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HAZMAT
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Chevron

August 30, 1994

Chevron U.S.A. Products Company
6001 Bollinger Canyon Road
Building L
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

Marketing – Northwest Region
Phone 510 842 9500

Ms. Juliet Shin
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Chevron Service Station #9-5630
997 Grant Avenue, San Lorenzo, CA

Dear Ms. Shin:

Enclosed is the Additional Environmental Assessment Report dated August 25, 1994, prepared by our consultant Groundwater Technology, Inc. for the above referenced site. Two on site soil borings were installed and completed as ground water monitor wells C-6 and C-7. This work was performed to further characterize ground water conditions at the site.

Soil samples collected were submitted to Superior Precision Analytical (SPA) for analysis. Laboratory results indicate concentrations of TPH-G and BTEX were detected at low concentrations in samples collected from C-6. Concentrations of these constituents were below method detection limits in samples collected from C-7.

Ground water samples collected were also sent to SPA for analysis. Laboratory results indicate concentrations of TPH-G and BTEX were below Maximum Contaminant Levels (MCL's) in C-6 and below method detection limits in C-7.

Based on this data and information contained in the Petition for Case Closure dated December 1, 1993 prepared by our consultant Geraghty & Miller, we feel that site closure is warranted. No further work is planned for this site.

If you have any questions or comments, please do not hesitate to contact me at (510) 842-8134.

Sincerely,
CHEVRON U.S.A. PRODUCTS COMPANY

Mark A. Miller
Site Assessment and Remediation Engineer

Enclosure

cc: Mr. Kevin Graves, RWQCB - S.F. Bay Area
Ms. B.C. Owen

Mr. Darryl Snow, Geraghty & Miller - Richmond

Mr. Lawrence E. Cogan
Ware & Freidenrich
400 Hamilton Avenue
Palo Alto, CA 94301

Mr. Michael Meniktas
Meniktas & Associates
3440 Lakeshore Avenue, Suite 206
Oakland, CA 94610

File: 9-5630 SA1

GROUNDWATER TECHNOLOGY ®

Groundwater Technology, Inc.
4057 Port Chicago Highway, Concord, CA 94520 USA
Tel: (510) 671-2387 Fax: (510) 685-9148

ADDITIONAL ENVIRONMENTAL ASSESSMENT REPORT
FORMER CHEVRON SERVICE STATION NO. 9-5630
997 GRANT AVENUE
SAN LORENZO, CALIFORNIA

GTI Project 020200019

August 25, 1994

Prepared for:
Mr. Mark Miller
Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, CA 94583-0804

Groundwater Technology, Inc.
Submitted by:

Michael A. Chamberlain
Project Manager

Groundwater Technology, Inc.
Approved by:

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

E. K. Simonis, RG
Senior Environmental Geologist

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

0019R014.020

Figures

Tables

Appendixes

1.0 INTRODUCTION

This report summarizes the additional environmental assessment work conducted by Groundwater Technology, Inc. at Chevron U.S.A. Products Company (Chevron) former Service Station No. 9-5630 at 997 Grant Avenue in San Lorenzo, California (figure 1). A *Work Plan for Additional Site Assessment* (Groundwater Technology June 7, 1994) presented the scope of the work performed. The objective of this work was to evaluate the lateral extent of petroleum hydrocarbons in the soil and groundwater at the site and confirm the depth to groundwater. The assessment was performed between July 1994 and August 1944. The assessment activities included installing two 2-inch-diameter groundwater monitoring wells (C-6 and C-7), collecting soil and groundwater samples, analyzing the collected samples, evaluating the data, and preparing this report.

2.0 BACKGROUND

The site is located in southwestern Alameda County on the northeast corner of the Grant and Washington Avenues intersection in San Lorenzo, California (figure 2). The site is situated in an area comprised of residences and small businesses. To the west across Washington Avenue is a car wash and Tune-Up Masters automotive facility. Toward the north and east are apartment buildings and a church, respectively. Across Grant Avenue toward the south are residential buildings. Geographically, the site is approximately 2,000 feet south of San Lorenzo Creek and 1.7 miles east of San Francisco Bay. Topographically, the area is generally level with an approximate site elevation of 20 feet above mean sea level (MSL). The site is currently an unpaved vacant lot.

On November 12 and 13, 1990, GeoStrategies Inc. (GSI) installed four 2-inch diameter on-site groundwater monitoring wells (C-1, C-2, C-3, and C-4) (GSI 1991a). Analytical results of soil samples collected during drilling activities reported the highest concentrations of total petroleum hydrocarbons-as-gasoline (TPH-g) in the samples from monitoring wells C-2 and C-3 of 99 milligrams per kilograms (mg/kg) at 10.5 feet below surface grade (bsg) and 140 mg/kg at 9 feet bsg, respectively. On December 5, 1990, the groundwater gradient was calculated at 0.003 foot per foot (ft/ft) with an average groundwater flow direction to the west. Analytical results of groundwater samples collected from the monitoring wells on December 5, 1990, indicated no detectable levels of TPH-g. The highest concentrations of benzene were indicated at 4 micrograms per liter (μg/L) in the samples collected from monitoring well C-4.

