ConocoPhillips Company
76 Broadway
Sacramento, CA 95818
phone 916-558-7600
fax 916-558-7639

June 29, 2007

Ms. Donna Drogos
Supervising Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, California 94502

RE: Sensitive Receptor Survey and File Review
TRC Project no. 125917
Dated: June 28, 2007

76 Station no. 3292
15008 East 14th Street
San Leandro, California

Dear Ms. Drogos,

I declare under the penalty of perjury that to the best of my knowledge the information and / or recommendations in the attached report is / are true and correct.

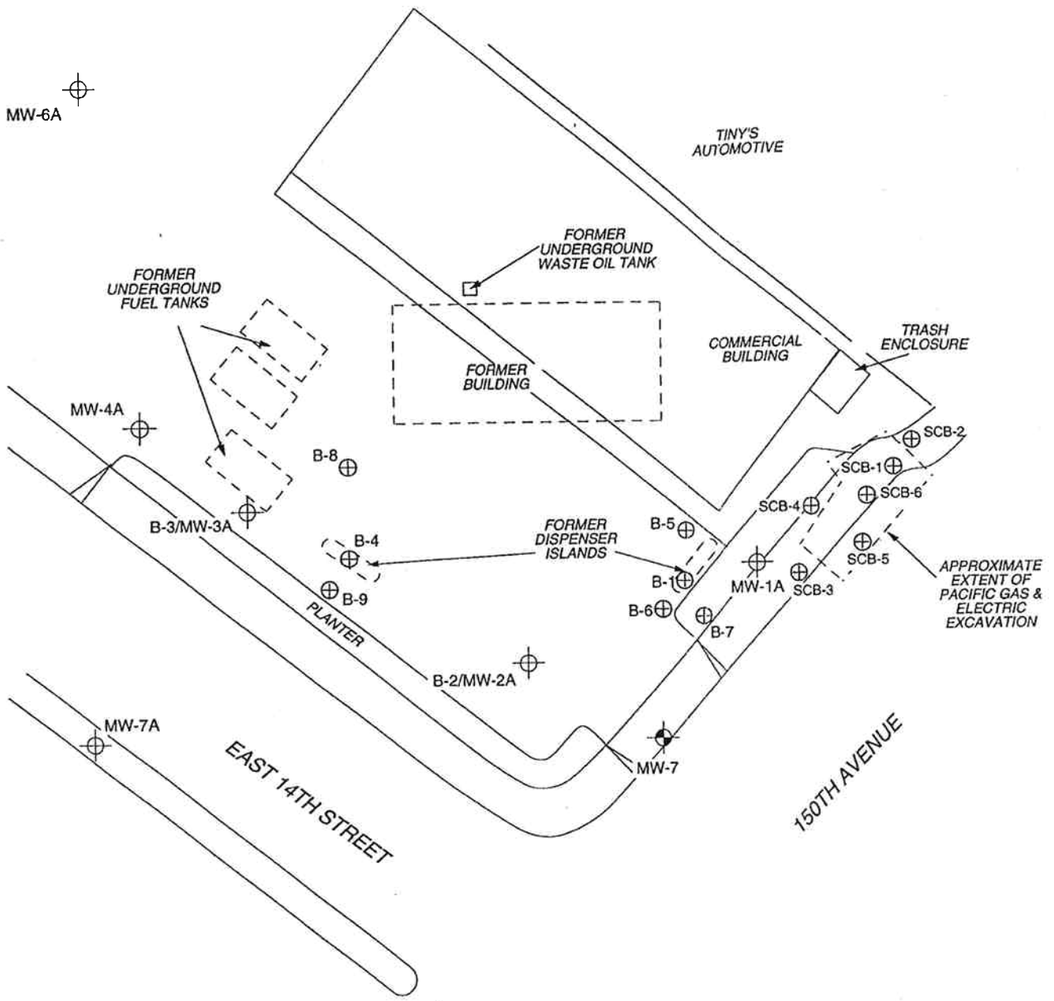
Please feel free to contact me if you have any questions or require additional information.

Respectfully,

Bill Borgh

Bill Borgh
Site Manager – Risk Management and Remediation

Attachment



SCALE (feet)
0 15 30

SOURCE: Allsto Engineering Group

ALTON GEOSCIENCE
Livermore, California

SITE DETAIL SHOWING EXCAVATION AND SOIL SAMPLE LOCATIONS

Former Mobil Station 04-FGN
14994 East 14th Street
San Leandro, California

FIGURE 3

04-FGN/Site Detail

1590 Solano Way
#A
Concord, CA 94520

925.688.1200 PHONE
925.688.0388 FAX

www.TRCsolutions.com

June 28, 2007 TRC Project No. 125917

Ms. Donna Drogos
Supervising Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, California 94502

RE: SENSITIVE RECEPTOR SURVEY AND FILE REVIEW
76 SERVICE STATION No. 3292
15008 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Dear Ms. Drogos:

On behalf of ConocoPhillips, TRC has prepared this sensitive receptor survey and file review report for 76 Service Station No. 3292, located at 15008 East 14th Street (Site) in San Leandro, California (Figure 1).

SCOPE OF WORK

To identify public and municipal wells within one-half mile of the Site, TRC contacted the California Department of Water Resources (DWR) to review copies of well completion reports for any wells located within the vicinity of the Site. The results of the DWR well report review, excluding destroyed water supply wells, groundwater monitoring wells and extraction wells, are summarized in Table 1 and Figure 1.

Also included in the survey was an evaluation of nearby surface water bodies as possible sensitive receptors. TRC reviewed various site and vicinity maps and conducted a site reconnaissance of the area. Figure 1 shows the nearby surface water bodies, as applicable.

In order to obtain information on the surrounding service stations, TRC contacted the Alameda County Health Care Services (ACHCS) and the City of San Leandro Environmental Services to review reports and correspondence for the leaking underground fuel cases at 14901 East 14th Street, 14994 East 14th Street, and 15002 Hesperian Boulevard. The file review results are discussed below.

SENSITIVE RECEPTOR SURVEY

A request was made to the DWR for well completion reports within the vicinity of the site. Of the approximately 69 well reports received, thirteen wells were water supply wells located within a one-half mile radius of the Site.

Wells 3S/3W-01A5 and 3S/2W-06E6 are located approximately 1,980 feet west and 1,254 feet southwest of the Site, respectively. These two wells listed in the DWR well reports as a domestic well and a domestic/irrigation well, respectively. The available construction details for these wells are provided in Table 1.

Nine of the 13 water supply wells located within a one-half mile radius of the Site are listed in the DWR report as irrigation wells. These irrigation wells are located in all directions from the Site, except to the southeast, at distances of between 1,320 and 1,881 feet.

In addition, two wells identified in the DWR reports within a one-half mile radius of the Site did not indicate a use. These two wells are located 1,584 feet west and 1,848 feet east of the Site. No surface water bodies were observed within a one-half mile radius of the Site.

Groundwater at the Site is encountered at an approximate depth of 10 feet below grade and historical groundwater flow direction is typically to the south-southwest.

FILE REVIEW

A request was made to the ACHCS to review the files of three leaking underground fuel tank (LUFT) cases in the vicinity of the Site (Figure 2). The main files for two of the sites were maintained by the City of San Leandro, therefore, TRC requested a file review through that agency. Selected documents obtained during the file reviews are included as Appendix A. Two of the sites, Quality Tune Up located at 14901 East 14th Street and Former Mobil 04-FGN located at 14994 East 14th Street, are both active LUFT cases. They are located to the west and northwest of the site, respectively. The third site, Chevron Station #9-2013 located at 15002 Hesperian Boulevard, is a closed LUFT case, located southwest of the site.

Quality Tune Up, 14901 East 14th Street, San Leandro, California
The Quality Tune Up (QTU) facility is located west of the Site and is an active LUFT case. The QTU property was previously a gasoline service station with one 5,500-gallon and two 10,000-gallon gasoline underground storage tanks (USTs), one 200-gallon waste oil UST and three dispenser islands. The file for the QTU site contained very little information on the current environmental status of the facility, and no data on past site environmental activities. A Phase II Site Investigation was completed at the site in October 2004 by Ninyo & Moore (2005).

The investigation identified total petroleum hydrocarbons as gasoline (TPH-g) at 20,000 micrograms per liter (µg/L) and methyl tertiary butyl ether (MTBE) at 5.5 µg/L, as contaminants in groundwater. These results are from grab groundwater samples collected from a boring on the south side of the QTU site. As part of their conclusions, Ninyo & Moore indicated that TPH-g and MTBE groundwater contamination beneath the QTU facility may be attributed to migration from an upgradient off-site property or a combination of off- and on-site sources. The shallow groundwater constituent concentration map (Figure 3 from the Ninyo & Moore June 2005 Report) indicates that MTBE concentrations are generally at or below detection limits along the upgradient northeastern and eastern edge of the property and detectable MTBE concentrations are located adjacent to former tank and dispenser islands on the QTU property.

Former Mobil Service Station 04-FGN, 14994 East 14th Street, San Leandro, California
The former Mobil Service Station is located to the northwest of the Site and is an active LUFT case. The former Mobil Station had seven monitoring wells that were sampled on a quarterly basis since 1988. Historical groundwater sampling data indicate that very high concentrations of TPH-g, total petroleum hydrocarbons as diesel (TPH-d), benzene, toluene, ethylbenzene and xylenes (BTEX), and MTBE were identified in onsite wells. A Formal Case Closure Report was submitted to ACHCS by Alton Geoscience in 1998. There are no records of the county ever responding to this case closure report. In March 2000, four of the monitoring wells were destroyed leaving only three monitoring wells onsite. These wells were last sampled July 7, 2004 and at that time TPH-g was detected in all three wells at a maximum of 2,250 µg/L and MTBE was not detected above the laboratory reporting limit of 0.5 µg/L (ETIC, 2004). ExxonMobil sent a letter dated March 22, 2005, requesting closure of the site and stated that they planned to cease sampling. At the time the file review was conducted, site closure had not been granted.

Chevron Station #9-2013, 15002 Hesperian Boulevard, San Leandro, California
The Chevron station is located southwest of the Site and is still an active gasoline service station. The Chevron station had eight monitoring wells that were sampled on a quarterly basis since 1987. Historical groundwater sampling data indicate that detectable concentrations of TPH-g, BTEX and MTBE were identified in onsite wells. In a report by Weiss Associates (1994), it was documented that they believed the contaminants in the Chevron wells were from an offsite source. In 1994 Chevron strongly tried to implicate Unocal as the responsible party for the contamination detected in their monitoring wells by having their research and technology division conduct a fingerprinting of groundwater samples from four of the Chevron site wells (ACHCS, 1994a). Unocal countered that the laboratory methods used by Chevron were questionable and their conclusions were based on specific compounds identified in the test results that were linked to assumed refining processes at the Unocal refineries. Moreover, Chevron's evaluation didn't provide comparative data from Chevron's refining process (methods used to finish the gasoline through specific units) or the specific compound concentrations in their brand name gasoline (ACHCS, 1994b). This attempt to incriminate Unocal for the groundwater contamination plume beneath the Chevron station was unsuccessful and dropped after this incident.

The Chevron station was granted case closure on July 27, 1999 even with 1,000 µg/L of TPH-g and 64 µg/L of MTBE present in the groundwater (ACHCS, 1999). The case closure summary indicated that the site had been adequately characterized, there were no known sensitive receptors down gradient of the site, and the plume appeared stable.

CONCLUSIONS

Sensitive Receptor Survey

Six wells identified in the DWR reports, including the two domestic wells, are located to the west and southwest of the Site and are in the path of local groundwater flow. However, based on the distance from the Site (greater than 1,000 feet), these wells are unlikely to be impacted by the groundwater hydrocarbon plume beneath the Site. No other current or potential sensitive receptors were identified within a one-half mile radius of the Site.

File Review

- **Quality Tune Up**

The QTU property used to be a gasoline station with USTs/dispenser islands, which would be the substantial contributor to the contaminants detected in groundwater beneath that facility. The Ninyo & Moore Limited Phase II Site Assessment Report indicated that the "MTBE detected in the soil beneath the water table is most likely attributed to migration of MTBE from an upgradient off-site property" since the gasoline station discontinued operations prior to 1981 and MTBE was not widely utilized as a fuel additive at that time. Figure 3 from the Ninyo & Moore Report dated June 2005, indicates that detectable MTBE concentrations are located adjacent to the former tanks and dispenser islands and are generally at or below detection limits along the upgradient northeastern and eastern edge of the QTU property. The historical groundwater flow direction at the 76 Service Station has typically been to the south-southwest, cross gradient to the QTU facility, which makes it unlikely that the 76 Service Station (situated to the east) is a contributor to the groundwater plume beneath the QTU facility. If fuel containing MTBE was not used at the former gasoline station on the QTU property, which has not been adequately verified, then it is possible that a source directly upgradient (north) of QTU could be the contributor to groundwater contamination at that facility.

- **Former Mobil Service Station 04-FGN**

The former Mobil station has groundwater monitoring data from 1988 to 2004 that indicates very high detectable concentrations of TPH-g, TPH-d, MTBE and BTEX along the southern corner of the property (closest to the Site). Due to the proximity of the former service station to the 76 Service Station, and the groundwater flow direction, it is feasible that the groundwater plume from the former Mobil station has migrated beneath the 76 Service Station and East 14th Street.

This conclusion is based on previous groundwater monitoring data for the Mobil station along with data from the most upgradient well for the 76 Service Station (MW-7), located along the southern corner of the former Mobil station, which indicates very high detectable concentrations of petroleum hydrocarbons still remain in groundwater beneath the former Mobil station.

- **Chevron Station #9-2013**

In the Case Closure Summary (March 1999) completed for the Chevron station, it was never mentioned that the plume was the result of an offsite source. It appears that discussions initiated in 1994 regarding Unocal as a potentially responsible party were resolved. Since the Chevron station is located down gradient from the 76 Service Station, it is not a feasible contributor to the hydrocarbon plume beneath the Site.

Recommendations

Based on the absence of any potential sensitive receptors and the presence of residual groundwater impacts from the Chevron plume likely present further downgradient of the current offsite, downgradient monitoring wells, TRC does not recommend any further offsite assessment at this time. The current dissolved-phase hydrocarbon plume from the Site has likely merged with the residual impacts left in place beneath the Chevron Station #9-2013. Therefore, any well installed further downgradient of the current offsite, downgradient wells MW-8 through MW-11 and MW-3(SP) would not provide any additional plume definition.

TRC therefore recommends completing an updated Tier II RBCA evaluation to determine if current onsite and offsite groundwater impacts exceed the site-specific target levels (SSTLs). Based on the results of the updated RBCA, TRC may recommend no further action and request the site be referred for closure.

