Foundation crack	0.31	❑ 0.26	
d	Thickness of surficial soil zone (cm)	91.44	❑ 100 cm	
BUILDING PARAMETERS				
			Resid.	Comm/ Ind.
L_b	Building volume/area ratio (cm)		■ 200	■ 300
ER	Building air exchange rate (dy^{-1})		■ 12	■ 20
L_{crack}	Foundation crack thickness (cm)		■ 15	
η	Foundation crack fraction		■ 0.01	

Additional Information:

RBCA SITE ASSESSMENT | Tier 2 Worksheet 8.1a

Site Name: Former Service Station No 9-4930 | Site Location: Castro Valley, California | Completed By: CRTC | Date Completed 7/16/1996

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

SUBSURFACE SOILS: VAPOR INHALATION

Constituents of Concern	Exposure Concentration 1) Source Medium: Subsurface Soil Conc (mg/kg)	2) NAF Value (m^3/kg) Receptor: On Site Commercial	2) NAF Value (m^3/kg) Receptor: Off Site Commercial	3) Exposure Medium Air POE Conc (mg/m^3) (1) / (2): On Site Commercial	3) Exposure Medium Air POE Conc (mg/m^3) (1) / (2): Off Site Commercial	4) Exposure Multiplier (IR x ET x EF x ED) / (BW x AT) (m^3/kg day): On Site Commercial	4) Exposure Multiplier (IR x ET x EF x ED) / (BW x AT) (m^3/kg day): Off Site Commercial	5) Average Daily Intake Rate (mg/kg day) (3) X (4): On Site Commercial	5) Average Daily Intake Rate (mg/kg day) (3) X (4): Off Site Commercial	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from surface & subsurface routes): On Site Commercial	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from surface & subsurface routes): Off Site Commercial
Benzene	6 0E-1	6.1E+4		9 9E-6						0 0E+0	0 0E+0
Ethylbenzene	4 5E+0	6 1E+4		7 5E-5						0 0E+0	0 0E+0
Toluene	9 3E-1	6 1E+4		1 5E-5						0 0E+0	0 0E+0
Xylene (mixed isomers)	1 6E+1	6 1E+4		2 6E-4						0 0E+0	0 0E+0

NOTE ABS = Dermal absorption factor (dim)
AF = Adherance factor
AT = Averaging time (days)
BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = intake rate (L/day or mg/day)
POE = Point of exposure
SA = Skin surface area (cm^2)

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RBCA SITE ASSESSMENT | Tier 2 Worksheet 8.1a

Site Name: Former Service Station No. 9-4930 | Site Location: Castro Valley, California | Completed By: CRTC | Date Completed 7/16/1996

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: INGESTION

Constituents of Concern	Exposure Concentration: 1) Source Medium — Groundwater Concentration (mg/L)	2) NAF Value (dim) — Receptor: On-Site Commercial	2) NAF Value (dim) — Receptor: Off-Site Commercial	3) Exposure Medium — Groundwater, POE Conc. (mg/L) (1)/(2): On-Site Commercial	3) Exposure Medium — Groundwater, POE Conc. (mg/L) (1)/(2): Off-Site Commercial	4) Exposure Multiplier (IRxEFxED)/(BWxAT) (L/kg-day): On-Site Commercial	4) Exposure Multiplier (IRxEFxED)/(BWxAT) (L/kg-day): Off-Site Commercial	5) Average Daily Intake Rate (mg/kg-day): On-Site Commercial	5) Average Daily Intake Rate (mg/kg-day): Off-Site Commercial	MAX. PATHWAY INTAKE (mg/kg-day) (Maximum intake of active pathways soil leaching & groundwater routes): On-Site Commercial	MAX. PATHWAY INTAKE (mg/kg-day) (Maximum intake of active pathways soil leaching & groundwater routes): Off-Site Commercial
Benzene	7.3E-2	1.0E+0	1.0E+0	7.3E-2	7.3E-2	3.5E-3	3.5E-3	2.5E-4	2.5E-4	2.5E-4	2.5E-4
Ethylbenzene	5.1E-2	1.0E+0	1.0E+0	5.1E-2	5.1E-2	9.8E-3	9.8E-3	5.0E-4	5.0E-4	5.0E-4	5.0E-4
Toluene	2.8E-3	1.0E+0	1.0E+0	2.8E-3	2.8E-3	9.8E-3	9.8E-3	2.7E-5	2.7E-5	2.7E-5	2.7E-5
Xylene (mixed isomers)	9.4E-3	1.0E+0	1.0E+0	9.4E-3	9.4E-3	9.8E-3	9.8E-3	9.2E-5	9.2E-5	9.2E-5	9.2E-5