On December 18, 1990, four underground storage tanks and associated product pipelines were removed from the site. Excavation of the tank pit was performed until field analysis (using an Organic Vapor Meter [OVM]) of collected soil samples indicated values of less than 100 mg/kg. During the excavation, monitoring well C-4 was destroyed. Verification samples from the excavation

sidewalls and bottom were collected after the OVM readings were less than 100 mg/kg. Approximately 1,600 cubic yards of soil was stockpiled during the excavation. Approximately 220 cubic yards of soil was transported to the Browning-Ferris Industries North Vasco Road disposal facility in Livermore, California. Approximately 1,380 cubic yards of soil was aerated on-site and then used to backfill the excavations (GSI 1991b).

Between December 1990 and September 1992, Sierra Environmental Services (SES) monitored and sampled the monitoring wells at the site six times (SES 1992). Analytical results indicated the highest concentrations of TPH-g (1,100 μg/L) and benzene (150 μg/L) in the samples collected from monitoring well C-3 on September 6, 1991. The analytical results of samples collected from monitoring wells C-1, C-2, and C-3 on September 2, 1992, indicated TPH-g, benzene, toluene, and ethylbenzene concentrations below the MDLs. Xylenes were reported at concentrations of 0.9 μg/L in samples collected from monitoring well C-3 on September 2, 1992.

On February 2, 1993, Groundwater Technology supervised the drilling of one off-site monitoring well (C-5) using a mobile B-61 drilling rig (Groundwater Technology 1993). The soil boring for this monitoring well was drilled to 20.5 feet bsg. The materials encountered during drilling consisted of silty clays. Analytical results of soil samples collected during drilling activities for monitoring well C-5 indicated TPH-g and benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations below MDLs. On February 16, 1993, the groundwater level was measured in monitoring well C-5. The depth to water in monitoring well C-5 was 6.64 feet bsg. Analytical results of the groundwater samples collected from monitoring well C-5 indicated concentrations of TPH-g and BTEX below MDLs.

3.0 SCOPE OF WORK

3.1 Site-Specific Health and Safety Plan and Permits

Groundwater Technology previously 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 for the site. The *Site-Specific Health and Safety Plan* was reviewed and signed by Groundwater Technology personnel and subcontractors before beginning work at the site.

Groundwater Technology personnel also reviewed site history and information with Chevron representatives before beginning work at the site. A drilling permit to install two groundwater monitoring wells was approved by Contra Costa County Environmental Health Division. A copy of the permit is included in appendix A.

3.2 Soil Borings

On July 22, 1994, Groundwater Technology supervised the drilling of two soil borings which were completed as two monitoring wells (C-6 and C-7) (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 July 22, 1994. Both borings were drilled and sampled to 21.5 feet bsg. The monitoring wells were installed to a depth of approximately 18 feet bsg.

The steam cleaning water, generated during the steam cleaning of the augers between drilling of the monitoring wells was stored in labeled 55-gallon drums pending disposal. The soil cuttings generated during the drilling of the monitoring wells were placed on plastic and covered pending disposal.

3.3 Soil Sampling

During drilling, soil samples were collected from the soil borings for the monitoring wells at 5-foot intervals from approximately 5 to 20 feet in each well boring. 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 conducted according to Groundwater Technology Standard Operating Procedures (SOPs), which are included in appendix B.

Soil samples collected at depths of 5 and 10 feet bsg from each well boring were submitted to a California-certified laboratory for analyses of TPH-g and BTEX using Environmental Protection Agency (EPA) Methods 5030/8020 and modified EPA Method 8015.

3.4 Monitoring Well Installation

Monitoring wells C-6 and C-7 were constructed using 3 feet of 2-inch-diameter, Schedule 40 polyvinyl chloride (PVC) blank casing and 15 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 1 foot of hydrated bentonite and a neat-cement seal to grade. The wellhead was finished with a locking cap and a street box with a water-tight bolted lid. Well construction details are included with the drill log (appendix C). The top of casing elevation of each monitoring well was surveyed relative to MSL on August 17, 1994, to an Alameda County Bench Mark (BM-C) in the southeast curb return at Grand Avenue and Via Alamitos by a professional licensed surveyor.

3.5 Monitoring Well Development

On August 16, 1994, the monitoring wells were developed by surging groundwater using a PVC bailer. Well development removes fine-grain sediments from the well screen and improves the hydraulic communication between the well and aquifer. The groundwater from the wells was bailed until the fine-grain sediments were removed. Approximately 10 well volumes (62 gallons) of water were removed from each monitoring well during development activities.

3.6 Groundwater Monitoring

On August 17, 1994, monitoring wells C-6 and C-7 were monitored to measure the depth to groundwater and the thickness of separate-phase hydrocarbons, if present. The water levels were measured using an ORS Environmental Equipment INTERFACE PROBE Well Monitoring System, which consists of a dual optical sensor and electrical conductivity probe that distinguishes between water and petroleum products. Separate-phase hydrocarbons were not detected in either monitoring well.

