GROUNDWATER TECHNOLOGY ®

Groundwater Technology, Inc.
4057 Port Chicago Highway, Concord, CA 94520 USA

ADDITIONAL SITE ASSESSMENT REPORT
FORMER SIGNAL SERVICE STATION NO. S0800
800 CENTER STREET
OAKLAND, CALIFORNIA

11-14-95

GTI Project 020200105

November 14, 1995

Prepared for:
Mr. Mark Miller
Chevron U.S.A. Products Company
6001 Bollinger Canyon Road, Building L
San Ramon, California 94583-0804

Groundwater Technology, Inc.
Submitted by:

Michael A. Chamberlain
Project Manager

Groundwater Technology, Inc.
Approved by:

E.K. Simonis, R.G.
Senior Geologist

REGISTERED GEOLOGIST
EDVARDAS (ED) K. SIMONIS
No. 4422
STATE OF CALIFORNIA

For:
Wendell W. Lattz
Vice President, General Manager
West Region

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1.0 INTRODUCTION

This report summarizes the environmental assessment work conducted by Groundwater Technology, Inc., at the request of Chevron U.S.A. Products Company (Chevron) for the former Signal Service Station No. S0800 located at 800 Center Street in Oakland, California (figure 1). A *Work Plan for Additional Site Assessment* (Groundwater Technology 1995) presented the scope of the work performed. The objective of the work was to evaluate the lateral and vertical extent of petroleum hydrocarbons in the soil and groundwater in the vicinity of the site. The assessment was performed during October 1995 and included drilling seven soil borings (MW-1 through MW-4, and SB-1 through SB-3), collecting soil samples, completing four soil borings as a 2-inch-diameter monitoring wells (MW-1 through MW-4), developing, monitoring, and sampling the new monitoring wells, analyzing the collected soil and groundwater samples, evaluating the data, and preparing this report.

2.0 BACKGROUND

The site is located in the city of Oakland in Alameda County, California, on the northeast corner of the intersection of 8th and Center Streets (figure 2). The site is currently unoccupied, however, two structures (the former station building and pump island) remain at the site. Residential and light commercial buildings are located north, west, south, and east of the site.

According to existing historical assessment reports and information provided by Chevron, the site was occupied by an operating gasoline service station from 1932 until the early 1970s. Four, 1,000-gallon gasoline underground storage tanks (USTs) were reportedly removed in 1973. Environmental investigation at the site began in August 1989 with the drilling and sampling of 5 soil borings (1 through 5). Groundwater samples were collected from temporary monitoring wells set in three of the soil borings (1, 2, and 3). The analytical results from soil and groundwater samples indicated petroleum hydrocarbon impact to soil and groundwater beneath the site (Subsurface Consultants 1989).

3.0 WORK SCOPE

3.1 Site-Specific *Health and Safety Plan* and Permits

Groundwater Technology prepared a site-specific *Health and Safety Plan* required by the Occupational Health and Safety Administration Standard Hazardous Waste Operations and Emergency Response guidelines (29 Code of Federal Regulations [CFR] 1910.120). The site-specific *Health and Safety Plan* was prepared after a review of site conditions and existing available site-specific health and safety plans. The *Health and Safety Plan* was reviewed and signed by Groundwater Technology personnel and subcontractors before beginning work at the site.

Groundwater Technology personnel reviewed site history and information with Chevron representatives before beginning work at the site. A drilling permit to install four monitoring wells was approved by Mr. Wyman Hong of the Alameda County Zone 7 Water Agency on October 12, 1995. An encroachment permit and excavation permit was obtained from the City of Oakland for the installation of off-site monitoring well MW-4. Copies of the permits are included in appendix A.

3.2 Soil Borings

On October 17 and 18, 1995, Groundwater Technology supervised the drilling of seven soil borings, MW-1 through MW-4, and SB-1 through SB-3 (figure 2). A Groundwater Technology field geologist, under the supervision of a California registered geologist, logged the materials encountered during drilling of the soil borings using the Unified Soil Classification System. Drilling was completed on October 18, 1995. Four of the soil borings were drilled to a total depth of 15 feet below surface grade (bsg) and completed as groundwater monitoring wells (MW-1, MW-2, MW-3, and MW-4). Each of the remaining soil borings (SB-1, SB-2, and SB-3) was drilled to a total depth of 12 feet bsg. Drilling logs are presented in appendix B.

The soil cuttings generated during the drilling activities were stockpiled on and covered with plastic at the site. Soil cuttings were then characterized, profiled, and removed for disposal.

3.3 Soil Sampling

During drilling, soil samples were collected from the soil borings at 5-foot intervals. Soil samples were collected using a 2-inch-diameter split-spoon sampler lined with three 2-inch-diameter by 6-inch-long brass sample tubes. At each sample point, the sampler was advanced 18 inches ahead of the hollow-stem augers into undisturbed soil. One soil sample from each 5-foot interval was

collected, sealed with aluminum foil, capped, taped, labeled, placed on ice in an insulated container, and delivered to a California-certified laboratory. Soil sampling was performed according to Groundwater Technology Standard Operating Procedures (SOPs), which are included in appendix C.

Selected soil samples from each soil boring were submitted to a California-certified laboratory for analyses of benzene, toluene, ethylbenzene, total xylenes (BTEX), and total petroleum hydrocarbons as gasoline (TPH-g) using Environmental Protection Agency (EPA) Methods 5030/8020/modified 8015. Additional soil samples were collected from soil boring MW-1 and submitted for petrophysical analysis. The petrophysical analysis included: effective permeability to air (horizontal and vertical), pore fluid saturation, effective porosity, grain and bulk density, moisture content, and grain size analysis (laser method to 1 micro) using American Petroleum Institute (API) Test Method RP40 and American Society for Testing and Materials (ASTM) Test Method D4464, respectively.

3.4 Monitoring Well Installation

The monitoring wells were constructed using 5 feet of 2-inch-diameter, Schedule 40 polyvinyl chloride (PVC) blank casing and 10 feet of 0.020-inch-slot well screen. A sand filter pack was placed around the well screen to approximately 1 foot above the slotted well screen. The monitoring wells were completed with 0.5 foot of hydrated bentonite and neat cement seal to grade. The wellheads were finished with a locking cap and a street box with a water-tight bolted lid. Well construction details are included with the drilling log (appendix C). The top of casing elevation of each monitoring well was surveyed relative to mean sea level datum by a licensed land surveyor on November 2, 1995, using a brass disc in a standard city street monument bench mark (25 H) located at the northwest corner of the intersection of Seventh Street and Center Street.

3.5 Monitoring Well Development, Monitoring, and Sampling

On October 24, 1995, Groundwater Technology developed the four monitoring wells. Development was conducted using surge block and hand bailers. Well development forms are included in appendix D.

On October 27, 1995, groundwater samples were collected from the four monitoring wells (MW-1 through MW-4). Before sampling, a minimum of 4 well-casing volumes of groundwater was removed from each of the monitoring wells by hand bailing unless the wells purged dry. Well purging forms are included in appendix D. The groundwater samples were collected using a disposable PVC sampler. Groundwater samples were placed in 40-milliliter glass vials, which were acidified with hydrochloric acid to preserve the samples. The samples were then sealed using Teflon® septum caps, labeled with the job identification number, the sample number, date, time, and type of

laboratory analysis required. The samples were stored on ice and transported with a chain-of-custody record to Sequoia Analytical in Walnut Creek, California. Standard operating procedures (SOPs) for groundwater sampling are included in appendix C. Groundwater samples were analyzed for BTEX and TPH-g using EPA Methods 8020/5030/modified 8015.

4.0 SITE CONDITIONS

4.1 Hydrogeology

The materials encountered during drilling primarily consisted of sandy clay, to sandy clayey silt. During drilling on October 17 and 18, 1995, groundwater was first encountered at approximately 10 feet bsg. A potentiometric surface map was prepared using the groundwater elevation data collected on October 27, 1995 (figure 2). The estimated groundwater flow is toward the southwest at a gradient of approximately 0.002 foot per foot. The top-of-casing elevations for monitoring wells are presented on the drilling log (appendix B).

4.2 Analytical Results of Soil Samples

Laboratory analytical reports of soil samples collected from soil borings MW-1, MW-4, and SB-1 through SB-3 on October 17 and 18, 1995, indicated benzene concentrations ranging from less than 0.005 milligram per kilogram (mg/kg) to 120 mg/kg, and TPH-g concentrations ranging from less than 1.0 mg/kg to 14,000 mg/kg. The analyzed soil samples from soil borings MW-2 and MW-4 did not contain detectable concentrations of BTEX or TPH-g. The results of the soil analyses are summarized in table 1 and laboratory reports are included in appendix E.

The analytical results of soil samples collected from soil boring MW-1 for petrophysical analysis are presented in appendix F.

4.3 Analytical Results of Groundwater Samples

Laboratory analytical reports of groundwater samples collected from monitoring wells MW-1, MW-3, and MW-4 on October 27, 1995, indicate dissolved benzene concentrations ranging from 6.8 micrograms per liter (μg/L) to 19,000 μg/L, and dissolved TPH-g concentrations ranging from 66 μg/L to 170,000 μg/L. The groundwater sample analytical results for monitoring well MW-2

indicated no detectable concentrations of BTEX or TPH-g above their respective MDL. The results of the groundwater analyses are summarized in table 2 and laboratory reports are included in appendix E.

5.0 SUMMARY

- On October 17 and 18, 1995, Groundwater Technology supervised the drilling of seven soil borings. The soil borings were advanced to total depths ranging between 12 feet bsg and 15 feet bsg. Soil borings MW-1 through MW-4 were completed as 2-inch-diameter groundwater monitoring wells.

- The materials encountered during drilling primarily consisted of sandy clay to sandy clayey silt. The depth to groundwater encountered during drilling on October 17 and 18, 1995, was approximately 10 feet bsg. The estimated groundwater flow is toward the southwest at a gradient of 0.002 foot per foot.

- The soil samples collected from soil borings MW-2 and MW-4 did not contain concentrations of BTEX or TPH-g above their respective MDL. Soil samples collected from the remaining five soil borings contained benzene concentrations up to 120 mg/kg and TPH-g concentrations up to 14,000 mg/kg.

- The groundwater sample from monitoring well MW-2 did not contain concentrations of BTEX or TPH-g above their respective MDL. Groundwater samples collected from the remaining monitoring wells contained dissolved benzene concentrations up to 19,000 μg/L, and dissolved TPH-g concentrations up to 170,000 μg/L.

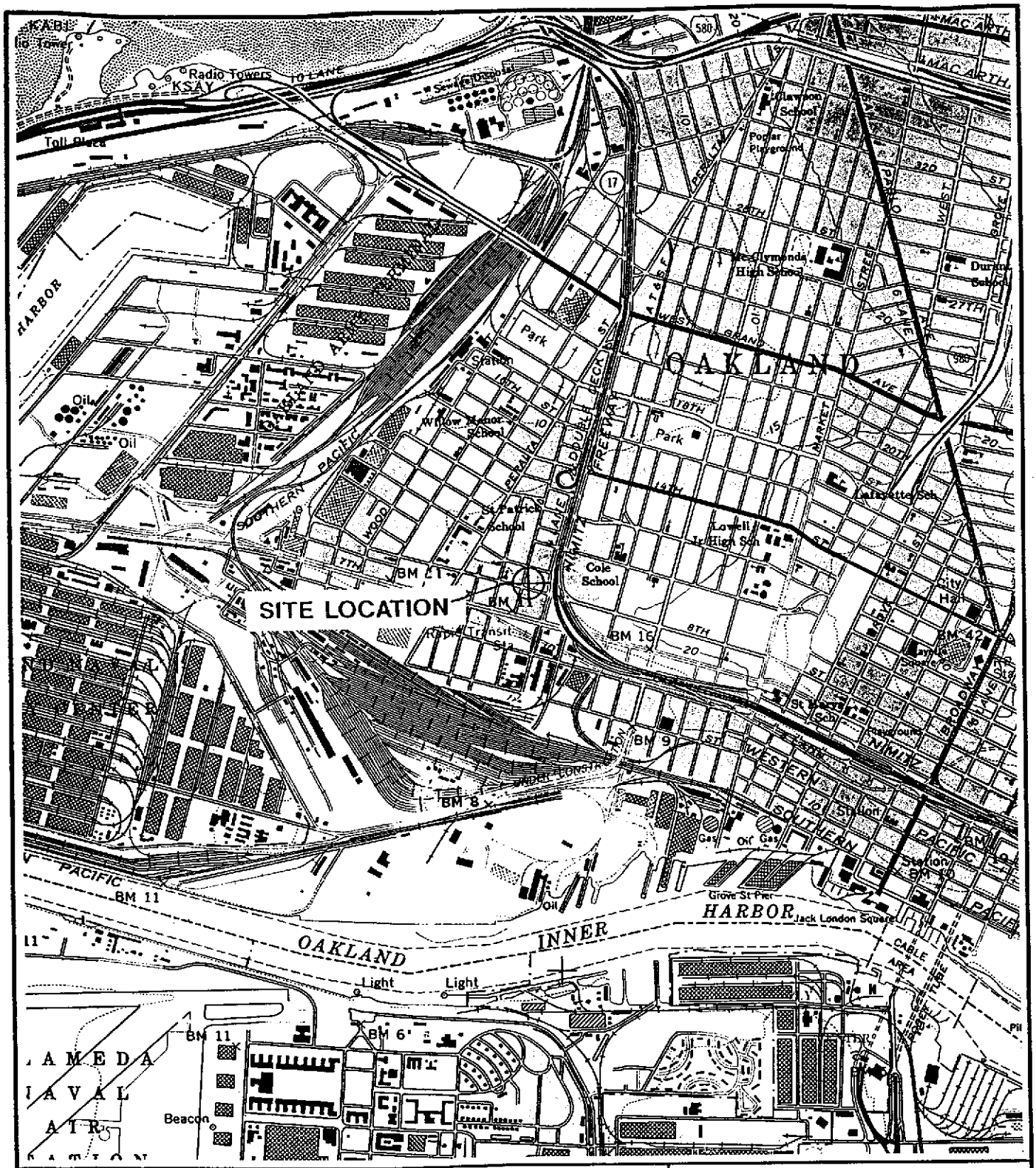
6.0 REFERENCES

Groundwater Technology, Inc. March 27, 1995. *Work Plan for Additional Site Assessment*. Former Signal Service Station No. S0800, 800 Center Street, Oakland, California.