NOTE: AT = Averaging time (days)
BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp. duration (yrs)
EF = Exposure frequency (days/yr)
IR = Intake rate (L/day or mg/day)
POE = Point of exposure

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Site Name: Former Service Station No. 9-4930 Site Location: Castro Valley, California Completed By: CRTC Date Completed 7/15/1996

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

☐ (CHECKED IF PATHWAY IS ACTIVE)

AIR EXPOSURE PATHWAYS

SUBSURFACE SOILS: VAPOR INHALATION

Constituents of Concern	Exposure Concentration 1) Source Medium: Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor: On Site Residential	2) NAF Value (m^3/kg) Receptor: Off Site Residential	3) Exposure Medium Air POE Conc. (mg/m^3) (1) / (2): On Site Residential	3) Exposure Medium Air POE Conc. (mg/m^3) (1) / (2): Off Site Residential	4) Exposure Multiplier [IRxETxEFxEDx(1/BWxAT)] (m^3/kg-day): On Site Residential	4) Exposure Multiplier [IRxETxEFxEDx(1/BWxAT)] (m^3/kg-day): Off Site Residential	5) Average Daily Intake Rate (mg/kg-day) (3) X (4): On Site Residential	5) Average Daily Intake Rate (mg/kg-day) (3) X (4): Off Site Residential	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from surface & subsurface routes): On Site Residential	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from surface & subsurface routes): Off Site Residential
Benzene	6.0E-1	7.3E+4		8.3E-6						0.0E+0	0.0E+0
Ethylbenzene	4.5E+0	7.3E+4		6.2E-5						0.0E+0	0.0E+0
Toluene	9.3E-1	7.3E+4		1.3E-5						0.0E+0	0.0E+0
Xylene (mixed isomers)	1.6E+1	7.3E+4		2.2E-4						0.0E+0	0.0E+0

NOTE ABS = Dermal absorption factor (dim)
AF = Adherance factor
AT = Averaging time (days)
BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp. duration (yrs)
EF = Exposure frequency (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (L/day or mg/day)
POE = Point of exposure
SA = Skin surface area (cm^2)

Serial G-411-ZHX-574 Software GSI RBCA Spreadsheet Version v1.0

RBCA SITE ASSESSMENT | Tier 2 Worksheet 8.2a

Site Name: Former Service Station No. 9-4930 | Site Location: Castro Valley, California | Completed By: CRTC | Date Completed: 7/16/1996

TIER 2 PATHWAY RISK CALCULATION

☐ (CHECKED IF PATHWAYS ARE ACTIVE)