3.7 Groundwater Sampling

On August 17, 1994, groundwater samples were collected from the monitoring wells using disposable bailers. A trip blank prepared by the laboratory was carried in the cooler chest and analyzed with the groundwater samples for quality control. Each water sample was acidified, labeled, placed on ice in an insulated container, and delivered to a California-certified laboratory. The samples were accompanied by a chain-of-custody record during transport. The samples were analyzed for TPH-g and BTEX using EPA Methods 5030/8020 and modified EPA Method 8015. Water generated during the purging and sampling process was transported for recycling to the Chevron Refinery in Richmond, California.

4.0 SITE CONDITIONS

4.1 Analytical Results of Soil Samples

With one exception, laboratory analytical results of soil samples collected from monitoring wells C-6 and C-7 indicated TPH-g concentrations below the MDL. Analytical results of soil samples collected from monitoring C-6 at 10 feet bsg indicated TPH-g concentrations of 180 mg/kg. Additionally, concentrations of benzene (0.012 mg/kg and 0.05 mg/kg) were detected in soil samples collected at 5 feet and 10 feet bsg from monitoring well C-6. Soil samples collected from monitoring well C-7 indicated benzene concentrations below the MDLs. The results of the soil analyses are summarized in table 1 and laboratory reports are included in appendix D.

4.2 Analytical Results of Groundwater Samples

Analytical results of groundwater samples collected on August 17, 1994, from monitoring well C-6 indicated TPH-g and benzene concentrations at 430 μg/L and 0.7 μg/L, respectively. Analytical results of samples collected from monitoring well C-7 indicated TPH-g and benzene concentrations below the MDLs. A summary of groundwater sample analytical results is presented in table 2. Copies of the laboratory reports are included in appendix D.

4.3 Hydrogeology

The materials encountered during drilling primarily consisted of clays. A well graded, fine gravel layer was identified at approximately 11.5 feet to 12 feet bsg during the drilling of well C-7. During drilling, water was first noticed at approximately 11 feet bsg. The depth to groundwater was found to be 8.44 feet to 10.08 feet bsg in wells C-6 and C-7, respectively, prior to development. The water level measurements collected prior to groundwater sampling of the wells (approximately 24 hours after development) documented only a 20 percent recharge of water in well C-6, while groundwater recharge in well C-7 was 100 percent. Groundwater level data and wellhead elevations are presented in table 2.

5.0 SUMMARY

- On July 22, 1994, Groundwater Technology supervised the drilling of two groundwater monitoring wells (C-6 and C-7) using a mobile CME 55 drilling rig.
- Analytical results of soil samples collected from the soil boring for monitoring well C-6 at 10 feet bsg indicated TPH-g concentrations at 180 mg/kg. Concentrations for benzene (0.012 mg/kg and 0.05 mg/kg) were detected in soil samples from both 5 feet and 10

feet bsg from soil boring C-6. Analytical results of the soil samples collected at 5 feet during drilling activities for the installation of monitoring well C-6, and 5 feet and 10 feet bsg in monitoring well C-7 indicated TPH-g concentrations below the MDL. No concentrations for benzene were detected in either soil sample from soil boring C-7.

- Analytical results of groundwater samples collected on August 17, 1994, from monitoring well C-6 indicated TPH-g and benzene concentrations at 430 μg/L and 0.07 μg/L, respectively. Analytical results of groundwater samples collected from monitoring well C-7 indicated TPH-g and benzene concentrations below the MDLs.

- On August 16 and 17, 1994, groundwater levels were measured in each of the new monitoring wells at the site. The depth to groundwater was found to be 8.44 feet and 10.08 feet bsg in wells C-6 and C-7, respectively, prior to development. The water level measurements collected prior to groundwater sampling of the wells (approximately 24 hours after development) recorded 16.02 feet and 10.07 feet bsg in wells C-6 and C-7, respectively. This represents only a 20 percent recharge of water in well C-6 and 100 percent in well C-7.

6.0 REFERENCES

GeoStrategies Inc., February 8, 1991a, *Preliminary Site Assessment and Well Installation Report*, Former Chevron Service Station No. 9-5630, 997 Grant Avenue, San Lorenzo, California.

GeoStrategies Inc., September 13, 1991b, *Tank Removal Observation Report*, Former Chevron Service Station No. 9-5630, 997 Grant Avenue, San Lorenzo, California.

Groundwater Technology, Inc. March 19, 1993. *Additional Environmental Assessment Report*, Former Chevron Service Station No. 9-5630, 997 Grant Avenue, San Lorenzo, California.

