

April 30, 1998

REPORT

of SOIL AND GROUNDWATER ASSESSMENT ASE JOB NO. 3231

a t

The Oliver Rubber Facility 1200 65th Street Oakland, California

Submitted by:

AQUA SCIENCE ENGINEERS, INC. 2411 Old Crow Canyon Road, #4 San Ramon, CA 94583

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1.0 INTRODUCTION

This report outlines the methods and findings of Aqua Science Engineers, Inc. (ASE)'s various soil and groundwater assessment activities conducted at the Oliver Rubber Company (ORCo) property located at 1200 65th Street in Oakland, California (Figures 1 and 2). The site assessment activities were initiated by ORCo as part of ORCo's Plant I closure activities.

ASE was contracted by ORCo to assist in the evaluation of pit, vault, and concrete floor integrity and document the findings. The determination of pit integrity was ORCo's first step in its methodology to identify subsurface areas that warrant sample collection and analyses. This methodology was discussed with Mr. Amir Gholami of the Alameda County Health Care Service Agency (ACHCSA) during a meeting held at the site on November 20, 1997 and confirmed in a letter dated December 12, 1997 (see Appendix A).

Based on the findings of the integrity evaluations (discussed in Section 3.0 of this report), ASE's March 20, 1998 "Workplan for a Soil and Groundwater Assessment" was submitted to the ACHCSA and was subsequently approved.

2.0 SITE HISTORY

The site has been used since the 1950's primarily as a rubber manufacturing plant. Virgin materials were combined and processed using various mixing machines, milling machines, and conveyors. The rubber product was then either extruded into strip form or molded into tire treads at ORCo's Plant II across Vallejo Street (see Figure 2). The milling machines and conveyor system sat on pedestals above shallow concrete pits. A cooling water system was incorporated within the production area to keep the machines operating at controlled temperatures. This cooling water was then recycled and reused. Chemicals were added to the cooling water to reduce the levels of scaling in the cooling tower, to reduce algae, and to control the pH.

The compound of interest for this investigation is RAFFEX 120. RAFFEX 120 is a heavy petroleum hydrocarbon with the viscosity of tar at elevated temperatures and is used during the production of the rubber for tire treads. A material safety data sheet (MSDS) for RAFFEX 120 is attached in Appendix B. The RAFFEX 120 was stored outside the plant in a subgrade concrete vault, which was heated with steam to maintain the liquid

consistency of the product. The RAFFEX was then pumped inside the building to the process area.

Zinc Stearate was also used during the extrusion of the rubber product to inhibit the product from adhering to itself as it was stacked onto pallets. This activity was performed at the Camelback Conveyor Pit (Figure 2). A copy of the MSDS for Zinc Stearate is included in Appendix B.

Various lubricating oils and greases were used in the milling and mixing machines. Spent lubricating oils and greases were drummed, profiled, and shipped off-site for recycling. Safety solvent cleaning stations were used at the facility during maintenance activities.

Beginning in January 1998 and completed during the week of March 16, 1998, this plant was decommissioned and cleaned by Mid-American Machine, Inc. (MMI) and DECON Environmental Services (DECON), respectively. All plant manufacturing equipment was removed and either shipped to various Oliver plants on the east coast or scrapped as metal salvage. Pressure washing liquids used to clean the building and pits were collected and disposed of off-site. The integrity of the pits and floors were evaluated after cleaning. Based on the findings of the integrity evaluations and ASE's recommendation for sampling locations, where possible, the pits were filled and capped to accommodate scheduled decommissioning activities. The scope of work conducted for this plant closure was discussed and agreed upon by members of Oliver staff and Mr. Amir Gholami of the ACHCSA during his visit to the plant on November 20, 1997. The letter confirming the scope of work is attached in Appendix A.

3.0 VAULTS, PITS AND CONCRETE FLOOR INSPECTIONS AND FINDINGS

On February 10, 1998 and February 17, 1998, ASE inspected the RAFFEX tank vault, various milling and manufacturing machine pits, and the concrete floor surface inside and outside the ORCo Plant I building for determination of concrete integrity (Figure 1). Visual inspection of the concrete surfaces was the sole inspection technique performed by ASE personnel.

The following areas were observed.

3.1 RAFFEX Tank Vault

The dimensions of this vault were approximately 35-feet long, 20-feet wide and 10-feet deep. The walls and floor of this vault were 6 to 8-inches thick concrete. This vault housed three (3) 5,000 gallon tanks which stored RAFFEX. The tanks were heated by a steam source to keep the RAFFEX product in a liquid state.

The floor of this vault appeared to be in relatively fair shape without any obvious holes or significant cracks. The walls of the vault did show signs of integrity failure based on the presence of numerous stains that were generated from shallow groundwater weeping through hairline cracks (see Photographs #1 and #2. The RAFFEX product however never came in contact with the hairline cracks observed on the walls of the vault. joints made the transition from the floor to the walls of the vault. on the pooled water found within the vault, it was apparent that shallow groundwater was entering the vault through these cold joints. A sump was identified in the low part of the vault floor which was used to pump water out of the vault. Based on the presence of water within the vault, it appeared that the integrity of the vault was suspect (see Photograph #3). It was the opinion of ASE that if groundwater could come into the vault, water and RAFFEX may have the ability to leave the vault. recommended collection of soil samples from this vault. Details of these samples are discussed in a later section of this report.

The offloading of the RAFFEX from tank trucks was performed at the RAFFEX offloading manifold as depicted on Figure 2. An underground steel pipe, contained in a secondary steel pipe, was used to transport the RAFFEX from the offloading area to the vaulted tanks. Since the subsurface beneath this pipe could not be inspected, ASE recommended soil samples to be collected upon the removal of this underground piping system. Details of these samples are discussed in a later section of this report.

3.2 Camelback Conveyor Pit

- The concrete bottom and sides of this pit appeared to be free of any evident or visible integrity failures such as cracks. This pit had a metal liner that was removed during decommissioning.
- Two (2) 4-inch diameter pipes were found exiting the pit. These exit pipes created a potential integrity failure situation that could have impacted the subsurface soil.

- Two electrical conduit boxes are located on the sidewall of the pit in two separate areas. The integrity of the boxes and conduits within them are a potential source of integrity failure.
- A 1/2-inch wide crack was observed at the edge of the pit/floor intersection. This crack is located adjacent to the location of one of the exit pipes within the pit which is apparently piped to the local sanitary sewer (see Photograph #4).
- Zinc Stearate was used exclusively in this area during the extrusion of the rubber product to inhibit the product from adhering to itself as it was stacked onto pallets. A copy of the MSDS for Zinc Stearate is included in Appendix B.

Based on ASE's inspection of the pit and the location of the proposed sampling locations, this pit was backfilled and resurfaced on February 12, 1998. ASE recommended that the subsurface soil be investigated by drilling soil borings and collecting soil samples on the outside of the pit in the areas of potential integrity concerns detailed above. Details of these samples are discussed in a later section of this report.

3.3 Cooling Water Pump Pits and Water Storage Pits

- The concrete bottom and sides of these associated pits appeared to be free of any evident or visible integrity failures such as cracks.
- Multiple pipes were found exiting the pits which appeared to transfer cooling water to and from the pump pit to the water storage pits. Because only water traveled within these pipes and pits, it appears to ASE that the potential impact to subsurface soil, if any, does not pose a significant concern.

Based on ASE's inspection of these pits, in which sampling was not recommended, these pits were backfilled and resurfaced on February 12, 1998. ASE did not recommend subsurface soil investigation activities related to these pits.

3.4 Three (3) Milling Machine Pits and Calendar Pit

- The concrete bottom and sides of these pits appeared to be free of any evident or visible integrity failures such as cracks.
- Multiple pipes were found exiting these pits; the termination point of some of these pipes has not been determined. These exit pipes create a potential integrity failure situation that could have impacted the subsurface soil (see Photographs #5 and #6).

- Cracks found around the top surface of several of these pits were noted. The cracks are a potential sign of integrity failure (see Photograph #7).
- The concrete pits which housed these various milling machines are noted to be as much as 3-feet thick, but not less than 2-feet thick, with extreme amounts of structural steel rebar for reinforcement.

Based on ASE's inspection of these pits, the thickness of the concrete beneath the pits and the location of the proposed sampling locations, these pits were backfilled and resurfaced during the week of February 23, 1998. ASE recommended that the subsurface soil associated with these pits be investigated by drilling soil borings and collecting soil samples on the outside of these pits in the areas of potential integrity concerns detailed above. Details of these samples are discussed in a later section of this report.

3.5 Three (3) Exposed-Soil Pits and One (1) Round Pit

- The concrete bottom and sides of several small pits were inspected and found to have dirt bottoms, rather than concrete bottoms, creating a potential pathway for contaminants into subsurface soil (see Photograph #8 and #9).
- Multiple entry pipes existing related to the round pit associated with the 84-inch mill. Due to the unknown use of this pit, there exists a potential concern for subsurface contamination due to the pipes described above.

ASE recommended that the subsurface soil associated with these pits be investigated by drilling soil borings and collecting soil samples adjacent to these pits. Based on the sampling results, which are discussed in a later section of this report, ASE has recommended to ORCo that these pits be backfilled and resurfaced.

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3.6 Pallet Elevator Shaft

A pallet elevator was used at the site as depicted on Figure 2 and Photograph #10. The shaft of the elevator ended at a depth of 25-feet below ground surface. The shaft appeared to be in relatively fair shape upon its removal; however, the use of a soluble oil as the hydraulic fluid led to the possibility of subsurface soil contamination. Although hydraulic fluids are typically exempt as environmental concerns, ASE recommended a soil sample in this area to determine if the hydraulic ram/shaft had impacted the subsurface soil. Based on the sampling results, which are discussed in a later section of this report, ASE has recommended to ORCo that these pits be backfilled and resurfaced.

3.7 Concrete Floor Surface

Two floor cracks of concern were identified within the building; one in area adjacent to a milling pit, and one where used oils were stored prior to off-site disposal. There existed other cracks within the floor surface of the plant; however these various cracks were not in areas of manufacturing operations. ASE recommended that the subsurface soil associated with these cracks be investigated by drilling soil borings and collecting soil samples adjacent to them. Details of these samples are discussed in a later section of this report.

4.0 SCOPE OF WORK

ASE's basic scope of work for this project was to:

- 1) Conduct and document an inspection of the pits, vault and floor for signs of potential environmental concerns.
- 2) Prepare a workplan and site specific health and safety plan for approval by Mr. Amir Gholami and/or Ms. Susan Hugo of the ACHCSA.
- 3) Obtain a subsurface drilling permit from the Alameda County Public Works Agency (ACPWA).
- 4) Call Underground Service Alert (USA) to have all public utilities in the area marked prior to drilling.
- 5) Core drill through the concrete floor in each boring location.

- 6) Hand auger and or hydraulically drill soil borings within/adjacent to areas of concern raised during the inspection period. Collect soil and/or groundwater samples where appropriate.
- Analyze samples collected during this project at a CAL-EPA certified analytical laboratory for all or a combination of the following: RAFFEX 120 by modified EPA Method 8015, hydrocarbon oil & grease (O&G) by Standard Method 5520 EF, volatile organic compounds (VOCs) by EPA Method 8010, and zinc by EPA Method 6010.
- 8) Backfill the borings with neat cement and finish with concrete.
- 9) Prepare a report detailing the methods and findings of the assessment activities. The report will include tabulated analytical results, drawings, and recommendations for remediation as necessary.

Details of the assessment are presented below.

5.0 SOIL BORING DRILLING AND SAMPLE COLLECTION

Prior to geoprobe drilling, ASE obtained a drilling permit from the Alameda County Public Works Agency, Water Resource Section (Permit # 98WR149). A copy of the drilling permit is included as Attachment C.

5.1 Soil and Groundwater Sampling - February 10, 1998

On February 10, 1998, Vickers Concrete Coring cored two 4-inch diameter holes in the concrete floor of the RAFFEX tank vault as shown on Figure 2. Artesian groundwater conditions were encountered upon breaking through the bottom of the vault floor. ASE staff geologist Charlie Rous immediately collected samples of the groundwater using a disposable bailer within the cored borehole. Care was taken to minimize cross-contamination between the groundwater emerging from the borehole and the water ponding on the vault floor. Grab groundwater samples GRAB-A and GRAB-B were collected from each boring. The water samples were collected into precleaned 1-liter glass amber bottles, labeled, and placed into an ice chest containing ice for delivery to the certified analytical laboratory under chain of custody documentation.

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Soil sample GRAB-A @ 3.5' was collected 3.5-feet below the vault floor. The soil sample was collected directly from the auger shoe and stored in a glass sample jar, labeled, and placed into an ice chest containing ice for delivery to the analytical laboratory under chain of custody documentation. A soil sample was not collected from soil boring GRAB-B due to the volume of water flowing from the boring.

Soil analytical results are presented in Table One. RAFFEX was detected in the soil sample at 380 parts per million (ppm). RAFFEX was detected in groundwater samples GRAB-A and GRAB-B at 8 ppm and 28 ppm, respectively. The results of the groundwater sample analyses prompted the need for further delineation of the RAFFEX in groundwater; details are discussed in a later section.

5.1a. Vault Backfilling

ASE recommended that the vault be backfilled and resurfaced due to the following:

- The depth of groundwater, being above the depth of the floor of the vault, would make it extremely difficult to excavate soil, and potentially dangerous to the adjacent railroad line.
- RAFFEX is a very heavy petroleum hydrocarbon, much like tar, with a low solubility and potential for mobility
- The RAFFEX tanks have been removed from the site, and the site is being decommissioned
- The area surrounding the ORCo facility is heavy industrial. It is unlikely that groundwater in the area will ever be used for human consumption.

The ACHCSA, in a telephone conversation, agreed with ASE's recommendation to backfill and resurface the vault. The vault was subsequently backfilled and compacted with a granular fill, followed by a cement cap.

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5.2 Soil Sampling - March 11, 1998

On March 11, 1998, ASE senior project manager David Allen was on site to witness the removal of the underground pipeline that was used to transport the RAFFEX from the offloading manifold to the RAFFEX tank vault (see Photograph #11 and #12). Three soil samples were collected from the open trench using a hand auger. The samples were identified as Trench-A, Trench-B, and Trench-C. Each soil sample was collected approximately 1-foot below the bottom of the former piping system. Analytical results are tabulated on Table One. Results ranged from 3.8 ppm to 35 ppm RAFFEX.

5.3 Soil Sampling - April 8, 1998

On April 6, 1998 Pacific Concrete Cutting of San Bruno, California cored ten (10) 4-inch diameter concrete cores inside and outside the ORCo facility. On April 8, 1998 Kvilhaugh Well Drilling & Pump Company of Concord, California drilled soil borings BH-1 through BH-12 at the site using a Geoprobe hydraulic sampling rig (see Photograph #13). locations are shown on Figure 2. These borings were placed in areas identified by Mr. Amir Gholami of the ACHCSA, ORCo personnel, and Mr. David Allen of ASE, as locations with the greatest potential for the presence of subsurface contaminants. As discussed in Section 5.1, the boring locations were based on the integrity evaluation activities and the results of the grab water samples collected from within the RAFFEX vault. groundwater gradient was assumed to be to the west towards the San Francisco Bay beneath the site. The drilling was directed by ASE staff geologist Charlie Rous.

Soil borings BH-1 through BH-9 were all advanced inside the ORCo Plant I facility. These interior borings were advanced adjacent to pits, cracks, and the elevator shaft. Boring BH-10 was advanced outside, adjacent to the RAFFEX offloading manifold. Each soil boring was continuously cored from the concrete floor surface to the total depth explored for lithologic and hydrogeologic description. Borings BH-1 through BH-4 and BH-8 through BH-10 were advanced to approximately 5 feet below ground surface (bgs). Boring BH-7 was advanced to approximately 6 feet bgs. Due to poor sample recovery, borings BH-5 and BH-6 were advanced to approximately 9 feet bgs to retrieve an adequate soil sample. Borings BH-11 and BH-12 were advanced outside the building, downgradient of the former RAFFEX tank vault, to a depth of 9-feet and 8.5-feet bgs respectively in order to collect groundwater samples.