AIR EXPOSURE PATHWAYS

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK: (2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Commercial	(2) Total Carcinogenic Intake Rate (mg/kg/day) Off-Site Commercial	(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site Commercial	(4) Individual COC Risk (2) x (3) Off-Site Commercial	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Commercial	(5) Total Toxicant Intake Rate (mg/kg/day) Off-Site Commercial	TOXIC EFFECTS: (6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Commercial	(7) Individual COC Hazard Quotient (5) / (6) Off-Site Commercial
Benzene	A	0.0E+0	0.0E+0	2.9E-2	0.0E+0	0.0E+0	1.9E-6	0.0E+0	1.7E-3	1.1E-3	0.0E+0
Ethylbenzene	D						0.0E+0	0.0E+0	2.9E-1	0.0E+0	0.0E+0
Toluene	D						0.0E+0	0.0E+0	1.1E-1	0.0E+0	0.0E+0
Xylene (mixed isomers)	D						0.0E+0	0.0E+0	2.0E+0	0.0E+0	0.0E+0
Total Pathway Carcinogenic Risk =					0.0E+0	0.0E+0	*Total Pathway Hazard Index =*			1.1E-3	0.0E+0

Serial: G-411-ZHX-574 | Software: GSI RBCA Spreadsheet Version: v 1.0

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.2a**

Site Name: Former Service Station No 9-4930 Site Location: Castro Valley, California Completed By: CRTC Date Completed 7/16/1996

TIER 2 PATHWAY RISK CALCULATION

GROUNDWATER EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAYS ARE ACTIVE)

	CARCINOGENIC RISK							TOXIC EFFECTS		
Constituents of Concern	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Commercial	(2) Total Carcinogenic Intake Rate (mg/kg/day) Off-Site Commercial	(3) Oral Slope Factor (mg/kg day)^-1	(4) Individual COC Risk (2) x (3) On-Site Commercial	(4) Individual COC Risk (2) x (3) Off-Site Commercial	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Commercial	(5) Total Toxicant Intake Rate (mg/kg/day) Off-Site Commercial	(6) Oral Reference Dose (mg/kg day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Commercial	(7) Individual COC Hazard Quotient (5) / (6) Off-Site Commercial
Benzene	A	2.5E-4	2.5E-4	2.9E-2	7.4E-6	7.4E-6	5.0E-4	5.0E-4	1.0E-1	5.0E-3	5.0E-3
Ethylbenzene	D						2.7E-5	2.7E-5	2.0E-1	1.4E-4	1.4E-4
Toluene	D						9.2E-5	9.2E-5	2.0E+0	4.6E-5	4.6E-5
Xylene (mixed isomers)	D										
Total Pathway Carcinogenic Risk =					7.4E-6	7.4E-6	*Total Pathway Hazard Index =*			5.2E-3	5.2E-3

Serial: G-411-ZHX-5/4 Software: GSI RBCA Spreadsheet Version: v 1.0

RBCA SITE ASSESSMENT | Tier 2 Worksheet 8.2b

Site Name: Former Service Station No. 9-4930 | Site Location: Castro Valley, California | Completed By: CRTC | Date Completed: 7/15/1996

TIER 2 PATHWAY RISK CALCULATION

☐ (CHECKED IF PATHWAYS ARE ACTIVE)

AIR EXPOSURE PATHWAYS

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK: (2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Residential	Off-Site Residential	(3) Inhalation Slope Factor (mg/kg day)^-1	(4) Individual COC Risk (2) x (3) On-Site Residential	Off-Site Residential	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Residential	Off-Site Residential	TOXIC EFFECTS: (6) Inhalation Reference Dose (mg/kg day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Residential	Off Site Residential
Benzene	A	0 0E+0	0 0E+0	2 9E-2	0.0E+0	0 0E+0	2.3E-6	0 0E+0	1 7E-3	1 3E-3	0 0E+0
Ethylbenzene	D						0 0E+0	0 0E+0	2 9E-1	0 0E+0	0 0E+0
Toluene	D						0 0E+0	0 0E+0	1 1E-1	0 0E+0	0 0E+0
Xylene (mixed isomers)	D						0 0E+0	0 0E+0	2 0E+0	0 0E+0	0 0E+0
Total Pathway Carcinogenic Risk =					0.0E+0	0.0E+0	*Total Pathway Hazard Index =*			1.3E-3	0.0E+0