Subsurface Consultants, Inc. October 13, 1989. *Preliminary Hydrocarbon Contamination Assessment*, 800 Center Street, Oakland, California.

FIGURES

1. Site Location Map
2. Site Plan



GROUNDWATER TECHNOLOGY

SOURCE: U.S.G.S. 7.5' QUAD SHEET
OAKLAND WEST, CALIFORNIA
PHOTOREVISED 1980

N

SCALE: 0 FEET 2000

SITE LOCATION MAP

CLIENT: CHEVRON U.S.A. PRODUCTS CO.
SERVICE STATION NO. S0800

DATE: 3/7/95

LOCATION: 800 CENTER STREET
OAKLAND, CALIFORNIA

FIGURE: 1

TABLES

TABLE 1
Analytical Results of Soil Samples
(Results expressed as milligrams per kilogram)

Former Signal Service Station No. S0800
800 Center Street
Oakland, California

Date	Sample ID	Sample Depth (ft)[a]	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g[b]
10-17-95	MW-1-5	5	0.091	0.49	0.14	1.9	11
10-17-95	MW-1-10	10	120	800	270	1,300	14,000
10-17-95	MW-2-5	5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
10-17-95	MW-2-10	10	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
10-17-95	MW-3-5	5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
10-17-95	MW-3-10	10	0.24	0.010	0.016	0.019	<1.0
10-18-95	MW-4-5	5	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
10-18-95	MW-4-10	10	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
10-17-95	SB-1-5	5	0.34	1.2	1.2	1.3	87
10-17-95	SB-1-10	10	72	640	240	1,100	8,100
10-17-95	SB-2-5	5	0.19	4.8	5.1	26	240
10-17-95	SB-2-10	10	28	440	150	630	4,700
10-18-95	SB-3-5	5	<0.0050	0.019	0.0087	0.049	<1.0
10-18-95	SB-3-10	10	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
10-18-95	COMP	N/A	0.036	1.5	0.75	3.2	13

[a] feet below surface grade
[b] total petroleum hydrocarbons as gasoline

TABLE 2
Analytical Results of Groundwater Samples
(Results expressed as micrograms per liter)

Former Signal Service Station No. S0800
800 Center Street
Oakland, California

Date	Well ID Elev.[a]	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g[b]	DTW[c]	SPT[d]	GWE[e]
10-27-95	MW-1 15.69	19,000	34,000	4,800	26,000	170,000	10.54	0.00	5.15
10-27-95	MW-2 15.77	<0.50	<0.50	<0.50	<0.50	<50	10.60	0.00	5.17
10-27-95	MW-3 15.46	11,000	1,700	2,300	4,200	33,000	10.37	0.00	5.09
10-27-95	MW-4 14.45	6.8	<0.50	<0.50	<0.50	66	9.37	0.00	5.08

[a] top of casing elevation, feet above mean sea level
[b] total petroleum hydrocarbons as gasoline
[c] depth to water, feet below top of casing
[d] separate phase hydrocarbon thickness, feet
[e] groundwater elevation, feet above mean sea level

APPENDIX A

CITY OF OAKLAND MINOR ENCROACHMENT, EXCAVATION PERMITS AND ZONE 7 WELL INSTALLATION PERMITS

State of California
County of Contra Costa

On 9/29/95 (DATE) before me, Susan R Weber Notary Public (NAME/TITLE OF OFFICER-i.e."JANE DOE, NOTARY PUBLIC")

personally appeared MARK A. Miller (NAME(S) OF SIGNER(S))

☑ personally known to me ~~OR ☐ proved to me on the basis of satisfactory evidence~~ to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(s) acted, executed the instrument.

SUSAN R. WEBER
Comm. # 1059775
NOTARY PUBLIC - CALIFORNIA
Contra Costa County
My Comm. Expires June 30, 1999

Witness my hand and official seal.

(SEAL)

Susan R Weber
(SIGNATURE OF NOTARY)

RIGHT THUMBPRINT (Optional)

TOP OF THUMB HERE

CAPACITY CLAIMED BY SIGNER(S)
☐INDIVIDUAL(S)
☐CORPORATE _____
OFFICER(S) _____ (TITLES)
☐PARTNER(S) ☐LIMITED ☐GENERAL
☐ATTORNEY IN FACT
☐TRUSTEE(S)
☐GUARDIAN/CONSERVATOR
☐OTHER: SAK Engineer

SIGNER IS REPRESENTING:
(Name of Person(s) or Entity(ies))
Chevron USA

RIGHT THUMBPRINT (Optional)

TOP OF THUMB HERE

CAPACITY CLAIMED BY SIGNER(S)
☐INDIVIDUAL(S)
☐CORPORATE _____
OFFICER(S) _____ (TITLES)
☐PARTNER(S) ☐LIMITED ☐GENERAL
☐ATTORNEY IN FACT
☐TRUSTEE(S)
☐GUARDIAN/CONSERVATOR
☐OTHER: _____

SIGNER IS REPRESENTING:
(Name of Person(s) or Entity(ies))

ATTENTION NOTARY

The information requested below and in the column to the right is OPTIONAL. Recording of this document is not required by law and is also optional. It could, however, prevent fraudulent attachment of this certificate to any unauthorized document.

THIS CERTIFICATE MUST BE ATTACHED TO THE DOCUMENT DESCRIBED AT RIGHT:

Title or Type of Document: Minor encroachment permit

Number of Pages _____ Date of Document _____

Signer(s) Other Than Named Above _____

7 67775 63237 8

City of Oakland
Director of Planning & Building
1330 Broadway, 2nd Floor
Oakland, CA 94612

When Recorded Mail to:
Director of Planning & Building
City of Oakland
1330 Broadway, 2nd Floor
Oakland, CA 94612

TAX ROLL PARCEL NUMBER
(ASSESSOR'S REFERENCE NUMBER)

--	--	--	--
MAP	BLOCK	PARCEL	SUB

SPACE ABOVE FOR RECORDER'S USE ONLY

Address: 8th Street, Oakland

MINOR ENCROACHMENT PERMIT AND AGREEMENT

Chevron U.S.A. Products Company, is hereby granted a Conditional Revocable Permit to encroach into the public right-of-way area of 8th Street, Oakland with one monitoring well. The location of said encroachment shall be as delineated in Exhibit 'A' attached hereto and made a part hereof.

The permittee agrees to comply with and be bound by the conditions for granting an Encroachment Permit attached hereto and made a part hereof.

This agreement shall be binding upon the permitee described above, and their successors in interest thereof.

In witness whereof, I, the authorized representative of Chevron U.S.A. Products Company, have set my signature this 29 day of SEPTEMBER, 1995.

Name: MARK A MILLER
Title: SAR ENGINEER

<-- Please attach California all-purpose acknowledgment slip here
-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --

BELOW FOR OFFICIAL USE ONLY

CITY OF OAKLAND

Dated_____

By:_____
CALVIN N. WONG
Deputy Director
Building Services
For
SHIRLEY STUBBLEFIELD
Office of Planning & Building
Interim Director

RT:rt

file: 8th-st.mw\per&agrt(8)

TO: Chevron U.S.A. Products Company

Address: 225 Bush Street, Suite 474, San Francisco, CA 94104-4289

RE: Minor Encroachment Permit for Monitoring Well in 8th Street, Oakland

CONDITIONS FOR GRANTING A MINOR ENCROACHMENT PERMIT

1. That this permit shall be revocable at the pleasure of the Director of Planning & Building.

2. That the permittee, by the acceptance, either expressed or implied, of the minor encroachment permit hereby disclaims any right, title, or interest in or to any portion of the public sidewalk or street area, and agrees that said temporary use of said area does not constitute an abandonment on the part of the City of Oakland of any of its rights for street purposes and otherwise.

3. The permittee shall be considered self-insured. The permittee shall maintain in force and effect at all times that said encroachment occupies said public right-of-way, good and sufficient fund to cover public liability and property damage, both including contractual liability insuring the City of Oakland against any and all claims arising out of the existence of said encroachment in said public right-of-way area.

4. That the permittee, by the acceptance, either expressed or implied, of this revocable permit shall be solely and fully responsible for the repair or replacement of any portion or all of said improvements in the event that said improvements shall have failed or have been damaged to the extent of creating a menace or of becoming a hazard to the safety of the general public; and that the permittee shall be liable for the expenses connected therewith.

5. That upon the termination of the permission herein granted, permittee shall immediately remove said encroachment from the sidewalk and street area, and any damage resulting therefrom shall be repaired to the satisfaction of the Director of Planning & Building.

6. That the permittee shall file with the City of Oakland for recordation a Minor Encroachment Permit and Agreement, and shall be bound by and comply with all the terms and conditions of said permit.

7. That said permittee shall obtain an excavation permit prior to the construction and a separate excavation permit prior to the removal of the ground water monitoring wells.

8. (a) That said permittee shall provide to the City of Oakland a performance bond for the amount of $3,000 per each monitoring well encroaching within the public right-of-way prior to the issuance of the encroachment permit. Said perfomance bond shall be returned to the permittee after the monitoring is complete and the monitoring well is/are removed and the street area is restored.

(b) That said permittee shall provide to the City of Oakland an AS BUILT plan showing the actual location of the ground water monitoring wells and the results of all data collected from the monitoring wells.

9. That said permittee shall remove the monitoring wells and repair any damage to the sidewalk or street area in accordance with City standards two (2) years after construction or as soon as monitoring is complete.

10. That said permittee shall notify the Office of Planning & Building after the monitoring well(s) is/are removed and the sidewalk or street area restored to initiate the procedure to rescind the minor encroachment permit.

11. That monitoring well covers installed within the sidewalk area shall have a skidproof surface. A precast concrete utility box may be used in conjunction with the bolted cast iron cover with City approval.

12. That the ground water monitoring well casting and cover shall be cast iron and shall meet H-20 load rating. The cover shall be secured with a minimum of two stainless steel bolts. Bolts and cover shall be mounted flush with the surrounding surface.

13. That the permittee acknowledges that the City makes no representations or warranties as to the conditions beneath said encroachment. By accepting this revocable permit, permittee agrees that it will use the encroachment area at its own risk, is responsible for the proper coordination of its activities with all other permittees, underground utilities, contractors, or workmen operating within the encroachment area and for the safety of itself and any of its personnel in connection with its entry under this revocable permit.

14. That the permittee acknowledges that the City is unaware of the existence of any hazardous substances beneath the encroachment area, and hereby waives and fully releases and forever discharges the City and its officers, directors, employees, agents, servants, representatives, assigns and

successors from any and all claims, demands, liabilities, damages, actions, causes of action, penalties, fines, liens, judgments, costs, or expenses whatsoever (including, without limitation, attorneys' fees and costs), whether direct or indirect, known or unknown, foreseen or unforeseen, that may arise out of or in any way connected with the physical condition, or required remediation of the excavation area or any law or regulation applicable thereto, including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. Sections 9601 et seq.), the Resource Conservation and Recovery Act of 1976 (42 U.S.C. Section 6901 et seq.), the Clean Water Act (33 U.S.C. Section 466 et Seq.), the Safe Drinking Water Act (14 U.S.C. Sections 1401-1450), the Hazardous Materials Transportation Act (49 U.S.C. Section 1801 et seq.), the Toxic Substance Control Act (15 U.S.C. Sections 2601-2629), the California Hazardous Waste Control Law (California Health and Safety Code Sections 25100 et seq.), the Porter-Cologne Water Quality Control Act (California Health and Safety Code Section 13000 et seq.), the Hazardous Substance Account Act (California Health and Safety Code Section 25300 et seq.), and the Safe Drinking Water and Toxic Enforcement Act (California Health and Safety Code Section 25249.5 et seq.).

15. Permittee further acknowledges that it understands and agrees that it hereby expressly waives all rights and benefits which it now has or in the future may have, under and by virtue of the terms of California Civil Code Section 1542, which reads as follows: "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR."

16. Permittee recognizes that by waiving the provisions of this section, permittee will not be able to make any claims for damages that may exist, and to which, if known, would materially affect his/her decision to execute this encroachment agreement, regardless of whether permittee's lack of knowledge is the result of ignorance, oversight, error, negligence, or any other cause.