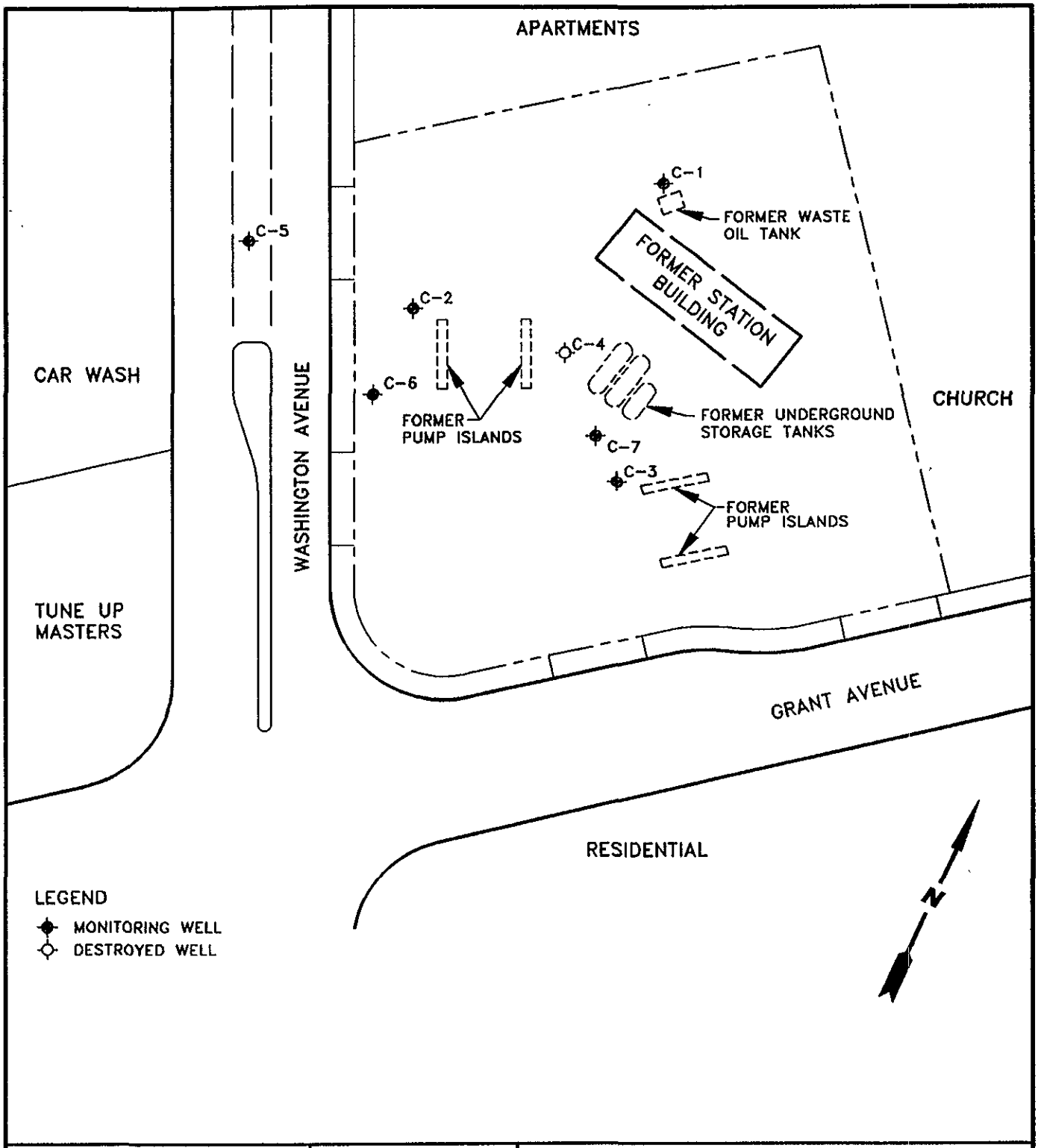
Groundwater Technology, Inc. June 7, 1994. *Work Plan for Additional Site Assessment*, Former Former Chevron Service Station No. 9-5630, 997 Grant Avenue, San Lorenzo, California.

Sierra Environmental Services, October 1, 1992, Former Chevron Service Station No. 9-5630, 997 Grant Avenue, San Lorenzo, California.

Figures

1. Site Location Map
2. Site Plan

GROUNDWATER TECHNOLOGY 4057 PORT CHICAGO HWY CONCORD, CA 94520 (510) 671-2387	N	SCALE: 0 FEET 2000	SITE LOCATION MAP
		CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-5630	DATE: 3/9/93
		LOCATION: 997 GRANT AVENUE SAN LORENZO, CALIFORNIA	FIGURE: 1



GROUNDWATER TECHNOLOGY

0 FEET 60
SCALE

SITE PLAN

CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-5630	FILE: SP894		PROJECT NO: 020200019	PM	RG/PE
LOCATION: 997 GRANT AVENUE SAN LORENZO, CALIFORNIA	REV: 1				FIGURE: 2
	DES: MC	DET: ML	DATE: 8/22/94		

Tables

TABLE 1
Analytical Results of Soil Samples

Former Chevron Service Station No. 9-5630
997 Grant Avenue
San Lorenzo, California