Serial G-411-ZHX-574

Software GSI RBCA Spreadsheet Version v 1 0

RBCA SITE ASSESSMENT

Tier 2 Worksheet 8.3a

Future Onsite Worker Scenario

Site Name: Former Service Station No. 9-4930
Site Location: Castro Valley, California

Completed By: CRTC
Date Completed: 7/16/1996

TIER 2 BASELINE RISK SUMMARY TABLE

EXPOSURE PATHWAY	BASELINE CARCINOGENIC RISK: Individual COC Risk – Maximum Value	Individual COC Risk – Target Risk	Cumulative COC Risk – Total Value	Cumulative COC Risk – Target Risk	Risk Limit(s) Exceeded?	BASELINE TOXIC EFFECTS: Hazard Quotient – Maximum Value	Hazard Quotient – Applicable Limit	Hazard Index – Total Value	Hazard Index – Applicable Limit	Toxicity Limit(s) Exceeded?
AIR EXPOSURE PATHWAYS										
Complete:	5.5E-5	1.0E-4	5.5E-5	N/A	☐	1.1E-3	1.0E+0	1.1E-3	N/A	☐
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	7.4E-6	1.0E-4	7.4E-6	N/A	☐	5.2E-3	1.0E+0	5.2E-3	N/A	☐
SOIL EXPOSURE PATHWAYS										
Complete:	0.0E+0	1.0E-4	0.0E+0	N/A	☐	0.0E+0	1.0E+0	0.0E+0	N/A	☐
MULTI EXPOSURE PATHWAY										
	6.2E-5	1.0E-4	6.2E-5	N/A	☐	6.3E-3	1.0E+0	6.3E-3	N/A	☐

Serial: G-411-ZHX-

Software: GSI RBCA Spreadsheet
Version: v 1.0

RBCA SITE ASSESSMENT

Tier 2 Worksheet 8.3b

Future Onsite Resident Scenario

Site Name: Former Service Station No. 9-4930
Site Location: Castro Valley, California

Completed By: CRTC
Date Completed: 7/15/1996

TIER 2 BASELINE RISK SUMMARY TABLE

	BASELINE CARCINOGENIC RISK					BASELINE TOXIC EFFECTS				
	Individual COC Risk		Cumulative COC Risk		Risk Limit(s) Exceeded?	Hazard Quotient		Hazard Index		Toxicity Limit(s) Exceeded?
EXPOSURE PATHWAY	Maximum Value	Target Risk	Total Value	Target Risk		Maximum Value	Applicable Limit	Total Value	Applicable Limit	
AIR EXPOSURE PATHWAYS										
Complete:	2.5E-5	1.0E-5	2.5E-5	N/A	■	1.3E-3	1.0E+0	1.3E-3	N/A	☐
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	0.0E+0	1.0E-5	0.0E+0	N/A	☐	0.0E+0	1.0E+0	0.0E+0	N/A	☐
SOIL EXPOSURE PATHWAYS										
Complete:	0.0E+0	1.0E-5	0.0E+0	N/A	☐	0.0E+0	1.0E+0	0.0E+0	N/A	☐
MULTI EXPOSURE PATHWAY										
	2.5E-5	1.0E-5	2.5E-5	N/A	■	1.3E-3	1.0E+0	1.3E-3	N/A	☐

Serial: G-411-ZHX-

Software: GSI RBCA Spreadsheet
Version: v 1.0

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.2a

e Name: Former Service Station No. 9-4930
e Location: Castro Valley, California

Completed By: CRTC
Date Completed: 7/16/1996

Target Risk (Class A & B) 1.0E-4
Target Risk (Class C) 1.0E-4
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SUBSURFACE SOIL SSTL VALUES (> 3 FT BGS)

SSTL Results For Complete Exposure Pathways ("x" if Complete)