Undisturbed soil samples were retained approximately 1 foot below the bottom of each equipment footing or pit, or at the capillary fringe, as drilling progressed for possible chemical analysis. The samples were collected by driving a sampler lined with acetate tubes using hydraulic direct push methods. The tube was cut where an analysis was required. The tube was immediately trimmed, sealed with Teflon tape, plastic end caps and duct tape, labeled, sealed in plastic bags and stored in a cooler with wet ice for transport to Chromalab, Inc. of Pleasanton, California (ELAP #1094) under appropriate chain of custody documentation. Analytical results for the soil samples collected on April 8, 1998 are tabulated in Table Two.

5.4 Groundwater Sampling - April 8, 1998

A temporary PVC well casing was placed in Borings BH-11 and BH-12 for the collection of groundwater samples. Groundwater samples were removed from the borings using a pre-cleaned peristaltic pump and new tubing. The groundwater samples were contained in 1-liter amber glass bottles. The samples were labeled, placed in protective foam sleeves, and stored in a cooler with wet ice for transport to Chromalab under appropriate chain of custody documentation. Analytical results for the groundwater samples collected on April 8, 1998 are tabulated in Table Three. Upon completion of the soil and groundwater sampling, the borings were backfilled with neat cement to the ground surface.

All drilling equipment was cleaned with a TSP solution between sampling intervals and between borings to prevent potential cross-contamination.

5.5 Geology

Sediments encountered during drilling generally consisted of clayey silt to the total depth explored of approximately 9 feet bgs, with the exception of the presence of silty sand and gravel in Borings BH-4 through BH-6 and BH-12. Boring logs BH-1 through BH-12 are presented as Appendix D. Petroleum hydrocarbon impacted soil and groundwater were only noted in borings BH-11 and BH-12. Groundwater was encountered at approximately 4 feet bgs in borings BH-11 and BH-12, where it stabilized.

6.0 SOIL ANALYTICAL RESULTS

All of the soil samples described in Section 5 above were analyzed by Chromalab for all or a portion of the following: RAFFEX by modified EPA. Method 8015, hydrocarbon oil & grease (O&G) by Standard Method 5520 EF, volatile organic compounds (VOCs) by EPA Method 8010, and zinc by EPA Method 6010. The analytical results are tabulated in Tables One and Two, and the certified analytical report and chain of custody documentation are included in Appendix E.

TABLE ONE
Soil Analytical Results
All results are in parts per million

SAMPLE ID.	MATRIX	TPH RAFFEX
GRAB-A @ 3.5'	SOIL	380
TRENCH-A	SOIL	3.8
TRENCH-B	SOIL	3 5
TRENCH-C	SOIL	9.6
EPA METHOD		8015M

Notes:

Detectable concentrations are in bold

TABLE TWO Soil Analytical Results All results are in parts per million

SAMPLE ID.	TPH RAFFEX	OIL & GREASE	ZINC	A 11 VOCs
~~~~ <b>~</b>				
BH-1 @ 3'	10	< 50	18	< 5.0 - < 50
BH-2 @ 2.5'	6.4	< 50		< 5.0 - < 50
BH-3 @ 3'	3.1	< 50		< 5.0 - < 50
BH-4 @ 2'	4 0	< 50	- + -	< 5.0 - < 50
BH-5 @ 5'	3 6	< 50		< 5.0 - < 50
BH-6 @ 6'	10	< 50		< 5.0 - < 50
BH-7 @ 5.5'	4.7	< 50		< 5.0 - < 50
BH-8 @ 4'	1 4	260		< 5.0 - < 50
BH-9 @ 4'	5.1	< 50		< 5.0 - < 50
BH-10 @ 3'	7.5			< 5.0 - < 50
BH-11 @ 6'	7 4			< 5.0 - < 50
BH-12 @ 5.5'	2 0			< 5.0 - < 50
EPA METHOD	8015M	5520 EF	6010	8010

Notes:

Detectable concentrations are in bold.

Non-detectable concentrations are noted by the less than sign (<) followed by the laboratory detection limit.

#### 7.0 GROUNDWATER ANALYTICAL RESULTS

The groundwater samples were analyzed by Chromalab for total extractable hydrocarbons as RAFFEX by modified EPA Method 8015. The analytical results are presented below in Table Three, and the certified analytical report and chain of custody forms are included in Appendix E.

# TABLE THREE Groundwater Analytical Results All results are in parts per million

SAMPLE ID.	LOCATION	TPH RAFFEX
CDAD A	TRICING ANALYS OF	
GRAB-A	INSIDE VAULT	8
GRAB-B	INSIDE VAULT	28
BH-11	DOWNGRADIENT OF VAULT	1.2
BH-12	DOWNGRADIENT OF VAULT	4.6
EPA METHOD		8015 <b>M</b>

Note:

Detectable concentrations are in bold

#### 8.0 CONCLUSIONS AND RECOMMENDATIONS

#### 8.1 Former RAFFEX Tank Vault and Associated Piping

RAFFEX was detected in the soil and groundwater in borings BH-11 and BH-12; however, both the soil and groundwater concentrations within these downgradient borings were much less the concentrations of the samples collected from within the vault. The concentrations of RAFFEX found in the soil samples collected from BH-10 and from within the piping trench (Trench A, B, and C) were extremely low, and thus, do not present an environmental concern.

It is the opinion of ASE that for reasons previously mentioned (a) high viscosity and nature of RAFFEX, (b) industrial area, and (c) no use of groundwater in the area, contamination of RAFFEX related to the former vault has been sufficiently characterized and that further assessment or remedial activities are not warranted.

#### 8.2 RAFFEX Within the ORCo Facility

Concentrations of RAFFEX ranging from 3.1 ppm to 40 ppm were identified in soil samples collected at shallow depths below the concrete floor within the ORCo facility.

It is the opinion of ASE, that none of these concentrations present a significant environmental concern, and that that further assessment or remedial activities are not warranted.

#### 8.3 Oil & Grease Within the ORCo Facility

Of the nine soil borings drilled within the ORCo facility, only one contained oil & grease at a concentration of 260 ppm. This boring is located adjacent to a crack in the area previously used to store drums of waste lubricating oils and greases. Borehole BH-7 is approximately 30-feet away and within the same area of drum storage. BH-7 contained non-detectable amounts of oil & grease. Because none of the other boreholes contained concentrations of oil & grease, it is safe to assume that the 260 ppm is localized, and would not present a significant environmental concern because of the concrete surface. It is the opinion of ASE, that the 260 ppm oil & grease in borehole BH-8 does not present a significant environmental concern, and that that further assessment or remedial activities are not warranted.

#### 8.4 Zinc Within the ORCo Facility

Zinc Stearate was used during the extrusion of the rubber product to inhibit the product from adhering to itself as it was stacked onto pallets. This process was performed adjacent to the location of borehole BH-1. Zinc was identified in the soil sample collected from BH-1 at 18 ppm.

It is the opinion of ASE that this concentration is insignificant and requires no further assessment or remedial activities.

#### 9.0 REPORT LIMITATIONS

The results of this assessment represent conditions at the time of the soil and groundwater sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory.

This report does not fully characterize the site for contamination resulting from unknown sources or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

Aqua Science Engineers appreciates the opportunity provide environmental consulting services for this project. Should you have any questions or comments, please feel free to call us at (510) 820-9391.

Respectfully submitted,

AQUA SETENCE ENGINEERS, INC.

Charlie Rous Staff Geologist

David Allen, R.E.A.

Senior Project Manager

No. REA-06211
Expires: 6-98

Attachments

Distribution: Mr. Tom Palmer, The Standard Products Company

Mr. David Kuhre, The Oliver Rubber Company

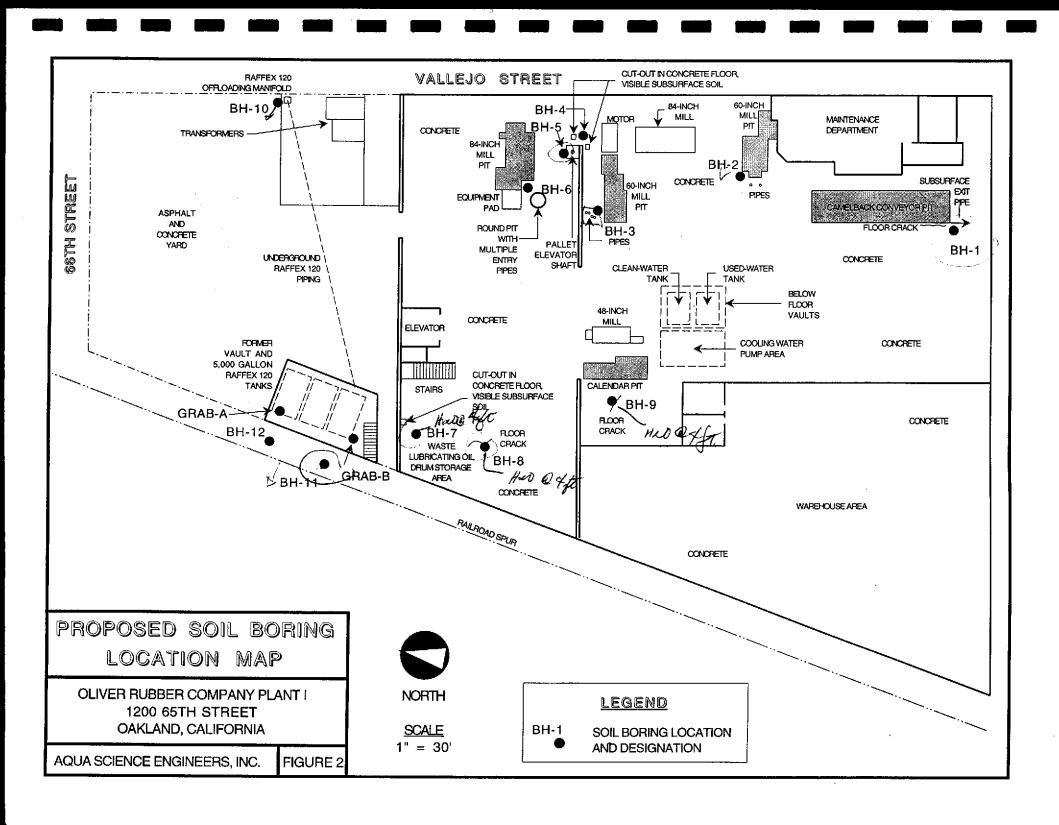
Mr. Amir Gholami, ACHCSA Ms. Susan Hugo, ACHCSA

## SITE LOCATION MAP

OLIVER RUBBER COMPANY PLANT I 1200 65TH STREET OAKLAND, CALIFORNIA

Aqua Science Engineers

Figure 1



PHOTOGRAPHS



Photograph 1 - RAFFEX Tank Vault

Groundwater weeping through hairline cracks.

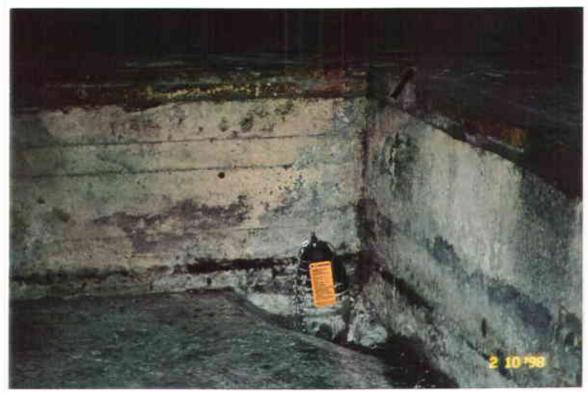


Photograph 2 - RAFFEX Tank Vault

Closeup of weeping crack.



Photograph 3 - RAFFEX Tank Vault Sump



Photograph 4 - Camelback Conveyor Pit Plug inserted in exit pipe; arrow pointing to crack in floor.



Photograph 5 - Milling Machine Pit Exit Pipes



Photograph 6 - Milling Machine Pit Exit Pipes



Photograph 7 - Milling Machine Pit Crack



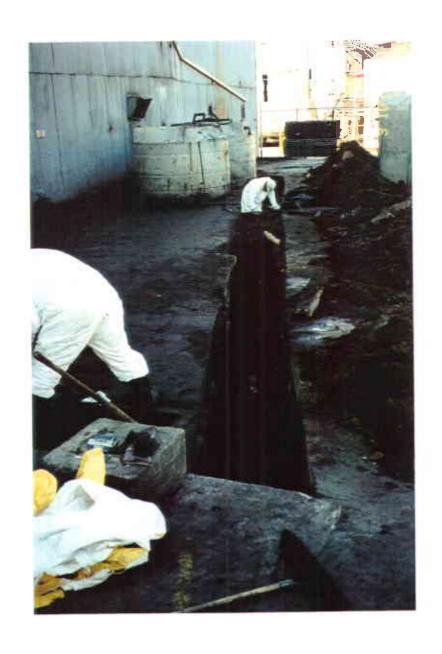
Photograph 8 - Pit with exposed soil bottom.



Photograph 9 - Pit with exposed soil bottom.



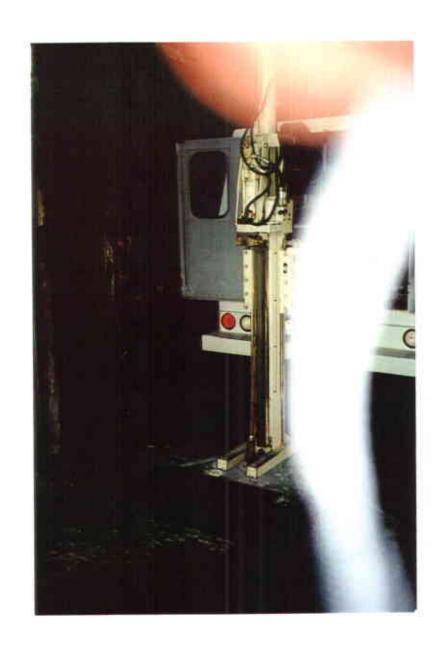
Photograph 10 - Pallet Elevator Shaft



Photograph 11 - RAFFEX Underground Pipeline Removal



Photograph 12 - RAFFEX Underground Pipeline Removal



Photograph 13 - Geoprobe Soil Sampling Rig

## APPENDIX A

Letter Dated December 12, 1997 to ACHCSA



PRODUCT DEVELOPMENT DIVISION: 2401 SOUTH GULLEY ROAD, DEARBORN, MICHIGAN 48124-2486 (313) 274-5024

Amir Gholami via Fax (510) 337-9335 Alameda County Department of Environmental Health 1131 Harbor Bay Parkway Alameda CA 94502

Dear Mr. Gholami

12/12/97

This letter is to summarize the closure activities planned to be conducted at the Oliver Rubber facility located in Oakland and Emeryville. These activities are consistent with our discussions of November 20th when we met on the site to discuss the closure of the facility. Since then, we have further defined these activities with the assistance of contractors involved in this effort. This further definition delayed my response to you by several weeks.

As we discussed, the following hazardous waste closure activities will be conducted within 120 days after the termination of manufacturing operations:

- Obsolete raw materials, drained fluids, clean-up wastes, treatment residues, and other miscellaneous wastes that meet the definition of a California hazardous waste will be properly managed and recycled or disposed as a hazardous waste. An exception will be aqueous waste generated during cleaning activities that will be treated on site using a transportable treatment unit operated under a Permit-by-Rule application from the DTSC. Treated water will be analyzed to ensure compliance with applicable sanitary sewer requirements prior to discharge.
- Areas where oil containing hazardous waste were accumulated or stored will be
  cleaned using high pressure washing, sandblasting, and/or other effective methods.
   With the exception of aqueous wastes, clean-up residues will be properly characterized
  and recycled or disposed as a California hazardous waste as necessary.
- Areas where rubber tire tread buffing dust were accumulated or stored will be cleaned
  by sweeping and/or vacuuming followed by high pressure washing and/or other
  effective measures. With the exception of aqueous wastes, clean-up residues will be
  properly characterized and recycled or disposed as a California hazardous waste as
  necessary.

The DTSC General Information Section in Sacramento will be notified to deactivate
the site's generator ID number. Your office will also be copied on this notification.

We also discussed other environmental closure activities that will be conducted, and they include the following:

- Removal of three 5,000 gallon unregulated tanks and associated underground piping will be conducted. The tanks will be cleaned on site and then recycled as scrap metal.. The vault will be initially scraped and then further cleaned by high pressure washing sandblasting, or other effective method. The integrity of the vault will be determined visually. Signs of questionable integrity will be further evaluated through subsurface soil samples. The majority of the underground piping will be removed, any visually contaminated soils will be removed by excavation, and the resulting excavation will be sampled. The portion of the piping under or through the transformer pad will be closed in place. The need to sample adjacent to this abandoned piping will be determined based on field observations. The Emeryville Fire Department will be notified, and any necessary permits will be obtained. Your office will be notified in advance of the sampling of the piping excavation and, if necessary, of the soils beneath the vault. With the exception of aqueous wastes, clean-up residues will be properly characterized and recycled or disposed as a California hazardous waste as necessary. The piping excavation and the vault will be backfilled and compacted after satisfactory completion of this work. A report will be prepared to summarize this work and findings.
- Cleaning and integrity determinations of equipment and process water pits will be conducted. The example we specifically discussed was the tread press pit that contains water and hydraulic oil. Cleaning will be accomplished by high pressure washing, sandblasting, or other effective methods. Integrity will be determined visually. Signs of questionable integrity will be further evaluated through subsurface soil samples. With the exception of aqueous wastes, clean-up residues will be properly characterized and recycled or disposed as a California hazardous waste as necessary. The pits will be backfilled and compacted after satisfactory completion of this work.
- Equipment will be drained if necessary and cleaned prior to removal from the site.
   Most equipment is expected to be sold for reconditioning/reuse or recycled for the
   scrap metal content. With the exception of aqueous wastes, clean-up residues will be
   properly characterized and recycled or disposed as a California hazardous waste as
   necessary.
- Cleaning of manufacturing areas by high pressure washing, sandblasting, or other
  effective methods will be conducted. With the exception of aqueous wastes, clean-up
  residues will be properly characterized and recycled or disposed as a California
  hazardous waste as necessary.

- Notification was sent to all authorities granting permits or licenses to the site which
  also solicited closure requirements and requirements for termination of permits and/or
  licenses. Termination of permits/licenses will be completed when appropriate.
- Environmental due diligence as associated with possible property transfers will
  continue. The due diligence process has already been completed on a significant
  portion of the site with no significant recognized environmental conditions. The
  remaining portion of the site will most probably also be evaluated by an environmental
  due diligence process. Documentation generated during the activities listed above will
  be referenced as part of the due diligence process.

Thank you for your visit to the site and the recommendations you provided. Dave Kuhre, Steve Brady, and myself look forward to working with you in the future.

Sincerely,

Tom Palmer

The Standard Products Company

cc: D Kuhre via Fax (510) 655-6319

S Brady

R Kessler via Fax (706) 354-1650

## APPENDIX B

Material Safety Data Sheets

SAN JOAQUIN REFINING CO., INC. STANDARD & SHELL STREETS P. O. BOX 5576 BAKERSFIELD CA 93388

(805) 327-4257

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PAGE 1 OF 2

H HAZARD RATING

CODE: 3130 RECTION

M 4 - SEVERE HEALTH
I 3 - SERIOUS FLAMMABILIT
S 2 - MODERATE REACTIVITY

1 - SLIGHT

0 - MINIMAL

HMIS

PERSONAL

MATERIAL SAFETY DATA SHEET ("ESSENTIALLY SIMILAR" TO FORM OSHA 20 MATERIAL SAFETY DATA SHEET)

PRODUCT NAME: RAFFEX 120

CHEMICAL FAMILY: PETROLEUM, HYDROCARBON

CHEMICAL NAME:

CAS NO. 64742-11-6, HEAVY NAPHTHENIC DISTILLATE SOLVENT EXTRACT

TYPICAL COMPOSITION: HEAVY NAPHTHENIC DISTILLATE SOLVENT EXTRACT 100%

EXPOSURE STANDARD, ACGIH TWA & OSHA PEL - OBSERVE 5 MG/M3 (CUBIC METER OF AIR) FOR MINERAL OILS

#### _____ PHYSICAL DATA

INITIAL BOILING POINT, 'F: 550 SPECIFIC GRAVITY (H2O=1): 1.0

VAPOR PRESSURE (MMHg): <0.1 PERCENT VOLATILE, (% BY VOL.): NA VAPOR DENSITY (AIR=1): NA EVAPORATION RATE (ETHYL ETHER=1): <1

APPEARANCE AND ODOR: BLACK LIQUID WITH LITTLE OR NO ODOR V

#### FIRE AND EXPLOSION HAZARD DATA

 $_{
m LEL}$ UEL FLASH POINT - COC, F: 410 FLAMMABLE LIMITS: NDA NDA EXTINGUISHING MEDIA: FOAM, WATER FOG, DRY CHEMICAL, CO2

SPECIAL FIRE FIGHTING PROCEDURES:

DO NO ENTER CONFINED FIRE SPACE WITHOUT PROPER PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS. SEE HAZARDOUS DECOMPOSITION PRODUCTS.

#### REACTIVITY DATA

STABILITY (THERMAL, LIGHT): STABLE INCOMPATABILITY (MATERIALS TO AVOID): MAY REACT WITH STRONG OXIDIZERS. HAZARDOUS DECOMPOSTION PRODUCTS: NORMAL COMBUSTION FORMS CARBON DIOXIDE AND WATER VAPOR, AND MAY PRODUCE OXIDES OF SULFUR AND NITROGEN. INCOMPLETE COMBUSTION CAN PRODUCE CARBON MONOXIDE. HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SAN JOAQUIN REFINING CO. INC. PAGE 2 OF 2 CODE:3130

MATERIAL SAFETY DATA SHEET

#### SPILL OR LEAK PROCEDURES

STEPS IN CASE OF SPILL: CLEAN UP USING ABSORBENT MATERIAL, SUCH AS EARTH OR SAND.

WASTE DISPOSAL METHOD: OBSERVE FEDERAL, STATE, AND LOCAL REGULATIONS COVERING CHEMICAL WASTE SPILLS.

SPECIAL PROTECTION INFORMATION FOR POTENTIAL ROUTES OF ENTRY

EYE: AVOID EYE CONTACT. FLUSH WITH PLENTY OF WATER, IF IRRITATION PERSIS' SEEK MEDICAL ATTENTION.

SKIN: AVOID SKIN CONTACT. IF CONTACT OCCURS, WASH WITH SOAP AND WATER.
RESPIRATORY PROTECTION: IF OPERATING CONDITIONS CREATE AIRBORN CONCENTRATE WHICH EXCEED THE EXPOSURE STANDARD, THE USE OF AN APPROVED NIOSH/OSI RESPIRATOR FOR ORGANIC VAPORS OR AIR-SUPPLIED BREATHING EQUIPMENT IS

VENTILATION: USE ADEQUATE VENTILATION TO KEEP THE AIRBORN CONCENTRATIONS THIS MATERIAL BELOW THE ESTABLISHED EXPOSURE STANDARD.

#### SPECIAL PRECAUTIONS AND SAFE HANDLING

AVOID FIRE, SPARKS, OPEN FLAME. WEAR APPROPRIATE EQUIPMENT TO INSURE THAT PRODUCT DOES NOT CONTACT EYES OR SKIN.

#### HEALTH HAZARD DATA

EYES: THIS MATERIAL IS NOT EXPECTED TO CAUSE EYE IRRITATION.

SKIN: THIS MATERIAL IS NOT EXPECTED TO CAUSE SKIN IRRITATION.

INGESTION: NOT EXPECTED TO BE ACTUTELY TOXIC BY INGESTION. IF SWALLOWED DO NOT INDUCE VOMITING, CALL A PHYSICIAN.

INHALATION: FUMES MAY BE UNPLEASANT AND MAY PRODUCE NAUSEA. REMOVE THE PERSON TO FRESH AIR IF RESPIRATORY DISCOMFORT OCCURS.

EFFECT OF OVEREXPOSURE: INHALATION OF HIGH CONCENTRATIONS MAY CAUSE DIZZINESS, HEADACHE, OR NAUSEA.

#### SUSPECTED CANCER AGENT:

RECOMMENDED.

