Chevron U.S.A. Inc.
2410 Camino Ramon, San Ramon, California • Phone (415) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

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Marketing Operations

D. Moller
Manager, Operations
S. L. Patterson
Area Manager, Operations
C. G. Trimbach
Manager, Engineering

September 28, 1990

Mr. Rafat Shahid
Alameda County
Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Re: Former Chevron Service Station #9-0019
210 W. Grand Avenue
Oakland, CA

Dear Mr. Shahid:

Enclosed we are forwarding the Underground Tank and Piping Closure Report dated August 16, 1990, and a Remediation Work Plan dated September 5, 1990, both prepared by our consultant Western Geologic Resources, Inc. for the above referenced site.

The Underground Tank and Piping Closure Report documents soil sampling performed during removal of all the underground tanks and piping. The underground storage tanks removed were in good condition when pulled including the waste oil tank which had received damage to its top during the removal process. Limited contamination was found in both the former underground product tank pit and the former piping trenches. Analytic sampling of the former waste oil tank pit detected oil & grease concentrations ranging from ND to 3600 ppm. The most likely source of the contamination was from the limited overfilling of the tanks.

The Remediation Work Plan proposes to excavate and aerate the impacted soils, backfilling the excavation with the remediated soils, and disposing of soils containing oil & grease. This plan is being implemented to assess the magnitude and extent of the subsurface contamination. Chevron will proceed under self direction unless otherwise informed by your office.

If you have any questions or comments please do not hesitate to call me at (415) 842 - 9581.

Very truly yours,
C. G. Trimbach

By Nancy Vukelich
Nancy Vukelich

NLV/jmr
Enclosure

cc: Mr. Lester Feldman
RWQCB-Bay Area
1800 Harrison Street
Suite # 700
Oakland, CA 94612

Mr. W.T. Scudder - w/o enclosures

BLAINE
TECH SERVICES INC.

1370 TULLY RD., SUITE 505
SAN JOSE, CA 95122
(408) 995-5535

August 16, 1990

Chevron USA, Inc.
2410 Camino Ramon
San Ramon, CA 94583

Attn: Cynthia Wong

SITE:
Chevron Service Station No. **90019**
210 Grand Avenue
Oakland, California

PROJECT:
Full service station demolition
with removal of all above ground
and subsurface installations

SAMPLING REPORT 900620-G-1

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. does not participate in the interpretation of analytical results or engage in the marketing or installation of remedial systems.

This report describes the environmental sampling performed by our personnel on June 20, 1990. In addition to the text of the Sampling Report, supporting documents are provided as attachments. These include the chain of custody and the certified analytical report.

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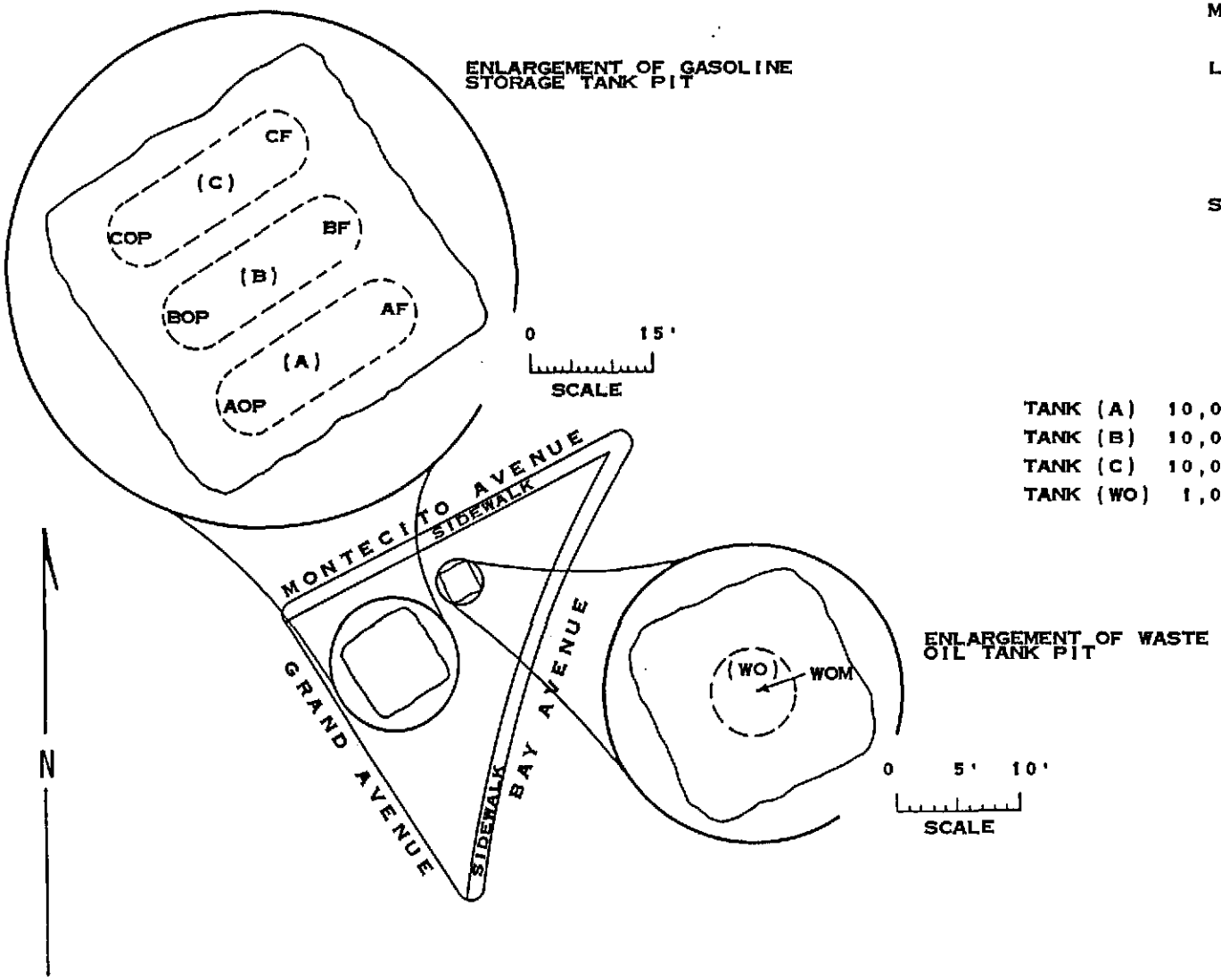
Chevron Station 90019

MASTER SITE DIAGRAM

Chevron Station 90019



MAP REF: THOMAS BROS., ALAMEDA COUNTY P.9 C-10

LEGEND: F = FILL END
OP = OPPOSITE THE FILL END
M = MIDDLE

SCALE: 0 75'

TANK (A)	10,000	GALLON GASOLINE TANK
TANK (B)	10,000	GALLON GASOLINE TANK
TANK (C)	10,000	GALLON GASOLINE TANK
TANK (WO)	1,000	GALLON WASTE OIL TANK

TANK REMOVAL SAMPLING

June 20, 1990 / 900620-G-1

SCOPE OF REQUESTED SERVICES

In accordance with your request, our office was asked to provide field personnel who would be sent to the site for the specific purpose of obtaining environmental samples following the removal of three gasoline tanks and one waste oil tank.

Our personnel would collect the samples, arrange for the proper analyses of the samples and maintain adequate documentation for the issuance of a formal Sampling Report. The collection of environmental samples was to be performed in accordance with the requirements of the Regional Water Quality Control Board and the specific directions of the Local Implementing Agency (LIA) inspector.

EXECUTION OF THE WORK PERFORMED ON JUNE 20, 1990

Personnel were dispatched from our office and arrived at the subject site on Wednesday, June 13, 1990.

The subject site is located within the overall jurisdiction of the Regional Water Quality Control Board -- San Francisco Bay Region. Initial inspection and evaluation of the site is customarily conducted by the local implementing agency (LIA), which was the Alameda County Health Agency. The local implementing agency was represented by Mr. Ariu Levi, who was present to observe the tank removal and sampling. The City of Oakland Fire Department was represented by Ms. Christine Myers who was present to observe the tank removal.

Chevron USA, Inc. was represented by Ms. Cynthia Wong.

In accordance with the local regulations and the field judgment of the LIA representative, a detailed visual inspection was made of each tank in which likely failure points were closely examined. No holes were observed in any of the tanks. The waste oil tank (Tank WO) was damaged during its removal from the pit, but was determined to have had no other holes.