			(milligrams per kilograms)				
Date	Sample ID	Sample Depth ft[a]	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g[b]
7/22/94	C-6-5	5	0.012	<0.005	<0.005	0.015	<1
7/22/94	C-6-10	10	0.05	1.9	0.84	0.95	180
7/22/94	C-7-5	5	<0.005	<0.05	<0.005	<0.005	<1
7/22/94	C-7-10	10	<0.005	<0.05	<0.005	0.014	<1
7/22/94	COMP[c]	N/A[d]	<0.005	<0.005	<0.005	<0.005	<1

Source: Superior Precision Analytical, Inc.

a = feet
b = total petroleum hydrocarbons as gasoline
c = composite soil sample, for disposal characterization
d = not applicable

TABLE 2
Monitoring Data and Analytical Results of Groundwater Samples

Former Chevron Service Station No. 9-5630
997 Grant Avenue
San Lorenzo, California

			(micrograms per liter)							
Well ID	Date	TOC[a] Elevation (MSL)[b]	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g[c]	DTW[d] (ft)[g]	SPT[e] (ft)	GWE[f] (ft)
C-6	8/17/94	21.42	0.7	2.7	<0.5	28	430	16.02	0.00	5.40
C-7	8/17/94	23.21	<0.5	<0.5	<0.5	<0.5	<50	10.07	0.00	13.14

Source: Superior Precision Analytical, Inc.

a = top of casing
b = mean sea level
c = total petroleum hydrocarbons as gasoline
d = depth to water in feet below TOC
e = separate-phase hydrocarbon thickness in feet
f = groundwater elevation in feet above msl
g = feet

Appendix A

Well Installation Permit

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 5197 Grant Avenue
San Lorenzo, California

CLIENT
Name Chevron U.S.A. Products Co.
Address 2410 Camino Ramon Voice (510) 842-8134
City San Ramon, CA Zip 94583-0804

APPLICANT
Name Groundwater Technology Fax (510) 685-9148
Address 4057 Port Chicago Hwy Voice (510) 671-2387
City Concord CA Zip 94520

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

PROPOSED WATER SUPPLY WELL USE
Domestic Industrial Other monitoring
Municipal Irrigation

DRILLING METHOD:
Mud Rotary Air Rotary Auger X
Cable Other

DRILLER'S LICENSE NO. 582696

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 5 ft. Number 2

GEOTECHNICAL PROJECTS
Number of Borings Maximum
Hole Diameter in. Depth ft.

ESTIMATED STARTING DATE 1 July 94
ESTIMATED COMPLETION DATE 1 August 94

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

APPLICANT'S SIGNATURE [signature] Date 5 Jul 94

FOR OFFICE USE

PERMIT NUMBER 94390
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 5 Jul 94
Wyman Hong