REFERENCES

Alameda County Health Care Services (ACHCS), 1994a, Unocal Station #3292, 15008 East 14th Street, San Leandro, California, May 17, 1994, Correspondence.

ACHCS, 1994b, Chevron Service Station #9-2013, 15002 Hesperian Boulevard, San Leandro, California, November 2, 1994, Correspondence.

ACHCS, 1999, Remedial Action Completion Certification, Chevron Station #9-2013, 15002 Hesperian Boulevard, San Leandro, California, July 27, 1999, Correspondence, Case Closure Summary, and Figure 1.

Alton Geoscience, 1998, Formal Case Closure Report, Former Mobil Station 04-FGN, 14994 East 14th Street, San Leandro, California, November 23, 1998, Figure 3.

ETIC, 2004, Semi-Annual Quarterly Monitoring Report, Third Quarter 2004, Former Mobil Station 04-FGN, 14994 East 14th Street, San Leandro, California, September 1, 2004, Table 2.

Ninyo & Moore, 2005, Limited Phase II Environmental Site Assessment, Quality Tune Up, 14901 East 14th Street, San Leandro, California, June 6, 2005, Pages 15-17 and Figure 3.

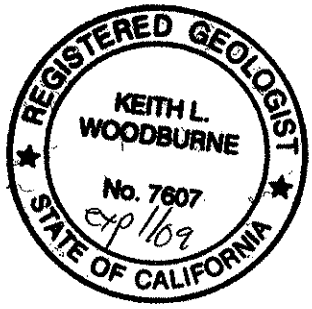
Weiss Associates, 1994, Comprehensive Site Evaluation and Proposed Future Action Plan at Chevron Service Station 9-2013, 15002 Hesperian Boulevard, San Leandro, July 11, 1994, Pages 5, 8, and 13.

If you have any questions or concerns regarding this information, please contact either of the undersigned at 925-688-1200.

Sincerely,
TRC

Rachelle Dunn
Senior Staff Geologist

Keith Woodburne, P.G.
Senior Project Geologist



Attachments:

Figure 1 – Sensitive Receptors within Half-Mile of Site
Figure 2 – Site Plan

Table 1 - Summary of Well Information

Appendix A – File Review Documents

-Correspondence, Unocal Station #3292, 15008 East 14th Street, San Leandro, May 17, 1994 (ACHCS)

-Correspondence, Chevron Service Station #9-2013, 15002 Hesperian Boulevard, San Leandro, November 2, 1994 (ACHCS)

-Selected Text from the Remedial Action Completion Certification, Chevron Station #9-2013, 15002 Hesperian Boulevard, San Leandro, July 27, 1999 (ACHCSA)

- Figure 3 from the Formal Case Closure Report, Former Mobil Station 04-FGN, 14994 East 14th Street, San Leandro, California, November 23, 1998 (Alton Geoscience)

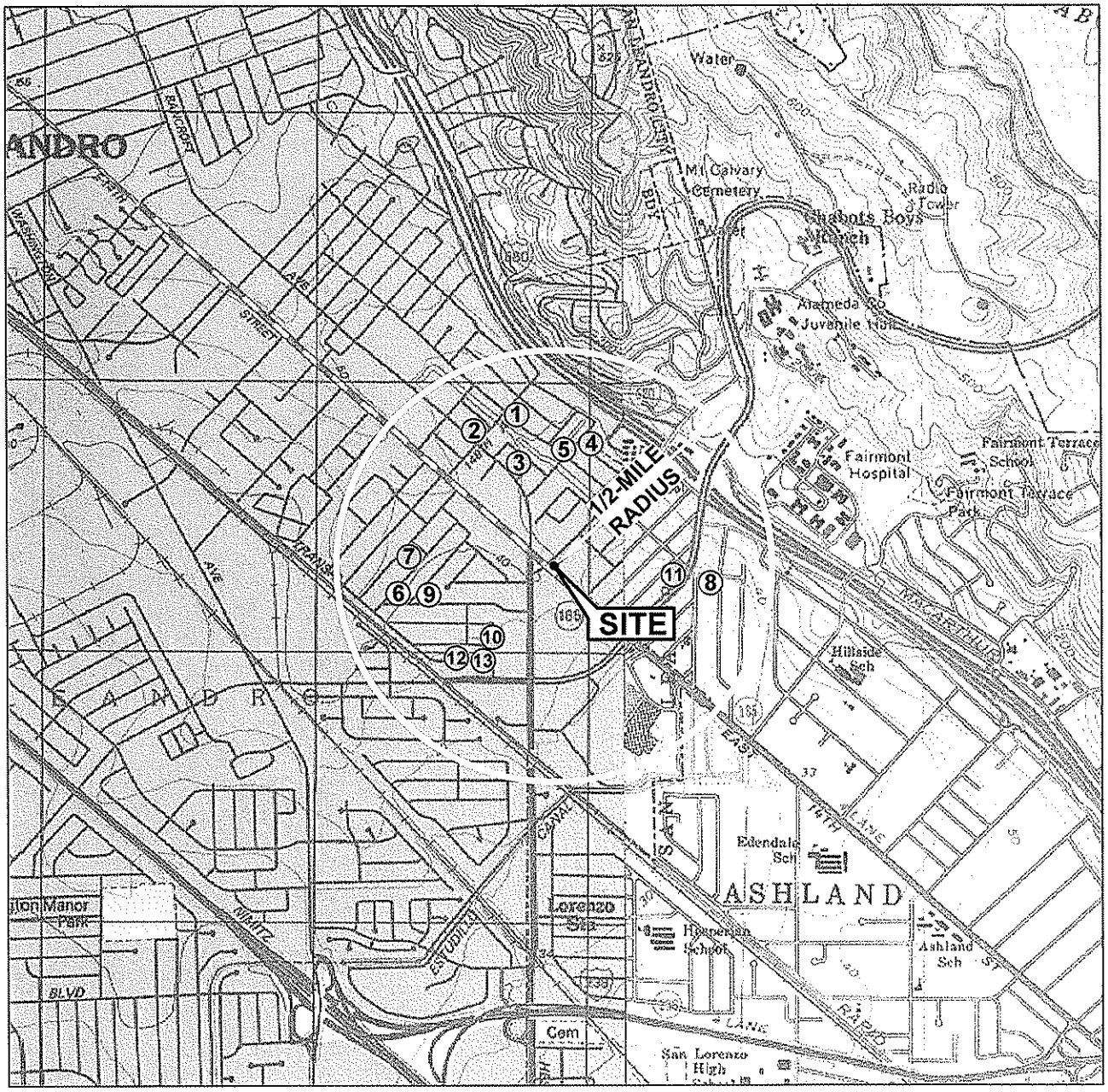
- Table 2-Groundwater Monitoring Data from the Semi-Annual Quarterly Monitoring Report, Third Quarter 2004, Former Mobil Station 04-FGN, 14994 East 14th Street, San Leandro, California, September 1, 2004 (ETIC)

- Selected Text and Figure 3 from the Limited Phase II Environmental Site Assessment, Quality Tune Up, 14901 East 14th Street, San Leandro, California, June 6, 2005 (Ninyo & Moore)

-Selected Text from the Comprehensive Site Evaluation and Proposed Future Action Plan at Chevron Service Station 9-2013, 15002 Hesperian Boulevard, San Leandro, July 11, 1994 (Weiss Associates)

cc: Bill Borgh, ConocoPhillips (electronic upload only)

Figures



1 MILE 3/4 1/2 1/4 0 1 MILE

SCALE 1 : 24,000

N

SOURCE:
United States Geological Survey
7.5 Minute Topographic Maps:
Hayward and San Leandro Quadrangles,
California

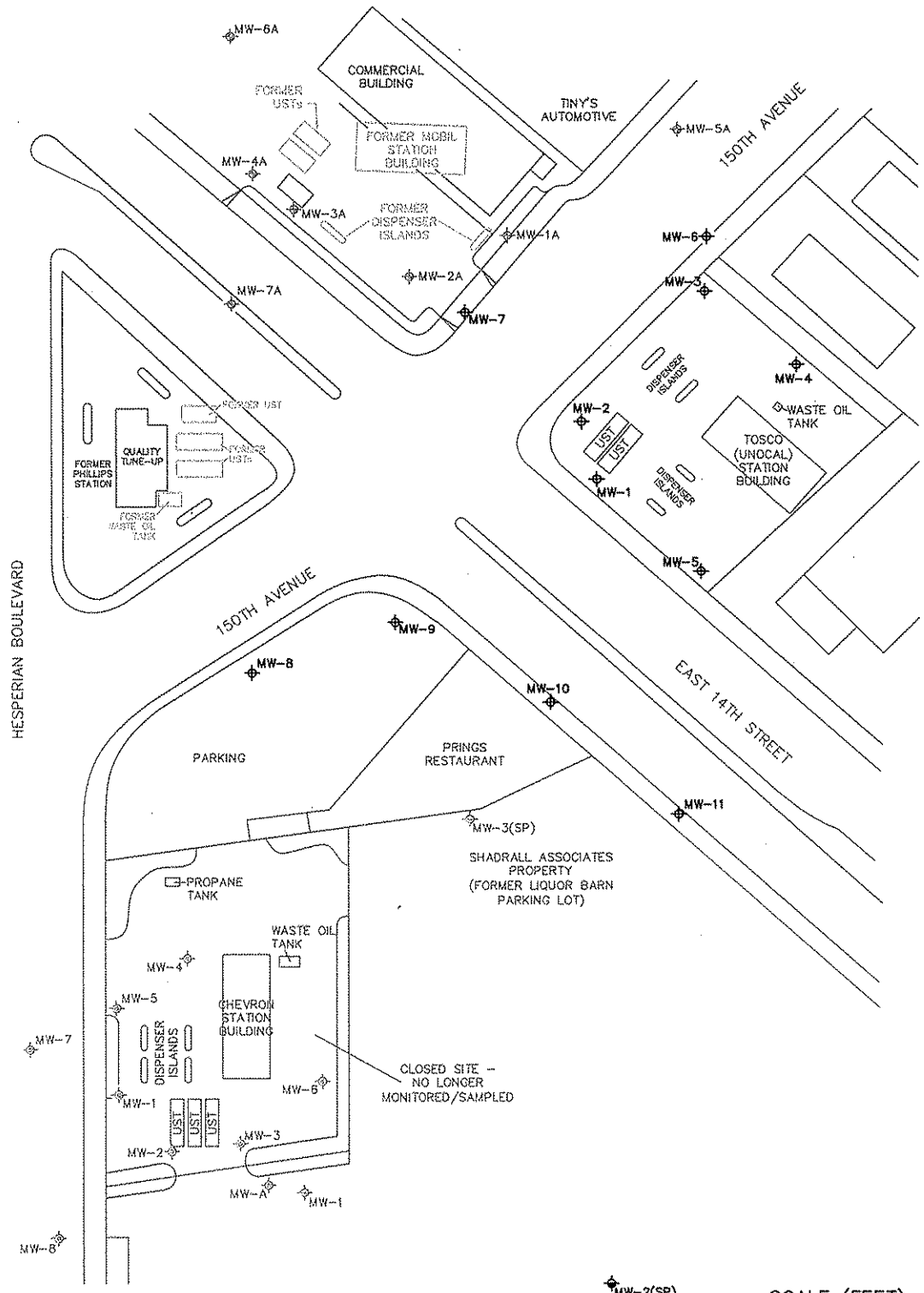
LEGEND

- ⑥ Domestic Well
- ① Irrigation Well
- ⑩ Domestic and Irrigation Well
- ⑨ Not Stated

SENSITIVE RECEPTORS WITHIN HALF-MILE OF SITE

76 Service Station #3292
15008 East 14th Street
San Leandro, California

TRC | **FIGURE 1**



SITE PLAN

76 Service Station #3292
15008 East 14th Street
San Leandro, California

TRC

FIGURE 2

Table

TABLE 1
SUMMARY OF WELL INFORMATION
76 Service Station #3292
15008 East 14th Street
San Leandro, California

Map Location	State Well Identification	Owner	Well Use	Well Total Depth (fbg)	Screened Interval (fbg)	Depth to Water (ft)	Date Installed	Approximate Distance From Site (ft)
Figure 1, number 1	2S/2W-31M1	Robert W. Bennett, Jr.	Irrigation	42	27 to 42	22	6/22/1977	1,881 NW
Figure 1, number 2	2S/2W-31M3	Howard E. Green	Irrigation	35	20 to 35	20	6/15/1977	1,782 NW
Figure 1, number 3	2S/2W-31N1	Carl C. McElroy	Irrigation	40	20 to 40	20	NA	1,320 NW
Figure 1, number 4	2S/2W-31P1	August Farias	Irrigation	40	20 to 40	20	NA	1,551 N
Figure 1, number 5	2S/2W-31P2	John E Deborn	Irrigation	NA	NA	20	5/27/1977	1,518 N
Figure 1, number 6	3S/3W-01A5	Wm McCabe	Domestic	45	25 to 45	15	5/8/1977	1,980 W
Figure 1, number 7	3S/3W-01A4	Aaron Geiser	Irrigation	48	20 to 48	18	5/13/1977	1,848 W
Figure 1, number 8	3S/2W-06B1	NA	NA	52	32 to 44	NA	NA	1,848 E
Figure 1, number 9	3S/2W-06E1	Adams	NA	45	NA	NA	9/1949	1,584 W
Figure 1, number 10	3S/2W-06E6	Wm Dennis	Irrigation & Domestic	60	24 to 56	40	11/14/1977	1,254 SW
Figure 1, number 11	3S/2W-06B4	Paul M. Fearon	Irrigation	30	10 to 30	12	8/6/1977	1,386 E
Figure 1, number 12	3S/2W-06E5	Herbert H. Howard	Irrigation	37	17 to 37	15	3/8/1977	1,716 SW
Figure 1, number 13	3S/2W-06E4	Stanley-M Boone	Irrigation	40	20 to 40	15	2/12/1977	1,650 SW

Notes: NA - Not Available

Appendix A

File Review Documents

Correspondence
Unocal Station #3292
15008 East 14th Street, San Leandro
May 17, 1994 (ACHCS)

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR
DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

STID 2400

May 17, 1994

Mr. Edward Ralston
Unocal Corporation
2000 Crow Canyon Place, Suite 400
P.O. Box 5155
San Ramon, CA 94583

RE: UNOCAL STATION #3292, 15008 EAST 14TH STREET, SAN LEANDRO

Dear Mr. Ralston:

Attached please find a copy of recent correspondence with enclosure from Chevron U.S.A. Products Company presenting data reportedly from the evaluation of fuel compounds in ground water sampled from several wells located at a nearby Chevron station, 15002 Hesperian Boulevard. Chevron concludes that the noted evaluation, or "finger printing," suggests that their wells are impacted by the plume originating from the subject Unocal site.