THIS PRODUCT CONTAINS PETROLEUM OILS SIMILAR TO ONES CATEGORIZED BY THI INTERNATIONAL AGENCY FOR RESEARCH ON CANCER AS CAUSING SKIN CANCER IN MICE WHEN REPEATEDLY APPLIED FOR MOST OF THE LIFETIME OF THE ANIMAL WIND EFFORT MADE TO REMOVE THE OIL BETWEEN APPLICATIONS.

DATE REVISED: 7/94

REVISED BY:

NA = NOT APPLICABLE

NDA = NO DATA AVAILABLE

MATERIAL SAFETY DATA SHEET

SLAB DIP 9035

SE	CTION 1 - IDENTITY	
MANUFACTURER'S NAME	EMERGENCY	TELEPHONE NO
	215-368	-1661
ADDRESS (Number, Striet, City, State, and Zip Code) 601 West 8th Street, Lansdale, F	PA 19446	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYM	
N/A	GS#250 Zinc Steam	ate Dispersion
CHEMICAL FAMILY	FORMUCA	- <del> </del>

<del></del>	SECTION II - HAZARDOUS INGREDIENTS		
CAS NO.	PRINCIPAL HAZARDOUS COMPONENT(S)	Qu,	TUGGET
67-63-0	Isopropyl Alcohol		400 P
34590-94-8	Dipropylene Glycol Methyl Ether		
557-05-1	Zinc Stearate *	28	
*	Requires reporting as Zinc Compound under SARA Title III. Sec		
	313.		

	SECTION III - I	PHYSICAL DATA		
BOILING POINT (F)	N/A	SPECIFIC GRAVITY (M2O = 1)	1	N/A
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT, VOLATILE BY VOLUME (%)	,,,	N/A
VAPOR DENSITY (AIR = 1)	N/A	EVAPORATION RATE		N/A
SOLUBILITY IN WATER	slight	REACTIVITY IN WATER		N/A
APPEARANCE AND ODOR Whitepas	te, Character	istic odor	pH	N/A

SECTION IV - FIRE AN	D EXPLOSION DATA		v
FLASH POINT (Method used) NON-COC 110°F PMCC	FLAMMABLE LUMITS	LOWER	UPPER
EXTINGUISHING MEDIA Foam, CO2 Dry Chemical	AUTO-IGNITION TEMPERATUR	SE N/A	<u> </u>
SPECIAL FIRE FIGHTING PROCEDURES	tained breathing gear wh	en <u>fire-figh</u>	ting
in confined areas.			
UNUSUAL FIRE AND EXPLOSION HAZARDS N/A			

	SE	CTION V - PHYSICAL HAZAROS
STABILITY	UNSTABLE	CONDITIONS TO AVOID
	STABLE	Y
	(Materials to avoid) Stro OMPOSITION PRODUCTS	ong oxidizers  Carbon Monoxide, Carbon Dioxide
HAZAROOUS	MAY OCCUR	CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT OCCU	R X

,	SECTION VI - H	EALTH HAZ	ARD DATA	
THRESHOLD LIMIT VALUE	Nusiance Dust	<del></del>		······································
Effects of Overexposure  1. Inhalation	None expected			
2. Eyes	May cause irritation	<u> </u>		
3. Skin	Prolonged or repeat	ed contact	may cause icr	itation
4. Ingestion	Unknown			
Chemical Listed as Carcino or Potential Carcinogen	gen National Toxicology Program	Yes 🛈 No 🨾	I.A.R.C. Yes Monographs No	O OSHA Yes (1)
OSHA Permissible Exposure Limit	ACGIH Threshold Limit Value		Other Exposure Limit Used	
Emergency and First Aid Procedures		<del></del>		
1. Inhalation	Remove to Fresh ai			
2. Eyes			es and get me	dical attention
3. Skin	Wash with soan and	water		
4. Ingestion	Consult a Physician			
	,			
	SECTION VII - SPII		PROCEDURES	·
	SECTION VII - SPECIA	L PROTECT	TION INFORMATI	ON
RESPIRATORY PROTECTI	ON (Specify type) Not requ	ired		
VENTILATION LOCA	L EXHAUST N/A		SPECIAL	N/A
MECH	IANICAL (General) N/A		OTHER	N/A
PROTECTIVE GLOVES	ed contact	EYE PA	OTECTION GORR	les
OTHER PROTECTIVE EOL	IIPMENT N/A	<u> </u>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
	1717			
	OFOTION IV	COGCIAL DE	PECALITIONS	
PRECAUTION TO BE TAK	SECTION (X - SECTI	Ġ		And the second s
Store indoors - K	eep away from heat, s	packs and	llames.	
OTHER PRECAUTIONS	may contain explosive	vanors ×	een away from	heat spacks
	not cut, puncture or w	•		
repared by T. Ficker	-	Tiffe	Technical Di	
Signature Signature	h.J.	Oate	12/72/88	
	( <u>'</u> 17	vsta	ı	

# APPENDIX C

Drilling Permit



#### ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION

951 TURNER COURT, SUITE 360, HAYWARD, CA 94545-2651

PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262

(510) 670-5248 ALYIN KAN

DRILLING PERM	IT APPLICATION
FOR APPLICANT TO COMPLETE	FOR OFFICE USE
TOR ATTECANT TO COMIDETE	
CATION OF PROJECT	PERMIT NUMBER 98 WR 149
1 Street	WELL NUMBER
8 H a 8 9 4 6 0 8	APN
Ifomia Coordinates Bource R. CCE R. Accuracy ± ft.	PERMIT CONDITIONS
N	Circled Fermit Requirements Apply
LENT	(A) GENERAL
ME DLIVER PUBBER COMPANY	1. A permit application should be submitted so as to
brees 18100 65HL STEELT Phone 654-7716	arrive at the ACPWA office five days prior to
V Oukland Zip 94608	proposed starting date.
PUCANT	(2) Submit to ACFWA within 60 days after completion of permitted work the original Department of Water
me Asua Science Engineers	Resources Water Well Drillers Report or equivalent for
to: Party Kitar Fox (945) 837-4853	well projects, or drilling logs and location sketch for
Bress when der constant Rd 94 Phone (925) 820-9391	geotechnical projects.
V 5 210 94583	2 Permit is void if project not begun within 90 days of approval date.
IPE OF PROJECT	B. WATER SUPPLY WELLS
Vell Constitution Geotechnical Investigation	1. Minimum surface seal thickness is two inches of
Cathodic Protoction D General D	coment grout placed by tramie.
Weter Supply - Contamination - E	2. Minimum seal depth is 50 feet for municipal and
Monitoring	industrial wells or 20 (set for domestic and irrigation
CARAPPART PPR Stinns warms stor	wells unless a lesser depth is specially approved. C. GROUNDWATER MONITORING WELLS
OPOSEDIWATER SUPPLY WELL USE New Dominio C Replacement Domestic C	INCLUDING PIEZOMETERS
Municipali 0 . Irrigation 0	1. Minimum surface seal thickness is two inches of
Industrial D Other O	cement grout placed by tremic.
	2. Minimum seal depth for monitoring wells is the
rilling methodi	maximum depth practicable or 20 feet.
Mud Retary O Air Rotary O Auger C	(D) GEOTECHNICAL
Cable 1 Other & Geophibe	Backfill have hale with compacted comings or heavy
RILLER'S HICENSE NO. C-57 48 2390	bentonite and upper two feet with compacted material.  In areas of known or suspected contamination, tremied
RILLER'S HICERSE NO. COST 10 SOTO	cement grout shall be used in place of compacted cuttings
ELL PROMECTS	E. CATHODIC
Drill Hele Dianteterin. Maximum	Fill hole above anode zone with concrete placed by tremi-
Casing Olderneter in. Depth 15 ft.	F. WELL DESTRUCTION
Surface Seal Depthft. Number 12-	See attached. G. SPECIAL CONDITIONS
ROTECHNICAL PROJECTS	G. SEECIME CONDITIONS
Number of Borings 12 Maximum Hole Direkter 2 in. Depth 15 ft.	λ
STEMATER STARTING DATE 4-8-98	// //
STIMATED COMPLETION DATE 4-8-98	APPROVED DATE 416 14
	•

## APPENDIX D

Boring Logs

Project Name: Oliver Rubber  Driller: Kvilhaug Well Drilling  Type of Rig: Geoprobe  Size of Drill: 2.0* Diameter Direct Push  Logged By: Charlie Rous  Date Drilled: April 8, 1998  Checked By: Robert E. Kitay, R.G. Pt  WATER AND WELL DATA  Depth of Water First Encountered: 4*  Static Depth of Boring: 5.0*  Total Depth of Boring: 5.0*  Type and Size of Soil Sampler: 2.0* I.D. Macrocore Sampler  Type and Size of Soil Sampler: 2.0* I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O DETAIL  Depth of Boring at 5.0*  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O Concrete  Clayer SILT (ML); black; soft; damp; 60-70% silt; 25-55% clay; 5% medium sand; low plasticity; low estimated K; no odor  93; as above; greenish gray; moist; no odor  End of boring at 5.0*  10	SOIL BOR	ING LOG A	AND C	OMPL	ETIO	N DETA	ILS				Boring E	3H-1	
Logged By: Charlie Rous  Date Drilled: April 8, 1998  Checked By: Robert E. Kitay, R.G. Ruman Marker And Well Completed: NA  Depth of Water First Encountered: 4'  Static Depth of Water in Boring: 4'  Total Depth of Boring: 5.0'  Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O Concrete  Clayey SiLT (ML); black: soft; damp: 60-70% silt; 25-35% clay; 5% medium sand; low plasticity; low estimated K; no odor  Concrete  Clayey Silt (ML); black: soft; damp: 60-70% silt; 25-35% clay; 5% medium sand; low plasticity; low estimated K; no odor  End of boring at 5.0'	Project Name: Oliver Rubber Project Location						n: 120	00 65th Stre	et, Oakl	and, CA		Page 1	of 1
Total Depth of Water First Encountered: 4'  Static Depth of Water in Boring: 4'  Total Depth of Boring: 5.0'  Total Depth of Boring: 5.0'  BORING DETAIL DET	Driller: Kvill	riller: Kvilhaug Well Drilling Type of Rig: G					eoprob	oe .	Size of	Drill: 2.0	)" Diameter	Direct Po	ısh
Depth of Water First Encountered: 4'  Static Depth of Water in Boring: 4'  Total Depth of Boring: 5.0'  Type and Size of Soil Sampler: 2.0' I.D. Macrocore Sampler  Type and Size of Soil Sampler: 2.0' I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  Standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O Congrete  Clayey SiLT (ML); black; soft; damp; 60-70% silt; 25-35% clay; 5% medium sand; low plasticity; low estimated K; no odor  93'; as above; greenish gray; moist; no odor  End of boring at 5.0'	Logged By:	Charlie Rous	3		Date	Drilled:	April	8, 1998		Checked	By: Robert	E. Kitay,	R.G.
Static Depth of Water in Boring: 4'  Total Depth of Boring: 5.0'  Total Depth of Boring: 5.0'  SOILROCK SAMPLE DATA  BORING  DETAIL  DETAIL  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  Concrete  Clayey SiLT (ML); black; soft; damp; 60-70% silt; 25-35% clay; 5% medium sand; low plasticity; low estimated K; no odor  20  -10  -15  -15  -15	WATER AN	D WELL DA	ATA				Total	Depth of We	ell Comp				
Total Depth of Boring: 5.0'  Type and Size of Soil Sampler: 2.0* I.D. Macrocore Sampler  Type and Size of Soil Sampler: 2.0* I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O DETAIL  Type and Size of Soil Sampler: 2.0* I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O Concrete  Clayey SiLT (ML); black; soft; damp; 60-70% silt; 25-35% clay; 5% medium sand; low plasticity; low estimated K; no odor  @ 3'; as above; greenish gray; moist; no odor  End of boring at 5.0'	Depth of Wa	ter First Enc	ountere	ed: 4'			Well	Screen Type	and Dia	ameter: N	A	<del></del>	
SOIL/ROCK SAMPLE DATA  Let up and Detail  Description of Lithology  Soll/Rock Sample DATA  Description of Lithology  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  Concrete  Clayey SiLT (ML); black; soft; damp; 60-70% silt; 25-35% clay; 5% medium sand; low plasticity; low estimated k; no odor  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  Concrete  Clayey SiLT (ML); black; soft; damp; 60-70% silt; 25-35% clay; 5% medium sand; low plasticity; low estimated k; no odor  Bind of boring at 5.0'  20	Static Depth	of Water in	Boring:	4'			Well	Screen Slot	Size: N	A			
BORING DETAIL  THOUGH BORING DETAIL DETAIL D	Total Depth	of Boring: 5.0	0'				Туре	and Size of	Soil Sai	mpler: 2.0	I.D. Macr	ocore Sam	npler
The second of th	BOR DET	MG All Secription					epth in Feet	standar density	rd class	ification,	texture, re	lative mo	isture, nation.
-25 	-0 -5 -10 -15 -20 -25		X				- 0 - 5 - 5 - 10 - 15 - 20 - 25	Clayey SIL 25-35% cla estimated I @3'; as ab	ay; 5% i K; no od pove; gre End	medium sa for eenish gray	and; low p	lasticity; l	ow

ł

SOIL BORING L	OG ANI	D COMP	LETIO	N DETA	ILS				Boring E	3H-2
Project Name: Oliver Rubber Project Location						00 65th Stre	et, Oak	land, CA		Page 1 of 1
Driller: Kvilhaug V	Vell Drill	ing	Туре	of Rig: G	eoprot	oe .	Size o	f Drill: 2.0	)" Diameter	Direct Push
Logged By: Charlie	e Rous		Date	Drilled:	April	8, 1998		Checked	By: Robert	E. Kitay, R.G.
WATER AND WE	LL DATA	<u>A</u>	•		Total	Depth of We	ell Comp	leted: NA		
Depth of Water Fire	st Encou	ntered: 4'			Well	Screen Type	and Di	ameter: N	Α	
Static Depth of Wa	ter in Bo	ring: 4'			Well	Screen Slot	Size: N	Α		
Total Depth of Bori	ng: 5.0'				Туре	and Size of	Soil Sa	mpler: 2.0	" I.D. Macro	ocore Sampler
Feet		OIL/ROCK	SAMP	LE DATA	Feet		DESC	RIPTION	OF LITHOLO	OGY
E BORING DETAIL O	Description	Interval Water Level	OVM (ppmv)	Graphic Log	Depth in F	standa density	rd class , stiffne	sification, ss, odor-s	texture, re taining, US	lative moisture, SCS designation.
-0 -10 -15 15 20 25 30	Class "H" Portland Cement	<b>▼</b> :	0		- 0 - 5 - 10 - 15 - 20 - 25 - 30		black; ay; 10-2 ity; low	soft; mois 0% mediu estimated  of boring	st; 50-60% m to coars K; no odo at 5.0'	silt; se sand;

Project Name: Oliver Rubber  Project Location: 1200 65th Street, Oakland, CA  Page 1 of 1  Driller: Kwihaug Well Drilling  Logged By: Chartie Rous  Date Drilled: April 8, 1998  Checked By: Robert E. Kitay, R.G.   WATER AND WELL DATA  Depth of Water First Encountered: 4'  Static Depth of Water in Boring: 4'  Total Depth of Boring: 5.0'  Total Depth of Boring: 5.0'  Total Depth of Boring: 5.0'  Type and Size of Soil Sampler: 2.0' I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation  O  Concrete  Clayey St.T. (ML); dark grayish brown; soft; moist; 60-70% silt; 20-30% clay; 10% fine to medium sand; low plasticity; low estimated K; no odor  10  10  10  10  10  10  10  10  10  1	SOIL BORING LOG AND COMP	LETION DETA	ILS			Boring BH-3
Logged By: Charlie Rous   Date Drilled: April 8, 1998   Checked By: Robert E. Kitay, R.G.	Project Name: Oliver Rubber	Project Location	on: 1200 65th	Street, Oal	dand, CA	Page 1 of 1
WATER AND WELL DATA Depth of Water First Encountered: 4'  Static Depth of Water in Boring: 4'  Total Depth of Boring: 5.0'  Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler  BORING	Driller: Kvilhaug Well Drilling	Type of Rig: G	eoprobe	Size o	of Drill: 2.0	Diameter Direct Push
Depth of Water First Encountered: 4'  Static Depth of Water in Boring: 4'  Total Depth of Boring: 5.0'  Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler  Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  DESCRIPTION OF LITHOLOGY  Soil Depth of Boring: 5.0'  DESCRIPTION OF LITHOLOGY  DESCRIPTION OF LITHOLOGY  Standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  Concrete  Clayey Sil.T (ML); dark grayish brown; soft; moist; 60-70% silt; 20-30% clay; 10% fine to medium sand; low plasticity; low estimated K; no odor  10  15  15  15  20  20  20  20  20  20  20  20  20  2	Logged By: Charlie Rous	Date Drilled:	April 8, 1998	<u>.                                    </u>	Checked I	By: Robert E. Kitay, R.G. **
Static Depth of Water in Boring: 4'  Total Depth of Boring: 5.0'  Total Depth of Boring: 5.0'  SOIL/ROCK SAMPLE DATA  BORING DETAIL  Claysy SILT (ML); dark grayish brown; soft; moist; 60-70% silt; 20-30% clay; 10% fine to medium sand; low plasticity; low estimated K; no odor  BORING DETAIL	WATER AND WELL DATA		Total Depth	of Well Com	pleted: NA	
Total Depth of Boring: 5.0'  Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O  DETAIL  O  DETAIL  O  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O  Concrete  Clayey SILT (ML); dark grayish brown; soft; moist; 60-70% silt; 20-30% clay; 10% fine to medium sand; low plasticity; low estimated K; no odor  End of boring at 5.0'  20  21  22  25  25	Depth of Water First Encountered: 4'		Well Screen	Type and D	iameter: N	4
BORING DETAIL    BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   Concrete Clays SILT (ML); dark grayish brown; soft; moist; 60-70% silt; 20-30% clay; 10% fine to medium sand; low plasticity; low estimated K; no odor   BORING DETAIL   BORI	Static Depth of Water in Boring: 4'	·	Well Screen	Slot Size: I	NA	
BORING DETAIL    Solid   Solid	Total Depth of Boring: 5.0'		Type and Si	e of Soil S	ampler: 2.0"	I.D. Macrocore Sampler
Sching DETAIL  The map of the properties of the		SAMPLE DATA	eet	DES	CRIPTION C	OF LITHOLOGY
Concrete Clayey SILT (ML); dark grayish brown; soft; moist; 60-70% silt; 20-30% clay; 10% fine to medium sand; low plasticity; low estimated K; no odor  End of boring at 5.0'  End of boring at 5.0'  20  25  25  25  25  25  25  25  25  26  27  28  29  20  20  20  20  20  20  20  20  20	Depth in 9  Descriptio  Mater Leve	OVM (ppmv) Graphic Log	Depth in g			
AQUA SCIENCE ENGINEERS, INC.		0	Concr Claye 60-70 sand; - 5 - 10 - 15 20 25 	y SILT (ML % silt; 20-3 low plastici Er	ty; low estired of boring	0% fine to medium mated K; no odor at 5.0'