ONSTITUENTS OF CONCERN		Representative Concentration	Soil Leaching to Groundwater			X Soil Volatilization to Indoor Air		Soil Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
AS No.	Name	(mg/kg)	Residential (on-site)	Commercial (on-site)	Regulatory(MCL) (on-site)	Residential (on-site)	Commercial (on-site)	Residential (on-site)	Commercial 0 feet	(mg/kg)	"■" If yes	Only if "yes" left
71-43-2	Benzene	6.0E-1	NA	NA	NA	NA	1.2E+0	NA	NA	1.2E+0	☐	<1
100-41-4	Ethylbenzene	4.5E+0	NA	NA	NA	NA	>Res	NA	NA	>Res	☐	<1
108-88-3	Toluene	9.3E-1	NA	NA	NA	NA	8.2E+1	NA	NA	8.2E+1	☐	<1
330-20-7	Xylene (mixed isomers)	1.6E+1	NA	NA	NA	NA	>Res	NA	NA	>Res	☐	<1

Software: GSI RBCA Spreadsheet
Version: v 1.0

Serial: G-411-ZHX-574

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.2b

e Name: Former Service Station No. 9-4930
e Location: Castro Valley, California

Completed By: CRTC
Date Completed: 7/15/1996

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SUBSURFACE SOIL SSTL VALUES (> 3 FT BGS)

SSTL Results For Complete Exposure Pathways ("x" if Complete)

ONSTITUENTS OF CONCERN		Representative Concentration	Soil Leaching to Groundwater			X Soil Volatilization to Indoor Air		Soil Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
AS No.	Name	(mg/kg)	Residential: (on-site)	Commercial (on-site)	Regulatory(MCL) (on-site)	Residential: (on-site)	Commercial (on-site)	Residential 0 feet	Commercial (on-site)	(mg/kg)	"■" If yes	Only if "yes" left
71-43-2	Benzene	6.0E-1	NA	NA	NA	2.7E-1	NA	NA	NA	2.7E-1	■	2.0E+00
100-41-4	Ethylbenzene	4.5E+0	NA	NA	NA	>Res	NA	NA	NA	>Res	☐	<1
108-88-3	Toluene	9.3E-1	NA	NA	NA	3.8E+1	NA	NA	NA	3.8E+1	☐	<1
330-20-7	Xylene (mixed isomers)	1.6E+1	NA	NA	NA	>Res	NA	NA	NA	>Res	☐	<1

Software: GSI RBCA Spreadsheet
Version: v 1.0

Serial: G-411-ZHX-574

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.3a

e Name: Former Service Station No. 9-4930
e Location: Castro Valley, California

Completed By: CRTC
Date Completed 7/16/1996

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-4
Target Risk (Class C) 1.0E-4
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

ONSTITUENTS OF CONCERN		Representative Concentration	X Groundwater Ingestion			X Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
AS No.	Name	(mg/L)	Residential: (on-site)	Commercial: 0 feet	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential (on-site)	Commercial. (on-site)	(mg/L	"■" If yes	Only if "yes" left
71-43-2	Benzene	7.3E-2	NA	9.9E-1	NA	NA	1.4E+0	NA	NA	9.9E-1	☐	<1
00-41-4	Ethylbenzene	5.1E-2	NA	1.0E+1	NA	NA	>Sol	NA	NA	1.0E+1	☐	<1
08-88-3	Toluene	2.8E-3	NA	2.0E+1	NA	NA	9.0E+1	NA	NA	2.0E+1	☐	<1
30-20-7	Xylene (mixed isomers)	9.4E-3	NA	>Sol	NA	NA	>Sol	NA	NA	>Sol	☐	<1