Please have your experts consider these data and suggest how this new issue may be resolved such that the multi-party investigation occurring in the area continues in a cooperative fashion and towards a common goal.

Please contact me at your earliest convenience. I may be reached at 510/271-4530.

Sincerely,

Scott O. Seery, CHMM
Senior Hazardous Materials Specialist

enclosure

cc: Rafat A. Shahid, Assistant Agency Director (w/o)
Gil Jensen, Alameda County District Attorney's Office (w/o)
Mike Bakaldin, San Leandro Fire Department (w/o)
Ed Laudani, Alameda County Fire Department (w/o)
Kenneth Kan, Chevron U.S.A. Products Company (w/o)
Steve Pao, Mobil Oil Company **(w/ enclosure)**
Paul Feldman, Esq. **(w/ enclosure)**

ALCO
HAZMAT

94 MAY 12 PM 1:06

Chevron

May 10, 1994

Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

Marketing Department
Phone 510 842 9500

Mr. Scott Seery
Alameda County Environmental Health
80 Swan Way, Rm. 200
Oakland, CA 94621

Re: Chevron Service Station No. 9-2013
15002 Hesperian Blvd., San Leandro, California

Dear Mr. Seery :

At the request of Chevron U.S.A. Products Co., Groundwater Technology obtained several groundwater samples from monitoring wells (MW-2, MW-3, MW-6, MW-8). These samples were subsequently analyzed and fingerprinted by Chevron Research & Technology Co. (CRTC) in Richmond, California.

Results from CRTC's analysis suggest UNOCAL's plume migrated to our site. Several compounds found in coker gasoline were detected. UNOCAL refineries in Rodeo and Santa Maria, CA were reported to have cokers. Since Chevron's Richmond Refinery does not have a coker, it suggests that these wells contain traces of UNOCAL's plume.

In light of this information, Chevron would like to cease the additional investigation that you requested in your letter dated August 18, 1993. It is Chevron's opinion based on CRTC's summary and Law Environmental's Phase II Site Assessment Report dated November 14, 1990 that this investigation should be part of UNOCAL's responsibility.

Please respond to our request in writing. For additional information, refer to the enclosed project summary from CRTC dated May 5, 1994. If you have any questions or comments, please feel free to contact me at (510) 842-8752.

Sincerely,

Chevron U.S.A. Products Co.

Kenneth Kan
Engineer

LKAN/MacFile 9-2013R14

Enclosure

cc : Mr. Lester Feldman, RWQCB-San Francisco Bay Region
2101 Webster Str., Ste. 500, Oakland, CA 94612

Mr. Steve Willer, Chevron U.S.A. Products Co.

MAY 9 '94 J.M.M.

CHEVRON RESEARCH AND TECHNOLOGY COMPANY
ANALYTICAL SCIENCES UNIT PROJECT SUMMARY

Project No.	5767	**Requested by**	K. L. Kan
Date Initiated	4/7/94	**Location**	CUSA Products Co.
Date Completed	5/5/94		P.O. Box 5004
CRTC Charge Code	TT15267		San Ramon, CA 94583
		Phone	842-8752

Project Description: Analyze four water samples, labeled MW-2, MW-3, MW-6, and MW-8, taken from Chevron service station number 9-2013 at 15002 Hesperian Blvd., San Leandro, CA. Determine if Unocal's plume has reached Chevron's facility. A site plan shows MW-3 to be upgradient towards the Unocal site. MW-6 is located on Chevron property. MW-2 is located cross-gradient to MW-6. MW-8's location is not shown.

Results: All of the wells contain some gasoline. Blank-corrected concentrations are shown in the following table.

Well	mg/L (ppm) gasoline, duplicate
MW-2	1.6, 3.5
MW-3	2.4, 1.9
MW-6	0.6, 0.4
MW-8	0.04, 4.7

The gasoline in the wells appears to be present as entrained material (microscopic bubbles, coated dust particles) rather than dissolved hydrocarbon. This observation is supported by the dramatic changes in concentration between duplicates, especially for MW-8. The lack of prominent BTEX peaks also suggests entrainment, although it could also be attributed to preferential biodegradation of aromatics.

Fingerprints from wells MW-2, MW-3 and MW-8 have an identical pattern, with prominent peaks in the C_9 to C_{12} region. A few of these peaks appear to be the aromatic compounds generically typical of gasolines. Many of the peaks cannot be identified without GC/MS analysis. The MW-6 fingerprints contain these same compounds, but not always in the same ratios.

There are no compounds in the gasolines that definitively link them with Unocal. However, there are four compounds that occur in all of the sample gasolines that are present in moderate to high concentrations in coker gasoline and not typically present in other gasoline blending stocks. Tentative identifications for two of these peaks are 1-nonene and 1-undecene. Unocal refineries at Rodeo, CA and Santa Maria, CA both have cokers. Chevron's Richmond refinery does not currently have a coker. This suggests that all four wells contain traces of a Unocal plume.

ever ?

Analytical Approach: The samples were extracted with carbon disulfide and analyzed by gas chromatography using a flame ionization detector to determine the hydrocarbon composition. Total extractable petroleum hydrocarbon was quantified by an ethylcyclohexane internal standard.

Analyzed by: N. Berkowitz
Reported by: E. A. Harvey EAH
Reviewed by: J. Kimberlin J.K.

KLKan
AWVerstuyft
DCYoung
JKimberlin
NBerkowitz
EAHarvey
ECDfile
Tech.files 300.6110

Request for Environmental Analysis and Chain of Custody

Chevron U.S.A. Inc.

To E. A. Harvey (Phone: 415-620-4993)
Chevron Research Company, Environmental Analysis Lab, Room 54-1114
576 Standard Avenue, Richmond, CA 94802

Date: 4-7-94

Requestor (Chevron): Kenneth Kan — Phone: CTN 842-8752

Company, Department: Chevron U.S.A. Products Company, SAR Group — Charge Code: 3 465R 6009203

Address: 2410 Camino Ramon, P.O. Box 5004, San Ramon, CA 94583-0804

Sampler: Hector Merino — Phone: 510 671-2387

Company, Address: Groundwater Technology, Inc., 4057 Port Chicago Hwy, Concord, CA 94520

Sampling Location (Address): 15002 Hesperian Blvd., San Leandro, California (Chevron Station 9-2013)

☑ Service Station ☐ Fuel Terminal ☐ Marine Terminal ☐ Pipeline
☐ Refinery ☐ Other

☑ Chevron ☐ Gulf ☐ BP ☐ Cumberland Farms ☐ Other

Type of Analysis Desired
☑ Identify Product ☐ Compare Spill with Potential Sources (Send Source Samples)
☐ Compare Samples with Previous Analyses. Log Numbers and/or Dates:
☐ EPA Method(s) (Call 415-620-4993 for Approval)
☐ Other

Reason for Request (Clearly State Problem, Site History, Draw or Enclose a Map)
UNOCAL's plume may have or probably reached the Chevron site. Does MW-6, MW-3, MW-2, and MW-8 (Chevron on-site wells) contain Unocal product? For additional information, refer to Groundwater Technology's Nov. 23, 1993 groundwater report and Law Environmental Site Plan that are attached to this form.

Sample Name/Number	Date Sampled	Sampled by
MW-2 MW-3 MW-6 MW-8	4-5-94 ↓ ↓ ↓	Hector Merino ↓ ↓

Transporter: Clayton Gonzales	Date Received: 4-7-94	Initials: C.G.
Laboratory: Chevron Research	Date Received: 4-7-94	Initials: NB

Minimum Sample: Hydrocarbon – 1 pint; Water – 1 quart; Soil – 8 ounce.

It is the shipper's responsibility to insure federal D.O.T. regulations are complied with. Consultation with a Chevron Regional Transport Specialist is MANDATORY prior to air shipment. Contact your Chevron Representative or call the Hazmat Help Line (415) 894-3481 for assistance.

When in doubt, assume the sample is flammable.

OSHA HAZARD WARNING ON REVERSE SIDE

Distribution: White (Original) With Sample – Chevron Research Company
Canary – Division Office
Pink – Originator

MS-5103 (05-91)
Printed in U.S.A.

Correspondence
Chevron Service Station #9-2013
15002 Hesperian Boulevard, San Leandro
November 2, 1994 (ACHCS)

STID 770

ALAMEDA COUNTY CC4580
DEPT. OF ENVIRONMENTAL HEALTH
DIV. OF ENVIRONMENTAL PROTECTION
1131 HARBOR BAY PKWY., #250
ALAMEDA CA 94502-6577

November 2, 1994

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

RE: CHEVRON SERVICE STATION #9-2013, 15002 HESPERIAN BOULEVARD, SAN LEANDRO

Dear Mr. Kan:

Attached please find a copy of recent correspondence with enclosure from Unocal Corporation presenting their evaluation of Chevron's previous "fingerprint" analysis of fuel compounds in water sampled from four of the Chevron wells. Chevron had concluded from their evaluation the likelihood that the plume originating from the nearby Unocal site (15008 E. 14th Street) had impacted the Chevron site. Unocal's evaluation appears to discount that conclusion.

As has been articulated in the past, once the latest phase of the investigation at the nearby former Mobil site (14994 E.14th Street) has been completed, a meeting will be scheduled to discuss appropriate corrective action.

Please contact me at 510/567-6783, or -6700, should you have any questions or comments.

Sincerely,

Scott O. Seery, CHMM
Senior Hazardous Materials Specialist

attachment

cc: Rafat A. Shahid, Director, Environmental Services
Gil Jensen, Alameda County District Attorney's Office
Mike Bakaldin, San Leandro Fire Department
Ed Laudani, Alameda County Fire Department
Ed Ralston, Unocal Corporation
Steve Pao, Mobil Oil Company
Paul Feldman, Davis, Malm & D'Agostine
One Boston Place, Boston, MA 02108-4470

Unocal Corporation
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583
Telephone (510) 867-0706
Facsimile (510) 277-2309

UNOCAL 76

October 24, 1994

Northern Region
Corporate Environmental
Remediation & Technology

Mr. Scott Seery
Alameda County Health Care
Services Agency
Hazardous Materials Division
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

UNOCAL SERVICE STATION #3292
15008 East 14th Street
San Leandro, California

Dear Mr. Seery:

Please find enclosed a copy of Unocal's response to Chevron's evaluation of fuel compounds found in groundwater at their site. Chevron's report was evaluated by our forsenics geochemist, Dr. Bob Haddad. As the report suggests, Chevron's method of fingerprinting is somewhat questionable. In addition, Chevron's identification of "coker" compounds actually implicates Chevron as the source of contamination, rather than Unocal as Chevron has previously suggested. Therefore, it is Unocal's opinion that Chevron should continue as a responsible party for the investigation and remediation of petroleum hydrocarbon contamination.

Should you have any question regarding this matter, please feel free to contact me at (510) 277-2311.

Sincerely,

Edward C. Ralston

Edward C. Ralston
Senior Environmental Geologist

cc: R.D. Sisk, UNOCAL
R.H. Kezerian, KEI

Memorandum

UNOCAL 76

RECEIVED

OCT 13 1994

CERT
Brea, California

October 5, 1994

ENV 94-500

TO: E. A. Ralston

FROM: R. I. Haddad

R. I. Haddad

RESPONSE TO THE CHEVRON RESEARCH AND TECHNOLOGY COMPANY ANALYTICAL SCIENCES UNIT PROJECT SUMMARY, PROJECT #5767

At your request, I have reviewed the data and conclusions presented in the Chevron Research and Technology Company Analytical Sciences Unit Project Summary (Chevron project #5767, completed 5/5/94) and the associated May 10, 1994, letter by Mr. Kenneth Kau of Chevron U.S.A. Products Company.

I have several questions regarding this Summary. The first one concerns the analytical approach; it is unclear whether the method used employed a purge and trap type extraction/injection procedure. This method is necessary when dealing with samples having low boiling point ranges (e.g., gasoline). If the extraction procedure involved any type of solvent removal (e.g., solvent blow down, roto-evaporation, etc.), then it is certain that compounds with boiling points < nC8 have not been quantitatively recovered.

The concentration of BTEX compounds present in the samples will be directly related to the analytical approach. Assuming a purge and trap method was used, the lack of prominent BTEX would most likely be due to differential solubility and migration of these compounds. Comparison of internal ratios (e.g., B/T, B/X, etc.) could be used to evaluate the "degree of environmental weathering" in these samples. I am unclear whether the conclusions that "the gasoline . . . appears to be present as entrained material (microscopic bubbles, coated dust particles) rather than dissolved hydrocarbon" is based on direct observation of these microscopic bubbles in coated dust particles or is offered as a way to explain the poor reproducibility of their results. (As an aside, if purge and trap was not used, differences in the degree to which the solvent is removed for the samples prior to analysis could very likely account for the poor reproducibilities noted in the summary.) In order to further evaluate the data, I would need to have a more detailed account of the analytical approach.

My second concern regards the logic used in the Summary's conclusions. It appears clear that the conclusion was driven by a preconceived notion. The language used in the Reason for Request portion of the Request for Environmental Analysis and Chain of Custody clearly indicates this bias.

The most troubling aspect of the Summary is the assumption that because (1) coker gas oil contains olefins, (2) Unocal has coker facilities, and (3) olefins may be present in these samples, then the product must belong to Unocal. Unocal gasoline delivered to the San Leandro site does come from the San Francisco Refinery (Rodeo). However, as should be obvious to those familiar with refining processes, the coker gas oil is not blended directly into finished gasoline. Rather is run through a hydrotreating unit to refine the stream. The use of the hydrogenation unit means that gasoline derived from this treatment contains no olefinic compounds. This lack of olefins in the finished gasoline from SFR is somewhat unique as most major refineries use a FCC unit (a catalytic process) to work the streams. This catalytic process produces olefins which do show up in the finished gasoline. It might be useful to evaluate Chevrons product with respect to the level of olefin concentration present. The point being that the use of coker gas oil is not the most significant source of olefins in finished gasoline. Rather, it appears that olefin content in the finished gasoline is more likely a function of whether the refinery is using a hydrogenation unit or a FCC unit to help finish the gasoline streams.

In closing, I would like to see a more detailed discussion of the analytical approach used in this study. Assuming valid results, I would then like to see the gas chromatograms to evaluate the validity of the identifications (the summary noted no GC/MS was used). This latter point is important for two reasons. First, the C9 - C12 range of gasoline gas chromatogram is quite crowded and I have not seen 1-nonene and 1-decene in any finished products or free products. Second, the presence of these olefinic compounds in what appears to be a weathered product is interesting since these compounds are usually among the most reactive compounds with respect to both biotic (microbial) and abiotic processes.