SOIL BORING LO	N DETA	ILS				Boring E	H-4			
Project Name: Oliver Rubber Project Location						00 65th Stre	et, Oak	land, CA		Page 1 of 1
Driller: Kvilhaug We	ell Drilling		Туре	of Rig: G	eoprob	е	Size o	f Drill: 2.0	)" Diameter	Direct Push
Logged By: Charlie	Rous		Date	Drilled:	April	8, 1998		Checked	By: Robert	E. Kitay, R.G. 🔑
WATER AND WELL	<u>DATA</u>				Total	Depth of We	ell Comp	leted: NA	<u> </u>	
Depth of Water First	Encounte	red: 4'			Well	Screen Type	and Di	ameter: N	A	
Static Depth of Wate	er in Boring	g: 4'			Well	Screen Slot	Size: N	IA		
Total Depth of Boring	g: 5.0'				Туре	and Size of	Soil Sa	mpler: 2.0	" I.D. Macro	ocore Sampler
Feet			SAMP	LE DATA	Feet		DESC	CRIPTION (	OF LITHOLO	OGY
e BORING	Description	Water Level	(Amdd)	Graphic	Depth in F	standa density	rd class , stiffne	sification, ss, odor-s	texture, re taining, US	lative moisture, CS designation.
-0 	Class "H" Portland Cement	<b>_</b> :	0		- 0 - 5 - 10 - 15 - 20 - 25 - 30	and pale y coarse sar	rellow; land; 20-3; mediu	oose; mois 30% silt; 1	et; 60-70% 0% angula ed K; no oc	pebbles;

SOIL BORING LOG AND COM	PLETION DETA	ILS	Boring BH-5
Project Name: Oliver Rubber	Project Location	on: 1200 65th Street, C	Dakland, CA Page 1 of 1
Driller: Kvilhaug Well Drilling	Type of Rig: G	eoprobe Size	e of Drill: 2.0" Diameter Direct Push
Logged By: Charlie Rous	Date Drilled:	April 8, 1998	Checked By: Robert E. Kitay, R.G. R.L.
WATER AND WELL DATA		Total Depth of Well Co	ompleted: NA
Depth of Water First Encountered:	4'	Well Screen Type and	Diameter: NA
Static Depth of Water in Boring: 4'		Well Screen Slot Size:	: NA
Total Depth of Boring: 9.0'		Type and Size of Soil	Sampler: 2.0" I.D. Macrocore Sampler
Description Description Mater Level Mater Level Description Descri	OVM (ppmv) Graphic Log	DI E standard c	ESCRIPTION OF LITHOLOGY lassification, texture, relative moisture, ffness, odor-staining, USCS designation.
-10 -15 -20 -25 -30		and pale yellov coarse sand; 2 non-plastic; me Clayey SILT (I moist; 50-60% and angular peno odor  10  20  25  30	aM); yellowish brown with olive, gray, w; loose; moist; 60-70% medium to 20-30% silt; 10% angular pebbles; edium estimated K; no odor  ML); dark greenish gray to black; stiff; o silt; 30-40% clay; 10% coarse sand ebbles; low plasticity; low estimated K;  End of boring at 9.0'

	Il Drilling Rous  DATA  Encountered: 4' in Boring: 4' : 9.0'	Type of Rig: G  Date Drilled:	April 8, 1998 Checked By: Robert E. Kitay,  Total Depth of Well Completed: NA  Well Screen Type and Diameter: NA  Well Screen Slot Size: NA  Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sa	Push R.G. ^{&amp;v}
Logged By: Charlie Rowater AND WELL Depth of Water First E  Static Depth of Water i  Total Depth of Boring:  ### BORING ####################################	Encountered: 4' in Boring: 4' : 9.0'	Date Drilled:	April 8, 1998 Checked By: Robert E. Kitay,  Total Depth of Well Completed: NA  Well Screen Type and Diameter: NA  Well Screen Slot Size: NA  Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sa	R.G.
WATER AND WELL  Depth of Water First E  Static Depth of Water i  Total Depth of Boring:  BORING DETAIL	DATA Encountered: 4' in Boring: 4' : 9.0'	SAMPLE DATA	Total Depth of Well Completed: NA  Well Screen Type and Diameter: NA  Well Screen Slot Size: NA  Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sa	
Depth of Water First E  Static Depth of Water i  Total Depth of Boring:  ### BORING ####################################	in Boring: 4' : 9.0'		Well Screen Type and Diameter: NA  Well Screen Slot Size: NA  Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sa	mpler
Static Depth of Water i  Total Depth of Boring:  ### BORING ####################################	in Boring: 4' : 9.0'		Well Screen Slot Size: NA  Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sa	mpler
Total Depth of Boring:	: 9.0'		Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sa	mpler
E BORING  STATE  DETAIL	SOIL/ROCK			mpler
BORING  DETAIL	c		t	•
o 5 5 7 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		OVM (ppmv) Graphic Log	DESCRIPTION OF LITHOLOGY  standard classification, texture, relative m density, stiffness, odor-staining, USCS desi	oisture gnation
•10 •15 •20 •25	Class "H" Portland Cement	0	Concrete Silty GRAVEL (GM); yellowish brown with pale yellow, white, and gray; dense; moist; 80% angular gravel; 10% silt; 10% medium to coars sand; non-plastic; medium estimated K; no odor  Clayey SILT (ML); dark greenish gray; soft; mo 60-70% silt; 30-40% clay; low plasticity; low estimated K; no odor  End of boring at 9.0'	

Project Name: Oliver Rubber Driller: Kvilhaug Well Drilling Type of Rig: Geoprobe Size of Drill: 2.0* Diameter Direct Push Logged By: Charlie Rous Date Drilled: April 8, 1998 Checked By: Robert E. Kitay, R.G.**  WATER AND WELL DATA Depth of Water First Encountered: 4* Well Screen Type and Diameter: NA  Static Depth of Water in Boring: 4*  Total Depth of Boring: 6.0*  Type and Size of Soil Sampler: 2.0* I.D. Macrocore Sampler  BORING DETAIL  DESCRIPTION OF LITHOLOGY Standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O Concrete Clayey SILT (ML); dark yellowish brown; soft; moist; 50-60% silt; 20-30% clay; 10% medium sand; 10% angular gravel; low plasticity; low estimated K; no odor  10 -10 -15 -25 -25 -25	Driller: Kvilhaug Well Drilling  Type of Rig: Geoprobe  Size of Drill: 2.0° Diameter Direct Push  Checked By: Robert E. Kitay, R.G.**  WATER AND WELL DATA  Depth of Water First Encountered: 4'  Static Depth of Water in Boring: 4'  Total Depth of Boring: 6.0'  Type and Size of Soil Sampler: 2.0° I.D. Macrocore Sampler  BORING  DETAIL  Depth of Water First Encountered: 4'  SIZE OF DIAMETER AND WELL DATA  Well Screen Type and Diameter: NA  Well Screen Type and Diameter: NA  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O Concrete  Clayey SILT (ML); dark yellowish brown: soft; moist; 50-60% silt; 20-30% clay; 10% medium sand; 10% angular gravel; low plasticity; low estimated K; no odor  Refusal at 6.0'	SOIL BORING LOG AND COMPLETION DETAILS  Boring BH-7						
Date Drilled: April 8, 1998   Checked By: Robert E. Kitay, R.G.   Property Checked By: Robert By: Rober	Date Drilled: April 8, 1998   Checked By: Robert E. Kitay, R.G.   Proceed By: Robert E. Kitay, R.G.   Proceedings of the Well Completed: NA	Project Name: Oliver Rubber	Project Location	n: 1200	65th Stree	et, Oakl	and, CA	Page 1 of, 1
Total Depth of Water First Encountered: 4'  Well Screen Type and Diameter: NA  Well Screen Type and Diameter: NA  Well Screen Slot Size: NA  Total Depth of Water in Boring: 4'  Total Depth of Boring: 6.0'  Type and Size of Soil Sampler: 2.0' I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O Concrete  Concrete:  Concrete:  Description Of Lithology  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O Concrete:  Concrete:  Description Of Lithology  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O Concrete:  Concrete:  Concrete:  Description Of Lithology  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O Concrete:  Concrete:	Total Depth of Well Completed: NA  Well Screen Type and Diameter: NA  Static Depth of Water First Encountered: 4'  Well Screen Stot Size: NA  Total Depth of Boring: 4'  Total Depth of Boring: 6.0'  Total Depth of Well Completed: NA  Well Screen Type and Diameter: NA  Well Screen Stot Size: NA  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moieture, density, stiffness, odor-staining, USCS designation  Concrete  Clayey SILT (ML); dark yellowish brown; soft; moist; 50-60% slit; 20-30% clay; 10% medium sand; 10% angular gravel; low plasticity; low estimated K; no odor  Refusal at 6.0'  15  25  25  25  30  30  30  30  30  30  30  30  30  3	Driller: Kvilhaug Well Drilling	Type of Rig: G	eoprobe		Size of	Drill: 2.0" Diamete	r Direct Push
Depth of Water First Encountered: 4'  Static Depth of Water in Boring: 4'  Total Depth of Boring: 6.0'  Type and Size of Soil Sampler: 2.0' I.D. Macrocore Sampler  Type and Size of Soil Sampler: 2.0' I.D. Macrocore Sampler  Type and Size of Soil Sampler: 2.0' I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  Standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O  Concrete  Clayey SiLT (ML); dark yellowish brown; soft; moist; 50-60% silt; 20-30% clay; 10% medium sand; 10% angular gravel; low plasticity; low estimated K; no odor  Refusal at 6.0'  15  25  25  25  25  25	Depth of Water in Boring: 4'  Static Depth of Water in Boring: 4'  Total Depth of Boring: 6.0'  Type and Size of Soil Sampler: 2.0" LD. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  DETAIL  DESCRIPTION OF LITHOLOGY  Standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  Concrete Clayey SILT (ML); dark yellowish brown; soft; moist; 50-60% stift; 20-30% clay; 10% medium sand; 10% angular gravel; low plasticity; low estimated K; no odor  Refusal at 6.0'  10  -20  -30  -30	Logged By: Charlie Rous	Date Drilled:	April 8,	, 1998		Checked By: Robert	E. Kitay, R.G.
Static Depth of Water in Boring: 4'  Total Depth of Boring: 6.0'  Total Depth of Boring: 6.0'  SOIL/ROCK SAMPLE DATA DESCRIPTION OF LITHOLOGY Standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O  Concrete Clayey SiLT (ML); dark yellowish brown; soft; moist; 50-60% silt; 20-30% clay; 10% medium sand; 10% angular gravel; low plasticity; low estimated K; no odor  Refusal at 6.0'	Static Depth of Water in Boring: 4'  Total Depth of Boring: 6.0'  Type and Size of Soil Sampler: 2.0' LD. Macrocore Sampler  Type and Size of Soil Sampler: 2.0' LD. Macrocore Sampler  Type and Size of Soil Sampler: 2.0' LD. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O	WATER AND WELL DATA		Total D	epth of We	II Comp	leted: NA	
Total Depth of Boring: 6.0'  Type and Size of Soil Sampler: 2.0' 1.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O  Concrete Clayey SiLT (ML); dark yellowish brown; soft; moist; 50-60% silt; 20-30% clay; 10% medium sand; 10% angular gravel; low plasticity; low estimated K; no odor  Refusal at 6.0'  Refusal at 6.0'	Total Depth of Boring: 6.0°  Type and Size of Soil Sampler: 2.0° I.D. Macrocore Sampler  DESCRIPTIONOF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O  O  O  O  O  O  O  O  O  O  O  O  O	Depth of Water First Encountered: 4'		Well S	creen Type	and Dia	ameter: NA	
BORING DETAIL    BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL	BORING DETAIL    SOIL/ROCK SAMPLE DATA   Soil/Rock Sam	Static Depth of Water in Boring: 4'		Well S	creen Slot	Size: N	Α	
BORING DETAIL    Second   Part   Part	BORING DETAIL  THE PROPERTY OF	Total Depth of Boring: 6.0'		Туре а	nd Size of	Soil Sa	mpler: 2.0" I.D. Macr	ocore Sampler
SCRING DETAIL  THE PARTY OF THE	Security Details   Security   Sec		SAMPLE DATA	-eet	DESCRIPTION OF LITHOLOGY			OGY
Concrete Clayery SILT (ML); dark yellowish brown; soft; moist; 50-60% silt; 20-30% clay; 10% medium sand; 10% angular gravel; low plasticity; low estimated K; no odor  Refusal at 6.0'  Refusal at 6.0'	The purpose of the pu	Depth in Descriptic Descriptic Mater Leve	OVM (ppmv) Graphic Log	Depth in F	standar density,	d class stiffne	sification, texture, ress, odor-staining, US	elative moisture, SCS designation.
-30		-10 -15 -20 -25	0	- 5 - 10 - 15 - 20 - 25	Clayey SIL moist; 50-6 sand; 10%	60% sil angula <; no oc	t; 20-30% clay; 10% ir gravel; low plastic dor	% medium

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Project Name: Oliver Driller: Kvilhaug Wel Logged By: Charlie R  WATER AND WELL Depth of Water First E  Static Depth of Water  Total Depth of Boring:  BORING DETAIL  O	Description  Rous  DATA  Encountered in Boring:  5.0'  SOIL/F	Type of Rig:  Date Drilled	April 8, 1998  Total Depth of W  Well Screen Typ  Well Screen Slot  Type and Size o	Size of Drill: 2.0" Diameter Direct Push Checked By: Robert E. Kitay, R.G Vell Completed: NA De and Diameter: NA
Logged By: Charlie R  WATER AND WELL  Depth of Water First E  Static Depth of Water  Total Depth of Boring:  BORING  BORING  DETAIL	Para Encountered in Boring:  5.0'  SOIL/F	Date Drilled  1: 4' 4' OCK SAMPLE DAT	April 8, 1998  Total Depth of W  Well Screen Typ  Well Screen Slot  Type and Size o	Checked By: Robert E. Kitay, R.G.  Vell Completed: NA  De and Diameter: NA  It Size: NA  Of Soil Sampler: 2.0" I.D. Macrocore Sample
WATER AND WELL Depth of Water First E Static Depth of Water Total Depth of Boring:  Total Depth of Boring:  BORING DETAIL	DATA  Encountered in Boring:  5.0'  SOIL/F	: 4' 4' OCK SAMPLE DAT	Total Depth of W Well Screen Typ Well Screen Slot Type and Size o	/ell Completed: NA  pe and Diameter: NA  It Size: NA  of Soil Sampler: 2.0" I.D. Macrocore Sample
Depth of Water First E  Static Depth of Water  Total Depth of Boring:  BORING  G  DETAIL	Encountered in Boring:    5.0'   SOIL/F	OCK SAMPLE DAT	Well Screen Typ Well Screen Slot Type and Size o	oe and Diameter: NA t Size: NA of Soil Sampler: 2.0" I.D. Macrocore Sample
Static Depth of Water  Total Depth of Boring:  BORING  G  DETAIL	Description   De	OCK SAMPLE DAT	Well Screen Slot	t Size: NA of Soil Sampler: 2.0" I.D. Macrocore Sample
Total Depth of Boring:	Description .:	OCK SAMPLE DAT	Type and Size o	of Soil Sampler: 2.0" I.D. Macrocore Sample
Depth in Peet Detail	Description Interval		A Leet A	· · · · · · · · · · · · · · · · · · ·
.⊆ BORING ± DETAIL	Description		7 🐇	DESCRIPTION OF LITHOLOGY
S BORING DETAIL	_	er Leve	.E stands	
		(p Q   vat	standa densit	ard classification, texture, relative moistury, stiffness, odor-staining, USCS designati
-10 -15 -20 -25 -30	Class "H" Portland Cement		30% clay	ILT (ML); black; soft; damp; 50-60% silt; ; 10-20% angular pebbles; low plasticity; ated K; no odor  End of boring at 5.0'

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SOIL BORING LOG AND COMPLETION DETAILS  Boring BH-9								3H-9		
Project Name: Olive	er Rubber		Projec	t Locatio	n: 120	00 65th Stre	et, Oak	land, CA		Page 1 of 1
Driller: Kvilhaug We	ell Drilling		Туре	of Rig: G	eoprob	е	Size o	f Drill: 2.0"	Diamete	r Direct Push
Logged By: Charlie F	Rous	•	Date	Drilled:	April	8, 1998		Checked By	/: Robert	E. Kitay, R.G.
WATER AND WELL	. DATA				Total	Depth of We	ell Comp	oleted: NA		
Depth of Water First	Encounte	red: 4'			Well	Screen Type	and Di	ameter: NA		
Static Depth of Water	r in Boring	g: 4'			Well	Screen Slot	Size: N	IA		
Total Depth of Boring						and Size of	Soil Sa	ampler: 2.0" I	.D. Macr	ocore Sampler
BORING E BORING DETAIL	Description	Water Level	(Nudd)	Graphic Graphic Log	Depth in Feet		rd clas		xture, re	OGY elative moisture, SCS designation.
-0 -10 -10 -15 -15 15 20 25 30	Class "H" Portland Cement	¥	0		0 - 5 - 10 - 15 - 20 - 25 - 30	30-40% c estimated	lay; mor K; no or above; En	dark greenish	n gray; n	•

Project Name: Oliver Driller: Kvilhaug Well Logged By: Charlie Ro WATER AND WELL Depth of Water First E Static Depth of Boring:  Total Depth of Boring:  BORING DETAIL  O  10  10  10  10  10  10  10  10  10	DATA  Encountered: in Boring: 4  5.0'  SOIL/RG	Type Date	of Rig: G Drilled:	April : Total Well: Well: Type	Depth of Well Comp Screen Type and Di Screen Slot Size: N and Size of Soil Sa DESC standard class	f Drill: 2.0" Diameter Checked By: Robert bleted: NA ameter: NA	E. Kitay, R.G.