Appendix B

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 C

Drilling Logs and Well Construction Specifications

Drilling Log

GROUNDWATER TECHNOLOGY

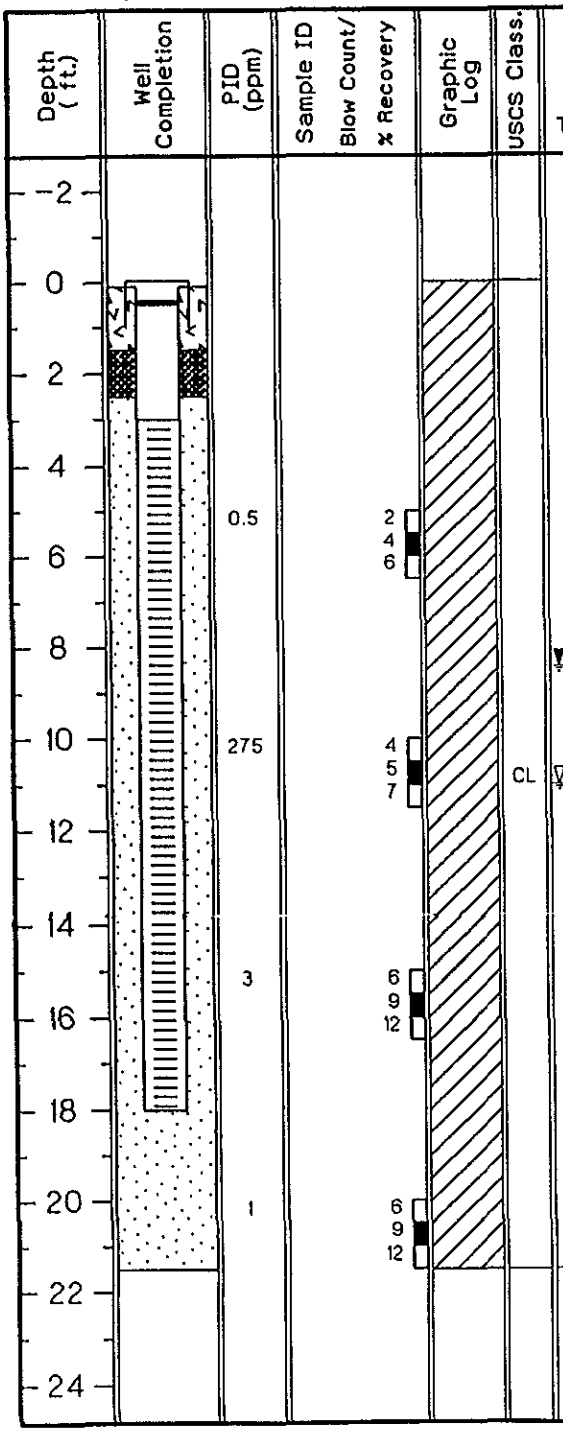
Monitoring Well C-6

Project CHV/997 Grant Avenue — Owner Chevron U.S.A. Products Co.
Location San Lorenzo, California — Proj. No. 02020 0019
Surface Elev. 21.30 ft. — Total Hole Depth 21.5 ft. — Diameter 8 in.
Top of Casing 21.42 ft. — Water Level Initial 11 ft. — Static 8.44 ft.
Screen: Dia 2 in. — Length 15 ft. — Type/Size 0.020 in.
Casing: Dia 2 in. — Length 3 ft. — Type SCH 40 PVC
Fill Material Lapis Lustre #3 — Rig/Core CME-55/Split Spoon
Drill Co. SES, Inc. — Method Hollow Stem Auger
Driller David Ryan — Log By Bob Davis — Date 07/22/94 — Permit # 94390
Checked By E. K. Simonis — License No. RG# 4422

See Site Map For Boring Location

COMMENTS:

Percentages are approximate. Well is screened from 3 to 18 feet below grade. (SES) Soil Exploration Services drillers



Description

(Color, Texture, Structure)
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

NOTE: Hand augered to 5 feet, cuttings gray black CLAY

Gray black CLAY, about 95% clay, 5% silt, medium stiff, moist, medium plasticity, no hydrocarbon odor.

Gray black CLAY, about 95% clay, 5% silt, stiff, moist, medium plasticity, slight hydrocarbon odor.

Water encountered during drilling, 7/22/94

Moderate yellowish brown CLAY, about 90% clay, 10% silt, stiff, saturated, medium plasticity, no hydrocarbon odor.

Moderate yellowish brown CLAY, about 90% clay, 10% silt, stiff, saturated, medium plasticity, no hydrocarbon odor.

End of boring at 21.5 feet. Installed groundwater monitoring well.