17. (a) That the permittee, by the acceptance of this revocable permit, agrees and promises to indemnify, defend, and hold harmless the City of Oakland, its officers, agents, and employees, to the maximum extent permitted by law, from any and all claims, demands, liabilities, damages, actions, causes of action, penalties, fines, liens, judgments, costs, or expenses whatsoever (including, without limitation, attorneys' fees and costs; collectively referred to as "claims"), whether direct or indirect, known or unknown, foreseen or unforeseen, to the extent that such claims were caused by the permittee,

its agents, employees, contractors or representatives.

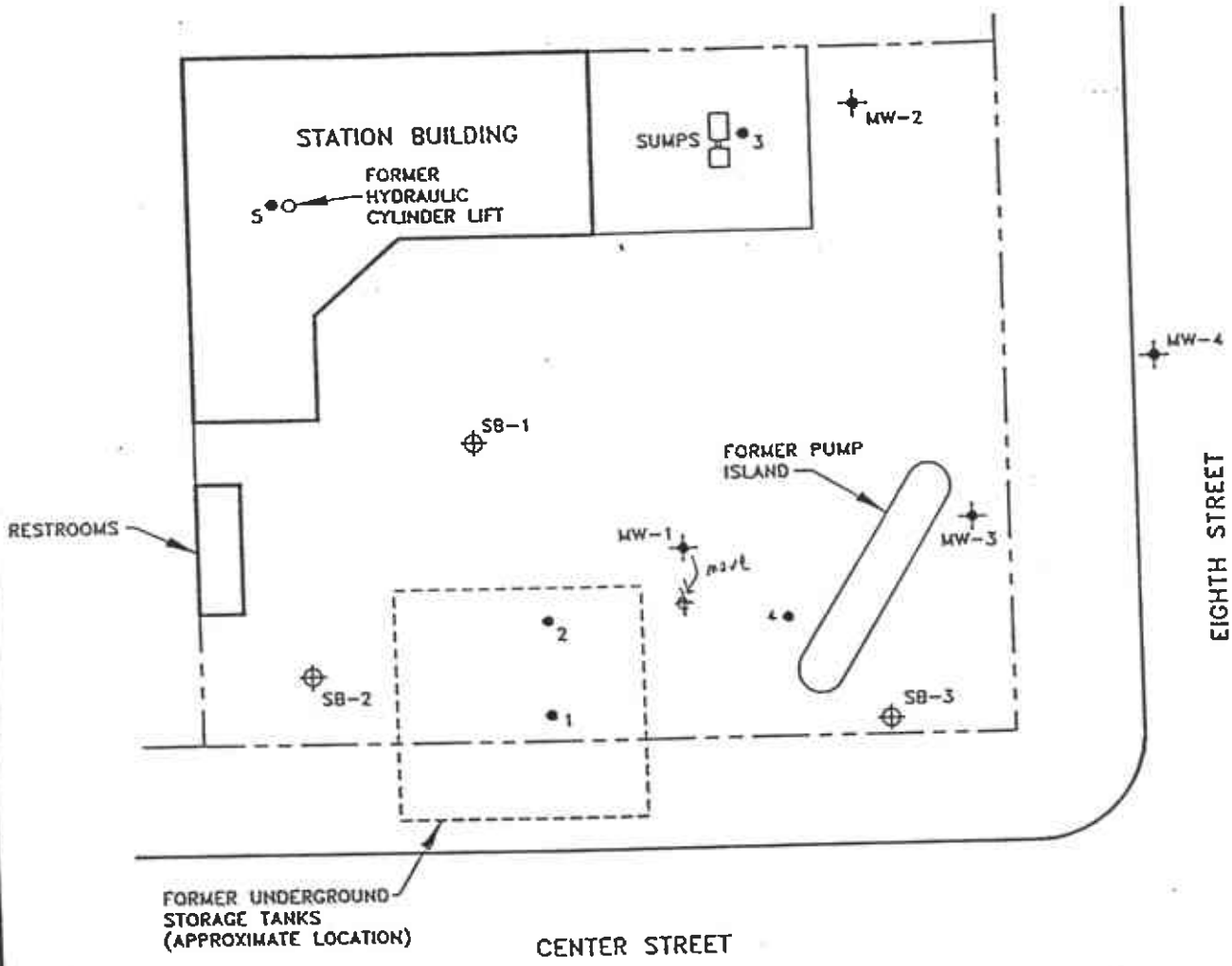
(b) That, if any contamination is discovered below or in the immediate vicinity of the encroachment, and the contaminants found are of the type used, housed, stored, processed or sold on or from the 8th Street, Oakland, California site, such shall amount to a rebuttable presumption that the contamination below, or in the immediate vicinity of, the encroachment was caused by the permittee, its agents, employees, contractors or representatives.

(c) That the permittee shall comply with all applicable federal, state, county and local laws, rules, and regulations governing the installation, maintenance, operation and abatement of the encroachment.

(d) That the permittee hereby does remise, release, and forever discharge, and agree to defend, indemnify and save harmless, the City, its officers, agents and employees and each of them, from any and all actions, claims, and demands of whatsoever kind or nature, and any damage, loss or injury which may be sustained directly or by the undersigned and any other person or persons, and arising out of, or by reason of, the occupation of said public property, and the future removal of the above-mentioned encroachment.

18. That the hereinabove conditions shall be binding upon the permittee and the successive owners and assigns thereof.

19. That said Minor Encroachment Permit and Agreement shall take effect when all the conditions hereinabove set forth shall have been complied with to the satisfaction of the Director of Planning & Building, and shall become null and void upon the failure of the permittee to comply with all conditions hereinabove set forth.



LEGEND

- TEST BORING
- PROPOSED MONITORING WELL
- PROPOSED SOIL BORING

N

EXHIBIT "A"

GROUNDWATER TECHNOLOGY	0 FEET 20 SCALE	SITE PLAN

CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION NO. S0800	FILE: SP395		PROJECT NO: 020200036	PM	RG/PE
	REV: 1			FIGURE: 2	
LOCATION: 800 CENTER STREET OAKLAND, CALIFORNIA	DES: MC	DET: ML	DATE: 3/7/95		

UNITED PACIFIC INSURANCE COMPANY

HEAD OFFICE, PHILADELPHIA, PENNSYLVANIA

PERFORMANCE BOND

REVISED BOND
$6000

Bond No. U80 51 20-1243
Premium: $50.00 Annually

KNOW ALL MEN BY THESE Division of Chevron U.S.A. on U.S.A. Products Company, A

as Principal, and the UNITED PACIFIC INSURANCE COMPANY, a Pennsylvania corporation, as Surety, are held and firmly bound unto the City of Oakland

as Obligee, in the sum of Three Thousand and No/100---------- ($ 3,000.00--------) DOLLARS, for which sum, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, by these presents.

WHEREAS, on the 20th day of August, 19 95, the Principal entered into a contract with the Obligee for monitoring well in Eighth Street, Oakland near former Signal Station located at 800 Center Street, Oakland, CA 94607 per conditions of City of Oakland minor encroachment permit.

which contract is by reference made a part hereof and is hereafter referred to as the Contract;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That, if the Principal shall faithfully perform said contract according to its terms, covenants, and conditions, then this obligation shall be void; otherwise it shall remain in full force and effect.

Dated this 19th day of September, 1995

CHEVRON U.S.A. PRODUCTS COMPANY, A DIVISION OF CHEVRON U.S.A. INC.

H. D. Millar
Assistant Treasurer
PRINCIPAL

UNITED PACIFIC INSURANCE COMPANY

By Mary R. Berry
ATTORNEY-IN-FACT

ACKNOWLEDGMENT BY SURETY

STATE OF CALIFORNIA)
County of SAN FRANCISCO)

On 09/19/95 before me, Helen A. Weires, Notary Public personally appeared Mary R. Berry, Attorney-in-Fact, United Pacific Insurance Company

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature Helen A. Weires (Seal)

CRS 2 HELEN A. WEIRES
COMM. # 1000467
NOTARY PUBLIC - CALIFORNIA
SAN FRANCISCO COUNTY
My Comm. Expires Aug. 11, 1997 CRS 2

UNITED PACIFIC INSURANCE COMPANY

HEAD OFFICE, PHILADELPHIA, PENNSYLVANIA

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, That the UNITED PACIFIC INSURANCE COMPANY, a corporation duly organized under the laws of the State of Pennsylvania, does hereby make, constitute and appoint Helen A. Weires, individually, of San Francisco, California, its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver for and on its behalf, and as its act and deed any and all bonds and undertakings of suretyship and to bind the UNITED PACIFIC INSURANCE COMPANY thereby as fully and to the same extent as if such bonds and undertakings and other writings obligatory in the nature thereof were signed by an Executive Officer of the UNITED PACIFIC INSURANCE COMPANY and sealed and attested by one other of such officers, and hereby ratifies and confirms all that its said Attorney(s)-in-Fact may do in pursuance hereof.

This Power of Attorney is granted under and by authority of Article VII of the By-Laws of UNITED PACIFIC INSURANCE COMPANY which became effective September 7, 1978, which provisions are now in full force and effect, reading as follows:

ARTICLE VII - EXECUTION OF BONDS AND UNDERTAKING

1. The Board of Directors, the President, the Chairman of the Board, any Senior Vice President, any Vice President or Assistant Vice President or other officer designated by the Board of Directors shall have power and authority to (a) appoint Attorney(s)-in-Fact and to authorize them to execute on behalf of the Company, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and (b) to remove any such Attorney(s)-in-Fact at any time and revoke the power and authority given to them.

2. Attorney(s)-in-Fact shall have power and authority, subject to the terms and limitations of the Power of Attorney issued to them, to execute and deliver on behalf of the Company, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof. The corporate seal is not necessary for the validity of any bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof.

3. Attorney(s)-in-Fact shall have power and authority to execute affidavits required to be attached to bonds, recognizances, contracts of indemnity or other conditional or obligatory undertakings and they shall also have power and authority to certify the financial statement of the Company and to copies of the By-Laws of the Company or any article or section thereof.

This Power of Attorney is signed and sealed by facsimile under and by authority of the following Resolution adopted by the Board of Directors of UNITED PACIFIC INSURANCE COMPANY at a meeting held on the 5th day of June, 1979, at which a quorum was present, and said Resolution has not been amended or repealed:

> "Resolved that the signatures of such directors and officers and the seal of the Company may be affixed to any such Power of Attorney or any certificates relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company and any such Power so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company, in the future with respect to any bond or undertaking to which it is attached."

IN WITNESS WHEREOF, the UNITED PACIFIC INSURANCE COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed, this 20 day of September, 1993

UNITED PACIFIC INSURANCE COMPANY

UNITED PACIFIC INSURANCE COMPANY CORPORATE SEAL 1928 PENNSYLVANIA

Vice President

STATE OF Washington }
COUNTY OF King } ss.

On this 20 day of September, 1993 personally appeared Lawrence W. Carlstrom to me known to be the Vice President of the UNITED PACIFIC INSURANCE COMPANY, and acknowledged that he executed and attested the foregoing instrument and affixed the seal of said corporation thereto and that Article VII, Section 1, 2, and 3 of the By-Laws of said Company, and the Resolution, set forth therein, are still in full force.

KIMBERLY GREENWOOD NOTARY PUBLIC STATE OF WASHINGTON COMMISSION EXPIRES 3-05-96

Notary Public in and for State of Washington
Residing at Puyallup

I, Robyn Layng, Assistant Secretary of the UNITED PACIFIC INSURANCE COMPANY, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney executed by said UNITED PACIFIC INSURANCE COMPANY, which is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Company this 19th day of September 19 95

UNITED PACIFIC INSURANCE COMPANY CORPORATE SEAL 1928 PENNSYLVANIA

Assistant Secretary

CITY OF OAKLAND
Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

PERMIT NUMBER		SITE ADDRESS/LOCATION
X9500739		800 Comstock St
APPROX. START DATE	APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number)
CONTRACTOR'S LICENSE # AND CLASS		CITY BUSINESS TAX #

ATTENTION:

1) State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: 225393

2) 48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. _____, B&PC for this reason _____

WORKER'S COMPENSATION

☐ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # _____ Company Name _____

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Chapter 6, Article 2 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

Jerry Jones / Groundwater Technology Inc - 10/12/95

Signature of Permittee ☐ Agent for ☐ Contractor ☐ Owner Date

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☐ NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) ☐ YES ☐ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☐ NO
81			
ISSUED BY		DATE ISSUED	
		10.12.95	

1330 Broadway, 2nd Floor, Oakland, CA

PERMIT

EXCAVATION

Job Site 800 CENTER ST Parcel# 004 -0067-016-00 Appl# X9500739

Descr excavation for monitoring well on 8th st. minor encroachment Permit Issued 10/12/95
permit ok as per roger tam 10/12/95

APPL	40.00
EXCV	195.00
SUBTL	235.00
CHECK	235.00
ITEM	2
1CL	3096 13:35TM

Work Type EXCAVATION-PRIVATE P

USA # Util Ctl Job # 10-12-95 #1

Fund #:

Applcnt Phone# Lic# --License Classes--

Owner CHEVRON USA ( )999-9999
Contractor BAY AREA EXPLORATION INC X 520125 C57
Arch/Engr
Agent MARK MILLER
Applic Addr 4563 CENTRAL AVE

$235.00 TOTAL FEES PAID AT ISSUANCE

$40.00	Applic	$195.00	Permit
$.00	Process	$.00	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other		

CITY OF OAKLAND

CITY OF OAKLAND
NO REFUND W/O RECPT

10-12-95 #1

APPL	40.00
EXCV	195.00
SUBTL	235.00
CHECK	235.00
ITEM	2
1CL	3096 13:35TM

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT FORMER SIGNAL STATION @ SOBOU
800 CENTER STREET
OAKLAND CA

CLIENT
Name CHEVRON USA PRODUCTS COMPANY
Address 6001 BOLLINGER CANYON, BLDG L Voice (510) 842-9134
City SAN RAMON Zip 94583-0804

APPLICANT
Name GROUNDWATER TECHNOLOGY
Fax (510) 685-9148
Address 4057 PORT CHICAGO HWY Voice (510) 671-2387
City CONCORD Zip 94520

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	X
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other 3D4 ROCK EXPLORATION

DRILLER'S LICENSE NO. C57-572125

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 5 ft. Number 4 (MW-1 thru MW-4)

GEOTECHNICAL PROJECTS (SB-1 thru SB-3)
Number of Borings 3 Maximum
Hole Diameter 8 in. Depth 12 ft.