TANK I.D.	SIZE IN GALLONS	TANK CONTENT	MATERIAL OF CONSTRUCTION	INSPECTION FOUND
A	10,000	GASOLINE	FIBERGLASS	NO HOLES
B	10,000	GASOLINE	FIBERGLASS	NO HOLES
C	10,000	GASOLINE	FIBERGLASS	NO HOLES
WO	1,000	WASTE OIL	FIBERGLASS (SPHERICAL)	NO HOLES

Following the removal of the gasoline tanks, water was observed in the tank pit at a depth of eight feet (8.0') below grade. Because of the water in the bottom of the pit, it was decided that standard RWQCB interface samples would *not* be collected from the soil beneath the gasoline tanks. Instead, capillary zone samples were taken from the four walls of the tank pit. Excavation of the spherical waste oil tank (Tank WO) did not encounter water so sampling consisted of the collection of a standard interface sample taken from the soil lying directly beneath the tank, followed by two exploratory soil samples. Samples of the soil underlying two hydraulic lifts were taken, as were samples of the soil underlying the product line that conducted fuel from the underground storage tanks to the dispenser pumps. The stockpiled soil generated during the removal of the underground storage tanks and the product lines was also sampled. Decisions regarding the particular type, location, and number of samples that needed to be collected to satisfy regulatory requirements were made by Mr. Ariu Levi. Additional (elective) exploratory samples were collected at the request of the Chevron engineer, Cynthia Wong.

In the paragraphs that follow, the samples are described in the order in which they were collected:

Sample #1 was collected from the soil underlying an hydraulic lift at a depth of eight feet (8.0') below grade.

Sample #2 was collected from the soil underlying a second hydraulic lift at a depth of eight feet (8.0') below grade.

Sample #3 was an interface sample taken from beneath the waste oil tank at a depth of eleven and a half feet (11.5') below grade. Discoloration in the soil was evident at this depth and prompted the collection of two exploratory samples.

Sample #4 was the first exploratory sample taken from beneath the waste oil tank at a depth of ten feet (10.0') below grade.

Sample #5 was a capillary zone sample taken from the southeast wall of the gasoline tank pit at a depth of seven and a half feet (7.5') below grade.

Sample #6 was a capillary zone sample taken from the northwest wall of the gasoline tank pit at a depth of seven feet (7.0') below grade.

Sample #7 was a capillary zone sample taken from the northeast wall of the gasoline tank pit at a depth of six and a half feet (6.5') below grade. Discoloration of the soil was evident at this location and an exploratory sample was also taken.

Sample #8 was this exploratory sample taken at a depth of four feet (4.0') below grade.

Sample #9 was a capillary zone sample taken from the southwest wall of the gasoline tank at a depth of seven feet (7.0') below grade.

Samples #10 and #11 were taken of the soil underlying the product line nearest Grand Avenue. Both samples were collected at a depth of three feet (3.0') below grade.

Samples #12 and #13 were taken of the soil underlying the product line thirty feet (30.0') northeast of samples #10 and #11. Both samples were collected at a depth of three feet (3.0') below grade.

For sampling purposes, the stockpiled soil generated during the removal of the gasoline tanks was divided into two sections (#14, #15). This large stockpile of soil was stacked to the east of the gasoline tank pit.

Sample #14A-D was a four part composite. As described in the Sampling Methodology section of the report, the sample consisted of four individual brass sample liners (#14-A, #14-B, #14-C, and #14-D) which were collected from different faces of the stockpile.

Sample #15A-D was also a four part composite collected from different faces of the stockpile.

Sample #16A-D was a four part composite collected from the stockpile of soil which was stacked northeast of the waste oil tank pit. This stockpiled soil was generated during the removal of the waste oil tank.

Sample #17A-D was a four part composite collected from the stockpile of soil which was stacked south of the product lines. This stockpile was generated during the removal of the product lines.

Sample #18 was the second exploratory sample taken from beneath the waste oil tank at a depth of twelve feet (12.0') below grade.

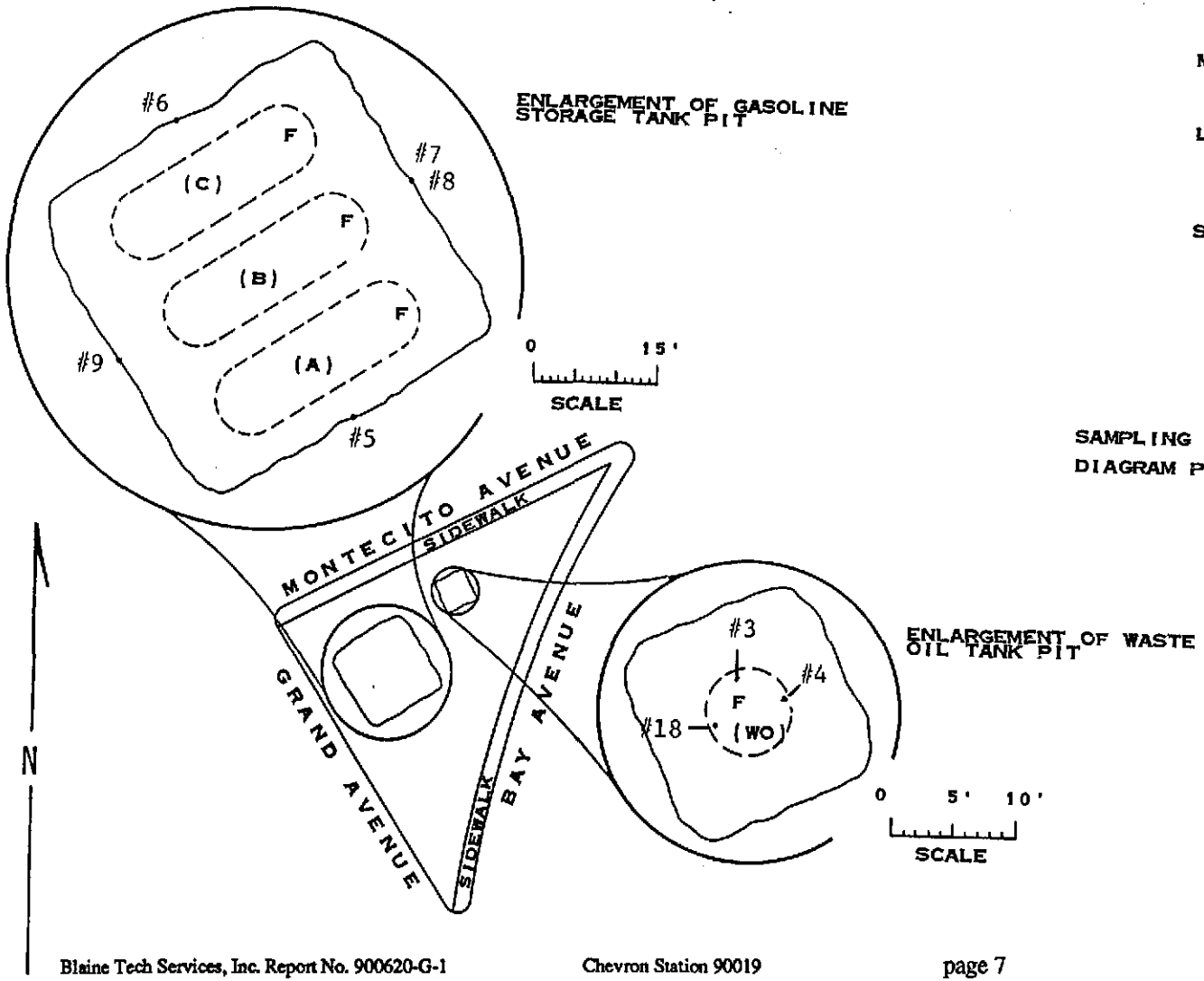
After completion of the field work, the sample containers were delivered to Sequoia Analytical Laboratory in Redwood City, California. Sequoia Analytical Laboratory is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1210.

It was requested that the analytical procedures used for these analyses be those specified by the Regional Water Quality Control Board -- San Francisco Bay Region. The methods are defined in attachments to the San Francisco RWQCB (Region 2) publication, Guidelines For Addressing Fuel Leaks and in documents issued to clarify the Board's interpretation of the California LUFT Manual.