Software: GSI RBCA Spreadsheet
Version: v 1.0

Serial: G-411-ZHX-574

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.3b

e Name: Former Service Station No. 9-4930
e Location: Castro Valley, California

Completed By: CRTC
Date Completed 7/15/1996

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

ONSTITUENTS OF CONCERN		Representative Concentration		Groundwater Ingestion			X	Groundwater Volatilization to Indoor Air			Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
AS No.	Name	(mg/L)		Residential: 0 feet	Commercial: (on-site)	Regulatory(MCL): (on-site)		Residential: (on-site)	Commercial: (on-site)		Residential (on-site)	Commercial: (on-site)	(mg/L	"■" if yes	Only if "yes" left
71-43-2	Benzene	7.3E-2		NA	NA	NA		2.6E-1	NA		NA	NA	2.6E-1	☐	<1
100-41-4	Ethylbenzene	5.1E-2		NA	NA	NA		8.1E+1	NA		NA	NA	8.1E+1	☐	<1
108-88-3	Toluene	2.8E-3		NA	NA	NA		3.5E+1	NA		NA	NA	3.5E+1	☐	<1
330-20-7	Xylene (mixed isomers)	9.4E-3		NA	NA	NA		>Sol	NA		NA	NA	>Sol	☐	<1

Software: GSI RBCA Spreadsheet
Version: v 1.0

Serial: G-411-ZHX-574

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Former Service Station No 9-48b Identification: YWTT12641
Site Location: Castro Valley, California Date Completed: 7/15/96
Completed By: CRTC

Software: GSI RBCA Spreadsheet
Version: v 1 0

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined

DEFAULT PARAMETERS

Definition (Units)	Residential Adult	Residential (1-6yrs)	Residential (1-16 yrs)	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
Averaging time for carcinogens (yr)	70			25	1
Averaging time for non-carcinogens (yr)	30	6	16	25	
Body Weight (kg)	70	15	35	70	
Exposure Duration (yr)	30	6	16	25	1
Exposure Frequency (days/yr)	350			250	180
Exposure Frequency for dermal exposure	350			250	
Ingestion Rate of Water (l/day)	2			1	
Ingestion Rate of Soil (mg/day)	100	200		50	100
Adjusted soil ing rate (mg-yr/kg-d)	1 1E+02			9 4E+01	
Inhalation rate indoor (m^3/day)	15			20	
Inhalation rate outdoor (m^3/day)	20			20	10
Skin surface area (dermal) (cm^2)	5 8E+03		2 0E+03	5 8E+03	5 8E+03
Adjusted dermal area (cm^2-yr/kg)	2 1E+03			1 7E+03	
Soil to Skin adherence factor	1				
Age adjustment on soil ingestion	FALSE			FALSE	
Age adjustment on skin surface area	FALSE			FALSE	
Use EPA Iox data for air (or PEL based)	TRUE				
Use MCL as exposure limit in groundwater?	FALSE				

Surface Parameters	Definition (Units)	Residential	Commercial/Industrial Chronic	Commercial/Industrial Construction
t	Exposure duration (yr)	30	25	1
A	Contaminated soil area (cm^2)	2 2E+06		1 0E+06
W	Length of affected soil parallel to wind (cm)	1 5E+03		1 0E+03
W gw	Length of affected soil parallel to groundwater (c	1 5E+03		
Uair	Ambient air velocity in mixing zone (cm/s)	2 3E+02		
delta	Air mixing zone height (cm)	2 0E+02		
Lss	Definition of surficial soils (cm)	***9.1E+01***		
Pe	Particulate areal emission rate (g/cm^2/s)	2 2E-10		

Groundwater	Definition (Units)	Value
delta gw	Groundwater mixing zone depth (cm)	2 0E+02
I	Groundwater infiltration rate (cm/yr)	3 0E+01
Ugw	Groundwater Darcy velocity (cm/yr)	***2.4E+01***
Ugw.tr	Groundwater Transport velocity (cm/yr)	***5.2E+01***
Ks	Saturated Hydraulic Conductivity(cm/s)	1 0E-04
grad	Groundwater Gradient (cm/cm)	7 5E-03
Sw	Width of groundwater source zone (cm)	1 5E+03
Sd	Depth of groundwater source zone (cm)	2 3E+02
BC	Biodegradation Capacity (mg/L)	
BIO?	Is Bioattenuation Considered	TRUE
phi eff	Effective Porosity in Water-Bearing Unit	4 5E-01
foc sat	Fraction organic carbon in water-bearing unit	1 0E-03