ESTIMATED STARTING DATE 10-17-95
ESTIMATED COMPLETION DATE 10-19-95

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ Date 10/3/95

FOR OFFICE USE

PERMIT NUMBER 95664
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 12 Oct 95
Wyman Hong

91992

APPENDIX B

DRILL LOGS AND WELL CONSTRUCTION SPECIFICATIONS

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well [redacted]

Project Signal S0800 Owner CHV/USA

Location 800 Center St. Project No. 020200105 Date drilled 10/17/95

Surface Elev. 16.2 ft. Total Hole Depth 16.5 ft. Diameter 8.25 in.

Top of Casing 15.69 ft. Water Level Initial 10 ft. Static 10.54 ft.

Screen: Dia 2 in. Length 10 ft. Type/Size PVC/0.020 in.

Casing: Dia 2 in. Length 5 ft. Type PVC

Filter Pack Material #3 Monterey Sand Rig/Core Type CME 75/Splitspoon

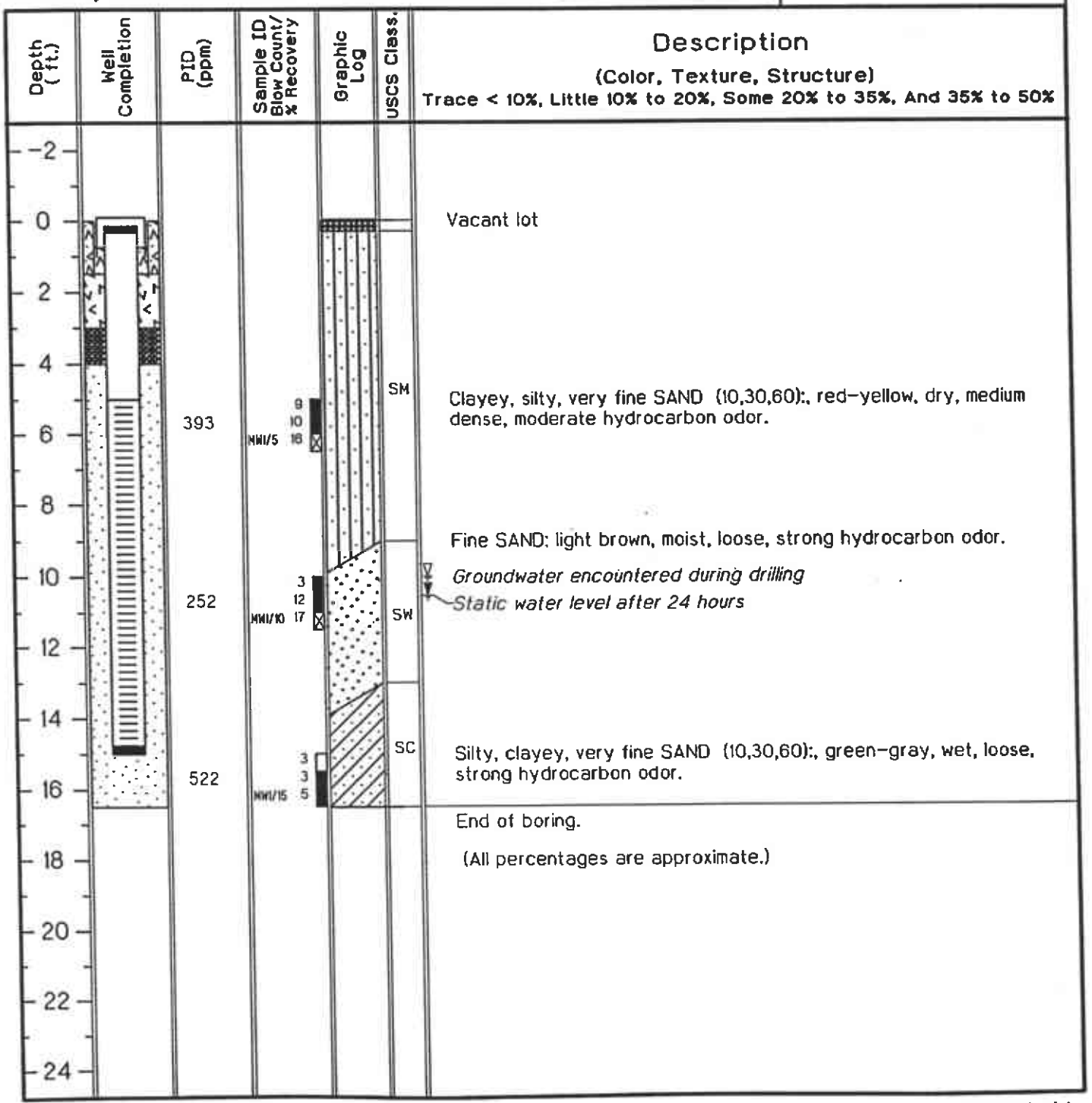
Drilling Company Bay Area Explor. Method Hollow Stem Auger Permit # 65664

Driller Scott Fitche Log By Terry James

Checked By E K Simonis License No. R.G. 4422

See Site Map For Boring Location

COMMENTS:



Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well MW-2

Project Signal S0800 Owner CHV/USA

Location 800 Center St. Project No. 020200105 Date drilled 10/17/95

Surface Elev. 16.3 ft. Total Hole Depth 16.5 ft. Diameter 8.25 in.

Top of Casing 15.77 ft. Water Level Initial 10 ft. Static 10.60 ft.

Screen: Dia 2 in. Length 10 ft. Type/Size PVC/0.020 in.

Casing: Dia 2 in. Length 5 ft. Type PVC

Filter Pack Material #3 Monterey Sand Rig/Core Type CME 75/Splitspoon

Drilling Company Bay Area Explor. Method Hollow Stem Auger Permit # 65664

Driller Scott Fitche Log By Terry James

Checked By E K Simonis License No. R.G. 4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 36% to 50%
-2 to 24						Thin Asphalt
6		4	3 / 7 / MW2/5 12		SM	Clayey, silty, very fine SAND (10,20,70): red-yellow, damp, medium dense, no hydrocarbon odor.
10		3	7 / 20 / MW2/10 25			Grades fine sand, reddish-brown, wet. *Groundwater encountered during drilling* *Static water level after 24 hours*
16		3	4 / 10 / MW2/15 10		SC	Silty, clayey, very fine SAND (10,30,60): saturated, soft, no hydrocarbon odor.
						End of boring. (All percentages are approximate.)

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well **MW-3**

Project *Signal S0800* Owner *CHV/USA*
Location *800 Center St.* Project No. *020200105* Date drilled *10/17/95*
Surface Elev. *16.1 ft.* Total Hole Depth *16.5 ft.* Diameter *8.25 in.*
Top of Casing *15.46 ft.* Water Level Initial *10 ft.* Static *10.37 ft.*
Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC/0.020 in.*
Casing: Dia *2 in.* Length *5 ft.* Type *PVC*
Filter Pack Material *#3 Monterey Sand* Rig/Core Type *CME 75/Splitspoon*
Drilling Company *Bay Area Explor.* Method *Hollow Stem Auger* Permit # *65664*
Driller *Scott Fitche* Log By *Terry James*
Checked By *E K Simonis* License No. *R.G. 4422*

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2 to 24						Thin Asphalt
4 to 6		7	NM3/5: 7, 9, 16		SM	Clayey, silty, very fine SAND (10,20,70): red-yellow, damp, loose, no hydrocarbon odor, trace root stems.
8 to 10		83	NM3/10: 7, 15, 17		SW	Fine SAND: green-gray, wet, loose, strong hydrocarbon odor. *Groundwater encountered during drilling* *Static water level after 24 hours*
14 to 16		82	NM3/15: 4, 7, 8		SC	Silty, clayey, very fine SAND (10,20,70): mottled orange-brown/ green-gray, saturated, loose, slight hydrocarbon odor
						End of boring. (All percentages are approximate.)

Drilling Log

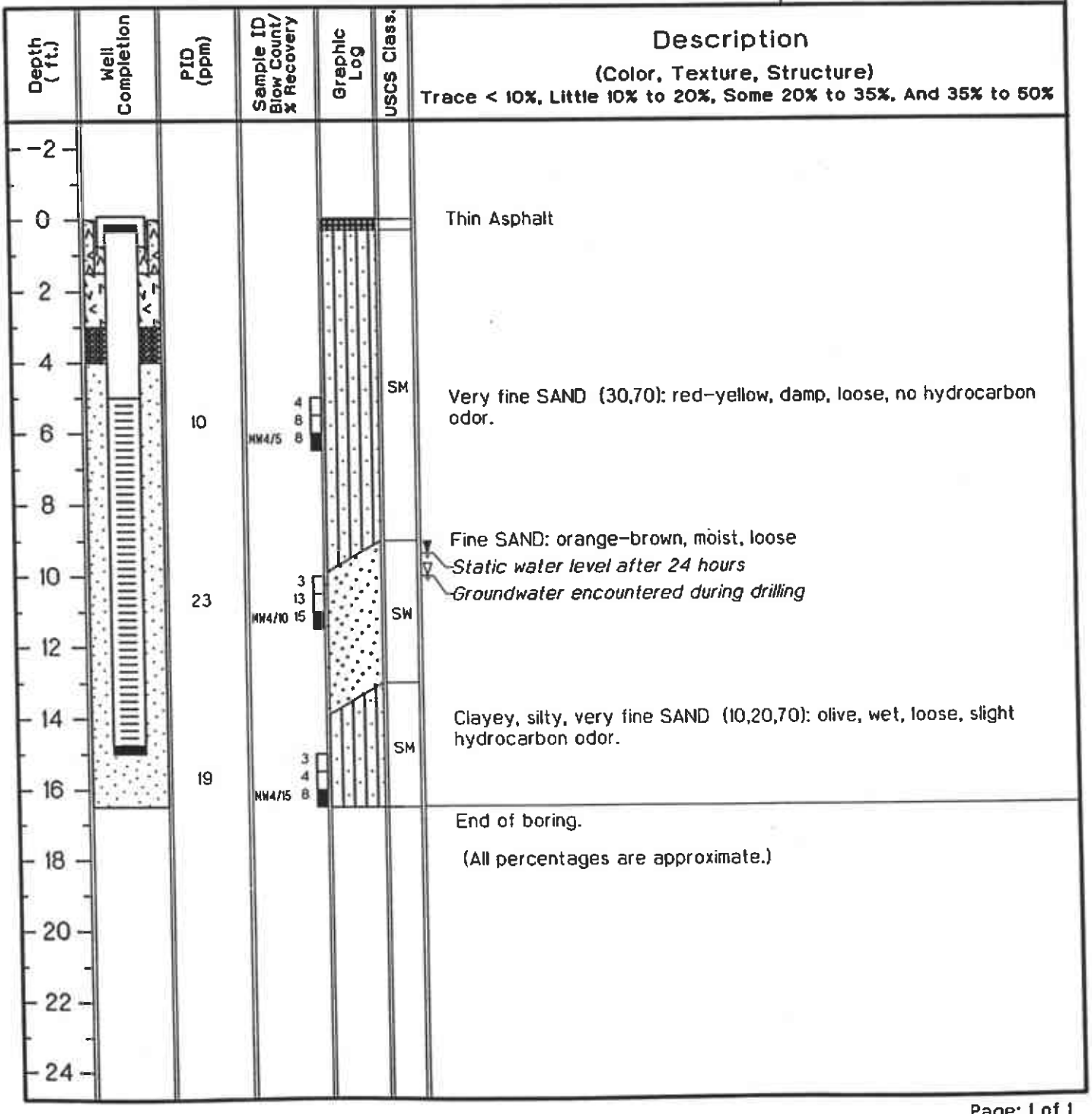
GROUNDWATER TECHNOLOGY

Monitoring Well MW-4

Project Signal S0800 Owner CHV/USA
Location 800 Center St. Project No. 020200105 Date drilled 10/18/95
Surface Elev. 14.84 ft. Total Hole Depth 16.5 ft. Diameter 8.25 in.
Top of Casing 14.45 ft. Water Level Initial 10 ft. Static 9.37 ft.
Screen: Dia 2 in. Length 10 ft. Type/Size PVC/0.020 in.
Casing: Dia 2 in. Length 5 ft. Type PVC
Filter Pack Material #3 Monterey Sand Rig/Core Type CME 55/Splitspoon
Drilling Company Bay Area Explor. Method Hollow Stem Auger Permit # 65664
Driller Scott Fitche Log By Terry James
Checked By E K Simonis License No. R.G. 4422

See Site Map For Boring Location

COMMENTS:



Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-1

Project Signal S0800 Owner CHV/USA

Location 800 Center St. Project No. 020200105 Date drilled 10/17/95

Surface Elev. -- ft. Total Hole Depth 11.5 ft. Diameter 6.25 in.