TANK REMOVAL DIAGRAM

DIAGRAM ONE

June 20, 1990 / 900620-G-1



MAP REF: THOMAS BROS. ALAMEDA COUNTY P.9 C.10

LEGEND: F = FILL END

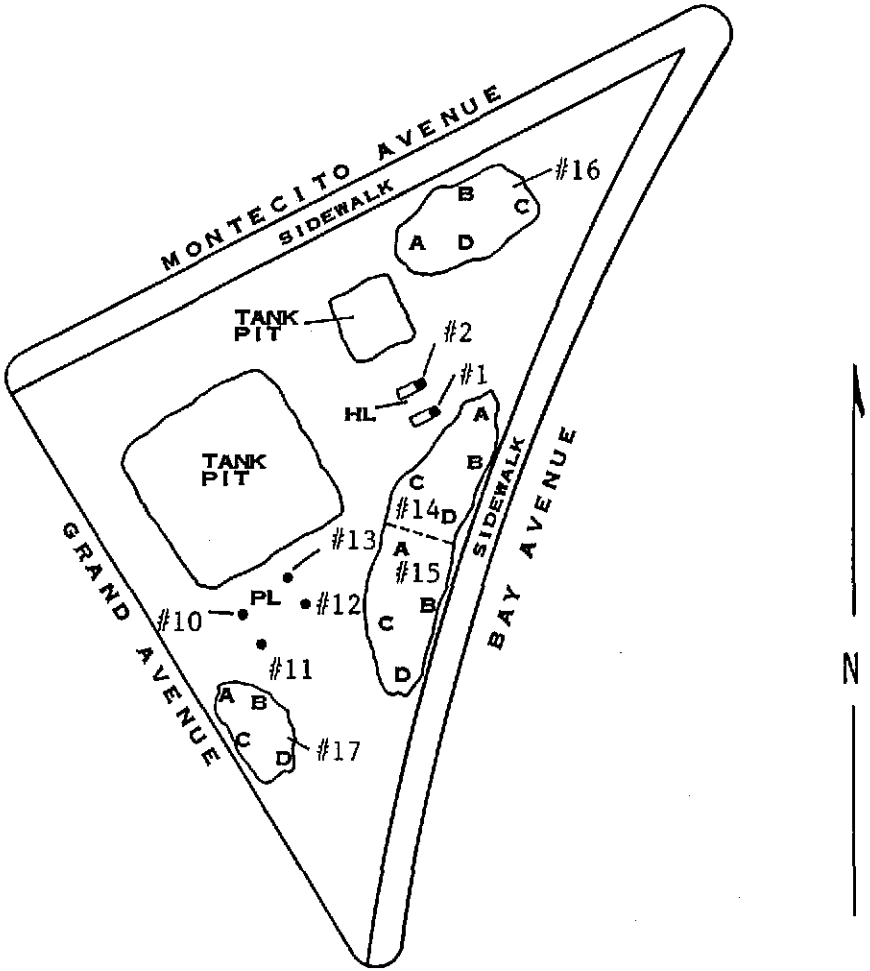
SCALE: 0 75'

SAMPLING PERFORMED BY CHUCK GRAVES
DIAGRAM PREPARED BY BRENT ADAMS

TANK REMOVAL DIAGRAM

June 20, 1990 / 900620-G-1

DIAGRAM TWO

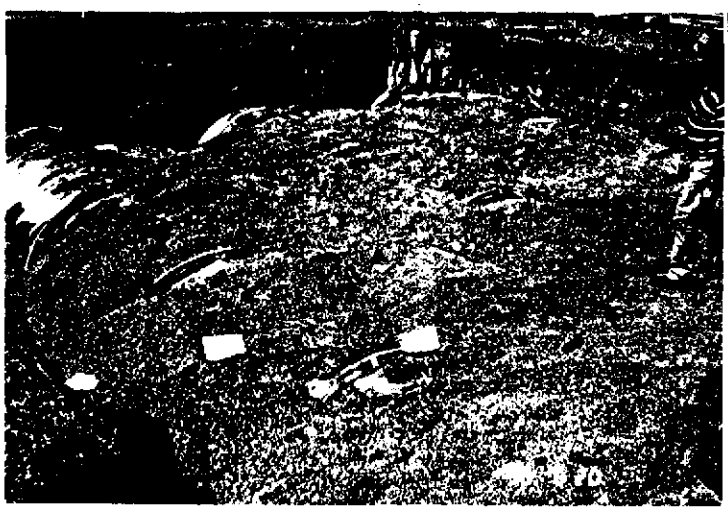


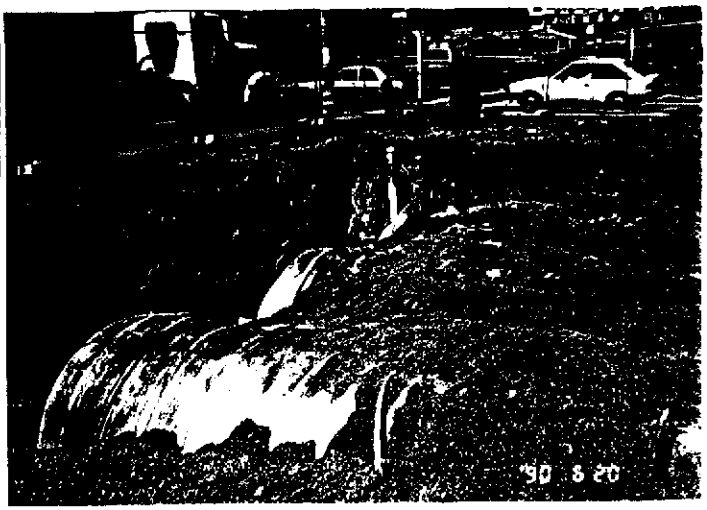
MAP REF: THOMAS BROS., ALAMEDA COUNTY P.9 C-10

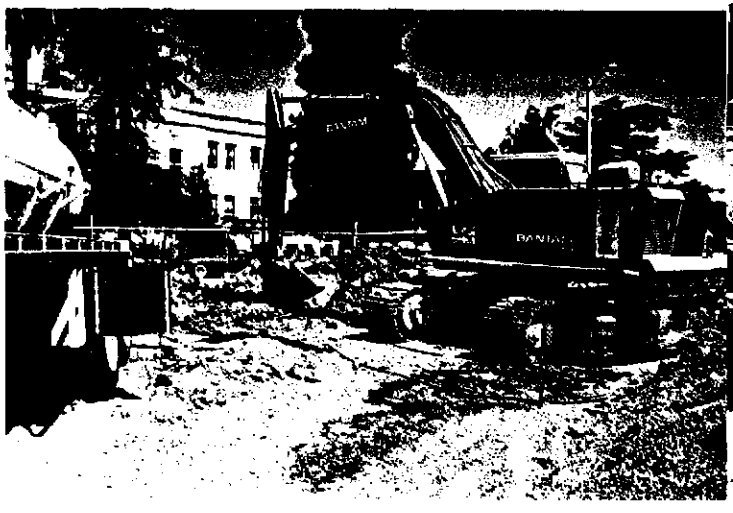
SCALE: 0 75'

LEGEND: HL = HYDRAULIC LIFT
PL = PRODUCT LINE

SAMPLING PERFORMED BY CHUCK GRAVES
DIAGRAM PREPARED BY BRENT ADAMS





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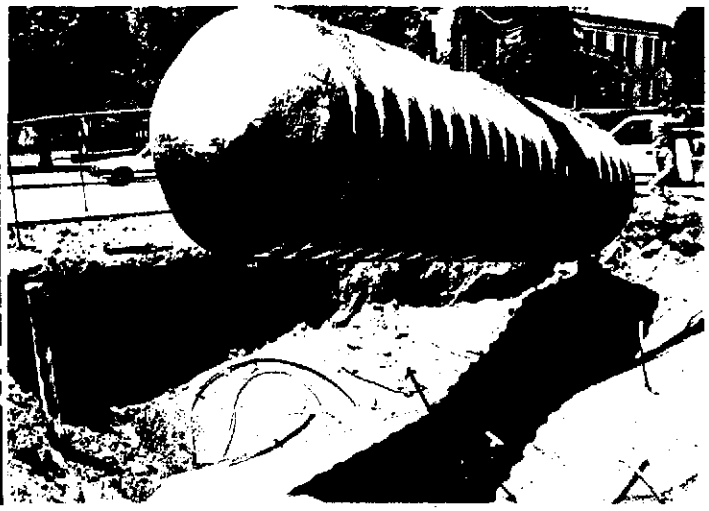