Drilling Log

GROUNDWATER TECHNOLOGY

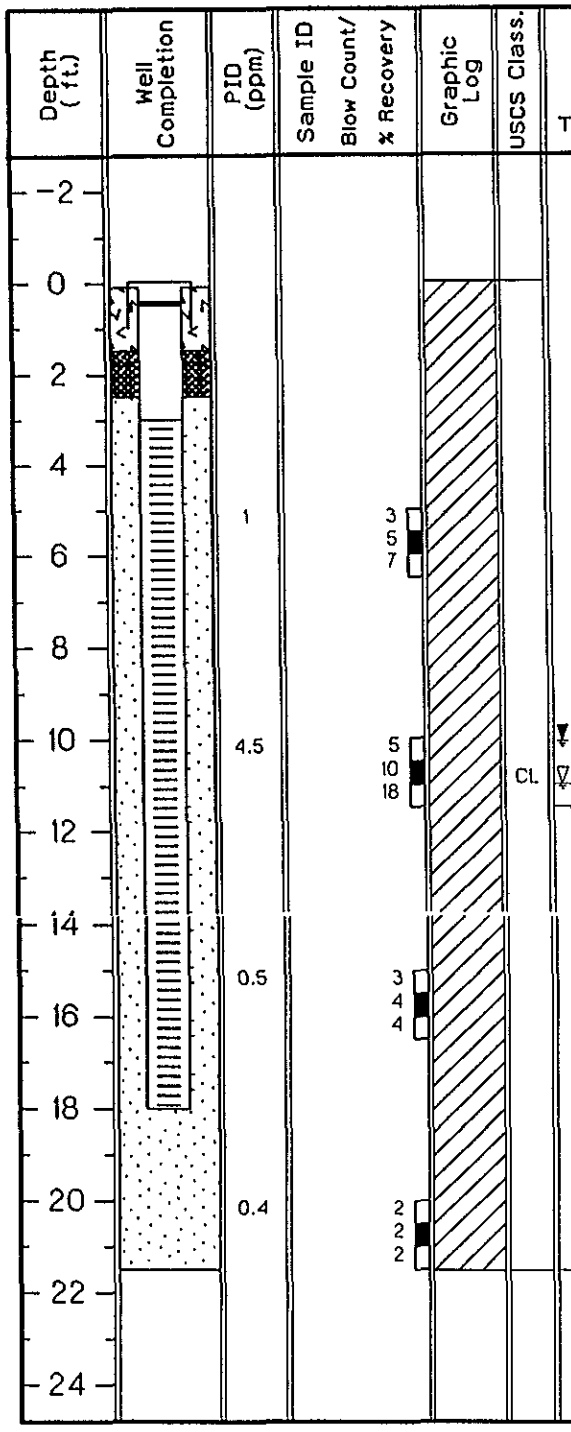
Monitoring Well C-7

Project CHV/997 Grant Avenue — Owner Chevron U.S.A. Products Co.
Location San Lorenzo, California — Proj. No. 02020 0019
Surface Elev. 23.40 ft. — Total Hole Depth 21.5 ft. — Diameter 8 in.
Top of Casing 23.21 ft. — Water Level Initial 11 ft. — Static 10.08 ft.
Screen: Dia 2 in. — Length 15 ft. — Type/Size 0.020 in.
Casing: Dia 2 in. — Length 3 ft. — Type SCH 40 PVC
Fill Material Lapis Lustre #3 — Rig/Core CME-55/Split Spoon
Drill Co. SES, Inc. — Method Hollow Stem Auger
Driller David Ryan — Log By Bob Davis — Date 07/22/94 — Permit # 94390
Checked By E. K. Simonis — License No. RG# 4422

See Site Map For Boring Location

COMMENTS:

Percentages are approximate. Well is screened from 3 to 18 feet below grade (SES) Soil Exploration Services drillers.



Description

(Color, Texture, Structure)

Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

NOTE: Hand augered to 5 feet, cuttings gray black CLAY

Gray black CLAY, about 95% clay, 5% silt, medium stiff, moist, medium plasticity, no hydrocarbon odor.

Gray black CLAY, about 95% clay, 5% silt, very stiff, moist, medium plasticity, faint hydrocarbon odor.

Water encountered during drilling, 7/22/94

NOTE: 11.5 feet to 12.0 feet, well graded, fine gravel, saturated (noted from cuttings).

Moderate yellowish brown CLAY, about 95% clay, 5% silt, medium stiff, saturated, medium plasticity, trace fine gravel, no hydrocarbon odor.

Moderate yellowish brown CLAY, about 95% clay, 5% silt, soft, saturated, medium plasticity, no hydrocarbon odor.

End of boring at 21.5 feet. Installed groundwater monitoring well.

Appendix D

Laboratory Reports
and
Cain-of-Custody Records

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

GROUNDWATER TECHNOLOGY, INC.
Attn: MIKE CHAMBERLAIN

Project 9-5630
Reported 08/09/94

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
30688- 1	C-6-5	07/22/94	07/30/94	Soil
30688- 2	C-6-10	07/22/94	07/30/94	Soil
30688- 3	SP-C-6	07/22/94	07/30/94	Soil
30688- 4	C-7-5	07/22/94	07/30/94	Soil
30688- 5	C-7-10	07/22/94	07/30/94	Soil
30688- 6	COMP SP-C-6 & SP-C-7	07/22/94	07/30/94	Soil

RESULTS OF ANALYSIS

Laboratory Number:	30688- 1	30688- 2	30688- 3	30688- 4	30688- 5
Gasoline:	ND<1	180	ND<1	ND<1	ND<1
Benzene:	0.012	0.05	ND<.005	ND<.005	ND<.005
Toluene:	ND<.005	1.9	ND<.005	ND<0.05*	ND<0.05*
Ethyl Benzene:	ND<.005	0.84	ND<.005	ND<.005	ND<.005
Total Xylenes:	0.015	0.95	ND<.005	ND<.005	0.014
Concentration:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

Laboratory Number:	30688- 6
Gasoline:	ND<1
Benzene:	ND<.005
Toluene:	ND<.005
Ethyl Benzene:	ND<.005
Total Xylenes:	ND<.005
Concentration:	mg/kg

* Detection limit of toluene raised due to matrix interference.

Certified Laboratories
825 Arnold Dr., Suite 114 • Martinez, California 94553 • (510) 313-0850 / fax (510) 229-1526

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 30688

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = parts per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	95/101	6%	70-130
Benzene:	92/96	4%	70-130
Toluene:	103/106	3%	70-130
Ethyl Benzene:	108/106	2%	70-130
Total Xylenes:	109/108	1%	70-130

Michael R. Verona
Senior Chemist

SUPERIOR 92274 2688

GTEL ENVIRONMENTAL LABORATORIES INC
4080 PIKE LANE, SUITE C
CONCORD, CA 94520
(510) 685-7852
(800) 423-7143

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

31488

Company Name: GROUNDWATER TECHNOLOGY
Phone #: (510) 671-2387
FAX #: (510) 685-9148
Company Address: 4057 PORT CHICAGO HWY, CONCORD
Site Location: 997 GRANT AVE SAN LORENZO, CA
Project Manager: MKB CHAMBERLAIN
Client Project ID: (#) 6Z0200019
(NAME) CHEV 9-5630
I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): BOB DAVIS

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	UNPRESERVED	OTHER (Specify)	Sampling: DATE	TIME
C-6-5		1		X											7-22-94	0840
C-6-10		1		X												0855
C-6-15		1		X												0901
C-6-20		1		X												0907
SP-C-6		1		X												0930
C-7-5		1		X												1020
C-7-10		1		X				RUN SAMPLE								1025
C-7-15		1		X												1035
C-7-20		1		X												1040
SP-C-7		1		X												1110