If you have any questions, please do not hesitate to contact me at (714) 577-1484.

RIH/cs

xc: B. J. Kelly
G. T. Ririe

Selected Text from the Remedial Action Completion Certification
Chevron Station #9-2013
15002 Hesperian Boulevard, San Leandro
July 27, 1999 (ACHCSA)

TRC

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

ENVIRONMENTAL HEALTH SERVICES
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9335 (FAX)

July 27, 1999

STID 770

Philip Briggs
Chevron Products Company
P.O. Box 6004
San Ramon, CA 94583-0904

RE: (Former) Chevron Station #9-2013, 15002 Hesperian Boulevard, San Leandro

Dear Mr. Briggs:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]) of the California Health and Safety Code. The State Water Resources Control Board (SWRCB) has required since March 1, 1997 that this agency use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at this site.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- Up to 1000 micrograms per liter (ug/l) Total Petroleum Hydrocarbons as Gasoline (TPH-G) and 64 ug/l methyl tert-butyl ether (MtBE) are present in groundwater beneath the site.

If you have any questions, please contact the undersigned at (510) 567-6783.

Sincerely,

Scott O. Seery, CHMM
Hazardous Materials Specialist

Enclosures:
1. Case Closure Letter
2. Case Closure Summary

cc: Dick Pantages, Chief
Ui Chin Hwang, 15018 Hesperian Blvd., San Leandro, CA 94578

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: 03/22/99

Agency name: **Alameda County-EPD**
City/State/Zip: **Alameda, CA 94502**
Responsible staff person: **Scott Seery**

Address: **1131 Harbor Bay Pkwy #250**
Phone: **(510) 567-6700**
Title: **Haz. Materials Spec.**

II. CASE INFORMATION

Site facility name: **Chevron Service Station #9-2013**
Site facility address: **15002 Hesperian Blvd., San Leandro 94578**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **770**
URF filing date: **04/17/84** SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
Chevron Products Co. Attn: Phil Briggs	P.O. Box 6004 San Ramon, CA 94583-0904	(925) 842-9136
Estate of G.W. Scheffer	P.O. Box 173 San Jose, CA 95103	

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	10,000 gal	gasoline	Removed	~ 1984
2	10,000 "	"	"	"
3	5,000 "	"	"	"
4	1,000	waste oil	"	"
5	1,000	" "	"	1998

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: UNK (possible line leak)

Site characterization complete? YES

Date approved by oversight agency:

Monitoring Wells installed? YES Number: 8

Proper screened interval? YES

Highest GW depth below ground surface: 7.6' Lowest depth: 15.09'

Flow direction: SW - SE

Most sensitive current use: commercial/retail

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Are drinking water wells affected? NO Aquifer name: San Leandro Cone

Is surface water affected? NO Nearest affected SW name: NA

Off-site beneficial use impacts (addresses/locations): NA

Report(s) on file? **YES** Where is report filed? **Alameda County**
1131 Harbor Bay Pkwy
Alameda CA 94502

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment or Disposal w/destination)	Date
Tank	2x10K; 5K; 1K gals.	UNK	8/84
	1,000 gals.	Disposal – Erickson, inc. Richmond, CA	10/30/98
Piping	UNK	UNK	
Free Product	"	"	
Soil	"	"	
Groundwater	4700 gals.	Disposal – I.T. Corp. Martinez, CA	8/7/84

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)[1,2,5]		Water[3,4] (ppb)	
	Before	After	Before	After
TPH (Gas)	UNK	<10	12,000	1000
TPH (Diesel	"	NA	NA	NA
Benzene	"	<0.3	120	<0.5
Toluene	"	<0.3	110	<0.5
Xylene	"	<0.3	130	<0.5
Ethylbenzene	"	<0.3	110	<0.5
Other (MtBE)	"	NA	NA	64

Notes:
1) "Before" soil results reflect the (presumed) August 1984 tank removals for which no documentation could be located by the local agencies and Chevron.

2) "After" soil results reflect soil samples collected during installation of wells MW-6, -7, and –8, the only soil samples for which there are available results.

3) "Before" water results from samples collected December 8, 1987 from well MW-5.

4) "After" water results reflect May 15, 1998 sampling event, as follows: TPH-G from well MW-6; MtBE from well MW-2; BTEX reflects data from all wells.

5) Samples collected during the 1998 waste oil UST closure were analyzed for TPH-G, TPH-D, BTEX, MtBE, TOG, HVOC, and SVOC. No detectable target compounds were identified except for 504-ppm bis(2-ethylhexyl)phthalate.

Leaking Underground Fuel Storage Tank Program

Comments (Depth of Remediation, etc.):

Available information indicates four USTs were removed from this site sometime during or around August 1984. A tank closure report or similar document could not be located by the City of San Leandro Fire Department, this agency, or Chevron at the time of this writing.

The original tanks were reportedly installed in 1969, and were comprised of two (2) 10,000 and one 5,000 gallon gasoline, and one 1,000-gallon waste oil UST. These early tanks were reportedly replaced in 1984 with three (3) 10,000-gallon gasoline and one 1000-gallon waste oil USTs. All replacement tanks were comprised of fiberglass-reinforced plastic (FRP). It is unknown if the USTs are of single- or double-walled construction, as conflicting accounts have been presented.

The 1000-gallon waste oil tank, along with the hydraulic lifts and oil/water separator, were removed from the site during October 1998 under San Leandro Fire Department oversight. The condition of the tank was sound, and the sample results unremarkable. Excavated soil was returned to the tank pit. The fuel tanks remain in-place at the site.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? _____

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? _____

Does corrective action protect public health for current land use? YES
Site management requirements: NA

Should corrective action be reviewed if land use changes? YES

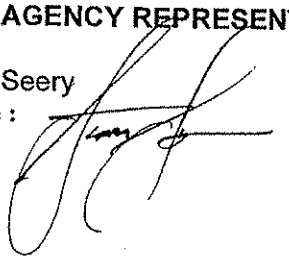
Monitoring wells Decommissioned: NO

Number Decommissioned: NA Number Retained: 8

List enforcement actions taken: NONE

List enforcement actions rescinded: NONE

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Scott Seery
Signature: 
Title: Haz Mat Specialist
Date: 4-12-99

Leaking Underground Fuel Storage Tank Program

V. LOCAL AGENCY REPRESENTATIVE DATA (Continued)

Reviewed by
Name: Tom Peacock Title: Supervising Haz Mat Specialist
Signature: Tom Peacock Date: 4-9-99

Name: Don Hwang Title: Haz Mat Specialist
Signature: Don Hwang Date: 3/31/99

VI. RWQCB NOTIFICATION

Date Submitted to RB: 4-12-99 RB Response:
RWQCB Staff Name: Chuck Headlee Title: San. Eng. Assoc. Date:

VII. ADDITIONAL COMMENTS, DATA, ETC.

The record reflects that five (5) wells were initially installed at the site during 1983, reportedly in response to a line leak that occurred in April of that year. These wells were reportedly monitored solely for the presence of free product (FP). Boring logs are, at best, rudimentary in their descriptions. Nevertheless, all encountered sediments are reportedly comprised of clay or silty clay to the depths explored. "Vapors" (presumably hydrocarbon vapors) were noted on logs for well borings MW-2, -3, -4, and –5 at depths of ~ 13–14' BG. The occurrence of these "vapors" appears consistent with the interception of the interface between the saturated and unsaturated zones. Soil samples were not collected. The wells were monitored twice in July 1983, and then weekly for two months in 1984 for the presence of FP. In each instance, no FP was reportedly detected. These wells were not sampled again until 1987.

In December 1987, the 5 original wells were sampled, perhaps for the first time where data were reported. Up to 12,000-ug/l total "fuel" hydrocarbons (TFHC) and 120-ug/l benzene, among other aromatic fuel components, were identified in water sampled from well MW-5 located NW of the fuel dispensers. Water sampled from apparent downgradient wells MW-2 and –3 also exhibited elevated concentrations of TFHC of up to 4000 ug/l and benzene of up to 80 ug/l during this sampling event.

In May 1988, three (3) additional wells were installed, two (MW-7 and –8) with in Hesperian Blvd. and one (MW-6) on-site. All wells were sampled at this time.

In October 1990, three wells were installed by others on the property south and east of the Chevron site to assess plumes from several sources. One such well (MW-1 aka "MW-A") was installed south and in close proximity to the Chevron UST cluster. Detectable concentrations of total petroleum hydrocarbons as gasoline (TPH-G) and ethylbenzene (E) were identified in water sampled from this well at that time. Soil samples were not collected. Beginning in 1995, Chevron began collecting samples from this well. Only low levels or non-detectable concentrations of fuel compounds were identified in samples collected from well MW-A through August 1998.

Leaking Underground Fuel Storage Tank Program

All Chevron wells were also sampled and monitored through August 1998, beginning with a quarterly schedule in 1987 and 1988, reduced to a semi- or annual scheduled thereafter in select wells. Diminishing trends in dissolved phase fuel compounds have been identified in samples collected since 1987. Groundwater flow was predominantly calculated towards the south over the course of the investigation, with periodic swings from SW to SE.

This case appears be a "Low Risk Groundwater Case", as described in the January 5, 1996 San Francisco Bay Regional Water Quality Control memorandum entitled "*Regional Board Supplemental Instructions to State water Board December 8, 1995, Interim Guidance on Required Cleanup at Low-Risk Fuel Sites,*" as follows:

1) **The leak has been stopped and ongoing sources, including free product, have been removed or remediated.**

The subject tanks were removed in 1984. Free product has not been known to occur at the site.

2) **The site has been adequately characterized.**

An 8-well network of wells was installed, monitored, and sampled over the course of several years. An additional well was installed on the adjoining property downgradient of the site. These points have allowed an adequate confirmation of underlying geology, groundwater flow, and contaminant extent.

3) **The dissolved hydrocarbon plume is not migrating.**

The plume appears stable. Hydrocarbon concentrations have attenuated over time.

4) **No water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted.**

There are no known municipal or residential water wells or surface water bodies within 750' downgradient of the subject site that would be impacted by shallow groundwater from this site.

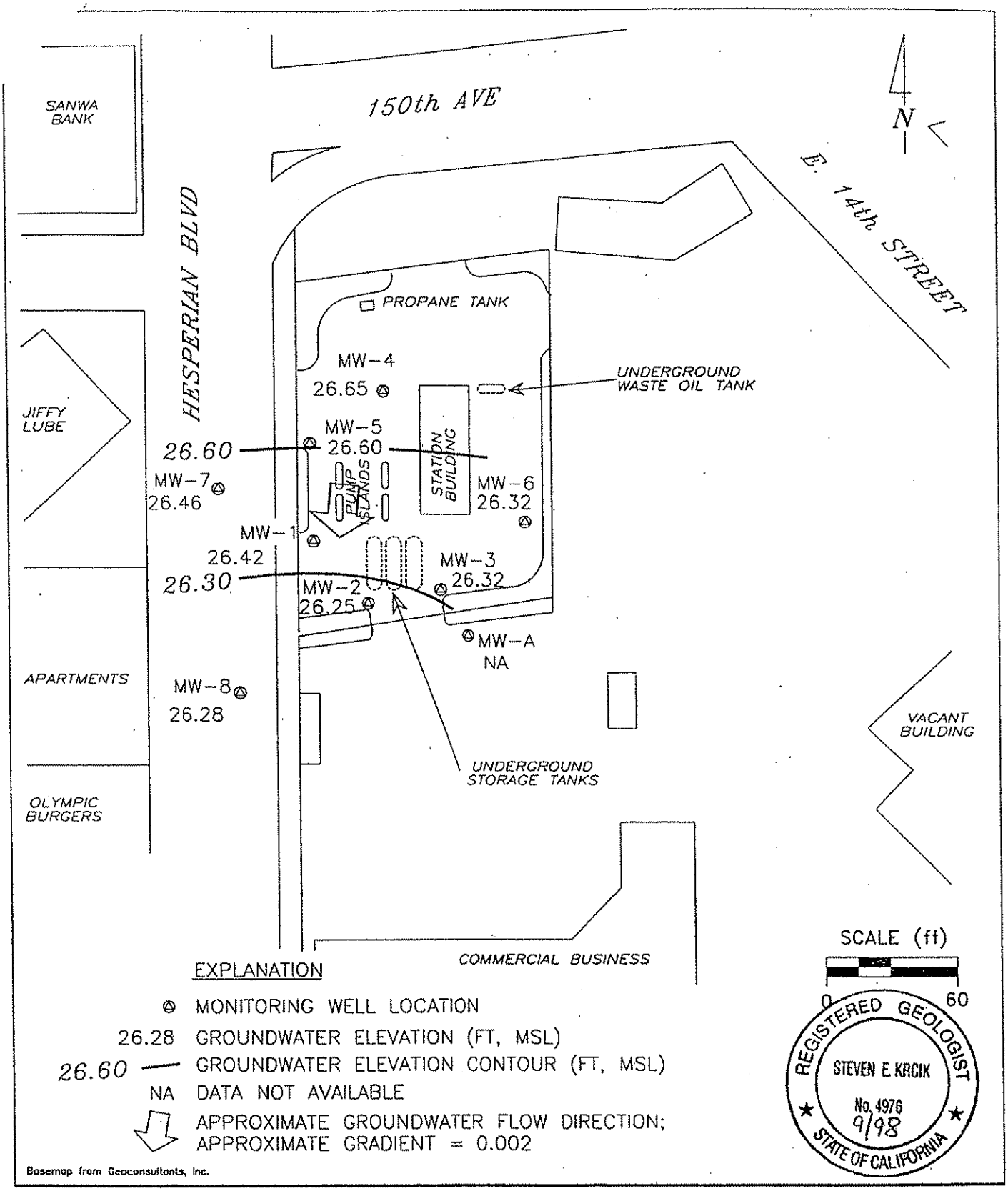
5) **The site presents no significant risk to human health.**

Comparison of ASTM E 1739-95 *Risk Based Screening Levels (RBSL)* with site-specific concentration and occurrence of risk-driving target compounds (e.g., benzene) in groundwater demonstrate that RBSL values are not exceeded for any plausible exposure pathways. Further, default criteria used to calculate the published RBSLs present more conservative parameters, as site-specific geology (clay) is much less conducive to vertical vapor transport to potential receptors at the site.