Logged By: Charlie Ro  WATER AND WELL  Depth of Water First E  Static Depth of Water  Total Depth of Boring:  BORING DETAIL  O  O  O  O  O  O  O  O  O  O  O  O  O	DATA Encountered: in Boring: 4 5.0' SOIL/RG	Date	Drilled:	April a Total Well Well Type	Depth of Well Comp Screen Type and Di Screen Slot Size: N and Size of Soil Sa DESC standard class	Checked By: Robert  bleted: NA  ameter: NA  IA  ampler: 2.0" I.D. Macro  CRIPTION OF LITHOLO  sification, texture, re	E. Kitay, R.G.
WATER AND WELL Depth of Water First E  Static Depth of Water  Total Depth of Boring:  BORING DETAIL  O  O  O  O  O  O  O  O  O  O  O  O  O	DATA Encountered: in Boring: 4 5.0' SOIL/RG	4' CCK SAMP	PLE DATA	Total Well Type Type	Depth of Well Comp Screen Type and Di Screen Slot Size: N and Size of Soil Sa DESC standard class	oleted: NA ameter: NA IA ampler: 2.0" I.D. Macro CRIPTION OF LITHOLO sification, texture, re	ocore Sampler  OGY  elative moisture,
Depth of Water First E  Static Depth of Water  Total Depth of Boring:  BORING DETAIL  O  O  O  O  O  O  O  O  O  O  O  O  O	in Boring: 4 5.0' SOIL/RO	OCK SAMP		Well: Type Type	Screen Type and Di Screen Slot Size: N and Size of Soil Sa DESC standard class	ameter: NA  IA  IA  IMPLEMENTATION OF LITHOLO  Sification, texture, re	OGY elative moisture,
Static Depth of Water  Total Depth of Boring:  BORING DETAIL	Description SOIL/RO SOIL/RO	OCK SAMP		Depth in Feet	Screen Slot Size: N and Size of Soil Sa DESC standard class	IA  ampler: 2.0" I.D. Macr  CRIPTION OF LITHOLO  sification, texture, re	OGY elative moisture,
Total Depth of Boring:  BORING DETAIL  O  O  O  O  O  O  O  O  O  O  O  O  O	Description SOIL/RO	OCK SAMP		Type Depth in Feet	and Size of Soil Sa  DESC  standard class	ampler: 2.0" I.D. Macro	OGY elative moisture,
BORING DETAIL  O	Description Interval			Depth in Feet	DESC	CRIPTION OF LITHOLO	OGY elative moisture,
BORING DETAIL	Description			Depth in Fee	standard class	sification, texture, re	elative moisture,
- 1 - 5	ortiand Cement			<b>-</b> 0			oo oo og naaon.
-15 - - -20 - - -25 - - -30	Class "H" PC	0		- 5 - 5 - 10 - 15 - 20 - 25 - 30	20-30% clay; 20% low plasticity; low @2.5'; as above;	; black; soft; damp; coarse sand to angrestimated K; no odd dark greenish gray; nd of boring at 5.0'	ular pebbies; or

Project Name: Oliver Rubber  Project Location: 1200 65th Street, Oakland, CA  Page 1 of 1  Driller: Kvilhaug Well Drilling  Type of Rig: Geoprobe  Size of Drill: 2.0° Diameter Direct Push  Logged By: Charlie Rous  Date Drilled: April 8, 1998  Checked By: Robert E. Kitay, R.G. Streen Type and Diameter: NA  Depth of Water First Encountered: 4'  Well Screen Type and Diameter: NA  Static Depth of Water in Boring: 4'  Total Depth of Boring: 9.0'  Type and Size of Soil Sampler: 2.0° I.D. Macrocore Sampler  BORING  DETAIL  BORING  DETAIL  Total Depth of Well Completed: NA  Well Screen Stot Size: NA  Type and Size of Soil Sampler: 2.0° I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  Concrete  Clayey SILT (ML); black; soft; damp; 60-70% silt; 20-30% clay; 10% medium sand; low plasticity; low sestimated K; for odor wet at 4'  RAFFEX nodules and pocksts below water table.  Silty SAND (SW); dark grey to black; dense: wet follow in Coarse sand; 20% fine sand; 20% fine sand; 20% silt; 10%-angular gravel; non-plastic; medium estimated K; faint RAFFEX odor  10  End of boring at 9.0'	SOIL BORING LOG AND COMPLETION DETAILS  Boring BH-11						
Logged By: Charlie Rous  Date Drilled: April 8, 1998  Checked By: Robert E. Kitay, R.G. **  WATER AND WELL DATA  Depth of Water First Encountered: 4'  Well Screen Type and Diameter: NA  Static Depth of Water in Boring: 4'  Total Depth of Boring: 9.0'  Type and Size of Soil Sampler: 2.0' I.D. Macrocore Sampler  Type and Size of Soil Sampler: 2.0' I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O  Concrete  Clayey SILT (ML); black; soft; damp; 60-70% slit; 20-30% clay; 10% medium sand; low plasticity; low setting the control of the sand; 20% slit; 10% angular-gravej; non-plastic; medium estimated K; faint RAFFEX oddr  10  End of boring at 9.0'	Project Name: Oliver Rubber	Project Location	on: 1200 65th S	treet, Oal	kland, CA Page 1 c	of 1	
WATER AND WELL DATA  Depth of Water First Encountered: 4*  Well Screen Type and Diameter: NA  Well Screen Stot Size: NA  Total Depth of Water Some Stot Size: NA  Total Depth of Boring: 9.0*  Type and Size of Soit Sampler: 2.0* I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  Concrete  Clayey SILT (ML); black; soft; damp; 60-70% slit; 20-30% clay; 10% medium sand; low plasticity; low estimated K; no odor wet at 4*  Sity SAND (SW); dark grey to black; dense wet; 50% medium to coarse sand; 20% fine sand; 20% elit; 10% angular-gravel; non-plastic; medium estimated K; faint RAFFEX odor  End of boring at 9.0*	Driller: Kvilhaug Well Drilling	Type of Rig: G	eoprobe	Size o	of Drill: 2.0" Diameter Direct Pu	ısh	
Depth of Water First Encountered: 4'  Static Depth of Water in Boring: 4'  Total Depth of Boring: 9.0'  Type and Size of Soit Sampler: 2.0' I.D. Macrocore Sampler  Type and Size of Soit Sampler: 2.0' I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  Standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O  Concrete Clayey SiLT (ML); black; soft; damp; 60-70% silt; 20-30% clay; 10% medium sand; low plasticity; low estimated k; no odor wet at 4'  RAFFEX nodules and pockets below water table.  Silty SAND (SW); dark grey to black; dense; wet; 50% medium to coarse sand; 20% fine sand; 20% silt; 10% angular-gravel; non-plastic; medium estimated K; faint RAFFEX odor  10  End of boring at 9.0'	Logged By: Charlie Rous	Date Drilled:	April 8, 1998		Checked By: Robert E. Kitay, F	R.G.R.	
Static Depth of Water in Boring: 4'  Total Depth of Boring: 9.0'  Total Depth of Boring: 9.0'  Type and Size of Soit Sampler: 2.0" I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  Standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O  Concrete Clayey SILT (ML); black; soft; damp; 60-70% silt; 20-30% clay; 10% medium sand; low plasticity; low estimated K; no odor wet at 4'  BAFEEX nodules and pockets below water table.  Silty SAND (SW); dark grey to black; dense; wet; 50% medium to coarse sand; 20% fine sand; 20% fine sand; 10% any any are green in on-plastic; medium estimated K; faint RAFFEX odor  10  End of boring at 9.0'	WATER AND WELL DATA		Total Depth of	Well Com	pleted: NA		
Total Depth of Boring: 9.0'  Type and Size of Soil Sampler: 2.0' I.D. Macrocore Sampler  DESCRIPTION OF LITHOLOGY  standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.  O  Concrete  Clayey SILT (ML); black; soft; damp; 60-70% silt; 20-30% clay; 10% medium sand; low plasticity; low estimated K; no odor est at 4' relative moisture, stiffness, odor-staining, USCS designation.  O  Concrete  Clayey SILT (ML); black; soft; damp; 60-70% silt; 20-30% clay; 10% medium to coarse sand; 20% fine sand; 20% silt; 1,0% angular gravel; non-plastic; medium estimated K; faint RAFFEX odor  To  End of boring at 9.0'	Depth of Water First Encountered: 4'		Well Screen T	pe and D	iameter: NA		
BORING DETAIL    BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL   BORING DETAIL	Static Depth of Water in Boring: 4'		Well Screen S	ot Size: I	NA		
BORING DETAIL    Section   Detail   Description of Lith-OLOGY   Standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.    Concrete   Clayey SILT (ML); black; soft; damp; 60-70% silt; 20-30% clay; 10% medium sand; low plasticity; low estimated 4; no odor wet at 4'   BAFEX nodules and pockets below water table. Silty SAND (SW); damp; for to black; dense, wet; 50% medium to coarse sand; 20% fine sand; 20% silt; 10% angular-gravel; non-plastic; medium estimated K; faint RAFFEX odor    10	Total Depth of Boring: 9.0'		Type and Size of Soil Sampler: 2.0" I.D. Macrocore Samp				
Sching Detail.    Section   Section		SAMPLE DATA	eet	DES	CRIPTION OF LITHOLOGY	-	
The purpose of the pu	Depth in F PINTER DESCRIPTION	OVM (ppmv) Graphic Log	obth deu				
AQUA SCIENCE ENGINEERS. INC.	-10 -15 -15 20 	7	Concre Clayey 20-30% estimate wet at RAFFE Silty SA 50% me 10% ar faint RA	SILT (ML clay; 109 d K; no clay; 109 d K; no clay; 109 divides ND (SW); dium to clay gular gray FFEX odo	medium sand; low plasticity; odor  and pockets below water table dark grey to black; dense; wet coarse sand; 20% fine sand; 20% rel; non-plastic; medium estimater  and of boring at 9.0'	low  K silt; ed K;	

Project Name: Oliver R  Driller: Kvilhaug Well D  Logged By: Charlie Rous  WATER AND WELL D  Depth of Water First End  Static Depth of Water in  Total Depth of Boring: 8.  BORING DETAIL  BORING DETAIL  Total Depth of Boring: 8.	lubber	Broingt				SOIL BORING LOG AND COMPLETION DETAILS  Boring BH-12						
Logged By: Charlie Rouse  WATER AND WELL DA  Depth of Water First End  Static Depth of Water in  Total Depth of Boring: 8.  BORING DETAIL  O  O  O  O  O  O  O  O  O  O  O  O  O		Frojeci	t Locatio	tion: 1200 65th Street, Oakland, CA Page 1 of 1					Page 1 of 1			
WATER AND WELL DATE OF THE PROPERTY OF THE PRO	Drilling	Туре с	of Rig: G	eoprob	e	Size o	f Drill: 2.0	" Diameter	Direct Push			
Depth of Water First End Static Depth of Water in  Total Depth of Boring: 8.  BORING DETAIL  O O O O O O O O O O O O O O O O O O O	S	Date I	Drilled:	April	8, 1998		Checked	By: Robert	E. Kitay, R.G. 👭			
Static Depth of Water in  Total Depth of Boring: 8.  BORING DETAIL  OPECALIBITION  OPECALIBITION	WATER AND WELL DATA				Depth of We	eli Comp	oleted: NA					
Total Depth of Boring: 8  Depth in Feet  Depth in F	countered: 5.	7'		Well	Screen Type	and Di	ameter: N	A				
Class "H" Portland Cement Description	Boring: 5.3'			Well	Screen Slot	Size: N	۱A					
Class "H" Portland Cement Descriptic	.5'			Туре	and Size of	Soil Sa	ampler: 2.0	" I.D. Macro	ocore Sampler			
Class "H" Portland Cemer	Interval OS Nater Level OS OS	(ALLING)	Graphic Gr Log	Depth in Feet		rd clas	sification,		OGY lative moisture, CS designation.			
-15 - - - -20 - - - -25 - -		O		- 0 - 5 - 10 - 15 - 20 - 25 - 30	silt; 30-40' plasticity; @ 6'; as	% clay; low est above; ebbles;	10% med imated K;  wet; 40-50 low plastic	ium to coar no odor 0% silt; 30- ity; low est				

## APPENDIX E

Certified Analytical Report and Chain of Custody Documentation

Environmental Services (SDB)

March 12, 1998

Submission #: 9803134

AQUA SCIENCE ENGINEERS INC

Atten: Dave Allen

Project: OLIVER

Received: March 11, 1998

Project#: 3231

re: One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: TRENCH-C

Spl#: 174625

Sampled: March 11, 1998

Matrix: SOIL

Extracted: March 11, 1998

Run#:11576 Analyzed: March 11, 1998

REPORTING BLANK BLANK DILUTION RESULT LIMIT RESULT SPIKE **FACTOR** ANALYTE (mg/Kg) (mg/Kg) (mq/Kq)

RAFFEX Note:

9.6 1.0 N.D. 102 Quantitation based on a one point RAFFEX reference standard. The hydrocarbon pattern in this sample matched the RAFFEX reference.

Bruce Havlik

Chemist

Carolyn House

Chemist

Environmental Services (SDB)

March 12, 1998

Submission #: 9803134

AQUA SCIENCE ENGINEERS INC

Atten: Dave Allen

Project: OLIVER

Project#: 3231

Received: March 11, 1998

re: One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: TRENCH-B

Spl#: 174624

Matrix: SOIL

Extracted: March 11, 1998

Sampled: March 11, 1998 Run#:11576 Analyzed: March 11, 1998

ANALYTE

RESULT (mq/Kq) REPORTING LIMIT (mq/Kq)

BLANK RESULT BLANK DILUTION SPIKE FACTOR

(mq/Kq)(왕) 102

RAFFEX

35

2.0

N.D.

Note:

Quantitation based on a one point RAFFEX reference standard. hydrocarbon pattern in this sample matched the RAFFEX reference.

Bruce Havlik

Chemist

Muld hV fr Carolyn House

Chemist

Environmental Services (SDB)

March 12, 1998

Submission #: 9803134

AQUA SCIENCE ENGINEERS INC

Atten: Dave Allen

Project: OLIVER

Project#: 3231

Received: March 11, 1998

re: One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: TRENCH-A

Spl#: 174623 Sampled: March 11, 1998 Matrix: SOIL Run#:11576

Extracted: March 11, 1998 Analyzed: March 11, 1998

REPORTING BLANK BLANK DILUTION RESULT LIMIT RESULT

ANALYTE

(mq/Kq)

SPIKE FACTOR

(mg/Kg) (mg/Kg) 3.8 1.0 N.D. 102 RAFFEX

Quantitation based on a one point RAFFEX reference standard. The hydrocarbon pattern in this sample matched the RAFFEX reference.

Bruce Havlik

Chemist

Carolyn House

Chemist

**Environmental Services (SDB)** 

February 12, 1998

Submission #: 9802149

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER RUBBER

Project#: 3231

Received: February 10, 1998

re: 3 samples for TEPH analysis.

Method: EPA 8015M

Matrix: WATER

Extracted: February 11, 1998

Sampled: February 10, 1998 Run#: 11122 Analyzed: February 11, 1998

Kerosene Motor Oil Raffex #lq2 CLIENT SPL ID (ug/L) (uq/L) (ug/L) 170250 GRAB-A N.D. 0008 N.D.

Quantitation based on a one point RAFFEX reference standard.

hydrocarbon pattern in this sample matched the RAFFEX reference. 170251 GRAB-B

N.D. 28000 Note: Quantitation base upon a one point RAFFEX reference standard.

hydrocarbon pattern in this sample matched the RAFFEX reference.

Matrix: SOIL Extracted: February 11, 1998 Sampled: February 10, 1998 Run#: 11126 Analyzed: February 11, 1998

Kerosene Raffex Motor Oil CLIENT SPL ID (ug/L) (mg/Kg) (mg/Kg) 170252 GRAB-A@3.5' N.D. 380 N.D.

Note: Quantitation based on a one point RAFFEX reference standard. The hydrocarbon pattern in this sample matched the RAFFEX reference.

Reporting Limits 1.0 1.0 50 Blank Result N.D. N.D. N.D. Blank Spike Result (%) 99.8

Bruce Havlik Chemist

Chemist.

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-1@ 3'

*Spl#*: 180006

Matrix: SOIL

Sampled: April 8, 1998

Run#: 12189

Analyzed: April 14, 1998

bumpied. Hprir o, 1990	2002277 -			,	
	RESULT	REPORTING LIMIT	BLANK RESULT		LUTION FACTOR
ANALYTE	(uq/Kg)	(ug/Kg)	(ug/Kg)	(%)	·
BROMODICHLOROMETHANE	N.D.	5.0	N.D.		1
BROMOFORM	N.D.	5.0	N.D.		1
BROMOMETHANE	N.D.	10	N.D.		1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.		11111111111111111
CHLOROBENZENE	${ t N.D.}$	5.0	N.D.	95.1	1
CHLOROETHANE	N.D.	10	N.D.		1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		1
CHLOROFORM	N.D.	5.0	N.D.	<del></del>	1
CHLOROMETHANE	N.D.	10	N.D.		]
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.		<u>1</u>
1,1-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	<del></del>	].
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	106	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.		1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		1 1 1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	<del></del> -	]
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.		
TETRACHLOROETHENE	N.D.	5.0	N.D.		<u>]</u>
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.		]
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.		_
TRICHLOROETHENE	N.D.	5.0	N.D.	102	<u>]</u> 1
VINYL CHLORIDE	N.D.	5.0	N.D.		1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	<del>-</del> -	1
				0	

June Zhao Chemist

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-2@ 2.5'

Spl#: 180007

Matrix: SOIL

Sampled: April 8, 1998

Run#: 12189

Analyzed: April 14, 1998

T					
	RESULT	REPORTING LIMIT	BLANK RESULT		ILUTION FACTOR
ANALYTE	(ug/Kg)	(ug/Kg)	(ug/Kg)	(%)	
BROMODICHLOROMETHANE	N.D.	5.0	N.D.		l
BROMOFORM	N.D.	5.0	N.D.		1
BROMOMETHANE	N.D.	10	N.D.		1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.		1
CHLOROBENZENE	N.D.	5.0	N.D.	95.1	1 1 1 1
CHLOROETHANE	N.D.	10	N.D.		1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		3
CHLOROFORM	N.D.	5.0	N.D.		1
CHLOROMETHANE	N.D.	10	N.D.		1.
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		î 1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.		<u>.</u>
1,1-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	. = =	-
