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Corrected report

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TECHNICAL SUMMARY, GROUNDWATER MONITORING REPORT for QUARTER 3 2005, and WORK PLAN FOR FEASIBILITY STUDY/REMEDIAL INVESTIGATION

4919 Tidewater Avenue
Oakland, California
ERAS Project Number 05-001-02

Prepared for:

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Prepared by:

ERAS Environmental
November 7, 2005

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CERTIFICATION

This **Technical Summary, Groundwater Monitoring Report for Quarter 3 2005, and Work Plan for Feasibility Study / Remedial Investigation** for 4919 Tidewater Avenue in Oakland, California, has been prepared by ERAS Environmental, Inc. (ERAS) under the professional supervision of the Registered Geologist whose signature appears hereon.

This report was prepared in general accordance with the accepted standard of practice that exists in Northern California at the time the investigation was performed. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the conditions present. More extensive studies, including additional environmental investigations, can tend to reduce the inherent uncertainties associated with such studies.

Our firm has prepared this report for the Client's exclusive use for this particular project and in accordance with generally accepted professional practices within the area at the time of our investigation. No other representations, expressed or implied, and no warranty or guarantee is included or intended.

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Respectfully submitted,

Gail M. Jones
California Registered Geologist 5725

November 7, 2005

1.0 TECHNICAL SUMMARY

1.1 INTRODUCTION

This report pertains to the environmental conditions at the Heitz Trucking (formerly DiSalvo Trucking) facility at 4919 Tidewater Avenue (the Property) located in Oakland, California as shown on **Figure 1**. This technical summary includes results of all previous soil and groundwater investigation, remediation and monitoring projects, and presents a Site Conceptual Model (SCM).

The current layout of the Property is shown on **Figure 2**. The Property contains a large concrete warehouse and loading dock building, an office trailer and maintenance building. Outside yard areas are located along the northwest side of the building and a much larger outside yard area

The current owner of the Property, Mr. Charles Lawlor, is planning to demolish the current buildings and after the required remediation, the Property is planned to be redeveloped for residential purposes.

The Property is listed as a fuel leak case and is being overseen by the Alameda County Environmental Health Department (ACEHD).

1.2 PREVIOUS ENVIRONMENTAL WORK

Based on conversations with Mr. Lawlor, several underground diesel fuel tanks were used to service remote fueling hydrants that were located in the outside yard area. The piping was not coated and the saline groundwater subsequently corroded the pipes. Mr. Lawlor estimated that as much as 40,000 gallons of diesel fuel may have been lost before the USTs and associated piping was removed.

ERAS conducted file reviews at State Water Resources Control Board LUFT Fund and ACEHD to obtain all available reports. Some of these reports appeared to be only partially complete with some pages of appendices missing. **Appendix A** presents a list of all reports in the public files regarding this site.

The following is a summary of the UST removal, and subsequent remediation, investigation and monitoring that has been conducted at the Property. These activities were performed by Geo-Environmental Technology (GET), Gen-Tech Environmental (Gen-Tech), PIERS Environmental (PIERS) and Environmental Restoration Services (Enrest). Results of soil and groundwater grab-samples collected from borings and wells at the Property are summarized in **Tables 1 and 2**.

1994 Summary Report

The following historical information was obtained from a report by Gen-Tech Environmental entitled Summary Report of Previous Site Activity, Di Salvo Trucking, 4919 Tidewater Avenue, Oakland, California dated March 24, 1994.

GET removed three underground storage tanks (USTs) from the Property in March 1989. These included 10,000-gallon diesel, 5,000 gallon diesel and 280 gallon waste oil tank. During later over-excavation a fourth UST of 550-gallon capacity was discovered and removed. The locations of the former USTs and extent of the excavation are shown on **Figure 2**.

Approximately 3,000 cubic yards of contaminated soil was excavated from the area around the former USTs and stockpiled on-site for treatment. During the over-excavation GET discovered a ten-inch diameter product pipeline leading from the USTs to the building as shown on the figures in **Appendix B.** The pipe broke and leaked 3,000 gallons of diesel-like fuel into the excavation. During the excavation activities, this material as well as other free-phase fuel was pumped from the excavation for disposal. Samples DS-1 through DS-6 were collected from the over-excavated pit. These locations are shown on **Figure 3.** Analytical results of these soil samples are included in **Table 1**.

Excavated soil was treated on-site using an enhanced biodegradation process. This soil was piled into a landscape berm between Tidewater Avenue and the Property boundary. Contaminated groundwater was removed from the excavation and disposed.

In April 1989 a product collection well (called a recovery sump on the Site Plan) and recovery trench was installed that operated from April to August 1989. A total of an estimated 2,400 gallons of diesel fuel and 20,000 gallons of contaminated groundwater were removed in total from the UST excavation, recovery trench and collection well.

In May 1989 GTE hand-augured 22 boreholes (BH-1 through BH-22) and collected twelve soil samples for chemical analyses. Soil samples were not collected from those boreholes containing obvious petroleum product. The borehole locations are shown on Figure 4 in **Appendix B**. The results of chemical analyses are shown in **Table 1**.

The results of the soil analyses indicated there were elevated concentrations of diesel hydrocarbons in soil in close proximity of the UST excavation and along a product line that extended from the former USTs to the northeast. The results of the groundwater sampling indicated a high concentration of volatile organic compounds (VOC) and gasoline constituents benzene, toluene, ethylbenzene and xylenes (BTEX) were detected in water samples collected from the UST excavation (samples WS-1 and WWOP-1). Another water sample with the same designation of WS-1 contained less than detectable concentrations of diesel hydrocarbons. It is assumed the second WS-1 sample was collected along the southeast side of the Property near the parking area as shown on Figure 4 in **Appendix B**. The location of water sample WS-2 could not be determined.

1994 Soil and Groundwater Investigation

Gen-Tech performed a soil and groundwater investigation at the Property in April 1994. Fourteen soil borings (EB-1 through EB-11 and MW-1 through MW-3) were drilled on the Property. Three of the borings were converted to groundwater monitoring wells. Results of the analysis of six soil and fourteen groundwater samples are included in **Appendix C** and are summarized on **Tables 1 through 3**. The locations of the borings are shown on Figures 2 and 4 in **Appendix C**.

The results of the laboratory analysis of soil samples indicated high concentrations of diesel hydrocarbons in MW-2. Concentrations of gasoline hydrocarbons were detected in MW-3. In groundwater, elevated concentrations of diesel and gasoline hydrocarbons were detected in borings (EB-4 and EB-6) drilled to the northwest along a product line that extended toward the trucking terminal. Elevated concentrations of hydrocarbons, mostly diesel, were also detected in the borings drilled along the northeast side of the Property (EB-1, EB-2, EB-3 and EB-11).

1995 Soil and Groundwater Investigation

Enrest conducted a soil and groundwater investigation at the Property in July 1995. The work included the drilling of two soil borings and installation of a fourth groundwater monitoring well (MW4) in one of the borings. The soil borings were drilled along a product line that extended northwest from the former USTs to the terminal building. Well MW-4 was installed on the northwest side of the terminal building. The locations of the borings and well are shown on the Figure 2 in **Appendix D**.

2000 Soil and Groundwater Investigation

PIERS conducted a soil and groundwater investigation at the Property on December 20, 2000. Sixteen soil borings, SB-1 through SB-16, were drilled on the site to collect soil and groundwater samples. The locations of the borings are shown on the **Figure 3**. The results of the groundwater analyses are included in **Tables 2 and 3**. PIERS concluded that concentrations of diesel in the groundwater do not appear to have been reduced from natural attenuation since the subsurface investigation conducted (by Gen-Tech) in April of 1994 and that the groundwater plume extends off-site to the northwest.

A summary of analytical results of groundwater samples are included in **Table 2.**

Groundwater Monitoring

Groundwater monitoring has been conducted intermittently at the Property from 1994 to 2002. Review of available files indicate there were a total of seven groundwater monitoring events appear to have been conducted since the installation of the groundwater monitoring wells in 1994 and 1995. The groundwater flow direction has been determined to be to the northwest with a shallow gradient. A summary of analytical results of groundwater samples from the monitoring wells are included in **Table 3**.

Historical analytical results indicate that concentrations of diesel hydrocarbons have generally declined in all four monitoring wells from 2000 to 2002. The concentrations in samples collected in 2002 from well MW-2, down-gradient of the recovery trench are similar to the concentrations in samples collected in 1994. The concentration of TPH-d in the down-gradient well MW-4 has increased between 1995 and 2002. This is an indication that the hydrocarbon groundwater plume has migrated to the northwest under the terminal building.

Corrective Action Plan

Enrest prepared a revised corrective action plan (CAP) dated October 4, 2002. The CAP evaluated the possible remediation alternatives of chemical oxidation, groundwater extraction and treatment and excavation and disposal of the soil in the area affected by the

contamination plume. Enrest recommended groundwater extraction and treatment combined with injection of microbes and oxygenating chemicals for its cost compared to the other remediation alternatives.

The ACEHD approved the recommended method of groundwater extraction method providing a pilot test was conducted to verify the groundwater extraction rate. In addition, the ACEHD recommended the consideration of injecting microbes, nutrients and oxygen up-gradient of the contaminant plume. The treated water may then be considered for re-injection rather than disposal to the sanitary sewer.

2.0 SITE CONCEPTUAL MODEL

2.1 REGIONAL HYDROGEOLOGY

The Property is in the southwestern part of Oakland, in the eastern part of the San Francisco Bay Area. The San Francisco Bay Area occupies the central part of the Santa Clara Valley, a broad alluvial valley that slopes gently northward toward San Francisco Bay and is flanked by alluvial fans deposited at the foot of the Diablo Range to the east and the Santa Cruz Mountains to the west. The upland surfaces rising abruptly approximately four miles to the east of the Property are known as the East Bay Hills.

The Property is at an elevation of approximately five feet above Mean Sea Level according to the United States Geological Survey (USGS) Oakland East Quadrangle California 7.5 Minute Series topographic map. Regionally, topography in the area of the Property slopes down to the west toward San Francisco Bay. However, the area of the Property is very flat with little topographic change.

The Property is located at the eastern edge of San Francisco Bay, on the Bay Plain. The sediments in the vicinity of the Property are fine-grained alluvial sediments that represent distal deposits of alluvial fans that were deposited by rivers draining upland surfaces to the west and east of the Property. These sediments were deposited in a low energy environment on the margins of San Francisco Bay. At shallow depths beneath these sediments are a series of Recent-age (<10,000 years) blue clay layers that become increasingly thicker toward San Francisco Bay. These clay layers are known as the Bay Mud and were deposited in San Francisco Bay during higher stands of sea level. In the vicinity of the Property it is likely that several hundred feet of these sediments overlie sandstone and serpentine sedimentary and metamorphic rocks of the Jurassic-aged Franciscan Formation bedrock.

The regional groundwater flow follows the topography, moving from areas of higher elevation to areas of lower elevation. The regional groundwater flow direction in the area of the Property is estimated to be to the west toward San Francisco Bay. However, the groundwater gradient in this area is likely to vary due to tidal influences and there may not be a dominant groundwater gradient.

2.2 SITE HYDROGEOLOGY

Soil borings drilled on the Property indicate the area of the Property was likely filled to create land and lift the surface roughly 5 feet above the high tide line (Gen-Tech, 1994). The Property is underlain by artificial fill comprised of gravel and sand which may contain debris such as concrete or asphalt as well as silt and clay. The fill is underlain by and peat with thin interbeds of organic silt and clay. The peaty material is underlain by black Bay Mud. The isopach map in **Figure 4** shows the estimated thickness of the artificial fill where the base of the fill is defined by the top of the peaty material. The thickness of the fill increases to the north and north east, varying from less than 3 feet near the southern corner of the Property to greater than 9 feet along Tidewater Avenue.

Top of groundwater has been measured in the monitoring wells from 1.14 to 3.88 feet below top-of-casing. Groundwater appears to be unconfined. **Figure 5** shows the groundwater elevation map for September 19, 2002 as representative of a typical groundwater monitoring result for this site. The groundwater flow direction was toward the northeast at a gradient of 0.04 foot/foot. However, some monitoring events indicated a groundwater flow direction in the opposite direction, to the southeast. Given these results and the close proximity of the Tidal Canal, the groundwater is probably under tidal influence with daily fluctuations in groundwater flow direction.

2.3 EXTENT OF CONTAMINATION

2.3.1 Contamination in Soil

Figure 3 shows the locations of all soil borings advanced by previous consultants with three cross section lines A-A', B-B', and C-C'. **Figures 6 and 7** show the schematic cross sections detailing the distribution of artificial fill and natural peat materials. Cross Section B-B' in **Figure 7** shows the location of the UST excavation with the base of the excavation in the peaty material. Fuel leak in the UST pit caused contamination to impact the peat material in the immediate area. The peaty material appears to act as an aquitard and contamination in the peat has not advanced much beyond the UST pit area. Toward the north the contamination appears to be limited to the fill material, and concentrated around well MW-2 as shown on cross sections A-A' and C-C' (**Figure 6**).

The estimated distribution of maximum TPH-d concentrations is shown in **Figure 8**. Some of the TPH-D values on the figure represent soil samples collected above or below the area of maximum contamination for the purpose of vertically delineating the soil contamination, and thus do not represent the maximum TPH-D concentration in that boring. The isoconcentration contours represent the estimate of the distribution of maximum TPH-D concentration in a vertical column of soil.

There appears to be two areas of maximum TPH-D concentration in soil. One is near the north end of the UST pit. Some of this soil was removed at the time of excavation, However some remains in the peat around the former pit. The second extends from the northeast end of the recovery trench to around well MW-2. This appears to be an area where LNAPL advanced through the fill causing heavy contamination.

2.3.2 Contamination in Groundwater

The estimated distribution of TPH-D in groundwater for December 2000 is shown on **Figure 9**. The map shows that the greatest groundwater contamination (TPH-D > 100,000µg/L) is located in the central area of the site between the UST pit, recovery trench and the building, and underlies the central part of the building.

Based on the dissolved TPH-D concentrations found in the groundwater grab-samples collected from borings SB-14 and SB-15, contamination appears to have advanced offsite to the north of the UST pit and recovery trench. The results for samples collected from borings SB-3 and SB-4 indicated that the dissolved plume above 100µg/L had not advanced to Tidewater Avenue at that time. However, nearly five years have passed since these samples were collected and the plume may have advanced under Tidewater Avenue during that time.

2.4 PRELIMINARY RISK ASSESSMENT

The property owner expects the current building to be razed and the site redeveloped as residential property. Therefore, risk to sensitive receptors will be evaluated relative to the ESLs for residential property unless otherwise noted. The site is located very close to the tidal canal and groundwater beneath the site is likely to be impacted by tidal currents and saltwater intrusion. Therefore risk to sensitive receptors will be evaluated relative to the ESLs for groundwater that is not potential drinking water.

2.4.1 Contaminant Intrusion to Indoor Air.

The ESL for benzene in shallow soil with respect to intrusion into residential indoor air is 0.18mg/kg. No soil sample of know location exceeds this ESL. One sample of unknown location, DS-4, was found to contain 0.197mg/Kg benzene. It is not known whether or not this soil was removed during excavation activities. No other soil sample was found to contain toluene, ethylbenzene, xylenes or MTBE (TEX/MTBE) above the respective ESLs for protection of indoor air. Therefore BTEX and MTBE in soil do not appear to represent a human health hazard due to intrusion into indoor air.

The ESL for benzene in groundwater with respect to intrusion into residential air is 540µg/L. None of the groundwater grab-samples or monitoring well samples exceeded this ESL. Nor were the ESLs for TEX/MTBE with respect to the protection of indoor air exceeded in any groundwater sample collected to date. Therefore BTEX and MTBE in groundwater do not appear to represent a human health hazard due to intrusion into indoor air.

However, there are no ESLs for TPH in soil or groundwater with respect to the protection of indoor air. Because TPH-D is present onsite in high concentrations in soil and groundwater under much of the site, soil-gas samples may need to be collected for analysis of TPH (and benzene) to eliminate contaminant intrusion to indoor air as a potential risk.

2.4.2 Contaminant Leaching to Groundwater and Protection of Aquatic Habitat

The ESL for TPH-D in shallow soil with respect to leaching to groundwater is 500mgkg. On Figure 6 we can see that would include the area around the north end of the former UST pit, as well as the area between the recovery trench and well MW-2 and is estimated to extend under the northeast portion of the existing building. This area represents the source area for TPH-D contamination to the groundwater.

No soil samples were found to exceed the ESL for TPH-G, BTEX or MTBE with respect to leaching to groundwater.

The ESL for benzene in groundwater with respect to the protection of aquatic habitat is 46µg/L. Two historical groundwater grab-samples, WS-1 and EB-4 were found to contain benzene in excess of the ESL. However, none of the groundwater samples collected from the monitoring wells since the beginning of monitoring have been found to contain benzene above the ESL. However in two instances groundwater samples were not collected due to the presence of LNAPL (MW-2 in April 1994, and MW-3 in August 2005). Benzene may be expected to exceed the ESL where measurable LNAPL is present.

The ESL for TPH-G in groundwater with respect to the protection of aquatic habitat is 500µg/L. Several groundwater samples collected from well MW-2 (October 200 and April 2001) and from well MW-4 (May 1999, October 2000 and April 2001) were found to exceed the TPH-G ESL. Therefore, if the dissolved TPH-G plume is allowed to reach the tidal canal, then TPH-g concentrations may pose a risk to the aquatic habitat.

The ESL for TPH-d in groundwater with respect to protection of aquatic habitat is 640µg/L. Groundwater samples collected from wells MW-2 through MW-5 have exceeded the TPH-D ESL by one to two orders of magnitude each of the last four sampling events (October 2000 to August 2005). Therefore, if allowed to reach the San Francisco Bay, TPH-D concentrations in the dissolved contaminant plume are likely to pose a risk to the aquatic habitat.

2.4.3 Direct Exposure

The ESL for direct exposure to TPH-D in soil for a commercial or industrial setting is 750mg/Kg. As shown on figure 6, the area where maximum TPH-D concentrations in soil are estimated to exceed this ESL would be closely estimated by the 1,000mg/kg contour. Work crews that may be involved in excavating soil from this area should be HAZWOPER certified.

3.0 QUARTERLY GROUNDWATER MONITORING

3.1 FIELD WORK PERFORMED

The quarterly groundwater-monitoring was conducted on August 18th 2005. The locations of all the monitoring wells associated with the subject site are shown on **Figure 2**

On the 18th and 19th of August 2005, ERAS recorded groundwater elevations from onsite wells MW-1, MW-2, MW-3, and MW-4, once at low tide and once at high tide. Groundwater samples were collected from MW-1, MW-2, and MW-4 on the 18th of August 2005. MW-3 was not sampled due to free product in the monitoring well. The locations of Monitoring Wells MW-1 through MW-12 are shown on **Figure 2**.

At each monitoring well, the well cap was removed and the water level in the well was allowed to equilibrate to atmospheric pressure. Static water level was measured using an electronic water-level probe. The probe was decontaminated between wells using a non-phosphate detergent and rinsed with purified water. The field records of water-level measurements are included in **Appendix E.** The standard operating procedure for groundwater sampling is included as **Appendix F.**

Three monitoring wells were sampled: MW-1, MW-2, and MW-4. Groundwater was purged using a new disposable bailer and transferred to appropriate containers using a VOC-tip. The well purging and sampling forms are included in **Appendix E.** The sample containers were labeled and stored in a cooler with blue-ice, to be transported under chain-of-custody documentation to the State certified analytical laboratory. The chain-of-custody forms are included in **Appendix G.**

Purge water was temporarily stored onsite until transport to an appropriate facility.

3.2 RESULTS OF MONITORING

3.2.1 Results of Groundwater Elevation Monitoring

Depth to liquid measurement collected on August 18 and 19 2005 were used to calculate the groundwater elevation data shown in **Table 4.** The table shows that a measurable thickness of LNAPL was found in well MW-3. As much LNAPL as possible was bailed from MW-3 as an interim remediation measure, approximately 10 gallons.

Measurements were collected on August 18th while the tide was coming in. **Figure 10** shows groundwater flow to the southwest, toward the tidal canal, at a relatively flat gradient of 0.003 foot/foot. Measurements were taken on August 19th while the tide was going out. The data in Table 3 indicate that the groundwater flow direction is again toward the southwest at a steeper gradient. Depth to groundwater in well MW-1 was found to have fallen over 3 feet. This may be representative of groundwater in the formation. However, when groundwater was sample on the previous day, water recovered very slowly into the well, less than .02 foot per hour. Therefore ERAS assumes the reading in well MW-1 on August 19th does not represent the static water level.

Historically, the groundwater flow direction under the site has been found to be at various times to the southwest and to the northeast. Thus, ERAS concludes that groundwater flow direction can vary 180 degrees within a 24-hour period due to diurnal tidal fluctuations. The relative flatness or steepness of the gradient can also vary depending on tidal flow.

3.2.2 Analytical Results

Groundwater samples collected from wells MW-1, MW-2 and MW-4 were analyzed for TPH-D and TPH-G by EPA Method 8015, and for BTEX and MTBE by EPA Method 8260. The analytical results are presented on **Table 3**. Groundwater from well MW-3 was not sampled due to the presence of LNAPL on top of the groundwater. The laboratory report and chain-of custody form are included as **Appendix G**.

No detectable concentrations of TPH-G or BTEX were found in any of the three groundwater samples. MTBE was detected only in the sample from MW-1 at 6µg/L. Concentrations of TPH-D above the ESL of 100µg/L were detected in all three groundwater samples ranging from 410µg/L(MW-1) to 13,300 (MW-2).

4.0 FEASIBILITY STUDY / REMEDIAL INVESTIGATION WORK PLAN

ERAS recommends a removal of the LNAPL and contaminated soil acting as a source of contamination, as well as assessment of passive and active treatment technologies for groundwater contamination. ERAS proposes a Remedial Investigation and Feasibility Study to assess the feasibility and appropriateness of various clean-up technologies.

Figure 11 shows the elements of the Feasibility Study / Remedial Investigation (FS/RI). Area A represents the area considered for excavation and dewatering. Area B represents the area where clean-up will be considered via chemical oxidation. Excavation and dewatering is also considered a possibility for Area B.

4.1 ELEMENTS OF FEASIBILITY STUDY / REMEDIAL INVESTIGATION

4.1.1 Assessment and Design of Source Removal Excavation

A remedial investigation will assess the feasibility of and the results will be used to design an excavation system that will include shoring and dewatering. Excavation will remove contaminated soil acting as a source of contamination to groundwater. Dewatering will remove LNAPL and contaminated water from the excavation; in addition to facilitating excavation and backfilling activities by lower the groundwater table.

Figure 11 shows ten proposed locations for geotechnical borings to evaluate soil conditions for the design of shoring system to efficiently dewater the excavation area and to protect existing structures from the excavation. Soil samples from these borings will be analyzed for geotechnical parameters including shear strength, unconfined compressive strength and friction angle.

Figure 11 shows three proposed wells located in Area A near well MW-2. Extraction well EW-1 is a proposed 8-inch diameter well set to 15 feet bgs located 30 feet from well MW-2. Proposed observation well MW-2A is located 20 feet from well EW-1 and will be screened in both the peat and fill (2 feet to 15 feet bgs). Proposed observation well MW-2B is located 10 feet from well EW-1 and will be screened in the peat only (roughly 8 to 15 feet bgs). Monitoring well MW-2, screened to 8 feet bgs in the artificial fill only, will also be used as an observation well. An aquifer pump test and groundwater modeling will be

conducted to strategically locate dewatering wells and estimate well pumping flow rates to dewater and treat the contaminated groundwater, and to facilitate excavation and backfilling activities by lowering the groundwater table for the planned excavation. These data can also be used to assess the feasibility and appropriateness of an active groundwater pump and treat remediation system.

4.1.2 Assessment of In-Situ Chemical and Biological Remediation.

In addition, the remedial investigation will evaluate the feasibility of in-situ chemical and biological remediation, and the results considered for evaluation of an array of injection remedial wells for introduction of oxidants and biological enhancement products.

Figure 11 shows four test wells to be installed near the northwest boundary of the site (wells MW-5 and MW-5A through C). MW-5 will serve as an injection well for testing in situ chemical and bioremediation technologies. Wells MW-5 A through MW-5C will serve as observation wells located 5, 10 and 15 feet from well MW-5.

4.2 WELL INSTALLATION, DEVELOPMENT AND GROUNDWATER SAMPLING

Prior to drilling well installation permits will be obtained from the Alameda County Public Works. The drilling area will be marked and reported to Underground Service Alert at least 48 hours prior to drilling to give private utilities an opportunity to mark their lines. All drilling locations will be inspected for underground utilities using a private line locating service.

All wells will be drilled using a hollow-stem auger drill rig. All borings will be continuously cored for lithologic description. One soil sample from the boring for wellMW-5 will be kept for chemical analysis of TPH-D, TPH-G and BTEX/MTBE. Representative soil samples will be kept from the borings for MW-5 and MW-5A through MW-5C for analysis of total organic carbon (TOC), moisture content, bulk density, and total and effective porosity. The results of these tests will assist the groundwater modeling and geotechnical analyses, as well as in-situ oxidation.

Well EW-1 will be drilled using 12 to 14-inch augers and completed as an 8-inch diameter PVC well to 15 feet. The screen of 0.02-inch slots will be set at 2 to 15 feet bgs. The annulus will be filled with #3 sand filter pack to 1.5 feet bgs. The filter pack will be topped with 0.5 foot of hydrated bentonite. The remaining annulus will be filled with neat cement to about 0.5 feet bgs and the well head protected by an 18-inch square metal vault.

All other wells will be installed as 2 inch diameter PVC wells in 8-inch diameter borings with 0.02-inch slotted screen and filter pack of #3 sand. The well heads will be protected by a 10 diameter well vault. Wells MW-5 and MW-5A through MW-5C will be completed to a total estimated depth to 8 feet with the screened interval from 2 to 8 feet. The annulus will be filled with filter pack to 1.5 feet bgs, overlain by 0.5 foot of hydrated bentonite, and the remaining annulus filled with neat cement. Well MW-2A located 20 feet from EW-1 will be completed in both the fill and the peat with the screen from 2 feet to 15 feet bgs. The annulus will be completed as for MW-5. Well MW-2B located 10 feet from well EW-1 will be screened in the peat material only, from 10 to 15 feet bgs. The filter pack will be filled to 9 feet bgs with 2 feet of hydrated bentonite above the filter pack. The remaining

annulus will be filed with neat cement.

The five new 2-inch diameter wells will be developed using the purge and surge method. The wells will be initially bailed from the base of the well to remove accumulated solids. Then the wells will be surged using a 2-inch surge block. The wells will then be purged using a submersible pump until the groundwater clears substantially of silt and/or the groundwater parameters pH, conductivity and temperature settle to within 10% for three consecutive readings.

Monitoring well MW-5 and pre-existing wells MW-1 through MW-4 will be monitored for depth to groundwater and groundwater samples will be collected for chemical analysis as part of the semi-annual groundwater monitoring program. .At that time, groundwater in wells MW-4 and MW-5 will be monitored in the field for oxidation-reduction potential (ORP), dissolved oxygen (DO), temperature, and pH. Additional groundwater samples will be analyzed for total and dissolved iron and dissolved manganese. Data from these additional tests will be used to assess the feasibility of in-situ remediation as explained is Section 4.5.

Previous chemical analysis of groundwater collected from the monitoring wells has been for TPH-D, BTEX and MTBE. However, the 1994 summary report prepared by Gen-Tech reported 8,000µg/LVOCs detected in water sample (WS-1) collected from the excavation. Therefore, ERAS proposed analysis of the groundwater samples collected from wells MW-1 through MW-5 for VOCs by EPA Method 8260 (full scan) as well as TPH-D and TPH-G by EPA Method 8015. Future analysis of groundwater samples for VOCs (in addition to the required BTEX/MTBE) will be determined by the results of the initial 8260 full scan.

The Standard Operating Procedures for hollow-stem auger drilling and sampling, well installation and development are included in **Appendix F.**

4.3 GEOTECHNICAL INVESTIGATION

In order to further evaluate excavation and disposal as a feasible remedial option, an effective shoring system will be required for the following reasons: 1) To protect existing structures and utilities from the excavation; and 2) To efficiently dewater the excavation area by limiting the flow of water into the excavation from beyond the excavation limits. Therefore, to evaluate various shoring systems we recommend a geotechnical investigation with the following scope of work:

- We will include up to ten cone penetrometer test (CPT) probes distributed along the proposed excavation limits. The total number of CPT probes will be based on an 8-hour work day with the CPT subcontractor and will be dependent upon the total depth required at each probe location; however, we estimate that at least 6 probes to depths of at least 20 feet each can be achieved within an 8-hour work day. The probes will be advanced to the stated depths or to practical refusal of the exploration equipment, whichever comes first.
- An adjacent boring will be advanced at each location for direct-push core to confirm the location of the top of the peat layer and to collect a groundwater

grab-sample for analysis of TPH-D, TPH-MO, BTEX and MTBE. At the two location between the former USTs and MW-1 and the location near the former USTs and the recovery trench, a core sample of the underlying peat will collected for analyses of TPH-D, TPH-MO, TPH-G, BTEX and MTBE, to confirm the hydrocarbon concentrations detected in the peat layer in previous boring BH-11. Standard Operating Procedures for collection of soil and groundwater grab-samples are included in **Appendix F**. These data will be used in conjunction with analytical results from the monitoring well to show the current distribution of contamination in groundwater, and to help design an offsite investigation to delineate the horizontal extent of the plume, if appropriate.

- Upon completion of the CPT probes, the resulting holes will be backfilled with grout in accordance with the County of Alameda guidelines.
- Cone penetration testing (CPT) is a process whereby soil characteristics are determined when a cone penetrometer is driven into the subsurface. The CPT provides a rapid, reliable and economical means of determining soil stratigraphy, relative density, strength and hydrogeologic information (static and dynamic pore pressure, hydraulic conductivity).
- Murray Engineers, Inc. of Palo Alto will review the CPT data and establish correlations with the Gen-Tech data as well as available published information regarding the expected local Bay Mud characteristics. Murray Engineers will perform engineering analysis of the resulting data in order to provide recommendations for sheet pile shoring design, from a geotechnical perspective. Murray Engineers will also provide recommendations for earthwork during replacement of the exported contaminated soils with clean imported fill.

4.4 AQUIFER TEST FOR DESIGN OF DEWATERING SYSTEM

For shallow unsaturated and saturated soils impacted with TPH-D, excavation and disposal is a feasible remedial option. In order to remove soils impacted in the saturated zone, an effective dewatering system is required prior to the excavation of these soils. The design parameters for the dewatering system, which include the number and location of wells and their depth, will depend on the site geology and the extent of vertical and lateral contamination within the various lithologic layers.

Based upon review of previous site investigation (Gen-Tech Environmental, May 17, 1994), which included a total of 14 exploratory borings ranging from 5.5 to 12 feet deep across the site, we understand that the entire site is capped with artificial fill which has raised the surface to approximately 5 feet above the high tide line. The fill varies in thickness from 0 feet at the southwest property boundary to greater than 9 feet along Tidewater Avenue. The fill varies in composition from sandy gravel with intermixed debris to silty or clayey sand near the base. The fill is underlain by peat thinly interbedded with silt and clay. The peat layer appears to be underlain by black Bay Mud.

Historically, groundwater impacted with TPH-D has been encountered at approximately 1-4 feet bgs, and within the artificial fill and the underlying native silty clay, silt and clayey sand layers. In addition, TPH-D-impacted soils were locally encountered in the deeper peat layer (soil sample collected from boring BH-11 contained 46,000 mg/kg TPH-D).

To excavate saturated soils impacted with TPH-d, the dewatering system will have to lower the water table at least 2-3 feet below the varying excavation depth, which may locally terminate in the underlying peat layer. In order to design the dewatering system, we will perform an aquifer test will be performed (using the proposed 8" well EW-1 as the production or extraction well) to characterize the aquifer hydraulic parameters including hydraulic conductivity (K) and specific storage (S_s). These parameters will then be used to simulate site dewatering and provide recommendations for the temporary construction dewatering system. The scope for the aquifer test will be as following:

- Install pressure-transducers in the observation wells, piezometers, and production well to observe the ground-water levels during the pre-pumping, pumping, and recovery test periods.
- Install necessary piping system to convey the extracted groundwater from the production well to a holding tank.
- Take background static water levels for 48 hours to determine any pre-pumping trends including from tidal fluctuations.
- Perform a step test for approximately 3 hours to estimate the maximum sustainable discharge rate for the 48-hour pump test. Allow the system to recover.
- Using the a specific sustainable discharge rate, conduct a 48-hour pump test and monitor drawdown in the various observation wells and piezometers screened in different lithologic layers to determine the hydraulic parameters of the aquifer system. The discharged groundwater flow rate will be measured with a flow meter, and stored on-site in a holding tank.
- Monitor water levels in all wells during recovery until water-levels are within at least 90% of their pre-pumping static levels.

The groundwater stored in the holding tank will be removed from the tank and disposed within 90 days of accumulation. If groundwater is discharged into the sanitary sewer, a wastewater discharge permit will be obtained from EBMUD (East Bay Municipal Utility District).

4.5 AQUIFER TEST ANALYSIS AND GROUNDWATER FLOW MODELING

The time-drawdown data generated during the aquifer test will be analyzed to estimate the hydraulic properties of the aquifer system and in turn, these will be used as the basis for a numerical groundwater flow model. The scope of work will be as following:

- Analyze the time-drawdown data collected during the pump test.
- Evaluate the lithologic data and the results of K and S_s from the pump test.
- Construct and calibrate a numerical groundwater flow model for the Site.
- Use the groundwater flow model to:

- estimate the locations and number of pumping wells, and the production rates and flow quantities for the temporary dewatering of the aquifer system prior to excavation;
- simulate the dewatering of the aquifer system and estimate the length of time necessary to dewater that portion of the aquifer system above the excavation;
- simulate and evaluate the effects of shoring system including sheet piles acting as cut-off walls, or interceptor or injection wells;
- Provide preliminary design criteria for construction dewatering.

We will simulate the dewatering system that will lower the water table below the bottom of the proposed excavation depths. This will involve optimizing the number, location, and spacing of wells pumping at constant and/or variable rates by simulating the transient decline in pore-water pressure across the Site using MODFLOW, the U.S. Geological Survey modular finite-difference groundwater flow code (USGS 1988).

4.6 IN-SITU CHEMICAL AND BIOLOGICAL OXYDATION INVESTIGATION

For soils impacted with petroleum hydrocarbons, oxidation of the contaminants by chemical injection (e.g. oxidants like hydrogen peroxide, sodium percarbonate) and/or biological (aerobic and/or anaerobic) degradation may be a feasible remedial alternative. In order to evaluate this remedial option we propose the following scope of work:

- For in-situ chemical oxidation, determine oxidant injection flow rate and concentration based on the injection test well concentrations of TPH-d in groundwater and in groundwater, and soil and aquifer test data including soil bulk density, porosity and hydraulic permeability.
- Perform two follow-up monitoring events of groundwater sampling in the test wells, and evaluate groundwater well concentrations. The time gap between the follow-up monitoring events will be based on well distances and aquifer data including groundwater gradient and hydraulic permeability. Based on the well concentrations obtained during the first follow-up monitoring, inject additional oxidant formulation in the test wells as required. Estimate degradation rates and times for in-situ chemical oxidation.
- For in-situ biological degradation, evaluate chemical indicators of natural attenuation, which include measurements for nutrients, electron acceptors, ORP, DO, and pH. During well drilling operations, collect one groundwater sample and one representative soil sample from each of the upper distinct lithologic layers, i.e. the fill material, the native clayey sand layer and the peat layer, and analyze for the following: TOC, ammonia nitrogen, nitrate and nitrite, ortho-phosphate, sulfide and sulfate, and pH. Additionally, the groundwater sample will be analyzed for biological oxygen demand (BOD), chemical oxygen demand (COD), total and dissolved iron and manganese, alkalinity, ORP, DO and temperature; and as indicated in Section 4.2 the

soil samples will be analyzed for physical parameters like bulk density, porosity (total and effective) and moisture content.

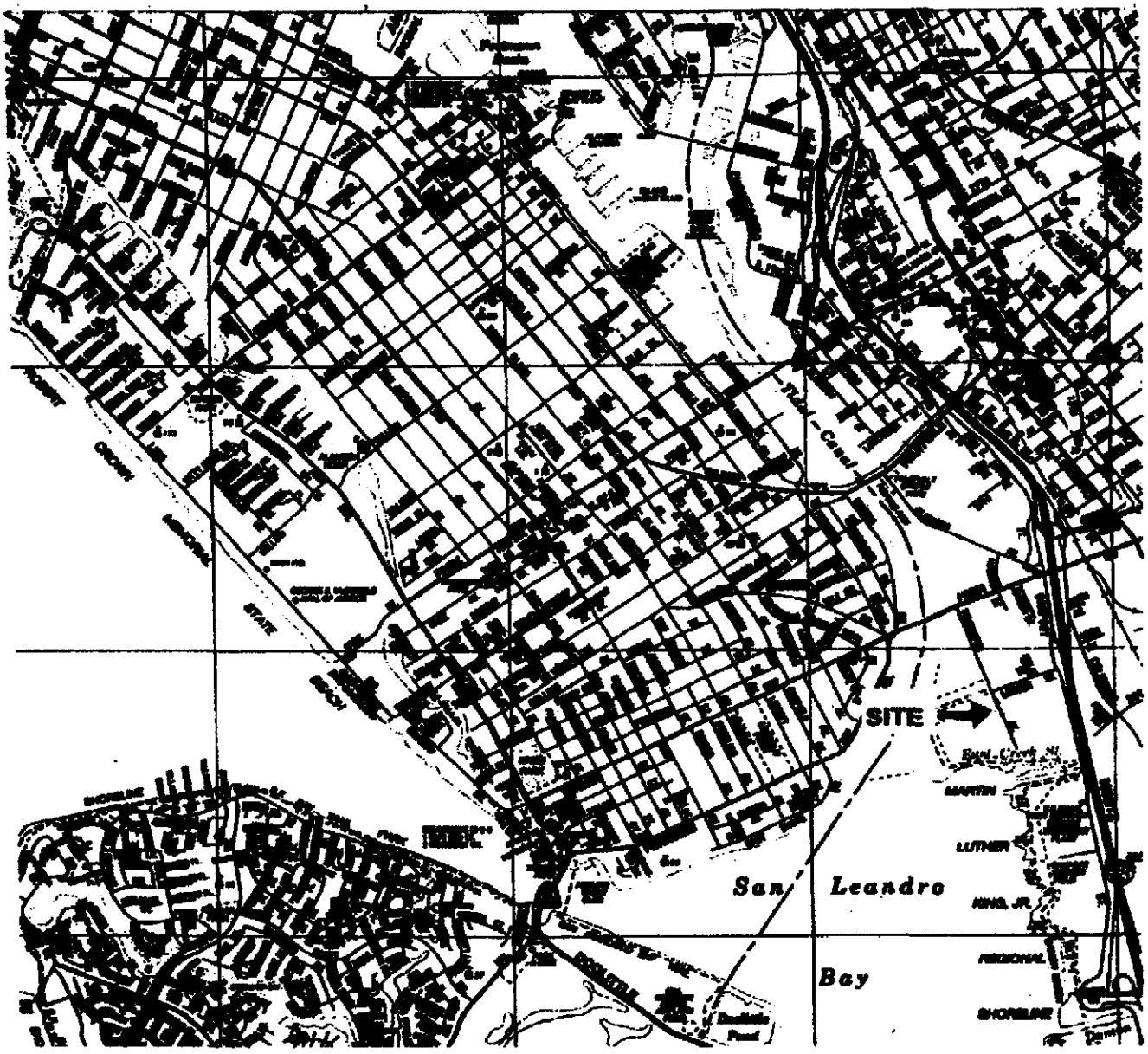
- If analytical results of chemical measurements indicate possibility of significant biological degradation, a more detailed microbial study will be performed to determine site specific biodegradation activity. Laboratory simulations using site groundwater, soil, microbes and contaminants will be performed. Information such as enumerations of on-site microbe populations, microbial by-products and most favorable electron acceptor conditions (aerobic vs. anaerobic) will be evaluated, and thereby an estimate for biodegradation rates and times will be provided.

4.7 REPORT PREPARATION

The field procedures and results for the well installations and geotechnical borings listed above will be detailed in a Well Installation and Soil and Groundwater Investigation Report prepared by ERAS Environmental, Inc. This report will include the boring and well completion logs, CPT logs, the results of soil and groundwater analyses, updated maps showing contaminant distribution, and a refined SCM. This report will also include recommendations for offsite sampling for plume delineation, and additional wells for monitoring plume attenuation, if warranted.

The results of the aquifer testing, groundwater modeling, in-situ remedial investigation will be presented in a FS/RI report prepared by Applied Remedial Technologies, Inc. of San Francisco. This report will assess the feasibility and cost associated with excavation and de-watering for source removal, and in-situ remediation of groundwater. This report will be part of the updated Corrective Action Plan detailing the area and design of the proposed excavation and dewatering system, geotechnical recommendations from Murray Engineers, Inc. of Palo Alto for excavation shoring, and a proposal for an in-situ groundwater remediation system, if warranted

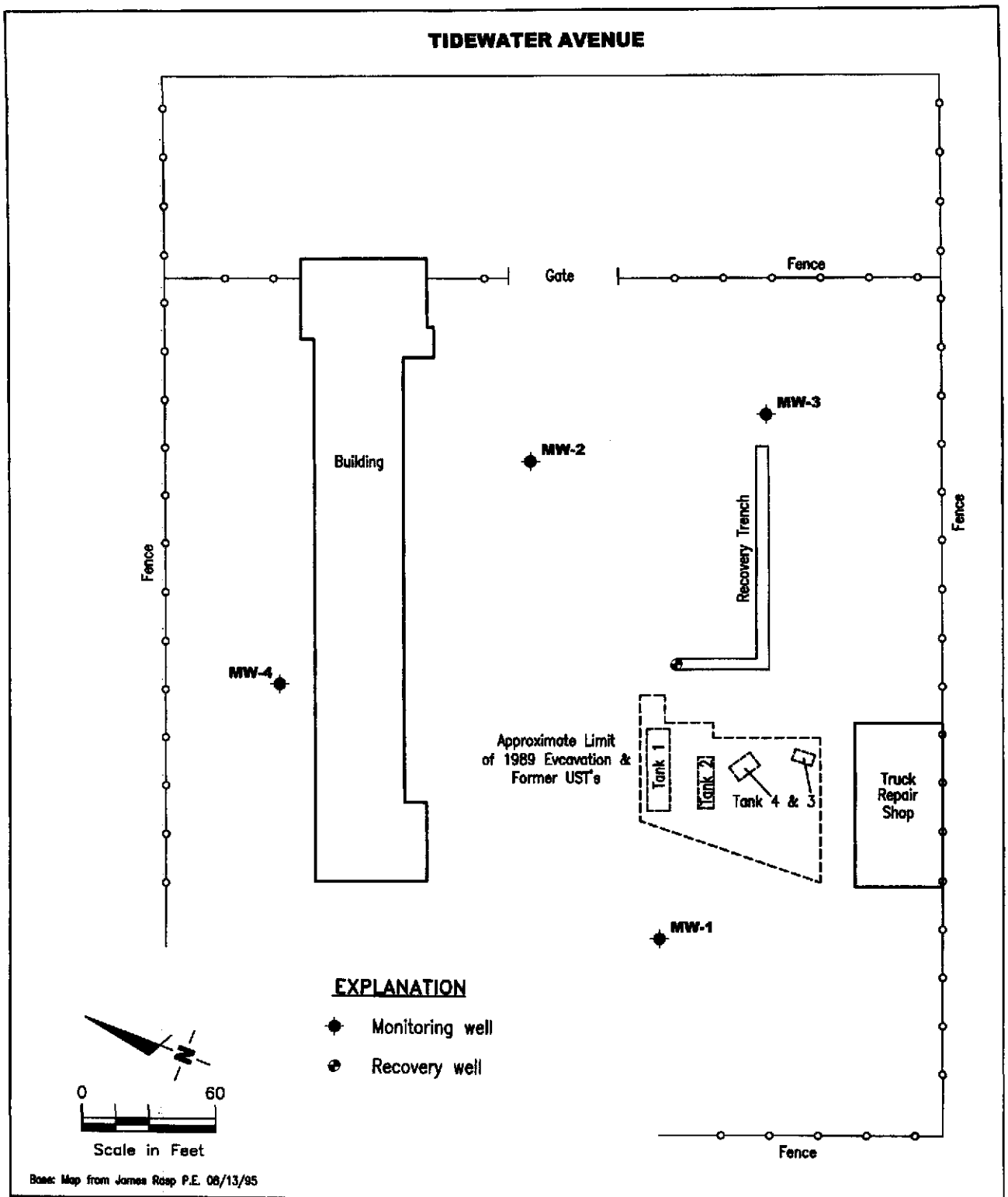
FIGURES



SITE LOCATION MAP

DATE		JOB NUMBER
11-05	4919 Tidewater Road	05-001-01
REVIEWED BY	Oakland, California	FIGURE
GJ		1

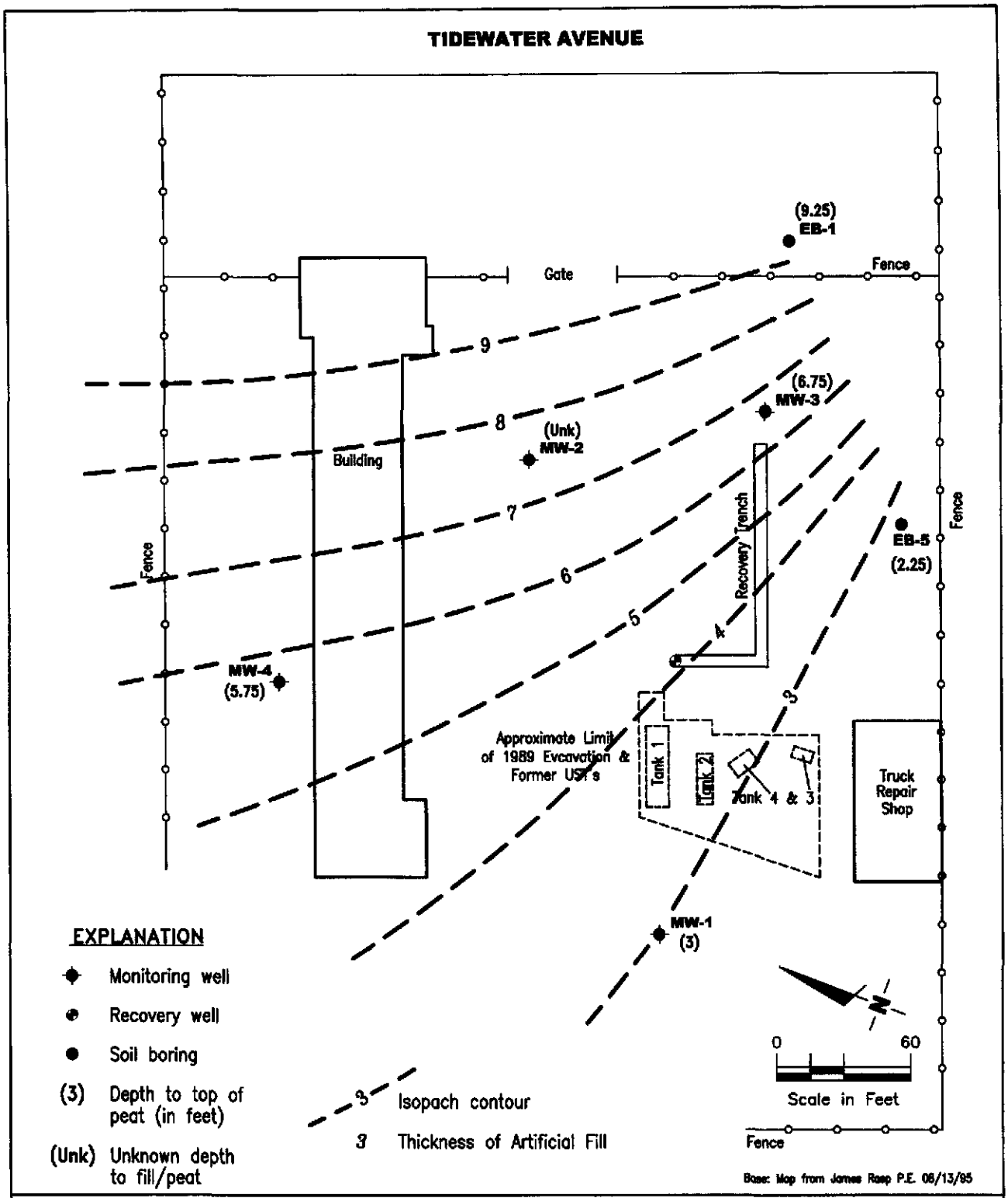
ERAS Environmental Inc.



SITE PLAN

DATE		JOB NUMBER
08-05	**HEITZ TRUCKING**	05-001-02
REVIEWED BY	4919 Tidewater	FIGURE
GJ	Oakland , California	2

ERAS Environmental Inc.

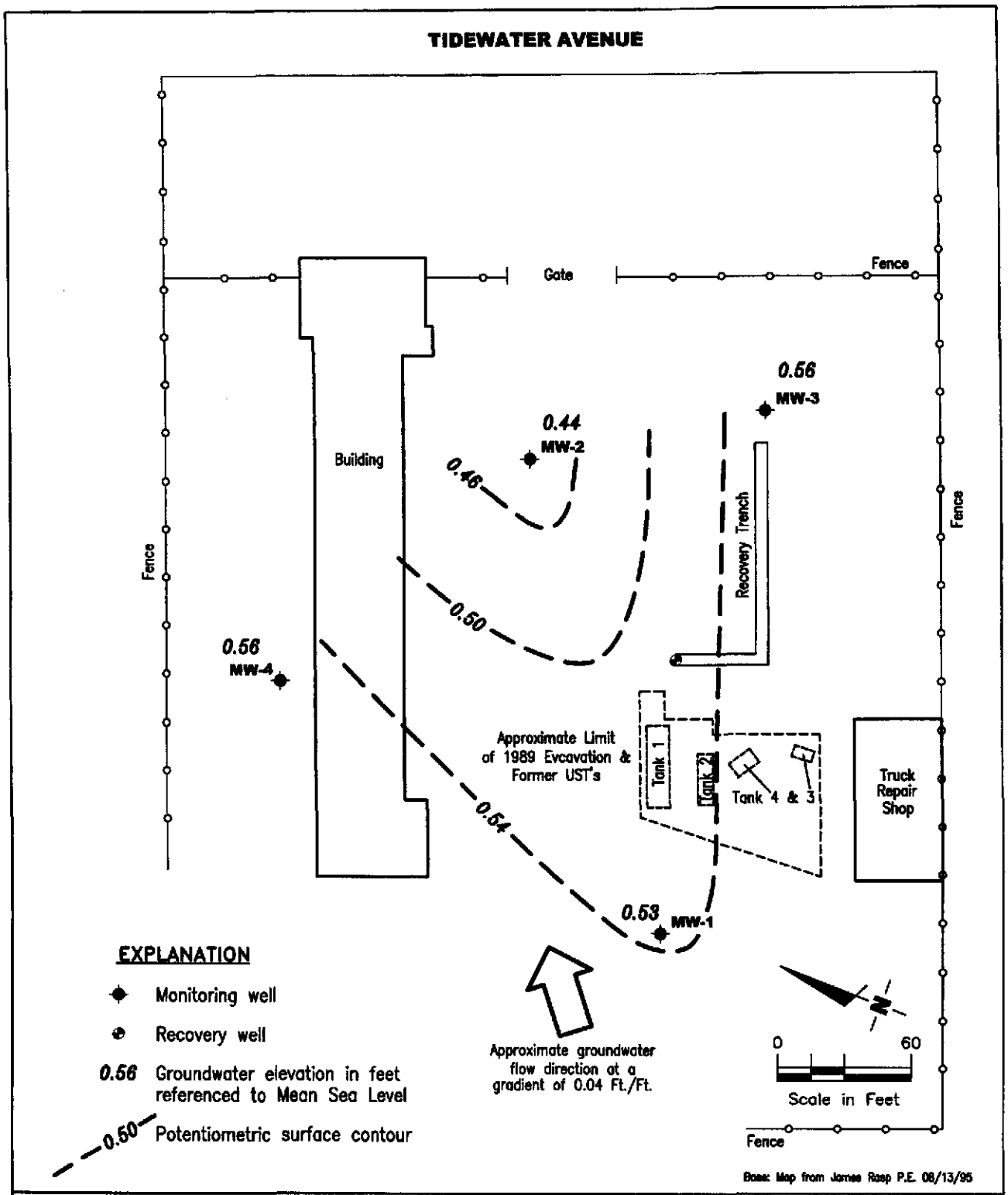


ISOPACH MAP - ESTIMATED THICKNESS of ARTIFICIAL FILL

DATE		JOB NUMBER
08-05	**HEITZ TRUCKING**	05-001-02
REVIEWED BY	4919 Tidewater	FIGURE
GJ	Oakland , California	3

ERAS Environmental Inc.

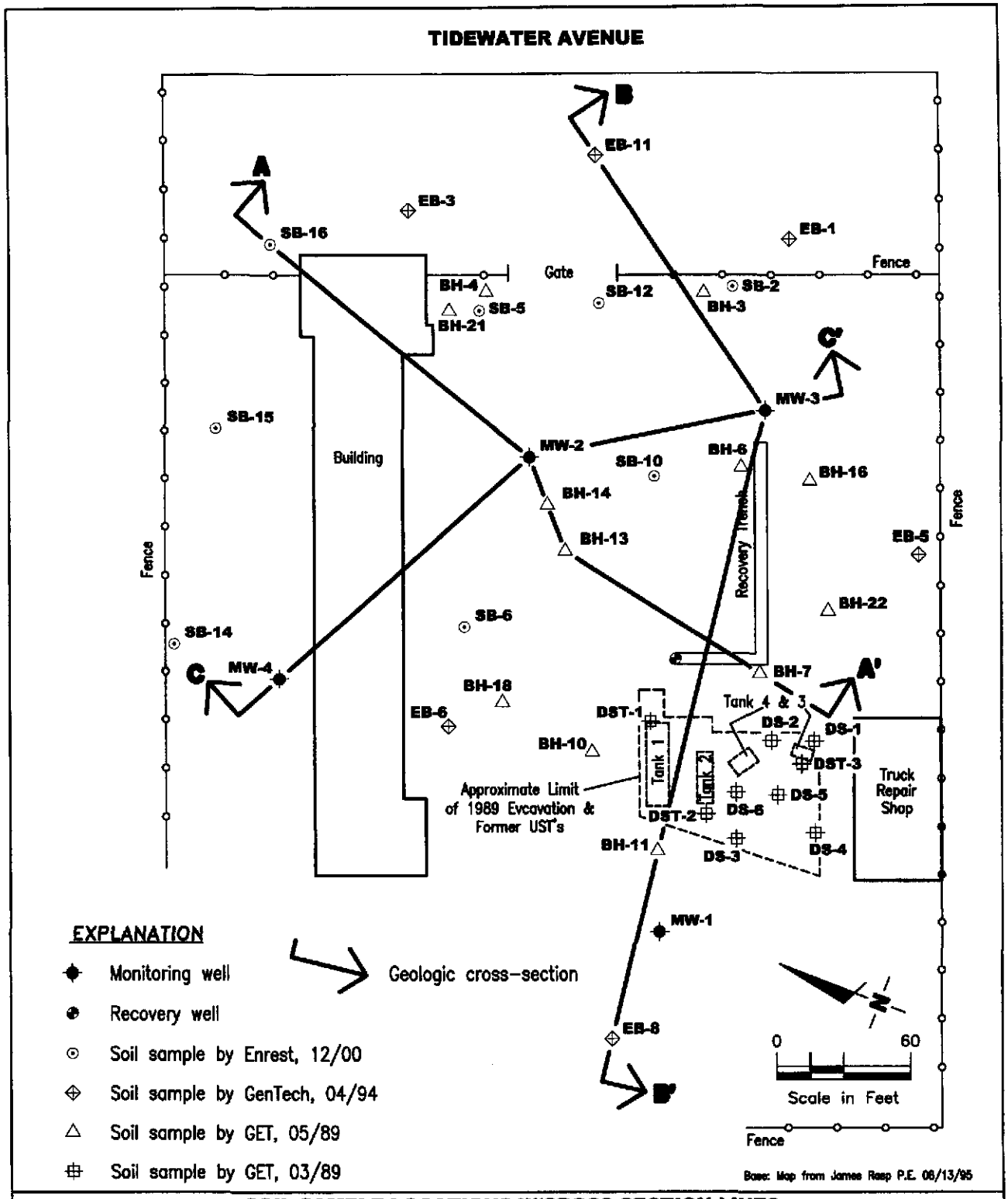
ERAS 10-25-05 ISOPACH.dwg



GROUNDWATER ELEVATION MAP - SEPTEMBER 19, 2002

DATE		JOB NUMBER
08-05	**HEITZ TRUCKING**	05-001-02
REVIEWED BY	4919 Tidewater	FIGURE
GJ	Oakland , California	4

ERAS Environmental Inc.

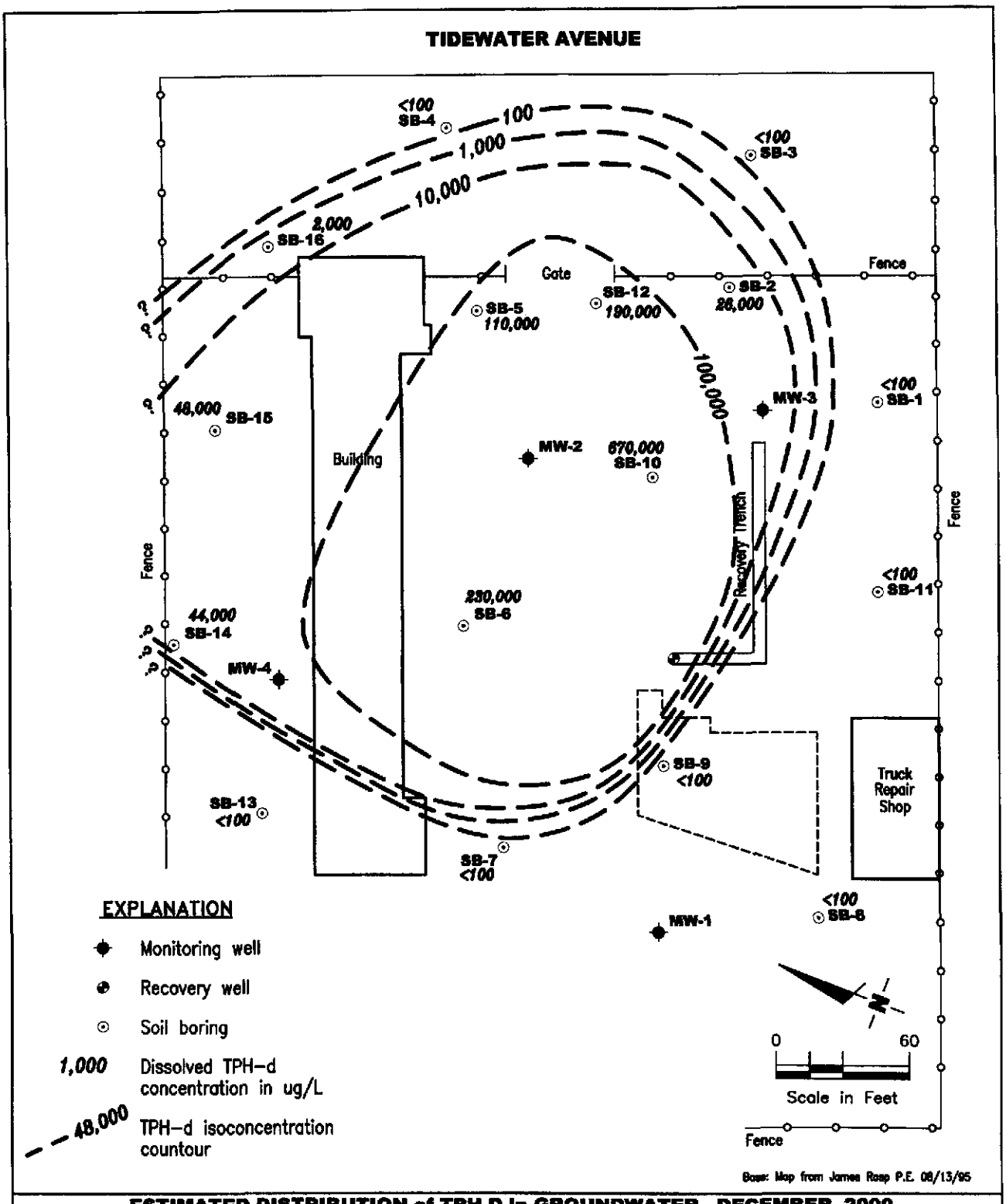


SOIL SAMPLE LOCATIONS W/CROSS SECTION LINES

DATE		JOB NUMBER
08-05	**HEITZ TRUCKING**	05-001-02
REVIEWED BY	4919 Tidewater	FIGURE
GJ	Oakland , California	5

ERAS Environmental Inc.

ERAS 10-25-05 SOIL-X-S.dwg

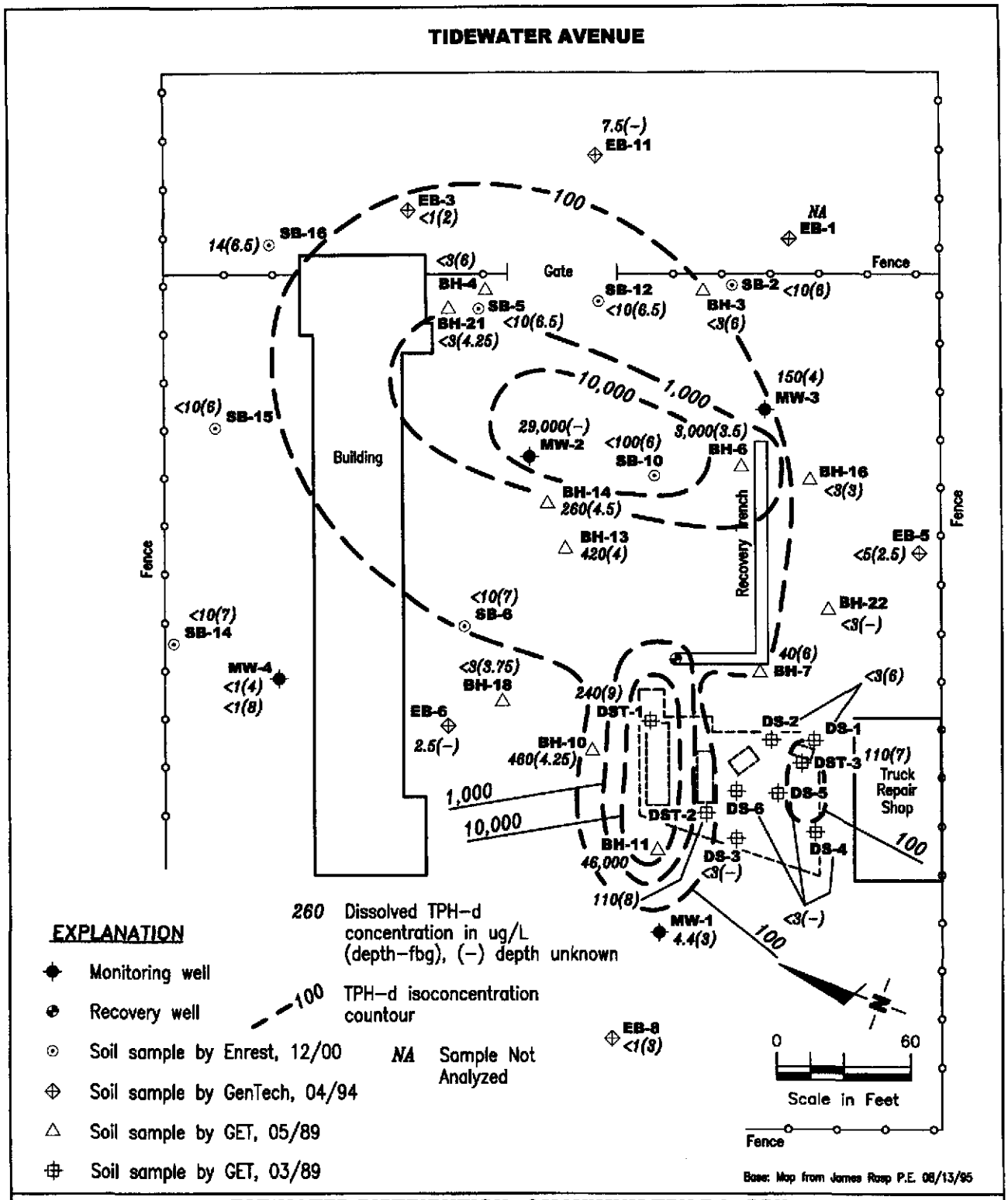


ESTIMATED DISTRIBUTION of TPH-D In GROUNDWATER - DECEMBER, 2000

DATE		JOB NUMBER
08-05	**HEITZ TRUCKING**	05-001-02
REVIEWED BY	4919 Tidewater	FIGURE
GJ	Oakland , California	7

ERAS Environmental Inc.

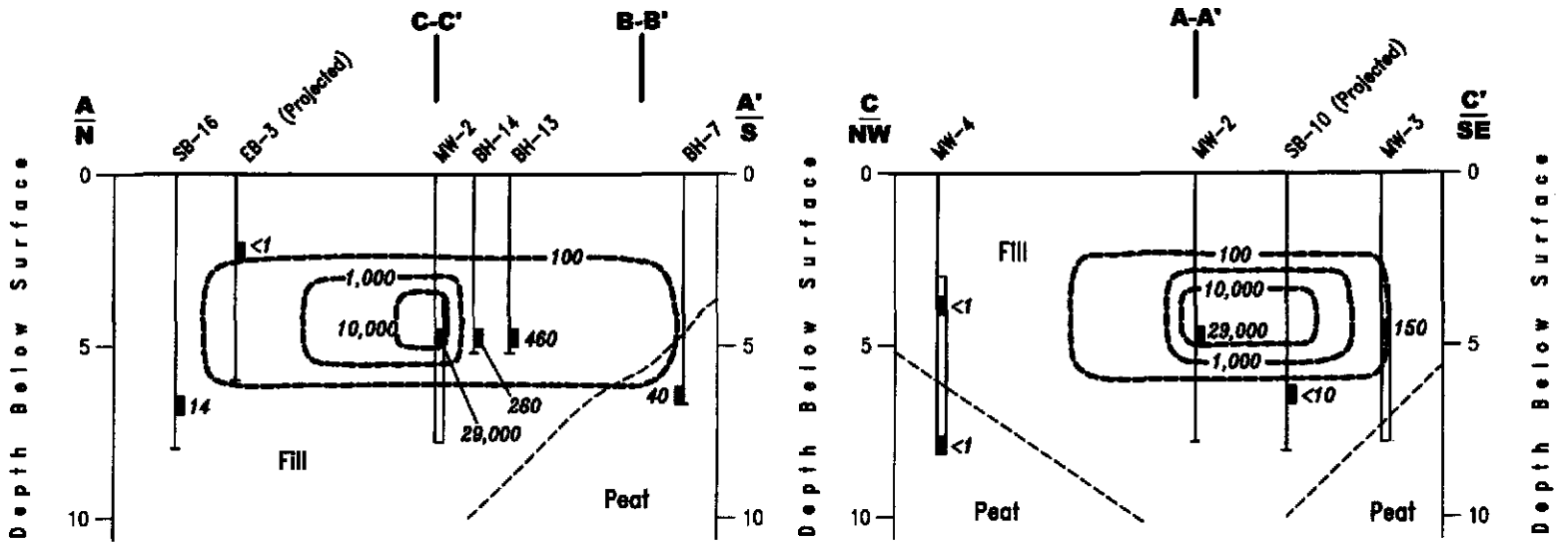
ERAS 08-01-05 THKD-GW.dwg

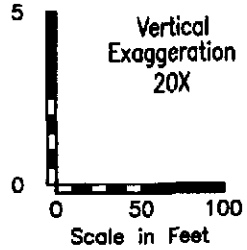


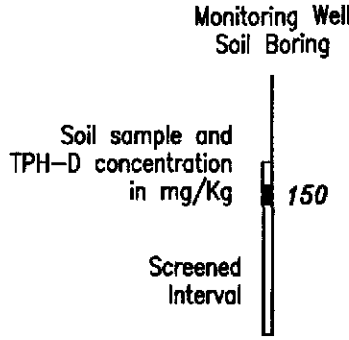
ESTIMATED DISTRIBUTION of MAXIMUM TPH-D in SOIL

DATE		JOB NUMBER
08-05	**HEITZ TRUCKING**	05-001-02
REVIEWED BY	4919 Tidewater	FIGURE
GJ	Oakland , California	6

ERAS Environmental Inc.







LEGEND

Fill	Predominantly artifical fill of silt, sand, gravel with various properties of concrete, asphalt or wood
Peat	Peat and Peaty material interbedded with sandy silt or sandy clay
Bay Mud	Black Clay
100	Isoconcentration contour for TPH-D in soil, ug/Kg

SCHEMATIC CROSS SECTIONS A-A' & C-C'

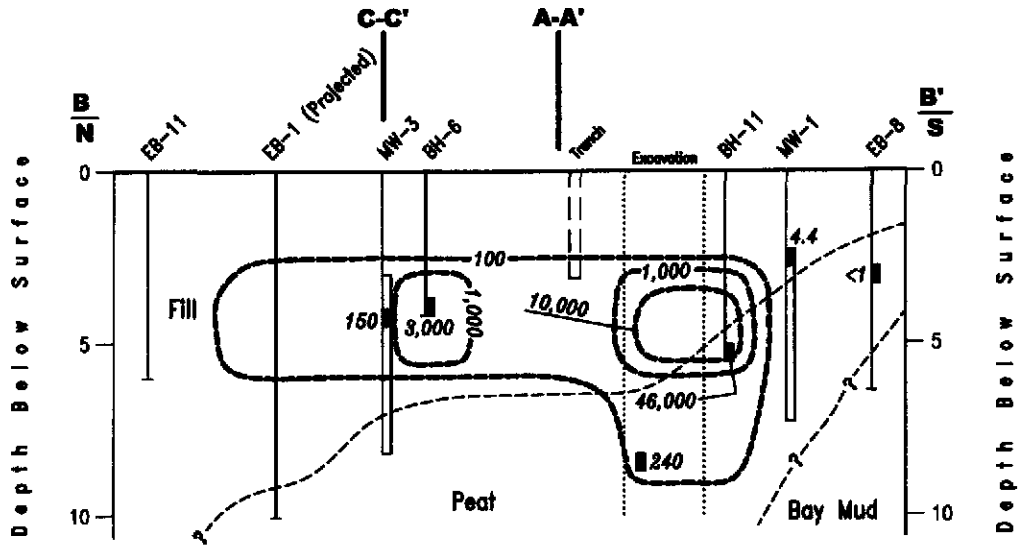
DATE
08/05
REVIEWED BY
GJ

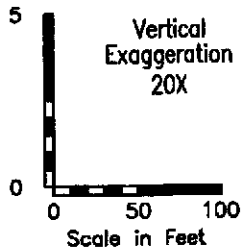
HEITZ TRUCKING
4919 Tidewater Avenue
Oakland, California

JOB NUMBER
05-001-02
FIGURE
8

ERAS Environmental Inc.

ERAS 10-25-05 A-C XS-05 SCHMAT.dwg





Monitoring Well
Soil Boring

Soil sample and TPH-D concentration in mg/Kg — 150

Screened Interval

LEGEND

Fill	Predominantly artifical fill of silt, sand, gravel with various properties of concrete, asphalt or wood
Peat	Peat and Peaty material interbedded with sandy silt or sandy clay
Bay Mud	Black Clay
100	Isoconcentration contour for TPH-D *in soil, ug/Kg*

SCHEMATIC CROSS SECTIONS B-B'

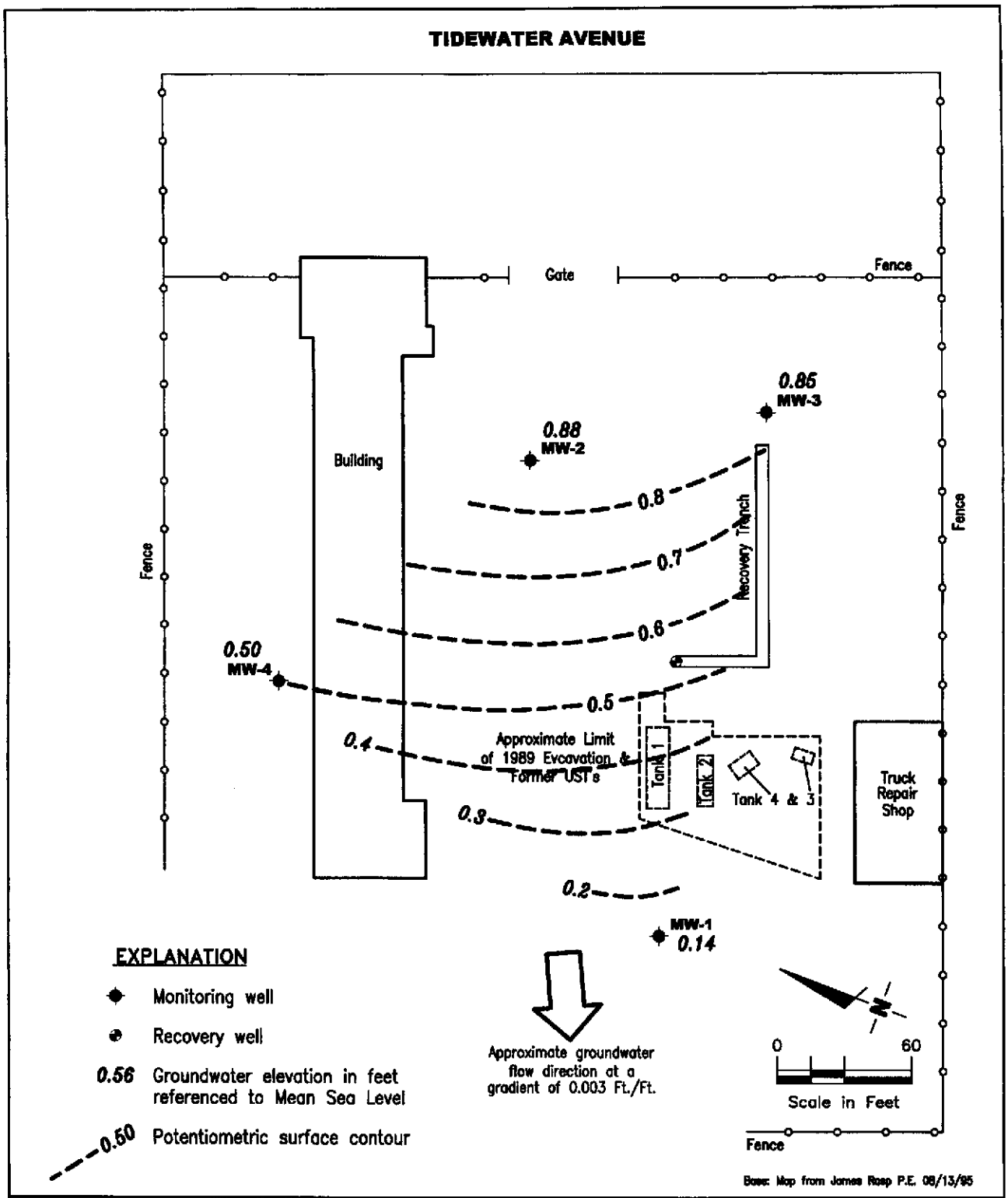
DATE
08/05
REVIEWED BY
GJ

HEITZ TRUCKING
4919 Tidewater Avenue
Oakland, California

JOB NUMBER
05-001-02
FIGURE
9

ERAS Environmental Inc.

ERAS 10-25-05 B XS-05 SCHMAT.dwg

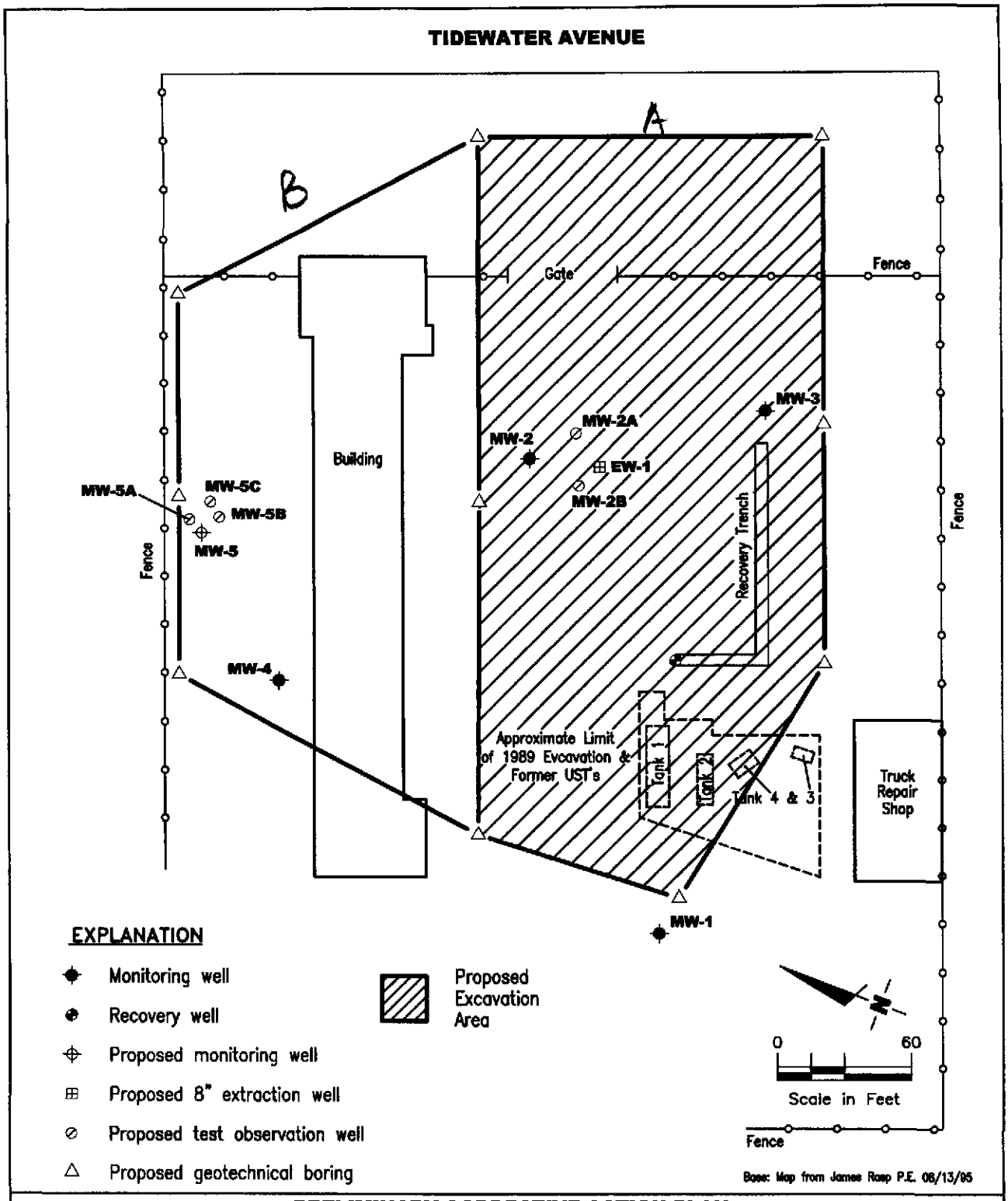


GROUNDWATER ELEVATION MAP - AUGUST 18, 2005

DATE		JOB NUMBER
08-05	**HEITZ TRUCKING**	05-001-01
REVIEWED BY	4919 Tidewater	FIGURE
GJ	Oakland , California	10

ERAS Environmental Inc.

ERAS 10-10-05 GWE05-05.dwg



PRELIMINARY CORRECTIVE ACTION PLAN

DATE		JOB NUMBER
10-05	**HEITZ TRUCKING**	05-001-02
REVIEWED BY	4919 Tidewater	FIGURE
GJ	Oakland , California	11

ERAS Environmental Inc.

ERAS 10-25-05 PRELIM PLAN.dwg

TABLE 1
ANALYTICAL RESULTS FOR SOIL SAMPLES
4919 Tidewater Avenue
Oakland

Sample ID (Boring)	Date	Depth (Ft bgs)	TPH-D (mg/Kg)	TPH-G (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	O & G (mg/Kg)	TPH-WO (mg/Kg)
Excavation										
DST 1	16-Mar-89	29 inches	240	NA	NA	NA	NA	NA	NA	NA
DST 2	16-Mar-89	8.0	110	NA	NA	NA	NA	NA	NA	NA
DST 3	16-Mar-89	7.0	110	NA	NA	NA	NA	NA	15	NA
DS-1	16-Mar-89	6.0	<3	NA	<.02	<.02	<0.1	<.04	29	NA
DS-2	24-Mar-89	6.0	<3	NA	<.02	<.02	<0.1	<.04	59	NA
DS-3	24-Mar-89	Ukn	<3	NA	<.02	<.02	<0.1	<.04	NA	NA
DS-4	24-Mar-89	7.0	64	NA	<.02	<.02	<0.1	<.04	NA	NA
DS-5	24-Mar-89	Unk	<3	NA	<.02	<.02	<0.1	<.04	NA	NA
DS-6	24-Mar-89	Unk	<3	NA	<.02	<.02	<0.1	<.04	NA	NA
WOP-1	24-May-89	Unk	<3,000	NA	<.02	<.02	<.03	<.02	NA	<10,000
WOP-2	24-May-89	Unk	<3,000	NA	<.02	<.02	<.03	<.02	NA	<10,000
Tank 4	27-Mar-89	Unk	<3	<500	<.03	<.03	<0.1	<.05	NA	NA
Line Samples										
SB1	19-Jul-95	4.0	34.0	NA	ND	ND	ND	ND	NA	NA
SB2	19-Jul-95	4.0	ND	NA	ND	ND	ND	ND	NA	NA
Boring										
LS-1 (BH-4)	1-May-89	6.0	<3	NA	NA	NA	NA	NA	NA	NA
LS-2 (BH-3)	1-May-89	6.0	<3	NA	NA	NA	NA	NA	NA	NA
LS-4 (BH-6)	1-May-89	3.5	3,000	NA	NA	NA	NA	NA	NA	NA
LS-6 (BH-7)	2-May-89	6.0	40	NA	NA	NA	NA	NA	NA	NA
LS-9 (BH-10)	3-May-89	4.25	460	NA	NA	NA	NA	NA	NA	NA
LS-10 (BH-11)	3-May-89	5.0	46,000	NA	NA	NA	NA	NA	27,000	NA
LS-11 (BH-13)	3-May-89	4.0	420	NA	NA	NA	NA	NA	NA	NA
LS-12 (BH-14)	3-May-89	4.5	260	NA	NA	NA	NA	NA	NA	NA
LS-16 (BH-16)	4-May-89	3-3.25	<3	NA	NA	NA	NA	NA	NA	NA
LS-18 (BH-18)	4-May-89	3.75-4	<3	NA	NA	NA	NA	NA	NA	NA
LS-21 (BH-21)	5-May-89	4.3	<3	NA	NA	NA	NA	NA	NA	NA
LS-22 (BH-22)	5-May-89	3.3	<3	NA	NA	NA	NA	NA	NA	NA
MW#1	7-Apr-94	3.0	4.4	ND	ND	ND	ND	ND	ND	NA
MW#2	7-Apr-94	Unk	29,000	ND	ND	ND	ND	ND	36,000	NA
MW#3	7-Apr-94	4.0	150	250	0.180	ND	2.1	2.0	ND	NA
EB-3	7-Apr-94	2.0	<1	ND	ND	ND	ND	ND	ND	NA
EB-5	7-Apr-94	2.5-3	<5	ND	ND	ND	ND	ND	ND	NA
EB-6	7-Apr-94	Unk	2.5	ND	ND	ND	ND	ND	180	NA
EB-8	7-Apr-94	3.0	<1	ND	ND	ND	ND	ND	ND	NA
EB11*	7-Apr-94	Unk	7.5	ND	ND	ND	ND	ND	ND	NA
MW4	19-Jul-95	4.0	<1	NA	<.005	<.005	<.005	<.005	NA	NA
MW4	19-Jul-95	8.0	<1	NA	<.005	<.005	<.005	<.005	NA	NA
SB2	20-Dec-00	6.0	<10	NA	NA	NA	NA	NA	NA	NA
SB5	20-Dec-00	6.5	<10	NA	NA	NA	NA	NA	NA	NA
SB6	20-Dec-00	7.0	<10	NA	NA	NA	NA	NA	NA	NA
SB10	20-Dec-00	6.0	<10	NA	NA	NA	NA	NA	NA	NA
SB12	20-Dec-00	6.5	<10	NA	NA	NA	NA	NA	NA	NA
SB14	20-Dec-00	7.0	<10	NA	NA	NA	NA	NA	NA	NA
SB15	20-Dec-00	6.0	<10	NA	NA	NA	NA	NA	NA	NA
SB16	20-Dec-00	6.5	14	NA	NA	NA	NA	NA	NA	NA
Location Uknown										
DS-1	20-Jun-89	Unk	<20	NA	0.092	<.05	<.05	1.456	NA	NA
DS-2	20-Jun-89	Unk	4,310	NA	<.05	<.05	0.19	0.645	NA	NA
DS-3	20-Jun-89	Unk	1,690	NA	<.05	<.05	<.05	0.284	NA	NA
DS-4	20-Jun-89	Unk	420	NA	0.197	<.05	<.05	<.05	NA	NA
LS-1	15-Jun-90	Unk	9.0	NA	NA	NA	NA	NA	NA	NA
LS-2	15-Jun-90	Unk	ND	NA	NA	NA	NA	NA	NA	NA
LS-3	15-Jun-90	Unk	ND	NA	NA	NA	NA	NA	NA	NA
LS-4	15-Jun-90	Unk	ND	NA	NA	NA	NA	NA	NA	NA
LS-5	15-Jun-90	Unk	ND	NA	NA	NA	NA	NA	NA	NA
LS-6	15-Jun-90	Unk	ND	NA	NA	NA	NA	NA	NA	NA
ESL res			**100**	**100**	**0.044**	**2.9**	**3.3**	**2.3**	**500**	**?**

NOTES
TPH-D = Total petroleum hydrocarbons quantitated as diesel
TPH-G = Total petroleum hydrocarbons quantitated as gasoline
MTBE = Methyl tertiary butyl ether by EPA Method 8020, with confirmation by EPA Method 8260B.
O&G = Oil and Grease
TPH-WO = Total petroleum hydrocarbons quantitated as waste oil
<50 = Analyte not detected above the laboratory method reporting limit indicated.
ND = Analyte not detected above the laboratory method reporting limit indicated.
ESL res = Environmental Screening Levels subsurface soil, residental land use, potential drinking water
ESL ind = Environmental Screening Levels subsurface soil, commercial land use, potential drinking water
NA = Not Analyzed
Unk = unknown sample depth
* = Report as CB in oil and grease results by laboratory

TABLES

TABLE 3
CHEMICAL ANALYSIS FOR QUARTERLY MONITORING GROUNDWATER SAMPLES
4919 Tidewater Avenue
Oakland, California

Well Number Sample Date	TPH-D	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Fe	NO3	SO4	O&G	TRPH
	all results in micrograms per liter											
MW-1												
14-Apr-94	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	NA
17-Nov-94	ND	ND	ND	ND	ND	ND	1,100	NA	NA	NA	10.4	6.4
13-Aug-95	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
26-May-99	ND	60	0.6	ND	0.8	1.9	ND	NA	NA	NA	NA	NA
23-Aug-99	ND	NA	ND	ND	ND	ND	NA	0.11	ND	ND	NA	NA
16-Oct-00	150	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA
26-Apr-01	1,300	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA
5-Sep-02	<50	NA	<0.5	<0.5	<0.5	<1	9.8	NA	NA	NA	NA	NA
18-Aug-05	**410***	<50	<1	<1	<1	<1	**6.0**	NA	NA	NA	NA	NA
MW-2												
14-Apr-94	FP	FP	FP	FP	FP	FP	NA	NA	NA	NA	FP	NA
17-Oct-94	28,000	ND	ND	ND	ND	ND	NA	NA	NA	NA	102.1	96.3
13-Aug-95	180	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
26-May-99	120	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
23-Aug-99	61	NA	ND	ND	ND	ND	NA	0.08	ND	ND	NA	NA
16-Oct-00	3,400	570	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA
26-Apr-01	57,000	2,400	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA
5-Sep-02	27,100	NA	<0.5	<0.5	<0.5	<1	5.1	NA	NA	NA	NA	NA
18-Aug-05	**13,300**	<50	<10	<10	<10	<10	<30	NA	NA	NA	NA	NA
MW-3												
14-Apr-94	7,700	250	ND	ND	ND	1.2	NA	NA	NA	NA	1.7	NA
17-Oct-94	160,000	ND	ND	ND	ND	ND	NA	NA	NA	NA	327.8	313.3
13-Aug-95	1,500	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
26-May-99	1,100	160	1.6	1.1	16	54.00	ND	NA	NA	NA	NA	NA
23-Aug-99	84	NA	ND	ND	ND	ND	NA	0.14	ND	ND	NA	NA
16-Oct-00	42,000	130	0.52	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA
26-Apr-01	21,000	310	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA
5-Sep-02	1,990	NA	<0.5	<0.5	<0.5	<1	31.1	NA	NA	NA	NA	NA
18-Aug-05	FP	FP	FP	FP	FP	FP	FP	NA	NA	NA	NA	NA
MW-4												
13-Aug-95	ND	450	2.1	0.7	4.1	13	NA	NA	NA	NA	NA	NA
26-May-99	100	600	0.7	ND	ND	5.8	ND	NA	NA	NA	NA	NA
23-Aug-99	180	NA	ND	ND	ND	ND	NA	0.33	ND	ND	NA	NA
16-Oct-00	75,000	890	<0.5	<0.5	<0.5	11	NA	NA	NA	NA	NA	NA
26-Apr-01	24,000	2,100	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA
5-Sep-02	17,000	NA	<0.5	<0.5	<0.5	<1	1.2	NA	NA	NA	NA	NA
18-Aug-05	**6,200**	<50	<1	<1	<1	<1	<3	NA	NA	NA	NA	NA
SUMP 1												
23-Aug-99	140	NA	ND	ND	ND	ND	NA	0.28	ND	ND	NA	NA
ESL												
Aquatic Habitat	**640**	**500**	**46**	**130**	**290**	**100**	8,000	---	---	---	**640**	**640**
Vapor Intrusion into Buildings	---	---	540	380,000	170,000	160,000	24,000	---	---	---	---	---
Ceiling (odors etc.)	2,500	5,000	20,000	400	300	5,300	1,800	---	---	---	2,500	2,500

NOTES
TPH-D = Total petroleum hydrocarbon quantitated as diesel.
TPH-G = Total petroleum hydrocarbon quantitated as gasoline.
MTBE = Methyl tertiary butyl ether.
Fe = Iron +2
NO3 = Nitrate
SO4 = Sulfate
O&G = Oil and Grease
TRPH = Total Residual Petroleum Hydrocarbons
FP=Floating Product, monitoring well sample not collected
NA = Not analyzed.
<50 = Analyte not detected above the laboratory method reporting limit indicated.
ND = Analyte not detected above the laboratory method reporting limit indicated.
* = Chromatogram does not resemble the typical diesel pattern.
ESL = Environmental Screening Levels for groundwater that is <u>not</u> potentioal groundwater

TABLE 2
ANALYTICAL RESULTS FOR GROUNDWATER GRAB-SAMPLES

4919 Tidewater Avenue
Oakland, California

Well Number Sample Date	Date	TPH-D	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes	O&G	VOC
		all results in micrograms per liter							
WS-1(BH2)	5/2-3/89	<80	NA	NA	NA	NA	NA	NA	NA
WS-1	16-May-89	NA	NA	110	41	1,000	120	NA	8,000
WS-2	16-May-89	690,000	NA	NA	NA	NA	NA	NA	NA
WWOP-1	24-May-89	<100	NA	<2	120	260	3,300	36,000	ND
SB1-GW	20-Dec-00	<100	NA	NA	NA	NA	NA	NA	NA
SB2-GW	20-Dec-00	26,000	NA	NA	NA	NA	NA	NA	NA
SB3-GW	20-Dec-00	<100	NA	NA	NA	NA	NA	NA	NA
SB4-GW	20-Dec-00	<100	NA	NA	NA	NA	NA	NA	NA
SB5-GW	20-Dec-00	110,000	NA	NA	NA	NA	NA	NA	NA
SB6-GW	20-Dec-00	230,000	NA	NA	NA	NA	NA	NA	NA
SB7-GW	20-Dec-00	<100	NA	NA	NA	NA	NA	NA	NA
SB8-GW	20-Dec-00	<100	NA	NA	NA	NA	NA	NA	NA
SB9-GW	20-Dec-00	<100	NA	NA	NA	NA	NA	NA	NA
SB10-GW	20-Dec-00	670,000	NA	NA	NA	NA	NA	NA	NA
SB11-GW	20-Dec-00	<100	NA	NA	NA	NA	NA	NA	NA
SB12-GW	20-Dec-00	190,000	NA	NA	NA	NA	NA	NA	NA
SB13-GW	20-Dec-00	<100	NA	NA	NA	NA	NA	NA	NA
SB14-GW	20-Dec-00	44,000	NA	NA	NA	NA	NA	NA	NA
SB15-GW	20-Dec-00	48,000	NA	NA	NA	NA	NA	NA	NA
SB16-GW	20-Dec-00	2,000	NA	NA	NA	NA	NA	NA	NA
EB-1GWS	7-Apr-94	240	ND	ND	ND	ND	ND	ND	NA
EB-2GWS	7-Apr-94	64,000	2,500	ND	1.2	ND	ND	100	NA
EB-3GWS	7-Apr-94	330	ND	ND	ND	ND	ND	ND	NA
EB-4GWS	7-Apr-94	73,000	200	200	ND	0.80	4.4	38	NA
EB-5GWS	7-Apr-94	<50	ND	ND	ND	ND	ND	ND	NA
EB-6GWS	7-Apr-94	650	94	ND	ND	ND	ND	ND	NA
EB-7GWS	7-Apr-94	<50	ND	ND	ND	ND	ND	ND	NA
EB-8GWS	7-Apr-94	<50	ND	ND	ND	ND	ND	ND	NA
EB-9GWS	7-Apr-94	<50	ND	ND	ND	ND	ND	ND	NA
EB-10GWS	7-Apr-94	220	ND	ND	ND	ND	ND	3.4	NA
EB-11GWS	7-Apr-94	290	ND	ND	ND	ND	ND	ND	NA
ESL	**Aquatic Habitat**	**640**	**500**	**46**	**130**	**290**	**100**	**640**	-
	Vapor Intrusion	---	---	540	380,000	170,000	160000	-	-

NOTES
TPH-G = Total petroleum hydrocarbons quantitated as gasoline
TPH-D = Total petroleum hydrocarbons quantitated as diesel
MTBE = Methyl tertiary butyl ether
<50 = Analyte not detected above the laboratory method reporting limit indicated.
ND = Analyte not detected above the laboratory method reporting limit indicated.
ESL = Environmental Screening Levels for groundwater that is<u>not</u> potential drinking water
NA = Not Analyzed
O&G = Oil and Grease
VOC= Volatile Organic Compounds, no more specific information avialable in GenTech 24 March 1994, and original report not found during file review.

TABLE 4
GROUNDWATER ELEVATION DATA
4919 Tidewater Avenue
Oakland

Well Number	Date Monitored	Top of Casing Elevation (ft amsl)	Depth to Liquid (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Groundwater Elevation (ft amsl)
MW-1	14-Apr-94	2.68		1.26		1.42
	17-Nov-94	2.68		3.88		-1.20
	13-Aug-95	2.68		3.09		-0.41
	23-Aug-99	2.68		2.17		0.51
	26-May-99	2.68		2.29		0.39
	26-Apr-01	2.68		1.14		1.54
	5-Sep-02	2.68		2.15		0.53
	18-Aug-05	2.68	2.54	2.54	0	0.14
	19-Aug-05	2.68	6.1	6.10	0	-3.42
MW-2	14-Apr-94	3.5		1.92		1.58
	18-Nov-94	3.5		1.78		1.72
	13-Aug-95	3.5		2.95		0.55
	23-Aug-99	3.5		2.89		0.61
	26-May-99	3.5		2.96		0.54
	26-Apr-01	3.5		1.74		1.76
	5-Sep-02	3.5		3.06		0.44
	18-Aug-05	3.5	2.62	2.62	0	0.88
	19-Aug-05	3.5	2.62	2.62	0	0.88
MW-3	14-Apr-94	2.9		1.33		1.57
	18-Nov-94	2.9		1.23		1.67
	13-Aug-95	2.9		2.18		0.72
	23-Aug-99	2.9		2.18		0.72
	26-May-99	2.9		2.50		0.40
	26-Apr-01	2.9		1.29		1.61
	5-Sep-02	2.9		2.34		0.56
	18-Aug-05	2.9	2.04	2.08	0.04	0.85
	19-Aug-05	2.9	2.07	2.10	0.03	0.82
MW-4	13-Aug-95	3.87		3.33		0.54
	26-May-99	3.87		3.31		0.56
	26-Apr-01	3.87		1.69		2.18
	5-Sep-02	3.87		3.31		0.56
	18-Aug-05	3.87	3.37	3.37	0	0.50
	19-Aug-05	3.87	3.46	3.46	0	0.41

NOTES
ft amsl = feet above mean sea level
Depth to water measured in feet below top of casing survey point.
Groundwater Elevation reported in feet above mean sea level.

Appendix A

LIST OF PREVIOUS REPORTS IDENTIFIED IN PUBLIC FILE REVIEW FOR 4919 TIDEWATER AVE. OAKLAND, CA

In Chronological Order

Geo-Environmental Technology, April 27 1989, Underground Tank Removal

Geo-Environmental Technology, June 15, 1989, Technical Report and Preliminary Investigation.

Gen-Tech Environmental, March 12, 1991, Contaminated Site Interim Report and Technical Work Plan for Migration Control.

Gen-Tech Environmental, March 24, 1994, Summary Report of Previous Site Activity.

Gen-Tech Environmental, May 17, 1994, Soil and Groundwater Investigation

Gen-Tech Environmental, July 12, 1994, Supplemental Technical Report Letter on Bioremediation of Contaminated Soils and Trench Installation

Gen-Tech Environmental, December 9, 1994, Quarterly Monitoring Report, Fourth Quarter.

Environmental Restoration Services, August 18 1995, Investigative Report, Groundwater Extraction/Disposal

PIERS Environmental Services, August 27, 1999, Groundwater Monitoring Event, Product Removal System Performance

PIERS Environmental Services, November 27, 2000, Groundwater Monitoring Event, Free-Product Removal System Performance

PIERS Environmental Services, December 27, 2000, Investigative Report

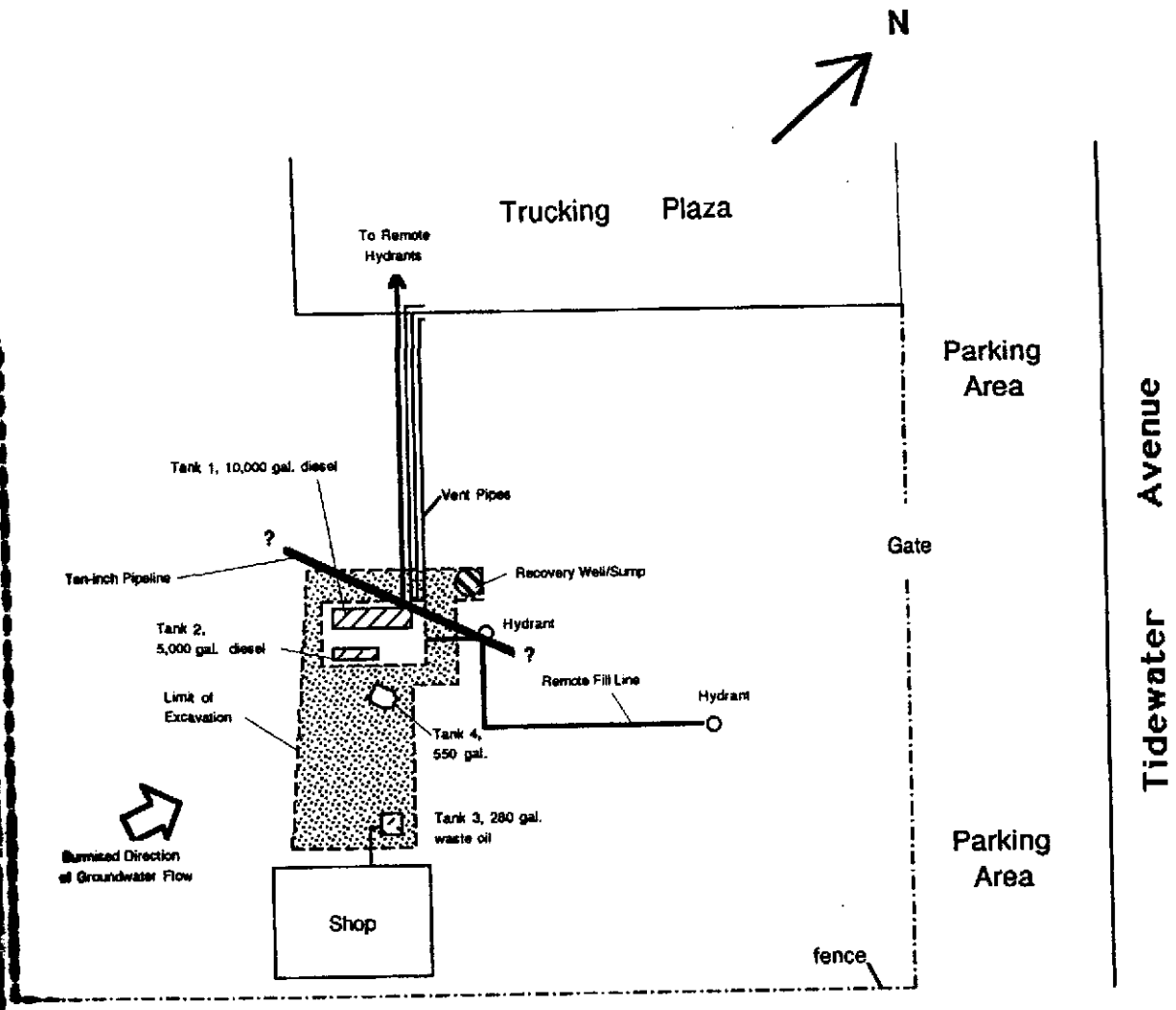
Environmental Restoration Services, May 7, 2001, Groundwater Monitoring Event

Environmental Restoration Services, September 27, 2002, Groundwater Monitoring Event.

Environmental Restoration Services, October 4, 2002, Revision of ERS February 6, 2001, Corrective Action Plan

Appendix B

GEN-TECH 1994 SUMMARY REPORT INFORMATION



Notes: Information presented taken from Geo-Environmental Technology, Inc. June, 1989.
Tank No. 4 discovered during excavation, apparently used for petroleum storage. Ten-inch Pipeline may be related to *oil refinery* use..

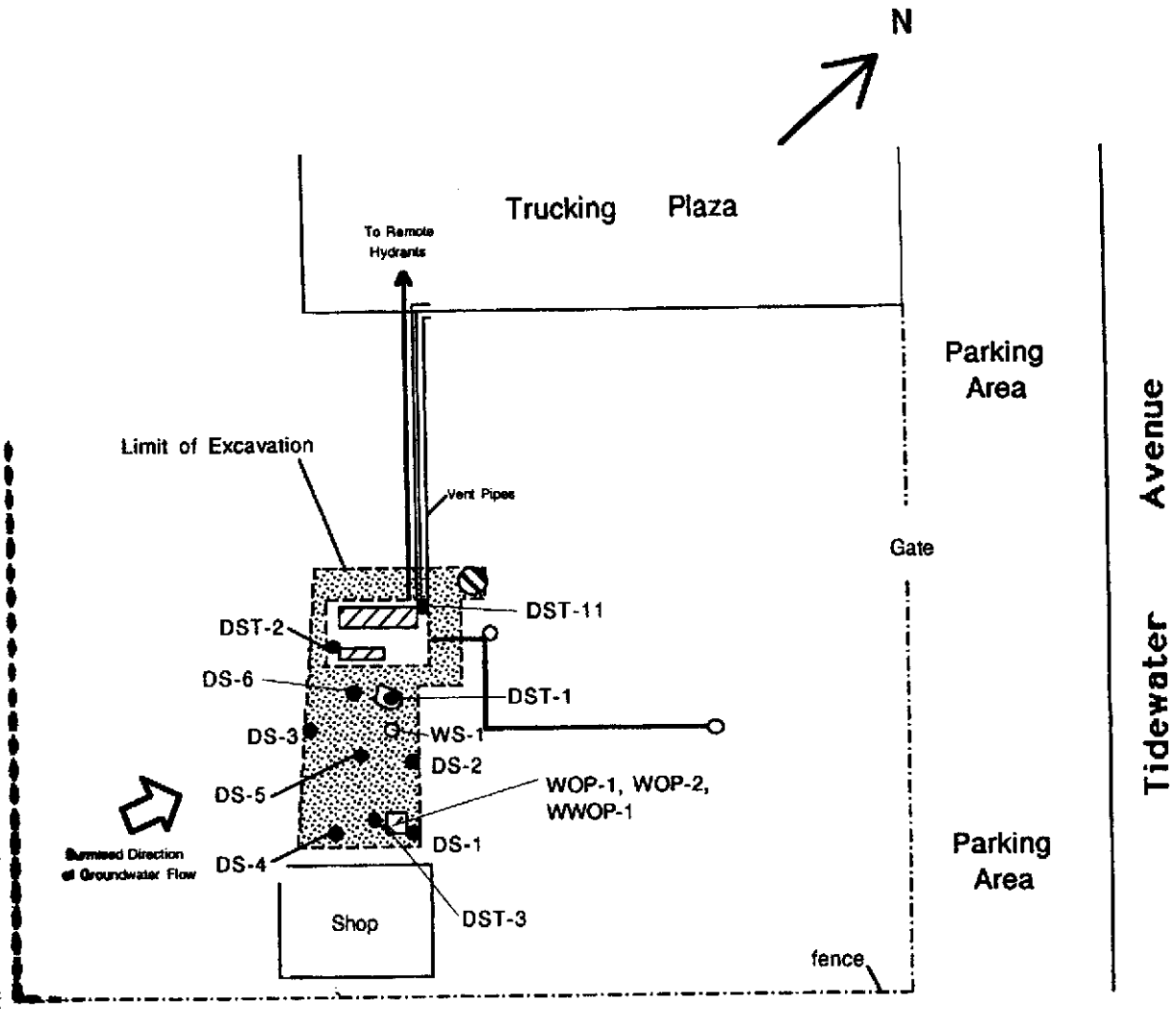
0 50

Tank Location and Excavation Map
DiSalvo Trucking
4919 Tidewater Avenue
Oakland, CA

Project No. 9344
Scale: 1" = 50'
Date: Mar., 1994

Figure 2

Gen Tech Environmental, Inc.
San Jose, CA



Notes: Information presented taken from Environmental Technology, Inc. June, 1989, Plate 2, 6-10-89. "Environmental Technology and Geo-Environmental Technology are the same company and performed the work.

● Soil Sample Location

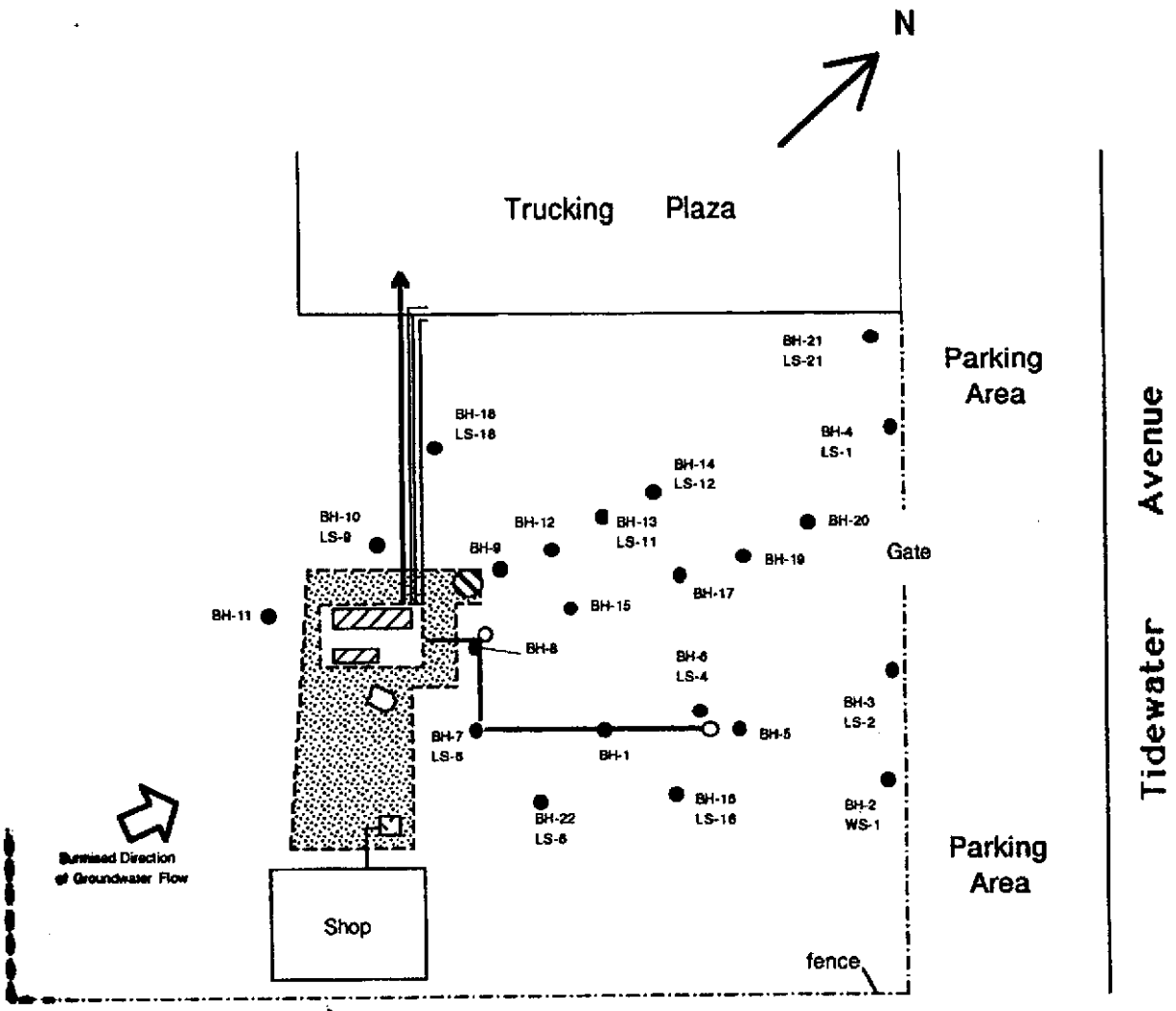
0 50'

Environmental, Inc.

Soil Sampling Map
Excavation Limit
DiSalvo Trucking
4919 Tidewater Avenue
Oakland, CA

Project No. 9344
Scale: 1" = 50'
Date: Mar., 1994

Figure 3



Notes: Information presented taken from Environmental Technology, Inc. June, 1989, Plate 3, 6-10-89. "Environmental Technology and Geo-Environmental Technology" are the same company and performed the work.

● BH-16 - Borehole Location
LS-16 - Sample Number

0 50'

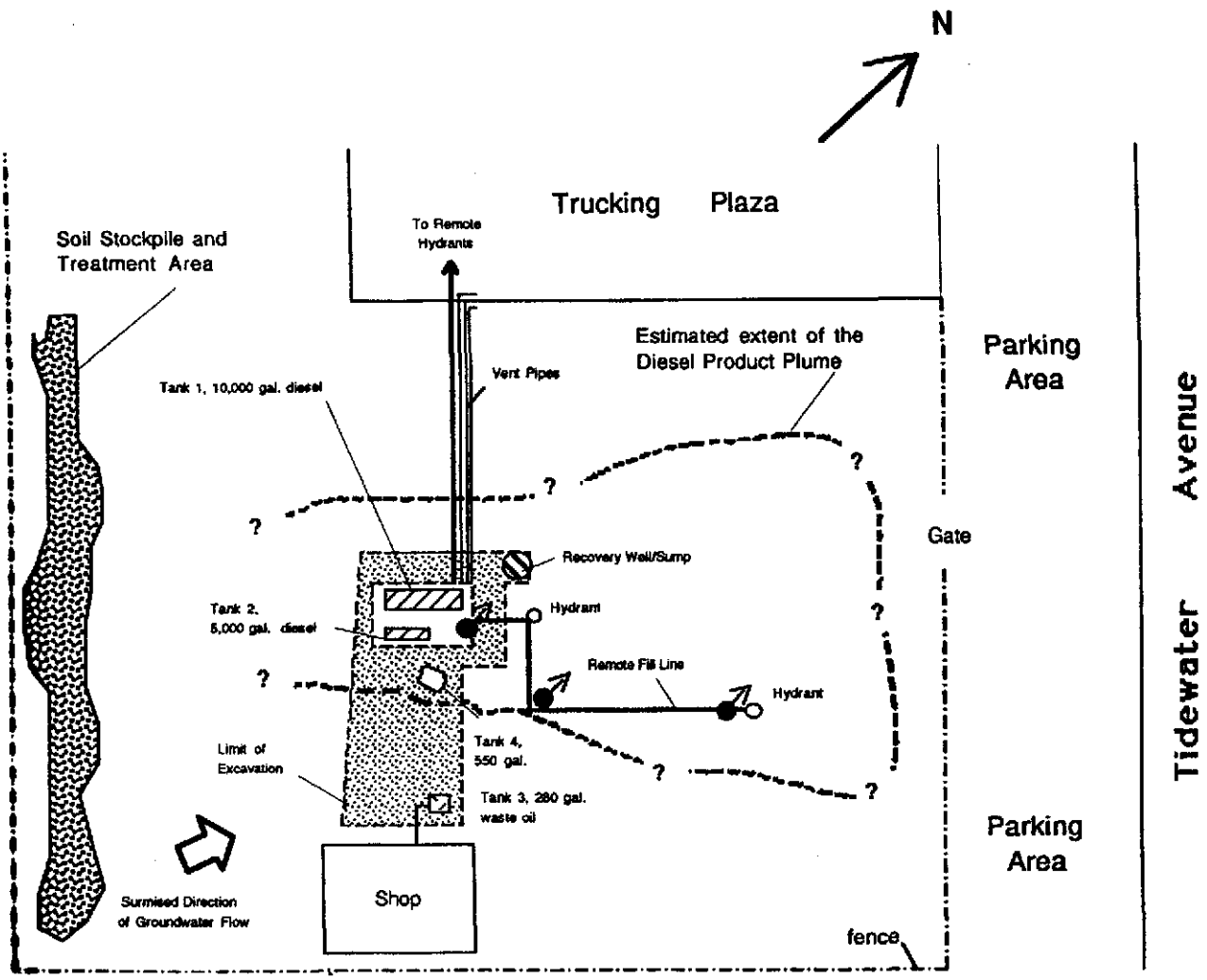
Gen Tech Environmental, Inc.
San Jose, CA

Yard Area Sampling Map

DiSalvo Trucking
4919 Tidewater Avenue
Oakland, CA

Project No. 9344
Scale: 1" = 50'
Date: Mar., 1994

Figure 4



Estimated extent of the separate phase Diesel plume plotted using sample locations shown on Figures 3 and 4.

Corroded Pipeline and/or Pipeline Leak

0 50'

Notes: Information presented taken from Geo-Environmental Technology, Inc. June, 1989.

Gen Tech Environmental, Inc.
San Jose, CA

Diesel Product Plume, May-June, 1989
DiSalvo Trucking
4919 Tidewater Avenue
Oakland, CA

Project No. 9344
Scale: 1" = 50'
Date: Mar., 1994

Figure 5

The soil declassification work was done by another subcontractor (Aqua Terra), who selected the laboratory foir their analyses.

Selected samples were chemically analyzed for Total Petroleum Hydrocarbons as Gasoline (TPHG), Diesel (TPHD), Benzene, Toluene, Ethylbenzene and Xylene (BTEX), Volatile Organic Analysis (VOC), Base Neutral Analysis (BNA), Ignitability, Priority Metals and Waste Oil/Total Oil and Grease using EPA Methods 8015, 8020, 8240, 8270, 7000 Series, and 503E. The chemical analytical reports are presented in the individual reports attached to this report. A fuel "fingerprint" was sent to Curtis Thompkins Laboratory in Berkeley, California for analysis of the liquid fuel. The sample was analyzed for TPHD, phenols and polychlorinated byphenols (PCB) using EPA Methods 8015, 8080 and 604. The results showed that the unknown fuel was 95% diesel, and that Aroclor PCB and phenols were not detected.

A summary of the soil and water data is presented in Tables 1 and 2 below. The data is grouped and listed by sample date, and where analysis constituents change a new header with those constituents analyzed is inserted into the Table.

Table 1. Soil Chemical Analysis Results

Sample No.	Date Sampled	TPHG ug/kg	TPHD ug/kg	B	T	E ug/kg	X	OG ug/kg
DS-1*	3/24/89	NR	<3,000	<20	<20	<100	<40	NR
DS-2*	3/24/89	NR	<3,000	<20	<20	<100	<40	NR
DS-3*	3/24/89	NR	<3,000	<20	<20	<100	<40	NR
DS-4*	3/24/89	NR	64,000	<20	<20	<100	<40	NR
DS-5*	3/24/89	NR	<3,000	<20	<20	<100	<40	NR
DS-6*	3/24/89	NR	<3,000	<20	<20	<100	<40	NR
DST-1*	3/27/89	<500	<3,000	<30	<30	<100	<50	NR
LS-1*	5/2/89	NR	<3,000	NA	NA	NA	NA	NR
LS-2*	5/2/89	NR	<3,000	NA	NA	NA	NA	NR
LS-4*	5/2/89	NR	3,000,000	NA	NA	NA	NA	NR
LS-6*	5/2/89	NR	40,000	NA	NA	NA	NA	NR
LS-8*	5/2/89	NR	460,000	NA	NA	NA	NA	NR
LS-10*	5/2/89	NR	46,000,000	NA	NA	NA	NA	27,000,000
LS-11*	5/2/89	NR	420,000	NA	NA	NA	NA	NR
LS-16*	5/4-5/89	NR	<3,000	NA	NA	NA	NA	NR
LS-18*	5/4-5/89	NR	<3,000	NA	NA	NA	NA	NR
LS-21*	5/4-5/89	NR	<3,000	NA	NA	NA	NA	NR
LS-22*	5/4-5/89	NR	<3,000	NA	NA	NA	NA	NR
SS-1*	5/16/89	4,100	NR	<30	39	240	2,000	<400
SS-2*	5/16/89	1,600	NR	<30	<30	<100	<40	<500

Table 1. Soil Chemical Results con't.

Sample No.	Date Sampled	VOC ug/kg	TPHD mg/kg	B	T	E	Total X	TPHWO mg/kg
				------	all	ug/kg	-----	
SS-1#	5/26/89	NR	1,300	NA	NA	NA	NA	ND
SS-8#	5/26/89	NR	3,900	NA	NA	NA	NA	ND
SS-12#	5/26/89	NR	8,300	NA	NA	NA	NA	ND
SS-16#	5/26/89	NR	1,800	NA	NA	NA	NA	ND
SS-20#	5/26/89	NR	650	NA	NA	NA	NA	280
SS-23#	5/26/89	NR	1,400	NA	NA	NA	NA	210
SS-28#	5/26/89	NR	790	NA	NA	NA	NA	240
SS-31#	5/26/89	NR	18,000	NA	NA	NA	NA	1,200
SS-36#	5/26/89	NR	9,700	NA	NA	NA	NA	2,000
DS-1†	6/20/89	NR	<20	92	<50	<50	1,456	NR
DS-2†	6/20/89	NR	4,310	<50	<50	190	645	NR
DS-3†	6/20/89	NR	1,690	<50	<50	<50	284	NR
DS-4†	6/20/89	NR	420	197	<50	<50	<50	NR
WOP-1*	5/24/89	ND	<3,000	<20	<20	<30	<20	<10,000
WOP-2*	5/24/89	ND	<3,000	<20	<20	<30	<20	<10,000

Sample No.	Date Sampled	TPHG ug/kg	TPHD ug/kg	B	T	E	X	OG ug/kg
				------	all	ug/kg	-----	
TS-1†	6/19/89	NR	5,710	<50	410	<50	975	NR
TS-2†	6/19/89	NR	3,950	1,620	55,700	<50	1,000	NR
TS-3†	6/19/89	NR	1,330	<50	310	65	130	NR
TS-4†	6/19/89	NR	1,560	<50	<50	<50	<50	NR
TS-5†	6/19/89	NR	370	<50	<50	<50	<50	NR
SD-1†	6/19/89	NR	1,310	<50	<50	<50	<50	NR
SD-2†	6/19/89	NR	13,460	<50	<50	<50	<50	NR
SD-3†	6/19/89	NR	5,500	<50	<50	<50	<50	NR
LS-1@	6/15/90	NR	9.0	NR	NR	NR	NR	NR
LS-2@	6/15/90	NR	ND	NR	NR	NR	NR	NR
LS-3@	6/15/90	NR	ND	NR	NR	NR	NR	NR
LS-4@	6/15/90	NR	ND	NR	NR	NR	NR	NR
LS-5@	6/15/90	NR	ND	NR	NR	NR	NR	NR
LS-6@	6/15/90	NR	ND	NR	NR	NR	NR	NR

Table 1. Soil Chemical Results con't.

Sample No.	Date Sampled	Ign.	VOCΔ	BNA	Metals
SS-1, 8 COMP#	5/26/89	NI	ND	ND	TRG
SS-12, 16 COMP#	5/26/89	NI	ND	ND	TRG
SS-20, 23, 28 COMP#	5/26/89	NI	ND	ND	TRG
SS-31 SS-36 COMP#	5/26/89	NI	ND	ND	TRG

NOTES: Soil Chemical Analysis Results

NA - Not Analyzed
NR - Not Requested
ND - Not Detected
VOC - Volatile Organic Compound
VOCΔ - None detected except for fuel constituents reported above.
BNA - Base, Neutral and Acid Extractables
TPHWO - Total Petroleum Hydrocarbons as Waste Oil
TPHG - Total Petroleum Hydrocarbons as Gasoline
TPHD - Total Petroleum Hydrocarbons as Diesel
B - Benzene; T - Toluene; E - Ethylbenzene; X - (Total) Xylene
NI - Not Ignitable at <186° F
TRG - When metals detected, concentrations are considered typical for the regional geology.
* - Analyzed at Trace Analysis Laboratory, Hayward, CA
# - Analyzed by Med-Tox Associates, Pleasant Hill, CA
† - Analyzed by Carter Analytical Laboratory, Inc., Campbell, CA
@ - Analyzed by Chromalab, Inc. San Ramon, CA; post treatment stockpile soil samples.

Table 2. Water Chemical Analysis Results

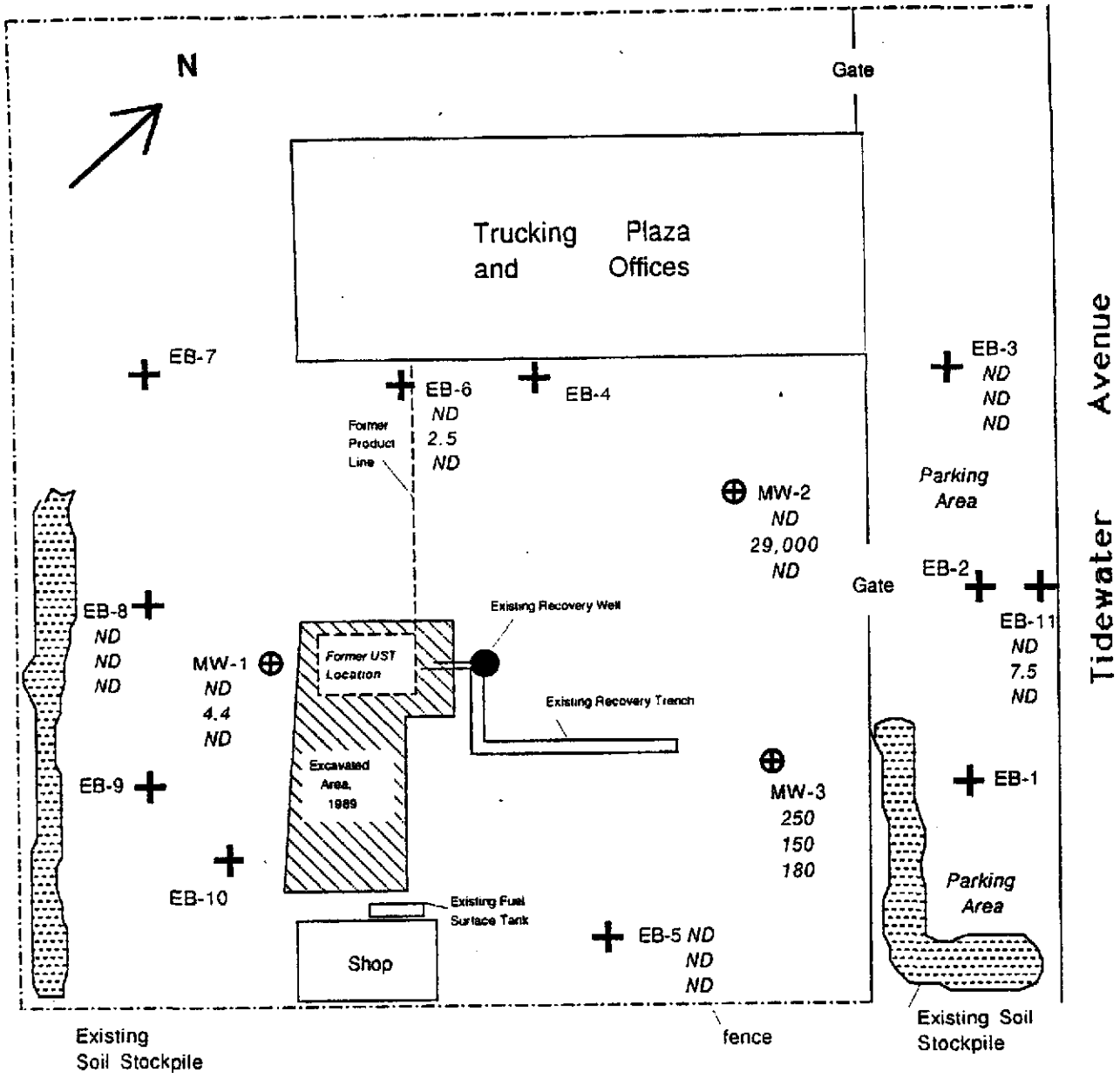
Sample No.	Date Sampled	VOC ug/kg	TPHD ug/kg	B ------	T all	E ug/kg	X ------	OG ug/kg
WS-1*	5/2-3/89	NR	<80	NR	NR	NR	NR	NR
WWOP-1*	5/24/89	ND	<100	<2	120	260	3,300	36,000
WS-1*	5/16/89	8,000	NR	110	41	1,000	120	NR
WS-2*	5/16/89	NR	690,000	NR	NR	NR	NR	NR

NOTES: Water Chemical Analysis Results

NA - Not Analyzed
NR - Not Requested
ND - Not Detected
VOC - Volatile Organics Compounds
TPHG - Total Petroleum Hydrocarbons as Gasoline
TPHD - Total Petroleum Hydrocarbons as Diesel
B - Benzene; T - Toluene; E - Ethylbenzene; X - (Total) Xylene
* - Analyzed at Trace Analysis Laboratory, Hayward, CA

Appendix C

GEN-TECH 1994 SOIL AND GROUNDWATER INVESTIGATION



MW-3 ⊕ Monitoring Well Location

EB-5 + Exploratory Boring Location

250 -TPH, Gasoline mg/kg
150 -TPH, Diesel mg/kg
180 - Benzene,ug/kg

Soil samples collected at the contact of the artifical fill and native soil which corresponds to the capillary fringe

0 feet 60

Soil Chemical Results

DiSalvo Trucking
4919 Tidewater Avenue
Oakland, CA

Project No. 9344
Scale: 1" = 60'
Date: Apr., 1994

Figure 4

Gen Tech Environmental, Inc.
San Jose, CA

TABLE 2. SOIL BORING CHEMICAL DATA

Sample No.	TPHG mg/kg	TPHD mg/kg	B	T	E	X	OG mg/kg
			-----	all	ug/kg	-----	
MW#1@C/F	ND	4.4	ND	ND	ND	ND	ND
MW#2@C/F	ND	29,000	ND	ND	ND	ND	36,000
MW#3@C/F	250	150	180	ND	2,100	2,000	ND
EB-3@C/F	ND	ND	ND	ND	ND	ND	ND
EB-5	ND	ND	ND	ND	ND	ND	180
EB-6	ND	2.5	ND	ND	ND	ND	ND
EB-8	ND	ND	ND	ND	ND	ND	ND
EB-11*	ND	7.5	ND	ND	ND	ND	ND

C/F - Contact between artificial fill and native sediments, see boring logs for depth.
*Reported as CB in Oil and grease results by laboratory
mg/kg - Milligrams per Kilogram
ug/kg - Micrograms per kilogram

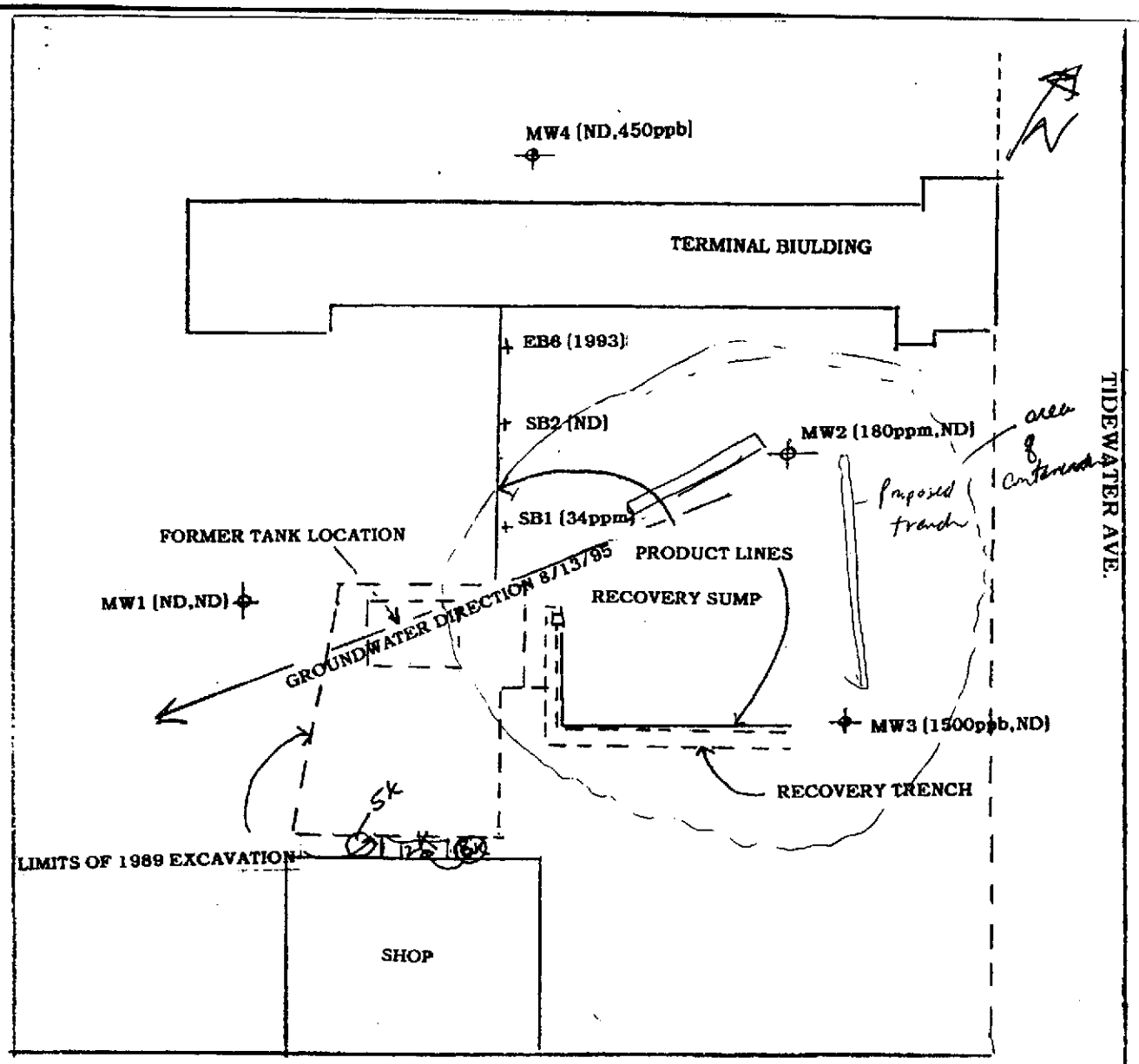
TABLE 2. GROUNDWATER CHEMICAL DATA

Sample No.	TPHG ug/l	TPHD ug/l	B	T	E	X	OG ug/l
			-------	ug/l		------	
EB-1GWS	ND	240	ND	ND	ND	ND	ND
EB-2GWS	2,500	64,000	ND	1.2	ND	ND	100
EB-3GWS	ND	330	ND	ND	ND	ND	ND
EB-4GWS	200	73,000	200	ND	0.80	4.4	38
EB-5GWS	ND	ND	ND	ND	ND	ND	ND
EB-6GWS	94	650	ND	ND	ND	ND	ND
EB-7GWS	ND	ND	ND	ND	ND	ND	ND
EB-8GWS	ND	ND	ND	ND	ND	ND	ND
EB-9GWS	ND	ND	ND	ND	ND	ND	ND
EB-10GWS	ND	220	ND	ND	ND	ND	3.4
EB-11GWS	ND	290	ND	ND	ND	ND	ND
MW-1	ND	ND	ND	ND	ND	ND	ND
MW-2	FP	FP	FP	FP	FP	FP	FP
MW-3	250	7,700	ND	ND	ND	1.2	1.7

FP - Floating Product, monitoring well sample not collected.
ND - Not Detected
mg/l - milligram per liter
ug/l - microgram per liter

Appendix D

ENREST 1995 SOIL AND GROUNDWATER INVESTIGATION



MONITORING WELL LOCATIONS (TPH/d,TPH/g)

SOIL BORING LOCATIONS (TPH/d)

SITE PLAN

DISALVO TRUCKING 4919 TIDEWATER AVE., OAKLAND

SCALE: 1"=50'	APPROVED BY:	DRAWN BY
DATE: 8/12/95		REVISED

Environmental Restoration Services

1115 Merrill Street • Menlo Park, California 94025

DRAWING NUMBER
FIGURE 2

Appendix E

FIELD DATA FORMS

Groundwater Level Summary

Project Location: 49M TRUMPETER Date: 8.18.05

Project Number: 05-001-01 Inspector: KC & GAFL

Meter Type (WLM/FP) SOLINST Measure Point (TOC or other) _____

Well Number	Time Open	Time Measured	Time Sample (NP only)	Total Depth (Standard Purge only)	Depth to LNAPL	Depth to Water	Comments
MW-1	9:30	10:06		6.74		2.54	
MW-2	9:32	10:09		7.21		2.62	
MW-3	9:35	10:20		7.05	2.04	2.08	
MW-4	9:37	10:12		7.40		3.37	
RECOVERY SUMP	9:52	10:33			NO	2.35	UNSCREEN. DEDICATED BAILER REMOVED. SHEEN ON WATER NO MEASURABLE PRODUCT IN BAILER
LOW TO HIGH TIDE							

Groundwater Level Summary

Project Location: 4919 FM 511 Date: 8.19.05

Project Number: 05-001-01 Inspector: LC

Meter Type (WLM/IEP) SOLINST Measure Point (TOC or other) _____

Well Number	Time Open	Time Measured	Time Sample (NP only)	Total Depth (Standard Purge only)	Depth to LNAPL	Depth to Water	Comments
	HIGH TO LOW TIDE						
MW-1	14:44	15:24				6.10	
MW-2	14:41	15:26				2.62	
MW-3	14:40	15:28			2.07	2.10	
MW-4	14:46	15:20		3.46		3.46	

Groundwater Level Summary

Project Location: 4919 TRONWAY Date: 8.19.05

Project Number: 05-001-01 Inspector: LC

Meter Type (WLM/IFP) SOLINST Measure Point (TOC or other) _____

Well Number	Time Open	Time Measured	Time Sample (NP only)	Total Depth (Standard Purge only)	Depth to LNAPL	Depth to Water	Comments
	HIGH TO LOW TIDE						
MW-1	14:44	15:24				6.10	
MW-2	14:41	15:26				2.62	
MW-3	14:40	15:28			2.07	2.10	
MW-4	14:46	15:20		~~3.46~~		3.46	

GROUNDWATER SAMPLE DATA

Well # MW-1

Project # 05-001-01 Project Location 4919 TIDEWATER

Purge Date 8.18.05 Personnel JAC

Purge Method DISP. BAILER Purge Rate (pump only)

Parameter Meter OAKTON

4.2 x .8 = 3.36

6.74 − 3.36 = 3.38

Depth to Bottom	- Depth to Water	= Casing volume	* Volume Factor 0.75"=.02 2"=0.17 4"=0.66	= Gallons per CV
6.74	2.54	4.2	.17	.74

Time (24 hour clock)	Gallons Removed	EC (uS/cm)	Temp [C]	pH	NOTES
11:40	START				
11:44	.75	7.03	25.2	6.75	
11:52	1.5	7.45	24.3	6.85	
~~11:?~~			~~25.0~~	~~6.65~~	
START TO RECOVER @ 12:30 - 6.02					
~~NO~~ RECOVER 4.05' IN 3.5 HOURS - 5.97					
16:20	SAMPLE				

Well Dewatered (Y/N)	Total Volume Removed (gal)	Casing Vol removed ~~(gal)~~
Y	1.5	2

Depth to Water at Sampling	Date Sampled	Time Sampled	Sample Method	#/type containers
5.97	8.18.05	16:20	DISP. BAILER	3/VOA 1/LITER

Well # MW-1

GROUNDWATER SAMPLE DATA

Well # MW-2

Project # 05-001-01 | **Project Location** 4/19 FARMINGTON

Purge Date 6-18-05 | **Personnel** JLC

Purge Method DISP. BAILER | **Purge Rate (pump only)**

Parameter Meter OAKTON

Depth to Bottom	- Depth to Water	= Casing volume	* Volume Factor 0.75"=.023 2"=0.17 4"=0.66	= Gallons per CV
7.21	2.62	4.58	.17	.78

Time (24 hour clock)	Gallons Removed	EC (uS/cm)	Temp [C]	pH	NOTES
12:37	START				GAS SMELL
12:45	.75	1380	25.5	6.71	
12:52	1.5	1309	25.6	6.61	
12:57	2.25	1355	23.5	6.65	
13:00	SAMPLE				
13:05	CAMPLE - TPH-D				

Well Dewatered (Y/N)	Total Volume Removed (gal)	Casing Vol removed
N	2.25	4

Depth to Water at Sampling	Date Sampled	Time Sampled	Sample Method	#/type containers
—	6.18.05	13:00 -VOA 13:00 -1L	DISP. BAILER	3/VOA 2/LITER

Well # MW-2

GROUNDWATER SAMPLE DATA

Well # MW-3

Project # 05-001-01 **Project Location** 4515 TRANSMITTER

Purge Date 8.18.05 **Personnel** JCC

Purge Method DISP. BAILER **Purge Rate (pump only)**

Parameter Meter OAKTON

Depth to Bottom	- Depth to Water	= Casing volume	* Volume Factor 0.75"=.02 2"=0.17 4"=0.66	= Gallons per CV
7.05	2.04	5.01	.17	.85

Time (24 hour clock)	Gallons Removed	EC (uS/cm)	Temp [C]	pH	NOTES
14:45	START				
16:05					
REMOVED ~40 GALS					SAMPLE
REMOVED TO START					

LAST

Well Dewatered (Y/N)	Total Volume Removed (gal)	Casing Vol removed (gal)

Depth to Water at Sampling	Date Sampled	Time Sampled	Sample Method	#/type containers

Well # MW-3

GROUNDWATER SAMPLE DATA

Well # MW-4

Project # 05-001-01 | Project Location 4919 TIDEWATER

Purge Date 8.18.05 | Personnel KC

Purge Method DISP. BAILER | Purge Rate (pump only)

Parameter Meter ORION

Depth to Bottom	- Depth to Water	= Casing volume	* Volume Factor 0.75"=.023 2"=0.17 4"=0.66	= Gallons per CV
7.40	3.37	4.03	.17	.68

Time (24 hour clock)	Gallons Removed	EC (uS/cm)	Temp [C]	pH	NOTES
10:58	START				GAS SMELL / SLIGHT SHEEN
11:01	.75	3.36	22.4	6.72	
11:05	1.5	5.23	22.3	6.81	
11:07	~~3.0~~ 2.25	4.85	22.2	6.83	
11:20	~~4.5~~ 3.0	4.95	21.5	6.97	
11:25	SAMPLE				
11:30	SAMPLE - TMD				

Well Dewatered (Y/N)	Total Volume Removed (gal)	Casing Vol removed (gal)
N	3.0	4

Depth to Water at Sampling	Date Sampled	Time Sampled	Sample Method	#/type containers
/	8.18.05	11:25-VOA 11:30-AMBER	DISP. BAILER	3/VOA 2/AMBER

Well # MW-4

GROUNDWATER SAMPLE DATA

Well # MW-1

Project # 05-001-01 | Project Location 4919 TIDEWATER

Purge Date 8.18.05 | Personnel JAC

Purge Method DISP. BAILER | Purge Rate (pump only)

Parameter Meter OAKTON

4.2 x .8 = 3.36

6.74 − 3.36 = 3.38

Depth to Bottom	- Depth to Water	= Casing volume	* Volume Factor 0.75"=.02 2"=0.17 4"=0.66	= Gallons per CV
6.74	2.54	4.2	.17	.74

Time (24 hour clock)	Gallons Removed	EC (uS/cm)	Temp [C]	pH	NOTES
11:40	START				
11:44	.75	7.03	25.2	6.75	
11:52	1.5	7.49	24.3	6.85	
~~11:54~~			~~25.0~~	~~6.65~~	
START RECOVERY @ 12:30 − 6.02					
~~NOT~~ RECOVER 4.05' IN 3.5 HOURS − 5.97					
16:20	SAMPLE				

Well Dewatered (Y/N)	Total Volume Removed (gal)	Casing Vol removed ~~(gal)~~
Y	1.5	2

Depth to Water at Sampling	Date Sampled	Time Sampled	Sample Method	#/type containers
5.97	8.18.05	16:20	DISP. BAILER	3/VOA 1/LITER

Well # MW-1

GROUNDWATER SAMPLE DATA

Well # MW-2

Project # 05-001-01 | **Project Location** 4919 DOWNTON

Purge Date 6.18.05 | **Personnel** JLC

Purge Method DISP. BAILER | **Purge Rate (pump only)**

Parameter Meter OAKTON

Depth to Bottom	- Depth to Water	= Casing volume	* Volume Factor 0.75"=.023 2"=0.17 4"=0.66	= Gallons per CV
7.21	2.62	4.58	.17	.78

Time (24 hour clock)	Gallons Removed	EC (uS/cm)	Temp [C]	pH	NOTES
12:37	START				GAS SMELL
12:45	.75	1380	25.5	6.71	
12:52	1.5	1305	25.6	6.61	
12:57	2.25	1355	23.5	6.65	
13:00	SAMPLE				
13:05	CAMPLE - TPH.D				

Well Dewatered (Y/N)	Total Volume Removed (gal)	Casing Vol removed ~~5~~
N	2.25	4

Depth to Water at Sampling	Date Sampled	Time Sampled	Sample Method	#/type containers
—	6.18.05	13:00 VOA 13:00 BTEX	DISP. BAILER	3/VOA 2/LITER

Well # MW-2

GROUNDWATER SAMPLE DATA

Well # MW3

Project # 05-001-01 Project Location 4515 TRONWOOD

Purge Date 8.18.05 Personnel ICC

Purge Method DESP. BAILER Purge Rate (pump only)

Parameter Meter OAKTON

Depth to Bottom	- Depth to Water	= Casing volume	* Volume Factor 0.75"=.028 2"=0.17 4"=0.66	= Gallons per CV
7.05	2.04	5.01	.17	.85

LAST

Time (24 hour clock)	Gallons Removed	EC (uS/cm)	Temp [C]	pH	NOTES
14:45	START				
16:05					
REMOVE ~40 GALS SAMPLE					
REMOVED TO START					

Well Dewatered (Y/N)	Total Volume Removed (gal)	Casing Vol removed (gal)

Depth to Water at Sampling	Date Sampled	Time Sampled	Sample Method	#/type containers

Well # MW-3

GROUNDWATER SAMPLE DATA

Well # MW-4
Project # 05-001-01
Project Location 4919 TIDEWATER
Purge Date 8.18.05
Personnel KC
Purge Method DISP. BAILER
Purge Rate (pump only)
Parameter Meter OAKTON

Depth to Bottom	- Depth to Water	= Casing volume	* Volume Factor 0.75"=.023 2"=0.17 4"=0.66	= Gallons per CV
7.40	3.37	4.03	.17	.68

Time (24 hour clock)	Gallons Removed	EC (uS/cm)	Temp [C]	pH	NOTES
10:58	START				GAS SMELL / SHEEN LIGHT
11:01	.75	3.36	22.4	6.72	
11:05	1.5	5.23	22.3	6.81	
11:07	~~3.0~~ 2.25	4.85	22.2	6.83	
11:20	~~4.5~~ 3.0	4.95	21.5	6.97	
11:25	SAMPLE				
11:30	SAMPLE - TPHD				

Well Dewatered (Y/N)	Total Volume Removed (gal)	Casing Vol removed (gal)
N	3.0	4

Depth to Water at Sampling	Date Sampled	Time Sampled	Sample Method	#/type containers
	8.18.05	11:25 - VOA 11:30 - AMBER	DISP. BAILER	3/VOA 2/LITER

Well # MW-4

Appendix F

STANDARD OPERATING PROCEDURES

STANDARD OPERATING PROCEDURES --- GROUNDWATER SAMPLING

Prior to groundwater sampling, a measurement is made of the static water level using a water level probe. At sites where the presence of separate-phase hydrocarbons is suspected, a product bailer or an interface probe is used to measure product thickness. The water level probe is cleaned with non-phosphate detergent and rinsed with de-ionized (DI) water between wells.

STANDARD PURGE PROCEDURES

The static water level and well depth are used to calculate the well casing volume. A minimum of 4 well casing volumes of water are purged from the well prior to sampling in order to obtain a representative sample of the groundwater from the formation surrounding the well. Wells should be purged and sampled in order of least to highest suspected concentrations.

Standard purging equipment is a new disposable bailer for each well. Alternatively, purging and sampling systems may be a stainless steel bailers; HDPE tubing with a foot-valve, or low-flow purging using a peristaltic pumps. Appropriate personal protective equipment is worn during purging. The well is purged until the clarity, pH, and conductivity of the discharged water has stabilized. "Stabilized" is defined as three consecutive readings within 10% of one another.

These parameters are measured and recorded initially, after every well casing volume is removed, and after the sample is collected. In some localities, turbidity, Eh, and dissolved oxygen measurements may also be required. If the well is purged dry prior to the removal of three or four casing volumes of water, the water level is allowed to recover to 80% of the static level before sampling. Whenever possible, samples will be collected within 24 hours after purging. Ideally, samples will be collected immediately after purging to minimize volatilization of aromatic hydrocarbons.

The standard sampling equipment will be inert polyethylene disposable bailers. New sampling gloves are worn during each sample collection. Sample containers typically consist, depending on the analysis, 40 milliliter volatile organic analysis (VOA) vials with Teflon septa, 1 liter amber glass bottles, or plastic bottles. HCl or other preservative are added to the sample containers as appropriate by the laboratory prior to sampling. The groundwater sample is decanted into each VOA vial to form a meniscus at the top to eliminate air bubbles when capped. The sample is labeled with date, time, sample number, project number and analysis. The samples are stored in a cooler with blue ice or ice, and delivered under chain-of-custody to the state-certified analytical laboratory. For quality control purposes, duplicate samples, trip blanks, and equipment blanks may also be collected. The duplicate sample is given a different number than the original sample from the same well. Trip blanks are prepared by the laboratory using DI water and remain in the cooler. Equipment blanks are collected from sampling equipment using DI water after the equipment has been decontaminated and rinsed.

All non-dedicated purging and sampling equipment is washed in non-phosphate detergent solution and double rinsed with DI water after use in every well to avoid cross-contamination.

Purge water will be properly disposed or temporarily contained in labeled steel barrels pending chemical analysis to determine proper disposal procedure.

NO PURGE ALTENATIVE PROCEDURES

Each well is sampled with a new 36-inch long inert polyethylene disposable bailer tied with unused string, so that no decontamination between wells is required. The bailer string is measured and marked with the measured depth to water such that the top of groundwater will be just below the top of the bailer. New sampling gloves are worn during each sample collection The bailer is slowly lowered into the groundwater until the mark on the string is at the top of the casing. Therefore, sample drawn from the base of the bailer will be taken from about 3 feet below the top of static groundwater in the well. The water sample is decanted into appropriate containers using a VOC tip to minimize aeration from turbid flow. The groundwater sample is decanted into each VOA vial to form a meniscus at the top to eliminate air bubbles when capped. The sample is labeled with date, time, sample number, project number and analysis. The samples are stored in a cooler with blue ice or ice, and delivered under chain-of-custody to the state-certified analytical laboratory.

STANDARD OPERATING PROCEDURE – HOLLOW-STEM AUGER DRILLING AND SOIL SAMPLING

Borings to be drilled with a hollow-stem auger shall be hand dug to a depth of 4 feet below ground surface. Soil samples shall be collected by driving a modified California-type split-spoon sampler at the base of the boring ahead of the augers. No fluids other than water will be used in drilling.

Undisturbed (intact) soil samples shall be recovered from soil borings without introducing liquids into the borings. Soil samples as core or cuttings shall be taken continuously from ground surface to termination depth (TD), or through the aquifer zone of interest for lithologic logging.

Soils from all borings shall be described in detail using the Unified Soil Classification System and shall be logged by a professional geologist, civil engineer, or engineering geologist who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System. A technician, non-registered geologist, or civil engineer trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals shall be qualified to log borings, provided the aforementioned professional reviews the logs and assumes responsibility for the accuracy and completeness of the logs.

All drilling tools shall be thoroughly decontaminated with non-phosphate detergent or steam cleaned immediately before starting each boring.

Soil samples shall be taken in decontaminated brass sampling tubes in the split-spoon. The brass sleeves will be separated using a clean knife. The ends of the tubes will be covered tightly with teflon wrap, capped with tight-fitting plastic caps, and properly labeled.

STANDARD OPERATING PROCEDURE ---

GROUNDWATER MONITORING WELL CONSTRUCTION

The boreholes for monitor wells are usually drilled using a truck-mounted hollow-stem auger drill rig. The hollow-stem auger drilling method allows the well screen, casing and filter pack to be installed through the auger, thereby limiting boring cave-in during well installation. The borehole is logged by a geologist during drilling. Soil samples are collected for logging in a split spoon sampler lined with brass tubes at a maximum interval of five feet. Soil samples selected for chemical analyses are sealed at each end with Teflon sheets and plastic end caps, labeled and stored in a cooler with ice.

Well casing typically consists of flush-threaded schedule 40 PVC; however, schedule 80 PVC, Teflon, or stainless steel may be used depending on site conditions. The screened interval usually consists of machined slots for PVC and Teflon casing and continuous wire-wrap for stainless steel screen. The slot or screen size is selected by the geologist according to filter pack grain size and *hydrogeologic formation* characteristics. The most commonly used slot sizes are 0.010 inch and 0.020 inch. Either a threaded end cap or a PVC slip cap fastened with stainless steel screws is placed at the bottom of the casing. No solvents or cements are used to join casing sections.

The casing is set inside the hollow-stem auger and sand or gravel filter pack material is slowly poured into the annular space from the bottom of the boring to about 2 ft above the top of the well screen while withdrawing the auger. The filter pack grain size is selected by the geologist to conform to the formation grain size and estimated hydraulic conductivity. A 1-ft to 2-ft thick seal composed of hydrated bentonite pellets is placed above the filter pack to prevent grout from infiltrating into the filter pack. Portland cement grout used to seal the annular space form the top of the bentonite seal to about 6 inches below the surface. The grout is pumped under pressure through a pipe if the bentonite seal is below water. A lockable plastic expansion cap is placed at the top of the casing. Traffic-rated vault boxes are set in concrete around well heads in paved areas. Locking steel monument covers are usually installed over wellheads in unpaved areas.

STANDARD OPERATING PROCEDURE ---
GROUNDWATER MONITORING WELL DEVELOPMENT

Groundwater monitoring wells are developed after installation to improve well yield by removing fine material, including formation material or drilling mud, from the well casing, filter pack and boring annulus/formation interface. Fine material is also removed and soil grains aligned in the formation surrounding the well screen, thereby increasing porosity and hydraulic conductivity.

Prior to well development, the initial static water level is measured using a water level or interface probe. Standard procedure is to develop wells using a WaTerra surge block and an electric submersible pump. Well development may also be performed by hand using surge blocks and bailers, or by a truck-mounted development rig. The well is the surged along the entire screened interval using a surge block. This creates a back-washing effect that draws fine material from the formation and filter pack into the well casing and aligns the formation grains. Following surging, the well is then purged by using and electric submersible pump to remove fine suspended solids. The purging is continued until the purged water is relatively free of suspended solids and measurements of the groundwater pH, and conductivity have stabilized. "Stabilized" is defined as three consecutive readings within 10% of one another. Typically the amount of water purged is a minimum of 10 casing volumes. Data including well yield purge time and rate, clarity, pH, and conductivity are recorded.

After purging is completed, water levels are measured and recorded while recovering to static level. All development equipment is either steam-cleaned or washed in non-phosphate detergent solution and double-rinsed with de-ionized (DI) water between wells.

The purged water is contained on-site in drums or tanks until properly disposed.

Appendix G

LABORATORY REPORT AND CHAIN OF CUSTODY FORM

TORRENT LABORATORY, INC.

483 Sinclair Frontage Rd. • Milpitas, CA 95035 • Ph: (408) 263-5258 • Fax: (408) 263-8293

www.torrentlab.com email: analysis@torrentlab.com

August 30, 2005

Gail Jones
ERAS Environmental
1583 B Street
Hayward, CA 94541

TEL: (510) 247-9885
FAX (510) 886-5399

RE: 4919 Tidewater

Order No.: 0508116

Dear Gail Jones:

Torrent Laboratory, Inc. received 6 samples on 8/19/2005 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director

8/30/05
Date

Torrent Laboratory, Inc. **Date:** *31-Aug-05*

CLIENT: ERAS Environmental
Project: 4919 Tidewater
Lab Order: 0508116

CASE NARRATIVE

Analytical Comments for METHOD TPH_DSL_W_8015B, SAMPLE 0508116-002A, : Note: Sample chromatogram does not resemble typical diesel pattern. Hydrocarbons within diesel range quantitated as diesel.

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Gail Jones
ERAS Environmental

Date Received: 8/19/2005
Date Reported: 8/30/2005

Client Sample ID: MW-1
Sample Location: 4919 Tidewater
Sample Matrix: GROUNDWATER
Date/Time Sampled 8/18/2005 4:20:00 PM

Lab Sample ID: 0508116-001
Date Prepared: 8/25/2005

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Gasoline)	SW8015B	8/26/2005	0.05	1	0.0500	ND	mg/L	R7050
Surr: Trifluorotoluene	SW8015B	8/26/2005	0	1	83.4-124	102	%REC	R7050
Benzene	SW8260B	8/25/2005	1	1	1.00	ND	µg/L	R7034
Ethylbenzene	SW8260B	8/25/2005	1	1	1.00	ND	µg/L	R7034
Methyl tert-butyl ether (MTBE)	SW8260B	8/25/2005	3	1	3.00	5.99	µg/L	R7034
Toluene	SW8260B	8/25/2005	1	1	1.00	ND	µg/L	R7034
Xylenes, Total	SW8260B	8/25/2005	1	1	1.00	ND	µg/L	R7034
Surr: Dibromofluoromethane	SW8260B	8/25/2005	0	1	65-135	120	%REC	R7034
Surr: 4-Bromofluorobenzene	SW8260B	8/25/2005	0	1	65-135	116	%REC	R7034
Surr: Toluene-d8	SW8260B	8/25/2005	0	1	65-135	116	%REC	R7034

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Gail Jones
ERAS Environmental

Date Received: 8/19/2005
Date Reported: 8/30/2005

Client Sample ID: MW-1
Sample Location: 4919 Tidewater
Sample Matrix: GROUNDWATER
Date/Time Sampled 8/18/2005 4:30:00 PM

Lab Sample ID: 0508116-002
Date Prepared: 8/22/2005

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Diesel)	SW8015B	8/23/2005	0.1	1	0.159	0.41x	mg/L	R7013
Surr: Pentacosane	SW8015B	8/23/2005	0	1	53.3-124	89.0	%REC	R7013

Note: x-Sample chromatogram does not resemble typical diesel pattern (possible waste or motor oil). Hydrocarbons within diesel range quantitated as diesel.

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Gail Jones
ERAS Environmental

Date Received: 8/19/2005
Date Reported: 8/30/2005

Client Sample ID: MW-2
Sample Location: 4919 Tidewater
Sample Matrix: GROUNDWATER
Date/Time Sampled 8/18/2005 1:00:00 PM

Lab Sample ID: 0508116-003
Date Prepared: 8/25/2005

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Gasoline)	SW8015B	8/26/2005	0.05	1	0.0500	ND	mg/L	R7050
Surr: Trifluorotoluene	SW8015B	8/26/2005	0	1	83.4-124	86.8	%REC	R7050
Benzene	SW8260B	8/25/2005	1	10	10.0	ND	µg/L	R7034
Ethylbenzene	SW8260B	8/25/2005	1	10	10.0	ND	µg/L	R7034
Methyl tert-butyl ether (MTBE)	SW8260B	8/25/2005	3	10	30.0	ND	µg/L	R7034
Toluene	SW8260B	8/25/2005	1	10	10.0	ND	µg/L	R7034
Xylenes, Total	SW8260B	8/25/2005	1	10	10.0	ND	µg/L	R7034
Surr: Dibromofluoromethane	SW8260B	8/25/2005	0	10	65-135	122	%REC	R7034
Surr: 4-Bromofluorobenzene	SW8260B	8/25/2005	0	10	65-135	113	%REC	R7034
Surr: Toluene-d8	SW8260B	8/25/2005	0	10	65-135	120	%REC	R7034

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Gail Jones
ERAS Environmental

Date Received: 8/19/2005
Date Reported: 8/30/2005

Client Sample ID: MW-2
Sample Location: 4919 Tidewater
Sample Matrix: GROUNDWATER
Date/Time Sampled 8/18/2005 1:05:00 PM

Lab Sample ID: 0508116-004
Date Prepared: 8/22/2005

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Diesel)	SW8015B	8/23/2005	0.1	10	1.00	13.3	mg/L	R7013
Surr: Pentacosane	SW8015B	8/23/2005	0	10	53.3-124	100	%REC	R7013

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Gail Jones
ERAS Environmental

Date Received: 8/19/2005
Date Reported: 8/30/2005

Client Sample ID: MW-4
Sample Location: 4919 Tidewater
Sample Matrix: GROUNDWATER
Date/Time Sampled 8/18/2005 11:25:00 AM

Lab Sample ID: 0508116-005
Date Prepared: 8/25/2005

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Gasoline)	SW8015B	8/26/2005	0.05	1	0.0500	ND	mg/L	R7050
Surr: Trifluorotoluene	SW8015B	8/26/2005	0	1	83.4-124	98.7	%REC	R7050
Benzene	SW8260B	8/25/2005	1	1	1.00	ND	µg/L	R7034
Ethylbenzene	SW8260B	8/25/2005	1	1	1.00	ND	µg/L	R7034
Methyl tert-butyl ether (MTBE)	SW8260B	8/25/2005	3	1	3.00	ND	µg/L	R7034
Toluene	SW8260B	8/25/2005	1	1	1.00	ND	µg/L	R7034
Xylenes, Total	SW8260B	8/25/2005	1	1	1.00	ND	µg/L	R7034
Surr: Dibromofluoromethane	SW8260B	8/25/2005	0	1	65-135	119	%REC	R7034
Surr: 4-Bromofluorobenzene	SW8260B	8/25/2005	0	1	65-135	113	%REC	R7034
Surr: Toluene-d8	SW8260B	8/25/2005	0	1	65-135	118	%REC	R7034

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Gail Jones
ERAS Environmental

Date Received: 8/19/2005
Date Reported: 8/30/2005

Client Sample ID: MW-4
Sample Location: 4919 Tidewater
Sample Matrix: GROUNDWATER
Date/Time Sampled 8/18/2005 11:30:00 AM

Lab Sample ID: 0508116-006
Date Prepared: 8/22/2005

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Diesel)	SW8015B	8/23/2005	0.1	10	1.00	6.2	mg/L	R7013
Surr: Pentacosane	SW8015B	8/23/2005	0	10	53.3-124	90.0	%REC	R7013

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Torrent Laboratory, Inc.

Date: *30-Aug-05*

CLIENT: ERAS Environmental
Work Order: 0508116
Project: 4919 Tidewater

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_W

Sample ID: **blk**	SampType: **MBLK**	TestCode: **8260_W**	Units: **µg/L**	Prep Date: **8/24/2005**	RunNo: **7034**
Client ID: **ZZZZZ**	Batch ID: **R7034**	TestNo: **SW8260B**		Analysis Date: **8/24/2005**	SeqNo: **104354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00									
Ethylbenzene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	3.00									
Toluene	ND	1.00									
Xylenes, Total	ND	1.00									
Surr: Dibromofluoromethane	13.95	0	11.9	0	117	71.1	125				
Surr: 4-Bromofluorobenzene	13.05	0	11.9	0	110	65	135				
Surr: Toluene-d8	14.05	0	11.9	0	118	77.3	125				

Sample ID: **lcs**	SampType: **LCS**	TestCode: **8260_W**	Units: **µg/L**	Prep Date: **8/24/2005**	RunNo: **7034**
Client ID: **ZZZZZ**	Batch ID: **R7034**	TestNo: **SW8260B**		Analysis Date: **8/24/2005**	SeqNo: **104355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	16.67	1.00	17.86	0	93.3	69.1	114				
Toluene	17.45	1.00	17.86	0	97.7	68.5	115				
Surr: Dibromofluoromethane	13.23	0	11.9	0	111	73.8	121				
Surr: 4-Bromofluorobenzene	13.38	0	11.9	0	112	81.8	114				
Surr: Toluene-d8	13.21	0	11.9	0	111	78.8	124				

Sample ID: **lcsd**	SampType: **LCSD**	TestCode: **8260_W**	Units: **µg/L**	Prep Date: **8/24/2005**	RunNo: **7034**
Client ID: **ZZZZZ**	Batch ID: **R7034**	TestNo: **SW8260B**		Analysis Date: **8/24/2005**	SeqNo: **104356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.43	1.00	17.86	0	103	69.1	114	16.67	10.0	20	
Toluene	18.92	1.00	17.86	0	106	68.5	115	17.45	8.08	20	
Surr: Dibromofluoromethane	13.80	0	11.9	0	116	73.8	121	0	0	0	
Surr: 4-Bromofluorobenzene	13.34	0	11.9	0	112	81.8	114	0	0	0	
Surr: Toluene-d8	14.54	0	11.9	0	122	78.8	124	0	0	0	

Qualifiers:
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: ERAS Environmental
Work Order: 0508116
Project: 4919 Tidewater

ANALYTICAL QC SUMMARY REPORT

TestCode: TPH_DSL_W_8015B

Sample ID: **WD050822A-MB**	SampType: **MBLK**	TestCode: **TPH_DSL_W**	Units: **mg/L**	Prep Date: **8/22/2005**	RunNo: **7013**
Client ID: **ZZZZZ**	Batch ID: **R7013**	TestNo: **SW8015B**		Analysis Date: **8/23/2005**	SeqNo: **103935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	0.100									
Surr: Pentacosane	0.08400	0	0.1	0	84.0	53.3	124				

Sample ID: **WD050822A-LCS**	SampType: **LCS**	TestCode: **TPH_DSL_W**	Units: **mg/L**	Prep Date: **8/22/2005**	RunNo: **7013**
Client ID: **ZZZZZ**	Batch ID: **R7013**	TestNo: **SW8015B**		Analysis Date: **8/23/2005**	SeqNo: **103936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.8940	0.100	1	0.05	84.4	46.2	109				
Surr: Pentacosane	0.08400	0	0.1	0	84.0	53.3	124				

Sample ID: **WD050822A-LCSD**	SampType: **LCSD**	TestCode: **TPH_DSL_W**	Units: **mg/L**	Prep Date: **8/22/2005**	RunNo: **7013**
Client ID: **ZZZZZ**	Batch ID: **R7013**	TestNo: **SW8015B**		Analysis Date: **8/23/2005**	SeqNo: **103937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.8720	0.100	1	0.05	82.2	46.2	109	0.894	2.49	30	
Surr: Pentacosane	0.07400	0	0.1	0	74.0	53.3	124	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: ERAS Environmental
Work Order: 0508116
Project: 4919 Tidewater

ANALYTICAL QC SUMMARY REPORT

TestCode: TPH_GAS_W_8015B

Sample ID: **blk**	SampType: **MBLK**	TestCode: **TPH_GAS_W**	Units: **mg/L**	Prep Date:	RunNo: **7050**
Client ID: **ZZZZZ**	Batch ID: **R7050**	TestNo: **SW8015B**		Analysis Date: **8/26/2005**	SeqNo: **104817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	0.0500									
Surr: Trifluorotoluene	0.1437	0	0.119	0	121	83.4	124				

Sample ID: **lcs**	SampType: **LCS**	TestCode: **TPH_GAS_W**	Units: **mg/L**	Prep Date:	RunNo: **7050**
Client ID: **ZZZZZ**	Batch ID: **R7050**	TestNo: **SW8015B**		Analysis Date: **8/26/2005**	SeqNo: **104818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	0.2330	0.0500	0.2381	0	97.9	71.8	134				
Surr: Trifluorotoluene	0.1321	0	0.119	0	111	83.4	124				

Sample ID: **lcsd**	SampType: **LCSD**	TestCode: **TPH_GAS_W**	Units: **mg/L**	Prep Date:	RunNo: **7050**
Client ID: **ZZZZZ**	Batch ID: **R7050**	TestNo: **SW8015B**		Analysis Date: **8/26/2005**	SeqNo: **104819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	0.2190	0.0500	0.2381	0	92.0	71.8	134	0.233	6.19	35	
Surr: Trifluorotoluene	0.1214	0	0.119	0	102	83.4	124	0	0	35	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road, Milpitas, CA 95035
Phone: 408.263.5258 • FAX: 408.263.8293
www.torrentlab.com • email: analysis@torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0508116

Company Name: ERAS Environmental	Location of Sampling: 4919 Tidewater
Address: 1533 B Street	Purpose: QGWM
City: Hayward State: CA Zip Code: 94541	Special Instructions / Comments: GLOBAL ID: T0600100451
Telephone: 510 247 9885 FAX:	
REPORT TO: GAIL JONES SAMPLER: LC	P.O.#: 05-001-01 EMAIL: erasenvironmental@sbcglobal.net

TURNAROUND TIME:
- [X] 10 Working Days
- [ ] 3 Working Days
- [ ] 2 - 8 Hours
- [ ] 7 Working Days
- [ ] 2 Working Days
- [ ] Other
- [ ] 5 Working Days
- [ ] 24 Hours

SAMPLE TYPE:
- [ ] Storm Water
- [ ] Other
- [ ] Waste Water
- [X] Ground Water
- [ ] Soil

REPORT FORMAT:
- [ ] QC Level II
- [X] EDF
- [ ] Excel / EDD
- [X] PDF

ANALYSIS REQUESTED

CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	TPH-D 8015	TPH-G 8015	BTEX / MTBE 8260	TORRENT'S SAMPLE I.D.
1. MW-1	8.18.05 / 16:20	Water	3	40ml		X	X	0508116-001A
2. MW-1	/ 16:30		1	liter	X			" -002A
3. MW-2	/ 13:00		3	40ml		X	X	" -003A
4. MW-2	/ 13:05		2	Liter	X			" -004A
~~5. MW-3~~				40ml		X	X	
~~6. MW-3~~				liter	X			
7. MW-4	/ 11:25		3	40ml		X	X	" -005A
8. MW-4	8.18.05 / 11:30	W	2	liter	X			" -006A
9.								
10.								

	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
1		8-19-05	12:05		8-19-05	12:05
2		8-19-05	1:05			

Were Samples Received in Good Condition? [ ] Yes [ ] NO Samples on Ice? [ ] Yes [ ] NO Method of Shipment _____ Sample seals intact? [ ] Yes [ ] NO

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: _____ Date: 8/22/05 Log In Reviewed By: _____ Date: 8/22/05

Page _____ of _____