Sparse soil data have been presented to date. However, inference may be reasonably made that a substantial and, hence, potential risk-inducing soil source is not present at the site based on diminishing concentrations of target compounds in groundwater sampled since the late 1980s.

6) **The site presents no significant risk to the environment.**

No environmental receptors are known or expected to be proximal to the site.



Basemap from Geoconsultants, Inc.

PREPARED BY RRM engineering contracting firm	**Chevron Station 9-2013** 15002 Hesperian Boulevard San Leandro, California **GROUNDWATER ELEVATION CONTOUR MAP, AUGUST 12, 1998**	FIGURE: 1 PROJECT: DAC04

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	EDC	EDB
MW-1												
12/08/87	35.77	23.84	11.93	--	--	--	--	--	--	--	--	--
05/23/88	35.77	24.23	11.54	--	--	--	--	--	--	--	--	--
06/07/88	35.77	24.10	11.67	--	<1000	7.0	4.6	1.1	20	--	--	--
08/05/88	35.77	23.18	12.59	--	--	--	--	--	--	--	--	--
09/08/88	35.77	22.81	12.96	--	600	0.91	<1.0	7.0	18	--	0.2	<0.1
12/05/88	35.77	22.69	13.08	--	2200	16	5.0	150	250	--	<1.0	<1.0
12/05/88	35.77	22.69	13.08	--	2700	16	5.0	170	330	--	<1.0	<1.0
03/14/89	35.77	24.11	11.66	--	3900	11	2.1	66	150	--	--	--
06/13/89	35.77	23.82	11.95	--	3000	2.0	1.0	23	51	--	--	--
09/13/89	35.77	22.55	13.22	--	1400	0.8	2.0	6.0	9.0	--	--	--
12/13/89	35.77	22.59	13.18	--	870	4.0	2.0	7.0	14	--	--	--
03/13/90	35.77	23.49	12.28	--	870	1.0	<0.3	7.0	13	--	--	--
10/11/90	35.77	22.06	13.71	--	2100	4.5	4.3	19	84	--	--	--
04/05/91	35.77	24.49	11.28	--	6000	19	12	86	130	--	--	--
10/30/91	35.77	21.77	14.00	--	3800	360	31	18	17	--	--	--
04/23/92	35.77	24.98	10.79	--	320	30	1.4	1.6	1.7	--	--	--
07/20/92	35.77	23.82	11.95	--	1100	25	4.4	3.6	4.9	--	--	--
10/30/92	35.77	22.53	13.24	--	1300	6.0	8.0	4.2	7.0	--	--	--
01/20/93	35.77	26.07	9.70	--	1000	7.7	3.1	4.9	7.2	--	--	--
04/30/93	35.77	26.64	9.13	--	960	1.8	4.3	4.1	6.8	--	--	--
08/06/93	35.77	25.22	10.55	--	950	<1.0	1.9	2.2	1.9	--	--	--
10/22/93	35.77	24.39	11.38	--	920	1.4	1.3	0.7	6.0	--	--	--
01/25/94	35.77	24.63	11.14	--	6000	<2.5	12	18	60	--	--	--
04/05/94	35.77	25.43	10.34	--	480	1.5	5.3	5.5	7.9	--	--	--
07/01/94	35.77	24.81	10.96	--	1000	0.9	8.5	9.7	29	--	--	--
02/13/95	35.77	--	--	Inaccessible	--	--	--	--	--	--	--	--
05/10/95	35.77	27.01	8.76	--	270	0.72	2.0	1.3	4.3	--	--	--
08/02/95	35.77	26.06	9.71	--	310	2.0	<1.2	5.4	6.2	--	--	--
05/08/96	35.77	26.77	9.00	--	<50	<0.5	<0.5	<0.5	<0.5	3.8	--	--
11/07/96	35.77	25.01	10.76	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
05/07/97	35.77	26.53	9.24	--	190	0.6	<0.5	1.6	<0.5	<2.5	--	--
11/04/97	35.77	24.42	11.35	--	81	<0.5	<0.5	<0.5	<0.5	16	--	--
05/15/98	35.77	27.66	8.11	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
08/12/98	35.77	26.42	9.35	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	EDC	EDB
MW-2												
12/08/87	35.00	24.21	10.79	--	--	--	--	--	--	--	--	--
05/23/88	35.00	24.20	10.80	--	--	--	--	--	--	--	--	--
06/07/88	35.00	24.07	10.93	--	<1000	52	5.8	13	12	--	--	--
08/05/88	35.00	23.14	11.86	--	--	--	--	--	--	--	--	--
09/08/88	35.00	22.74	12.26	--	600	1.0	<10	<10	<10	--	<1.0	<1.0
09/08/88	35.00	22.74	12.26	--	400	1.3	<1.0	<1.0	<1.0	--	<0.1	<0.1
12/05/88	35.00	22.63	12.37	--	<100	<0.5	<1.0	2.0	<1.0	--	<1.0	<1.0
03/14/89	35.00	24.00	11.00	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
06/13/89	35.00	23.78	11.22	--	<500	0.7	<0.5	2.0	3.0	--	--	--
09/13/89	35.00	22.47	12.53	--	<500	0.5	1.0	<0.5	0.8	--	--	--
12/13/89	35.00	22.55	12.45	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
03/13/90	35.00	23.47	11.53	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
10/11/90	35.00	22.05	12.95	--	<50	<0.5	0.6	0.7	1.1	--	--	--
04/05/91	35.00	24.48	10.52	--	160	1.3	<0.5	0.7	0.8	--	--	--
10/30/91	35.00	21.38	13.62	--	69	3.0	<0.5	<0.5	<0.5	--	--	--
10/30/91	35.00	21.38	13.62	--	81	7.4	<0.5	<0.5	<0.5	--	--	--
04/23/92	35.00	24.92	10.08	--	250	53	29	3.5	11	--	--	--
07/20/92	35.00	23.78	11.22	--	690	94	6.6	5.5	4.7	--	--	--
10/30/92	35.00	22.48	12.52	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
01/20/93	35.00	26.00	9.00	--	780	<0.5	1.7	12	10	--	--	--
04/30/93	35.00	26.51	8.49	--	720	8.7	1.8	4.7	5.1	--	--	--
08/06/93	35.00	25.08	9.92	--	780	2.4	1.2	2.6	3.4	--	--	--
10/22/93	35.00	24.30	10.70	--	1700	38	53	11	80	--	--	--
01/25/94	35.00	24.52	10.48	--	600	1.1	1.9	2.4	3.7	--	--	--
04/05/94	35.00	25.35	9.65	--	970	6.0	<0.5	4.5	8.2	--	--	--
07/01/94	35.00	24.73	10.27	--	940	4.0	5.0	4.9	13	--	--	--
02/13/95	35.00	26.76	8.24	Sampled annually	--	--	--	--	--	--	--	--
05/10/95	35.00	26.85	8.15	--	--	--	--	--	--	--	--	--
08/02/95	35.00	25.92	9.08	--	260	<1.0	<1.0	<1.0	1.2	--	--	--
05/08/96	35.00	26.59	8.41	--	120	<0.5	<0.5	<0.5	<0.5	4.6	--	--
11/07/96	35.00	24.92	10.08	--	--	--	--	--	--	--	--	--
05/07/97	35.00	26.95	8.05	--	160	<0.5	<0.5	<0.5	<0.5	9.3	--	--
11/04/97	35.00	24.30	10.70	--	--	--	--	--	--	--	--	--
05/15/98	35.00	27.37	7.63	--	<50	<0.5	<0.5	<0.5	<0.5	64	--	--
05/15/98	35.00	27.37	7.63	Confirmation run	--	--	--	--	--	26	--	--
08/12/98	35.00	26.25	8.75	--	--	--	--	--	--	--	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	EDC	EDB
MW-3												
12/08/87	36.17	23.86	12.31	--	--	--	--	--	--	--	--	--
05/23/88	36.17	25.35	10.82	--	--	--	--	--	--	--	--	--
06/07/88	36.17	24.07	12.10	--	<1000	6.3	13	23	220	--	--	--
08/05/88	36.17	23.13	13.04	--	--	--	--	--	--	--	--	--
09/08/88	36.17	22.76	13.41	--	2000	1.2	<1.0	38	100	--	<0.1	<0.1
12/06/88	36.17	22.67	13.50	--	3000	10	<10	250	740	--	<10	<10
03/14/89	36.17	24.02	12.15	--	600	1.4	<0.5	8.7	17	--	--	--
06/13/89	36.17	23.77	12.40	--	10,000	9.0	6.0	290	530	--	--	--
09/13/89	36.17	22.49	13.68	--	8100	4.0	3.0	86	210	--	--	--
12/13/89	36.17	22.59	13.58	--	2600	20	<0.3	91	170	--	--	--
03/13/90	36.17	23.48	12.69	--	4200	17	<0.3	130	200	--	--	--
10/11/90	36.17	22.06	14.11	--	9800	3.0	28	380	640	--	--	--
10/11/90	36.17	22.06	14.11	--	9800	<3.0	12	430	720	--	--	--
04/05/91	36.17	24.52	11.65	--	120,000	<60	200	630	970	--	--	--
04/05/91	36.17	24.52	11.65	--	96,000	<15	92	420	570	--	--	--
10/30/91	36.17	21.81	14.36	--	5100	<0.5	8.8	66	73	--	--	--
04/23/92	36.17	24.93	11.24	--	590	<0.5	1.6	1.1	0.6	--	--	--
07/20/92	36.17	23.79	12.38	--	2100	12	3.5	25	21	--	--	--
10/30/92	36.17	22.49	13.68	--	2900	8.1	8.0	23	20	--	--	--
01/20/93	36.17	26.01	10.16	--	420	42	3.8	3.1	2.3	--	--	--
04/30/93	36.17	26.53	9.64	--	340	1.7	0.9	<0.5	<1.5	--	--	--
08/06/93	36.17	25.12	11.05	--	3000	<1.0	8.8	7.7	6.1	--	--	--
10/22/93	36.17	24.31	11.86	--	3000	3.6	3.4	<0.5	6.2	--	--	--
01/25/94	36.17	24.51	11.66	--	5600	8.2	15	18	34	--	--	--
04/05/94	36.17	25.35	10.82	--	1700	50	32	24	31	--	--	--
07/01/94	36.17	24.74	11.43	--	3800	1.3	16	12	20	--	--	--
02/13/95	36.17	26.84	9.33	--	1700	<2.5	<2.5	4.0	5.4	--	--	--
05/10/95	36.17	26.91	9.26	--	20,000	<5.0	<5.0	<5.0	<5.0	--	--	--
08/02/95	36.17	25.97	10.20	--	1700	<10	<10	<10	<10	--	--	--
05/08/96	36.17	26.64	9.53	--	720	<1.0	1.8	1.3	2.0	52	--	--
11/07/96	36.17	24.73	11.44	--	1400	<1.2	<1.2	<1.2	6.9	7.9	--	--
05/07/97	36.17	26.80	9.37	--	1500	9.7	<2.0	3.7	<2.0	<10	--	--
11/04/97	36.17	24.42	11.75	--	1300	16	7.4	<2.0	3.6	21	--	--
05/15/98	36.17	27.42	8.75	--	400	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
08/12/98	36.17	26.32	9.85	--	320	<0.5	2.1	<0.5	<0.5	<2.5	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	EDC	EDB
MW-4												
12/08/87	36.05	24.33	11.72	--	--	--	--	--	--	--	--	--
05/23/88	36.05	24.44	11.61	--	--	--	--	--	--	--	--	--
06/08/88	36.05	24.11	11.94	--	<1000	<0.5	31	1.0	1.1	--	--	--
08/05/88	36.05	23.25	12.80	--	--	--	--	--	--	--	--	--
09/08/88	36.05	22.86	13.19	--	1300	<0.1	<1.0	<1.0	<1.0	--	<0.1	<0.1
12/06/88	36.05	22.74	13.31	--	100	<1.0	<1.0	<1.0	<1.0	--	<1.0	<1.0
03/14/89	36.05	24.17	11.88	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
06/13/89	36.05	23.86	12.19	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
09/13/89	36.05	22.56	13.49	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
12/13/89	36.05	22.72	13.33	--	140	<0.3	<0.3	<0.3	<0.6	--	--	--
03/13/90	36.05	24.56	11.49	--	210	<0.3	<0.3	<0.3	<0.6	--	--	--
10/11/90	36.05	22.12	13.93	--	370	<0.5	2.8	1.9	3.9	--	--	--
04/05/91	36.05	24.63	11.42	--	790	<0.5	1.6	1.6	2.3	--	--	--
10/30/91	36.05	21.62	14.43	--	510	<0.5	0.5	<0.5	<0.5	--	--	--
04/23/92	36.05	25.12	10.93	--	880	6.6	7.0	5.9	11	--	--	--
07/20/92	36.05	23.91	12.14	--	500	<0.5	1.2	0.6	2.2	--	--	--
10/30/92	36.05	22.60	13.45	--	750	<0.5	1.4	6.0	21	--	--	--
01/20/93	36.05	26.29	9.76	--	280	<0.5	<0.5	<0.5	<0.5	--	--	--
04/30/93	36.05	26.86	9.19	--	<50	<0.5	<0.5	<0.5	<1.5	--	--	--
08/06/93	36.05	25.37	10.68	--	580	<1.0	12	<1.0	<3.0	--	--	--
10/22/93	36.05	24.51	11.54	--	<50	<0.5	0.6	<0.5	<1.5	--	--	--
01/25/94	36.05	24.68	11.37	--	1200	2.0	5.4	5.5	8.2	--	--	--
04/05/94	36.05	25.54	10.51	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
07/01/94	36.05	24.91	11.14	--	350	<0.5	<0.5	<0.5	<0.5	--	--	--
02/13/95	36.05	27.10	8.95	Sampled annually	--	--	--	--	--	--	--	--
05/10/95	36.05	27.19	8.86	--	--	--	--	--	--	--	--	--
08/02/95	36.05	26.15	9.90	--	130	<0.5	<0.5	<0.5	<0.5	--	--	--
05/08/96	36.05	26.95	9.10	--	<50	<0.5	0.63	<0.5	<0.5	7.5	--	--
11/07/96	36.05	25.27	10.78	--	--	--	--	--	--	--	--	--
05/07/97	36.05	27.07	8.98	--	120	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
11/04/97	36.05	24.58	11.47	--	--	--	--	--	--	--	--	--
05/15/98	36.05	27.78	8.27	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
08/12/98	36.05	26.65	9.40	--	--	--	--	--	--	--	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	EDC	EDB
MW-5												
12/08/87	35.65	23.61	12.04	--	--	--	--	--	--	--	--	--
05/23/88	35.65	24.26	11.39	--	--	--	--	--	--	--	--	--
06/08/88	35.65	24.17	11.48	--	<1000	<0.5	5.0	2.0	5.5	--	--	--
08/05/88	35.65	23.23	12.42	--	--	--	--	--	--	--	--	--
09/08/88	35.65	22.86	12.79	--	340	<0.1	<1.0	<1.0	<1.0	--	0.2	<0.1
12/06/88	35.65	22.69	12.96	--	<100	<1.0	<1.0	<1.0	<1.0	--	<1.0	<1.0
03/14/89	35.65	24.07	11.58	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
06/13/89	35.65	23.85	11.80	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
09/13/89	35.65	22.54	13.11	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
12/13/89	35.65	22.35	13.30	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
03/13/90	35.65	23.53	12.12	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
10/11/90	35.65	22.09	13.56	--	<50	<0.5	<0.5	<0.5	1.0	--	--	--
04/05/91	35.65	24.56	11.09	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
10/30/91	35.65	21.53	14.12	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
04/23/92	35.65	25.07	10.58	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
07/20/92	35.65	23.87	11.78	--	<50	<0.5	<0.5	<0.5	0.7	--	--	--
10/30/92	35.65	22.57	13.08	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
01/20/93	35.65	27.21	8.44	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
04/30/93	35.65	26.80	8.85	--	<50	<0.5	0.5	<0.5	<1.5	--	--	--
08/06/93	35.65	25.30	10.35	--	<50	<0.5	<0.5	<0.5	<1.5	--	--	--
10/22/93	35.65	24.46	11.19	--	<50	0.9	<0.5	<0.5	<1.5	--	--	--
01/25/94	35.65	24.63	11.02	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
04/05/94	35.65	25.50	10.15	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
07/01/94	35.65	24.86	10.79	--	110	<0.5	1.0	<0.5	0.8	--	--	--
02/13/95	35.65	26.99	8.66	Sampled annually	--	--	--	--	--	--	--	--
05/10/95	35.65	27.15	8.50	--	--	--	--	--	--	--	--	--
08/02/95	35.65	26.17	9.48	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
05/08/96	35.65	26.85	8.80	--	<50	<0.5	0.63	<0.5	<0.5	7.1	--	--
11/07/96	35.65	25.47	10.18	--	--	--	--	--	--	--	--	--
05/07/97	35.65	26.79	8.86	--	<50	<0.5	0.63	<0.5	<0.5	<2.5	--	--
11/04/97	35.65	24.48	11.17	--	--	--	--	--	--	--	--	--
05/15/98	35.65	27.73	7.92	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
08/12/98	35.65	26.60	9.05	--	--	--	--	--	--	--	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	EDC	EDB
MW-6												
06/08/88	36.92	24.02	12.90	--	<1000	<0.5	6.0	11	30	--	--	--
08/05/88	36.92	23.16	13.76	--	--	--	--	--	--	--	--	--
09/08/88	36.92	22.79	14.13	--	1200	0.6	<1.0	95	16	--	0.3	<0.1
12/06/88	36.92	22.64	14.28	--	600	0.7	<1.0	6.0	9.0	--	<0.1	<0.1
03/14/89	36.92	24.01	12.91	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
06/13/89	36.92	23.89	13.03	--	2000	<0.5	0.9	3.0	5.0	--	--	--
09/13/89	36.92	22.57	14.35	--	2300	1.0	3.0	0.9	3.0	--	--	--
12/13/89	36.92	22.53	14.39	--	870	5.0	1.0	2.0	1.0	--	--	--
03/13/90	36.92	23.16	13.76	--	1000	1.0	<0.3	1.0	1.0	--	--	--
10/11/90	36.92	22.04	14.88	--	370	<0.5	1.1	0.6	0.8	--	--	--
04/05/91	36.92	24.54	12.38	--	520	<0.5	1.0	1.0	<0.5	--	--	--
10/30/91	36.92	21.83	15.09	--	760	<0.5	1.6	0.9	<0.5	--	--	--
04/23/92	36.92	24.93	11.99	--	1000	30	22	7.4	32	--	--	--
07/20/92	36.92	23.78	13.14	--	400	<0.5	0.6	<0.5	0.5	--	--	--
10/30/92	36.92	22.47	14.45	--	420	2.3	1.3	<0.5	<0.5	--	--	--
01/20/93	36.92	26.12	10.80	--	580	4.3	0.7	1.1	0.8	--	--	--
04/30/93	36.92	26.56	10.36	--	750	<0.5	1.5	0.7	<1.5	--	--	--
08/06/93	36.92	25.17	11.75	--	1200	<0.5	2.9	0.6	<0.9	--	--	--
10/22/93	36.92	24.32	12.60	--	1100	8.7	1.1	0.6	<1.5	--	--	--
01/25/94	36.92	24.51	12.41	--	730	5.3	3.4	1.2	2.2	--	--	--
04/05/94	36.92	25.38	11.54	--	450	10	3.3	0.6	0.6	--	--	--
07/01/94	36.92	24.72	12.20	--	1000	1.6	6.6	0.8	1.8	--	--	--
02/13/95	36.92	26.72	10.20	--	870	<1.0	<1.0	<1.0	<1.0	--	--	--
05/10/95	36.92	26.88	10.04	--	690	<0.5	<0.5	<0.5	<0.5	--	--	--
08/02/95	36.92	26.02	10.90	--	1200	<2.0	<2.0	<2.0	<2.0	--	--	--
05/08/96	36.92	26.64	10.28	--	700	<5.0	<5.0	<5.0	<5.0	<25	--	--
11/07/96	36.92	25.64	11.28	--	450	5.5	<0.5	<0.5	<0.5	<2.5	--	--
05/07/97	36.92	26.44	10.48	--	1700	24.0	4.4	<1.0	<1.0	6	--	--
11/04/97	36.92	24.50	12.42	--	1400	<2.0	<2.0	<2.0	<2.0	15	--	--
05/15/98	36.92	27.47	9.45	--	1000	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
08/12/98	36.92	26.32	10.60	--	690	<0.5	<0.5	0.60	1.8	<2.5	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	EDC	EDB
MW-7												
06/08/88	35.71	24.05	11.66	--	<1000	<0.5	0.8	<0.5	<0.5	--	--	--
08/05/88	35.71	23.20	12.51	--	--	--	--	--	--	--	--	--
09/08/88	35.71	22.83	12.88	--	80	<0.1	<1.0	<1.0	<1.0	--	0.2	<0.1
12/06/88	35.71	22.65	13.06	--	<50	<0.1	<1.0	<1.0	<1.0	--	<0.1	<0.1
03/14/89	35.71	23.97	11.74	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
06/13/89	35.71	23.84	11.87	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
09/13/89	35.71	--	--	--	--	--	--	--	--	--	--	--
12/13/89	35.71	22.61	13.10	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
03/13/90	35.71	23.50	12.21	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
10/11/90	35.71	22.03	13.68	--	66	<0.5	0.8	1.5	3.0	--	--	--
04/05/91	35.71	24.44	11.27	--	260	0.6	0.9	0.7	1.1	--	--	--
10/30/91	35.71	21.61	14.10	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
04/23/92	35.71	24.97	10.74	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
07/20/92	35.71	23.82	11.89	--	<50	<0.5	<0.5	<0.5	0.7	--	--	--
10/30/92	35.71	22.51	13.20	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
01/20/93	35.71	26.13	9.58	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
04/30/93	35.71	26.67	9.04	--	<50	<0.5	<0.5	<0.5	<1.5	--	--	--
08/06/93	35.71	25.26	10.45	--	<50	<0.5	<0.5	<0.5	<1.5	--	--	--
10/22/93	35.71	24.37	11.34	--	<50	<0.5	0.7	<0.5	<1.5	--	--	--
01/25/94	35.71	24.57	11.14	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
04/05/94	35.71	25.46	10.25	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
07/01/94	35.71	25.04	10.67	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
02/13/95	35.71	27.00	8.71	Sampled annually	--	--	--	--	--	--	--	--
05/10/95	35.71	27.04	8.67	--	--	--	--	--	--	--	--	--
08/02/95	35.71	26.05	9.66	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
05/08/96	35.71	26.79	8.92	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
11/07/96	35.71	25.35	10.36	--	--	--	--	--	--	--	--	--
05/07/97	35.71	26.50	9.21	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
11/04/97	35.71	24.70	11.01	--	--	--	--	--	--	--	--	--
05/15/98	35.71	27.60	8.11	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
08/12/98	35.71	26.46	9.25	--	--	--	--	--	--	--	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	EDC	EDB
MW-8												
06/08/88	35.28	23.96	11.32	--	<1000	<0.5	<0.5	<0.5	<0.5	--	--	--
08/05/88	35.28	23.12	12.16	--	--	--	--	--	--	--	--	--
09/08/88	35.28	22.76	12.52	--	<50	<0.1	<1.0	<1.0	<1.0	--	0.1	<0.1
12/05/88	35.28	22.59	12.69	--	<50	<0.1	<1.0	<1.0	<1.0	--	<0.1	<0.1
03/14/89	35.28	23.85	11.43	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
06/13/89	35.28	23.78	11.50	--	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
09/13/89	35.28	--	--	--	--	--	--	--	--	--	--	--
12/13/89	35.28	22.56	12.72	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
03/13/90	35.28	23.45	11.83	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
10/11/90	35.28	21.97	13.31	--	<50	<0.5	<0.5	<0.5	0.5	--	--	--
04/05/91	35.28	24.38	10.90	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
10/30/91	35.28	21.72	13.56	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
04/23/92	35.28	24.86	10.42	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
07/20/92	35.28	23.74	11.54	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
10/30/92	35.28	22.44	12.84	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
01/20/93	35.28	25.88	9.40	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
04/30/93	35.28	26.44	8.84	--	<50	<0.5	<0.5	<0.5	<1.5	--	--	--
08/06/93	35.28	25.11	10.17	--	<50	<0.5	<0.5	<0.5	<1.5	--	--	--
10/22/93	35.28	24.24	11.04	--	<50	<0.5	0.7	<0.5	<1.5	--	--	--
01/25/94	35.28	24.47	10.81	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
04/05/94	35.28	25.34	9.94	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
07/01/94	35.28	24.36	10.92	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
02/13/95	35.28	26.75	8.53	Sampled annually	--	--	--	--	--	--	--	--
05/10/95	35.28	--	--	Inaccessible	--	--	--	--	--	--	--	--
06/06/95	35.28	26.52	8.76	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
08/02/95	35.28	25.90	9.38	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
05/08/96	35.28	26.58	8.70	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
11/07/96	35.28	25.05	10.23	--	--	--	--	--	--	--	--	--
05/07/97	35.28	26.54	8.74	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
11/04/97	35.28	24.65	10.63	--	--	--	--	--	--	--	--	--
05/15/98	35.28	27.30	7.98	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
08/12/98	35.28	26.28	9.00	--	--	--	--	--	--	--	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	EDC	EDB
MW-A												
05/10/95	--	--	9.08	--	210	<0.5	<0.5	<0.5	<0.5	--	--	--
08/04/95	--	--	10.02	--	220	<0.5	<0.5	<0.5	<0.5	--	--	--
05/08/96	--	--	9.50	--	78	<0.5	<0.5	<0.5	<0.5	2.5	--	--
11/07/96	--	--	11.14	--	480	3.5	<0.5	3.1	1.3	<2.5	--	--
05/07/97	--	--	9.54	--	18	1.1	<0.5	<0.5	0.60	<2.5	--	--
11/04/97	--	--	11.45	--	230	1.6	1.0	<0.5	0.70	4.1	--	--
05/15/98	--	--	8.51	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
08/12/98	--	--	9.60	--	180	<0.5	<0.5	<0.5	<0.5	<2.5	--	--