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	106	
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	<del></del>	
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		4
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	- <b>-</b>	-
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	<del>-</del> -	
METHYLENE CHLORIDE	N.D.	5.0	N.D.		3
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.		1
TETRACHLOROETHENE	N.D.	5.0	N.D.	<del>-</del> -	
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.		<u> </u>
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	<del></del>	
TRICHLOROETHENE	N.D.	5.0	N.D.	102	į
VINYL CHLORIDE	N.D.	5.0	N.D.	<del></del>	। स्व हत्रा स्व हत्या हत्य
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		7-1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.		1
				<b>A</b> 2	

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June Zhao Chemist Michael Verona

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-3@ 3'

Spl#: 180008

Matrix: SOIL

Sampled: April 8, 1998

Run#: 12189

Analyzed: April 14, 1998

	RESULT	REPORTING LIMIT	BLANK RESULT	BLANK SPIKE	DILUTION FACTOR
ANALYTE	(ug/Kg)	(ug/Kg)	(ug/Kg)	(%)	
BROMODICHLOROMETHANE	N.D.	5.0	N.D.		1
BROMOFORM	N.D.	5.0	N.D.		1
BROMOMETHANE	N.D.	10	N.D.		1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.		1
CHLOROBENZENE	N.D.	5.0	N.D.	95.1	1 1 1
CHLOROETHANE	N.D.	10	N.D.		1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		1
CHLOROFORM	N.D.	5.0	N.D.		1
CHLOROMETHANE	N.D.	10	N.D.		]
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		2
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.		3
1,1-DICHLOROETHANE	N.D.	5.0	N.D.		j
1,2-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	106	. <u>1</u> . 1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.		1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		j
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		]
METHYLENE CHLORIDE	N.D.	5.0	N.D.		]
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.		1
TETRACHLOROETHENE	N.D.	5.0	N.D.		1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.		1 1 1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.		-
TRICHLOROETHENE	Ñ.D.	5.0	N.D.	102	Ę
VINYL CHLORIDE	N.D.	5.0	N.D.		j
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		]
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	- 7)	1
5		fo	T Aleg A	kewkir	

June Zhao Chemist

Michael Verona

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-4@ 2'

*Spl#:* 180009

*Matrix:* SOIL

Sampled: April 8, 1998

Run#: 12189

Analyzed: April 14, 1998

	RESULT	REPORTING LIMIT	BLANK RESULT	BLANK : SPIKE (%)	DILUTION FACTOR
ANALYTE	<u>(ug/Kg)</u>	<u>(na Ka)</u>	<u>(ug/Kg)</u> N.D.	(%)	
BROMODICHLOROMETHANE	N.D.	5.0	N.D.		1
BROMOFORM	N.D.	5.0	N.D.		1 1 1
BROMOMETHANE	N.D.	10	N.D.		ר ד
CARBON TETRACHLORIDE	N.D.	5.0		95.1	
CHLOROBENZENE	Ŋ.D.	5.0	N.D.	33.1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
CHLOROETHANE	Ŋ.D.	10	N.D.		7
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	<del>-</del> -	
CHLOROFORM	N.D.	5.0	N.D.		⊥ 1
CHLOROMETHANE	N.D.	10	N.D.		
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	- <del>-</del>	<u>ا</u> 1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.		4
1,3-DICHLOROBENZENE	N.D.	5.0	Ŋ.D.		-
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	<del></del>	=
1,1-DICHLOROETHANE	N.D.	5.0	Ŋ.D.		1 1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.		<u>.</u>
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	106	
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.		<u> </u>
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	Ŋ.D.		1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		j 3
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		3
METHYLENE CHLORIDE	N.D.	5.0	N.D.		=
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.		3
TETRACHLOROETHENE	N.D.	5.0	N.D.	- <del>-</del>	-
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	<del>-</del> -	3
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.		
TRICHLOROETHENE	N.D.	5.0	N.D.	102	-
VINYL CHLORIDE	N.D.	5.0	N.D.		
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.		1
		= - <del>-</del>		,	ו

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June Zhao Chemist

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-5@ 5'

*Spl#:* 180010

Matrix: SOIL

Sampled: April 8, 1998

Run#: 12196

Analyzed: April 15, 1998

ANALYTE	RESULT	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK : SPIKE (%)	DILUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	N.D.		1
BROMOFORM	N.D.	5.0	N.D.		1.
BROMOMETHANE	N.D.	10	N.D.		1 1 1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.		1
CHLOROBENZENE	N.D.	5.0	N.D.	94.7	1 1
CHLOROETHANE	N.D.	10	N.D.		1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		]
CHLOROFORM	N.D.	5.0	N.D.		1
CHLOROMETHANE	N.D.	10	N.D.		1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		1 1 1 1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	·	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.		7
1,1-DICHLOROETHANE	N.D.	5.0	N.D.		. 1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.		1 1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	105	
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.		1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		1
CIS-1,3-DICHLOROPROPENE	Ñ.D.	5.0	N.D.		<u>1</u>
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		<u>1</u>
METHYLENE CHLORIDE	N.D.	5.0	N.D.	- +	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	<del>-</del> -	1
TETRACHLOROETHENE	N.D.	5.0	N.D.		1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.		Ĩ
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	***	-
TRICHLOROETHENE	N.D.	5.0	N.D.	103	- -
VINYL CHLORIDE	N.D.	5.0	N.D.		]
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		1
TRICHLOROFLUOROMETHANE	N.D.	5.ŏ	N.D.		1
1112 022201102 10011011211111111	****	5.0		1 1	1

June Zhao Chemist

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AOUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-7@ 5.5'

Spl#: 180011

Matrix: SOIL

Sampled: April 8, 1998

Run#: 12196

Analyzed: April 15, 1998

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	N.D.		
BROMOFORM	N.D.	5.0	N.D.		1
BROMOMETHANE	N.D.	10	N.D.		2
CARBON TETRACHLORIDE	N.D.	5.0	N.D.		1
CHLOROBENZENE	N.D.	5.0	N.D.	94.7	1
CHLOROETHANE	N.D.	10	N.D.		1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		-
CHLOROFORM	N.D.	5.0	N.D.		1
CHLOROMETHANE	N.D.	10	N.D.		1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		<u> </u>
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.		3.
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.		]
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.		5
1,1-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	105	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.ŏ	N.D.		3
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		J
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		- -
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		]
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		]
METHYLENE CHLORIDE	N.D.	5.0 5.0	N.D.		-
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.		-
TETRACHLOROETHENE	N.D.	5.0	N.D.		-
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.		-
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.		
TRICHLOROETHENE	N.D.	5.0	N.D.	103	
VINYL CHLORIDE	N.D.	5.0	N.D.		- -
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		5
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.		1
TICT CHILDROT DOOROND THAT	14.17.	5.0	1, 1, 2,		0 /

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June Zhao Chemist

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-6@ 6'

Spl#: 180012

Matrix: SOIL

Sampled: April 8, 1998

Run#: 12196 Analyzed: April 15, 1998

	RESULT	REPORTING LIMIT	BLANK RESULT	BLANK SPIKE	DILUTION FACTOR
ANALYTE	(ug/Kg)	(ug/Kg)	(ug/Kg)	(%)	
BROMODICHLOROMETHANE	N.D.	5.0	N.D.		1
BROMOFORM	N.D.	5.0	N.D.		1
BROMOMETHANE	N.D.	10	N.D.		1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.		1
CHLOROBENZENE	N.D.	5.0	N.D.	94.7	1 1 1
CHLOROETHANE	N.D.	10	N.D.		1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		]
CHLOROFORM	N.D.	5.0	N.D.		1
CHLOROMETHANE	N.D.	10	N.D.		1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		ĩ
1,2-DICHLOROBENZENE	N.D.	5.0	Ŋ.D.		1
1,3-DICHLOROBENZENE	N.D.	5.0	Ŋ.D.		1
1,4-DICHLOROBENZENE	N.D.	5.0	Ŋ.D.		1
1,1-DICHLOROETHANE	N.D.	5.0	Ŋ.D.		1
1,2-DICHLOROETHANE	N.D.	5.0	Ŋ.D.		]
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	105	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	Ŋ.D.		1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		1
1,2-DICHLOROPROPANE	N.D.	5.0	Ŋ.D.		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	- ~	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	Ŋ.D.		1 -
METHYLENE CHLORIDE	N.D.	5.0	N.D.		Ţ
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.		Ţ
TETRACHLOROETHENE	${f N}$ . ${f D}$ .	5.0	N.D.		= = =
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.		3
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	103	:
TRICHLOROETHENE	N.D.	5.0	N.D.	103	J n
VINYL CHLORIDE	N.D.	5.0	N.D.		1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		⊥ 1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.		, , 1
J		4	or Olla	Deuds	m/

June Zhao Chemist

Michael Veróna

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-8@ 4'

*Spl#:* 180013

Matrix: SOIL

Sampled: April 8, 1998

Run#: 12196

Analyzed: April 15, 1998

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK D SPIKE (%)	ILUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	$\overline{N}$ .D.		1
BROMOFORM	N.D.	5.0	N.D.		1
BROMOMETHANE	N.D.	10	N.D.		1 1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.		1
CHLOROBENZENE	N.D.	5.0	N.D.	94.7	1 1 1
CHLOROETHANE	N.D.	10	N.D.		1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		. 1
CHLOROFORM	N.D.	5.0	N.D.		1
CHLOROMETHANE	N.D.	10	N.D.		1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		1 1 1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.		1 1 1 1 1 1 1 1 1 1 1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	105	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.		1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		1
METHYLENE CHLORIDE	N.D.	5.0	N.D.		1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	<del>-</del> -	1
TETRACHLOROETHENE	N.D.	5.0	N.D.		]
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.		]
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.		3
TRICHLOROETHENE	N.D.	5.0	N.D.	103	3 1
VINYL CHLORIDE	N.D.	5.0	N.D.		1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.		, 1
				$\rightarrow$ $i$ - $I/$	

June Zhao Chemist

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#:

3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-9@ 4'

Spl#: 180014

Matrix: SOIL

Sampled: April 8, 1998

Run#: 12196

Analyzed: April 15, 1998

	RESULT	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
ANALYTE	(ug/Kg) N.D.	<u>(ug/kg)</u> 5.0	$\frac{(ug/kg)}{N.D.}$		1
BROMODICHLOROMETHANE	N.D. N.D.	5.0	N.D.		
BROMOFORM	N.D. N.D.	10	N.D.		ī
BROMOMETHANE CARBON TETRACHLORIDE	N.D.	5.0	N.D.		
CHLOROBENZENE	N.D.	5.0	N.D.	94.7	ī
CHLOROBENZENE CHLOROETHANE	N.D.	10	N.D.		1 1 1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		-
CHLOROFORM	N.D.	5.0	N.D.		1
CHLOROMETHANE	N.D.	10	N.D.		
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		Ę
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.		<u>1</u>
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.		-
1,1-DICHLOROETHANE	N.D.	5.0	N.D.		2
1,2-DICHLOROETHANE	N.D.	5.0	N.D.		3
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	105	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.		Ī
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		ĵ
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		- -
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		-
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		-
METHYLENE CHLORIDE	N.D.	5.0	N.D.		-
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.		-
TETRACHLOROETHENE	N.D.	5.0	N.D.	- <b>-</b>	
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.		_
1,1,2-TRICHLOROETHANE	N.D.	5.0	Ν.D.		
TRICHLOROETHENE	N.D.	5.0	N.D.	103	-
VINYL CHLORIDE	N.D.	5.0	N.D.		-
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		<u>:</u>
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
7	,	4	or ally	Veud	for

June Zhao Chemist

Michael Veroha

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-10@ 3'

Spl#: 180015

Matrix: SOIL

Sampled: April 8, 1998

Run#: 12196

Analyzed: April 15, 1998

	RESULT	REPORTING LIMIT	BLANK RESULT	BLANK SPIKE	DILUTION FACTOR
ANALYTE	(ug/Kg)	(ug/Kg)	(ug/ <u>Kg)</u>	(%)	
BROMODICHLOROMETHANE	N.D.	5.0	N.D.		1.
BROMOFORM	N.D.	5.0	N.D.		1.
BROMOMETHANE	N.D.	10	N.D.		1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.		1
CHLOROBENZENE	N.D.	5.0	N.D.	94.7	1
CHLOROETHANE	N.D.	10	N.D.		1.
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		1
CHLOROFORM	N.D.	5.0	N.D.		1
CHLOROMETHANE	N.D.	10	N.D.		1 1 1 1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.		3.
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.		
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	105	1 1 1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.		1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		1 1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		1
METHYLENE CHLORIDE	N.D.	5.0	N.D.		-
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.		j
TETRACHLOROETHENE	N.D.	5.0	Ŋ.D.		-
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.		Ė
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.		
TRICHLOROETHENE	N.D.	5.0	Ŋ.D.	103	ن <del>م</del>
VINYL CHLORIDE	N.D.	5.0	N.D.		
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.		$\int_{0}^{1}$
<i>√</i>		4	or Olly	Deut	!/ \$01/

June Zhao Chemist

Michael Verona

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AOUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-11@ 6'

Spl#: 180016

Matrix: SOIL

Sampled: April 8, 1998

Run#: 12196

Analyzed: April 15, 1998

<u> </u>		DEDODETNO	BLANK	ו אוד אודע ו	DILUTION
	D TI G 111 M	REPORTING	RESULT	SPIKE	FACTOR
	RESULT	LIMIT			FACIOR
ANALYTE	(ug/Kg)	(ug/Kg)	(ug/Kg)	(%)	
BROMODICHLOROMETHANE	N.D.	5.0	N.D.		1
BROMOFORM	N.D.	5.0	N.D.		1
BROMOMETHANE	N.D.	10	N.D.		1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	~	1 1 1
CHLOROBENZENE	N.D.	5.0	N.D.	94.7	Ţ
CHLOROETHANE	N.D.	10	N.D.		Ţ
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		= = = = = = = = = = = = = = = = = = = =
CHLOROFORM	N.D.	5.0	N.D.		1
CHLOROMETHANE	N.D.	10	N.D.		
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		î.
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.		1 1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	105	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.		1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		j
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		ĵ
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		1
METHYLENE CHLORIDE	N.D.	5.0	N.D.		Ĵ
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.		1
TETRACHLOROETHENE	N.D.	5.0	N.D.		1 1 1 1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.		<u>1</u>
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.		]
TRICHLOROETHENE	N.D.	5.0	N.D.	103	]
VINYL CHLORIDE	N.D.	5.0	N.D.		1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.		1.
TREELEGROUND THE TOTAL T					

Surrogate Recoveries demonstrate Matrix interference. Note:

June Zhao Chemist

Reg Newerson Michael Verona