Top of Casing -- ft. Water Level Initial 10.0 ft. Static -- ft.

Screen: Dia -- in. Length -- ft. Type/Size -- in.

Casing: Dia -- in. Length -- ft. Type --

Filter Pack Material Neat cement Rig/Core Type CME 55/Splitspoon

Drilling Company Bay Area Explor. Method Hollow Stem Auger Permit # 65664

Driller Tim Dunn Log By Terry James

Checked By E K Simonis License No. R.G. 4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0					Thin Asphalt
2				FILL	Silty SAND with rubbish, brick fragments
4					
6	406	SB1/5 2 4 8		SM	Clayey, silty, very fine SAND (10,30,60): olive, damp, loose, strong hydrocarbon odor.
8					
10	781	SB1/10 7 16 21		SW	Fine SAND: red-brown, wet, loose, strong hydrocarbon odor. *Groundwater encountered during drilling*
12					End of boring. (All percentages are approximate.)
14					
16					
18					
20					
22					
24					

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-2

Project Signal S0800 Owner CHV/USA
Location 800 Center St. Project No. 020200105 Date drilled 10/17/95
Surface Elev. ____ Total Hole Depth 11.5 ft. Diameter 6.25 in.
Top of Casing ____ Water Level Initial 10.0 ft. Static -- ft.
Screen: Dia -- in. Length -- ft. Type/Size -- in.
Casing: Dia -- in. Length -- ft. Type --
Filter Pack Material Neat cement Rig/Core Type CME 55/Splitspoon
Drilling Company Bay Area Explor. Method Hollow Stem Auger Permit # 65664
Driller Tim Dunn Log By Terry James
Checked By E K Simonis License No. R.G. 4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0					Thin Asphalt
6	641	SB2/5 8 15 16		SM	Clayey, silty, very fine SAND (10,30,60): mottled yellow-brown/ green-gray, dry, medium dense, strong hydrocarbon odor, trace root stems.
10	800	SB2/10 8 15 21		SW	*Groundwater encountered during drilling* Fine SAND: brown, wet, loose, strong hydrocarbon odor.
12					End of boring. (All percentages are approximate.)

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-3

Project Signal S0800 Owner CHV/USA
Location 800 Center St. Project No. 020200105 Date drilled 10/18/95
Surface Elev. ____ Total Hole Depth 10.5 ft. Diameter 4.25 in.
Top of Casing ____ Water Level Initial -- ft. Static -- ft.
Screen: Dia -- in. Length -- ft. Type/Size -- in.
Casing: Dia -- in. Length -- ft. Type --
Filter Pack Material Neat cement Rig/Core Type Hand Auger/ Impact Sampler
Drilling Company GTI Method Hand Auger Permit # 65664
Driller Terry James Log By Terry James
Checked By E K Simonis License No. R.G. 4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0					Thin Asphalt
4	3	SB3/5		SM	Silty, very fine SAND (40,60), light brown, dry, no hydrocarbon odor.
8					Fine SAND:brown, moist, loose, faint hydrocarbon odor.
10	17	SB3/10		SW	
					End of boring.
					(All percentages are approximate.)

11/29/1995 lithlog-jan93

APPENDIX C

GROUNDWATER TECHNOLOGY
STANDARD OPERATING PROCEDURES (SOPS)

GROUNDWATER TECHNOLOGY, INC.
STANDARD OPERATING PROCEDURE NO. 8
GROUNDWATER MONITORING

Groundwater monitoring of wells at the site shall be conducted using an ORS Environmental Equipment (ORS) INTERFACE PROBE™ or SURFACE SAMPLER™. The INTERFACE PROBE™ is a hand-held, battery-operated device for measuring depth to petroleum product and depth to water as measured from an established datum (*i.e.*, top of the well casing which has been surveyed). Floating separate-phase hydrocarbon (product) thickness is then calculated by subtracting the depth to product from the depth to water. In addition, water elevations are adjusted for the presence of floating product with the following calculation:

(Product Thickness) x (0.8) + (Water Elevation) = Corrected Water Elevation

Note: The factor of 0.8 accounts for the density difference between water and petroleum hydrocarbons.

The thickness of dense non-aqueous phase liquids (DNAPLs) is calculated by subtracting the depth at which the DNAPL is encountered from the total depth of the well. Water-level elevations are not typically corrected for the presence of DNAPLs.

The INTERFACE PROBE™ consists of a dual-sensing probe which utilizes an optical liquid sensor and electrical conductivity to distinguish between water and petroleum products. A coated steel measuring tape transmits the sensor's signals to the reel assembly where an audible alarm sounds a continuous tone when the sensor is immersed in petroleum product and an oscillating tone when immersed in water. The INTERFACE PROBE™ is accurate to 0.01 inch.

A SURFACE SAMPLER™ shall be used for visual inspection of the groundwater to note sheens (difficult to detect with the INTERFACE PROBE™), odors, microbial action, etc.

The SURFACE SAMPLER™ used consists of a 12-inch-long case acrylic tube with a Delrin ball which closes onto a conical surface creating a seal as the sampler is pulled up. The sampler is calibrated in inches and centimeters for visual inspection of product thickness.

To reduce the potential for cross contamination between wells, the monitoring shall take place in order from the least to the most contaminated wells. Wells containing separate-phase hydrocarbons (free product) should be monitored last. Between each monitoring the equipment shall be washed with laboratory-grade detergent and double rinsed with distilled water.

GROUNDWATER TECHNOLOGY, INC.
STANDARD OPERATING PROCEDURE NO. 9
WATER SAMPLING METHODOLOGY

Before water sampling, each well shall be purged by pumping a minimum of four well volumes or until the discharge water indicates stabilization of temperature conductivity and pH. If the well is evacuated before four well volumes are removed or stabilization is achieved, the sample should be taken when the water level in the well recovers to 80 percent of its initial level.

Retrieval of the water sample, sample handling and sample preservation shall be conducted according to Standard Operating Procedure 10 concerning "Sampling for Volatiles in Water." The sampling equipment used shall consist of a Teflon® and/or stainless steel samplers which meet U.S. Environmental Protection Agency (EPA) regulations. Glass vials with Teflon® lids should be used to store the collected samples.

To ensure sample integrity, each vial shall be filled with the sampled water in such a way that the water stands above the lip of the vial. The cap should then be quickly placed on the vial and tightened securely. The vial should then be checked to ensure that air bubbles are not present prior to labeling of the sample. Label information should include a sample identification number, job identification, date, time, type of analysis requested, and sampler's name. Chain-of-custody records shall be completed according to Standard Operating Procedure (SOP) 11 concerning chain of custody.

The vials should be immediately placed in high quality coolers for shipment to the laboratory. The coolers should be packed with sufficient ice or freezer packs to ensure that the samples are kept below 4° Celsius (C). To minimize sample degradation the prescribed analysis shall take place within seven days of sample collection unless specially prepared acidified vials are used.

To minimize the potential for cross contamination between wells, all the well development and water sampling equipment which contacts the groundwater shall be cleaned between each sampling. As a second precautionary measure, the wells shall be sampled in order of increasing contaminant concentrations (the least contaminated well first, the most contaminated well last) as established by previous analysis.

GROUNDWATER TECHNOLOGY, INC.
STANDARD OPERATING PROCEDURE NO. 10
SAMPLING FOR VOLATILES IN WATER (DISSOLVED GASOLINE, SOLVENTS, ETC.)

1. Use only vials properly washed and oven dried (prepared by the laboratory).

2. Use clean sampling equipment. Scrub with Alconox or equivalent laboratory detergent and water followed by a thorough water rinse. Complete with a distilled water rinse.

   Sampling equipment which has come into contact with liquid hydrocarbons (free product) should be regarded with suspicion. Such equipment should have tubing and cables replaced and all resilient parts washed with laboratory detergent solution as indicated above. Visible deposits may have to be removed with hexane. Solvent washing should be followed by detergent washing, as indicated above.

   This procedure is valid for volatile organic analysis only. For extractable organics (for example, pesticides, or base neutrals for U.S. Environmental Protection Agency [EPA] Method 625 a final rinse with pesticide-grade isopropyl alcohol), followed by overnight or oven drying will be necessary.

3. Take duplicate samples. Mark on forms as a single sample with two containers to avoid duplication of analyses.

4. Take a site blank using distilled water or known uncontaminated source. This sample will be run at the discretion of the project manager.

5. Fill out labels and forms as much as possible ahead of time. Use an indelible marker.

6. Preservatives are required for some types of samples. Use specially prepared vials marked as indicated below, or use the appropriate field procedure (SOP 12 for acidification). Make note on forms that samples were preserved. Always have extra vials in case of problems. Samples for volatile analyses should be acidified below pH 2. Eye protection, foot protection, and disposable vinyl gloves are required for handling. Samples designated for expedited service and analyzed within seven (7) days of sampling will be acceptable without preservation. Glasses or goggles (not contact lenses) are necessary for protection of the eyes. Flush eyes with water for 15 minutes if contact occurs and seek medical attention. Rinse off hands frequently with water during handling.

   For sampling chlorinated drinking water supplies for chlorinated volatiles, samples shall be preserved with sodium thiosulfate. Use vials labeled "CONTAINS THIOSULFATE." No particular cautions are necessary.

7. Fill vial to overflowing with water, avoiding turbulence and bubbling as much as possible. Water should stand above lip of vial.

8. Carefully, but quickly, slip cap onto vial. Avoid dropping the Teflon® septum from cap by not inverting cap until it is in contact with the vial. Disc should have Teflon® face toward the water. Also avoid touching white Teflon® face with dirty fingers.

9. Tighten cap securely, invert vial, and tap against hand to see there are not bubbles inside.

10. Label vial, using indelible ink, as follows:

    A. Sample I.D. No.
    B. Job I.D. No.
    C. Date and Time
    D. Type of analysis required
    E. Your name

11. Unless the fabric-type label is used, place Scotch™ tape over the label to preserve its integrity.

12. For chain-of-custody reasons, sample vial should be wrapped end-for-end with Scotch™ tape or evidence tape and signed with indelible ink where the end of the tape seals on itself. The septum needs to be covered.

13. Chill samples immediately. Samples to be stored should be kept at 4° Celsius (C) (39.2° Fahrenheit [F]). Samples received at the laboratory above 10°C (as measured at glass surface by a thermocouple probe), after overnight shipping, will be considered substandard, so use a high quality cooler with sufficient ice or freezer packs.

14. Fill out Chain-of-Custody Manifest and Analysis Request Form (see Chain of Custody Procedures, SOP 11).

GROUNDWATER TECHNOLOGY, INC.
STANDARD OPERATING PROCEDURE NO. 11
CHAIN-OF-CUSTODY PROTOCOL

1. Samples must be maintained under custody until shipped or delivered to the laboratory. The laboratory will then maintain custody. A sample is under custody if:

    a) It is in your possession
    b) It is in your view after being in your possession
    c) You locked it up after it was in your possession
    d) It is in a designated secure area

2. Custody of samples may be transferred from one person to another. Each transferrer and recipient must date, sign and note the time on the chain-of-custody form.

3. In shipping, the container must be sealed with tape, and bear the sender's signature across the area of bonding at the ends of the tape to prevent undetected tampering. Each sampling jar should be taped and signed as well. Scotch tape works well.

4. Write "sealed by" and sign in the "Remarks" box at the bottom of the form before sealing the box. Place form in a plastic bag and seal it inside the box.

5. The "REMARKS" section of the form is for documenting details such as:

    a) Correlation of sample numbers if samples are split between labs.
    b) QC numbers when lab is logging in the samples.
    c) Sample temperature and condition when received by lab.
    d) Preservation notation.
    e) pH of samples when opened for analysis (if acidified).
    f) Sampling observation or sampling problem.

6. The chain-of-custody form should be included inside the shipping container. A copy should be sent to the project manager.

7. When the samples are received by the lab, the chain-of-custody form will be dated, signed, and the time noted by a laboratory representative. The form will be retained in the laboratory files along with shipping bills and receipts .

8. At the time of receipt of samples by the laboratory, the shipping container will be inspected and the sealing signature will be checked. The samples will be inspected for condition and bubbles, and the temperature of a representative sample container will be measured

externally by a thermocouple probe (held tightly between two samples) and recorded. The laboratory QC numbers will be placed on the labels, in the accession log, and on the chain-of-custody form. If samples are acidified, their pH will be measured by narrow range pH paper at the time of opening for analysis. All comments concerning procedures requiring handling of the samples will be dated and initialed on the form by the laboratory person performing the procedure. A copy of the completed chain-of-custody form with the comments on sample integrity will be returned to the sampler.