Soil	Definition (Units)	Value	vadose	foundation
hc	Capillary zone thickness (cm)	***1.5E+01***		
hv	Vadose zone thickness (cm)	***1.8E+02***		
rho	Soil density (g/cm^3)	1 7		
foc	Fraction of organic carbon in vadose zone	***0.001***		
phi	Soil porosity in vadose zone	***0.45***		
Lgw	Depth to groundwater (cm)	***2.0E+02***		
Ls	Depth to top of affected soil (cm)	***1.4E+02***		
Lsubs	Thickness of affected subsurface soils (cm)	***2.3E+02***		
pH	Soil/groundwater pH	6 5		
		capillary		
phi w	Volumetric water content	***0.392***	***0.14***	***0.14***
phi a	Volumetric air content	***0.058***	***0.31***	***0.31***

Building	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2 0E+02	3 0E+02
ER	Building air exchange rate (s^-1)	1 4E-04	2 3E-04
Lcrk	Foundation crack thickness (cm)	1 5E+01	
eta	Foundation crack fraction	0 01	

Exposed Persons to Complete Exposure Pathways

Groundwater Pathways:	Residential	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
Groundwater Ingestion	FALSE	FALSE	
Volatilization to Outdoor Air	FALSE	FALSE	
Vapor Intrusion to Buildings	TRUE	FALSE	
Pathways			
Volatiles from Subsurface Soils	FALSE	FALSE	FALSE
Volatiles and Particulate Inhalation	FALSE	FALSE	FALSE
Direct Ingestion and Dermal Contact	FALSE	FALSE	
Leaching to Groundwater from all Soils	FALSE	FALSE	
Intrusion to Buildings - Subsurface Soils	TRUE		

Location of Receptor Distance

Location on- or off-site	Residential Distance	Residential On-Site	Commercial/Industrial Distance	Commercial/Industrial On-Site
Groundwater receptor (cm)		FALSE		FALSE
Inhalation receptor (cm)		FALSE		FALSE

Risks

	Individual	Cumulative
Target Risk (class A&B carcinogens)	***1.0E-05***	
Target Risk (class C carcinogens)	1 0E-05	
Target Hazard Quotient	1 0E+00	
Calculation Option (1, 2, or 3)	2	
RBCA Tier	2	

Dispersive Transport

Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersion coefficient (cm)		
ay	Transverse dispersion coefficient (cm)		
az	Vertical dispersion coefficient (cm)		
Vapor			
dcy	Transverse dispersion coefficient (cm)		
dcz	Vertical dispersion coefficient (cm)		

UCL Percentile

95% (must be 0.9 or 0.95)

Subsurface Soil Analytical Data

	1	2	3	4	5	6	7	8	9	10	11	12
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Sample Name	EN-9	NE-6	NW-8	WN-6	P-10	OX-1	OX-2	OX-3	OX-4	OX-7	OX-9	OX-10
Date Sampled	3/10/93	3/10/93	3/10/93	3/10/93	3/10/93	3/19/93	3/19/93	3/22/93	3/22/93	3/22/93	3/25/93	3/26/93
Benzene	0	0.056	0.15	0	2.3	0	0	0.026	0.38	0	0	0
Ethylbenzene	0.014	7.7	11	4.9	9	4.4	1.8	0.006	0.31	0	8	0.39
Toluene	0	0.64	0.75	0.57	17	0.33	0	0	0.3	0.045	2.1	0.14
Xylene (mixed isomers)	0.024	33	53	4	49	15	9	0	1	0.083	43	1.3

Subsurface Soil Analytical Data (continued)