Figure 3 from the Formal Case Closure Report
Former Mobil Station 04-FGN
14994 East 14th Street, San Leandro
November 23, 1998 (Alton Geoscience)

Table 2-Groundwater Monitoring Data from the
Semi-Annual Quarterly Monitoring Report, Third Quarter 2004
Former Mobil Station 04-FGN
14994 East 14th Street, San Leandro, California
September 1, 2004 (ETIC)

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04-FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentrations (µg/L) TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8020 or 8021)	MTBE (8240 or 8260)
MW1A	03/31/88	36.35	—	—	29,000	ND	ND	ND	550	640	—	—
MW1A	01/31/89	36.35	—	—	11,200	—	260	ND	500	500	—	—
MW1A	02/24/94	36.35	9.42	26.93	11,000	2,500	70	ND	260	180	—	—
MW1A	08/03/94	36.35	12.00	24.35	13,000	7,100	61	50	280	230	—	—
MW1A	11/23/94	36.35	11.18	25.17	12,000	2,500	49	ND	300	190	—	—
MW1A	02/28/95	36.35	9.08	27.27	10,000	3,200	25	ND	110	67	—	—
MW1A	05/10/95	36.35	8.33	28.02	10,000	3,600	31	ND	140	81	—	—
MW1A	08/02/95	36.63	9.49	27.14	10,000	3,800	24	18	130	80	—	—
MW1A	11/02/95	36.63	11.05	25.58	12,000	3,400[i]	ND	ND	190	150	—	—
MW1A	02/08/96	36.63	7.55	29.08	8,000	3,600[i]	100	21	87	58	—	—
MW1A	05/08/96	36.63	7.52	29.11	9,200	—	11	ND	120	64	—	—
MW1A	08/09/96	36.63	9.63	27.00	—	—	—	—	—	—	—	—
MW1A	08/20/96	36.63	—	—	6,800	—	64	22	100	55	130	ND
MW1A	11/07/96	36.63	11.01	25.62	7,900	—	100	12	70	34	95	ND
MW1A	02/10/97	36.63	7.58	29.05	5,800	—	36	15	67	29	58	ND
MW1A	05/07/97	36.63	9.15	27.48	1,400	—	13	ND	11	ND	ND	—
MW1A	09/10/97	36.63	10.88	25.75	7,800	—	64	ND	70	26	120	ND
MW1A	02/12/98	36.63	5.52	31.11	ND	—	ND	ND	ND	ND	ND	—
MW1A	08/12/98	36.63	8.80	27.83	500	—	41	12	1.8	20	ND	—
MW1A	12/10/99	36.63	10.86	25.77	1,700	—	ND	1.4	6.2	3.3	ND	—
MW1A	01/14/00	36.63	11.33	25.30	4,600	—	ND	30	28	ND	ND	—
MW1A	10/27/00	36.63	10.30	26.33	3,500	—	<10	2.6	13	6.4	18	<5
MW1A	01/18/01	36.63	10.45	26.18	4,500	—	<10	3.9	12	4.7	<20	—
MW1A	07/10/01	36.63	10.72	25.91	2,000	—	<20	18	9.6	18	<20	<2
MW1A	11/27/01	16.34	Well resurveyed to new reference point									
MW1A	01/16/02	16.34	9.02	7.32	2,690	—	11.7	1.60	6.80	6.00	23.9	—
MW1A	07/08/02	16.34	10.43	5.91	1,570	—	12.0	11.0	<5.0	<5.0	24.0	<0.50
MW1A	01/23/03	16.34	8.84	7.50	2,040	—	16.5	3.5	8.70	5.90	—	<0.50
MW1A	07/09/03	16.34	9.97	6.37	1,440	—	8.60	1.0	7.3	5.2	13.6	<0.5
MW1A	01/15/04	16.34	9.39	6.95	1,640	—	0.70	5.2	4.0	2.8	—	<0.5
MW1A	**07/07/04**	**16.34**	**10.75**	**5.59**	**2,210**	**—**	**18.7**	**2.9**	**3.7**	**1.5**	**—**	**<0.5**
MW2A	02/24/94	36.61	9.52	27.09	6,400	4,500	31	ND	58	42	—	—
MW2A	08/23/94	36.61	12.05	24.56	7,500	7,100	42	21	71	53	—	—