GROUNDWATER TECHNOLOGY, INC.
STANDARD OPERATING PROCEDURE NO. 14
SOIL SAMPLING METHODOLOGY

1. Soil samples should be collected and preserved in accordance with Groundwater Technology Standard Operating Procedure (SOP 15) concerning Soil Sample Collection and Handling when Sampling for Volatile Organics. A hollow stem soil auger should be used to drill to the desired sampling depth. A standard 2 inch diameter split spoon sampler 18 inches in length shall be used to collect the samples. The samples are contained in 2 inch diameter by 6 inch long thin walled brass tube liners fitted into the split spoon sampler (three per sampler).

2. The split spoon sampler should be driven the full depth of the spoon into the soil by a 140 pound hammer. The spoon shall then be extracted from the borehole and the brass tube liners containing the soil sample removed from the sampler. The ends of the liner tubes should be immediately covered with aluminum foil, sealed with a teflon or plastic cap, and taped with duct tape. After being properly identified with sample data entered on a standard chain of custody form the samples shall be placed on dry ice (maintained below 4~C) and transported to the laboratory within 24 hours.

3. One of the three soil samples retrieved at each sample depth shall be analyzed in the field using a photoionization detector and/or explosimeter. The purpose of the field analysis is to provide a means to choose samples to be laboratory analyzed for hydrocarbon concentrations and to enable comparisons between the field and laboratory analyses. The soil sample shall be sealed in a plastic bag and allowed to equilibrate with the air surrounding the soil for approximately 10 minutes. One of the two field vapor instruments shall be used to quantify the amount of hydrocarbon released to the air from the soils. The data shall be recorded on the drill logs at the depth corresponding to the sample point.

GROUNDWATER TECHNOLOGY, INC.
STANDARD OPERATING PROCEDURE NO. 15
SOIL SAMPLE COLLECTION AND HANDLING WHEN SAMPLING FOR VOLATILE ORGANICS

1. Use a sampling means which maintains the physical integrity of the samples. The project sampling protocol will designate a preferred sampling tool. A split spoon sampler with liners, or similar tube sampler which can be sealed, is best.

2. The samples should be sealed in the liner, with teflon plugs (The "California Sampler") or plastic caps.

3. For sending whole-core samples (above):

   A. Seal ends of liner with teflon plugs or plastic caps, leaving no free air space inside.

   B. Tape with duct tape.

   C. Label the sample with the following information: sample identification, depth, date and time, project number and required analyses.

   D. Place in plastic bag labeled with indelible marker. Use Well #, depth, date, and job #.

   E. Place inside a second bag and place a labelling tag inside outer bag.

   F. Enclose samples in a cooler with sufficient ice or dry ice to maintain samples at 4 degrees C during shipment.

   G. Seal cooler with a lock, or tape with samplers signature so tampering can be detected.

   H. Package cooler in a box with insulating material. Chain of custody forms can be placed in a plastic bag in this outer box.

   I. If dry ice is used, a maximum of 5 pounds is allowed by Federal Express without special documents(documents are easy to obtain but are not necessary for under 5 pounds). Write "ORM-A dry ice", "____ pounds, for research" on outside packaging and on regular airbill under classification. UPS does not accept dry ice.

J. Soil cores kept a 4 degrees C are only viable for up to 7 days when aromatic hydrocarbons are involved. The lab should prepare the samples in methanol once in the lab.

4. Good sampling practice would include preparing 1 out of 5 samples to be prepared in duplicates for analysis. These 4 out of 20 samples will be used for the following purposes:

   A. One in every 20 samples should be analyzed as a field replicate to evaluate the precision of the sampling technique. A minimum of 1 sample per data set is suggested.

   B. An additional 1 in 20 samples should be selected by sampler to be prepared in duplicate as alternative to Step (A). Choose a different soil type if available.

   C. The remaining 2 in 20 samples should be used by lab for spiking with reference materials for internal QC.

   Other QC procedures can be specified at the project manager's discretion. See Table 3-2 (reference 2) attached.

5. Decontamination of equipment in the field requires a detergent wash, with a distilled water rinse.

REFERENCES

1. Soil Sampling Quality Assurance Users Guide, U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, NV, EPA 600/4-84-043, May 1984.

2. Preparation of Soil Sampling Protocol. Techniques and Strategies, U.S. EPA, Environmental Monitoring Systems Laboratory, Las Vegas, NV, EPA 600/4-83-020, August 1983 (PB83-206979).

3. Test Methods for Evaluating Solid Waste, U.S. EPA, Office of Solid Waste and Emergency Response, Washington, D.C., SW 846, July 1982.

GROUNDWATER TECHNOLOGY, INC.
STANDARD OPERATING PROCEDURE NO. 19
OPERATION/CALIBRATION OF PHOTOIONIZATION ANALYZER

1. The Thermo Environmental Instruments Inc. Model 580B OVM Photoionization Analyzer shall be used, using photoionization, to measure the concentration of trace gases over a range of less than 1 ppm to 2,000 ppm. The specific instrument used for investigations related to hydrocarbon contamination should be calibrated for direct readings in parts per million (ppm) volume/volume of isobutylene. Specifics of the detection principle/theory and functions of various components can be found in the manufactures instruction manual.

2. To assure optimum performance, the photoionization analyzer should be calibrated with a standard gas mixture of known concentration from a pressurized container. A daily procedure for calibration involves bringing the probe and readout close to the calibration gas, cracking the valve on the tank and checking the instrument reading. This provides a useful spot check for the instrument.

3. A procedure conducted weekly for more accurate calibration of the instrument from a pressurized container is to connect one side of a "T" to the pressurized container of calibration gas, another side of the "T" to a rotameter and the third side of the "T" directly to the 8" extension to the photoionization probe (see Figure 2). Crack the valve of the pressurized container until a slight flow is indicated on the rotameter. The instrument draws in the volume of sample required for detection, and the flow in the rotameter indicates an excess of sample. Now adjust the span pot so that the instrument reads the exact value of the calibration gas. (If the instrument span setting is changed, the instrument should be turned back to the standby position and the electronic zero should be readjusted, if necessary).

APPENDIX D

WELL DEVELOPMENT AND PURGING FORMS

Project Name: SIGNAL 50800

Site Address: 800 CENTER ST.

Project Number: 02020105.030503

Date: 10/24/95

Page 3 of 4

Project Manager: _____

Well ID: MW 1

Well Diameter: 2

DTW Measurements:
Initial: 10.60
Recharge: _____
DTB: 14.85

Calc Well Volume: 0.6 gal
Well Volume: 0.9 gal

Purge Method
Peristaltic _____
Gear Drive _____
Submersible _____

Pump Depth _____ ft.
Hand Bailed _____
Air Lift _____
Other _____

Instruments Used
YSI: _____
Hydac: _____
Omega: _____
Other: _____

WELL DEVELOPMENT

Time	DTW	DTB	Purge Volume Gallons	Turbidity	Comments
10:10	11.89	14.50	1	SLGTY GREY	
10:12	12.10	14.65	3		
10:14	12.82	14.75	5		
10:16	12.80	14.75	7	0	

GROUNDWATER TECHNOLOGY

Project Name: SIGNAL 50800

Site Address: 800 CENTERST.

Project Number: 020200105.030503

Date: 10/24/95

Page 1 of 4

Project Manager: MIKE CHAMBERLAIN

Well ID: MW-2

Well Diameter: 2

DTW Measurements:
Initial: 10.71
Recharge:
DTB: 14.55

Calc Well Volume: 0.6 gal
Well Volume: X10 6 gal

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI:
Hydac:
Omega:
Other:

WELL DEVELOPMENT

Time	DTW	DTB	Purge Volume Gallons	Turbidity	Comments
9:10	11.21	14.35	1	SILTY BROWN	
9:14	11.85	14.35	3	↓	
9:20	14.00	14.35	5	↓	
9:23	14.08	14.35	6	↓	DRY @ GALLONS

GROUNDWATER TECHNOLOGY

Project Name: SIGNAL 0800

Site Address: 800 CENTER ST.

Project Number: 02020010S.030503

Date: 10/24/95

Page 2 of 4

Project Manager: MIKE CHAMBERLIAN

Well ID: MW 3

Well Diameter: 2

DTW Measurements:
Initial: 10.45
Recharge: _____
DTB: 14.55

Calc Well Volume: 0.6 gal
Well Volume: X10 7 gal

Purge Method
Peristaltic _____
Gear Drive _____
Submersible _____

Pump Depth _____ ft.
Hand Bailed X
Air Lift _____
Other _____

Instruments Used
YSI: _____
Hydac: _____
Omega: _____
Other: _____

WELL DEVELOPMENT

Time	DTW	DTB	Purge Volume Gallons	Turbidity	Comments
9:40	11.30	14.50	1	SILTY GREY	ODOR
9:42	12.05	14.50	3	↓	↓
9:48	13.89	14.50	5	↓	↓
9:52	14.39	14.50	6	↓	↓ DRY @ 6 gallons

GROUNDWATER TECHNOLOGY

Project Name: SIGNAL 50800

Site Address: 800 CENTER ST.

Project Number: 02-0200105.030503

Date: 6/24/95

Page 4 of 4

Project Manager: MIKE HANNIGAN

Well ID: MW4

Well Diameter: 2

DTW Measurements:
Initial: 9.45
Recharge:
DTB: 14.40

Calc Well Volume: 0.8 gal
Well Volume: x10 8 gal

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed
Air Lift
Other

Instruments Used
YSI:
Hydac:
Omega:
Other:

WELL DEVELOPMENT

Time	DTW	DTB	Purge Volume Gallons	Turbidity	Comments
11:26	12.08	14.75	2	SLTY BROWN	
11:28	11.16	14.75	4		
11:30	11.25	14.75	6		
11:33	13.89	14.75	8		
11:35	14.20	14.75	10	V	DRY @ 10 gal @ 15

GROUNDWATER TECHNOLOGY

Project Name: Signal S0800

Site Address: 800 Center St., Oakland

Project Number: 020200105.030503

Date: 10/27/95

Page 1 of 4

Project Manager: Mike Chamberlain

Well ID: MW-1

Well Diameter: 2

DTW Measurements:
Initial: 10.54
Recharge:
DTB: 14.85

Calc Well Volume: 0.7 gal
Well Volume X4 2.8 gal

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp X C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
11:44	21.3	1.24	6.92	0	cloudy	Slight odor
11:46	20.6	1.20	6.98	1	cloudy Brown	↓
11:47	20.4	1.19	7.00	2	↓	↓

Project Name: Signal S0800

Site Address: 800 Center St, Oakland

Project Number: 020200105.030503

Date: 10/27/95

Page 2 of 4

Project Manager: Mike Chamberlain

Well ID: MW-2

Well Diameter: 2

DTW Measurements:
Initial: 10.60
Recharge:
DTB: 14.55

Calc Well Volume: 0.6 gal
Well Volume x4 2.5 gal

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp (X) C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
11:52	21.3	1.12	7.29	0	CLOUDY	NO ODOR
11:53	21.1	1.07	7.40	1	BROWN	↓
11:54	21.0	1.00	7.41	2	↓	↓
11:55	21.2	1.10	7.41	3	↓	↓

Project Name: Signal S0800

Site Address: 800 Center St., Oakland

Project Number: 020200105.030503

Date: 10/27/95

Page 3 of 4

Project Manager: Mike Chamberlain

Well ID: MW-3

Well Diameter: 2

DTW Measurements:
Initial: 10.37
Recharge:
DTB ≈ 14.55

Calc Well Volume: 0.6 gal
Well Volume: X4 2.7 gal

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
12:10	22.5	1.98	6.97	0	CLOUDY	STRONG ODOR
12:11	22.4	1.99	6.96	1	GREENISH BROWN	↓
12:12	22.4	1.84	6.94	2	↓	
12:13	22.3	1.83	6.95	3	↓	

Project Name: Signal S0800

Site Address: 800 Center St. Oakland

Project Number: 020200105.030503

Date: 10/27/95

Page 4 of 4

Project Manager: Mike Chamberlain

Well ID: MW-4

Well Diameter: 2

DTW Measurements:
Initial: 9.37
Recharge: _____
DTB 14.40

Calc Well Volume: 0.8 gal
Well Volume x4 3.2 gal

Purge Method
Peristaltic _____
Gear Drive _____
Submersible _____

Pump Depth _____ ft.
Hand Bailed X
Air Lift _____
Other _____

Instruments Used
YSI: X
Hydac: _____
Omega: _____
Other: _____

Time	Temp ~~C~~ C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
12:18	22.8	1.00	7.61	0	Cloudy	No odor
12:19	22.0	1.16	7.40	1	Brown	↓
12:20	22.0	1.14	7.35	2	↓	↓
12:21	22.0	1.11	7.33	3	↓	↓