Please Initial

BTEX 602 ☐ 8020 ☐ with MTBE ☐	BTEX/Gas Hydrocarbons PID/FID ☑ with MTBE ☐	Hydrocarbons GC/FID Gas ☐ Diesel ☐ Screen ☐	Hydrocarbon Profile (SIMDIS) ☐	Oil and Grease 413.1 ☐ 413.2 ☐ SM-503 ☐	TPH/IR 418.1 ☐ SM 503 ☐	EDB by 504 ☐ DBCP by 504 ☐	EPA 503.1 ☐ EPA 502.2 ☐	EPA 601 ☐ EPA 8010 ☐	EPA 602 ☐ EPA 8020 ☐	EPA 608 ☑ 8080 ☐ PCB only ☐	EPA 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	EPA 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	EPA 610 ☐ 8310 ☐	EP TOX Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi-VOA ☐ Pest ☐ Herb ☐	EPA Metals - Priority Pollutant ☐ TAL ☐ RCRA ☐	CAM Metals TTLC ☐ STLC ☐	Lead 239.2 ☐ 200.7 ☐ 7420 ☐ 7421 ☐ 6010 ☐	Organic Lead ☐	Corrosivity ☐ Flash Point [ ] Reactivity [ ]
X	X																			
X	X																			
X	X		MAC																	
X	X		MAC																	
X	X																			
X	X																			
X	X						RUN SAMPLE (MAC 7/25/94)														
X	X		MAC																	
	X		MAC				* COMPOSITE SAMPLES SP-C-6 AND														
X							SP-C-7, RUN AS ONE														

TAT
Priority (24 hr) ☐
Expedited (48 hr) ☐
7 Business Days ☐
Other _____
Business Days ☐

Special Handling
GTEL Contact _____
Quote/Contract # _____
Confirmation # _____
P.O. # _____

QA/QC Level
Blue ☐ CLP ☐ Other ☐ _____

SPECIAL DETECTION LIMITS
Samples S[illegible] SC
Appro[illegible]
Sample[illegible]

SPECIAL REPORTING REQUIREMENTS
FAX ☐

REMARKS: CHEVRON RELEASE 4247210
CHEV CONTACT: MARK MILLER

Lab Use Only Lot #:
Storage Location
Work Order #:

CUSTODY RECORD

	Relinquished by Sampler:	Date	Time	Received by:
1	R A Davis Jr	7-22-94	1330	(illegible)
2		7/25/94	10:00 AM	Michael Davis
3	Michael Davis	7/25/94	11:10	Received by Laboratory: Waybill # FT anyuly 7-25-94 11:15AM

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

GROUNDWATER TECHNOLOGY, INC.
Attn: MIKE CHAMBERLAIN

Project 9-5630
Reported 08/17/94

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
30712- 1	C-6	08/17/94	08/17/94	Water
30712- 2	C-7	08/17/94	08/17/94	Water

RESULTS OF ANALYSIS

Laboratory Number: 30712- 1 30712- 2

Gasoline:	430	ND<50
Benzene:	0.7	ND<0.5
Toluene:	2.7	ND<0.5
Ethyl Benzene:	ND<0.5	ND<0.5
Total Xylenes:	28	ND<0.5
Concentration:	ug/L	ug/L

Certified Laboratories
825 Arnold Dr., Suite 114 • Martinez, California 94553 • (510) 313-0850 / fax (510) 229-1526

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 30712

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
ug/L = parts per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/L

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/L

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/L

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	108/113	5%	70-130
Benzene:	101/100	1%	70-130
Toluene:	105/104	1%	70-130
Ethyl Benzene:	100/100	0%	70-130
Total Xylenes:	100/101	1%	70-130

Senior Chemist

Certified Laboratories
825 Arnold Dr., Suite 114 • Martinez, California 94553 • (510) 313-0850 / fax (510) 229-1526

Job # 30712

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

Chain-of-Custody-Recor

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

Chevron Facility Number: 9-5630
Facility Address: 997 GRANT AVE, SAN LORENZO CA
Consultant Project Number: 020200019
Consultant Name: GROUNDWATER TECHNOLOGY
Address: 5047 PORT CHICAGO HWY CONCORD CA 94520
Project Contact (Name): MICHAEL CHAMBERLAIN
(Phone): (510) 671-2387 (Fax Number): 510 685-9148

Chevron Contact (Name): MARK MILLER
(Phone): 510 842 8134
Laboratory Name: SUPERIOR
Laboratory Release Number: 4247210
Samples Collected by (Name): MARK GARCIA
Collection Date: 8.17.94
Signature: Mark Garcia

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
C-6		3	W		9:10	HCl	Y	X												
C-7		3	W		9:15	HCl	Y	X												

NOTE:
DO NOT BILL
TB-LB SAMPLES

RUSH
FAX RESULTS ASAP

Please initial:
Samples Sliced nice. VGL
Appropriate containers NO just sampled
Samples preserved yes
VOA's without headspace yes
Comments: None

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Mark Garcia	GTI	8.17.94			
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
			VGL		

Turn Around Time (Circle Choice)
NOTE
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted
SAME DAY T.A.T.