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Volatile Organics by GC/MS analysis.

Method: 8010 Compounds by Method 8260A Sept 1994

Client Sample ID: BH-12@ 5.5

Spl#: 180017 Sampled: April 8, 1998 Matrix: SOIL

Run#: 12196

Analyzed: April 15, 1998

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK DI SPIKE I (%)	LUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	N.D.		1
BROMOFORM	N.D.	5.0	N.D.		1
BROMOMETHANE	N.D.	10	N.D.		1 1 1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.		1
CHLOROBENZENE	N.D.	5.0	N.D.	94.7	1 1 2
CHLOROETHANE	N.D.	10	N.D.		1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.		
CHLOROFORM	N.D.	5.0	N.D.	<del>-</del> -	1 1 1
CHLOROMETHANE	N.D.	10	N.D.		1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.		ì
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.		1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	<del>-</del> -	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.		1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	105	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.		1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.		1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.		1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		ī
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.		1
METHYLENE CHLORIDE	N.D.	5.0	N.D.		<u>1</u>
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.		1
TETRACHLOROETHENE	N.D.	5.0	N.D.		7_
1,1,1-TRICHLOROETHANE	N.D.	5,0	N.D.		1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.		7
TRICHLOROETHENE	N.D.	5.0	N.D.	103	Ī
VINYL CHLORIDE	N.D.	5.0	N.D.		1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.		1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.		, 1
11.10.1.01.01 1001.01 11 11111	11.2.	,		$i \in \mathcal{I}$	f

June Zhao Chemist

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

ro: One cample for TEDM analysis.

Method: EPA 8015M

Client Sample ID: BH-1@ 3'

Spl#: 180006

Matrix: SOIL

Extracted: April 14, 1998

Sampled: April 8, 1998

Run#:12163

Analyzed: April 15, 1998

RESULT ANALYTE (mq/Kg) REPORTING LIMIT (mg/Kg)

1.0

BLANK RESULT BLANK DILUTION SPIKE FACTOR

(mg/Kg) (%) 100 N.D.

Quantitation based on a one point RAFFEX standard. The hydrocarbon

pattern in this sample match the RAFFEX reference.

RAFFEX

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re. One gample for TEDH analysis

Method: EPA 8015M

Client Sample ID: BH-2@ 2.5'

*Spl#:* 180007

Matrix: SOIL

Extracted: April 14, 1998

Sampled: April 8, 1998 Run#:12163

#:12163 Analyzed: A

Analyzed: April 14, 1998

RESULT

REPORTING LIMIT BLANK RESULT BLANK DILUTION SPIKE FACTOR

ANALYTE RAFFEX (mg/Kg) (mg/Kg) 6.4 1.0

(mg/Kg)

(%) 100 1

FFEX Note:

Quantitation based on a one point RAFFEX reference standard. The hydrocarbon pattern in this sample matched the RAFFEX reference.

Carolyn House

Chemist

Bruce Havlik

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AOUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re. One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: BH-3@ 3'

Spl#: 180008 Sampled: April 8, 1998 Matrix: SOIL

(mq/Kq)

Extracted: April 14, 1998

Run#:12163 Analyzed: April 15, 1998

ANALYTE

REPORTING RESULT LIMIT

BLANK RESHLT BLANK DILUTION

RESULT SPIKE FACTOR (mg/Kg) (%)

RAFFEX
Note:

3.1 1.0 N.D. 100 Quantitation based on a one point RAFFEX reference standard. The hydrocarbon pattern in this sample matched the RAFFEX reference.

(mq/Kq)

Carolyn House

Chemi/st

Bruce Havlik

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

ro: One sample for TEDH analysis.

Method: EPA 8015M

Client Sample ID: BH-4@ 2'

Spl#: 180009

Matrix: SOIL

Extracted: April 14, 1998

Sampled: April 8, 1998

Run#:12163

Analyzed: April 15, 1998

RESULT ANALYTE (mq/Kq) REPORTING LIMIT (mq/Kg)

BLANK DILUTION BLANK RESULT

SPIKE FACTOR <u>(왕)</u>

1

RAFFEX

(mq/Kq)100 N.D.

Quantitation based on a one point RAFFEX standard. The hydrocarbon

pattern in this sample matched the RAFFEX reference.

Bruce Havli

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for TERM analysis.

Method: EPA 8015M

Client Sample ID: BH-5@ 5'

*Spl#:* 180010

Matrix: SOIL

Extracted: April 15, 1998

Sampled: April 8, 1998

Run#:12202

Analyzed: April 16, 1998

RESULT ANALYTE (mg/Kg

REPORTING LIMIT BLANK RESULT BLANK DILUTION SPIKE FACTOR

(mg/Kg) (mg/Kg) (mg/Kg) (%) 36 1.0 N.D. 103

Note:

Quantitation based on a one point RAFFEX reference standard. The hydrocarbon pattern in the sample match the RAFFEX reference.

Carolya House

hemi/st

RAFFEX

Bruce Havlik

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

me: One sample for TEDM analysis.

Method: EPA 8015M

Client Sample ID: BH-7@ 5.5'

*Spl#:* 180011

Matrix: SOIL

Extracted: April 15, 1998

Sampled: April 8, 1998

Run#:12202

Analyzed: April 16, 1998

RESULT (mg/Kg)

REPORTING LIMIT (mg/Kg)

1.0

BLANK RESULT BLANK DILUTION SPIKE FACTOR

(mg/Kg) (%)

Note: (

Quantitation based on a one point RAFFEX reference standard. The hydrocarbon pattern in this sample matched the RAFFEX reference.

Carolyn House

Chemist

RAFFEX

Bruce Havlik

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One gample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: BH-6@ 6'

Sampled: April 8, 1998

Spl#: 180012

Matrix: SOIL

Extracted: April 15, 1998

Run#:12202 Analyzed: April 16, 1998

ANALYTE

RESULT (mg/Kg) REPORTING LIMIT (mg/Kg)

BLANK RESULT BLANK DILUTION SPIKE FACTOR

 $\overline{1}$ 

(mq/Kq)(%)

RAFFEX Note:

10 1.0 Quantitation based on a one point RAFFEX reference standard. The hydrocarbon pattern in the sample matched the RAFFEX reference.

Bruce Havlik

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: BH-8@ 4'

Spl#: 180013

Matrix: SOIL

Extracted: April 15, 1998

Sampled: April 8, 1998

Run#:12202

Analyzed: April 16, 1998

RESULT
ANALYTE (mg/Kg)

REPORTING LIMIT (mg/Kg) BLANK B

BLANK DILUTION SPIKE FACTOR

(mg/Kg) (%) N.D. 103 1

Note: Quantitation based on a one point RAFFEX reference standard. The hydrocarbon pattern matched the RAFFEX reference.

Carolyn House

Chem/st

RAFFEX

Bruce Havlik

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: BH-9@ 4'

Spl#: 180014

Matrix: SOIL

Extracted: April 15, 1998

Sampled: April 8, 1998

Run#:12202

Analyzed: April 16, 1998

ANALYTE

RESULT LIMIT
(mg/Kg) (mg/Kg)

BLANK RESULT BLANK DILUTION SPIKE FACTOR

1

ANALYTE (mg/Kg) (mg/Kg) (%)
RAFFEX 5.1 1.0 N.D. 103
Note: Quantitation based on a one point RAFFEX reference standard. The

hydrocarbon pattern matched the RAFFEX reference.

Caroly House

Chemist

Bruce Havlik

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: BH-10@ 3'

Spl#: 180015

Matrix: SOIL

Extracted: April 14, 1998

Sampled: April 8, 1998

Run#:12163

Analyzed: April 15, 1998

RESULT

REPORTING LIMIT

BLANK BLANK DILUTION RESULT

(mg/Kg)

(mg/Kg)

(mg/Kg)

SPIKE FACTOR

ANALYTE RAFFEX

1.0

(%) 100 1

Quantitation based on a one point RAFFEX standard. The hydrocarbon pattern in this sample matched the RAFFEX reference.

Bruce Havlik

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AOUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#:

Received: April 9, 1998

re: One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: BH-11@ 6'

Spl#: 180016

Matrix: SOIL

Extracted: April 14, 1998

Sampled: April 8, 1998

Run#:12163

Analyzed: April 15, 1998

RESULT

REPORTING LIMIT

BLANK

BLANK DILUTION

ANALYTE

RESULT (mg/Kg)

SPIKE FACTOR

1

(mq/Kq)

(mg/Kg)

N.D.

3231

(%) 100

RAFFEX Note:

1.0 Quantitation based on a one point RAFFEX standard. The hydrocarbon

pattern in this sample matched the RAFFEX reference.

Bruce Havlik

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: BH-12@ 5.5'

Spl#: 180017

*Matrix:* SOIL

Extracted: April 14, 1998

Sampled: April 8, 1998

Run#:12163

Analyzed: April 15, 1998

REPORTING RESULT LIMIT

BLANK RESULT BLANK DILUTION SPIKE FACTOR

ANALYTE (mg/Kg) (mg/Kg) (mg/Kg) (왕) RAFFEX 1.0 100

Note:

Quantitation based on a one point RAFFEX standard. The hydrocarbon

pattern in this sample matched the RAFFEX reference.

Bruce Havlik

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: 11 samples for Oil and Grease analysis.

Method: 5520 E&F

Matrix: SOIL

Extracted: April 16, 1998

Analyzed: April 16, 1998 Sampled: April 8, 1998 Run#: 12230

	OIL & GREASE	REPORTING LIMIT	BLANK RESULT	BLANK SPIKE	DILUTION FACTOR
Spl# CLIENT SPL ID	(mg/Kg)	(mg/Kg)	(mg/Kg)	(왕)	
180006 BH-1@ 3'	N.D.	50	N.D.	97.8	1
180007 BH-2@ 2.5'	N.D.	50	N.D.	97.8	1
180008 BH-3@ 3'	N.D.	50	N.D.	97.8	1
180009 BH-4@ 2'	N.D.	50	N.D.	97.8	1
180010 BH-5@ 5'	N.D.	50	N.D.	97.8	1
180011 BH-7@ 5.5'	N.D.	50	N.D.	97.8	1
180012 BH-6@ 6'	N.D.	50	N.D.	97.8	1
180013 BH-8@ 4'	260	50	N.D.	97.8	1
180014 BH-9@ 4'	N.D.	50	N.D.	97.8	1
180015 BH-10@ 3'	N.D.	50	N.D.	97.8	1
180016 BH-11@ 6'	N.D.	50	N.D.	97.8	1

Analyst

Michael Verona

Operations Manager

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for Miscellaneous Metals analysis.

Method: EPA 3010A/3050A/6010A Nov 1990

Client Sample ID: BH-1@ 3'

Spl#: 180006

Matrix: SOIL

Extracted: April 14, 1998

Sampled: April 8, 1998

Run#: 12172 Analyzed: April 14, 1998

RESULT

REPORTING LIMIT

BLANK

BLANK DILUTION

(mg/Kg)

(mg/Kg)

RESULT (mg/Kg)

SPIKE FACTOR

<u>ANALYT</u>E

1.0

(왕)

ZINC

Barekzai

Chemist

Inorganics Supervisor

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Received: April 9, 1998

Project#: 3231

re: One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: BH-11

Spl#: 180018

Matrix: WATER

Extracted: April 13, 1998

Sampled: April 8, 1998

Run#:12149

Analyzed: April 16, 1998

REPORTING BLANK BLANK DILUTION RESULT LIMIT RESULT SPIKE FACTOR ANALYTE (ug/L) (ug/L) (ug/L) RAFFEX 1200

Note:

Quantitation based on a one point RAFFEX reference standard. Thehydrocarbon pattern in this sample matched the RAFFEX reference.

Bruce Havli

Environmental Services (SDB)

April 16, 1998

Submission #: 9804168

AQUA SCIENCE ENGINEERS INC

Atten: Charlie Rous

Project: OLIVER

Project#: 3231

Received: April 9, 1998

re: One sample for TEPH analysis.

Method: EPA 8015M

Client Sample ID: BH-12

Spl#: 180019

Matrix: WATER

Extracted: April 13, 1998

Sampled: April 8, 1998

Run#:12149

Analyzed: April 16, 1998

ANALYTE

RESULT

REPORTING LIMIT

BLANK RESULT BLANK DILUTION SPIKE

(ug/L)

(ug/L)

(ug/L)

FACTOR

RAFFEX

4600

62

N.D.

61.2

Note:

Quantitation based on a one point REFFEX reference standard. hydrocarbon pattern in this sample matched the Raffex reference.

Chemist

Bruce Havlik

1170249-170253 Chain of Custody, 38132 Aqua Science Engineers, Inc. 2411 Old Crow Canyon Road, #4, DATE 2/10/98 San Ramon, CA 94583 (510) 820-9391 - FAX (510) 837-4853 OLIVER RUBBER NO. 3231 (PHONE NO.) PROJECT NAME SAMPLERS (SIGNATURE) 65th Avz. ADDRESS 1150 DAKLAND 8209391 ANALYSIS REOUEST PURCABLE HALOCARBONS (EPA 601/8010) VOLATILE ORGANICS (EPA 624/8240) SPECIAL INSTRUCTIONS: TITLE 22 (CAM 17) (EPA 6010+7000) TCLP (EPA 1311/1310) BASE/NUETRALS, (EPA 625/8270) 24 hr TAT REACTIVITY CORROSIVITY IGITABILITY Regults by Thursday Am NO. OF SAMPLE ID. DATE TIME MATRIX SAMPLES 2/10/48 11:15 H20 3 VOA GRAB-A 11:15 GRAB-A 3 VOA 11:45 GRAB - B 11:45 GRAB-B SURM #: 9802149 REP: PM GRAB-A@3.5'210/48 12:00 CLIENT: ASE 02/11/98 TO 02/19/98 12:15 GRAB-B@31 REF #:38132 RAFFEX 120 2/10/41/12-30 COMMENTS: RECEIVED BY LABORATORY: RELINQUISHED BY: RELANOUISHED BY: RECEIVED BY: 24 W 7AT (lime) RUN RAFFEX (time) (signature) (time) (signature) (signature) (signature) MinuNavan 62/16 FIRST, THEN RON

(printed name)

Company-

(date)

(printed name)

Company/

(printed name)

Company-

OTHER SAMPLIES AND

KOMPARE TO RAFFEX

harlis Rous 2/10/98

(printed name)

Company. ASE

CLIENT: ASE

03/12/98

REF #:38649

## **Chain of Custody**

SAMPLE ID. DATE TIME MATRIX PRESERV.  PROJECT INFORMATION  SAMPLE HECRIPT  SAMPLE HECRIPT  PROJECT INFORMATION  SAMPLE HECRIPT  SAMPLE HE	Environmental Service	es (SDB) (DOHS 1094)										DAT	E				PAGE .		(	or	
PROJECT INFORMATION  SAMPLE ID  SAMPLE ID  SAMPLE HE CRIPT  SAMPLE ID  SAMPLE HE CRIPT  SAMPLE INFORMATION  SAMPLE HE CRIPT  SAMPLE ID  SAMPLE HE CRIPT  SAMPL	DA16 A11	(4)							ANA	ALYSIS		At			7						
TREACH - A 3/4 9:15 SOIL  TREACH - B 9:25  TREACH - C 9:40  TOTAL NO OF CONTAINERS  HEAD SPACE  PROJECT INJUST BY  TOTAL NO OF CONTAINERS  HEAD SPACE  RECT BOOD CONDITIONICOLD  CONFORMS TO RECORD  TAT STANDARD  TAT STANDARD  24 48 72 OTHER  SPECIAL INSTRUCTIONISCOMMENTS  N 9 CO DESCRIPTION TO THE COMPANY  RECEIVED BY  TOTAL NO OF CONTAINERS  HEAD SPACE  RECT BOOD CONDITIONICOLD  CONFORMS TO RECORD  TAT STANDARD  24 48 72 OTHER  SPECIAL INSTRUCTIONISCOMMENTS  N 9 COMPANY  RECEIVED BY  TRECEIVED BY  TRECEIVED BY  TRECEIVED BY  TRECEIVED BY  RECT BOOKATURE  TRICE  SONATURE  TRICE  TRACE  TRACE	COMPANY TOWA SC ADDRESS SAN 124	) 5030, 8015) 2, 8020)	PH 8015)	OMATICS 3020) LOCARBONS	ANICS 524.2)	, ACIDS 170, 525)	(EASE E+F)			<		Zu,	7) .	UTANT			ドイ	YEX		ONTAINERS	
TREACH - A 3/4 9:15 Soll  TREACH - B 9:25  TREACH - C 9:40  TOTAL NO OF CONTAINERS HEAD SPACE RECD GOOD CONDITIONICOLD TOTAL STANDARD TAT STANDARD TAT STANDARD TAT STANDARD TAT STANDARD TAT STANDARD TOTAL NO TO	SAMPLERS (SIGNATURE)	(FAX NO.)	PH - Gasoline EPA 5030, 8015 PH - Gasoline (/	PH - Diesel, TEI EPA 3510/3550,	URGEABLE ARG TEX (EPA 602, 8 URGEABLE HA	OLATILE ORG. EPA 624, 8240,	ASE/NEUTRAL EPA 625/627, 8	OTAL OIL & G	PCB EPA 608, 8080	PESTICIDES EPA 608, 8080)	OTAL RECOVE		LUFT METALS: Cd, Ci	CAM METALS (	PRIORITY POL METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)	8015 1	2		NUMBER OF CO
PROJECT INFORMATION  SAMPLEHECIENT  PROJECT INFORMATION  SAMPLEHECIENT  PROJECT INFORMATION  TOTAL NO. OF CONTAINERS  FROZECI INFORMATION  TOTAL NO. OF CONTAINERS  FROZECI INFORMATION  TOTAL NO. OF CONTAINERS  FROZECI INFORMATION  THE SIGNATURE  TOTAL NO. OF CONTAINERS		TIME MATRIX PRESERV.	F = F \$		<u> </u>	> =	8 0										-	Y		一	
PROJECT INFORMATION  SAMPLEHECIENT  PROJECT INFORMATION  SAMPLEHECIENT  PROJECT INFORMATION  TOTAL NO. OF CONTAINERS  FROZECI INFORMATION  TOTAL NO. OF CONTAINERS  FROZECI INFORMATION  TOTAL NO. OF CONTAINERS  FROZECI INFORMATION  THE SIGNATURE  TOTAL NO. OF CONTAINERS	TRENCH -A 3/11	9:15 SOIL	ļ	1 -							-				-			/			
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180006-180019 Aqua Science Engineers, Inc.

(510) 820-9391 - FAX (510) 837-4853

2411 Old Crow Canyon Road, #4,

San Rainon, CA 94583

SUBM 4: 9804168 REP: PM

CLIENT: ASE

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DATE 4.9.98 PAGE / OF 2

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Aqua Science Engineers, Inc. 2411 Old Crow Canyon Road, #4, San Ramon, CA 94583 (510) 820-9391 - FAX (510) 837-4853

# Chain of Custody

PROJECT NAME __OLIVER (PHONE NO.) SAMPLERS (SIGNATURE) ADDRESS _ OAKLAND 820.9391 ANALYSIS REQUEST PURGABLE HALOCARBONS (EPA 601/6010) PURGABLE AROMATICS (EPA 602/C020) OIL & GREASE (EPA 5520 EAR) OF 1 VOLATILE ORGALICS SPECIAL INSTRUCTIONS: TPH-GASOLINE/BTEX TITLE 22 (CAN 17) (EPA 6010+7000) STIC- CAM WET : (EPA 3510/8015) EPA 624/8240) BASE/NUETRALS, ( EFA 625/8270) See Connents NO. OF DATE TIME MATRIX SAMPLE ID. SAMPLES BH-12055 4.8 13:25 501L 2(9,5) 12:00 Water BH-11 4.8 2(4,6) 4.8 13:30 Water 13H-12 HECETVED BY LABORATORY: COMMENTS: RELINQUISHED BY: RECEIVED BY: Analyze the liters RELINQUISHED BY: 13: 4S (time) (signature) (signature) (signature) D. Allen STANDARD (printed name) (printed name) (printed name) (printed name) T.A.T Company Company-Company. SE Company-