APPENDIX E

LABORATORY REPORTS
AND
CHAIN-OF-CUSTODY RECORDS

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Groundwater Technology	Client Project ID:	800 Center	Sampled: Oct 17-18,1995
4057 Port Chicago Hwy	Sample Matrix:	Soil	Received: Oct 19, 1995
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Oct 30, 1995
Attention: M. Chamberlain	First Sample #:	510-1615	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 510-1615 SB-3-5	Sample I.D. 510-1616 SB-3-10	Sample I.D. 510-1617 MW-4-5	Sample I.D. 510-1618 MW-4-10	Sample I.D. 510-1619 COMP	Sample I.D. 510-1620 MW-2-5
QC Batch Number:		GC102595 802004A	GC102595 802004A	GC102595 802004A	GC102595 802004A	GC102595 802004A	GC102595 802004A
Purgeable Hydrocarbons	1.0	N.D.	N.D.	N.D.	N.D.	13	N.D.
Benzene	0.0050	N.D.	N.D.	N.D.	N.D.	0.036	N.D.
Toluene	0.0050	0.019	N.D.	N.D.	N.D.	1.5	N.D.
Ethyl Benzene	0.0050	0.0087	N.D.	N.D.	N.D.	0.75	N.D.
Total Xylenes	0.0050	0.049	N.D.	N.D.	N.D.	3.2	N.D.
Chromatogram Pattern:		--	--	--	--	Gasoline	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	10/25/95	10/25/95	10/25/95	10/25/95	10/25/95	10/25/95
Instrument Identification:	HP-4	HP-4	HP-4	HP-4	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	106	105	102	102	111	104

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Kenneth L. Wimer
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Groundwater Technology
4057 Port Chicago Hwy
Concord, CA 94520
Attention: M. Chamberlain

Client Project ID: 800 Center
Sample Matrix: Soil
Analysis Method: EPA 5030/8015 Mod./8020
First Sample #: 510-1621

Sampled: Oct 17, 1995
Received: Oct 19, 1995
Reported: Oct 30, 1995

QC Batch Number:	GC102595 802004A	GC102595 802004A	GC102595 802004A	GC102595 802004A	GC102995 802005A	GC102595 802004A

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 510-1621 MW-3-5	Sample I.D. 510-1622 SB-1-5	Sample I.D. 510-1623 SB-1-10	Sample I.D. 510-1624 SB-2-5	Sample I.D. 510-1625 SB-2-10	Sample I.D. 510-1626 MW-1-5
Purgeable Hydrocarbons	1.0	N.D.	87	8,100	240	4,700	11
Benzene	0.0050	N.D.	0.34	72	0.19	28	0.091
Toluene	0.0050	N.D.	1.2	640	4.8	440	0.49
Ethyl Benzene	0.0050	N.D.	1.2	240	5.1	150	0.14
Total Xylenes	0.0050	N.D.	1.3	1,100	26	630	1.9
Chromatogram Pattern:		--	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	10	1,000	20	1,000	5.0
Date Analyzed:	10/25/95	10/25/95	10/25/95	10/25/95	10/29/95	10/25/95
Instrument Identification:	HP-4	HP-4	HP-4	HP-4	HP-5	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	102	116	124	91	99	101

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Kenneth L. Wimer
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Groundwater Technology	Client Project ID:	800 Center	Sampled: Oct 17, 1995
4057 Port Chicago Hwy	Sample Matrix:	Soil	Received: Oct 19, 1995
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Oct 30, 1995
Attention: M. Chamberlain	First Sample #:	510-1627	

QC Batch Number: GC102995 802005A | GC102595 802004A | GC102995 802004A

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 510-1627 MW-1-10	Sample I.D. 510-1628 MW-2-10	Sample I.D. 510-1629 MW-3-10
Purgeable Hydrocarbons	1.0	14,000	N.D.	N.D.
Benzene	0.0050	120	N.D.	0.24
Toluene	0.0050	800	N.D.	0.010
Ethyl Benzene	0.0050	270	N.D.	0.016
Total Xylenes	0.0050	1,300	N.D.	0.019
Chromatogram Pattern:		Gasoline	--	--

Quality Control Data

Report Limit Multiplication Factor:	2,000	1.0	1.0
Date Analyzed:	10/29/95	10/25/95	10/29/95
Instrument Identification:	HP-5	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	99	104	84

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Kenneth L. Wimer
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Groundwater Technology
4057 Port Chicago Hwy
Concord, CA 94520
Attention: M. Chamberlain

Client Project ID: 800 Center
Matrix: Solid
QC Sample Group: 5101659

Reported: Nov 1, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	SP102595	SP102595	SP102595	SP102595
	8020EXA	8020EXA	8020EXA	8020EXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	K. Nill	K. Nill	K. Nill	K. Nill
MS/MSD #:	5101902	5101902	5101902	5101902
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/25/95	10/25/95	10/25/95	10/25/95
Analyzed Date:	10/25/95	10/25/95	10/25/95	10/25/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	0.40 mg/kg	0.40 mg/kg	0.40 mg/kg	1.2 mg/kg
Result:	0.33	0.35	0.37	1.1
MS % Recovery:	83	88	93	93
Dup. Result:	0.35	0.37	0.38	1.1
MSD % Recov.:	88	93	95	95
RPD:	5.9	5.6	2.7	2.7
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	2LCS102595	2LCS102595	2LCS102595	2LCS102595
Prepared Date:	10/25/95	10/25/95	10/25/95	10/25/95
Analyzed Date:	10/25/95	10/25/95	10/25/95	10/25/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
LCS Result:	18	21	22	66
LCS % Recov.:	89	104	110	111

MS/MSD LCS Control Limits	55-145	47-149	47-155	56-140

SEQUOIA ANALYTICAL, #1271

Kenneth L. Wimer
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Groundwater Technology
4057 Port Chicago Hwy
Concord, CA 94520
Attention: M. Chamberlain

Client Project ID: 800 Center
Matrix: Solid
QC Sample Group: 5101659
Reported: Nov 1, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	SP102995	SP102995	SP102995	SP102995
	8020EXA	8020EXA	8020EXA	8020EXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	K. Nill	K. Nill	K. Nill	K. Nill
MS/MSD #:	MS102995	MS102995	MS102995	MS102995
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/29/95	10/29/95	10/29/95	10/29/95
Analyzed Date:	10/29/95	10/29/95	10/29/95	10/29/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	0.40 mg/kg	0.40 mg/kg	0.40 mg/kg	1.2 mg/kg
Result:	0.38	0.39	0.39	1.2
MS % Recovery:	95	98	96	99
Dup. Result:	0.38	0.39	0.40	1.2
MSD % Recov.:	95	98	100	99
RPD:	0.0	0.0	2.5	0.0
RPD Limit:	0-20	0-20	0-20	0-20
LCS #:	2LCS102995	2LCS102995	2LCS102995	2LCS102995
Prepared Date:	10/29/95	10/29/95	10/29/95	10/29/95
Analyzed Date:	10/29/95	10/29/95	10/29/95	10/29/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
LCS Result:	20	20	20	61
LCS % Recov.:	101	102	102	101
MS/MSD LCS Control Limits	55-145	47-149	47-155	56-140

SEQUOIA ANALYTICAL, #1271

Kenneth L. Wimer
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an allquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

SEQUOIA ANALYTICAL
CHAIN OF CUSTODY

❑ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600 FAX (415) 364-9233
❑ 819 West Striker Ave. • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100
❑ 1900 Bates Ave., Suite LM • Concord, CA 94520 • (510) 686-9600 FAX (510) 686-9689

Company Name: GROUND WATER Technology	Project Name: 800 Center 9510362
Address: 4057 Port Chicago Hwy	Billing Address (if different):
City: CONCORD State: CA Zip Code: 94520	
Telephone (510) 671-2387 FAX # (510) 685-9148	P.O. #: LAB Release # 287 8280
Report To: M. CHAMBERLAIN Sampler: T JAMES	QC Data: ❑ Level A (Standard) ❑ Level B ❑ Level C ❑ Level D

Turnaround Time: ❑ 10 Working Days ❑ 3 Working Days ❑ 2 - 8 Hours ❑ 7 Working Days ❑ 2 Working Days ❑ 5 Working Days ❑ 24 Hours / CONTRACT

❑ Drinking Water ❑ Waste Water ❑ Other

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	BTEX/TPH-g	Comments
1. SB-3-5	10-18 / 7:50	Soil	1	Tube	5101615	X	
2. SB-3-10	10-18 / 8:05				5101616		
3. MW-4-5	10-16 / 9:20				5101617		
4. MW-4-10	10-18 / 9:30				5101618		
5. COMP	10-16 / 11:00				5101619		
6. MW-2-5	10-17 / 11:40				5101620		
7. MW-3-5	10-17 / 11:00				5101621		
8. SB-1-5	10-17 / 10:00				5101622		
9. SB-1-10	10-17 / 10:20				5101623		
10. SB-2-5	10-17 / 9:20				5101624		

Pink - Client
Yellow - Sequoia
White - Sequoia

Relinquished By: Jerry James	Date: 10/18/95	Time: 15:00	Received By: Ralf Boelle	Date: 10/18/95	Time: 8:00
Relinquished By: Ralf Boelle	Date: 10/18/95	Time: 8:50	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab:	Date: 10/19/95	Time: 0850

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment _____ Page __ of __

SEQUOIA ANALYTICAL
CHAIN OF CUSTODY

❑ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600 FAX (415) 364-9233
❑ 819 West Striker Ave. • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100
❑ 1900 Bates Ave., Suite LM • Concord, CA 94520 • (510) 686-9600 FAX (510) 686-9689

Company Name: GROUND WATER TECHNOLOGY	Project Name: 800 Center
Address: 4057 Port Chicago Hwy	Billing Address (if different):
City: CONCORD State: CA Zip Code: 94520	
Telephone: (510) 671-2387 FAX #: (510) 685-9148	P.O. #: LAB RELEASE # 287 8280
Report To: M. CHAMBERLAIN. Sampler: T. JONES	QC Data: ❑ Level A (Standard) ❑ Level B ❑ Level C ❑ Level D

Turnaround Time: ❑ 10 Working Days ❑ 3 Working Days ❑ 2 - 8 Hours ❑ 7 Working Days ❑ 2 Working Days ❑ 5 Working Days ❑ 24 Hours AS CONTRACT

❑ Drinking Water ❑ Waste Water ❑ Other

Analyses Requested: BTEX | TPH-g

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	BTEX	TPH-g	Comments
1. SB-2-10	10/17 9:40	Soil	1	Tube	5101625	X		
2. MW-1-5	10/17 14:15				5101626	X		
3. MW-1-10	10/17 14:30				5101627	X		
4. MW-2-10	10/17 11:50				5101628	X		
5. MW-3-10	10/17 11:15				5101629	X		
6.								
7.								
8.								
9.								
10.								

Relinquished By: Jerry Jones	Date: 10-18-95	Time: 15:00	Received By: Ralph Bonilla
Relinquished By: Ralph Bonilla	Date: 10/18/95	Time: 8:50	Received By:
Relinquished By:	Date:	Time:	Received By Lab: Date: 10/19/95 Time: 0850

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment_____ Page __ of __

Pink - Client
Yellow - Sequoia
White - Sequoia

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Groundwater Technology	Client Project ID:	Chevron #Signal S0800	Sampled: Oct 27, 1995
4057 Port Chicago Hwy	Sample Matrix:	Water	Received: Oct 27, 1995
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Nov 3, 1995
Attention: Mike Chamberlain	First Sample #:	510-2393	

QC Batch Number: GC103095 802009B | GC103095 802009B | GC103095 802009B | GC103095 802009B | GC103095 802009B

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 510-2393 TBLB	Sample I.D. 510-2394 MW-1	Sample I.D. 510-2395 MW-2	Sample I.D. 510-2396 MW-3	Sample I.D. 510-2397 MW-4
Purgeable Hydrocarbons	50	N.D.	170,000	N.D.	33,000	66
Benzene	0.50	N.D.	19,000	N.D.	11,000	6.8
Toluene	0.50	N.D.	34,000	N.D.	1,700	N.D.
Ethyl Benzene	0.50	N.D.	4,800	N.D.	2,300	N.D.
Total Xylenes	0.50	N.D.	26,000	N.D.	4,200	N.D.
Chromatogram Pattern:		--	Gasoline	--	Gaoline	Gasoline & Unidentified Hydrocarbons <C7

Quality Control Data

Report Limit Multiplication Factor:	1.0	1,000	1.0	400	1.0
Date Analyzed:	10/30/95	10/30/95	10/30/95	10/30/95	10/30/95
Instrument Identification:	HP-9	HP-9	HP-9	HP-9	HP-9
Surrogate Recovery, %: (QC Limits = 70-130%)	102	92	93	91	92

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Kenneth L. Wimer
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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Groundwater Technology
4057 Port Chicago Hwy
Concord, CA 94520
Attention: Mike Chamberlain