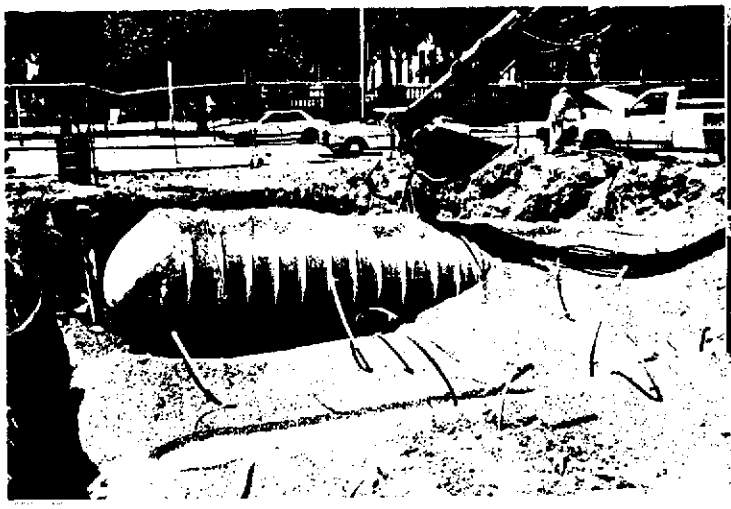

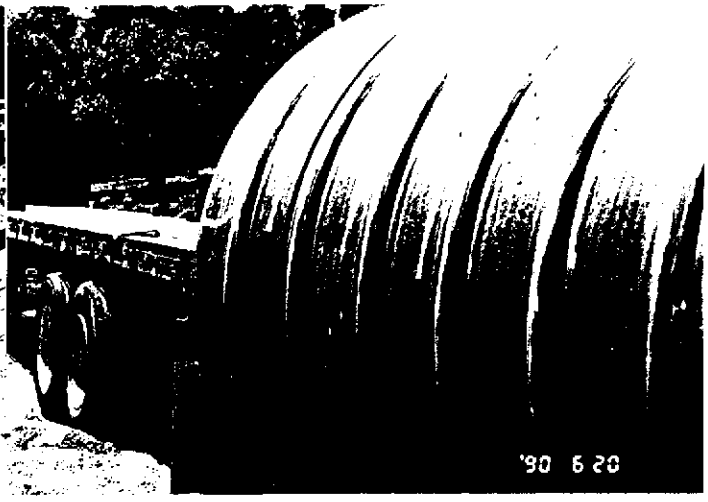
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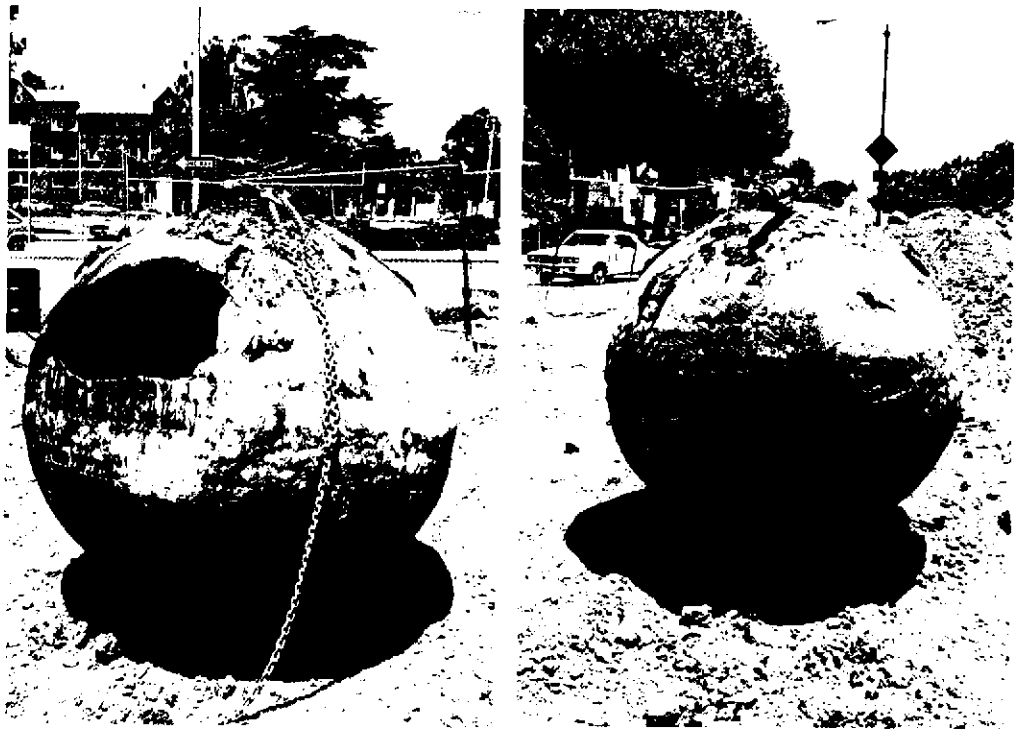

TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS

NOTE: Analytical results are reported in Parts Per Million or Parts Per Billion

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	PPM TPH AS GAS	PPM BENZENE	PPM TOLUENE	PPM ETHYL BENZENE	PPM XYLENES
TANK PIT														
WALLS	7.5	LIA	CAPILLAR	SOIL	06/20/90	900620-G-1	#5	SEQUOIA	006-3052	ND	ND	ND	ND	ND
	7.0	LIA	CAPILLAR	SOIL	06/20/90	900620-G-1	#6	SEQUOIA	006-3053	3.3	0.075	0.012	0.033	0.051
	6.5	LIA	CAPILLAR	SOIL	06/20/90	900620-G-1	#7	SEQUOIA	006-3054	ND	ND	ND	ND	ND
	4.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#8	SEQUOIA	006-3055	ND	0.011	ND	0.025	0.0054
	7.0	LIA	CAPILLAR	SOIL	06/20/90	900620-G-1	#9	SEQUOIA	006-3056	13	0.10	0.30	0.18	0.54
PRODUCT LINES														
PL	3.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#10	SEQUOIA	006-3057	160	2.9	13	4.4	19
	3.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#11	SEQUOIA	006-3058	100	1.7	0.36	5.1	2.9
	3.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#12	SEQUOIA	006-3059	67	2.8	7.7	1.4	9.0
	3.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#13	SEQUOIA	006-3060	5.1	0.84	0.43	0.19	0.74
STOCK	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#14A-D	SEQUOIA	0063062 A-D	3.1	ND	0.0097	0.0086	0.025
	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#15A-D	SEQUOIA	0063063 A-D	11	ND	0.061	0.078	0.47
	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#17A-D	SEQUOIA	0063061 A-D	290	0.33	6.3	4.7	31

Standard = The location conformed to established (professional or regulatory) definitions for the type of sample being collected. Example: a standard RWQCB interface sample.

LIA = The local implementing agency inspector chose a sampling location that was different from a standard (pre-defined) location.

Elective = Elective samples are not taken to comply with regulatory requirements, but to obtain information. Sampling locations may be chosen by the property owner, the contractor, a consultant, etc. The samples may or may not be analyzed.

TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS

NOTE: Analytical results are reported in Parts Per Million or Parts Per Billion

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	PPM TPH AS GAS	PPM BENZENE	PPM TOLUENE	PPM ETHYL BENZENE	PPM XYLENES
WoF (interface)	11.5	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#3	SEQUOIA	006-3049	41	0.085	0.33	0.20	1.6
WoF (below tank)	10.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#4	SEQUOIA	006-3050	ND	ND	ND	ND	ND
WoF (below tank)	12.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#18	SEQUOIA	006-3051	69	0.29	2.1	1.2	4.0
WoSTK	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#16A-D	SEQUOIA	0063064 A-D	960,000	14,000	99,000	31,000	120,000

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	PPM TPH-HBF DIESEL	PPM TOTAL OIL & GREASE	PPB EPA 8010 COMPOUNDS
WoF	11.5	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#3	SEQUOIA	006-3049	190	3,600	SEE LAB REPORT
	10.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#4	SEQUOIA	006-3050	ND	170	SEE LAB REPORT
	12.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#18	SEQUOIA	006-3051	140	650	ND
WoSTK	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#16A-D	SEQUOIA	0063064 A-D	510	6,400	ND
HYDRAULIC LIFTS												
HL	8.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#1	SEQUOIA	006-3047	ND	100	--
	8.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#2	SEQUOIA	006-3048	180	1,300	--

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	PPM CADMIUM	PPM CHROMIUM	PPM LEAD	PPM ZINC
WoF	11.5	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#3	SEQUOIA	006-3049	ND	39	20	43
	10.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#4	SEQUOIA	006-3050	ND	41	3.1	26
	12.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#18	SEQUOIA	006-3051	ND	22	2.6	15
WoSTK	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#16A-D	SEQUOIA	0063064 A-D	ND	26	18	44

Standard = The location conformed to established (professional or regulatory) definitions for the type of sample being collected. Example: a standard RWQCB interface sample.

LIA = The local implementing agency inspector chose a sampling location that was different from a standard (pre-defined) location.

Elective = Elective samples are not taken to comply with regulatory requirements, but to obtain information. Sampling locations may be chosen by the property owner, the contractor, a consultant, etc. The samples may or may not be analyzed.