13	14	15	16	17	18	19	20	21	22	23	24	25
(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
OX-14	OX-15	OX-17	OX-19	OX-20	OX-21	OX-23	OX-25	OX-26	OX-27	OX-34	OX-35	OX-36
4/2/93	4/2/93	4/7/93	4/9/93	4/9/93	4/9/93	4/19/93	4/19/93	4/20/93	4/20/93	4/28/93	4/28/93	4/28/93
0	0	0	0.5	0.032	2.6	0	3.9	0.59	0.3	0	0	0
5.8	0	4.6	17	2.2	17	2.2	77	9.7	4.9	1.5	0.15	0.34
0.18	0.008	0.65	4	0.18	14	0.29	6.6	3.6	0.98	0.15	0.011	0.065
28	0	21	76	1.8	80	4.2	360	51	18	3.1	0.31	0.86

Site Name: Former Service Station No. 9-4930
Site Location: Castro Valley, California

Completed By: CRTC
Date Completed: 7/16/1996

TIER 2 SUBSURFACE SOIL CONCENTRATION DATA SUMMA (e.g., >3 FT BGS)

CONSTITUENTS DETECTED		Analytical Method			Detected Concentrations		
CAS No.	Name	Typical Detection Limit (mg/kg)	No. of Samples	No. of Detects	Maximum Conc. (mg/kg)	Mean Conc. (mg/kg)	UCL on Mean Conc. (mg/kg)
71-43-2	Benzene		25	25	3.9E+00	3.3E-01	6.0E-01
100-41-4	Ethylbenzene		25	25	7.7E+01	2.1E+00	4.5E+00
108-88-3	Toluene		25	25	1.7E+01	4.6E-01	9.3E-01
1330-20-7	Xylene (mixed isomers)		25	25	3.6E+02	7.1E+00	1.6E+01

Serial: G-411-ZHX-574

Software: GSI RBCA Spreadshe
Version: v 1.0

ATTACHMENT G

TABLE 1 - GROUNDWATER CHEMICAL ANALYTICAL DATA
Chevron Service Station #9-4930
3369 Castro Valley Boulevard
Castro Valley, California

Well ID	Sample Date	Depth to Water (ft.)	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MtBE* (ppb)	TBA (ppb)	DIPE (ppb)	EtBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)	Methanol (ppb)	Ethanol (ppb)
MW-1	05/31/01	7.05	**97**	**1.5**	<0.50	<0.50	<0.50	**3.0/*2.1***	<20	<2.0	<2.0	<2.0	<2.0	<2.0	<1000	<500
MW-2	05/31/01	5.76	**120**	**3**	<0.50	<0.50	<0.50	**29/*26***	<20	<2.0	<2.0	<2.0	<2.0	<2.0	<1000	<500
MW-3	05/31/01	4.85	**230**	<0.50	<0.50	<0.50	<0.50	**5.2/*2.4***	<20	<2.0	<2.0	<2.0	<2.0	<2.0	<1000	<500
MW-4	05/31/01	5.08	<50	**0.63**	<0.50	<0.50	<0.50	<2.5/*<2.0*	<20	<2.0	<2.0	<2.0	<2.0	<2.0	<1000	<500

Explanation:
TPHg = total petroleum hydrocarbons as gasoline (includes MtBE)
BTEX = benzene, toluene, ethylbenzene, total xylenes
MtBE = methyl tertiary-butyl ether
TBA = tertiary-butyl alcohol
DIPE = di-isopropyl ether
EtBE = ethyl tertiary-butyl ether
TAME = tertiary-amyl methyl ether
1,2-DCA 1,2-Dichloroethane
EDB = Ethylene dibromide
(ppb) = parts per billion
NA = not applicable
ft = feet
* Reported as MtBE by DHS LUFT/*EPA Method 8260B*

Analytical Laboratory
Sequoia Analytical (ELAP #1271)

Analytical Methods
TPHg/BTEX/MtBE: DHS LUFT
Volatile Organic Compounds: EPA Method 8260B
Methanol: EPA Method 8015M