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04-FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentrations (µg/L) TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8020 or 8021)	MTBE (8240 or 8260)
MW2A	11/23/94	36.61	11.25	25.36	7,000	1,800	33	11	39	ND	—	—
MW2A	02/28/95	36.61	9.10	27.51	9,000	1,600	29	36	96	45	—	—
MW2A	05/10/95	36.61	8.42	28.19	5,100	1,600	20	27	32	35	—	—
MW2A	08/02/95	36.62	9.54	27.08	4,300	1,800	36	ND	11	16	—	—
MW2A	11/02/95	36.62	11.08	25.54	4,300	3,000[i]	22	ND	10	11	—	—
MW2A	02/08/96	36.62	7.68	28.94	2,900	940[i]	32	13	13	ND	—	—
MW2A	05/08/96	36.62	8.64	27.98	2,500	—	13	12	19	26	—	—
MW2A	08/09/96	36.62	9.71	26.91	—	—	—	—	—	—	—	—
MW2A	08/20/96	36.62	—	—	2,500	—	19	11	6.8	8.1	36	—
MW2A	11/07/96	36.62	11.04	25.58	4,700	—	58	7.3	5.3	ND	55	—
MW2A	02/10/97	36.62	7.75	28.87	2,600	—	12	10	35	15	ND	—
MW2A	05/07/97	36.62	9.23	27.39	3,300	—	25	18	16	11	ND	—
MW2A	09/10/97	36.62	10.91	25.71	2,800	—	24	ND	ND	ND	43	—
MW2A	02/12/98	36.62	5.59	31.03	3,800	—	10	11	30	14	ND	—
MW2A	08/12/98	36.62	8.85	27.77	1,300	—	0.8	8.7	2.4	4.7	ND	—
MW2A	12/10/99	36.62	10.90	25.72	1,300	—	ND	2.2	ND	ND	ND	—
MW2A	01/14/00	36.62	11.39	25.23	2,700	—	1.3	18	2.4	ND	ND	—
MW2A	10/27/00	36.62	10.48	26.14	2,600	—	9.6	2.4	<5.0	<5.0	7.9	—
MW2A	01/18/01	36.62	10.61	26.01	3,800	—	<5.0	2.1	3.0	2.0	<10	—
MW2A	07/10/01	36.62	10.78	25.84	2,100	—	<10	2.6	2.8	3.4	<10	—
MW2A	11/27/01	16.12	Well resurveyed to new reference point									
MW2A	01/16/02	16.12	9.11	7.01	2,500	—	9.80	5.10	6.50	9.80	16.0	—
MW2A	07/08/02	16.12	10.48	5.64	682	—	6.3	0.7	0.9	3.3	8.5	—
MW2A	01/23/03	16.12	8.94	7.18	1,180	—	8.8	3.1	4.8	5.8	—	<0.50
MW2A	07/09/03	16.12	10.03	6.09	1,430	—	7.80	1.5	3.1	3.4	10.5	<0.5
MW2A	01/15/04	16.12	9.48	6.64	1,530	—	0.50	4.8	2.2	2.9	—	<0.5
MW2A	**07/07/04**	**16.12**	**10.80**	**5.32**	**797**	—	**5.70**	**1.3**	**1.7**	**1.1**	—	**<0.5**
MW3A	02/24/94	36.92	9.85	27.07	19,000	10,000	52	30	690	290	—	—
MW3A	08/23/94	36.92	12.33	24.59	14,000	11,000	44	24	1,000	100	—	—
MW3A	11/23/94	36.92	11.56	25.36	13,000	2,600	30	18	690	52	—	—
MW3A	02/28/95	36.92	9.35	27.57	8,500	—	11	ND	340	24	—	—
MW3A	05/10/95	36.92	8.55	28.37	7,600	3,800	ND	ND	400	45	—	—
MW3A	08/02/95	36.93	9.75	27.18	9,200	3,800	17	13	340	34	—	—

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04-FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentrations (µg/L) TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8020 or 8021)	MTBE (8240 or 8260)
MW3A	11/02/95	36.93	11.29	25.64	9,200	4,400[i]	31	ND	360	72	—	—
MW3A	02/08/96	36.93	7.97	28.96	6,900	3,800[i]	38	ND	230	43	—	—
MW3A	05/08/96	36.93	8.82	28.11	7,700	—	ND	ND	270	38	—	—
MW3A	08/09/96	36.93	9.95	26.98	—	—	—	—	—	—	—	—
MW3A	08/20/96	36.93	—	—	5,600	—	8.0	29	180	23	12	—
MW3A	11/07/96	36.93	11.28	25.65	8,600	—	47	ND	150	29	ND	—
MW3A	02/10/97	36.93	7.95	28.98	8,300	—	28	ND	130	23	ND	—
MW3A	05/07/97	36.93	9.45	27.48	37,000	—	230	110	630	ND	ND	—
MW3A	09/10/97	36.93	11.13	25.80	5,500	—	16	ND	75	11	ND	—
MW3A	02/12/98	36.93	5.72	31.21	10,000	—	37	ND	84	25	ND	—
MW3A	08/12/98	36.93	9.05	27.88	5,600	—	4	18	39	19	ND	—
MW3A	12/10/99	36.93	11.21	25.72	5,900	—	ND	3.0	22	5.0	ND	—
MW3A	01/14/00	36.93	11.64	25.29	6,500	—	7.5	27	37	ND	ND	—
MW3A	10/27/00	36.93	10.78	26.15	6,300	—	<10	3.8	17	5.6	<20	—
MW3A	01/18/01	36.93	10.87	26.06	7,300	—	<20	3.1	14	3.3	<10	—
MW3A	07/10/01	36.93	11.03	25.90	5,200	—	7.3	8.0	11	9.6	<10	—
MW3A	11/27/01	16.42	Well resurveyed to new reference point									
MW3A	01/16/02	16.42	9.38	7.04	4,900	—	19.0	<5.00	16.0	14.0	28.0	<5
MW3A	07/08/02	16.42	10.75	5.67	2,470	—	9.1	1.8	8.8	4.1	17.5	—
MW3A	01/23/03	16.42	9.20	7.22	2,240	—	12.5	4.5	7.9	28.0	—	<0.50
MW3A	07/09/03	16.42	10.28	6.14	2,850	—	10.8	2.8	8.3	5.5	15.7	<0.5
MW3A	01/15/04	16.42	9.77	6.65	2,810	—	1.20	8.2	5.9	9.1	—	<0.5
MW3A	**07/07/04**	**16.42**	**11.07**	**5.35**	**2,250**	—	**15.9**	**2.7**	**5.8**	**1.8**	—	**<0.5**
MW4A	08/02/95	37.18	9.63	27.55	ND	ND	ND	ND	ND	ND	—	—
MW4A	11/02/95	37.18	11.48	25.70	ND	ND	ND	ND	ND	ND	—	—
MW4A	02/08/96	37.18	8.18	29.00	ND	ND	ND	1.1	ND	0.92	—	—
MW4A	05/08/96	37.18	8.49	28.69	ND	—	ND	ND	ND	ND	—	—
MW4A	08/09/96	37.18	10.05	27.13	—	—	—	—	—	—	—	—
MW4A	08/20/96	37.18	—	—	ND	—	ND	ND	ND	ND	ND	—
MW4A	11/07/96	37.18	11.48	25.70	ND	—	ND	ND	ND	0.88	ND	—
MW4A	02/10/97	37.18	8.11	29.07	ND	—	ND	2.4	ND	ND	ND	—
MW4A	05/07/97	37.18	9.64	27.54	ND	—	ND	ND	ND	ND	ND	—
MW4A	09/10/97	37.18	11.32	25.86	—	—	—	—	—	—	—	—

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04-FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentrations (µg/L) TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8020 or 8021)	MTBE (8240 or 8260)
MW4A	02/12/98	37.18	5.90	31.28	ND	—	ND	ND	ND	ND	ND	—
MW4A	08/12/98	37.18	9.21	27.97	—	—	—	—	—	—	—	—
MW4A	12/10/99	37.18	11.46	25.72	ND	—	ND	0.39	ND	0.95	ND	—
MW4A	03/09/00	Well destroyed										
MW5A	08/02/95	35.91	8.74	27.17	1,300	220	16	0.68	1.3	4.3	—	—
MW5A	11/02/95	35.91	10.34	25.57	180	ND	1.9	1.2	ND	ND	—	—
MW5A	02/08/96	35.91	6.67	29.24	160	150	1.9	2.2	ND	0.89	—	—
MW5A	05/08/96	35.91	7.35	28.56	260	—	2.4	6.7	2.0	9.6	—	—
MW5A	08/09/96	35.91	8.81	27.10	—	—	—	—	—	—	—	—
MW5A	08/20/96	35.91	—	—	ND	—	ND	1.8	ND	ND	9.4	—
MW5A	11/07/96	35.91	10.25	25.66	—	—	—	—	—	—	—	—
MW5A	02/10/97	35.91	6.93	28.98	ND	—	ND	1.2	ND	ND	ND	—
MW5A	05/07/97	35.91	8.42	27.49	—	—	—	—	—	—	—	—
MW5A	09/10/97	35.91	10.15	25.76	—	—	—	—	—	—	—	—
MW5A	02/12/98	35.91	5.32	30.59	ND	—	ND	ND	ND	ND	ND	—
MW5A	08/12/98	35.91	8.19	27.72	—	—	—	—	—	—	—	—
MW5A	12/10/99	35.91	10.10	25.81	ND	—	ND	ND	ND	ND	ND	—
MW5A	03/09/00	Well destroyed										
MW6A	08/02/95	37.10	9.68	27.42	ND	ND	ND	ND	ND	ND	—	—
MW6A	11/02/95	37.10	11.26	25.84	ND	ND	ND	ND	ND	ND	—	—
MW6A	02/08/96	37.10	7.79	29.31	ND	ND	ND	1.3	ND	1.3	—	—
MW6A	05/08/96	37.10	8.38	28.72	ND	—	ND	1.6	ND	1.2	—	—
MW6A	08/09/96	37.10	9.82	27.28	—	—	—	—	—	—	—	—
MW6A	08/20/96	37.10	—	—	ND	—	ND	ND	ND	ND	ND	—
MW6A	11/07/96	37.10	11.02	26.08	—	—	—	—	—	—	—	—
MW6A	02/10/97	37.10	7.70	29.40	ND	—	ND	3.4	ND	ND	ND	—
MW6A	05/07/97	37.10	9.31	27.79	—	—	—	—	—	—	—	—
MW6A	09/10/97	37.10	11.08	26.02	—	—	—	—	—	—	—	—
MW6A	02/12/98	37.10	5.52	31.58	ND	—	ND	ND	ND	ND	ND	—
MW6A	08/12/98	37.10	8.91	28.19	—	—	—	—	—	—	—	—
MW6A	12/10/99	37.10	11.24	25.86	ND	—	ND	0.32	ND	ND	ND	—
MW6A	03/09/00	Well destroyed										

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04-FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentrations (µg/L) TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8020 or 8021)	MTBE (8240 or 8260)
MW7A	11/02/95	37.39	11.77	25.62	ND	ND	ND	ND	ND	ND	—	—
MW7A	02/08/96	37.39	8.68	28.71	ND	75	ND	1.4	ND	1.5	—	—
MW7A	05/08/96	37.39	9.00	28.39	ND	—	2.2	6.3	1.4	7.9	—	—
MW7A	08/09/96	37.39	10.31	27.08	—	—	—	—	—	—	—	—
MW7A	08/20/96	37.39	—	—	ND	—	ND	ND	ND	ND	ND	—
MW7A	11/07/96	37.39	11.81	25.58	ND	—	ND	0.96	ND	1.6	ND	—
MW7A	02/10/97	37.39	8.57	28.82	ND	—	ND	2.4	ND	ND	ND	—
MW7A	05/07/97	37.39	10.05	27.34	ND	—	ND	ND	ND	ND	ND	—
MW7A	09/10/97	37.39	11.66	25.73	ND	—	ND	ND	ND	ND	ND	—
MW7A	02/12/98	37.39	6.55	30.84	ND	—	ND	ND	ND	ND	ND	—
MW7A	08/12/98	37.39	9.65	27.74	ND	—	0.5	ND	ND	ND	ND	—
MW7A	12/10/99	37.39	11.80	25.59	ND	—	ND	ND	ND	ND	ND	—
MW7A	03/09/00	Well destroyed										

i Unidentified hydrocarbons <C10

TPH-d Total Petroleum Hydrocarbons as diesel.
TPH-g Total Petroleum Hydrocarbons as gasoline.
MTBE Methyl tertiary butyl ether.
ND Not detected at or above laboratory reporting limit.
TOC Top of casing.

µg/L Micrograms per liter.
— Not analyzed or not provided.

Selected Text and Figure 3 from the
Limited Phase II Environmental Site Assessment
Quality Tune Up
14901 East 14th Street, San Leandro, California
June 6, 2005 (Ninyo & Moore)

was detected in samples NMGW-4 at 2,600 µg/L, NMGW-5 at 450 µg/L, and NMGW-6 at 280 µg/L.

5.3. QA/QC Discussion

Laboratory QA/QC samples, including Laboratory Control Samples (LCS), Matrix Spike (MS) and Matrix Spike Duplicates (MSD) and Surrogates were within Recovery Control Limits (RCLs). No laboratory qualifiers were associated with analytical results with the exception of the aforementioned laboratory note related to the non-typical pattern associated with TPH-D.