SAMPLING METHODOLOGIES

Specific methods used on this project

Capillary Zone Soil Sample: The capillary zone is the soil horizon immediately above the surface of standing groundwater into which moisture is drawn by capillary action. Capillary zone sampling is most often requested in open pit and open trench situations where lost petroleum products are evident or suspected. In these cases, it is reasoned that a sample of the capillary zone will demonstrate whether or not fuel has been drawn up into the soil above the groundwater and, thereby, provide a rough indication of the volume and duration of the lost fuel condition.

Engineers of the Region 2 RWQCB staff have specified the correct sampling area as being from zero to six inches above the surface of the standing perched water and no more than twelve inches back into the native soil from the lateral backfill/native soil interface.

There are two weaknesses which tend to invalidate capillary zone sampling on the basis of inconsistent results. First, is the difficulty encountered in locating the true surface of the perched water above which the capillary zone resides. The removal of the tank and backfill material tends to artificially lower the water in the immediate vicinity of the tank pit below the true standing water level and mislead observers attempting to evaluate where the capillary zone is located. Second, the zone itself is a narrow horizon which is bordered on the top and bottom by soil which would not be expected to contain nearly the concentration of fuel hydrocarbons as the capillary zone proper. Collecting the correct material is complicated by conditions at the site which usually consist of a broad excavation, with vertical walls descending into a water filled pit. Because of these conditions, direct approach to the sampling area is difficult, dangerous, or impossible.

Assuming that the true and original surface of the perched water can be determined, samples can be safely obtained by one of the following methods. The backhoe bucket can be used to dig up a segment of the pit wall that contains the capillary zone and bring it up for inspection and sampling. An alternative method is to use sections of light weight drill rod and a drive shoe which contains a brass sample liner. This train can be extended across the pit, positioned, and used to drive an undisturbed soil sample.

Elective Exploratory Samples: This type of sampling employs the same sample collection and handling procedures as are used in standard RWQCB interface sampling, but soil is typically obtained at a greater depth or from a position that is laterally offset from the interface location.

Standard RWQCB Interface Samples: Samples taken immediately following a tank removal are required to conform to criteria established by the Regional Water Quality Control Boards. Interpretation of these criteria is usually entrusted to the discretion of the local implementing agency inspector, but are widely known and conformance with these criteria is expected even when no regulatory agency personnel are present to direct the procedures. Accordingly, "Standard Interface samples" are those which have been taken in accordance with the standard protocol for obtaining interface samples. These samples fall into the category of samples which are known to be of primary concern to the interested

regulatory agencies for determining if additional action will be required at a site and the methodology has been closely defined in state and RWQCB publications, supplements, and presentations. These specify both the acceptable depth and lateral situation of sample collection points. In accordance with these specifications, sample collection is executed as close as possible to the center line (longitudinal axis) of the tank and on a vertical axis with the fill pipe. A corresponding location is also found at the opposite end of the tank whenever standard interface samples are being collected.

Briefly, the method consists of digging up native soil from directly below the fill pipe and the corresponding opposite end of the tank and obtaining a sample from the backfill/native soil interface or a short distance below the interface. A short distance has been defined by Region 2 Board engineers as not greater than twenty-four inches below the backfill/native soil interface and is generally taken to be one foot below the backfill/native soil interface. This soil is brought up in the backhoe bucket. A shovel or trowel is used to cut away surface soil and backfill material which may have been included in the bucket, and the sample is taken by pushing or driving a brass sample liner into the newly exposed soil from the designated depth and location. Additional clarifications by Region 2 Board engineers have indicated that when there is an obvious difference in the relative contamination of soil brought up from the interface depth, then it is the relatively more contaminated soil that should be selected for inclusion in the sample.

Stockpile Survey (Modified BAAQMD Protocol): This sampling follows a survey pattern, but uses a modified BAAQMD protocol for sampling stockpiles of material that have been newly removed from a tank pit excavation. This protocol calls for a discrete sample container to be collected for every 12.5 cubic yards of material. The survey includes opposite sides of the stockpile. Strict observance of the BAAQMD protocol (for purposes of evaluating the levels of fuel vapor likely to be discharged from a stockpile) calls for inclusion of the surface material in the brass liner which is driven into the pile at a right angle (to the angle of repose) until the liner is full. Unless specifically asked to follow the BAAQMD protocol, our personnel routinely modify the procedure to exclude the surface soil and collect soil from a depth of eight to eighteen inches. While this prejudices the sample in the direction of yielding higher results than would a strict BAAQMD sample, it is more representative of the levels of fuel hydrocarbons present in the soil and is not likely to mislead the client or contractor into offhauling or backfilling with soil stockpiles that are relatively clean at the surface, but unacceptably contaminated through the remainder of their volume.

STANDARD PROCEDURES

Conventions and practices

General Practices

U.S. Environmental Protection Agency standards serve as the foundation for all field sampling operations performed by our firm. The EPA SW 846 is the primary publication from which procedures are derived, though there are additional EPA sources such as training films and verbal communications. Sampling related to underground storage tanks and tank related threats to groundwater are governed by the California Water Resources Control Board and its Regional Water Quality Control Boards. While some aspects of field and laboratory work may be delegated to the California Department of Health Services, the

CWRCB and the nine Regional Water Quality Control Boards establish the general and specific criteria for sampling performed in connection with underground storage tanks. This is done through the publication of guidance documents, the issuance of memoranda, and verbal announcements.

Other agencies, such as Air Pollution Control Districts, may require additional samples, but these are usually in addition to samples required by the RWQCB. Local implementing agency (LIA) inspectors are frequently present during the tank removal phase of a project and either direct or request that samples be taken according to RWQCB specifications. Additional samples may, and frequently are, taken at the request of the LIA inspector.

Based on field conditions directly observable by the LIA inspector, our field personnel may be asked to collect samples that are tailored to the specific situation and which the inspector judges will provide substantial information about the site. Quite often these directions or suggestions coincide with the sampling areas established by the RWQCB as the proper collection points for samples which will be used as the Primary Criteria for a Regulatory Agency Determination on whether additional exploration or remediation will be required at a particular site. Similarly, there are instances when the LIA inspector's judgments do not coincide with Board specifications.

Two common examples of this are as follows:

1. A local implementing agency inspector notes that soil dug up from the correct RWQCB interface sampling point is relatively clean, but observes that there is quite obviously contaminated backfill underlying the center of the tank. The inspector directs that the contaminated backfill should be taken instead of the clean interface soil so as to provide information about the "worst case" conditions within the tank pit.

2. The soil at the specified interface sampling depth is found to be slightly contaminated, but much less so than the soil only a few inches above. Noting the relatively dense soil, the local implementing agency inspector decides not to have the interface soil sampled and has the backhoe dig deeper to see if the contamination diminishes to acceptable levels. This exploration saves the property owner the cost of running two samples at that location, and enables the inspector to directly observe the condition of the deeper soil.

In both examples, different material is collected in lieu of a standard RWQCB interface sample. Further, the material collected is substantially different from what would have been obtained by taking representative soil at the Board specified sampling location. Note that both of these samples were taken at the direction of the local implementing agency inspector who was present at the site and elected to select alternative sampling locations. Note too, that these alternative samples may provide more information about the site than standard Board specified samples. However, as the LIA elected samples do not accurately reflect soil conditions at the sampling points specified by the RWQCB, the decision making process may be hampered.

Clearly there is no advantage in limiting the ability of the regulator in the field to make prudent judgments. Likewise, regulatory personnel and consultants who will review the reports without benefit of having been present at the site need to know that the samples taken were not obtained at the standard locations. A simple resolution to these situations is a brief notation indicating that the sampling was elective rather than in accordance with a

standard Board specification. These notations appear in the third column of the TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS. By referring to the notations in column three and four in the TABLE, any party reviewing the report should be able to determine if something other than Board standard samples were obtained, and when variant sampling was performed, clarify whether it was elected by the LIA inspector, elected by our field personnel, or the result of some physical condition at the site that made it impossible to obtain material from the correct sampling location.

Sample Containers

Our firm uses new sample containers of the type specified by either EPA or the RWQCB for the collection of samples at sites where underground storage tanks are involved. Water samples are contained in 40 ml volatile organic analysis vials (VOAs) when analysis for gasoline and similar light volatile compounds is intended. These containers are prepared according to EPA SW 846 and will contain a small amount of preservative when the analysis is for TPH as gasoline or EPA 602. Vials intended for EPA 601 analysis and EPA 624 GCMS procedures are not preserved. Closure is accomplished with an open headed (syringe accessible) plastic screw cap brought down on top of a Teflon faced septum which is used to seal the sample without headspace.

Water samples intended for semivolatile and nonvolatile analysis such as total oil and grease (TOG) and diesel (TPH HBF) are collected and transported in properly prepared new glass liter bottles. Dark amber glass is used in the manufacture of these bottles to reduce any adverse effect on the sample by sunlight. Antimicrobial preservative may be added to the sample liquid if a prolonged holding time is expected prior to analysis. Closure is accomplished with a heavy plastic screw cap.

Soil samples for volatile, semivolatile and nonvolatile analyses are all collected in properly prepared new brass liners which are 2 inches in diameter by 4 inches in length. Closure is accomplished with press fit plastic end caps which are fitted to the open ends of brass tube liners after a sheet of aluminum foil is wrapped over the exposed sample material. A non-contributing/nonsubtractive tape is wrapped completely around the joint areas where the plastic caps meet the outer wall of the brass tube. No preservative other than cold storage is used on samples captured in sample containers of this type.

Sample Handling Procedures

Solid sample material is captured by advancing the liner into the soil. This may be done by pushing the liner into soft soils or by containing the liner in a drive shoe which can be advanced and then retracted by means of a slide hammer. The open ends of the sample liner are covered with aluminum foil and plastic end caps. Excess aluminum foil is removed and the edge of the plastic end cap is tightly sealed against the outer surface of the brass liner with an unbroken wrap made with a tape which has been tested to confirm that it does not contribute compounds that would be detected in the type of analyses intended for the sample contained inside of the brass liner. The brass liner is then labeled with the appropriate identification numbers which specify the sampling activity designation number, sample collection area, depth etc. that apply to that particular sample. The sample liner is then placed in an ice chest which contains pre-frozen blocks of an inert ice substitute such as Blue Ice or Super Ice.

Water samples are collected in any of several appropriate devices such as bailers, Coliwasas, Middleburg sampling pumps, etc., which are described in detail only as warranted by their employment at a given site. Sample liquid is decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA procedures for handling volatile organic and semi-volatile compounds. Only two variations from the EPA methods are generally employed. First, preservative is added to the sample container prior to addition of the sample liquid. This method was pioneered by Stoner Laboratories in 1982 and subsequently adopted by laboratories and environmental consulting firms as a practical means of reducing the time that a liquid is allowed to aerate prior to closure of the sampling container. Second, because tests have shown that the preservative readily mixes with sample liquid, glass stirring rods are not used to agitate the sample/preservative mixture.

Sample Designations

All sample containers are identified with both a sampling event number and a discrete sample identification number. Please note that the sampling event number is the number that appears on our chain of custody. It is roughly equivalent to a job number, but applies only to work done on a particular day of the year rather than spanning several days as jobs and projects often do. This is followed by the sample I.D. number which is usually a simple number such as #1, #2, #3.

Chain of Custody

Samples are continuously maintained in either a chilled ice chest, refrigerator, or freezer from the time of collection until acceptance by the State certified Hazardous Materials Testing Laboratory selected to perform the analytical procedures. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Laboratory Identification Numbers

Following receipt of the samples and completion of the Chain of Custody form, the laboratory then assigns their own identification numbers to the samples. Different laboratories use different numbering systems and, according to their own internal conventions, may or may not assign sequential numbers to samples which are placed on temporary "hold", pending the results of other analyses. Laboratory identification numbers (if assigned and available) are included in the TABLE, and will be found on the certified analytical report by the analytical laboratory.

Certified Analytical Report

The certified analytical report (CAR) generated by the laboratory is the official document in which they issue their findings. The Results of Analyses section of the TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS should correspond exactly with the laboratory's CAR. Any discrepancy between analytical values should be decided

in favor of the CAR, for while it may, itself, be in error with regard to a particular number, the CAR remains the recognized document until such time as it is amended with a corrected report.

The certified analytical report should also be reviewed when samples are taken from below waste oil tanks as any detection of the EPA halogenated and purgeable aromatic compounds may be grounds for requiring further action. Also the TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS is insufficiently spacious to allow anything more than a simple listing of the detected compounds. The TABLE does not include such information as the detection limits at which other compounds were not detected. The full text of the laboratory report will be found in the Analytical Appendix.

Reportage

Submission to the Regional Water Quality Control Board and the local implementing agency should include copies of the sampling report, the chain of custody, and the certified analytical report issued by the Hazardous Materials Testing Laboratory. The property owner should attach a cover letter and submit all documents together in a package.

The following addresses have been listed here for your convenience:

Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street
Room 700
Oakland, CA 94612
ATTN: Lester Feldman

Alameda County Health
Hazardous Materials Management
80 Swan Way, Room 200
Oakland, CA 94621
ATTN: Ariu Levi

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/dmp

ANALYTICAL APPENDIX

Supporting documents

CHAIN OF CUSTODY FORMS
CERTIFIED ANALYTICAL REPORTS
TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS

BLAINE
TECH SERVICES INC.

1370 TULLY ROAD, SUITE 505
SAN JOSE, CA 95122
(408) 995-5535

CHAIN OF CUSTODY # 900620G-1

SITE SPECIFICATION Chevron Station # 9019
210 Grand Ave, Oakland CA

(X) Bill BLAINE TECH SERVICES, Inc.
( ) Bill

SPECIAL INSTRUCTIONS
24 hrs - All samples
BTEX Limit = .005 ppm

#16(A-D) - 4 - 5 (TPH-G, TPH-D, O+G (503 B+E), BTEX, CLHC, Cd, Cr, Pb, ZN) — 24 hr.

#17(A-D) - 4 - 5 - (TPH-G, BTEX) - 24 hr.

SAMPLE I.D.	QUANTITY	TYPE	OK	ANALYSIS TO DETECT	STATUS	RESULTS	LAB NUMBER
#1	1	S		O+G (503 D+E), 8015-D	24hr.		
#2	1			" " , " "	" "		
#3	1	S		TPH-G, TPH-D, O+G (503 D+E), BTEX, CLHC, Cd, Cr, Pb, ZN	" "		
#4 & #18	2	S		" " " "	" "		
#5	1	S		TPH-G, BTEX	" "		
#6	1	S		" "	" "		
#7	1	S		" "	" "		
#8	1	S		" "	" "		
#9	1	S		" "	" "		
#10	1	S		" "	" "		
#11	1	S		" "	" "		
#12	1	S		" "	" "		
#13	1	S		" "	" "		
#14 (A-D)	4	S		" "	" "		
#15 (A-D)	4	S		" "	" "		

Field sampling was performed by Charles M Dunn

Sampling was completed at 18 :00 AM/PM 6 -20-1990

RELEASE OF SAMPLES FROM (name,time,date) ---->>>>> INTO THE CUSTODY OF (name,time,date)

from Charles M Dunn @ 19:30 AM/PM 6-20-90 -> to [illegible] @ 19:25 AM/PM 6/20 -90

from _____ @ : AM/PM -90 -> to _____ @ : AM/PM -90

from _____ @ : AM/PM -90 -> to _____ @ : AM/PM -90

The laboratory designated to perform these analyses is: SEQUOIA DHS #/145
NOTE: Procedures and detection limits must confrom to RWQCB Region 2 specifications.
Please include chain of custody number and site specification on reports and invoices.

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Sample Descript:	Soil, #3	Received:	Jun 20, 1990
San Jose, CA 95122			Extracted:	Jun 20, 1990
Attention: Richard Blaine	Lab Number:	006-3049	Analyzed:	Jun 21, 1990
			Reported:	Jun 22, 1990

LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	0.50	N.D.
Chromium	0.25	39
Lead	0.25	20
Zinc	0.50	43

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Elizabeth W. Hackl
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Sample Descript:	Soil, #4	Received:	Jun 20, 1990
San Jose, CA 95122			Extracted:	Jun 20, 1990
Attention: Richard Blaine	Lab Number:	006-3050	Analyzed:	Jun 21, 1990
			Reported:	Jun 22, 1990

LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	0.50	N.D.
Chromium	0.25	41
Lead	0.25	3.1
Zinc	0.50	26

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Elizabeth W. Hackl
Project Manager

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680 Chesapeake Drive • Redwood City, CA 94063
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Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Sample Descript:	Soil, #18	Received:	Jun 20, 1990
San Jose, CA 95122			Extracted:	Jun 20, 1990
Attention: Richard Blaine	Lab Number:	006-3051	Analyzed:	Jun 21, 1990
			Reported:	Jun 22, 1990

LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	0.50	N.D.
Chromium	0.25	22
Lead	0.25	2.6
Zinc	0.50	15

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Elizabeth W. Hackl
Project Manager

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Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Sample Descript:	Soil Comp., #16	Received:	Jun 20, 1990
San Jose, CA 95122			Extracted:	Jun 20, 1990
Attention: Richard Blaine	Lab Number:	005-3954	Analyzed:	Jun 21, 1990
			Reported:	Jun 22, 1990

LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	0.50	N.D.
Chromium	0.25	26
Lead	0.25	18
Zinc	0.50	44

Analytes reported as N.D. were not present above the stated limit of detection.

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Elizabeth W. Hackl
Project Manager

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680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Matrix Descript:	Soil	Received:	Jun 20, 1990
San Jose, CA 95122	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Jun 21, 1990
Attention: Richard Blaine	First Sample #:	006-3049	Reported:	Jun 22, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
006-3049	#3	41	0.085	0.33	0.20	1.6
006-3050	#4	N.D.	N.D.	N.D.	N.D.	N.D.
006-3051	#18	69	0.29	2.1	1.2	4.0
006-3052	#5	N.D.	N.D.	N.D.	N.D.	N.D.
006-3053	#6	3.3	0.075	0.012	0.033	0.051
006-3054	#7	N.D.	N.D.	N.D.	N.D.	N.D.
006-3055	#8	N.D.	0.011	N.D.	0.025	0.0054
006-3056	#9	13	0.10	0.30	0.18	0.54
006-3057	#10	160	2.9	13	4.4	19
006-3058	#11	100	1.7	0.36	5.1	2.9
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Elizabeth W. Hackl
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Matrix Descript:	Soil	Received:	Jun 20, 1990
San Jose, CA 95122	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Jun 21, 1990
Attention: Richard Blaine	First Sample #:	006-3059	Reported:	Jun 22, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
006-3059	#12	67	2.8	7.7	1.4	9.0
006-3060	#13	5.1	0.84	0.43	0.19	0.74
0063061 A-D	#17, Composite	290	0.33	6.3	4.7	31
0063062 A-D	#14, Composite	3.1	N.D.	0.0097	0.0086	0.025
0063063 A-D	#15, Composite	11	N.D.	0.061	0.078	0.47
0063064 A-D	#16, Composite	960,000	14,000	99,000	31,000	120,000
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Project Manager

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Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Matrix Descript:	Soil	Received:	Jun 20, 1990
San Jose, CA 95122	Analysis Method:	EPA 3550/8015	Extracted:	Jun 20, 1990
Attention: Richard Blaine	First Sample #:	006-3047	Analyzed:	Jun 21, 1990
			Reported:	Jun 22, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
006-3047	#1	N.D.
006-3048	#2	180
006-3049	#3	190
006-3050	#4	N.D.
006-3051	#18	140
0063064 A-D	#16, Comp.	510

Detection Limits:	**1.0**

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Matrix Descript:	Soil	Received:	Jun 20, 1990
San Jose, CA 95122	Analysis Method:	SM 503 D&E (Gravimetric)	Extracted:	Jun 21, 1990
Attention: Richard Blaine	First Sample #:	006-3047	Analyzed:	Jun 21, 1990
			Reported:	Jun 22, 1990

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
006-3047	#1	100
006-3048	#2	1,300
006-3049	#3	3,600
006-3050	#4	170
006-3051	#18	650
0063064 A-D	#16, Comp.	6,400

Detection Limits:	**30**

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Sample Descript:	Soil, #3	Received:	Jun 20, 1990
San Jose, CA 95122	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 20, 1990
Attention: Richard Blaine	Lab Number:	006-3049	Reported:	Jun 22, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	50	N.D.
Bromoform	50	N.D.
Bromomethane	50	N.D.
Carbon tetrachloride	50	N.D.
Chlorobenzene	50	N.D.
Chloroethane	250	N.D.
2-Chloroethylvinyl ether	50	N.D.
Chloroform	50	N.D.
Chloromethane	50	N.D.
Dibromochloromethane	50	N.D.
1,2-Dichlorobenzene	100	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,1-Dichloroethane	50	N.D.
1,2-Dichloroethane	50	N.D.
1,1-Dichloroethene	50	N.D.
cis 1,2-Dichloroethene	50	140
1,2-Dichloropropane	50	N.D.
cis-1,3-Dichloropropene	50	N.D.
trans-1,3-Dichloropropene	50	N.D.
Methylene chloride	100	N.D.
1,1,2,2-Tetrachloroethane	50	N.D.
Tetrachloroethene	50	52
1,1,1-Trichloroethane	50	250
1,1,2-Trichloroethane	50	N.D.
Trichloroethene	50	N.D.
Trichlorofluoromethane	50	N.D.
Vinyl chloride	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

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Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Sample Descript:	Soil, #4	Received:	Jun 20, 1990
San Jose, CA 95122	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 20, 1990
Attention: Richard Blaine	Lab Number:	006-3050	Reported:	Jun 22, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	10	N.D.
Bromoform	10	N.D.
Bromomethane	10	N.D.
Carbon tetrachloride	10	N.D.
Chlorobenzene	10	N.D.
Chloroethane	50	N.D.
2-Chloroethylvinyl ether	10	N.D.
Chloroform	10	N.D.
Chloromethane	10	N.D.
Dibromochloromethane	10	N.D.
1,2-Dichlorobenzene	20	N.D.
1,3-Dichlorobenzene	20	N.D.
1,4-Dichlorobenzene	20	N.D.
1,1-Dichloroethane	10	N.D.
1,2-Dichloroethane	10	N.D.
1,1-Dichloroethene	10	N.D.
cis 1,2-Dichloroethene	10	26
1,2-Dichloropropane	10	N.D.
cis-1,3-Dichloropropene	10	N.D.
trans-1,3-Dichloropropene	10	N.D.
Methylene chloride	20	N.D.
1,1,2,2-Tetrachloroethane	10	N.D.
Tetrachloroethene	10	N.D.
1,1,1-Trichloroethane	10	N.D.
1,1,2-Trichloroethane	10	N.D.
Trichloroethene	10	N.D.
Trichlorofluoromethane	10	N.D.
Vinyl chloride	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

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Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Sample Descript:	Soil, #18	Received:	Jun 20, 1990
San Jose, CA 95122	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 20, 1990
Attention: Richard Blaine	Lab Number:	006-3051	Reported:	Jun 22, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	20	N.D.
Bromoform	20	N.D.
Bromomethane	20	N.D.
Carbon tetrachloride	20	N.D.
Chlorobenzene	20	N.D.
Chloroethane	100	N.D.
2-Chloroethylvinyl ether	20	N.D.
Chloroform	20	N.D.
Chloromethane	20	N.D.
Dibromochloromethane	20	N.D.
1,2-Dichlorobenzene	40	N.D.
1,3-Dichlorobenzene	40	N.D.
1,4-Dichlorobenzene	40	N.D.
1,1-Dichloroethane	20	N.D.
1,2-Dichloroethane	20	N.D.
1,1-Dichloroethene	20	N.D.
Total 1,2-Dichloroethene	20	N.D.
1,2-Dichloropropane	20	N.D.
cis-1,3-Dichloropropene	20	N.D.
trans-1,3-Dichloropropene	20	N.D.
Methylene chloride	40	N.D.
1,1,2,2-Tetrachloroethane	20	N.D.
Tetrachloroethene	20	N.D.
1,1,1-Trichloroethane	20	N.D.
1,1,2-Trichloroethane	20	N.D.
Trichloroethene	20	N.D.
Trichlorofluoromethane	20	N.D.
Vinyl chloride	40	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Elizabeth W. Hackl
Project Manager

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Blaine Tech Services	Client Project ID:	#900620G1, Chevron #90019	Sampled:	Jun 20, 1990
1370 Tully Rd., Suite 505	Sample Descript:	Soil Composite, #16	Received:	Jun 20, 1990
San Jose, CA 95122	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 20, 1990
Attention: Richard Blaine	Lab Number:	006-3064 A - D	Reported:	Jun 22, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	100	N.D.
Bromoform	100	N.D.
Bromomethane	100	N.D.
Carbon tetrachloride	100	N.D.
Chlorobenzene	100	N.D.
Chloroethane	500	N.D.
2-Chloroethylvinyl ether	100	N.D.
Chloroform	100	N.D.
Chloromethane	100	N.D.
Dibromochloromethane	100	N.D.
1,2-Dichlorobenzene	200	N.D.
1,3-Dichlorobenzene	200	N.D.
1,4-Dichlorobenzene	200	N.D.
1,1-Dichloroethane	100	N.D.
1,2-Dichloroethane	100	N.D.
1,1-Dichloroethene	100	N.D.
Total 1,2-Dichloroethene	100	N.D.
1,2-Dichloropropane	100	N.D.
cis-1,3-Dichloropropene	100	N.D.
trans-1,3-Dichloropropene	100	N.D.
Methylene chloride	200	N.D.
1,1,2,2-Tetrachloroethane	100	N.D.
Tetrachloroethene	100	N.D.
1,1,1-Trichloroethane	100	N.D.
1,1,2-Trichloroethane	100	N.D.
Trichloroethene	100	N.D.
Trichlorofluoromethane	100	N.D.
Vinyl chloride	200	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Elizabeth W. Hackl
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services
1370 Tully Rd., Suite 505
San Jose, CA 95122
Attention: Richard Blaine

Client Project ID: #900620G1, Chevron #90019

QC Sample Group: 0063049 - 0063064

Reported: Jun 22, 1990

QUALITY CONTROL DATA REPORT

ANALYTE	Lead	Cadmium	Chromium	Zinc
Method:	EPA 7421	EPA 6010	EPA 6010	EPA 6010
Analyst:	R. Britton	D. Herrera	D. Herrera	D. Herrera
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Jun 21, 1990	Jun 21, 1990	Jun 21, 1990	Jun 21, 1990
QC Sample #:	006-3064	006-2705	006-2705	006-2705
Sample Conc.:	18	N.D.	0.50	1.2
Spike Conc. Added:	25	1.0	1.0	1.0
Conc. Matrix Spike:	44	7.9	8.3	9.8
Matrix Spike % Recovery:	100	79	78	86
Conc. Matrix Spike Dup.:	44	8.7	9.8	11
Matrix Spike Duplicate % Recovery:	100	87	93	98
Relative % Difference:	0.0	9.6	17	12

SEQUOIA ANALYTICAL

Elizabeth W. Hackl
Project Manager

% Recovery: $\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$

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Reported: Jun 22, 1990

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020/8015	EPA 8020/8015	EPA 8020/8015	EPA 8020/8015
Analyst:	L. Erickson	L. Erickson	L. Erickson	L. Erickson
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Jun 21, 1990	Jun 21, 1990	Jun 21, 1990	Jun 21, 1990
QC Sample #:	006-0718	006-0718	006-0718	006-0718
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.20	0.20	0.20	0.60
Conc. Matrix Spike:	0.17	0.17	0.17	0.56
Matrix Spike % Recovery:	85	85	85	93
Conc. Matrix Spike Dup.:	0.17	0.18	0.17	0.57
Matrix Spike Duplicate % Recovery:	85	90	85	95
Relative % Difference:	0.0	5.7	0.0	2.1

SEQUOIA ANALYTICAL

Elizabeth W. Hackl
Project Manager

$$\text{\% Recovery:} \quad \frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference:} \quad \frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$$

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QC Sample Group: 0063049 - 0063064

Reported: Jun 22, 1990

QUALITY CONTROL DATA REPORT

ANALYTE	Diesel	Total Oil & Grease
Method:	EPA 8015	SM503D&E
Analyst:	K. Mitchell	S. Scott
Reporting Units:	mg/kg	mg/kg
Date Analyzed:	Jun 21, 1990	Jun 21, 1990
QC Sample #:	DI	006-2882
Sample Conc.:	N.D.	N.D.
Spike Conc. Added:	15	5,300
Conc. Matrix Spike:	14	4,600
Matrix Spike % Recovery:	93	87
Conc. Matrix Spike Dup.:	14	4,600
Matrix Spike Duplicate % Recovery:	93	87
Relative % Difference:	0.0	0.0

SEQUOIA ANALYTICAL

Elizabeth W. Hackl
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL

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QC Sample Group: 0063049 - 0063064

Reported: Jun 22, 1990

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-benzene
Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	J. Montierth	J. Montierth	J. Montierth
Reporting Units:	µg	µg	µg
Date Analyzed:	Jun 20, 1990	Jun 20, 1990	Jun 20, 1990
QC Sample #:	006-1162	006-1162	006-1162
Sample Conc.:	N.D.	N.D.	N.D.
Spike Conc. Added:	25	25	25
Conc. Matrix Spike:	30	25	22
Matrix Spike % Recovery:	120	100	88
Conc. Matrix Spike Dup.:	28	26	23
Matrix Spike Duplicate % Recovery:	110	100	92
Relative % Difference:	6.9	0.0	4.4

SEQUOIA ANALYTICAL

Elizabeth W. Hackl
Project Manager

% Recovery: $\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$

TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS

NOTE: Analytical results are reported in Parts Per Million or Parts Per Billion

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	PPM TPH AS GAS	PPM BEN-ZENE	PPM TOL-UENE	PPM ETHYL BEN-ZENE	PPM XY-LENES
TANK PIT														
WALL	7.5	LIA	CAPILLAR	SOIL	06/20/90	900620-G-1	#5	SEQUOIA	006-3052	ND	ND	ND	ND	ND
	7.0	LIA	CAPILLAR	SOIL	06/20/90	900620-G-1	#6	SEQUOIA	006-3053	3.3	0.075	0.012	0.033	0.051
	6.5	LIA	CAPILLAR	SOIL	06/20/90	900620-G-1	#7	SEQUOIA	006-3054	ND	ND	ND	ND	ND
	4.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#8	SEQUOIA	006-3055	ND	0.011	ND	0.025	0.0054
	7.0	LIA	CAPILLAR	SOIL	06/20/90	900620-G-1	#9	SEQUOIA	006-3056	13	0.10	0.30	0.18	0.54
PRODUCT LINES														
PL	3.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#10	SEQUOIA	006-3057	160	2.9	13	4.4	19
	3.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#11	SEQUOIA	006-3058	100	1.7	0.36	5.1	2.9
	3.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#12	SEQUOIA	006-3059	67	2.8	7.7	1.4	9.0
	3.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#13	SEQUOIA	006-3060	5.1	0.84	0.43	0.19	0.74
STOCK	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#14A-D	SEQUOIA	0063062 A-D	3.1	ND	0.0097	0.0086	0.025
	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#15A-D	SEQUOIA	0063063 A-D	11	ND	0.061	0.078	0.47
	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#17A-D	SEQUOIA	0063061 A-D	290	0.33	6.3	4.7	31

Standard = The location conformed to established (professional or regulatory) definitions for the type of sample being collected. Example: a standard RWQCB interface sample.

LIA = The local implementing agency inspector chose a sampling location that was different from a standard (pre-defined) location.

Elective = Elective samples are not taken to comply with regulatory requirements, but to obtain information. Sampling locations may be chosen by the property owner, the contractor, a consultant, etc. The samples may or may not be analyzed.

TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS

NOTE: Analytical results are reported in Parts Per Million or Parts Per Billion

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	PPM TPH AS GAS	PPM BENZENE	PPM TOLUENE	PPM ETHYL BENZENE	PPM XYLENES
WoF	11.5	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#3	SEQUOIA	006-3049	41	0.085	0.33	0.20	1.6
	10.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#4	SEQUOIA	006-3050	ND	ND	ND	ND	ND
	12.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#18	SEQUOIA	006-3051	69	0.29	2.1	1.2	4.0
WoSTK	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#16A-D	SEQUOIA	0063064 A-D	960,000	14,000	99,000	31,000	120,000

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	PPM TPH-HBF DIESEL	PPM TOTAL OIL & GREASE	PPB EPA 8010 COMPOUNDS
WoF	11.5	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#3	SEQUOIA	006-3049	190	3,600	SEE LAB REPORT
	10.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#4	SEQUOIA	006-3050	ND	170	SEE LAB REPORT
	12.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#18	SEQUOIA	006-3051	140	650	ND
WoSTK	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#16A-D	SEQUOIA	0063064 A-D	510	6,400	ND
HYDRAULIC LIFTS												
HL	8.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#1	SEQUOIA	006-3047	ND	100	--
	8.0	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#2	SEQUOIA	006-3048	180	1,300	--

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	PPM CADMIUM	PPM CHROMIUM	PPM LEAD	PPM ZINC
WoF	11.5	LIA	INTRFACE	SOIL	06/20/90	900620-G-1	#3	SEQUOIA	006-3049	ND	39	20	43
	10.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#4	SEQUOIA	006-3050	ND	41	3.1	26
	12.0	ELECTIVE	EXPLOR	SOIL	06/20/90	900620-G-1	#18	SEQUOIA	006-3051	ND	22	2.6	15
WoSTK	12"	STANDARD	BAAQMD-M	SOIL	06/20/90	900620-G-1	#16A-D	SEQUOIA	0063064 A-D	ND	26	18	44

Standard = The location conformed to established (professional or regulatory) definitions for the type of sample being collected. Example: a standard RWQCB interface sample.

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