Client Project ID: Chevron #Signal S0800
Matrix: Liquid
QC Sample Group: 5102393-397
Reported: Nov 3, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC103095 802009B	GC103095 802009B	GC103095 802009B	GC103095 802009B
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	M. Creusere	M. Creusere	M. Creusere	M. Creusere
MS/MSD #:	5102081	5102081	5102081	5102081
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/30/95	10/30/95	10/30/95	10/30/95
Analyzed Date:	10/30/95	10/30/95	10/30/95	10/30/95
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Result:	21	21	20	65
MS % Recovery:	105	105	100	108
Dup. Result:	20	20	20	65
MSD % Recov.:	100	100	100	108
RPD:	4.9	4.9	0.0	0.0
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	4LCS103095	4LCS103095	4LCS103095	4LCS103095
Prepared Date:	10/30/95	10/30/95	10/30/95	10/30/95
Analyzed Date:	10/30/95	10/30/95	10/30/95	10/30/95
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
LCS Result:	18	18	18	60
LCS % Recov.:	92	90	91	99

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL, #1271

Kenneth L. Wimer
Project Manager

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** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

[redacted]Fa[redacted]opy[redacted]f 'L[redacted] Re[redacted]rt [redacted] C[redacted] to[redacted]hev[redacted] C[redacted]ac[redacted] N[redacted] [redacted] [redacted]Ch[redacted]n[redacted]C[redacted]to[redacted]K[redacted]

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number: SIGNAL S0800
Facility Address: 800 CENTER ST. OAKLAND CA.
Consultant Project Number: 020200105, 030503
Consultant Name: GROUNDWATER TECHNOLOGY
Address: 4057 PORT CHICAGO HWY CONCORD, CA
Project Contact (Name): MIKE CHAMBERLIN
(Phone): 671-2387 (Fax Number):

Chevron Contact (Name): MARK MILLER
(Phone):
Laboratory Name: SEQUOIA ANALYTICAL
Laboratory Release Number: 2578280
Samples Collected by (Name): HECTOR MERINO
Collection Date: 10/27/95
Signature: [signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)					Remarks
TBLB		1	W	G	—	HCl	YES	X			5102393A									
MW-1		2	↓	↓	13:00	↓	↓	X			5102394A,B									
MW-2		2	↓	↓	13:05	↓	↓	X			5102395A,B									
MW-3		2	↓	↓	13:10	↓	↓	X			5102396A,B									
MW-4		2	↓	↓	13:20	↓	↓	X			5102397A,B									

NOTE: Do Not Bil TB-LB SA

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
[signature]	GTI	10/27/95	[signature]	Seq	4:35 10/27/95
[signature]	Seq	5:00 10/27/95			
			Received For Laboratory By (Signature) [signature]		17:00 10/27/95

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted (circled)

APPENDIX F

PETROPHYSICAL ANALYSIS REPORTS AND CHAIN-OF-CUSTODY RECORDS

PTS Laboratories, Inc.

Geotechnical Services

8100 Secura Way • Santa Fe Springs • CA 90670
Phone (310) 907-3607 • Fax (310) 907-3610

October 30, 1995

Mike Chamberlain
Groundwater Technology
4057 Port Chicago Hwy
Concord, CA 94520

Re: Project No: 20200105.030599
PTS File: 25151

Dear Mr. Chamberlain:

Enclosed are final data for analyses conducted on samples submitted from your Chevron Berkley project. All analyses were performed by applicable ASTM, EPA or API methodology. Samples will be retained for 30 days before disposal unless prior arrangements are made.

We appreciate the opportunity to be of service and trust these data will prove beneficial in the development of this project. Please feel free to call myself or Fred Adame, Supervisor, should you have any questions or require additional information.

Sincerely,

PTS Laboratories, Inc.

Larry Kunkel
District Manager

LAK:lg

Enclosures

PTS Laboratories, Inc.

CLIENT: GROUNDWATER TECHNOLOGY, INC.

FILE NO: 25151
DATE: OCTOBER 1995
PROJ. NO: 020200105.030599

PHYSICAL PROPERTIES DATA

(METHODOLOGY: ASTM D2216, API RP40, EPA 9100)

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENT. (1)	MOISTURE CONTENT (% wt)	DENSITY BULK (g/cc)	DENSITY GRAIN (g/cc)	EFFECTIVE POROSITY, % Vb	PORE FLUID SATURATION, % Pv WATER (2)	PORE FLUID SATURATION, % Pv CONTAMINANT (3)	CONDUCTED AT 25.0 PSI CONFINING STRESS: NATIVE STATE EFFECTIVE PERMEABILITY TO AIR (millidarcy)	CONDUCTED AT 25.0 PSI CONFINING STRESS: NATIVE STATE EFFECTIVE AIR CONDUCTIVITY (cm/s)	CONDUCTED AT 25.0 PSI CONFINING STRESS: NATIVE STATE EFFECTIVE PERMEABILITY TO WATER (millidarcy)	CONDUCTED AT 25.0 PSI CONFINING STRESS: NATIVE STATE EFFECTIVE WATER CONDUCTIVITY (cm/s)
MW-1-5	N/A	H	16.5	1.73	2.64	34.4	84.1	N/D	190	1.02E-02		
		V							163	9.03E-03		
MW-1-10	N/A	H	12.8	1.68	2.66	36.9	57.0	N/D	857	4.65E-02		
		V							116	6.40E-03		
MW-1-15	N/A	H	15.7	1.76	2.65	33.8	78.2	N/D	49.6	2.76E-03		
		V							4.78	3.82E-04		

(1) SAMPLE ORIENTATION:
H = HORIZONTAL
V=VERTICAL

(2) 0.9986 gm/cc USED TO CALCULATE WATER SATURATION
(3) 0.7500 gm/cc USED TO CALCULATE HYDROCARBON SATURATION
ND = NOT DETECTED

Vb = BULK VOLUME, cc
Pv = PORE VOLUME, cc

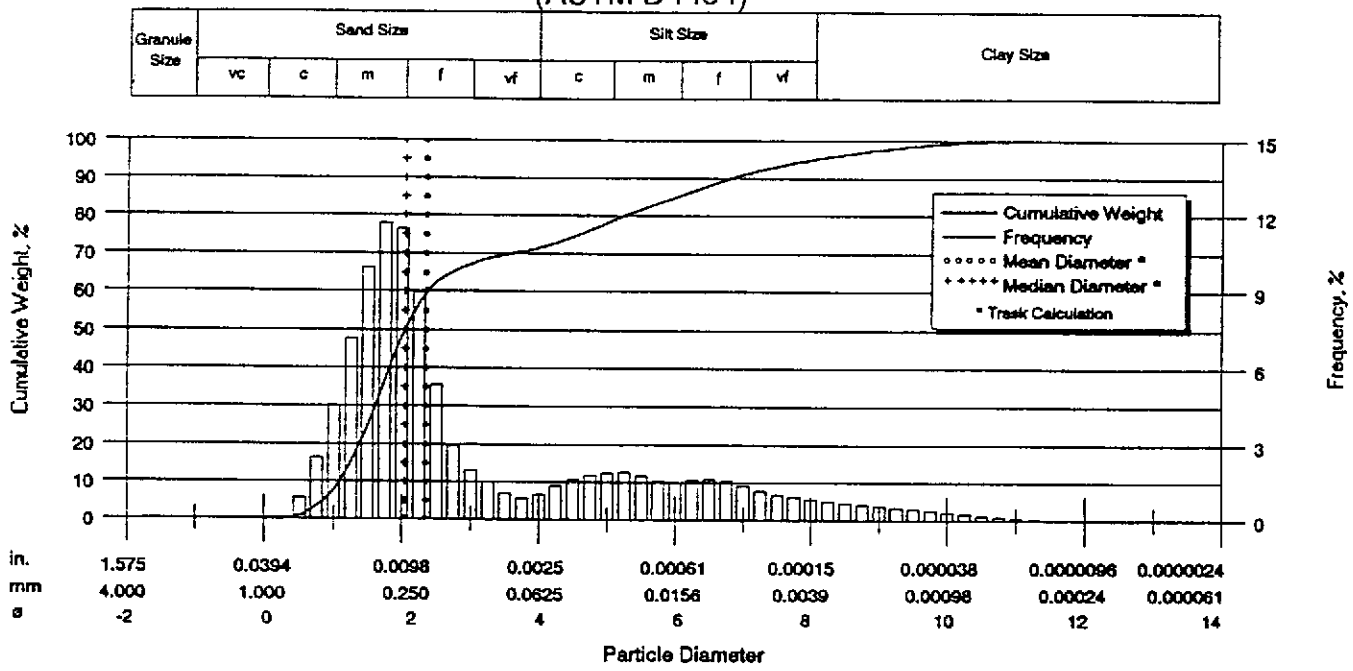
PTS Laboratories, Inc.

File No: 25151
Date: October 1995

Project Name: N/A
Project No: 020200105.030599
Sample ID: MW-1-15

Client: Groundwater Technology, Inc.

Particle Size by Laser Light Scattering
(ASTM D4464)



Particle Size Distribution		Diameter			Weight, %	
	[U.S. Sieve]	[in]	[mm]	[phi]	[Inc.]	[Cum.]
Granule	6	0.1324	3.36	-1.75	0.00	0.00
	8	0.0938	2.38	-1.25	0.00	0.00
V Coarse Sand	12	0.0662	1.68	-0.75	0.00	0.00
	16	0.0468	1.19	-0.25	0.00	0.00
	20	0.0331	0.84	0.25	0.00	0.00
Coarse Sand	25	0.0280	0.71	0.50	0.85	0.85
	30	0.0232	0.59	0.75	2.46	3.31
	35	0.0197	0.50	1.00	4.52	7.83
	40	0.0165	0.42	1.25	7.17	15.00
Medium Sand	45	0.0138	0.35	1.50	9.94	24.94
	50	0.0118	0.30	1.75	11.70	36.64
	60	0.0098	0.25	2.00	11.49	48.13
	70	0.0083	0.210	2.25	8.95	57.08
Fine Sand	80	0.0070	0.177	2.50	5.33	62.41
	100	0.0059	0.149	2.75	2.91	65.32
	120	0.0049	0.125	3.00	1.96	67.28
	140	0.0041	0.105	3.25	1.50	68.78
Very Fine Sand	170	0.0035	0.088	3.50	1.05	69.83
	200	0.0029	0.074	3.75	0.84	70.67
	230	0.0025	0.063	4.00	0.99	71.66
	270	0.0021	0.053	4.25	1.33	72.99
Silt	325	0.0017	0.044	4.50	1.61	74.60
	400	0.0015	0.037	4.75	1.76	76.36
	450	0.0012	0.031	5.00	1.88	78.24
	500	0.0010	0.025	5.32	2.42	80.66
	635	0.0008	0.020	5.64	2.12	82.78
		0.00061	0.0156	6.00	2.16	84.94
		0.00031	0.0078	7.00	6.11	91.05
		0.00015	0.0039	8.00	3.94	94.99
		0.000079	0.0020	9.00	2.59	97.58
Clay		0.000039	0.00098	10.0	1.65	99.23
		0.000019	0.00049	11.0	0.65	99.88
		0.0000094	0.00024	12.0	0.12	100.00
		0.0000047	0.00012	13.0	0.00	100.00
		0.0000039	0.00010	13.3	0.00	100.00

Sorting Statistics			
Parameter	Trask*	Inman**	Folk**
Mean, in	0.0077	0.0033	0.0047
Mean, mm	0.1979	0.0847	0.1202
Mean, phi	2.3374	3.5608	3.0559
Median, in	0.0094	0.0094	0.0094
Median, mm	0.2421	0.2421	0.2421
Median, phi	2.0461	2.0461	2.0461
Standard Deviation, in	0.1124	0.0080	0.0083
Standard Deviation, mm	2.8832	0.2055	0.2141
Standard Deviation, phi	-1.5277	2.2828	2.2238
Skewness	0.2560	1.0450	0.6657
Kurtosis	0.3370	0.5646	0.9582

* calculated using mm values
** calculated using phi values

Percentiles	Particle Diameter		
[weight, %]	[in]	[mm]	[phi]
5	0.0215	0.5510	0.8599
10	0.0183	0.4700	1.0894
16	0.0161	0.4124	1.2780
25	0.0138	0.3532	1.5013
50	0.0094	0.2421	2.0461
75	0.0017	0.0425	4.5567
84	0.0007	0.0174	5.8437
90	0.0003	0.0089	6.8043
95	0.0002	0.0039	8.0034

Fax copy of Lab Report and COC to Chevron Contact: ☐ Yes ☐ No

Chain-of-Custody-Reco

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number: former Signal 50 80Q
Facility Address: 800 Center St, OAKLAND CA
Consultant Project Number: 220200105-03 05-99
Consultant Name: Groundwater Technology, Inc.
Address: 4057 Port Chicago Hwy, Concord
Project Contact (Name): Mike Chamberlain
(510) (Phone) 671-2387 (Fax Number) (510) 685-9148

Chevron Contact (Name): MARK MILLER
(Phone) 510 842-8134
Laboratory Name: PTS
Laboratory Release Number:
Samples Collected by (Name): Terry JAMES
Collection Date: 10/17/95
Signature: Terry James

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)	Soil Properties Phys w/ Permeability to Air	Grain Size Laser to 1 μ				Remarks
								Analyses To Be Performed													
MW-1-5		1	S	G	14:15	NO	No									X					
MW-1-10		1	S	G	14:30	1	1									X					
MW-1-15		1	S	G	14:40	1	1									X	X				

NOTE:
Do Not BILL
TB-LB SAMPLE

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Terry James	GT I	10/18/95 15:00	Lisa Gerdes	PTS LAB	10/19 1:00pm
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted