TANK CLOSURE REPORT
AND
PRELIMINARY SITE ASSESSMENT REPORT
FOR REMEDIATION OF CONTAMINATED SOIL
AND GROUNDWATER INVESTIGATION

CITY OF EMERYVILLE
1333 PARK AVENUE
EMERYVILLE, CA 94608

Submitted by:
TANK PROTECT ENGINEERING
of Northern California
May 29, 1992

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This report has been prepared by the staff of **Tank Protect Engineering** under supervision of Engineer and/or Geologist whose seal(s) and signature(s) appear hereon.

The findings, recommendations, specifications or professional opinions are presented, within the limits prescribed by the client, after being prepared in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied.

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1.0 INTRODUCTION

The subject site is located at 1333 Park Avenue in the City of Emeryville in Alameda County, California (see Figure 1). Tank Protect Engineering (TPE) was contracted by the site owner, the City of Emeryville (COE), to remove one 2,000-gallon, underground, single walled, steel, unleaded gasoline storage tank; piping; and dispenser island from the subject site [the site contact person is Mr. Juan C. Arreguin, telephone number (510) 596-4333]. Because soil and groundwater contamination were documented after removal of the tank, COE contracted with TPE to conduct overexcavation of contaminated soil and install groundwater monitoring wells. This report documents tank closure activities, overexcavation activities, soil sampling and analytical results, excavation closure, disposal of contaminated soil, installation and sampling of groundwater monitoring wells, and groundwater analytical results.

2.0 TANK REMOVAL

On January 2, 1992, TPE removed the subject tank from the site. The tank removal was conducted after receiving an Underground Tank Closure Plan from the Alameda County Health Care Services Agency (ACHCSA), Department of Environmental Health and notifying the Bay Area Air Quality Management District [BAAQMD (see Appendix A)].

Prior to removing the tank, TPE contracted with Alviso Independent Oil (Alviso) to remove about 472 gallons of water and gasoline that was present in the tank. Alviso transported the fluid to their facility in Alviso, California under Uniform Hazardous Waste Manifest, State Manifest Document Number 91053402 (see Appendix A). After removing the water and gasoline from the tank, flammable vapors were purged from within the tank by displacement with dry ice, as indicated by a combustible gas indicator (GasTech model 1314). The tank was removed by TPE and transported off site by Erickson Trucking, Inc. as hazardous waste under Uniform Hazardous Waste Manifest, State Manifest Document Number 90796760 to Erickson, Inc. located at 255 Parr Boulevard, Richmond, CA 94801 (see Appendix A).

After removal, the tank was visually examined and appeared rusty. No holes were apparent.

About 45 cubic yards (cyd) of silty clay soil were excavated and stockpiled on site during tank removal activities. Soil contamination was apparent in the excavated soil and excavation sidewalls as evidenced by stains and odor.

Groundwater was present in the excavation at a depth of about 8 feet. Sheen and minor floating product were visible on the water's surface.

2.1 Soil and Groundwater Sampling

After tank removal, TPE conducted soil and groundwater sampling in accordance with the California Regional Water Quality Control Board (CRWQCB)-San Francisco Bay Region's "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites", dated August 10, 1990, and as directed by a representative of the ACHCSA (see Appendix A for ACHCSA's Hazardous Materials Inspection Form).

2.1.1 Soil Sampling

One discrete soil sample was collected for chemical analysis from native soil in each sidewall opposite each end of the tank, about 1 foot above the groundwater's surface, and 1 discrete sample was collected from beneath the dispenser island (see Figure 2 for sample locations SSW, SNE, and SP). The samples were collected about 1 to 2 feet into the native soil by excavating the soil with a backhoe bucket and collecting a sample from the bucket in a clean 2-inch diameter by 6-inch long brass tube driven by a slide-hammer corer. After collecting each sample, the brass tube ends were covered with aluminum foil and capped with plastic end-caps which were taped to the brass tubes with duct tape.

Two composite soil samples, each consisting of 3 discrete samples, (S1-1, 2, 3 and S2-1, 2, 3) were also collected to characterize the stockpiled soil (see Figure 2). The

samples were collected by removing about 1 to 3 feet of soil from the upper surface of the stockpile and driving a 2-inch diameter by 6-inch long brass tube with a slide-hammer corer into the newly exposed soil surface. The samples were handled as described above.

All tubes were labeled and placed in an iced cooler for transport to California Department of Health Services (DHS) certified Trace Analysis Laboratory, Inc. (TAL) located in Hayward, California accompanied by chain-of-custody documentation (see Appendix B for TPE's protocol relative to sample handling procedures).

2.1.2 Groundwater Sampling

Grab groundwater sample WS was collected for chemical analysis from water in the tank excavation. The water sample was collected in a dedicated, disposable, polyethylene bailer and stored in laboratory provided, HCl preserved, 40-milliliter glass bottles sealed with teflon lined caps. The bottles were labeled and placed in an iced cooler for transport to TAL accompanied by chain-of-custody documentation.

All soil samples and the groundwater sample were analyzed for total petroleum hydrocarbons as gasoline (TPHG), and for benzene, toluene, ethylbenzene, and xylenes (BTEX) by the DHS Method and United States Environmental Protection Agency (EPA) Method 8020, respectively. One soil sample was additionally analyzed for total lead and organic lead by EPA Method 7420 and the DHS Method, respectively.

2.1.1.1 Results of Chemical Analyses

Chemical analyses of soil samples SNE and SSW, collected from the tank excavation during tank removal, detected no TPHG, benzene, ethylbenzene, or xylenes; however, toluene was detected in both samples at concentrations of .0056 parts per million (ppm) and .0080 ppm, respectively. Sample SNE, also analyzed for total and organic lead, detected total lead at a concentration of 3.9 ppm. Soil sample SP, collected beneath the dispenser island, detected TPHG, toluene, ethylbenzene, and xylenes at concentrations of 180 ppm, .46 ppm, 1.4 ppm, and 20 ppm, respectively (see Table 1).

Stockpile soil samples S1-1, 2, 3 and S2-1, 2, 3 detected TPHG at concentrations of 410 ppm and 130 ppm, respectively. All BTEX chemicals were detected in both samples (see Table 1).

Grab groundwater sample WS detected TPHG, benzene, toluene, ethylbenzene, and xylenes at concentrations of 2,700 parts per billion (ppb), 120 ppb, 570 ppb, 140 ppb, and 900 ppb, respectively (see Table 2).

Analytical results are summarized in Tables 1 and 2 and documented with certified analytical reports and chain-of-custodies in Appendix C.

Because of the above documented soil and groundwater contamination, TPE completed an Underground Storage Tank Unauthorized Release (Leak)/Contamination Site Report for the ACHCSA (see Appendix A).

3.0 REMEDIATION OF CONTAMINATED SOIL AND GROUNDWATER INVESTIGATION

Because soil sample SP, collected in native soil beneath the dispenser island, detected TPHG at a concentration of 180 ppm, and because toluene was detected in soil samples SNE and SSW in the fuel tank excavation sidewalls, COE contracted with TPE to conduct overexcavation of contaminated soil beneath the former dispenser island and from the sidewalls of the fuel tank excavation. COE also contracted with TPE to install 3 groundwater monitoring wells to investigate the horizontal extent of groundwater contamination as a result of the fuel leak. Soil samples were also collected for chemical analysis from the borings for construction of the groundwater monitoring wells to further investigate vadose zone soil contamination.

TPE wrote and submitted a January 15, 1992 Workplan for Overexcavation of Contaminated Soil and Installation of Groundwater Monitoring Wells to COE, ACHCSA, and CRWQCB for their approval prior to beginning work under the above contract.

TPE's objectives in this remedial investigation were (1) to investigate the horizontal and vertical extent of vadose zone soil contamination, (2) to excavate, and remediate contaminated vadose zone soil, relative to TPHG and BTEX, to within the limits specified in the workplan, (3) to investigate hydrocarbon impact to groundwater, relative to TPHG, BTEX, and organic lead, and (4) to determine the hydraulic gradient and direction of groundwater flow.

To meet these objectives, TPE performed the following scope of work:

- Excavated contaminated soil from the sidewalls of the underground fuel tank excavation and from beneath the former dispenser island.

- After excavating the contaminated soil in the above task, collected verification soil samples from the sidewalls and/or floor of the excavations for chemical analysis for TPHG, BTEX, and organic lead.

- Collected soil samples from the stockpiled soil for chemical analysis for TPHG and BTEX.

- Backfilled the excavation with clean imported fill.

- Disposed of the excavated soil at a landfill.

- Conducted a file review at the CRWQCB to investigate the potential for any documented, off-site contamination to be impacting the subject site and to investigate vicinity and site groundwater flow direction to assist TPE in locating 3 groundwater monitoring wells.

- Drilled 3 soil borings to further investigate the horizontal and vertical extent of vadose zone soil contamination and for the construction of groundwater monitoring wells.

- Collected soil samples from each soil boring at approximately 5-foot depth intervals or less in the vadose zone and continuously in the saturated zone.

- Analyzed 4 vadose zone soil samples from the borings for TPHG and BTEX.

- Converted the 3 borings into groundwater monitoring wells.

- Developed, purged, and sampled groundwater from each monitoring well for chemical analysis.

- Analyzed 3 groundwater samples for TPHG, BTEX, and organic lead and 1 trip blank for TPHG and BTEX.

- Surveyed top-of-casings (TOCs) to the nearest .01 foot above Mean Sea Level (MSL) and evaluated direction and gradient of groundwater flow.

- Prepared this Tank Closure Report and Preliminary Site Assessment Report (TCR/PSAR) documenting work performed and analytical results with conclusions and recommendations.

Details of the above scope of work are presented below.

3.1 Remediation of Contaminated Soil

Prior to beginning excavation activities TPE notified the BAAQMD (see Appendix A).

On February 3, 1992, TPE excavated contaminated vadose zone soil in the area of the tank excavation and dispenser island. The tank excavation was horizontally excavated 2 feet on the east and west sides and vertically to the depth of groundwater. Horizontal excavation was conducted until field screening with a GasTech Inc., Trace-TechTor Hydrocarbon Vapor Testor (HVT) indicated the absence of contamination or physical constraints present on the site precluded further excavation (see Figure 3). The area of the dispenser island was excavated to a maximum vertical depth of 6 feet and horizontally to the limits shown in Figure 3.

About 35 cyd of soil were excavated and stockpiled on site. The soil was placed on an asphalt surface to prevent cross contamination to the underlying soil and covered with plastic.

3.1.1 Verification Soil Sampling

After excavating contaminated soil in the above task, verification soil samples VST-E and VST-W were collected from the overexcavated sidewalls of the tank excavation and verification soil samples VSD-N, VSD-S, VSD-E, VSD-W, and VSD-B were collected from the overexcavated sidewalls and floor of the dispenser island excavation (see Figure 3).

Verification soil samples were collected from the sidewalls of the fuel tank excavation by excavating native soil with the bucket of a backhoe and collecting a sample in a brass tube from soil in the bucket. Verification soil samples were collected from the floor of the dispenser island excavation by removing about 1 foot of native soil to expose a fresh surface and driving a 2-inch diameter by 6-inch long brass tube into the newly exposed surface with a slide-hammer corer. After collecting each sample, the brass tube ends were quickly covered with teflon tape and capped with plastic end-caps taped to the brass tubes with duct tape. The tubes were labeled and placed in an iced cooler for transport to TAL accompanied by chain-of-custody documentation (see Appendix B for TPE's protocol relative to sample handling procedures).

3.1.1.1 Results of Chemical Analyses

The above soil samples were analyzed for TPHG and organic lead by the DHS Method and for BTEX by EPA Method 8020. Analytical results were nondetectable for all samples with the exception of sample VSD-N which detected TPHG, benzene, toluene, ethylbenzene and xylenes at concentrations of 190 ppm, .320 ppm, 5.2 ppm, 2.7 ppm, and 31 ppm, respectively, and sample VSD-E which detected TPHG at a concentration of .810 ppm.

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August 6, 1992

Mr. Juan Arreguin
City of Emeryville
2200 Powell Street, 12th Floor
Emeryville, CA 94608

Subject: Correction to page 8 of Tank Protect Engineering's May 29, 1992 Tank Closure Report and Preliminary Site Assessment Report for Remediation of Contaminated Soil and Groundwater, 1333 Park Avenue, Emeryville, CA 94608

Dear Mr. Arreguin:

An error was recently discovered in Tank Protect Engineering's May 29, 1992 Tank Closure Report and Preliminary Site Assessment Report for Remediation of Contaminated Soil and Groundwater, 1333 Park Avenue, Emeryville, CA 94608. This error concerned the date of aeration of stockpiled soil. Enclosed is a correct replacement page which you may insert into your copy of the report. Replacement pages have already been sent to the California Regional Water Quality Control Board-San Francisco Bay Region and Mr. Brian Oliva of the Alameda County Health Care Services Agency.

If you have any questions, please call me at Tank Protect Engineering at (510) 429-8088.

Sincerely,

Michael Casso

Michael Casso
Geologist

cc: Mr. Brian Oliva, Alameda County Health Care Services Agency
California Regional Water Quality Control Board-San Francisco Bay Region

Analytical results are summarized in Table 1 and documented with a certified analytical report and chain-of-custody in Appendix C.

3.1.2 Excavation Closures

On February 24, 1992, TPE backfilled the 2 excavations. The excavations were backfilled to within 2 feet of ground surface with sand, and to within about 3 inches of ground surface with aggregate base material. The fill was placed in the excavation in 2-foot to 3-foot compacted lifts.

On February 27, 1992, the excavations were sealed with a 3-inch layer of asphalt.

3.1.3 Disposal of Stockpiled Soil

About 107 cyd (by truck basis) of soil was stockpiled on site, as a result of tank removal and excavation activities. On February 26, 1992, TPE aerated the stockpiled soil by turning the soil with the bucket of a backhoe. The stockpile was sampled on March 10, 1992 for characterization for disposal to a Class III landfill. Four discrete soil samples were collected in 2-inch diameter by 6-inch long brass tubes driven by a slide-hammer corer. The samples were collected at a depth of 1 to 2-feet below the stockpile's surface and handled as discussed above in section 3.1.1 Verification Soil Sampling. The soil samples were delivered to DHS certified S&W Soil and Water Environmental Laboratory (S&W) where they were composited into 1 sample and analyzed for TPHG and BTEX by EPA Methods 5020 and 8020, respectively. No TPHG or BTEX were detected.

Analytical results are summarized in Table 1 (see sample SP1-1, 2, 3, 4) and documented with a certified analytical report and chain-of-custody in Appendix C.

The stockpiled soil was disposed of at Redwood Landfill in Marin County, California on March 13, 1992.

Analytical results are summarized in Table 1 and documented with a certified analytical report and chain-of-custody in Appendix C.

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Analytical results are summarized in Table 1 (see sample SP1-1, 2, 3, 4) and documented with a certified analytical report and chain-of-custody in Appendix C.

The stockpiled soil was disposed of at Redwood Landfill in Marin County, California on March 13, 1992.

3.2 Groundwater Investigation

3.2.1 File Review

On March 3, 1992 a representative of TPE conducted a file review at the CRWQCB's Oakland office to investigate the potential for any documented, off-site contamination to be impacting the subject site and to investigate vicinity and site groundwater flow direction to assist TPE in locating up to 3 groundwater monitoring wells.

A documented contaminant site was located at the Ransome Company's former corporate yard located at 4030 Hollis Street, Emeryville, California; about 600 to 700 feet south of the subject site. A review of consultant reports available in the file found that groundwater was contaminated with diesel with concentrations up to 100 ppb and groundwater flow direction was estimated as southwest.

TPE believes the above site is not impacting groundwater quality beneath the subject site.

3.2.2 Predrilling Activities

Before commencing drilling activities TPE paid a permit fee to, and obtained a well installation permit from, the COE (see Appendix A).

3.2.3 Soil Boring/Monitoring Well Locations

On March 10 and 11, 1992, TPE drilled exploratory soil borings in the area of the former underground fuel tank and dispenser island and converted the borings into groundwater monitoring wells, MW-1, MW-2, and MW-3 (see Figure 4). Based on a southwest groundwater flow direction determined from the above file review, wells MW-2 and MW-3 were located downgradient of the former dispenser island and underground fuel tank, respectively, to monitor for potential groundwater contamination from those sources. The well locations were estimated to place each well within 10 feet and downgradient of the source areas for potential groundwater contamination

according to recommendations in the CRWQCB's "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites", dated August 10, 1990. Well MW-1 was constructed at a location to allow for triangulation of groundwater elevations in the 3 wells to calculate groundwater flow direction.

3.2.4 Soil Boring and Sampling Procedures

The exploratory borings for the monitoring wells were drilled using 8-inch diameter, hollow-stem auger drilling equipment. The augers and sampling equipment were steam-cleaned before drilling each boring to prevent cross contamination between borings or the introduction of off-site contamination for the initial boring. Representative soil samples were collected for use in constructing the geological profile at each boring location, for field screening for TPHG and BTEX contamination by headspace analysis, and for potential chemical analysis. The vadose zone samples were collected at approximately 5-foot depth intervals, or less, below the ground surface by advancing a California split-spoon sampler, equipped with three 6-inch long by 2-inch diameter brass tubes, into the undisturbed soil beyond the tip of the augers. The soil boring for well MW-3 was drilled through the sand backfill used to close the fuel tank excavation, consequently, soil sampling did not begin until native soil was encountered at about 9 feet deep. The saturated zone soil samples were obtained through continuous sampling by advancing a SPT 1.5-inch I.D. split spoon sampler into the undisturbed soil beyond the tip of the augers. Soil from all borings were described in detail using the Unified Soil Classification System and were logged by a California registered geologist.

The sampling equipment was cleaned before each sampling event by washing in a trisodium phosphate solution and rinsing in tap water, and then distilled water. Soil samples collected for chemical analysis were preserved in the brass tubes by quickly covering the open ends with teflon tape and capping the tube ends with plastic end-caps taped to the tubes with duct tape. The tubes were labeled to show site address, project number, sample number, sample depth, date, time, and sampler and stored on ice for transport to DHS certified S & W located in Boulder Creek, California accompanied by chain-of-custody documentation. Soil samples were collected for

chemical analyses from the boring for well MW-1 at a depth range of 10.0 feet to 10.5 feet, from the boring for well MW-2 at depth ranges of 5.0 feet to 5.5 feet and 10.5 feet to 11.0 feet, and from the boring for well MW-3 at a depth range of 11.5 feet to 12.0 feet.

Headspace analysis was conducted by sealing soil samples in quart size plastic bags and warming the bagged samples in the sun to promote volatilization of any hydrocarbons that may be present in the soil. The headspace in the plastic bags was tested by inserting the probe of a HVT into the bag (while minimizing the entry of new air into the bag); the response was recorded in ppms.

Drill cuttings were stored on site in 55-gallon steel drums. The drums were labeled to show contents, suspected contaminant, date filled, expected removal date, company name and telephone number. See Appendix D for TPE's protocol relative to waste handling and decontamination procedures.

3.2.4.1 Results of Chemical Analyses

Soil samples collected from all 3 borings were analyzed by S&W for TPHG and BTEX by EPA Methods 5020 and 8020, respectively. Results of all chemical analyses were nondetectable.

Analytical results are summarized in Table 1 and documented with a certified analytical report and chain-of-custody in Appendix C.

3.2.5 Groundwater Monitoring Well Construction

The design of each well was determined by the geologic profile and occurrence of groundwater in the boring at each location. After drilling through clay and silt aquitards, groundwater was encountered in multiple sandy aquifers beginning at depths ranging from about 9.5 feet to about 13 feet below ground surface in the 3 borings. After drilling into the aquifers, groundwater entered the borings and stabilized at depths of about 5 to 6 feet below ground surface. Because the aquifers are overlain

by clay and silt aquitards (well MW-3 was drilled through backfill sand and the clay aquitard is absent due to the backfill), and because the stabilized groundwater levels are above the aquifer's upper boundary, TPE interprets the aquifer to be confined. Because the aquifer is confined, the screens in the wells were not constructed to extend above the groundwater's stabilized surface.

During construction of each well, the screen and blank PVC well casings were threaded together above ground and lowered inside the hollow-stem augers. The annular space between the well screen and borehole was backfilled to about 2 feet above the top of the well screen with Lone Star #2/16 Monterey filter sand. The sand was slowly tremied down the inside of the hollow-stem augers while the augers were slowly withdrawn. This method minimized the possibility of bridging and helped assure that the filter sand would surround the well casing before the native material could collapse into the borehole.

After the screened portion of the well casing was backfilled with filter sand, the hole was sealed with a 2-foot thick bentonite plug overlain with a cement/sand grout to within 1 foot of the ground surface. The monitoring wells were protected with water tight, security, traffic-rated vault boxes with locking steel covers. The traffic boxes were set in concrete and elevated about an inch above the existing ground surface to divert surface water away from the well.

All wells were constructed under the supervision of a TPE registered geologist. See Appendix E for well construction details and soil borings logs.

The TOC (relative to MSL) of each well was surveyed by a professional civil engineer relative to bench mark H 130 located at the southeast corner of Hollis Street and Park Avenue in Emeryville, California.

3.2.5.1 Sieve/Hydrometer Analysis

At the request of the ACHCSA, a sieve/hydrometer analysis was conducted on 1 soil sample collected in the screened interval of a constructed well. A soil sample was selected from the depth range of 13.5 to 14.0 feet in well MW-2. The soil in this

sample represented the finest-grained soil logged opposite the screen. The screened interval for well MW-2 is from 10 to 20 feet below ground surface. The soil sample was identified during well construction as a silt with increasing sand content with depth. Based on results of the sieve/hydrometer analysis, the sample is identified as a sandy clay (see Appendix F).

3.2.6 Groundwater Monitoring Well Development

Wells MW-1 through MW-3 were developed by TPE on March 17 and 20, 1992. Before development of each well, depth to stabilized groundwater was measured from the TOC to the nearest 0.01 foot using an electronic Solinst water level meter. A minimum of 3 repetitive measurements were made for each level determination to ensure accuracy. Each well was checked for floating product using a dedicated polyethylene bailer; no floating product, sheen or odor was detected.

Each well was developed by surging with a surge block and using a 1.7", positive displacement, PVC hand pump until the water was clear of sand, silt, and turbidity or no change in improvement was achieved. All pumps were steam cleaned before developing each well.

Development water was stored on site in 55-gallon steel drums. The drums were labeled to show contents, suspected contaminant, date filled, expected removal date, company name and telephone number.

3.2.7 Groundwater Monitoring Well Sampling

Groundwater samples were collected from all 3 wells on March 23, 1992.

Prior to sampling, the wells were measured for depth-to-groundwater as described above in section 3.2.6 Groundwater Monitoring Well Development and purged a minimum of 3 well volumes with dedicated polyethylene bailers until temperature, pH, and electrical conductivity of the purged water stabilized. Since dedicated bailers were used for each well sampled, no decontamination was necessary between sampling

events. After purging was completed, the water samples were collected in HCl-preserved, clean, sterilized glass vials with teflon lined screw caps, immediately sealed, and labeled to include: date, time, sample location, project number, and sampler. The samples were immediately stored on ice for transport to a DHS certified laboratory accompanied by chain-of-custody documentation. See Appendix G for quality assurance and quality control procedures (QA/QC).

Purge water was stored on site in labeled 55-gallon drums. The drums were labeled to show contents, suspected contaminant, date filled, expected removal date, company name, contact person, and telephone number.

3.2.7.1 Results of Chemical Analyses

The 3 groundwater samples were analyzed by DHS certified TAL for TPHG, BTEX, and organic lead by the DHS Method, EPA Method 8020, and the DHS Method, respectively.

Laboratory analyses by the above methods detected no TPHG, BTEX, or organic lead, with the exception of 1.1 ppb benzene detected in the sample collected from well MW-2.

Analytical results are summarized in Table 2 and documented with a certified analytical report and chain-of-custody in Appendix C.

3.2.8 Regional Hydrogeology

The site is located in the East Bay Plain of the Coast Range physiographic province. The East Bay Plain is an area comprised of flat alluvial lowlands and bay and tidal marshes lying between the bedrock hills of the Diablo Range to the east and San Francisco Bay to the west. Geologic materials underlying the plain are classified as consolidated and unconsolidated. The presence of consolidated materials beneath the site are estimated to begin at a depth of about 1,000 feet below the ground surface and are not considered to be aquifers. The unconsolidated materials, present from

ground surface to a depth of about 1,000 feet, contain the groundwater aquifers of the East Bay Plain. These materials consist of a heterogeneous mixture of clay, silt, sand, and gravel mainly derived from erosion of the Diablo Range.

Major groundwater-bearing materials beneath the East Bay Plain occur at depths ranging from about 50 feet to 1,000 feet below ground surface. Groundwater from these aquifers is presently used mostly for irrigation and industrial purposes. Groundwater flow is generally in a direction from the Diablo Range toward San Francisco Bay.

The subject site is located on unconsolidated Quaternary, Holocene, fine-grained, alluvial deposits composed of unconsolidated, plastic, moderately to poorly sorted carbonaceous silt and clay (United States of the Interior Geological Survey, Professional Paper 943, 1979).

3.2.9 Site Hydrogeology

The site hydrogeology is interpreted from soil boring logs constructed by TPE and the stabilized water levels in groundwater monitoring wells MW-1 through MW-3. See Appendix E for boring logs and well construction details.

Cross section A-A' (see Figure 5) has been constructed from boring logs to illustrate the stratigraphy beneath the site. The location of the cross section is shown in Figure 4.

The stratigraphy beneath the site consist of alternating layers of clay, silt, and sand. The asphalt and aggregate base material at ground surface is underlain by a greenish grey clay which is present to depths of 8-feet in the boring for well MW-2 to 12.5-feet in the boring for well MW-1. A clayey sand layer interrupted the above greenish grey clay in well MW-1 from a depth of 9.5 to 11.0 feet. A mottled orange and brown silt or light green silt is present beneath the above clay to depths ranging from 10 feet in the boring for well MW-2 to 15 feet in the boring for well MW-1. This silt is underlain, in the borings for wells MW-2 and MW-3 by a mottled brown and orange clayey sand which is present to depths ranging from 12 to 14.5 feet, respectively; this

sand is absent in the boring for well MW-1. Underlying the above sand is a mottled orange and brown silt which is present to depths ranging from 15 feet in the boring for well MW-1 to 16 feet in the boring for well MW-3. This silt is underlain by silty sand followed by sand to the depth explored in the borings (see Figure 5).

Groundwater entered the 3 borings at depths ranging from 10 to 12 feet, after drilling into clayey sands. Below these sands, lower permeability silts and clays were moist and groundwater again entered the borings when sands near the bottom of the borings were penetrated (see lithology descriptions on logs of exploratory borings in Appendix E). The groundwater levels stabilized in the wells at depths ranging from about 5.5 to 6.5 feet. Because the static groundwater level rose several feet above the aquifer's upper boundary and because the aquifer is overlain by silt and clay aquitards, TPE interprets the aquifer to be confined.

3.2.9.1 Groundwater Gradient

The groundwater gradient was evaluated by triangulation of stabilized groundwater elevations on March 17 and 23, 1992. Figures 6 and 7 are groundwater gradient maps for the above dates, respectively. On March 17, 1992 groundwater flow direction was southwest at a gradient of .032 feet per foot. On March 23, 1992 groundwater flow direction was west-northwest at a gradient of .016 feet per foot. On March 17, 1992 well MW-2 was within 10 feet and downgradient of the location of the former dispenser island and well MW-3 was within 10 feet and downgradient of the former underground fuel tank. On March 23, 1992 well MW-1 was within 25 feet and downgradient of the location of the former dispenser island and former underground fuel tank.

The variability of direction of groundwater flow suggests that groundwater flow is influenced by tidal fluctuations from San Francisco Bay.

4.0 CONCLUSIONS

Chemical analyses of verification soil samples collected to document cleanup concentrations of TPHG and BTEX after excavating contaminated soil from the area of the fuel tank and from the area of the dispenser island indicate that soil contamination has been remediated with the exception of an area of contaminated soil under the on-site building.

Groundwater samples collected from wells MW-1 through MW-3 for analysis for TPHG and BTEX were nondetectable, with the exception of 1.1 ppb benzene in well MW-2.

5.0 RECOMMENDATIONS

TPE recommends quarterly groundwater sampling and gradient determination for the 3 monitoring wells for a period of 1 year. Groundwater samples are recommended to be analyzed for TPHG and BTEX. The next sampling event is due about June 23, 1992.

6.0 STUDY LIMITATIONS

TPE's TCR/PSAR for the subject site is based on results of soil excavation, subsurface exploration, laboratory analyses of soil and groundwater samples, and geologic correlations. The chemical analytical results of soil and groundwater samples are considered applicable to the borehole, monitoring well, or location from which they were collected. The soil encountered in the borings and excavations are believed to be representative of the site; however, the soil may vary in character between observation points. The conclusions contained herein are based on the analytical data and professional judgement which is in accordance with current standards of professional practice. No other warranty is expressed or implied.

The findings and conclusions of this report are valid as of the present time; however, the passing of time could change the conditions of the subsurface due to natural

processes or the influence of man. Therefore, the findings of this report may be invalidated, wholly or partly, by changes beyond TPE's control.

This report should not be relied upon after an extended period of time without being reviewed by a Civil Engineer or Registered Geologist.

LEGEND

REFERENCE: USGS 7.5 MINUTE
SERIES QUADRANGLE MAP
OAKLAND WEST, CALIFORNIA
PHOTOREVISED 1980

N

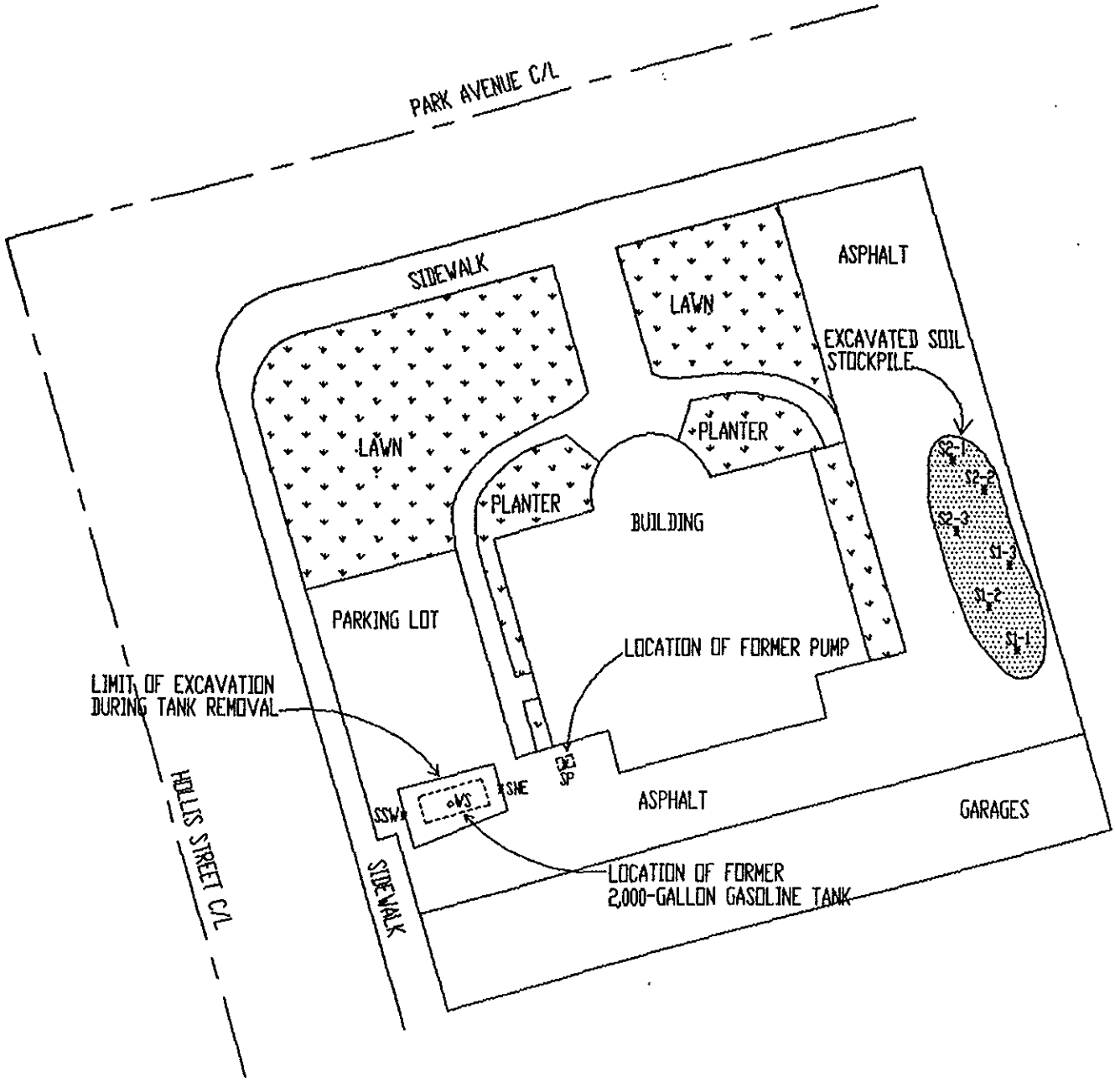
0 2,000
SCALE IN FEET

TANK PROTECT ENGINEERING

SITE VICINITY MAP

1333 PARK AVENUE
EMERYVILLE, CA

DATE	1/14/92
FIGURE	1
FILE #	213A-3
DRAWN BY	MAC
CHECKED BY	JVN



LEGEND

WS NAME AND LOCATION OF GRAB GROUNDWATER SAMPLE

SNE NAME AND LOCATION OF SOIL SAMPLE

N

0 30

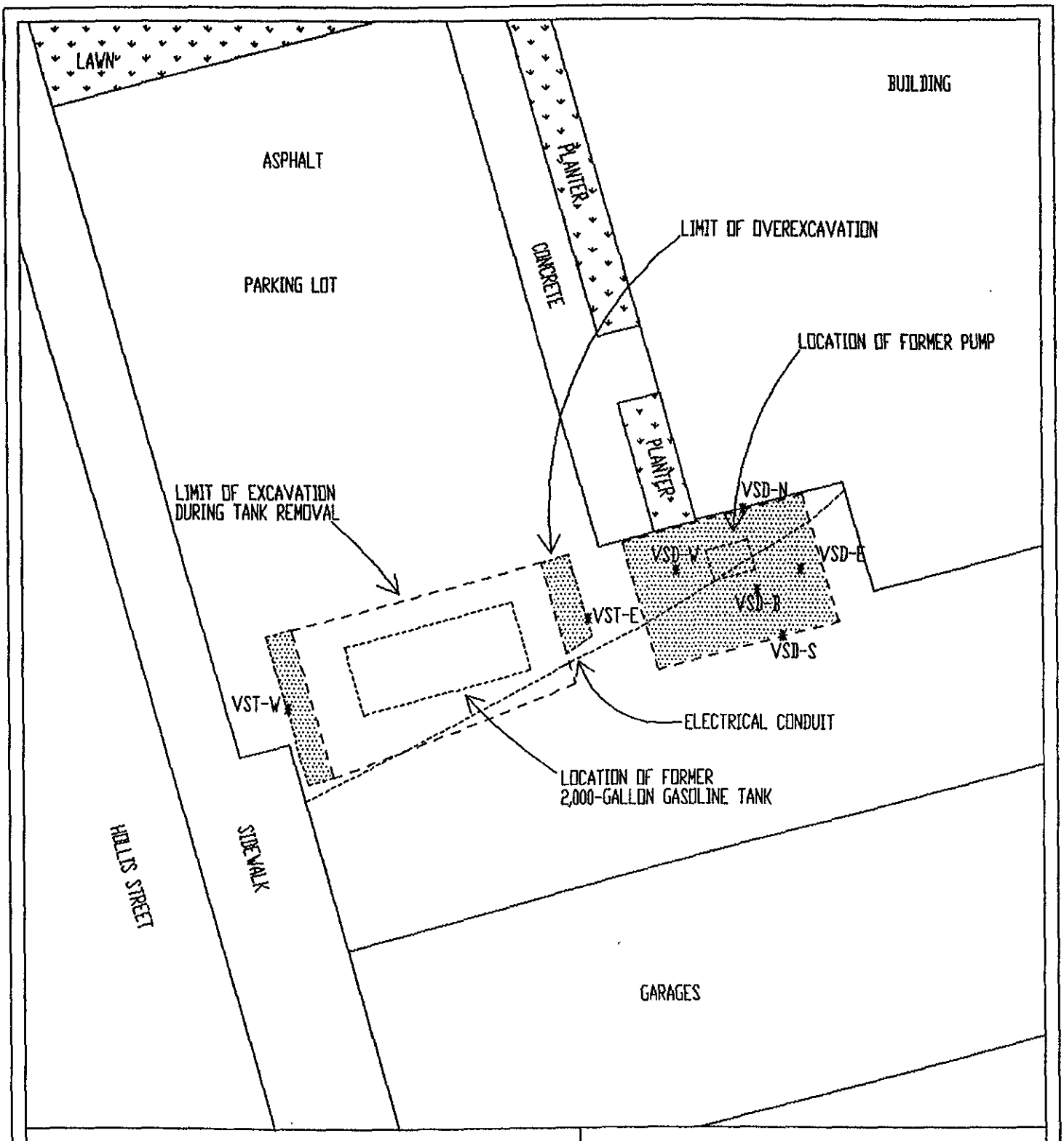
SCALE IN FEET

TANK PROTECT ENGINEERING

TANK REMOVAL SITE PLAN (1/2/92)

1333 PARK AVENUE
EMERYVILLE, CA 94608

DATE	3/12/92
FIGURE	2
FILE #	213A-16
DRAWN BY	MAC
CHECKED BY	JVM



LEGEND

VST-W — NAME AND LOCATION OF VERIFICATION SOIL SAMPLE

AREA OF OVEREXCAVATION

N

0 10

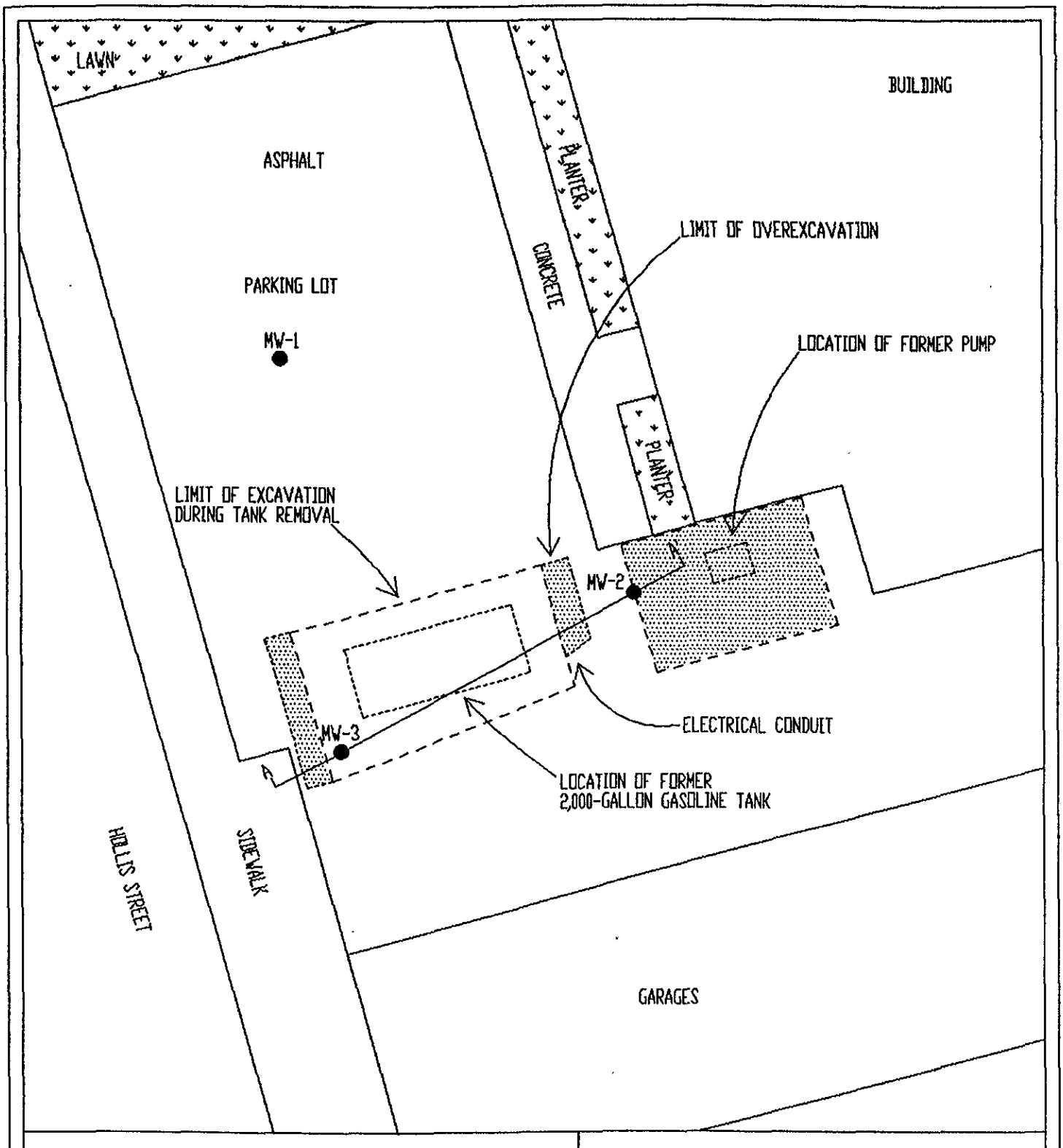
SCALE IN FEET

TANK PROTECT ENGINEERING

OVEREXCAVATION DETAIL (2/3/92)

1333 PARK AVENUE
EMERYVILLE, CA 94608

DATE	2/3/92
FIGURE	3
FILE #	213A-14
DRAWN BY	MAC
CHECKED BY	JVM



LEGEND

- MW-1 ● — NAME AND LOCATION OF GROUNDWATER MONITORING WELL
- A A' — LOCATION OF GEOLOGIC CROSS SECTION
- AREA OF OVEREXCAVATION

N

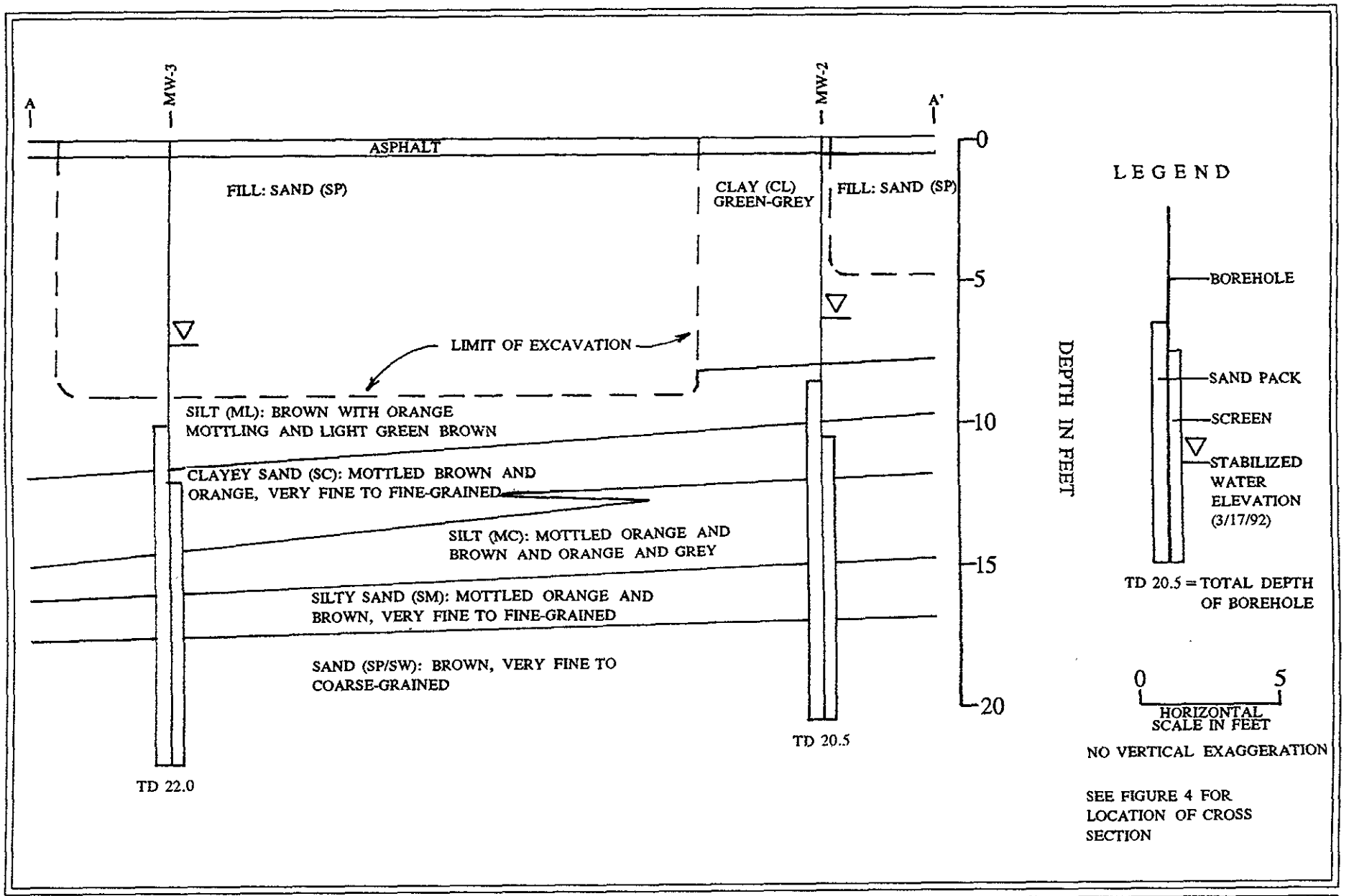
0 10
SCALE IN FEET

TANK PROTECT ENGINEERING

WELL INSTALLATION DETAIL (3/11/92)

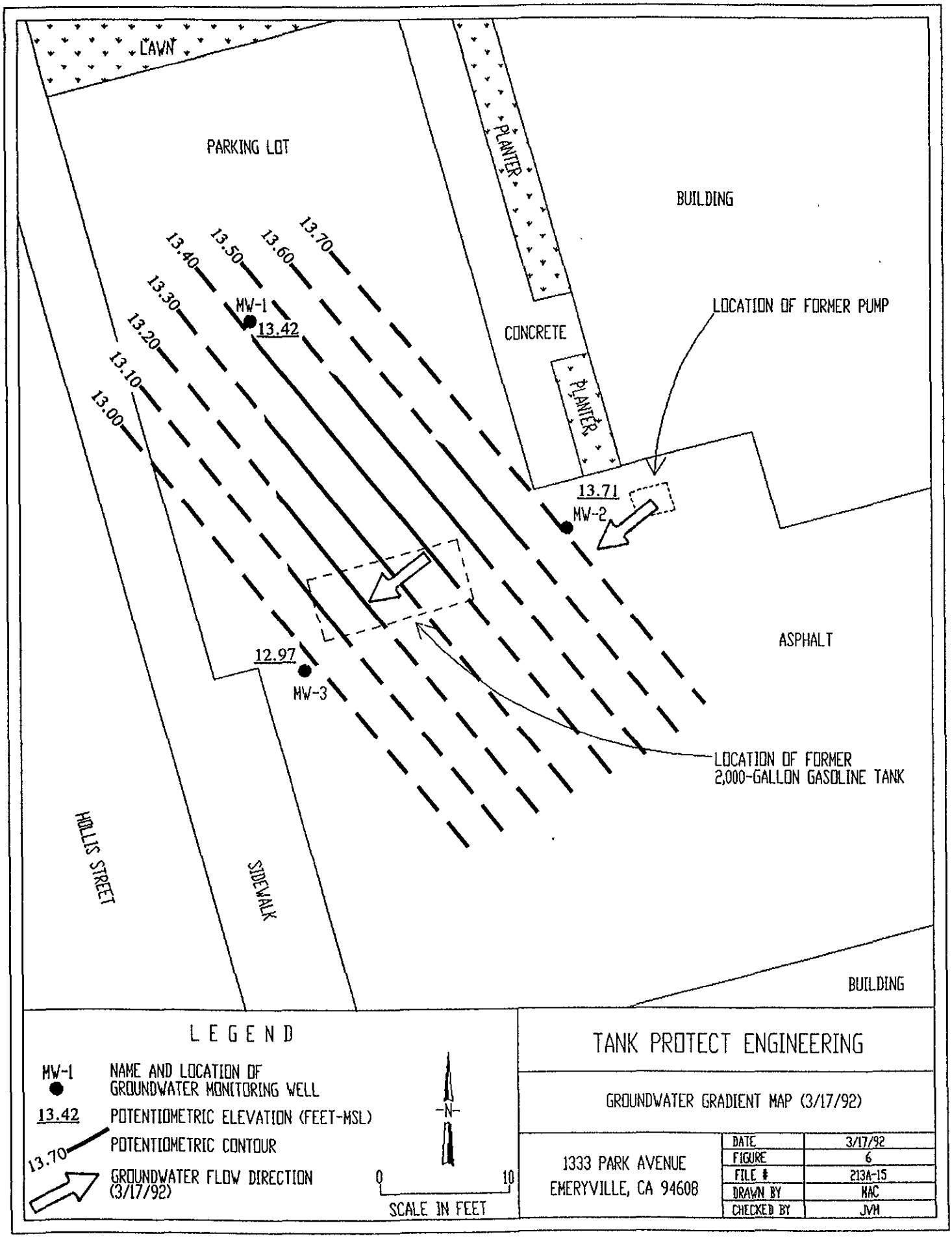
1333 PARK AVENUE
EMERYVILLE, CA 94608

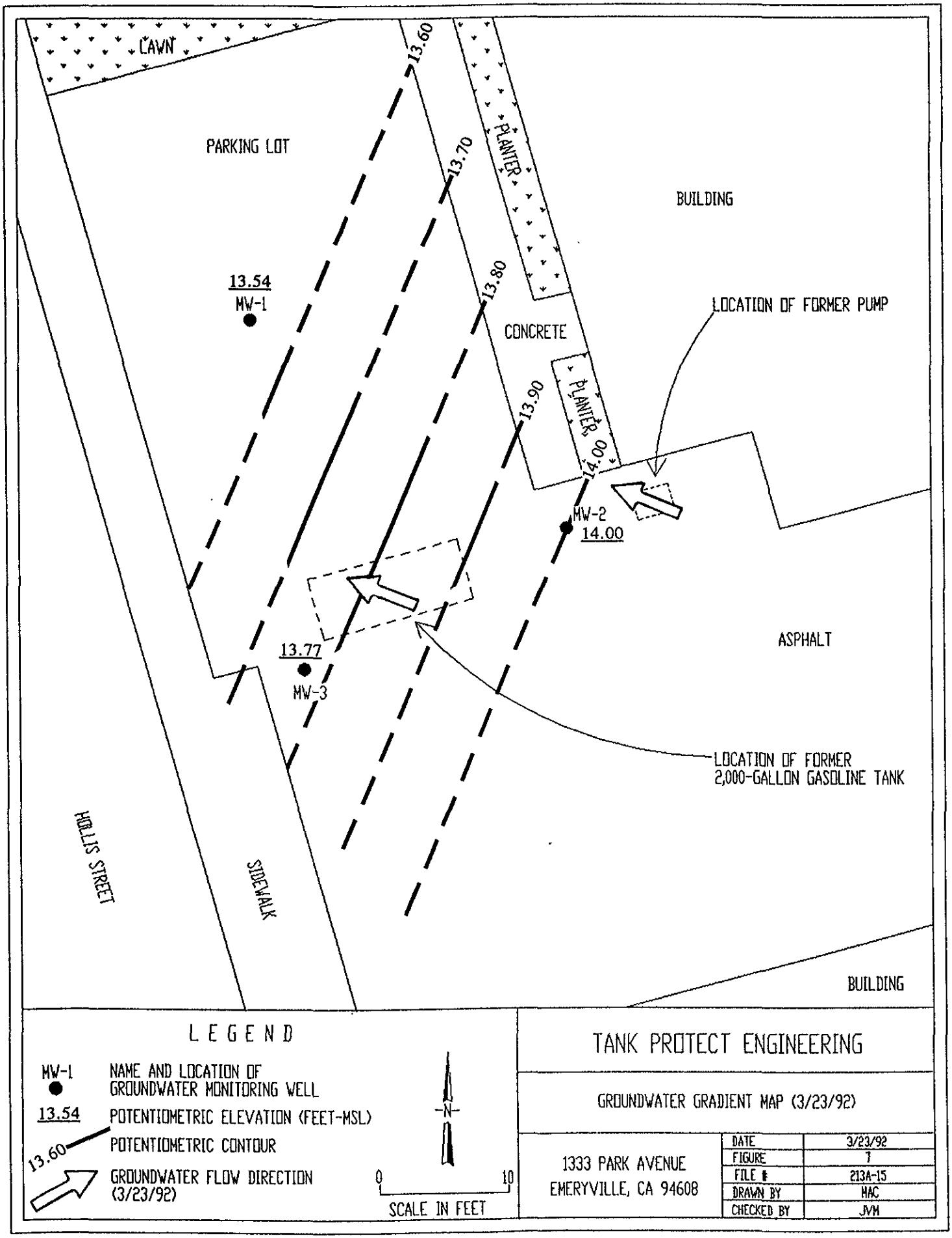
DATE	5/27/92
FIGURE	4
FILE #	2136-18
DRAWN BY	MAC
CHECKED BY	JVM



GEOLOGIC CROSS SECTION A-A'
1333 PARK AVENUE
EMERYVILLE, CALIFORNIA

FIGURE
5


LAWN
PARKING LOT
PLANTER
BUILDING
13.70
13.60
13.50
13.40
13.30
13.20
13.10
13.00
MW-1
13.42
LOCATION OF FORMER PUMP
CONCRETE
PLANTER
13.71
MW-2
ASPHALT
12.97
MW-3
LOCATION OF FORMER
2,000-GALLON GASOLINE TANK
HOLLIS STREET
SIDEWALK
BUILDING
LEGEND
MW-1 NAME AND LOCATION OF GROUNDWATER MONITORING WELL
13.42 POTENTIOMETRIC ELEVATION (FEET-MSL)
13.70 POTENTIOMETRIC CONTOUR
GROUNDWATER FLOW DIRECTION (3/17/92)
N
0
10
SCALE IN FEET
TANK PROTECT ENGINEERING
GROUNDWATER GRADIENT MAP (3/17/92)
1333 PARK AVENUE
EMERYVILLE, CA 94608
DATE 3/17/92
FIGURE 6
FILE # 213A-15
DRAWN BY MAC
CHECKED BY JVH



LEGEND

- MW-1 ● NAME AND LOCATION OF GROUNDWATER MONITORING WELL
- 13.54 POTENTIOMETRIC ELEVATION (FEET-MSL)
- 13.60 POTENTIOMETRIC CONTOUR
- GROUNDWATER FLOW DIRECTION (3/23/92)

N

0 10
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (3/23/92)

1333 PARK AVENUE
EMERYVILLE, CA 94608

DATE	3/23/92
FIGURE	7
FILE #	213A-15
DRAWN BY	MAC
CHECKED BY	JVM

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
(ppm)

Sample ID Name	Date	Depth (feet)	TPHG	Benzene	Toluene	Ethyl-Benzene	Xylenes	Total Lead	Organic Lead
S1-1, 2, 3	01/02/92	02.0-03.5	410	6.1	91	18	120	NA[1]	NA
S2-1, 2, 3	01/02/92	01.0-03.5	130	1.4	8.7	4.4	28	NA	NA
SNE	01/02/92	07.0-07.5	<.5	<.005	.0056	<.005	<.015	3.9	<.5
SP	01/02/92	02.0-02.5	180	<.088	.46	1.4	20	NA	NA
SSW	01/02/92	07.0-07.5	<.5	<.005	.008	<.005	<.015	NA	NA
VST-E	02/03/92	05.5	<.500	<.005	<.005	<.005	<.015	NA	<2.5
VST-W	02/03/92	05.5	<.500	<.005	<.005	<.005	<.015	NA	<2.5
VSD-N	02/03/92	04.0	190	.320	5.2	2.7	31	NA	<2.5
VSD-S	02/03/92	05.5	<.500	<.005	<.005	<.005	<.015	NA	<2.5
VSD-E	02/03/92	04.5	.810	<.005	<.005	<.005	<.015	NA	<2.5
VSD-W	02/03/92	04.5	<.500	<.005	<.005	<.005	<.015	NA	<2.5
VSD-B	02/03/92	06.5	<.500	<.005	<.005	<.005	<.015	NA	<2.5
MW-1	03/10/92	10.0-10.5	<1.0	<.005	<.005	<.005	<.005	NA	NA
MW-2	03/10/92	05.0-05.5	<1.0	<.005	<.005	<.005	<.005	NA	NA
MW-2	03/11/92	10.5-11.0	<1.0	<.005	<.005	<.005	<.005	NA	NA
MW-3	03/10/92	11.5-12.0	<1.0	<.005	<.005	<.005	<.005	NA	NA
SP1-1, 2, 3, 4	03/10/92	01.5-02.0	<1	<.005	<.005	<.005	<.005	NA	NA

[1] NA = NOT ANALYZED

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(ppb)

Well Name	Date	TPHG	Benzene	Toluene	Ethyl-Benzene	Xylenes	Organic Lead
WS	01/02/92	2,700	120	570	140	900	NA[1]
MW-1	03/23/92	<64	<0.50	<0.50	<0.50	<1.5	<100
MW-2	03/23/92	<50	1.1	<0.50	<0.50	<1.5	<100
MW-3	03/23/92	<50	<0.50	<0.50	<0.50	<1.5	<100
MW-4[2]	03/23/92	<50	<0.50	<0.50	<0.50	<1.5	NA

[1] NA = NOT ANALYZED

[2] TRIP BLANK

APPENDIX A

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY, DEPARTMENT OF ENVIRONMENTAL HEALTH, UNDERGROUND TANK CLOSURE PLAN; BAY AREA AIR QUALITY MANAGEMENT DISTRICT, NOTIFICATION FORM; UNIFORM HAZARDOUS WASTE MANIFESTS; ALAMEDA COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH, HAZARDOUS MATERIALS INSPECTION FORM; UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK)/CONTAMINATION SITE REPORT; BAY AREA AIR QUALITY MANAGEMENT DISTRICT, NOTIFICATION FORM; CITY OF EMERYVILLE APPLICATION AND PERMIT

Project Specialist (print) SUSAN L. HUGO

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621
PHONE NO. 415/271-4320

ACCEPTED

DEPARTMENT OF ENVIRONMENTAL HEALTH
470 - 27th Street, Third Floor
Oakland, CA 94612
Telephone: (415) 874-7237

These plans have been reviewed and found to be acceptable and essentially meet the requirements of State and local health laws. Changes to your plans indicated by the Department are to assure compliance with State and local laws. The project proposed herein is now released for issuance of any required building permits for construction.

One copy of these accepted plans must be on the job and available to all contractors and craftsmen involved with the removal.

Any changes or alterations of these plans and specifications must be submitted to this Department and to the Fire and Building Inspection Department to determine if such changes meet the requirements of State and local laws.

Notify this Department at least 48 hours prior to the following required inspections:

✓ Removal of Tank and Piping
✓ Sampling
✓ Final Inspection

Issuance of a permit to operate is dependent on compliance with accepted plans and all applicable laws and regulations.

THERE IS A FINANCIAL PENALTY FOR NOT OBTAINING THESE INSPECTIONS.

Susan L. Hugo 12/16/91

* Excavation pit must be covered.

UNDERGROUND TANK CLOSURE PLAN
*** * * Complete according to attached instructions * * ***

1. Business Name CITY OF EMERYVILLE

   Business Owner CITY OF EMERYVILLE

2. Site Address 1333 PARK AVENUE

   City EMERYVILLE CA Zip 94608 Phone (415) 596-4330

3. Mailing Address 2200 POWELL STREET

   City EMERYVILLE CA Zip 94608 Phone (415) 596-4330

4. Land Owner CITY OF EMERYVILLE

   Address 2200 POWELL STREET City, State EMERYVILLE, CA Zip 94608

5. Generator name under which tank will be manifested CITY OF EMERYVILLE

   EPA I.D. No. under which tank will be manifested CAC000658512

rev 12/90

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET
SAN FRANCISCO, CALIFORNIA 94109
(415) 771-6000

REGULATION 8, RULE 40
Aeration of Contaminanted Soil and Removal of Underground Storage Tanks

NOTIFICATION FORM

☑ Removal or Replacement of Tanks
☐ Excavation of Contaminated Soil

GROSE

SITE INFORMATION

SITE ADDRESS 1333 Park Ave.
CITY, STATE, ZIP Emeryville, CA, 94608
OWNER NAME City of Emeryville
SPECIFIC LOCATION OF PROJECT

TANK REMOVAL

SCHEDULED STARTUP DATE 12/31/91
VAPORS REMOVED BY:
[ ] WATER WASH
[✓] VAPOR FREEING (CO^2)
[ ] VENTILATION

CONTAMINATED SOIL EXCAVATION

SCHEDULED STARTUP DATE
STOCKPILES WILL BE COVERED? YES ____ NO ____
ALTERNATIVE METHOD OF AERATION (DESCRIBE BELOW):
(MAY REQUIRE PERMIT)

CONTRACTOR INFORMATION

NAME Tank Protect Engineering CONTACT Louis Travis
ADDRESS 2821 Whipple Rd. PHONE (510) 429-8088
CITY, STATE, ZIP Union City, CA, 94587

CONSULTANT INFORMATION
(IF APPLICABLE)

NAME CONTACT
ADDRESS PHONE ( )
CITY, STATE, ZIP

FOR OFFICE USE ONLY

DATE RECEIVED fax 12-27-91 BY RO (INIT.)
CC: 502 INSPECTOR NO. 1-375 DATE 12-30-91 BY RO (INIT.)
TELEPHONE UPDATE: CALLER CHANGE MADE
BAAQMD N #

3/89

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *Form designed for use on elite (12-pitch typewriter).*

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: C A 9 9 0 9 6 5 8 5 1 2 — Manifest Document No.: 0 0 1 0 1 1

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
CITY OF EMERYVILLE
6500 POWELL STREET
EMERYVILLE, CA 94608

4. Generator's Phone (510) 596-4330

A. State Manifest Document Number: **91053402**

B. State Generator's ID:

5. Transporter 1 Company Name: ALVISO INDEPENDENT OIL

6. US EPA ID Number: C A D 9 8 0 6 9 5 3 4 0

C. State Transporter's ID: 207 774

D. Transporter's Phone: (408) 262-2715

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address
ALVISO INDEPENDENT OIL
5092 ARCHER
ALVISO, CALIF. 95002

10. US EPA ID Number: C A L 0 0 0 0 4 8 5 7 1

G. State Facility's ID: C A L 0 0 0 0 4 8 5 7 1

H. Facility's Phone: (408) 262-2715

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WATER and Traces of Gas WASTE OIL N.O.S COMBUSTIBLE LIQUID NA 1270	0 0 1 1	T T	1 4 7 5	G	State 221 EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
1.1 USED OIL
1.2 WATER

K. Handling Codes for Wastes Listed Above
a. 01 b.
c. d.

15. Special Handling Instructions and Additional Information
GLOVES

16.
GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: LYLE TRAVIS FOR CITY OF EMERYVILLE — Signature — Month Day Year: 01 09 92

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: M MOORE — Signature — Month Day Year: 01 10 92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name — Signature — Month Day Year

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

91053402

DHS 8022 A
EPA 8700—22
(Rev. 6-89) Previous editions are obsolete.

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 400, Sacramento, CA 95812-0400

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *Form designed for use on elite (12-pitch typewriter).*

See Instructions on Back of Page 6 and Front of Page 7 — 79389

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAC0096585121 — Manifest Document No.: 113819
2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
City of Emeryville
1333 Park ave, Emeryville, Ca 94608
4. Generator's Phone (510) 596 4333

A. State Manifest Document Number: 90796760
B. State Generator's ID:
C. State Transporter's ID: 205169
D. Transporter's Phone: 510-235-1393
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID: CAD009466392 DSC
H. Facility's Phone: (510) 235-1393

5. Transporter 1 Company Name: Erickson Trucking Inc — 6. US EPA ID Number: CAD009466392
7. Transporter 2 Company Name — 8. US EPA ID Number:
9. Designated Facility Name and Site Address: Erickson, Inc. 255 Parr Blvd. Richmond, Ca. 94801 — 10. US EPA ID Number: CAD009466392

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No:	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Empty Storage Tank (Assorted Pipe NON-RCRA Hazardous Waste Solid (Gas Dispersal)	001	TT	20,000	P	State 512 / EPA/Other NONE
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
Qty. 1 Empty Storage Tank (s) # 1816, ____, ____. Tank (s) have been inerted with 15 lbs. Dry Ice per 1000 Gal. Capacity.

K. Handling Codes for Wastes Listed Above
a. 01 — b. — c. — d.

15. Special Handling Instructions and Additional Information
Keep away from sources of ignition. Always wear hardhats when working around U.S.T.'s 24 Hr. Contact Name Juan C. Arreguin & Phone (510) 596-4333

16.
GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
Juan C. Arreguin	Juan C. Arreguin	10	10	92

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Garry Adams	Garry Adams	10	10	92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space
12a: Should be "TP"

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month	Day	Year
DANIEL S. CARROLL	Daniel S Carroll	10	10	92

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

90796760

DHS 8022 A
EPA 8700—22
(Rev. 6-89) Previous editions are obsolete.

Do Not Write Below This Line

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 3000, Sacramento, CA 95812

white -env.health
yellow -facility
pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

80 Swan Way, #200
Oakland, CA 94621
(415) 271-4320

Hazardous Materials Inspection Form

II,III

Site ID # ____ Site Name City of Emeryville Today's Date 1/2/92

Site Address 1333 Park Ave

City Emeryville Zip 94608 Phone ________

___ MAX AMT stored ≥ 500 lbs, 55 gal., 200 cft.?

Inspection Categories:
___ I. Haz. Mat/Waste GENERATOR/TRANSPORTER
___ II. Business Plans, Acute Hazardous Materials
✓ III. Underground Tanks TANK Removal

II.A BUSINESS PLANS (Title 19)

___	1. Immediate Reporting	2703
___	2. Bus. Plan Stds.	25503(b)
___	3. RR Cars > 30 days	25503.7
___	4. Inventory Information	25504(a)
___	5. Inventory Complete	2730
___	6. Emergency Response	25504(b)
___	7. Training	25504(c)
___	8. Deficiency	25505(a)
___	9. Modification	25505(b)

II.B ACUTELY HAZ. MAT'LS

___	10. Registration Form Filed	25533(a)
___	11. Form Complete	25533(b)
___	12. RMPP Contents	25534(c)
___	13. Implement Sch. Req'd? (Y/N)	
___	14. Offsite Conseq. Assess.	25524(c)
___	15. Probable Risk Assessment	25534(d)
___	16. Persons Responsible	25534(g)
___	17. Certification	25534(f)
___	18. Exemption Request? (Y/N)	25536(b)
___	19. Trade Secret Requested?	25538

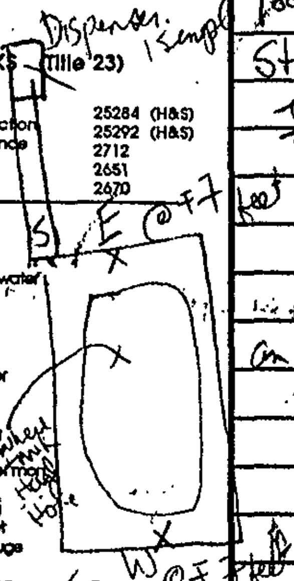
III. UNDERGROUND TANKS (Title 23)

General
- ___ 1. Permit Application 25284 (H&S)
- ___ 2. Pipeline Leak Detection 25292 (H&S)
- ___ 3. Records Maintenance 2712
- ___ 4. Release Report 2651
- ___ 5. Closure Plans 2670

Monitoring for Existing Tanks
- ___ 6. Method
  - 1) Monthly Test
  - 2) Daily Vadose / Semi-annual gndwater / One time soils
  - 3) Daily Vadose / One time soils / Annual tank test
  - 4) Monthly Gndwater / One time soils
  - 5) Daily Inventory / Annual tank testing / Cont pipe leak det / Vadose/gndwater mon.
  - 6) Daily Inventory / Annual tank testing / Cont pipe leak det
  - 7) Weekly Tank Gauge / Annual tank tstng
  - 8) Annual Tank Testing / Daily Inventory
  - 9) Other ____
- ___ 7. Precis Tank Test 2643 Date: ____
- ___ 8. Inventory Rec. 2644
- ___ 9. Soil Testing. 2646
- ___ 10. Ground Water. 2647

New Tanks
- ___ 11. Monitor Plan 2632
- ___ 12. Access. Secure 2634
- ___ 13. Plans Submit 2711 Date: ____
- ___ 14. As Built 2635 Date: ____

Rev 6/88



*Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

12 have 1/2 ... 500 gallons of gas were removed this am

Comments:
1:00 PM on site for Removal of Underground Storage tank (UST) 2000 g(?)
the tank is on a slab.
TPE on site TANK in ground
denatured with dry ice lel level 01
Note (photographs taken)
Note Soil on Site has been Stained and has an odor of stale/old hydrocarbon Supply fence
Note: groundwater encountered at (±) 7 feet
NOTE (Site to be rendered Safe by Contractor)
Note! there is a sheen (from fuel on the water at the west end of the excavation. photo # 5
Crane to be used for removal of UST
note at 3:10 a new gastech reading was done of UST "0"

upon removal the tank an area underneath the tank (below cement & soil that adhered had a area obviously stained (Photo taken)
STATE manifest Number.
90796467 → Erickson is the Hauler.

Total Samples background
2 at Ends of UST
1 at Dispenser
groundwater
Composite Samples

EPA CAC 000 658 512. generator # City of Emeryville

II, III

Contact: ________

Title: ________ Inspector: Brian P. Oliver

Signature: [signature] Signature: [signature]

white -env.health
yellow -facility
pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

Hazardous Materials Inspection Form

80 Swan Way, #200
Oakland, CA 94621
(415) 271-4320

II,III

Site ID # ____ Site Name City of Emeryville Today's Date 11/02/92

Site Address 1333 Park Avenue

City Emeryville Zip 94608 Phone ____

____ MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:
X I. Haz. Mat/Waste GENERATOR/TRANSPORTER
__ II. Business Plans, Acute Hazardous Materials
✓ III. Underground Tanks TANK Removal

* Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

II.A BUSINESS PLANS (Title 19)

__	1. Immediate Reporting	2703
__	2. Bus. Plan Stds.	25503(b)
__	3. RR Cars > 30 days	25503.7
__	4. Inventory Information	25504(a)
__	5. Inventory Complete	2730
__	6. Emergency Response	25504(b)
__	7. Training	25504(c)
__	8. Deficiency	25505(a)
__	9. Modification	25505(g)

II.B ACUTELY HAZ. MATLS

__	10. Registration Form Filed	25533(a)
__	11. Form Complete	25533(b)
__	12. RMPP Contents	25534(c)
__	13. Implement Sch. Req'd? (Y/N)	____
__	14. OffSite Conseq. Assess.	25524(c)
__	15. Probable Risk Assessment	25534(d)
__	16. Persons Responsible	25534(g)
__	17. Certification	25534(f)
__	18. Exemption Request? (Y/N)	25536(b)
__	19. Trade Secret Requested?	25538

III. UNDERGROUND TANKS (Title 23)

General
__ 1. Permit Application 25284 (H&S)
__ 2. Pipeline Leak Detection 25292 (H&S)
__ 3. Records Maintenance 2712
__ 4. Release Report 2651
__ 5. Closure Plans 2670

Monitoring for Existing Tanks
__ 6. Method
1) Monthly Test
2) Daily Vadose
Semi-annual gndwater
One time soils
3) Daily Vadose
One time soils
Annual tank test
4) Monthly Gndwater
One time soils
5) Daily Inventory
Annual tank testing
Cont pipe leak det
Vadose/gndwater mon.
6) Daily Inventory
Annual tank testing
X Cont pipe leak det
7) Weekly Tank Gauge
Annual tank tstng
8) Annual Tank Testing
Daily Inventory
9) Other ____

__ 7. Precis Tank Test Date: ____ 2643
__ 8. Inventory Rec. 2644
__ 9. Soil Testing. 2646
__ 10. Ground Water. 2647

New Tanks
__ 11. Monitor Plan 2632
__ 12. Access. Secure 2634
__ 13. Plans Submit Date: ____ 2711
__ 14. As Built Date: ____ 2635

Rev 6/88

Comments:

3.5

Emery Valley

42

City of Emeryville
1333 Park Avenue

Required actions:
* (1) Two (2) soil samples taken from both ends of Tank
* (2) one (1) water sample at soil/water interface
(3) submit samples analyzed by Certified lab to this office Within 14 days
(4) Samples to be analyzed for TPH as Gas BTEX
(5) Probable Organic Lead from soil sample as well as background lead
(6) Complete unauthorized Release form if required
(7) Provide 1 sample for fuel dispensary line
(8) Provide Composite samples 1 /per 20 Cu yards of Soil

II, III

Contact: X

Title: X Civil Engineer Inspector: Brian P. Oliva

Signature: Ahmad Shah Signature: ____

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY ☐ YES ☒ NO

HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? ☐ YES ☒ NO

FOR LOCAL AGENCY USE ONLY
I HEREBY CERTIFY THAT I HAVE DISTRIBUTED THIS INFORMATION ACCORDING TO THE DISTRIBUTION SHOWN ON THE INSTRUCTION SHEET ON THE BACK PAGE OF THIS FORM.
SIGNED _____ DATE _____

REPORT DATE: 01/16/92 | CASE #:

REPORTED BY

NAME OF INDIVIDUAL FILING REPORT: Marc Zomorodi | PHONE: (510) 429-8088 | SIGNATURE: Marc Zomorodi

REPRESENTING ☒ OWNER/OPERATOR ☐ REGIONAL BOARD ☐ LOCAL AGENCY ☐ OTHER _____

COMPANY OR AGENCY NAME: Tank Protect Engineering of Northern Calif.

ADDRESS: 2821 Whipple Road (STREET) | Union City (CITY) | CA (STATE) | 94587 (ZIP)

RESPONSIBLE PARTY

NAME: City of Emeryville ☐ UNKNOWN | CONTACT PERSON: Juan Arreguin | PHONE: (510) 596-4333

ADDRESS: 2200 Powell Street (STREET) | Emeryville (CITY) | CA (STATE) | 94608 (ZIP)

SITE LOCATION

FACILITY NAME (IF APPLICABLE) | OPERATOR | PHONE ( )

ADDRESS: 1333 Park Avenue (STREET) | Emeryville (CITY) | Alameda (COUNTY) | ZIP

CROSS STREET

IMPLEMENTING AGENCIES

LOCAL AGENCY — AGENCY NAME: Alameda County Health Care Services Agen. | CONTACT PERSON: Brian Oliva | PHONE: (510) 271-4320

REGIONAL BOARD: CRWQCB-San Francisco Bay Region | PHONE ( )

SUBSTANCES INVOLVED

(1) NAME: petroleum hydrocarbons-see below | QUANTITY LOST (GALLONS) _____ ☐ UNKNOWN

(2) _____ ☐ UNKNOWN

DISCOVERY/ABATEMENT

DATE DISCOVERED: 01/02/92 | HOW DISCOVERED: ☐ TANK TEST ☒ TANK REMOVAL ☐ INVENTORY CONTROL ☐ SUBSURFACE MONITORING ☐ NUISANCE CONDITIONS ☐ OTHER _____

DATE DISCHARGE BEGAN: M M D D Y Y ☐ UNKNOWN

HAS DISCHARGE BEEN STOPPED? ☐ YES ☐ NO IF YES, DATE M M D D Y Y

METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY)
☐ REMOVE CONTENTS ☒ CLOSE TANK & REMOVE ☐ REPAIR PIPING
☐ REPAIR TANK ☐ CLOSE TANK & FILL IN PLACE ☐ CHANGE PROCEDURE
☐ REPLACE TANK ☐ OTHER _____

SOURCE/CAUSE

SOURCE OF DISCHARGE: ☐ TANK LEAK ☒ UNKNOWN ☐ PIPING LEAK ☐ OTHER

CAUSE(S): ☐ OVERFILL ☐ RUPTURE/FAILURE ☐ SPILL ☐ CORROSION ☐ UNKNOWN ☐ OTHER _____

CASE TYPE

CHECK ONE ONLY
☒ UNDETERMINED ☐ SOIL ONLY ☐ GROUNDWATER ☐ DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)

CURRENT STATUS

CHECK ONE ONLY
☐ NO ACTION TAKEN ☒ PRELIMINARY SITE ASSESSMENT WORKPLAN SUBMITTED ☐ POLLUTION CHARACTERIZATION
☐ LEAK BEING CONFIRMED ☐ PRELIMINARY SITE ASSESSMENT UNDERWAY ☐ POST CLEANUP MONITORING IN PROGRESS
☐ REMEDIATION PLAN ☐ CASE CLOSED (CLEANUP COMPLETED OR UNNECESSARY) ☐ CLEANUP UNDERWAY

REMEDIAL ACTION

CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)
☐ CAP SITE (CD) ☐ EXCAVATE & DISPOSE (ED) ☐ REMOVE FREE PRODUCT (FP) ☐ ENHANCED BIO DEGRADATION (IT)
☐ CONTAINMENT BARRIER (CB) ☐ EXCAVATE & TREAT (ET) ☐ PUMP & TREAT GROUNDWATER (GT) ☐ REPLACE SUPPLY (RS)
☐ VACUUM EXTRACT (VE) ☐ NO ACTION REQUIRED (NA) ☐ TREATMENT AT HOOKUP (HU) ☐ VENT SOIL (VS)
☐ OTHER (OT) _____

COMMENTS

One 2,000-gallon, single wall, steel, unleaded gasoline, underground storage tank was removed.

HSC 05 (8/90)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET
SAN FRANCISCO, CALIFORNIA 94109
(415) 771-6000

REGULATION 8, RULE 40
Aeration of Contaminated Soil and Removal of Underground Storage Tanks

NOTIFICATION FORM
Removal or Replacement of Tanks
✓ Excavation of Contaminated Soil

Grupe

SITE INFORMATION

SITE ADDRESS 1333 PARK AVENUE
CITY, STATE EMERYVILLE, CA ZIP 94608
OWNER NAME CITY OF EMERYVILLE
SPECIFIC LOCATION OF PROJECT

TANK REMOVAL
SCHEDULED STARTUP DATE
VAPORS REMOVED BY:
[ ] WATER WASH
[ ] VAPOR FREEING (CO^2)
[ ] VENTILATION

CONTAMINATED SOIL EXCAVATION
SCHEDULED STARTUP DATE 2/3/92
STOCKPILES WILL BE COVERED? YES X NO
ALTERNATIVE METHOD OF AERATION (DESCRIBE BELOW):
(MAY REQUIRE PERMIT)

CONTRACTOR INFORMATION

NAME Tank Protect Engineering CONTACT Marc Zomorodi
ADDRESS 2821 Whipple Rd. PHONE (510) 429-8088
CITY, STATE, ZIP Union City, CA. 94587

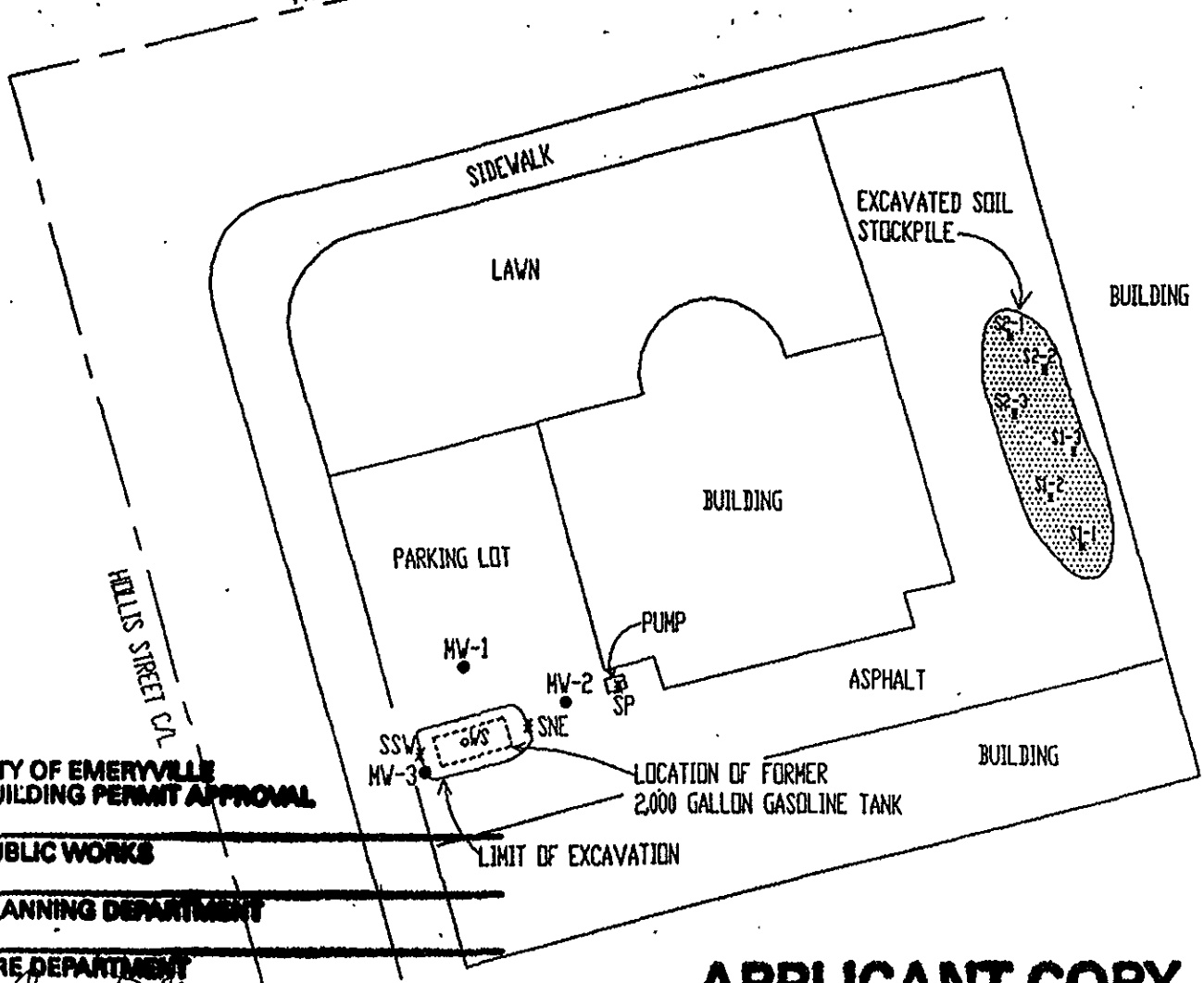
CONSULTANT INFORMATION
(IF APPLICABLE)

NAME CONTACT
ADDRESS PHONE ( )
CITY, STATE, ZIP

FOR OFFICE USE ONLY

DATE RECEIVED FAX 1/29/92 BY Bly (init.)
DATE POSTMARKED BY (init.)
CC: INSPECTOR NO. 524 DATE 1/31/92 BY Bly (init.)
UPDATE: CONTACT NAME DATE BY (init.)
BAAQMD N # DATA ENTRY 1/31/92

See reverse for instructions



CITY OF EMERYVILLE
BUILDING PERMIT APPROVAL

PUBLIC WORKS

PLANNING DEPARTMENT

FIRE DEPARTMENT

BUILDING DIVISION

B-4239-392
PERMIT NUMBER

APPLICANT COPY

LEGEN

RECEIVED
MAR 05 1992
BUILDING DEPARTMENT

SSW ✕ NAME AND LOCATION OF SOIL SAMPLE

WS ○ NAME AND LOCATION OF GROUNDWATER SAMPLE

MW-1 ● NAME AND LOCATION OF PROPOSED GROUNDWATER MONITORING WELL

0 30
SCALE IN FEET

TANK PROTECT ENGINEERING

SITE PLAN

1333 PARK AVENUE
EMERYVILLE, CA

DATE	1/2/92
FIGURE	2
FILE #	213A-2
DRAWN BY	ASH
CHECKED BY	JVM

INSPECTION SERVICES DEPT.
2200 POWELL STREET, 12TH FLOOR
EMERYVILLE, CA 94608
(415) 596-4310

B-4239-392
Permit Number

DO NOT WRITE IN THIS SPA

Application Received
Date 3/5/92 Signed C. Sey
Permit Issued
Date 3/5/92 Signed C. Se

APPLICATION AND PERMIT

THIS APPLICATION IS YOUR PERMIT WHEN PROPERLY FILLED OUT, SIGNED, VALIDATED & FEES PAID.

BUILDING ADDRESS 1333 Park Ave
TRACT LOT APN

OWNER
NAME City of Emeryville
ADDRESS 2200 Powell Street PHONE 596-4310
CITY ~~TANK Protect Engineering~~ Emeryville ZIP

ARCHITECT
NAME TANK Protect Engineering LICENSE#
ADDRESS PHONE
CITY ST ZIP

CONTRACTOR
I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

LICENSE # AND CLASS 575837 A CITY BUSINESS TAX #
CONTRACTOR NAME TANK Protect Engineering
ADDRESS 2821 Whipple Road
Union City ST. CA ZIP 94587 PHONE 429-8088
SIGNATURE [signature] DATE 3-5-92

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

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

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

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

☐ I am exempt under Sec. ________, B&P.C. for this reason ________

Signature Date

WORKERS' COMPENSATION
I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C).
Policy # Company Name
☐ Certified copy is hereby furnished.
☒ Certified copy is filed with the city building inspection department.
Signature [signature] Date 3-5-92

(This section need not be completed if the permit is for one hundred dollars ($100) or less)
I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California.
Signature Date

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LENDERS
I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C). (If no lender indicate "None".)
LENDERS NAME
LENDERS ADDRESS

APPLICANT
I CERTIFY THAT I HAVE READ THIS APPLICATION AND STATE THAT THE INFORMATION GIVEN IS TRUE AND CORRECT. I AGREE TO COMPLY WITH ALL LOCAL ORDINANCES AND STATE LAWS RELATING TO BUILDING CONSTRUCTION AND I MAKE THIS STATEMENT UNDER PENALTY OF LAW. I HEREBY AUTHORIZE REPRESENTATIVES OF THIS CITY TO ENTER UPON THE ABOVE MENTIONED PROPERTY FOR INSPECTION PURPOSES. NOTICE!! THIS PERMIT WILL EXPIRE BY LIMITATION IF WORK IS NOT STARTED WITHIN 180 DAYS OR IF WORK IS ABANDONED FOR MORE THAN 180 DAYS. DO NOT CONCEAL OR COVER ANY CONSTRUCTION UNTIL THE WORK IS INSPECTED AND THE INSPECTION IS RECORDED ON THE FIELD CARD ISSUED FOR THIS PERMIT. ALL INSPECTION REQUESTS ARE REQUIRED 24 HOURS IN ADVANCE OF THIS INSPECTION.

I hereby agree to save, indemnify and keep harmless the City of Emeryville, and its officers, employees and agents against all liabilities, judgments, costs and expenses which may accrue against the City in consequence of the granting of this permit or from the use or occupancy of any sidewalk, street or subsidewalk, or otherwise by virtue thereof, and will in all things strictly comply with the conditions under which this permit is granted.
☐ Contractor
☐ Owner X [signature] Date 3-5-92

☐ Single Family ☐ Apartment ☐ Condominium ☐ Commercial ☐ Industrial ☐ Public Building ☐ Accessory ☐ Other

☐ New ☐ Addition ☐ Alteration ☐ Repair ☐ Improve ☐ Other

Grading: ☐ Excavation ☐ Fill ☐ Drainage ☐ Other

Describe Briefly All Proposed Construction Work
install 3 groundwater monitoring Well

New Building Floor Area (Sq. Ft.)
1st ____ 2nd ____ 3rd ____ Total ____
Garage ____ Carport ____ # Bedrooms ____ # Baths ____
Building Setbacks
Front ____ Rear ____ Left ____ Right ____

Occupancy Group and Division ____ (Per UBC Table 5A) Type ____ (Per UBC Table 17A)

Valuation of Proposed Work $ -0-
(Include all labor and materials, all lighting, heating, ventilation, water supply, plumbing, electrical, fire sprinklers, elevator equipment therein and thereon.)

THIS PERMIT SHALL COVER:
☐ Building ☐ Plan Check ☐ Electrical
☐ Plumbing ☐ Mechanical ☐ Insulation
☐ Solar ☐ Sign ☐ Pool/Spa
☐ S.M.I.P. ☐ Grading ☐ Other ____

DO NOT WRITE BELOW THIS LINE

N/A Planning Approval-Date
N/A Fire Dept. Approval-Date
N/A Health Dept. Approval-Date
3/5/92 Final Approval-Date

Special Conditions:

Variance Date ____ Use Permit Date ____

PERMIT FEES

Building	N/A
Plan Check	
Filing	45.00
Electrical	
Plumbing	
Mechanical	
Insulation	
Fire	
Traffic	
School	N/A
S.M.I.P.-SB1374	
Grading	
Annexation	
Sewer Connection	
Community Development	
Growth Impact Fee	

APPENDIX B

SAMPLE HANDLING PROCEDURES

APPENDIX B

SAMPLE HANDLING PROCEDURES

Soil and groundwater samples will be packaged carefully to avoid breakage or contamination, and will be delivered to the laboratory at proper storage temperatures. The following sample packaging requirements will be followed.

- Sample bottle/sleeve lids will not be mixed. All sample lids will stay with the original containers and have custody seals affixed to them.

- Samples will be secured in coolers to maintain custody, control temperature, and prevent breakage during transportation to the laboratory.

- A chain-of-custody form will be completed for all samples and accompany the sample cooler to the laboratory.

- Ice, blue ice, or dry ice (dry ice will be used for preserving soil samples collected for the Alameda County Water District) will be used to keep samples at a constant temperature during transport to the laboratory.

- Each sample will be identified by affixing a pressure sensitive, gummed label, or standardized tag on the container(s). This label will contain the site identification, sample identification number, date and time of sample collection, and the collector's initials.

All groundwater sample containers will be precleaned and will be obtained from a State Department of Health Services certified analytical laboratory.

Sample Control/Chain-of-Custody: All field personnel will refer to this work plan to verify the methods to be employed during sample collection. All sample gathering activities will be recorded in the site log book; all sample transfers will be documented in the site logbook; samples are to be identified with TPE labels and all sample

bottles are to be custody-sealed. All information is to be recorded in waterproof ink. All TPE field personnel are personally responsible for sample collection and the care and custody of collected samples until the samples are transferred or properly dispatched.

The custody record will be completed by the field technician who has been designated by the TPE project manager as being responsible for sample shipment to the appropriate laboratory. The custody record will include, among other things, the following information: site identification, name of person collecting the samples, date and time samples were collected, type of sampling conducted (composite/grab), location of sampling station, number and type of containers used, and signature of the TPE person relinquishing samples to a non-TPE person with the date and time of transfer noted. The relinquishing individual will also put all the specific shipping data on the custody record.

Site log books will be maintained by a designated TPE field employee to record, for each sample, site identification, sampling locations, station numbers, dates, times, sampler's name, designation of the samples as a grab or composite, notation of the type of sample (e.g. groundwater, soil boring, etc.), preservatives used, on-site measurement data, and other observations or remarks.

APPENDIX C

CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

January 7, 1992

Mr. Marc Zomorodi
Tank Protect Engineering
2821 Whipple Road
Union City, California 94587

Dear Mr. Zomorodi:

Trace Analysis Laboratory received nine soil samples on January 3, 1992 for your Project No. 213A-010392, 1333 Park Avenue, Emeryville, California (our custody log number 1632).

These samples were composited according to your chain of custody and analyzed for Total Petroleum Hydrocarbons as Gasoline, Benzene, Toluene, Ethylbenzene, Xylenes, Lead and Organic Lead. Our analytical report and the completed chain of custody form are enclosed for your review.

Trace Analysis Laboratory is certified under the California Environmental Laboratory Accreditation Program. Our certification number is 1199.

If you should have any questions or require additional information, please call me.

Sincerely yours,

Jennifer Pekol
Project Specialist

Enclosures

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

LOG NUMBER: 1632
DATE SAMPLED: 01/02/92
DATE RECEIVED: 01/03/92
DATE EXTRACTED: 01/03/92
DATE ANALYZED: 01/04/92
DATE REPORTED: 01/07/92

CUSTOMER: Tank Protect Engineering

REQUESTER: Marc Zomorodi

PROJECT: No. 213A-010392, 1333 Park Avenue, Emeryville, CA 94608

Sample Type: Soil

Method and Constituent:	Units	Composite of S1-1, S1-2 and S1-3 Concentration	Composite of S1-1, S1-2 and S1-3 Reporting Limit	Composite of S2-1, S2-2 and S2-3 Concentration	Composite of S2-1, S2-2 and S2-3 Reporting Limit	SNE Concentration	SNE Reporting Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	410,000	2,400	130,000	500	ND	500
EPA Method 8020 for:							
Benzene	ug/kg	6,100	440	1,400	44	ND	5.0
Toluene	ug/kg	91,000	380	8,700	38	5.6	5.0
Ethylbenzene	ug/kg	18,000	460	4,400	46	ND	5.0
Xylenes	ug/kg	120,000	1,200	28,000	120	ND	15

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1632
DATE SAMPLED: 01/02/92
DATE RECEIVED: 01/03/92
DATE EXTRACTED: 01/03/92
DATE ANALYZED: 01/04/92
DATE REPORTED: 01/07/92
PAGE: Two

Sample Type: Soil

Method and Constituent:	Units	SP Concentration	SP Reporting Limit	SSW Concentration	SSW Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	180,000	500	ND	500	ND	500
EPA Method 8020 for:							
Benzene	ug/kg	ND	88	ND	5.0	ND	5.0
Toluene	ug/kg	460	76	8.0	5.0	ND	5.0
Ethylbenzene	ug/kg	1,400	92	ND	5.0	ND	5.0
Xylenes	ug/kg	20,000	240	ND	15	ND	15

QC Summary:

% Recovery: 96
% RPD: 13

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1632
DATE SAMPLED: 01/02/92
DATE RECEIVED: 01/03/92
DATE EXTRACTED: 01/07/92
DATE ANALYZED: 01/07/92
DATE REPORTED: 01/07/92
PAGE: Three

Sample Type: Soil

Method and Constituent:	Units	SNE Concentration	SNE Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
EPA Method 7420:					
Lead	ug/kg	3,900	2,500	ND	2,500

QC Summary:

% Recovery: 86
% RPD: 6.5

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1632
DATE SAMPLED: 01/02/92
DATE RECEIVED: 01/03/92
DATE EXTRACTED: 01/06/92
DATE ANALYZED: 01/07/92
DATE REPORTED: 01/07/92
PAGE: Four

Sample Type: Soil

Method and Constituent:	Units	SNE Concentration	SNE Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:					
Organic Lead	ug/kg	ND	500	ND	500

QC Summary:

% Recovery: 82
% RPD: *

Concentrations reported as ND were not detected at or above the reporting limit.

* The RPD is not reportable since the sample prepared in duplicate was not detectable.

Louis W. DuPuis
Quality Assurance/ Quality Control Manager

TANK PROTECT ENGINEERING
Environmental Management

TANK PROTECT ENGINEERING
2821 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

LAB: TAL
TURNAROUND: NORMAL / 5 DAYS
P.O. #: 0360

PAGE 1 OF 1

CHAIN OF CUSTODY

1632

PROJECT NO.: 213A-01392

SITE NAME & ADDRESS: 1333 PARK AVE EMERYVILLE, CA 94608

SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER: AHMAD SHAH TANK PROTECT ENGINEERING 2821 WHIPPLE ROAD, UNION CITY, CA 94587 (415) 429-8088

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	(1) TYPE OF CONTAINER	TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER (TOTAL LEAD)	(TETRA ETHY LEAD)	
SSW	01/02	3:50	✓		SSW @ 7' FROM GROUND LEVEL	BRASS TUBE	✓	✓						
SNE	01/02	4:00	✓		SNE @ 7' FROM GROUND LEVEL	↓	✓	✓				✓	✓	
SP	01/02	4:45	✓		SP @ 2' UNDER PUMP ISLAND	↓	✓	✓						
S1-1	01/02	5:09	✓		S1-1 @ 2' FROM STOCK PILE	↓	✓	✓						COMPOSITE
S1-2	01/02	5:15	✓		S1-2 @ 3' FROM STOCK PILE	↓	✓	✓						
S1-3	01/02	5:30	✓		S1-3 @ 2' FROM STOCKPILE	↓	✓	✓						
S2-1	01/02	5:40	✓		S2-1 @ 3' FROM STOCKPILE	↓	✓	✓						COMPOSITE
S2-3 [S2-2]	01/02	5:50	✓		S2-2 @ 1' FROM STOCKPILE	↓	✓	✓						
S2-3	01/02	6:00	✓		S-2-3 @ 2' FROM STOCKPILE	↓	✓	✓						

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
[illegible signature]					
Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Relinquished by : (Signature)	Date / Time	Received for Laboratory by: (Signature) [illegible signature]	Date / Time 1/3/92 10am	Remarks: 5-bty soil walk-in 1-bt [illegible] on ice [illegible]	

DATE: 01/02/1992

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

February 11, 1992

Mr. Marc Zomorodi
Tank Protect Engineering
2821 Whipple Road
Union City, California 94587

Dear Mr. Zomorodi:

Trace Analysis Laboratory received seven soil samples on February 4, 1992 for your Project No. 213C-020392, City of Emeryville (our custody log number 1759).

These samples were analyzed for Total Petroleum Hydrocarbons as Gasoline, Benzene, Toluene, Ethylbenzene, Xylenes and Organic Lead. Our analytical report and the completed chain of custody form are enclosed for your review.

Trace Analysis Laboratory is certified under the California Environmental Laboratory Accreditation Program. Our certification number is 1199.

If you should have any questions or require additional information, please call me.

Sincerely yours,

Jennifer Pekol
Project Specialist

Enclosures

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

LOG NUMBER: 1759
DATE SAMPLED: 02/03/92
DATE RECEIVED: 02/04/92
DATE EXTRACTED: 02/06/92
DATE ANALYZED: 02/08/92
DATE REPORTED: 02/11/92

CUSTOMER: Tank Protect Engineering

REQUESTER: Mark Zomorodi

PROJECT: No. 213C-020392, City of Emeryville, 1333 Park Avenue, Emeryville, CA

Sample Type: Soil

Method and Constituent:	Units	VSD-B Concentration	VSD-B Reporting Limit	VSD-E Concentration	VSD-E Reporting Limit	VSD-N Concentration	VSD-N Reporting Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	ND	500	810	500	190,000	500
EPA Method 8020 for:							
Benzene	ug/kg	ND	5.0	ND	5.0	320	24
Toluene	ug/kg	ND	5.0	ND	5.0	5,200	24
Ethylbenzene	ug/kg	ND	5.0	ND	5.0	2,700	26
Xylenes	ug/kg	ND	15	ND	15	31,000	70

Method and Constituent:	Units	VSD-S Concentration	VSD-S Reporting Limit	VSD-W Concentration	VSD-W Reporting Limit	VST-E Concentration	VST-E Reporting Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	ND	500	ND	500	ND	500
EPA Method 8020 for:							
Benzene	ug/kg	ND	5.0	ND	5.0	ND	5.0
Toluene	ug/kg	ND	5.0	ND	5.0	ND	5.0
Ethylbenzene	ug/kg	ND	5.0	ND	5.0	ND	5.0
Xylenes	ug/kg	ND	15	ND	15	ND	15

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1759
DATE SAMPLED: 02/03/92
DATE RECEIVED: 02/04/92
DATE EXTRACTED: 02/06/92
DATE ANALYZED: 02/08/92
DATE REPORTED: 02/11/92
PAGE: Two

Sample Type: Soil

Method and Constituent:	Units	VST-W Concentration	VST-W Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:					
Total Petroleum Hydrocarbons as Gasoline	ug/kg	ND	500	ND	500
EPA Method 8020 for:					
Benzene	ug/kg	ND	5.0	ND	5.0
Toluene	ug/kg	ND	5.0	ND	5.0
Ethylbenzene	ug/kg	ND	5.0	ND	5.0
Xylenes	ug/kg	ND	15	ND	15

QC Summary:

% Recovery: 108
% RPD: 16

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1759
DATE SAMPLED: 02/03/92
DATE RECEIVED: 02/04/92
DATE EXTRACTED: 02/10/92
DATE ANALYZED: 02/11/92
DATE REPORTED: 02/11/92
PAGE: Three

Sample Type: Soil

Method and Constituent:	Units	VSD-B Concentration	VSD-B Reporting Limit	VSD-E Concentration	VSD-E Reporting Limit	VSD-N Concentration	VSD-N Reporting Limit
DHS Method:							
Organic Lead	ug/kg	ND	2,500	ND	2,500	ND	2,500

Method and Constituent:	Units	VSD-S Concentration	VSD-S Reporting Limit	VSD-W Concentration	VSD-W Reporting Limit	VST-E Concentration	VST-E Reporting Limit
DHS Method:							
Organic Lead	ug/kg	ND	2,500	ND	2,500	ND	2,500

Method and Constituent:	Units	VST-W Concentration	VST-W Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit	QC Summary Concentration	QC Summary Reporting Limit
DHS Method:							
Organic Lead	ug/kg	ND	2,500	ND	2,500	80	*

Concentrations reported as ND were not detected at or above the reporting limit.

* The RPD is not reportable since the sample prepared in duplicate was not detectable.

for

Louis W. DuPuis
Quality Assurance/Quality Control Manager

TANK PROTECT ENGINEERING
2821 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

LAB: Trace Analysis Laboratory
TURNAROUND: Normal
P.O. #: 0373

PAGE 1 OF 1

CHAIN OF CUSTODY

1759

PROJECT NO.: 213C-020392

SITE NAME & ADDRESS: CITY OF EMERYVILLE, 1333 Park avenue, Emeryville, CA 94608

SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER: Michael Casso, TPE, 2821 WHIPPLE ROAD, UNION CITY, CA 94587 (415) 429-8088

	ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	(1) TYPE OF CONTAINER	TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER	ORGANIC LEAD
✓	VST-E	2/3/92	6:14	✓		East wall of Tank Excavation @ 5.5' Depth	BRASS TUBE	✓	✓				✓	
✓	VST-W		2:56			West wall of Tank Excavation @ 5.5' Depth								
✓	VSD-N		2:28			North wall of Dispenser Excavation @ 4.0' Depth								
✓	VSD-S		4:00			South wall of Dispenser Excavation @ 5.5' Depth								
✓	VSD-E		4:35			East wall of Dispenser Excavation @ 4.5' Depth								
✓	VSD-W		3:35			West wall of Dispenser Excavation @ 4.5' Depth								
✓	VSD-B		4:45			Bottom of Dispenser Excavation @ 6.5' Depth								

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Michael Casso	2/4/92 | 5:09				
Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Relinquished by : (Signature)	Date / Time	Received for Laboratory by: (Signature) John King	Date / Time: 2/4/92 | 5:09	Remarks: pick-up soil, 1-lt ea, on ice; 5-day TAT; y-1; 8 am	

DATE: February 4, 1992

S&W
Soil and Water
Environmental
Laboratory

Drinking Water
Waste Water ○ Asbestos
Hazardous Waste – Soil
Calderon Testing – Air

14072 W. Park Avenue
Boulder Creek, CA 95006
(408) 338-3053

Laboratory Report

Client
Tank Protect Engineering
2821 Whipple Rd.
Union City CA 94587

Report Date
03/13/92

Sample Site
1333 Park Ave.
Emeryville

213B

Date Received
03/11/92

Analysis Requested
Total Hydrocarbons - Gas
BTEX

Procedure
EPA 5020
EPA 8020

Date Analyzed
03/12/92

S&W Ref. #	Client Ref. #	Matrix/Analysis	Concentration	Detection Limit
0712-TP2-A	MW-1 10.0'	Soil/TPH-G	*	1 ppm
0712-TP2-A	MW-1 10.0'	Soil/BTEX		
		Benzene	*	5 ppb
		Toluene	*	5 ppb
		Ethylbenzene	*	5 ppb
		Xylenes	*	5 ppb
0712-TP2-B	MW-2 5.0'	Soil/TPH-G	*	1 ppm
0712-TP2-B	MW-2 5.0'	Soil/BTEX		
		Benzene	*	5 ppb
		Toluene	*	5 ppb
		Ethylbenzene	*	5 ppb
		Xylenes	*	5 ppb
0712-TP2-C	MW-2 10.5'	Soil/TPH-G	*	1 ppm
0712-TP2-C	MW-2 10.5'	Soil/BTEX		
		Benzene	*	5 ppb
		Toluene	*	5 ppb
		Ethylbenzene	*	5 ppb
		Xylenes	*	5 ppb
0712-TP2-D	MW-3 11.5'	Soil/TPH-G	*	1 ppm
0712-TP2-D	MW-3 11.5'	Soil/BTEX		
		Benzene	*	5 ppb
		Toluene	*	5 ppb
		Ethylbenzene	*	5 ppb
		Xylenes	*	5 ppb

* No detectable amount @ detection limit

Analyst Signature R. M. Lemay

TANK PROTECT ENGINEERING
2821 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

0712-TP2

LAB: S+U

TURNAROUND: Normal

P.O. #: 0404

CHAIN OF CUSTODY

PROJECT NO.: 213B

SITE NAME & ADDRESS: 1333 Park Ave Emeryville

SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER:
L. Flora - Tank Protect Engineering
2821 WHIPPLE ROAD, UNION CITY, CA 94587 (415) 429-8088

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	(1) TYPE OF CONTAINER	TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER TEL	REMARKS
✓ MW-1	3/10	0930	X		10 - 10.5'	Tube	X	X			X		A
10-10.5'													
✓ MW-2	3/10	1400	X		5 - 5.5'	Tube	X	X			X		B
5-5.5'													
✓ MW-2	3/11	930	X		10.5 - 11'	Tube	X	X			X		C
10.5-11'													
✓ MW-3	3/10	1115	X		11.5 - 12'	Tube	X	X			X		D
11.5-12'													

ANALYTES REQUESTED: Organic Lead

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Michael Cerro	3/11/92 3:18	Liz Clontz			
Liz Clontz	3/11/92 4:19 pm				

Relinquished by : (Signature)	Date / Time	Received for Laboratory by: [Signature]	Date / Time	Remarks

DATE: 3/11/92

S&W
Soil and Water
Environmental
Laboratory

Drinking Water
Waste Water, o Asbestos
Hazardous Waste – Soil
Calderon Testing – Air

14072 W. Park Avenue
Boulder Creek, CA 95006
(408) 338-3053

Laboratory Report

Client
Tank Protect Engineering
2821 Whipple Rd.
Union City CA 94587

Report Date
03/11/92

Sample Site
City of Emeryville
1333 Park Ave

213B-031092

Date Received
03/11/92

Analysis Requested
Total Hydrocarbons – Gas
BTEX

Procedure
EPA 5020
EPA 8020

Date Analyzed
03/11/92

S&W Ref. #	Client Ref. #	Matrix/Analysis	Concentration	Detection Limit
0712-TP1-A	SP1 1-4	Soil/TPH-G	*	1 ppm
0712-TP1-A	SP1 1-4	Soil/BTEX		
		Benzene	*	5 ppb
		Toluene	*	5 ppb
		Ethylbenzene	*	5 ppb
		Xylenes	*	5 ppb

* No detectable amount @ detection limit

Analyst Signature R. W. Lemoy

TANK PROTECT ENGINEERING
2821 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

0712-TP1

LAB: S&W

TURNAROUND: 24-HOURS

P.O. #: 0404

PAGE 1 OF 1

CHAIN OF CUSTODY

PROJECT NO.	SITE NAME & ADDRESS
213B-031092	City of Emeryville 1333 Park Avenue, Emeryville

SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER
Michael Casso, Tank Protect Engineering
2821 WHIPPLE ROAD, UNION CITY, CA 94587 (415) 429-8088

	ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	(1) TYPE OF CONTAINER	ANALYTES REQUESTED: TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER	REMARKS
✓	SP1-1	3/10/92	10:57	✓		Stockpile @ SP1-1 D= 1.5-2.0'	BRASS TUBE	✓	✓					Composite into one sample
✓	SP1-2		11:09			Stockpile @ SP1-2 D= 1.5-2.0'								
✓	SP1-3		11:24			Stockpile @ SP1-3 D= 1.5-2.0'								
✓	SP1-4		11:47			Stockpile @ SP1-4 D= 1.5-2.0'								

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Michael Casso	3/11/92 3:18	Liz Clontz			
Relinquished by : (Signature) Liz Clontz	Date / Time 3/11/92 4:18	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Relinquished by : (Signature)	Date / Time	Received for Laboratory by: [Signature]	Date / Time	Remarks	

DATE: 3/10/92

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

January 7, 1992

Mr. Marc Zomorodi
Tank Protect Engineering
2821 Whipple Road
Union City, California 94587

Dear Mr. Zomorodi:

Trace Analysis Laboratory received one water sample on January 3, 1992 for your Project No. 213A-010392, 1333 Park Avenue, Emeryville, California (our custody log number 1631).

This sample was analyzed for Total Petroleum Hydrocarbons as Gasoline, Benzene, Toluene, Ethylbenzene and Xylenes. Our analytical report and the completed chain of custody form are enclosed for your review.

Trace Analysis Laboratory is certified under the California Environmental Laboratory Accreditation Program. Our certification number is 1199.

If you should have any questions or require additional information, please call me.

Sincerely yours,

Jennifer Pekol
Project Specialist

Enclosures

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

LOG NUMBER: 1631
DATE SAMPLED: 01/02/92
DATE RECEIVED: 01/03/92
DATE ANALYZED: 01/06/92
DATE REPORTED: 01/07/91

CUSTOMER: Tank Protect Engineering

REQUESTER: Marc Zomorodi

PROJECT: No. 213A-010392, 1333 Park Avenue, Emeryville, CA 94608

Sample Type: Water

Method and Constituent:	Units	WS Concentration	WS Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:					
Total Petroleum Hydrocarbons as Gasoline	ug/l	2,700	50	ND	50
EPA Method 8020 for:					
Benzene	ug/l	120	6.6	ND	0.50
Toluene	ug/l	570	5.6	ND	0.50
Ethylbenzene	ug/l	140	7.0	ND	0.50
Xylenes	ug/l	900	18	ND	1.5

QC Summary:

% Recovery: 102*
% RPD: 6.1

Concentrations reported as ND were not detected at or above the reporting limit.

* The Recovery is for the Laboratory Control Sample, due to the high concentration in the spiked sample.

Louis W. DuPuis
Quality Assurance/Quality Control Manager

TANK PROTECT ENGINEERING
2821 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

LAB: TAL

TURNAROUND: NORMAL / 5 DAYS

P.O. #: 0360

PAGE 1 OF 1

CHAIN OF CUSTODY

PROJECT NO.	SITE NAME & ADDRESS
213A-010392	1333 PARK AVE EMERYVILLE, CA 94608

SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER
AHMAD SHAH TANK PROTECT ENGINEERING
2821 WHIPPLE ROAD, UNION CITY, CA 94587 (415) 429-8088

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	(1) TYPE OF CONTAINER	ANALYTES REQUESTED: TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER	1631
WS	01/02	4:20		✓	WS FROM BOTTOM OF PITE	2-40(ml)	✓	✓					

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Relinquished by : (Signature)	Date / Time	Received for Laboratory by: [Signature] T.h. Ray	Date / Time 1/3/92 10 2m	Remarks 5-day water	walk-in 2-vo's on ice green gk

DATE: _____

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

March 31, 1992

Mr. Marc Zomorodi
Tank Protect Engineering
2821 Whipple Road
Union City, California 94587

Dear Mr. Zomorodi:

Trace Analysis Laboratory received four water samples on March 24, 1992 for your Project No. 213-032392, City of Emeryville (our custody log number 1936).

These samples were analyzed for Total Petroleum Hydrocarbons as Gasoline and Benzene, Toluene, Ethylbenzene, Xylenes and Organic Lead. Our analytical report and the completed chain of custody form are enclosed for your review.

Trace Analysis Laboratory is certified under the California Environmental Laboratory Accreditation Program. Our certification number is 1199.

If you should have any questions or require additional information, please call me.

Sincerely yours,

Jennifer Rekol
Project Specialist

Enclosures

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

LOG NUMBER: 1936
DATE SAMPLED: 03/23/92
DATE RECEIVED: 03/24/92
DATE ANALYZED: 03/31/92
DATE REPORTED: 03/31/92

CUSTOMER: Tank Protect Engineering

REQUESTER: Marc Zomorodi

PROJECT: No. 213-032392, City of Emeryville

Sample Type: Water

Method and Constituent:	Units	MW-1 Concentration	MW-1 Reporting Limit	MW-2 Concentration	MW-2 Reporting Limit	MW-3 Concentration	MW-3 Reporting Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/l	ND	64	ND	50	ND	50
EPA Method 8020 for:							
Benzene	ug/l	ND	0.50	1.1	0.50	ND	0.50
Toluene	ug/l	ND	0.50	ND	0.50	ND	0.50
Ethylbenzene	ug/l	ND	0.50	ND	0.50	ND	0.50
Xylenes	ug/l	ND	1.5	ND	1.5	ND	1.5

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1936
DATE SAMPLED: 03/23/92
DATE RECEIVED: 03/24/92
DATE ANALYZED: 03/31/92
DATE REPORTED: 03/31/92
PAGE: Two

Sample Type: Water

Method and Constituent:	Units	MW-4 Concentration	MW-4 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:					
Total Petroleum Hydrocarbons as Gasoline	ug/l	ND	50	ND	50
EPA Method 8020 for:					
Benzene	ug/l	ND	0.50	ND	0.50
Toluene	ug/l	ND	0.50	ND	0.50
Ethylbenzene	ug/l	ND	0.50	ND	0.50
Xylenes	ug/l	ND	1.5	ND	1.5

QC Summary:

% Recovery: 64
% RPD: 3.1

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1936
DATE SAMPLED: 03/23/92
DATE RECEIVED: 03/24/92
DATE EXTRACTED: 03/31/92
DATE ANALYZED: 03/31/92
DATE REPORTED: 03/31/92
PAGE: Three

Sample Type: Water

Method and Constituent:	Units	MW-1 Concentration	MW-1 Reporting Limit	MW-2 Concentration	MW-2 Reporting Limit	MW-3 Concentration	MW-3 Reporting Limit
DHS Method:							
Organic Lead	ug/l	ND	100	ND	100	ND	100

Method and Constituent:	Units	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:			
Organic Lead	ug/l	ND	100

QC Summary:

% Recovery: 83
% RPD: *

Concentrations reported as ND were not detected at or above the reporting limit.

* The RPD is not reportable since the sample prepared in duplicate was not detectable.

Louis W. DuPuis
Quality Assurance/Quality Control Manager

TANK PROTECT ENGINEERING

2821 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

LAB: T.AL

TURNAROUND: NORMAL

P.O. #: 632

1936

PAGE 1 OF 1

CHAIN OF CUSTODY

PROJECT NO.: 213-032392

SITE NAME & ADDRESS: CITY OF ~~EMERYVILLE~~ 1333 PARK AVE

SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER: LOUIS TRAVIS
2821 WHIPPLE ROAD, UNION CITY, CA 94587 (415) 429-8088

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	(1) TYPE OF CONTAINER	TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER TOTAL METALS (CTL)	REMARKS
MW-1	3/23/92	1:38		✓	MW-1	2-40 ml 1-1 liter amber	✓	✓				✓	
MW-2	↓	11:28		↓	MW-2	↓	↓	↓				↓	1-liters did not arrive pick up for those scheduled 3/25/92 gf - picked up 3/25/92 gf
MW-3	↓	12:37		↓	MW-3	↓	↓	↓				↓	
MW-4	↓	2:10		↓	MW-4	2-40ml	↓	↓					

pickup water 2-40ml w/HCl 1-liter (to be picked up 3/25/92) green — done 3/25/92 gf

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
[signature]	3/24 12:00pm	Maureen Negrette for TAL			

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)

Relinquished by : (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks

DATE:

APPENDIX D

WASTE HANDLING AND DECONTAMINATION PROCEDURES

APPENDIX D

WASTE HANDLING AND DECONTAMINATION PROCEDURES

Decontamination: Any drilling, sampling or field measurement equipment that comes into contact with soils or groundwater will be properly decontaminated prior to its use at the site and after each incident of contact with the soils or groundwater being investigated. Proper decontamination is essential to obtain samples that are representative of environmental conditions and to accurately characterize the extent of soil and groundwater contamination. Hollow-stem auger flights and the drill bit will be steam-cleaned between the drilling of each well.

All sample equipment, including the split-tube sampler and brass tubes, will be cleaned by washing with tri-sodium phosphate detergent, followed by sequential rinsing with tap water, and deionized water.

Waste Handling: Waste materials generated during site characterization activities will be handled and stored as hazardous waste and will be stored on site in appropriately labeled containers. Waste materials anticipated include drill cuttings, development and purge water, water generated during aquifer testing, water generated during decontamination, and used personnel protection equipment such as gloves and Tyvek. The site owner will be responsible for providing the storage containers and will be responsible for the disposal of the waste materials. Drill cuttings from individual borings will be stored separately in drums or covered by plastic sheeting and the appropriate disposal procedure will be determined by the site owner or TPE following receipt of the soil sample analytical results. Drums or plastic sheeting will be labeled to show material stored, known or suggested contaminant, date stored, expected removal date, company name, contact, and telephone number.

APPENDIX E

LOGS OF EXPLORATORY BORINGS AND WELL COMPLETION DETAILS

LOG OF EXPLORATORY BORING

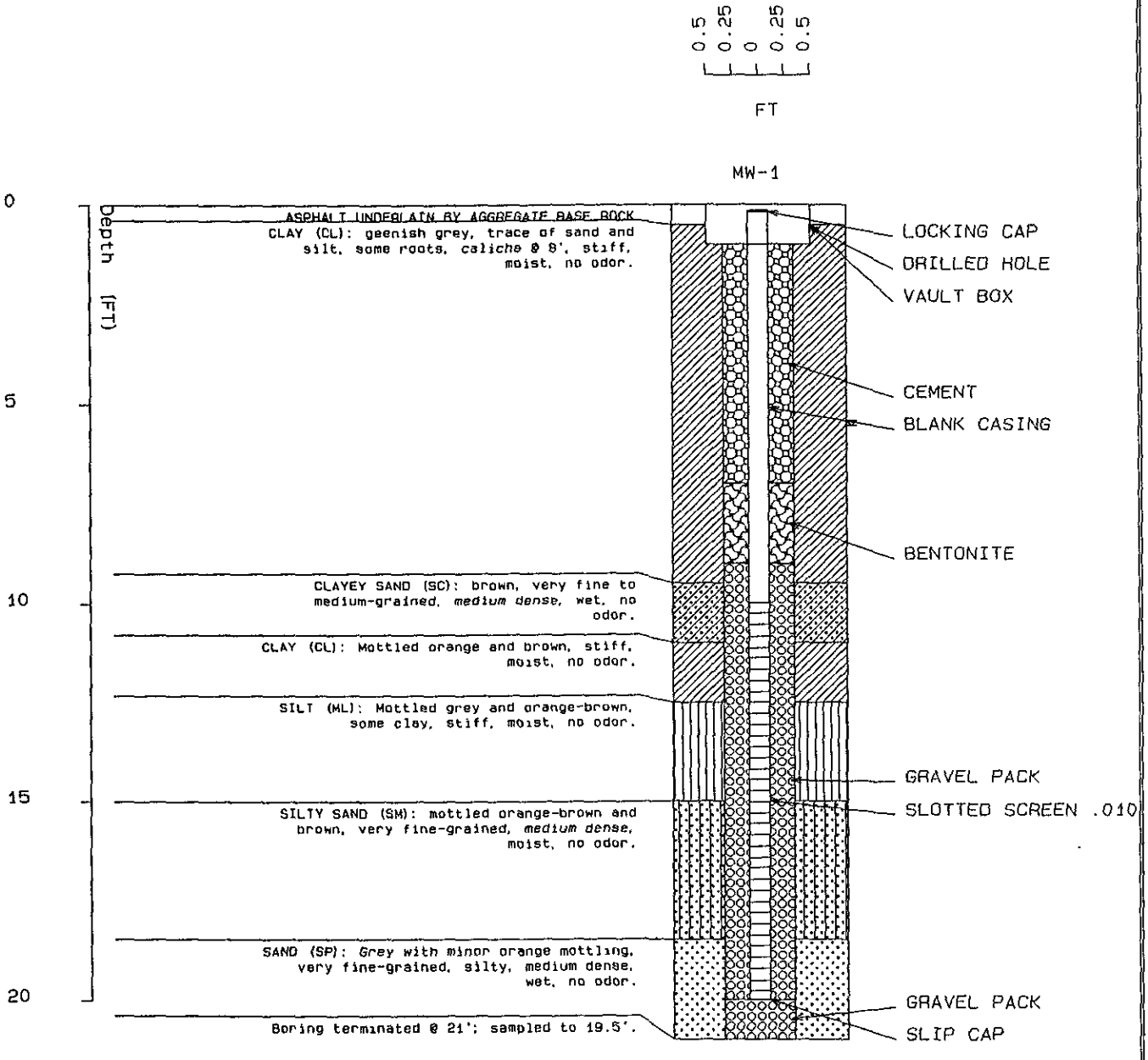
PROJECT NUMBER 213 — BORING NO. MW-1

PROJECT NAME 1333 Park Avenue, Emeryville, CA — PAGE

BY L. A. Flora — DATE 3/10/92 — SURFACE ELEV. 19 FT

RECOVERY (FT/FT)	OVA (PPM)	PENETRATION (BLOWS/FT)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				1			ASPHALT UNDERLAIN BY AGGREGATE BASE ROCK
				2			CLAY (CL): geenish grey, trace of sand and silt, some roots, caliche @ 8', stiff, moist, no odor.
				3			
				4			
1.0/1.5		9	▽	5			
				6			
1.5/1.5	7	14		7			
				8			
1.5/1.5		15		9			
1.5/1.5		25		10			CLAYEY SAND (SC): brown, very fine to medium-grained, medium dense, wet, no odor.
1.5/1.5	22	14		11			
				12			CLAY (CL): Mottled orange and brown, stiff, moist, no odor.
1.5/1.5		15		13			SILT (ML): Mottled grey and orange-brown, some clay, stiff, moist, no odor.
1.5/1.5		10		14			
				15			
1.5/1 5		13		16			SILTY SAND (SM): mottled orange-brown and brown, very fine-grained, medium dense, moist, no odor.
1.5/1.5		20		17			SAND (SP): Grey with minor orange mottling, very fine-grained, silty, medium dense, wet, no odor.
				18			
1.5/1.5		20		19			Boring terminated @ 21'; sampled to 19.5'.
				20			
				21			
				22			

REMARKS: Boring drilled with continuous-flight, hollow-stem, 8-inch O.D. augers. Samples collected in a 2.0-inch I.D. California Sampler or 1.5-inch I.D. SPT Sampler.



LEGEND ▽ Static Water Level

SP SM SC ML CL ASPHALT

WELL ID : MW-1

1333 PARK AVENUE, EMERYVILLE, CA 94608

TANK PROTECT ENGINEERING

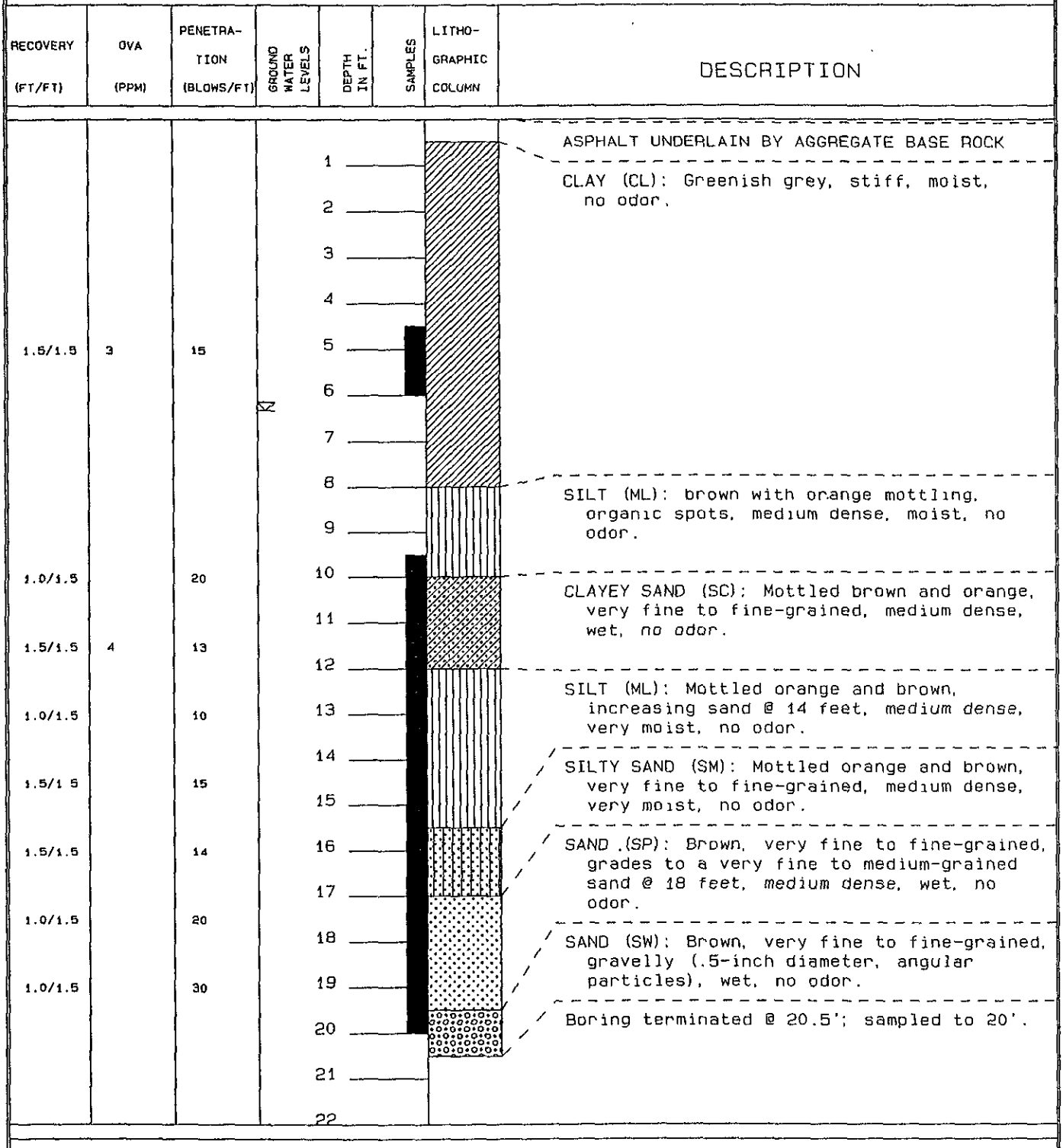
Figure :

LOG OF EXPLORATORY BORING

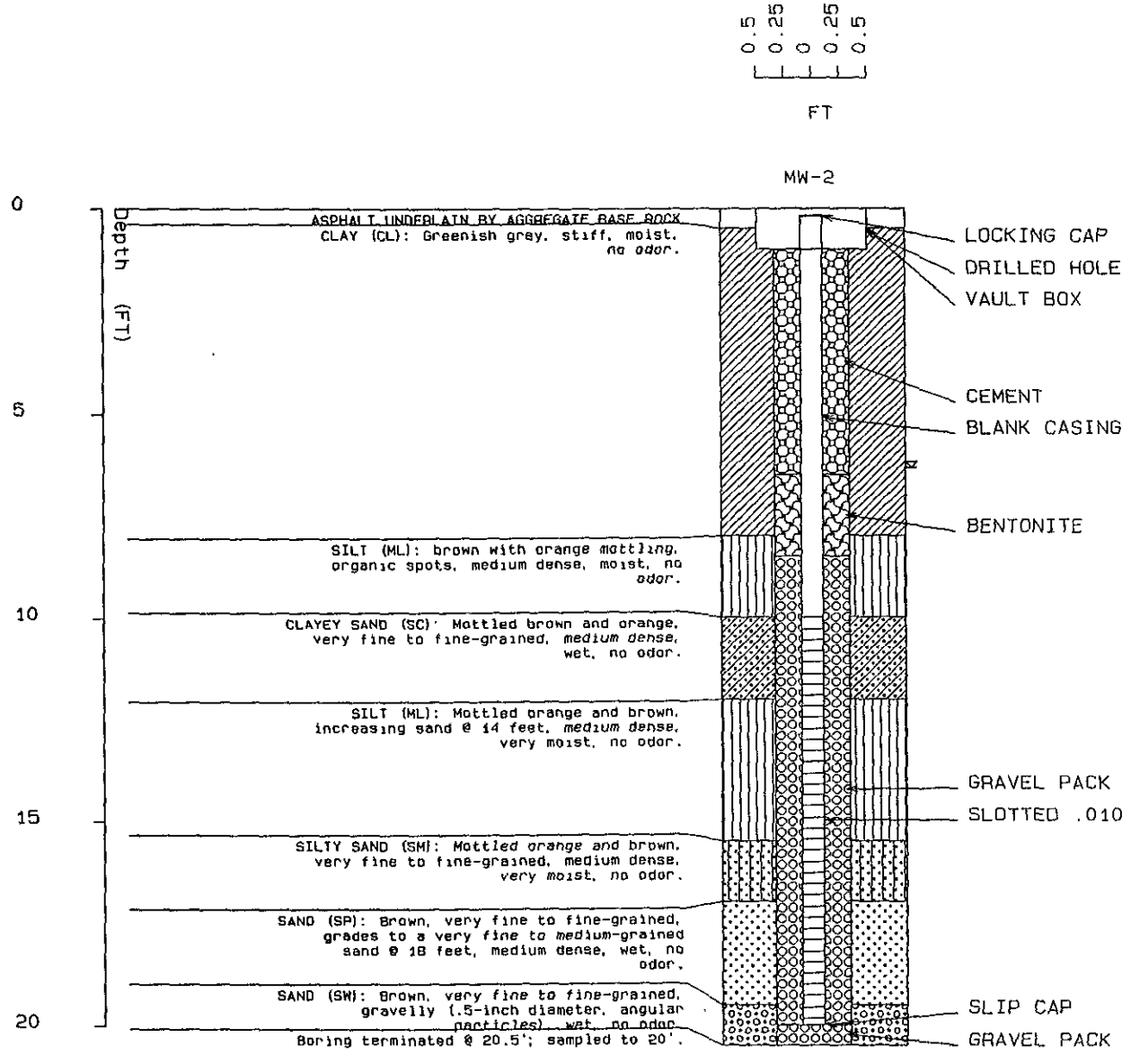
PROJECT NUMBER 213 BORING NO. MW-2

PROJECT NAME 1333 Park Avenue, Emeryville, CA PAGE

BY L. A. Flora DATE 3/10/92 SURFACE ELEV. 20 FT



REMARKS: Boring drilled with continuous-flight, hollow-stem, 8-inch O. D. augers. Samples collected in a 2.0-inch I. D. California Sampler or 1.5-inch SPT Sampler.



LEGEND ▽ Static Water Level

SW SM ML ASPHALT

SP SC CL

WELL ID : MW-2

1333 PARK AVENUE, EMERYVILLE, CA 94608

TANK PROTECT ENGINEERING

Figure :

LOG OF EXPLORATORY BORING

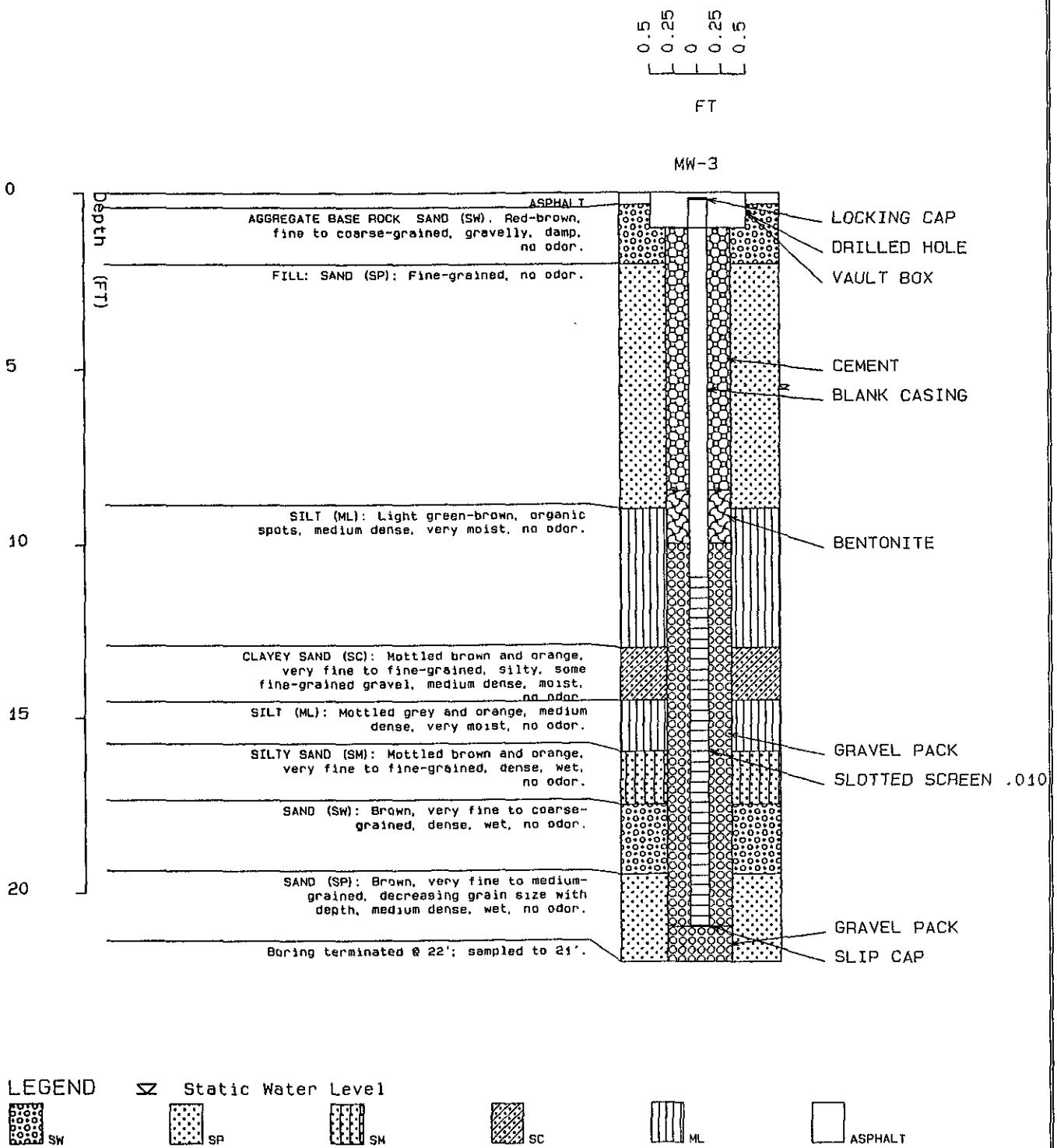
PROJECT NUMBER 213 — BORING NO. MW-3

PROJECT NAME 1333 Park Avenue, Emeryville, CA — PAGE

BY L. A. Flora — DATE 3/10/92 — SURFACE ELEV. 19 FT

RECOVERY (FT/FT)	OVA (PPM)	PENETRATION (BLOWS/FT)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				1			ASPHALT
				2			AGGREGATE BASE ROCK: SAND (SW): Red-brown, fine to coarse-grained, gravelly, damp, no odor.
				3			FILL: SAND (SP): Fine-grained, no odor.
				4			
				5			
				6			
				7			
				8			
				9			
1.5/1.5	10	20		10			SILT (ML): Light green-brown, organic spots, medium dense, very moist, no odor.
1.5/1.5		17		11			
				12			
1.5/1.5		20		13			CLAYEY SAND (SC): Mottled brown and orange, very fine to fine-grained, silty, some fine-grained gravel, medium dense, moist, no odor.
1.5/1.5		12		14			
				15			SILT (ML): Mottled grey and orange, medium dense, very moist, no odor.
1.0/1.5		23		16			SILTY SAND (SM): Mottled brown and orange, very fine to fine-grained, dense, wet, no odor.
1.0/1.5		37		17			
				18			SAND (SW): Brown, very fine to coarse-grained, dense, wet, no odor.
1.0/1.5		44		19			SAND (SP): Brown, very fine to medium-grained, decreasing grain size with depth, medium dense, wet, no odor.
1.0/1.5		28		20			
				21			Boring terminated @ 22'; sampled to 21'.
				22			

REMARKS: Boring drilled with continuous-flight, hollow-stem, 8-inch O. D. augers. Samples collected in a 2.0-inch I. D. California Sampler or 1.5-inch SPT Sampler.



LEGEND ▽ Static Water Level

SW SP SM SC ML ASPHALT

WELL ID : MW-3

1333 PARK AVENUE, EMERYVILLE, CA 94608

TANK PROTECT ENGINEERING

Figure :

APPENDIX F

SIEVE/HYDROMETER ANALYSIS

1365 VANDER WAY SAN JOSE, CALIFORNIA 95112 (408) 297-6969 FAX (408) 297-7716

March 18, 1992
Project 5018

Mr. John Mrakovich
Tank Protect Engineering
2821 Whipple Road
Union City, California 94587

Subject: Sieve/Hydrometer Analysis
TPE Project No.: 213B-031292

Dear Mrakovich:

A sample of tan lean clay with sand, collected by your staff, was delivered to our laboratory on March 12, 1992. As you requested, a sieve/hydrometer analysis was performed. The test results are attached.

If you have any questions, please feel free to call.

Sincerely,

TERRATECH, INC.

Frank R. Rancadore

Frank R. Rancadore
Laboratory Director

Attachments

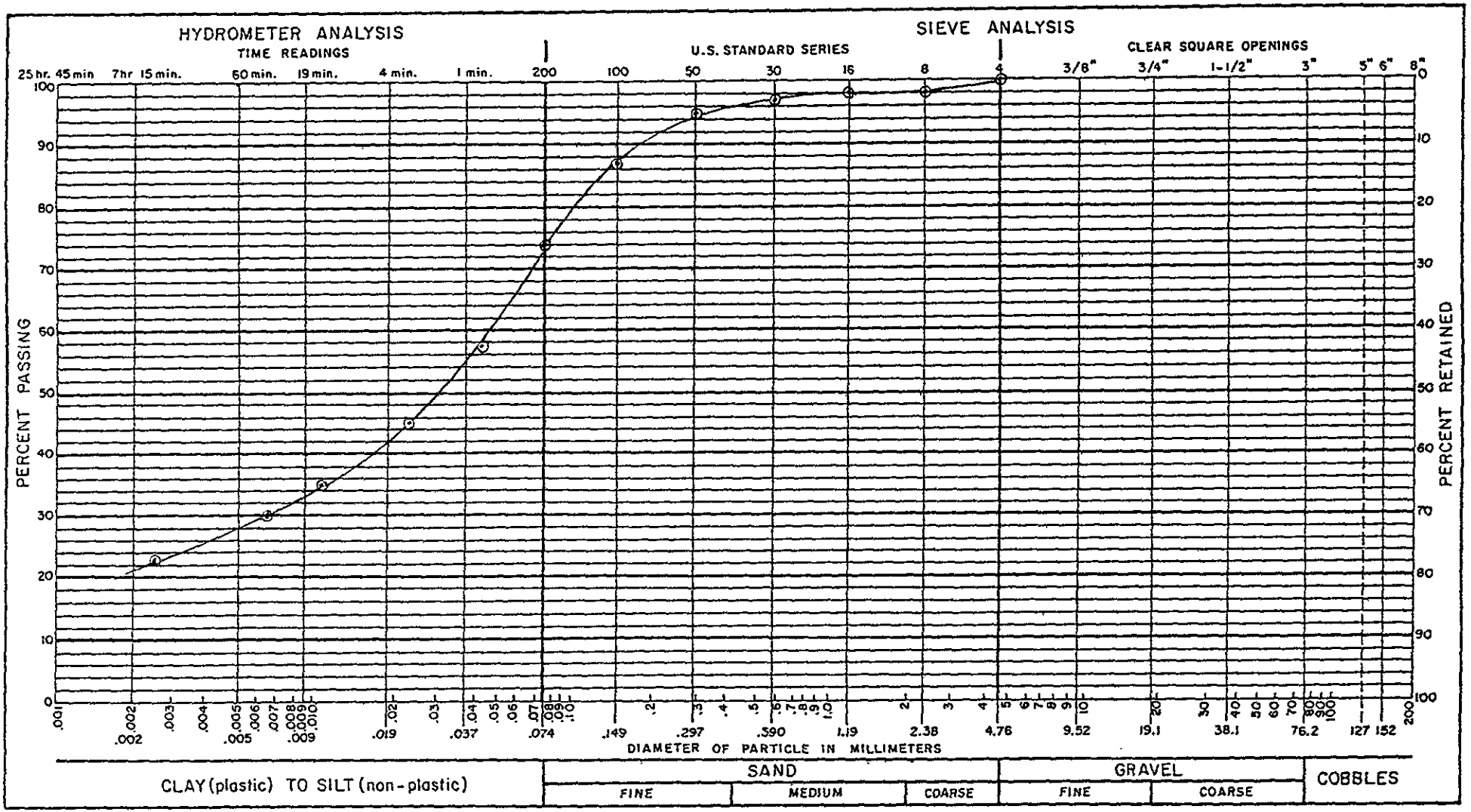
225-K CANNERY ROW MONTEREY, CA 93940 (408) 372-3716 FAX (408) 372-7481
7891 WESTWOOD DR., SUITE 101 GILROY, CA 95020 (408) 842-0236 FAX (408) 842-7314
141 SUBURBAN RD., SUITE C2 SAN LUIS OBISPO, CA 93401 (805) 543-5493 FAX (805) 543-2748

GRADATION TEST RESULTS

PROJECT TANK PROTECT ENGINEERING PROJECT NO. 5018

SAMPLE NO. MW-2 DEPTH 13½-14 ft.

SAMPLE DESCRIPTION LEAN CLAY with sand; tan



TERRATECH

L-0098

APPENDIX G

QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

APPENDIX G

QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

The overall objectives of the field sampling program include generation of reliable data that will support development of a remedial action plan. Sample quality will be checked by the use of proper sampling, handling, and testing methods. Additional sample quality control methods may include the use of background samples, equipment rinsate samples, and trip and field blanks. Chain-of-custody forms, use of a qualified laboratory, acceptable detection limits, and proper sample preservation and holding times also provide assurance of accurate analytical data.

TPE will follow a QA/QC program in the field to ensure that all samples collected and field measurements taken are representative of actual field and environmental conditions and that data obtained are accurate and reproducible. These activities and laboratory QA/QC procedures are described below.

Field Samples: Additional samples taken in the field are used to evaluate both sampling and analytical methods. Three basic categories of QA/QC samples that may be collected are trip samples, field blanks, and duplicate samples.

Trip blanks are a check for cross-contamination during sample collection, shipment, and in the laboratory. Analytically confirmed organic-free water shall be used for organic parameters and deionized water for metal parameters. Blanks will be prepared by the laboratory supplying the sample containers. The blank shall be numbered, packaged, and sealed in the same manner as the other samples. One trip blank will be used for each sample set of less than 20 samples. At least 5% blanks will be used for sets greater than 20 samples. The trip blank is a water sample that remains with the collected samples during transportation and is analyzed along with the field samples to check for residual contamination. The trip blank is not to be opened by either the sample collectors or the handlers.

The field blank is a water sample that is taken into the field and is opened and exposed at the sampling point to detect contamination from air exposure. The water sample is poured into appropriate containers to simulate actual sampling conditions. Contamination for air exposure can vary considerably from site to site.

The laboratory will not be informed about the presence of field and trip blanks and a false identifying number will be put on the label. Full documentation of these collection and decoy procedure will be made in the site logbook.

Duplicate samples are identical sample pairs (collected in the same place and at the same time), placed in identical containers. For soils, adjacent sample liners will be analyzed. For the purpose of data reporting, one is arbitrarily designated the sample, and the other is designated as a duplicate sample. Both sets of results are reported to give an indication of the precision of sampling and analytical methods.

The laboratory's precision will be assessed without the laboratory's knowledge by labeling one of the duplicates with false identifying information. Data quality will be evaluated on the basis of the duplicate results.

Laboratory QA/QC: Execution of a strict QA/QC program is an essential ingredient in high-quality analytical results. By using accredited laboratory techniques and analytical procedures, estimates of the experimental values can be very close to the actual value of the environmental sample. The experimental value is monitored for its precision and accuracy by performing QC test designed to measure the amount of random and systematic errors and to signal when correction of these errors is needed.

The QA/QC program describes methods for performing QC tests. These methods involve analyzing method blanks, calibration standards, check standards (both independent and EPA-certified standards), duplicates, replicates, and sample spikes. Internal QC also requires adherence to written methods, procedural documentation, and record keeping, and the observance of good laboratory practices.