6. SUMMARY AND CONCLUSIONS

Nine soil borings were drilled in the parking area on site on October 24, 2005. Undisturbed soil samples were collected from four of the soil borings (NM-3, NM-4, NM-7, and NM-9) and groundwater samples were collected from all nine of the borings (NM-1 through NM-9).

Based on the soil sample analytical results present herein, near surface soil samples collected have consistently been below the laboratory reporting limits for petroleum hydrocarbons with the exception of TPH-MO. TPH-MO was detected in soil samples NMSB3-02, NMSB3-16, NMSB4-02, and NMSB-05 at concentrations ranging from 19.0 mg/kg in NMSB3-02 to 53.0 mg/kg in NMSB4-02, which are below the TPH-MO ESL of 500 mg/kg. The concentrations of TPH-MO reported in the samples collected from NM-3 and NM-4 are likely related to the presence of residual fuels possibly present in the UST backfill material.

Concentrations of TPH-G and MTBE were reported at 180 mg/kg and 150 µg/kg, respectively, in NMSB3-16. These results, however, were reported from a saturated soil sample collected below the water table. These reported concentrations are above the San Francisco Bay Regional Water Quality Control Board Residential Environmental Screening Level (ESL) (RWQCB, July 2003) in surface soils (<3 meters) where groundwater is a source of drinking water for TPH-G (100 mg/kg) and MTBE (23 µg/kg).

The reported concentration of MTBE detected in the soil beneath the water table is most likely attributed to migration of MTBE from an upgradient off-site property or a combination of off- and on-site sources. MTBE was not widely utilized as a fuel additive until the early 1990s. Based on the historical operations of the site, the site discontinued operations as a gasoline stations sometime prior to 1981, when the present day tenant began oil changing and smog check services.

The reported concentration of TPH-G reported in the soil beneath the water table may also be associated with an off-site source and/or attributable to residual fuel concentrations present beneath the site.

Based on information contained in the Tank Closure Summary, excavated soil from the former UST areas contained minor concentrations of petroleum hydrocarbons. Officials with the City of San Leandro Fire Department Hazardous Materials Division "determined, based on the laboratory results the excavated soil (approximately 230 cubic meters/300 cubic yards) could be used as backfill material along with imported engineered base rock from the Dumbarton Quarry." It is unknown if the import materials were tested for contaminants prior to combining the material with excavated backfill material. It also remains unclear if the subgrade UST-associated dispenser piping were removed at the time of the UST removal and excavation activities.

Based on the nature of the petroleum hydrocarbons in the soil in the vicinity of NM-3, soil characterization and/or remediation in this area most likely will be required by the SLESD.

TPH-G concentrations ranging from (2,100 µg/L to 20,000 µg/L) reported for groundwater samples NMGW-3, NMGW-4, NMGW-7, and NMGW-8 are above the ESL for residual fuels of 100 µg/L where groundwater is a current or potential source of drinking water

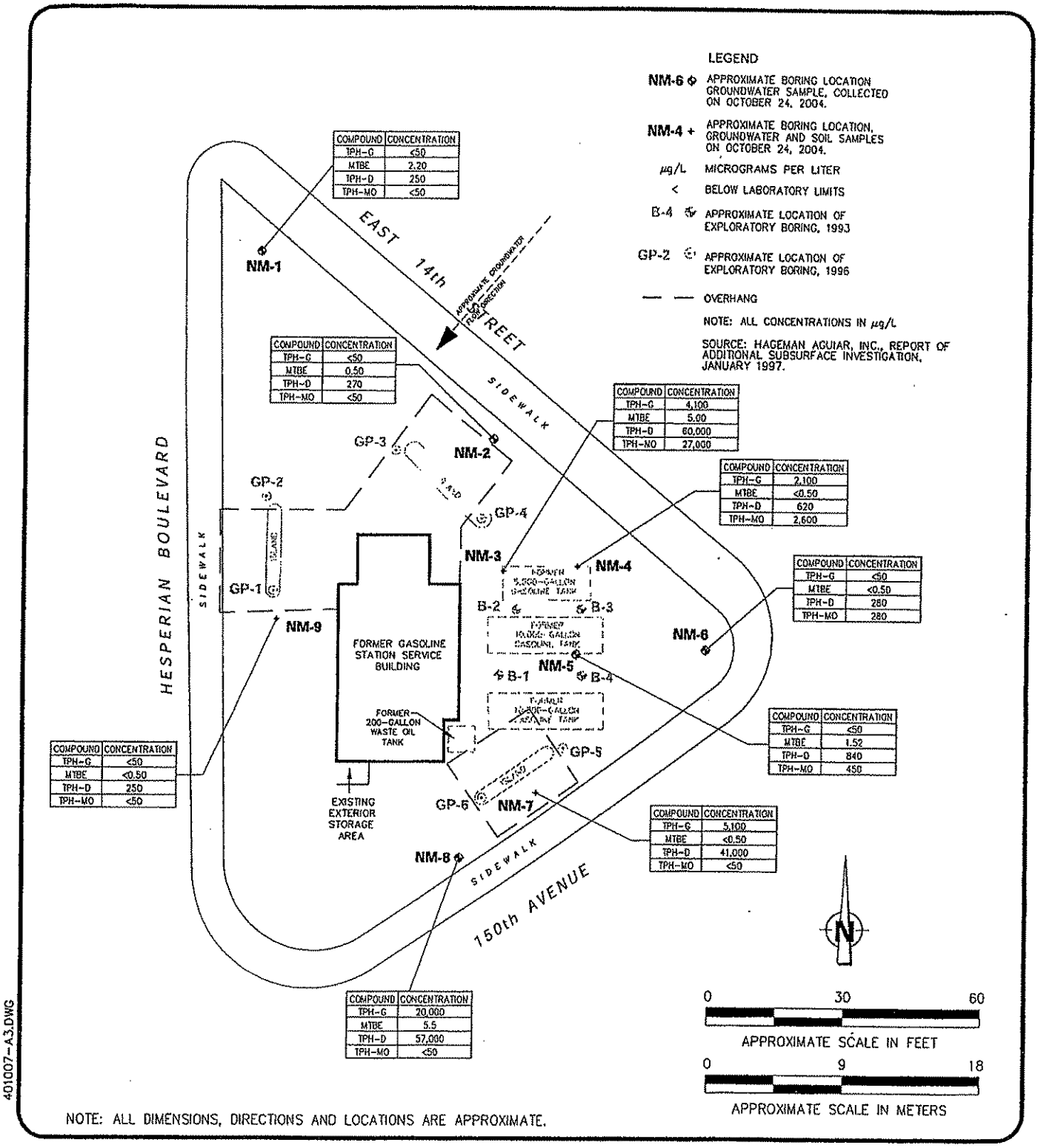
MTBE was reported in groundwater samples NMGW-1, NMGW-3, NMGW-5, and NMGW-8 (ranging in concentrations from 1.52 to 5.5 µg/L). Two of the reported concentrations were at or above the ESL for MTBE of 5.0 µg/L where groundwater is a current or potential source of drinking water. The presence of MTBE in groundwater samples NMGW-1, NMGW-3, NMGW-

5, and NMGW-8 may be attributable to migration of MTBE from an upgradient off-site property, from an on-site source, or a combination of off- and on-site sources.

TPH-D was reported in all groundwater samples (NMGW-1 through NMGW-9) ranging from 250 µg/L to 60,000 µg/L. A note contained in the laboratory report indicates the TPH-D did not exhibit a typical diesel pattern on all water samples. These reported concentrations are above the ESL for residual fuels of 100 µg/L where groundwater is a current or potential source of drinking water.

TPH-MO was reported in groundwater samples NMGW-3, NMGW-4, NMGW-5, and NMGW-6, ranging in concentrations from 280 µg/L to 27,000 µg/L. These reported concentrations are above the ESL for residual fuels of 100 µg/L where groundwater is a current or potential source of drinking water.

Based on the groundwater sample analytical results presented herein and the groundwater sample analytical results obtained during previous investigations, elevated concentrations of residual fuels in the form of TPH-G, and TPH-MO are present in the vicinity of NM-3 and NM-4. In addition, elevated concentrations of a "non-typical" pattern of TPH-D was reported in groundwater samples collected from all borings at the site. The "non-typical" TPH-D constituent may be related to a by-product or breakdown of old gasoline fuels. Groundwater samples collected from borings of NM-3, including NM-7 and NM-8 also were reported with elevated concentrations of TPH-G and TPH-D, which probably correspond to the migration of contaminants in groundwater towards the southwest, following the local flow direction. The source of contamination may be attributable to the presence of residual fuels remaining beneath the area of the former UST, subsurface piping, and/or former dispensing equipment. This finding is based on the relatively lower concentrations of these same contaminants as reported in groundwater samples collected in boring NM-2 located adjacent to the former UST excavations.



NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

401007-A3.DWG

Ninyo & Moore

SHALLOW GROUNDWATER CONSTITUENT CONCENTRATION MAP

QUALITY TUNE UP
14901 E. 14th STREET
SAN LEANDRO, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401007002	6/2005	3

Selected Text from the
Comprehensive Site Evaluation and Proposed Future Action Plan
Chevron Service Station 9-2013
15002 Hesperian Boulevard, San Leandro
July 11, 1994 (Weiss Associates)

TRC

Upgradient wells:

- **MW-3(LB):** 11,000 ppb TPH-G and 540 ppb benzene were detected in ground water samples collected from well MW-3(LB), located approximately 100 ft northeast (upgradient) of the Chevron site, and downgradient of the UNOCAL and Mobil sites.

- **MW-4:** Up to 1,300 ppb TPH-G and 6.6 ppb benzene have been detected in well MW-4, located in the central northern (upgradient) area of the Chevron site.

- **MW-5:** High hydrocarbon concentrations were detected in MW-5 only once, immediately after well installation. Only very low to non-detectable concentrations of TPH-G and benzene have been detected in this well since 1987. MW-5 is located on the western border of the Chevron site. upgradient of all on-site sources

This pattern of upgradient concentrations increasing to the east and decreasing to the west indicates that an offsite plume originates to the northeast of the Chevron site.

Midsite and cross-gradient wells:

- **MW-6:** Up to 2,300 ppb TPH-G and 30 ppb benzene have been detected in MW-6, located on the eastern border of the Chevron site, cross gradient to the underground fuel storage tanks (UFSTs), and downgradient of the waste oil tank.

- **MW-1:** Up to 6,000 ppb TPH-G has been detected in MW-1, located on the western edge of the site, downgradient of the fuel pumps islands, and upgradient of the UFSTs. Benzene concentrations in this well were initially 7 ppb when the well was first sampled in June, 1988, increased steadily to 360 ppb in August, 1991, and have since decreased again. Benzene concentrations have been less than 2 ppb for the past year.
  but more 7.7 (1/93), 6.0 (10/92), 25 (7/92), 30 (4/92), 360 (10/91), 19 (4/91)

- **MW-7:** Low to non-detectable concentrations of TPH-G and benzene have been detected in MW-7, located approximately 35 feet west of the Chevron site, cross gradient to the fuel pump islands and upgradient of the UFSTs.

These data, again, indicate that a significant offsite source has generated a plume which is impacting the eastern portion of the site. The source of hydrocarbons detected in MW-1 is not known, and may be a combination of hydrocarbons originating from the Chevron site and from an offsite plume. how about leaking pipes?

EVALUATION OF NON-ATTAINMENT ZONE CRITERIA AND FUTURE ACTION PLAN

DISCUSSION OF NON-ATTAINMENT ZONE CRITERIA

In the following section each of the RWQCB criterion for establishment of a non-attainment area, and potential Chevron responsibility for these criteria, is considered for the subject site.

Criteria a. The Discharger has demonstrated (e.g., pump tests, ground water monitoring, transport modeling) and will verify (e.g., ground water monitoring) that no significant pollution migration will occur due to hydrogeologic or chemical characteristics.

After review of the data collected at this site we conclude that the Chevron plume is restricted to the western area of the site and has not migrated offsite, as indicated by consistently low or non-detect concentrations in down-gradient wells. Our reasoning is described below.

Plume Locations: The data collected in the vicinity of the Chevron site suggest the presence of at least three plumes:

- An extensive hydrocarbon plume appears to reside to the east of the Chevron site. This plume is impacting the site from the north and east, probably originates at either the UNOCAL or Mobil sites located on East 14th Street, north of the Chevron site.
- The low concentrations of VOCs detected in most of the site wells indicate that a widely dispersed VOC plume is impacting the site from the north. The origin of this plume is unknown, but the recent DTSC studies indicate that it may be a regional problem.
- A small area in the vicinity of MW-1 may be impacted by hydrocarbons originating from the Chevron site. However, chemical analysis of samples collected from this well indicate that the hydrocarbons in this area are at least partially associated with an offsite source. Concentrations detected in onsite downgradient well MW-2, and offsite

CONCLUSIONS

Data collected at the site demonstrate the following points;

- **All** of the ground water monitored at this site has been impacted to some degree by an offsite source or sources.

- Hydrocarbon concentrations detected in ground water entering the Chevron site are **higher** than concentrations detected in ground water exiting the site, clearly indicating that Chevron is not responsible for any significant additional degradation of the regional aquifer.

- Hydrocarbon constituents detected in MW-4, MW-5, MW-6, MW-7 and MW-8 are primarily due to an offsite source.

- A small onsite source may be contributing to concentrations detected in MW-1 and MW-2, but the low concentrations detected in MW-1(LB) show that this portion of the plume is degraded by natural attenuation to very low levels before it reaches the site boundary.

- Chemical fingerprinting of samples collected from Chevron's four downgradient wells, MW-2, MW-3, MW-6, and MW-8, indicate that these samples contain a gasoline compound which is not present in gasoline distributed to Chevron stations in this area.

- At least three potentially responsible parties may be responsible for the offsite plume(s); Mobil Oil, UNOCAL Oil, and a lube shop upgradient of the Mobil site.

Based on the data summarized in this report, it is apparent that no additional appropriate or cost effective technologies exist that might significantly accelerate cleanup of any remaining hydrocarbons originating from the Chevron site.

Although elevated contaminant concentrations are present in the ground water at the Chevron site, these contaminants are primarily due to offsite sources and we submit that the portion of the plume which is attributable to Chevron meets all of the RWQCB criteria for establishing a non-attainment zone. However, we recognize that the presence of co-mingled offsite and onsite plumes will complicate this approach. We propose, therefore, that active remediation of the Chevron plume is not appropriate, but that Chevron continue to maintain a reduced monitoring plan for two years. Chevron will also maintain a cooperative approach in assisting other responsible parties in determining an appropriate response for management of the co-mingled plumes.