BLYMYER
ENGINEERS, INC.

July 31, 1995
BEI Job No. 95024

Mr. D. Kelly Green
P. O. Box 210
San Leandro, CA 94604

Subject: **Limited Subsurface Investigation Letter Report**
1370 7th Street
Oakland, California

Dear Kelly:

Blymyer Engineers, Inc. has completed the scope of work outlined in our March 16, 1995, proposal to conduct a limited subsurface investigation at the subject site (Figure 1). This letter represents a report, including tables, figures, and discussions of analytical results, of the investigation. The investigation was performed to comply with the Alameda County Health Care Services Agency's (ACHCSA's) request in its letter to you, dated July 13, 1994, to investigate the hydrocarbon contamination in soil and groundwater related to the underground storage tank (UST) formerly located at the site.

1.0 Introduction

1.1 Background

In December 1992, Caltrans District 4 retained Tetra Tech to conduct a subsurface geophysical and geologic investigation in order to verify the location of one known 500-gallon UST, to determine if other USTs were present, and to perform a preliminary assessment of the type and extent of soil and groundwater contamination, if any, at the site. The geophysical survey included a magnetometer and ground penetrating radar survey of the site. The survey did not locate any USTs or the one known UST, and based on information provided by Mr. Green, the one known UST was located approximately under the sidewalk on 7th Street. The ACHCSA stated in its July 1994 letter, that the UST may have been used in the early 1900s to fuel the Key System Railroad engine cars. Tetra Tech's research of the site's history indicated that the site contained homes until 1951, after which the site was occupied by a fueling station and by four different truck repair operations. Mr. Green believed the UST had not been used since approximately 1950. Tetra Tech also found that the UST was not on record with the City of Oakland Planning and Building Department, the Oakland Fire Department, or the ACHCSA. The specific past uses and contents of the UST were unclear.

As part of the geologic investigation, four soil bores, B-1, B-2, B-3, and B-4, were advanced to 13.5 feet below grade surface (bgs), approximately adjacent to each side of the UST (Figure 2).

Soil samples were collected from each soil bore at 3 feet, 8 feet, and 13 feet bgs for laboratory analysis. The highest concentrations of Total Recoverable Petroleum Hydrocarbons (TRPH), Total Petroleum Hydrocarbons (TPH) as gasoline, TPH as diesel, and benzene, toluene, ethylbenzene, and total xylenes (BTEX) were detected in soil samples collected at 8 feet bgs from soil bores B-1 and B-3. These samples were collected at the depth closest to the depths of first encountered groundwater of 8.5 to 9 feet bgs. Generally, the soil samples collected from all the soil bores above the water table, at 3 feet bgs, and below the water table, at 13 feet bgs, contained significantly lower or no detectable concentrations of the analytes. The laboratory indicated that the detectable concentrations of TPH as diesel resulted from an overlap of gasoline into the TPH as diesel range. The soil samples were also analyzed for total concentrations of arsenic, cadmium, chromium, lead, mercury and zinc. None of the detected metals had concentrations above the respective Total Threshold Limit Concentrations (TTLC) or 10 times the respective Soluble Threshold Limit Concentrations (STLC). (The industry "rule of thumb", where a TTLC value for any particular metal is compared to 10 times the STLC for the metal, is used to evaluate the potential for the metal to become soluble in groundwater).

The analytical results for a grab groundwater sample collected from soil bore B-4, which was considered by Tetra Tech to be located in the downgradient direction of the UST, indicated high concentrations of TRPH, TPH as gasoline, TPH as diesel, and BTEX. For the same metals analysis suite as for soil, only a low concentration of chromium was detected. Tetra Tech concluded that soil and groundwater associated with the UST at the site were impacted with gasoline. The results of the geophysical and geologic investigations were documented in the report entitled *Site Investigation for Kelly's Truck Repair, Oakland, California*, by Tetra Tech, dated February 1993.

On January 26, 1994, preliminary soil excavation was performed to prepare for the removal of the UST on January 27, 1994. According to the *Alameda County Department of Environmental Health (ACDEH), Hazardous Materials Inspection Form*, dated January 27, 1995, the UST had numerous corrosion holes. Soil samples collected after the UST removal and subsequent over-excavation events were analyzed for TPH as diesel and BTEX; however, the ACHCSA indicated in its July 1994 letter that the laboratory also reported concentrations of TPH as kerosene due to an overlap of hydrocarbon ranges. The ACHCSA did not state in its letter why analysis for TPH as gasoline was not performed.

Soil samples collected from the west and east walls of the UST basin contained high concentrations of TPH as kerosene and low concentrations of toluene, ethylbenzene, and total xylenes. TPH as diesel and benzene were not detected. Blymyer Engineers has assumed that a soil sample that was collected from a stockpile of excavated soil from under the UST was representative of the soil from beneath the UST. This sample contained similar analyte concentrations, and a low concentration of benzene was also detected.

Two events of over-excavation, conducted within the next month after the UST removal, were directed by Ms. J. Eberle of the ACHCSA. Blymyer Engineers has inferred that the extent of the excavation was determined based on analytical results for soil samples collected after the UST removal, the first over-excavation event, and the second over-excavation event. The assumed extent of the final excavation was an approximately 90- by 20- by 9.5-foot deep area. Sidewall soil samples collected during the first over-excavation event contained low or non-detectable concentrations of TPH as kerosene, except for one sample collected from the west end of the excavation at 8 feet bgs. Low concentrations of toluene, ethylbenzene, and total xylenes, and no benzene and TPH as diesel were detected. A sidewall soil sample collected after further excavation from the west end of the second over-excavation contained non-detectable concentrations of all of the analytes. Stockpile soil samples collected after the over-excavation events contained significantly lower or non-detectable concentrations of the analytes.

A total of three water samples were collected, one from the UST basin after the UST removal and one each from the over-excavations after each over-excavation event. As indicated by the *ACDEH Hazardous Materials Inspection Form* and the ACHCSA's July 1994 letter, only TPH as kerosene and BTEX analyses were performed for the three water samples collected. Prior to the collection of the first water sample from the UST basin, approximately 300 gallons of water that had accumulated in the UST basin was removed the day before the sample was collected. The *ACDEH Hazardous Materials Inspection Form* indicated that the 300 gallons of water may have accumulated due to rainfall and it was unstated whether groundwater recharge had also occurred. The water sample collected the next day contained high concentrations of TPH as kerosene and BTEX; however, it is unclear if this water sample was representative of groundwater, as it had rained again after the removal of the 300 gallons of water.

Prior to conducting the first over-excavation event, 2,200 gallons of water that had accumulated in the UST basin were removed. This water had accumulated due to rainfall, and possibly groundwater recharge, since the collection of the first water sample from the UST basin. Rain persisted, and an unknown volume of water that had accumulated in the UST basin after the removal of the 2,200 gallons of water was not removed before the first over-excavation event was conducted. A water sample collected from this excavation contained high concentrations of TPH as kerosene and benzene. It is unstated in the *ACDEH Hazardous Materials Inspection Form*, if there was any rainfall or groundwater recharge prior to the second over-excavation event. The water sample collected from the second over-excavation contained considerably lower concentrations of TPH as kerosene, ethylbenzene, and total xylenes. Benzene and toluene were not detected.

The final excavation was filled to grade with the previously excavated soil. According to Mr. Green, the stockpiled soil was aerated before being placed back in the excavation. Blymyer Engineers has assumed that the excavated soil associated with the UST removal was sufficiently

remediated to satisfy regulatory concerns, although no confirmation soil samples were collected after aeration and prior to placement of the soil back into the excavation.

In its July 1994 letter to Mr. Green, the ACHCSA requested that additional groundwater chemistry data be obtained for the site. Mr. Green retained Blymyer Engineers to perform a limited subsurface investigation in order to comply with the request of the ACHCSA. The scope of work performed was developed based on information provided by Mr. Green, review of Tetra Tech's report and the *ACDEH Hazardous Materials Inspection Form*, and Blymyer Engineers' telephone discussion with Ms. Eberle on March 8, 1995. On May 26, 1995, the ACHCSA granted written approval of Blymyer Engineers' *Monitoring Well Installation Workplan*, dated April 21, 1995, which outlined the scope of work to be performed.

1.2 Site Conditions

The subject site is located in a residential and light industrial area of Alameda County in Oakland, California (Figure 1). The site is located on the north side of 7th Street, at the intersection with Mandela Parkway. The property is located approximately 1.5 miles east-southeast of San Francisco Bay, and approximately 0.5 miles north-northeast of the Oakland Inner Harbor. The site structures consist of a single-story truck service and office building and a trailer, located adjacent to the south side of the truck service and office building.

1.3 Scope of Work

The scope of work proposed to be completed during the limited subsurface investigation is outlined below.

- Prepare a site-specific health and safety plan outlining the potentially hazardous work conditions and contingencies for an emergency.
- Obtain underground utilities clearance from Underground Service Alert.
- Obtain an encroachment permit and a driller's excavation permit from the City of Oakland, Planning and Building Department and a drilling and monitoring well permit from Zone 7 Water Agency of the Alameda County Flood Control and Water Conservation District.

- Continuously core and advance one soil bore to an approximate depth of 15 feet bgs using a drill rig with hollow-stem flight augers. The soil bore will be located approximately 10 feet south, the assumed downgradient direction, of the former UST location.

- Collect soil samples from 5 feet bgs and immediately above the vadose/saturated zone interface, at approximately 8 feet bgs. Submit the soil samples to GTEL Environmental Laboratories, Inc. for analysis by modified EPA Method 8015 for TPH as diesel and TPH as kerosene and by EPA Method 8020 for BTEX.

- Convert the soil bore to a 2-inch-diameter groundwater monitoring well. The monitoring well will be constructed of 0.010-inch, factory-slotted, PVC screen from 15 to 5 feet bgs and solid PVC casing from 5 feet bgs to ground surface. The monitoring well will be developed a minimum of 72 hours after installation.

- Collect one groundwater sample from the monitoring well for submittal to GTEL Environmental Laboratories, Inc. for analysis by modified EPA Method 8015 for TPH as diesel and kerosene and by EPA Method 8020 for BTEX.

- Contain all soil cuttings, decontamination water, and monitoring well development and purge water in Department of Transportation (DOT)-approved, 55-gallon drums and store on-site for later disposal by the owner.

- Prepare a final letter report, which documents the work performed, including soil bore advancement, monitoring well installation, soil and groundwater sampling protocols, a scaled site map, a bore and monitoring well log, summaries of soil and groundwater analytical data, and conclusions.

2.0 Environmental Setting

2.1 Regional Geology and Hydrogeology

The site is located on the gently sloping East Bay Plain of the San Francisco Bay Area, at an approximate elevation of 10 feet, National Geodetic Vertical Datum.

The San Francisco Bay Area is a region dominated by northwest trending topography, enclosed in the Coast Range Province of California. The topography of the region reflects activity of a major fault system that includes the San Andreas Fault Zone on the west side of San Francisco Bay and the Hayward Fault on the east side of the Bay, which defines the base of the Berkeley

Hills. Rock types in the region range from Jurassic age sedimentary, metamorphic, and plutonic basement to Quaternary alluvium (Norris and Webb, 1990).

The general vicinity of the site is underlain by the Quaternary age East Bay Plain of the San Francisco Bay Area, sediments of which were derived from Franciscan Formation rocks of the nearby hills to the east. The sediments that comprise the East Bay Plain are considered alluvial fan deposits including unconsolidated to poorly consolidated clay, silt, sand, and gravel. These sediments are divided into older and younger alluvium units. Specifically, the site overlies the Merritt Sand of the older alluvium deposits of the East Bay Plain. The Merritt Sand is a near-shore or beach deposit, consisting of generally light brown fine to medium, poorly graded, silty, clayey sand, with lenses of sandy clay and clay. The degree of consolidation increases with depth. Northeast of the site, approximately 1 mile, the Merritt Sand has been mapped by Radbruch (1957) and Radbruch and Case (1967) as in contact with undifferentiated alluvium that likely includes sediments of the Temescal and San Antonio Formations. The Merritt Sand was also mapped as in contact with artificially filled areas, which were once tidal wetlands, approximately 300 feet south of the site. The artificial fill has a variable composition and may contain miscellaneous debris in some locations. Underlying the artificial fill is bay mud, which consists of black clayey and sandy silt that is rich in organic material.

Groundwater flow direction generally ranges from the west to southwest, toward the San Francisco Bay, and depth to groundwater ranges from shallow depths to 60 feet bgs, depending on proximity to the San Francisco Bay and seasonal influences (Hickenbottom and Muir, 1988). The Merritt Sand is partially saturated but is not considered a primary source of groundwater supply because of its limited areal extent and thickness. The groundwater conditions of the Merritt Sand, where saturated, are characterized as unconfined. Sources and routes of recharge are infiltration of surface water and seepage of water from streams and leaky sewers at locations where the Merritt Sand outcrops (Hickenbottom and Muir, 1988).

2.2 Climate

The East Bay Plain exhibits a Mediterranean-type climate with cool, wet winters and warmer, dry summers. Mean annual precipitation in Oakland is 25.42 inches. Mean monthly rainfall is 4.03 inches in January and 0.05 inches in August. Mean maximum temperatures are 54.5 degrees Fahrenheit (°F) in January and 70.6°F in July; mean minimum temperatures are 43.4°F in January and 56.8°F in July; average temperatures are 49°F in January and 63.7°F in July (National Oceanic and Atmospheric Administration, 1982).

3.0 Data Collection

3.1 Soil Investigation

3.1.1 Soil Sample Collection

On June 14, 1995, a Blymyer Engineers geologist supervised the advancement of one 8-inch-diameter soil bore, MW-1, by Gregg Drilling and Testing, Inc. (Gregg Drilling), using a B-61 drill rig with hollow-stem flight augers. The soil bore was located 9 feet south-southwest of the approximate former UST location (Figure 2). The City of Oakland Planning and Building Department minor encroachment permit and driller's excavation permit and the Zone 7 Water Agency Drilling and Well Permit are included as Appendix A. Due to the close proximity of an underground water utility line, the soil bore was hand-augered to approximately 5 feet bgs. The soil bore was continuously cored from 5 feet bgs to a total depth of 15.5 feet bgs. A modified California split-spoon sampler, lined with three clean, 6-inch-long brass sleeves, was driven in 18-inch intervals ahead of the augers by a 140-pound hammer dropped from a height of 30 inches above the sampler. Soil samples were collected from the 18-inch-long sampler in 0.5 foot long intervals at 5.5, 9, 10.5, 13, and 15 feet bgs.

The number of hammer blows required to drive the sampler 6 inches of the total 18 inches of each sample interval were recorded. The soils were logged in accordance with the Unified Soils Classification System by a Blymyer Engineers geologist. The sampler was retrieved with a wire cable and the brass sleeves removed. The desired sample from each interval was sealed in its brass sleeve with Teflon® sheets, plastic end caps, and adhesiveless silicone tape and was labeled and placed in an iced cooler for transport to the analytical laboratory. Proper chain-of-custody procedures were observed. Soil samples were field screened for organic vapors using a photoionization detector (PID) and the results were noted on the bore and well construction log, which is included as Appendix B. The split-spoon sampler was decontaminated between samples with a low phosphate wash, a clean water rinse, and a de-ionized water final rinse.

All drill cuttings from the soil bore advancement were stored on-site in a labeled, DOT-approved 55-gallon drum.

This work was completed in accordance with the Blymyer Engineers' Standard Operating Procedure (SOP) No. 1, entitled *Soil and Grab Groundwater Sampling Using a Hollow-Stem Auger Drill Rig, Revision 1*, previously forwarded with the workplan.

3.1.2 Soil Sample Analytical Methods

The collected soil samples were submitted to GTEL Environmental Laboratories, Inc., a state-certified laboratory, for analysis on a 5-day turnaround time. The soil sample collected at 5.5 feet bgs was selected for laboratory analysis based on its proximity to the depth of first encountered groundwater. Groundwater was encountered at a shallower depth, approximately 5.5 feet bgs, than was originally anticipated, at approximately 8 feet bgs. The soil sample was originally analyzed for TPH as diesel and TPH as kerosene by modified EPA Method 8015 and BTEX by EPA Method 8020. Subsequent to submittal of the sample for analysis, Blymyer Engineers requested that the TPH as gasoline concentration be quantified by modified EPA Method 8015. This analysis was inadvertently excluded from the original scope of work.

3.1.3 Soil Sample Analytical Results

The soil sample collected from 5.5 feet bgs contained 400 milligrams per kilogram (mg/kg) of TPH as kerosene, 2,500 mg/kg of TPH as gasoline, 0.26 mg/kg of benzene, 2.0 mg/kg of toluene, 4.3 mg/kg of ethylbenzene, and 19.0 mg/kg of total xylenes. TPH as diesel was not detected above the detection limit of 10 mg/kg. The detection limit for the TPH as diesel analysis exceeded the Practical Quantitation Reporting Limit of 1 mg/kg recommended for TPH as diesel analysis by the Tri-Regional Board in *Recommendations for Preliminary Evaluations and Investigation of Underground Tank Sites*, dated August 10, 1990. The laboratory noted in its report that the 1 mg/kg detection limit was not achievable due to their method limitations for quantifying TPH as diesel and the presence of high concentrations of other target analytes. The other target analyte for the TPH as diesel analysis was TPH as kerosene. The laboratory also indicated on its report that the hydrocarbon pattern for the TPH as kerosene concentration was within the kerosene range, but that the pattern was also characteristic of weathered and degraded gasoline. The soil sample analytical results are summarized in Table I. The laboratory reports are included as Appendix C.

3.2 Groundwater Investigation

3.2.1 Monitoring Well Installation

The soil bore, MW-1, was converted to a 2-inch-diameter groundwater monitoring well. The monitoring well was completed in accordance with the Blymyer Engineers' SOP No. 2A, entitled *Completion of Borings as Groundwater Monitoring Wells, Revision 1*, previously forwarded with the workplan. The Zone 7 Water Agency Drilling and Well Permit is presented in Appendix A.

The monitoring well was constructed of threaded, 0.010-inch factory-slotted, schedule 40 PVC casing from 14 to 4 feet bgs, approximately 1.5 feet above the depth of first-encountered groundwater. Solid PVC casing was placed through the augers to complete the monitoring well from 4 to 0.5 feet bgs. The annular space around the casing from the bottom of the bore to 3.5 feet bgs was filled with number 2/12 RMC Lonestar filter sand. An approximately 1-foot-thick bentonite seal was placed in the annular space above the filter sand pack, from 3.5 to 2.5 feet bgs. The annular space from the bentonite seal to the surface was filled with concrete. A traffic-rated well vault was mounted in the concrete. A locking cap was placed on the top of the solid PVC casing. All casing joints were flush threaded, and no glues or solvents were used in the construction of the monitoring well. The monitoring well construction detail is included on the bore and well construction log (Appendix B).

Gregg Drilling developed the monitoring well on June 20, 1995, by surging and pumping approximately 10 well casing volumes of water from the monitoring well. Development water was stored on site in labeled, DOT-approved, 55-gallon drums. The monitoring well was developed in accordance with the Blymyer Engineers' SOP No. 2B, entitled *Groundwater Monitoring Well Development, Revision 1*, previously forwarded with the workplan. A copy of the Monitoring Well Development Log completed by Gregg Drilling is included as Appendix D.

3.2.2 Groundwater Sample Collection

A groundwater sample was collected from monitoring well MW-1 on June 23, 1995, after measuring the depth to the static groundwater level. Three well casing volumes were removed from the monitoring well prior to collection of the groundwater sample using a disposable polyethylene bailer. Temperature, pH, and conductivity were measured prior to the initial purging and after the removal of each well volume. Groundwater from the monitoring well was sampled when the differences between the individual temperature, pH, and conductivity measurements were all within approximately 15 percent for three consecutive well casing volumes. Purge water was stored on site in a labeled, DOT-approved, 55-gallon drum. The Well Purging and Sampling Data Sheet is included as Appendix E. The groundwater sample was placed in appropriate containers, labeled, and placed on ice in a cooler for transport to the analytical laboratory. All proper chain-of-custody procedures were observed.

All work was completed in accordance with the Blymyer Engineers' SOP No. 3, entitled *Groundwater Monitoring and Well Sampling Using a Bailer or Hand Pump, Revision 1*, previously forwarded with the workplan.

3.2.3 Groundwater Sample Analytical Methods

The groundwater sample was submitted to GTEL Environmental Laboratories, Inc., a state-certified laboratory, for analysis on a 5-day turnaround time. The groundwater sample was analyzed for TPH as diesel and TPH as kerosene by modified EPA Method 8015 and BTEX by EPA Method 8020. Subsequent to submittal of the sample to the laboratory, Blymyer Engineers requested that TPH as gasoline be quantified by modified EPA Method 8015. This analysis was inadvertently excluded from the original scope of work. The laboratory was only able to estimate the TPH as gasoline concentration. A laboratory representative stated that the TPH as gasoline concentration required estimation because the analysis was performed using a specific sample dilution to set the calibration range for both BTEX and TPH as gasoline compounds. The TPH as gasoline concentration exceeded the calibration range set by the specific dilution and because the original analysis was only for BTEX, another specific dilution, necessary to quantify the TPH as gasoline concentration, had not been performed.

3.2.4 Groundwater Sample Analytical Results

The groundwater sample collected from monitoring well MW-1 contained 4,000 micrograms per liter (µg/L) of TPH as kerosene, an estimated concentration of 5,500 µg/L of TPH as gasoline, 140 µg/L of benzene, 19 µg/L of toluene, 3.2 µg/L of ethylbenzene, and 240 µg/L of total xylenes. TPH as diesel was not detected above the detection limit of 50 µg/L. The laboratory noted in its report that the hydrocarbon pattern for the TPH as kerosene concentration was within the kerosene range, but that the pattern was also characteristic of weathered and degraded gasoline. The groundwater sample analytical results are summarized in Table II and the laboratory report is included as Appendix C.

3.2.5 Depth to Groundwater

The depth to static groundwater in monitoring well MW-1 was measured on June 23, 1995, from the top of the casing, which is approximately 0.5 feet bgs. An oil-water interface probe, accurate to 0.01 feet, was used to measure the depth to groundwater. The depth to groundwater was measured at 5.08 feet.

4.0 Data Interpretation

4.1 Site Geology and Hydrogeology

During the advancement of the soil bore, located south of the UST basin and at the north edge of 7th Street, the surface materials that were encountered from grade surface to 1.5 feet bgs consisted of 2 inches of asphalt, 6 inches of concrete, and a void space, of a maximum thickness of 10 inches. The sediment lithology in the vicinity of the former UST basin consists of clayey sand, with silt from 1.5 to 14 feet bgs. The clayey sand is interbedded with 0.5-foot-thick layers of sandy clay, which were encountered during drilling at 8 and 10 feet bgs. Minor amounts of brick fragments observed at 5 feet bgs indicate that the clayey sand encountered from 1.5 to at least 8 feet bgs may be artificial fill material.

The clayey sand observed throughout the section explored is characterized by predominantly fine sand, with some fine to medium sand, that is subangular to subrounded, and poorly graded. The sediments were observed to be damp from ground surface to approximately 5.5 feet and predominantly wet from 5.5 feet to the total depth explored of 15.5 feet bgs. The sandy clay layers were observed to have a lower moisture content than the clayey sand encountered in the section explored. At a depth of 14 feet bgs, sandy clay/clayey sand was encountered. The sand was predominantly fine and poorly graded and similar in character to the clayey sand encountered in shallower depths.

The coloration of the sediments throughout the section explored varied from orange-brown, to gray-brown, to a mottled pattern of shades of brown and gray. At the depth of first encountered groundwater, 5.5 feet, to 7 feet bgs, the sediments were observed to be mottled black and gray-green.

The groundwater depth measured on June 23, 1995, was nearly unchanged and slightly lower than the initial measurement, 5.5 feet bgs, indicating that the groundwater in the vicinity of the former UST is likely unconfined.

4.2 Discussion of Soil Sample Analytical Results

Based on the soil sample analytical results, a review of the chromatograms for the analyses (Appendix C), and discussions with a laboratory representative, it has been concluded that the main soil contaminant at the site in the area south of the approximate former UST location is gasoline. A high relative concentration of TPH as gasoline was detected, TPH as diesel was not detected, and the elevated concentration of TPH as kerosene that was detected has been noted by the laboratory in its report to be due to the presence of weathered and degraded gasoline.

The lateral extent of soil contamination cannot be determined based on the data collected during this limited subsurface investigation and the vertical extent of soil contamination is assumed to extend over the depth interval of historic seasonal high and low groundwater elevations. Field observations, PID readings, and the analytical results for soil samples collected during this investigation confirm the presence of petroleum hydrocarbons at the depth of first-encountered groundwater, 5.5 feet bgs. The soil was observed to be mottled black and gray-green between 5.5 to 7 feet bgs and a strong petroleum odor was noted. Also, the highest concentration of organic vapor, 359 parts per million (ppm), was detected during a PID screen of a soil sample collected from 6 feet bgs and elevated concentrations of TPH as gasoline and TPH as kerosene were detected in the soil sample collected from 5.5 feet bgs. The PID readings for soil samples collected below 6 feet bgs were considerably lower, ranging from 11 to 68 ppm. The depth to first-encountered groundwater during the subsurface investigation performed in December 1992 by Tetra Tech, was documented as 8.5 to 9 feet bgs. Therefore, a minimum depth interval of approximately 5.5 to 9 feet bgs of impacted soil likely exists in the area south of the approximate former UST location.

4.3 Discussion of Groundwater Sample Analytical Results

Based on the results, a review of the chromatograms for the analyses (Appendix C), and discussions with a laboratory representative, it has been concluded that gasoline is likely the main contaminant in groundwater in the area south of the approximate former location of the UST. Although the TPH as gasoline result required estimation, the estimated concentration was the highest relative concentration detected. The elevated benzene and total xylenes concentrations, and the lesser concentrations of toluene and ethylbenzene detected also indicated that gasoline is present in groundwater. No TPH as diesel concentrations were detected and the laboratory noted in its report that the elevated concentration of TPH as kerosene detected is due to the presence of weathered and degraded gasoline.

The sample analytical results are assumed to be representative of the water quality downgradient of the approximate former location of the UST; however, further definition of the contaminant plume in groundwater is not possible without additional data acquisition.

4.4 Groundwater Flow Direction and Gradient

Based on the depth to groundwater data for the site, the groundwater flow direction and gradient could not be determined; however, the assumed directional range of groundwater flow is south to southwest, toward the San Francisco Bay. Data from another site (Blymyer Engineers, 1995), located approximately 1,000 feet southeast of the subject site, indicates that the groundwater flow direction is toward the south at a gradient of 0.0032 feet/foot. The range of flow directions, between south and southwest, is consistent with the published study referenced in Section 2.1, with local topography, and with the data documented in Tetra Tech's report, dated February 1993.

5.0 Summary and Conclusions

- Four soil bores were drilled in the vicinity of a former 500-gallon UST in December 1992. Tetra Tech, the consultant that provided oversight of the subsurface investigation, concluded that soil and groundwater were impacted with gasoline. The analytical results for the soil samples collected during the investigation also indicated that heavier petroleum hydrocarbons may have been present.

- In January 1993, the UST was removed. Impacted soil in the vicinity of the UST basin was removed during two events of over-excavation and subsequently aerated. The assumed extent of the final excavation was an approximately 90- by 20- by 9.5-foot deep area. Blymyer Engineers has assumed that the over-excavated soil was remediated to soil contaminant levels acceptable to the ACHCSA, a representative of which provided oversight of the UST removal and over-excavation events.

- One soil bore was advanced in June 1995. The soil bore was located 9 feet south-southwest, the assumed downgradient direction, of the approximate former UST location. A monitoring well was installed in the soil bore.

- The sediment lithology in the area south of the approximate former UST location consisted of clayey sand, with thin interbedded sandy clay layers to 14 feet bgs, and sandy clay/clayey sand at 14 to 15.5 feet bgs, the total depth explored.

- PID readings for soil samples, collected every 18-inch sample interval during advancement of the soil bore, ranged from 359 ppm, for a sample collected just below the depth of first-encountered groundwater, to 11 ppm.

- Elevated concentrations of TPH as kerosene and TPH as gasoline and low concentrations of BTEX were detected in a soil sample collected from the depth at which groundwater was first encountered, 5.5 feet bgs, during the advancement of the soil bore. A groundwater sample collected subsequent to the installation of the monitoring well contained an elevated estimated concentration of TPH as gasoline, an elevated concentration of TPH as kerosene, benzene, and total xylenes, and lesser concentrations of toluene and ethylbenzene. No TPH as diesel concentrations were detected in the soil or groundwater samples. The laboratory indicated that the elevated concentrations of TPH as kerosene detected in the soil and groundwater sample were attributable to the presence of weathered and degraded gasoline.

- The lateral extent of soil and groundwater petroleum hydrocarbon contamination at the site in the area south of the approximate former UST location has not been determined from the limited subsurface investigation activities performed. The vertical extent of soil impact likely extends over a minimum depth interval of approximately 5.5 to 9 feet bgs.

6.0 Limitations

Services performed by Blymyer Engineers, Inc. have been provided in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. The scope of work for the project was conducted within the limitations prescribed by the client. This letter report is not meant to represent a legal opinion. No other warranty, expressed or implied, is made. This letter report was prepared for the sole use of the client.

7.0 Recommendations

Blymyer Engineers recommends that a copy of this letter report be submitted to:

- Ms. Jennifer Eberle
  Alameda County Health Care Services Agency
  Department of Environmental Health
  1131 Harbor Bay Parkway, Second Floor
  Alameda, CA 94052

  PH # 567-6700
  Jennifer Eberle

- Mr. Kevin Graves
  California Regional Water Quality Control Board
  San Francisco Bay Region
  2101 Webster Street, Suite 500
  Oakland, CA 94612

8.0 References

Blymyer Engineers, Inc., *Monitoring Well Installation Workplan,* D. K. Green Property, 1370 7th Street, Oakland, California, BEI Job No. 95024, unpublished, dated April 21, 1995.

Blymyer Engineers, Inc., *Subsurface Characterization Report,* (client undisclosed to maintain confidentiality), BEI Job No. 93049, unpublished, dated June 1, 1995.

Hickenbottom, K. and Muir, K., 1988, *Geohydrology and Groundwater Quality Overview of the East Bay Plain Area, Alameda County, California, 205(J) Report*: submitted to San Francisco Bay Regional Water Quality Control Board, 83 p.

National Oceanic and Atmospheric Administration, 1982, *Monthly Normals of Temperature, Precipitation, and Heating and Cooling Degree Days 1951-1980, California*: National Climatic Center, Asheville, North Carolina.

Norris, R. and Webb, R., 1990, *Geology of California*, 2nd ed., John Wiley and Sons, Inc., 541 p.

Radbruch, D. H., 1957, *Areal and Engineering Geology of the Oakland West Quadrangle, California*: U.S. Geological Survey Miscellaneous Geologic Investigations, No. I-239, scale 1:24,000.

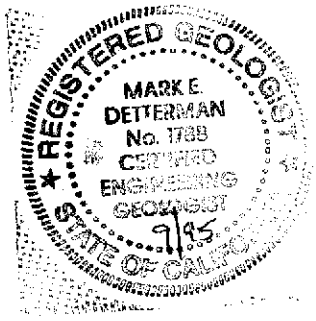
Radbruch, D. H. and Case, J. E., 1967, *Preliminary Geologic Map and Engineering Geologic Information of Oakland and Vicinity, California*: U.S. Geological Survey Open File Report, No. 67-0183, scale 1:24,000.

Please call Deborah Underwood at (510) 521-3773 with any questions or comments.

Sincerely,

Blymyer Engineers, Inc.

By: _____
Deborah Underwood
Geologist



And: _____
Mark Detterman, C.E.G. 1788
Senior Geologist

Tables:
Table I: Summary of Soil Sample Analytical Results
Table II: Summary of Groundwater Sample Analytical Results

Figures:
Figure 1: Site Location Map
Figure 2: Site Plan

Appendices:
Appendix A: Permits, City of Oakland, Building and Planning Department and Zone 7 Water Agency of the Alameda County Flood Control and Water Conservation District
Appendix B: Bore and Well Construction Log
Appendix C: Analytical Results, GTEL Environmental Laboratories, Inc., dated July 21, 1995
Appendix D: Monitoring Well Development Log, Gregg Drilling and Testing, Inc., dated June 20, 1995
Appendix E: Well Purging and Sampling Data Sheet, dated June 23, 1995

H:\DHU\9502\9502ASL.RPT

Tables

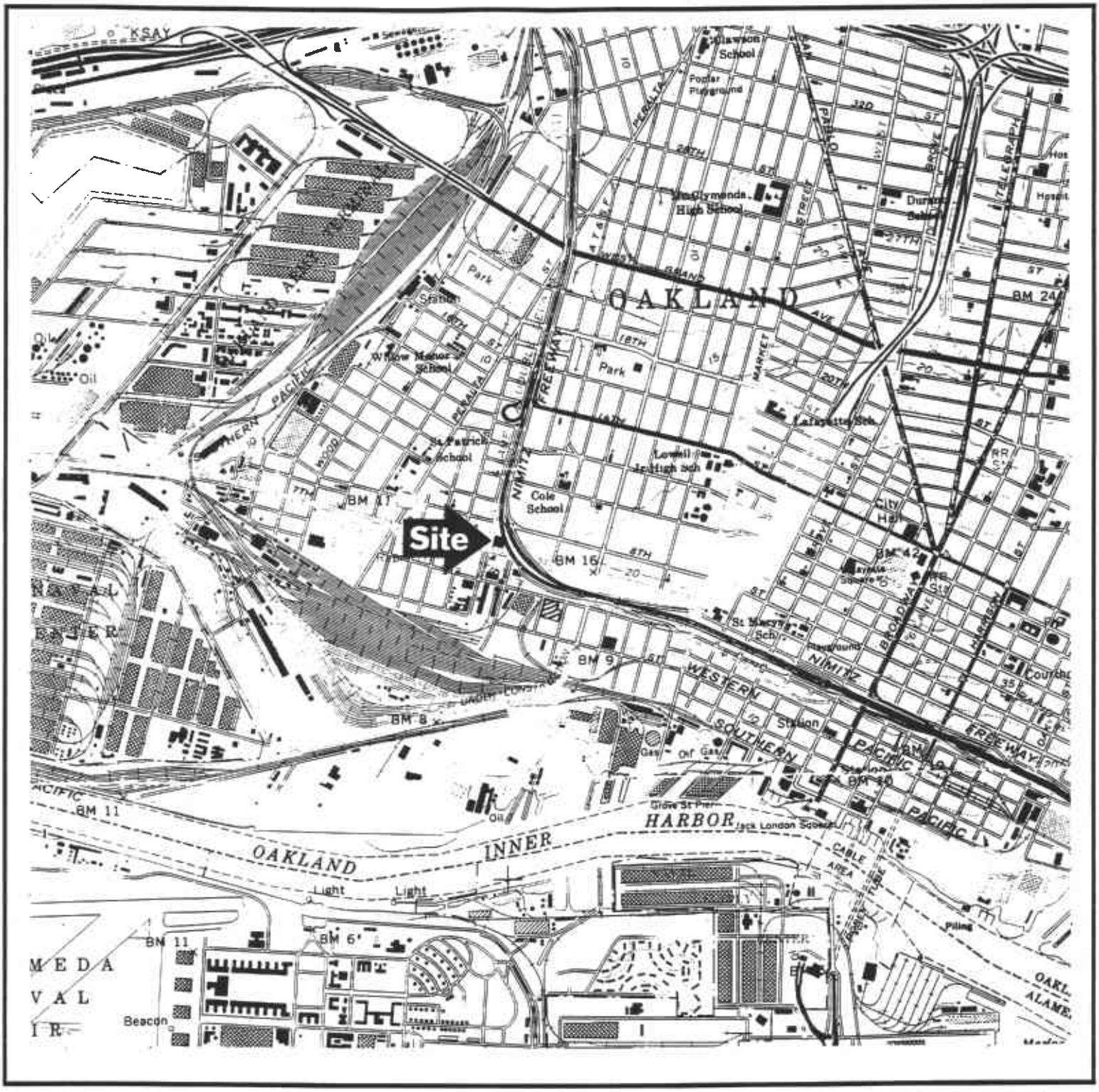
Table I, Summary of Soil Sample Analytical Results BEI Job No. 95024, D. K. Green Property, 1370 7th Street, Oakland, California								
Sample Identification	Date Sampled	Modified EPA Method 8015 (mg/kg)			EPA Method 8020 (mg/kg)			
		TPH as Diesel[a]	TPH as Kerosene	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-1-5.5'	6/14/95	<10[b]	400[c]	2,500	0.26	2.0	4.3	19.0

Notes: TPH = Total Petroleum Hydrocarbons
mg/kg = Milligrams per kilogram
a = Laboratory report states that the result is based on a non-diluted analysis.
b = Laboratory report states that due to method limitation and high concentrations of other target analytes, the detection limit was reported as 10 mg/kg.
c = Laboratory report states that hydrocarbon pattern is within kerosene range; however, the pattern is characteristic of weathered and degraded gasoline.

Table II, Summary of Groundwater Sample Analytical Results BEI Job No. 95024, D. K. Green Property, 1370 7th Street, Oakland, California								
Sample Identification	Date Sampled	Modified EPA Method 8015 (µg/L)			EPA Method 8020 (µg/L)			
		TPH as Diesel[a]	TPH as Kerosene[a]	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-1	6/23/95	<50	4,000[b]	5,500[c]	140	19	3.2	240

Notes: TPH = Total Petroleum Hydrocarbons
µg/L = Micrograms per Liter
a = Laboratory report states that the result is based on multiple dilutions.
b = Laboratory report states that hydrocarbon pattern is within kerosene range; however, the pattern is characteristic of weathered and degraded gasoline.
c = Laboratory report states that the concentration was estimated; result was greater than highest calibration level.

Figures



UNITED STATES GEOLOGICAL SURVEY 7.5' QUAD. "OAKLAND WEST, CA" PHOTOREVISED 1980.

BLYMYER ENGINEERS, INC.

BEI JOB NO. 95024

DATE 4/12/95

0 1000 2000

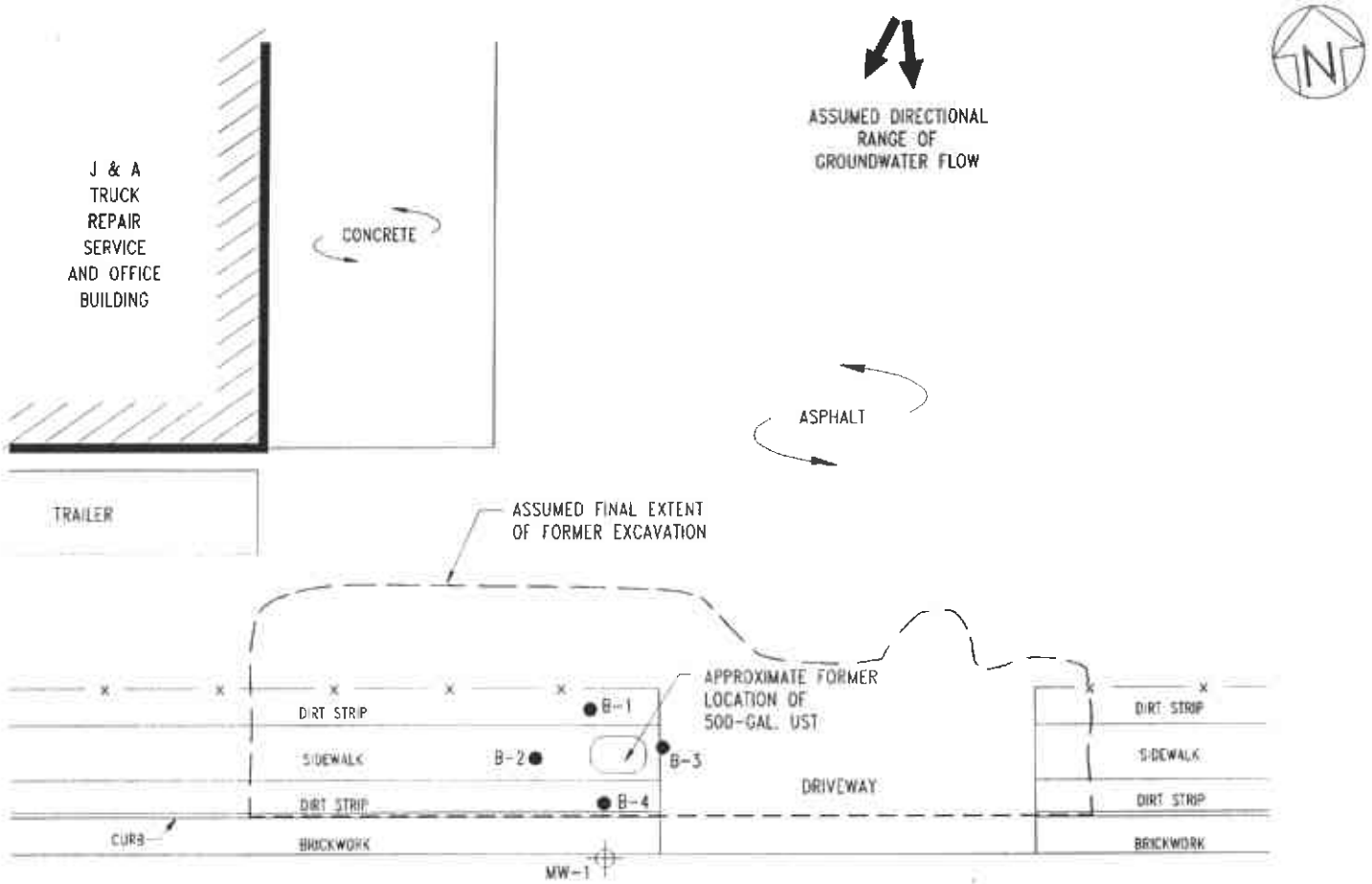
SCALE IN FEET

N

SITE LOCATION MAP

D. K. GREEN PROPERTY
1370 7th ST.
OAKLAND, CA

FIGURE 1



BLYMYER ENGINEERS, INC.

BEI JOB NO.	DATE
95024	6/21/95

LEGEND

- UST — UNDERGROUND STORAGE TANK
- B-1 — APPROXIMATE FORMER SOIL BORE LOCATION
- MONITORING WELL LOCATION

SITE PLAN
D.K. GREEN PROPERTY
1370 7TH STREET
OAKLAND, CA

FIGURE 2

REVISED 7/31/95 H:\PUBLIC\ACADLW\950242B

Appendix A

City of Oakland
Director of Planning & Building
1330 Broadway, 2nd Floor
Oakland, CA 94612

When Recorded Mail to:
Director of Planning & Building
City of Oakland
1330 Broadway, 2nd Floor
Oakland, CA 94612

TAX ROLL PARCEL NUMBER
(ASSESSOR'S REFERENCE NUMBER)

004	0067	022	00
MAP	BLOCK	PARCEL	SUB

SPACE ABOVE FOR RECORDER'S USE ONLY

Address: 1370 - 7th Street, Oakland

MINOR ENCROACHMENT PERMIT AND AGREEMENT

Douglas K. Green and Carleen R. Green, Trustees of the Green Family 1991 Trust, owners of that certain property described in the Deed recorded September 3, 1991, Series No. 91-236875, in the Office of the Recorder, Alameda County, California and commonly known as 1370 - 7th Street, is hereby granted a Conditional Revocable Permit to encroach into the public right of way area of 7th Street with one monitoring well. The location of said encroachment shall be as delineated in Exhibit 'A' attached hereto and made a part hereof.

The permittees agree to comply with and be bound by the conditions for granting an Encroachment Permit attached hereto and made a part hereof.

This agreement shall be binding upon the present owners of the property described above, and their successors in interest thereof.

In witness whereof, we have set our signatures this 5 day of June, 1995.

Douglas K. Green
Name: Douglas K. Green

Carleen R. Green
Name: Carleen R. Green

<-- Please attach California all-purpose acknowledgment slip here

BELOW FOR OFFICIAL USE ONLY

CITY OF OAKLAND

Dated_____

By:_____
CALVIN N. WONG
Deputy Director
Building Services
For
KAY WINER
Director of Planning & Building

RT:rt
file: 7st-1370.mw\per&agt(7)

BANK OF THE WEST

NOTARY ACKNOWLEDGEMENT

STATE OF CALIFORNIA
County of Alameda } ss.

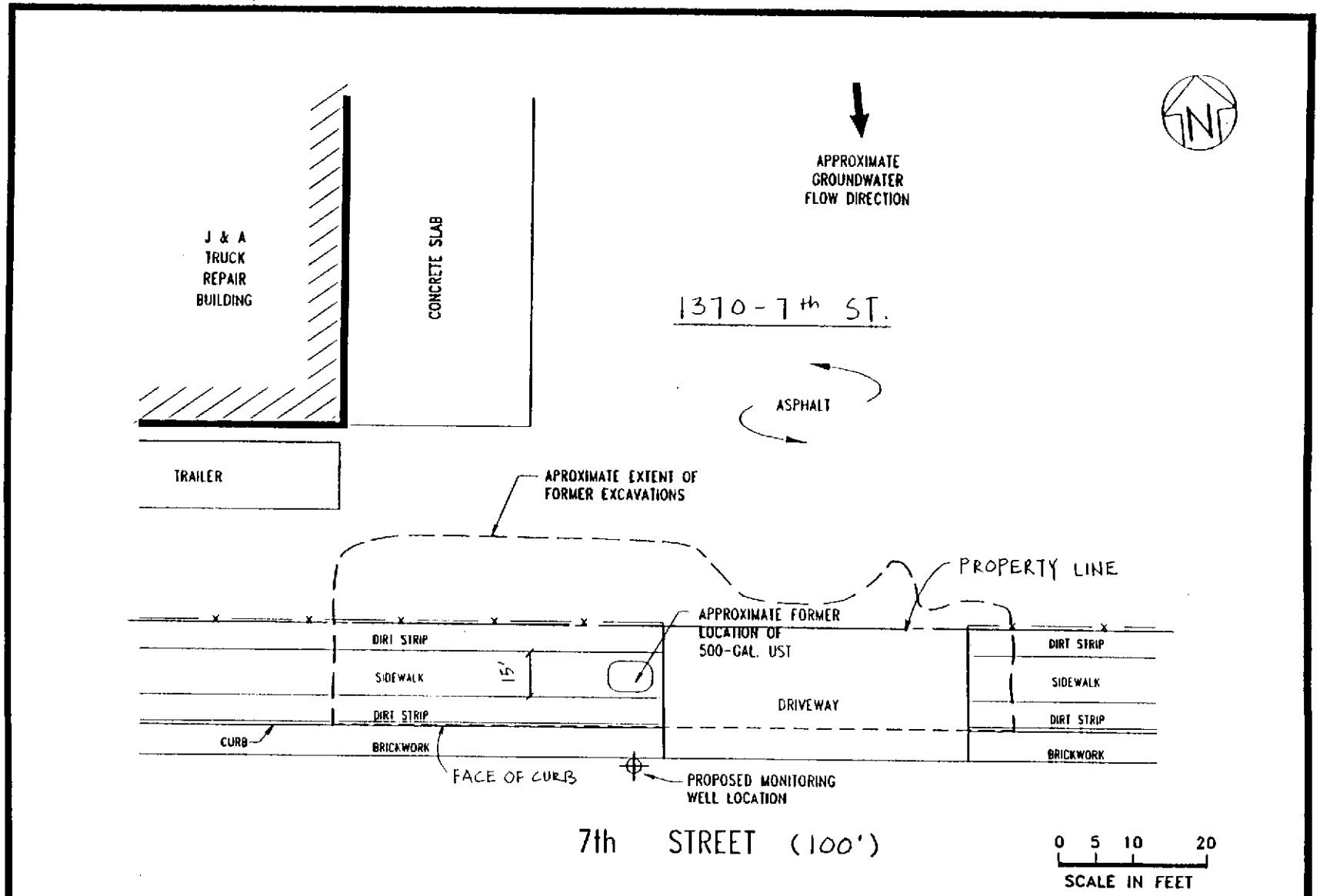
On 6-5-95, before me, Donna Rae Cooper, Notary
(Name of Notary/Title)

personally appeared Douglas K. Green & Carleen R. Green, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Donna Rae Cooper
(Signature)

GBP 1 DONNA RAE COOPER
COMM. #1025982
NOTARY PUBLIC - CALIFORNIA
ALAMEDA COUNTY
My Comm. Expires May 6, 1998 GBP 1
(Seal)



BLYMYER ENGINEERS, INC.

BEI JOB NO.	DATE
95024	4/10/95

LEGEND

UST UNDERGROUND STORAGE TANK

SITE PLAN
D. KELLY GREEN
1370 7TH STREET
OAKLAND, CA

FIGURE 2

REVISED 4/19/95 H:\PUBLIC\ACADLW\950242

EXHIBIT "A" (NO SCALE)

TO: Douglas K. Green and Carleen R. Green, trustees of the Green Family 1991 Trust
(APN: 004-0067-022)

Address: 845 Juana Ave., San Leandro, CA 94577

RE: Minor Encroachment Permit for Monitoring Well in 7th Street

CONDITIONS FOR GRANTING A MINOR ENCROACHMENT PERMIT

1. That this permit shall be revocable at the pleasure of the Director of Planning & Building.

2. That the permittee, by the acceptance, either expressed or implied, of the minor encroachment permit hereby disclaims any right, title, or interest in or to any portion of the public sidewalk or street area, and agrees that said temporary use of said area does not constitute an abandonment on the part of the City of Oakland of any of its rights for street purposes and otherwise.

3. The permittee shall maintain in force and effect at all times that said encroachment occupies said public sidewalk or street area, good and sufficient public liability insurance in the amount of $300,000 for each occurrence, and property damage insurance in the amount of $50,000 for each occurrence, both including contractual liability insuring the City of Oakland against any and all claims arising out of the existence of said encroachment in said public sidewalk or street area, and that a certificate of such insurance and subsequent notices of the renewal thereof, shall be filed with the Director of Planning & Building of the City of Oakland, and that such certificate shall state that said insurance coverage shall not be canceled or be permitted to lapse without thirty (30) days written notice to said Director of Planning & Building. The Permittee also agrees that the City may review the type and amount of insurance required of the Permittee every five (5) years and may require the permittee to increase the amount of and/or change the type of insurance coverage required.

4. That the permittee, by the acceptance, either expressed or implied, of this revocable permit shall be solely and fully responsible for the repair or replacement of any portion or all of said improvements in the event that said improvements shall have failed or have been damaged to the extent of creating a menace or of becoming a hazard to the safety of the general public; and that the permittee shall be liable for the expenses connected therewith.

encroachment area, and hereby waives and fully releases and forever discharges the City and its officers, directors, employees, agents, servants, representatives, assigns and successors from any and all claims, demands, liabilities, damages, actions, causes of action, penalties, fines, liens, judgments, costs, or expenses whatsoever (including, without limitation, attorneys' fees and costs), whether direct or indirect, known or unknown, foreseen or unforeseen, that may arise out of or in any way connected with the physical condition, or required remediation of the excavation area or any law or regulation applicable thereto, including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. Sections 9601 et seq.), the Resource Conservation and Recovery Act of 1976 (42 U.S.C. Section 6901 et seq.), the Clean Water Act (33 U.S.C. Section 466 et Seq.), the Safe Drinking Water Act (14 U.S.C. Sections 1401-1450), the Hazardous Materials Transportation Act (49 U.S.C. Section 1801 et seq.), the Toxic Substance Control Act (15 U.S.C. Sections 2601-2629), the California Hazardous Waste Control Law (California Health and Safety Code Sections 25100 et seq.), the Porter-Cologne Water Quality Control Act (California Health and Safety Code Section 13000 et seq.), the Hazardous Substance Account Act (California Health and Safety Code Section 25300 et seq.), and the Safe Drinking Water and Toxic Enforcement Act (California Health and Safety Code Section 25249.5 et seq.).

15. Permittee further acknowledges that it understands and agrees that it hereby expressly waives all rights and benefits which it now has or in the future may have, under and by virtue of the terms of California Civil Code Section 1542, which reads as follows: "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR."

16. Permittee recognizes that by waiving the provisions of this section, permittee will not be able to make any claims for damages that may exist, and to which, if known, would materially affect his/her decision to execute this encroachment agreement, regardless of whether permittee's lack of knowledge is the result of ignorance, oversight, error, negligence, or any other cause.

17. (a) That the permittee, by the acceptance of this revocable permit, agrees and promises to indemnify, defend, and hold harmless the City of Oakland, its officers, agents, and employees, to the maximum extent permitted by law, from any and all claims, demands, liabilities, damages, actions, causes of action, penalties, fines, liens, judgments, costs, or expenses whatsoever (including, without limitation, attorneys' fees and costs;

collectively referred to as "claims"), whether direct or indirect, known or unknown, foreseen or unforeseen, to the extent that such claims were caused by the permittee, its agents, employees, contractors or representatives.

(b) That, if any contamination is discovered below or in the immediate vicinity of the encroachment, and the contaminants found are of the type used, housed, stored, processed or sold on or from the 7th Street, Oakland, California site, such shall amount to a rebuttable presumption that the contamination below, or in the immediate vicinity of, the encroachment was caused by the permittee, its agents, employees, contractors or representatives.

(c) That the permittee shall comply with all applicable federal, state, county and local laws, rules, and regulations governing the installation, maintenance, operation and abatement of the encroachment.

(d) That the permittee hereby does remise, release, and forever discharge, and agree to defend, indemnify and save harmless, the City, its officers, agents and employees and each of them, from any and all actions, claims, and demands of whatsoever kind or nature, and any damage, loss or injury which may be sustained directly or by the undersigned and any other person or persons, and arising out of, or by reason of, the occupation of said public property, and the future removal of the above-mentioned encroachment.

18. That the hereinabove conditions shall be binding upon the permittee and the successive owners and assigns thereof.

19. That said Minor Encroachment Permit and Agreement shall take effect when all the conditions hereinabove set forth shall have been complied with to the satisfaction of the Director of Planning & Building, and shall become null and void upon the failure of the permittee to comply with all conditions hereinabove set forth.

5. That upon the termination of the permission herein granted, permittee shall immediately remove said encroachment from the sidewalk and street area, and any damage resulting therefrom shall be repaired to the satisfaction of the Director of Planning & Building.

6. That the permittee shall file with the City of Oakland for recordation a Minor Encroachment Permit and Agreement, and shall be bound by and comply with all the terms and conditions of said permit.

7. That said permittee shall obtain an excavation permit prior to the construction and a separate excavation permit prior to the removal of the ground water monitoring wells.

8. That said permittee shall provide to the City of Oakland an AS BUILT plan showing the actual location of the ground water monitoring wells and the results of all data collected from the monitoring wells.

9. That said permittee shall remove the monitoring wells and repair any damage to the sidewalk or street area in accordance with City standards two (2) years after construction or as soon as monitoring is complete.

10. That said permittee shall notify the Office of Planning & Building after the monitoring well(s) is/are removed and the sidewalk or street area restored to initiate the procedure to rescind the minor encroachment permit.

11. That monitoring well covers installed within the sidewalk area shall have a skidproof surface. A precast concrete utility box may be used in conjunction with the bolted cast iron cover with City approval.

12. That the ground water monitoring well casting and cover shall be cast iron and shall meet H-20 load rating. The cover shall be secured with a minimum of two stainless steel bolts. Bolts and cover shall be mounted flush with the surrounding surface.

13. That the permittee acknowledges that the City makes no representations or warranties as to the conditions beneath said encroachment. By accepting this revocable permit, permittee agrees that it will use the encroachment area at its own risk, is responsible for the proper coordination of its activities with all other permittees, underground utilities, contractors, or workmen operating within the encroachment area and for the safety of itself and any of its personnel in connection with its entry under this revocable permit.

14. That the permittee acknowledges that the City is unaware of the existence of any hazardous substances beneath the

Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

Engineering Services Info
1330 Broadway, 2nd Flr
Oakland, CA 94612
(510) 238-4777

PERMIT NUMBER		SITE ADDRESS/LOCATION
X 9510348		1370 7th ST
APPROX. START DATE	APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number)
CONTRACTOR'S LICENSE # AND CLASS		CITY BUSINESS TAX #

ATTENTION:

1) State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444.
UNDERGROUND SERVICE ALERT (USA) #: _____

2) 48 hours prior to starting work, you must call (510) 238-3651 to schedule an inspection.

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 an 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 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 on 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&PC for this reason _____.

WORKER'S COMPENSATION

☐ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # _____ Company Name _____

☐ 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 Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Chapter 6, Article 2 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

X For Gregg Drilling: _____ 6/13/95

Signature of Permittee ☒ Agent-for ☒ Contractor ☐ Owner Date

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☐ NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) ☐ YES ☐ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☒ YES ☐ NO
ISSUED BY J. Curtis		DATE ISSUED 6-13-95	

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT KELLY'S TRUCK REPAIR
1390 7TH STREET
OAKLAND, CA

CLIENT
Name D. KELLY GREEN
Address P.O. BOX 210 Voice
City OAKLAND CA Zip 94604

APPLICANT
Name DEB UNDERWOOD OF BLYMER ENGINEERS
Fax 510 865 2994
Address 1829 CLEMENT AVE Voice 510 521 3773
City ALAMEDA CA Zip 94501

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	X
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE N/A

Domestic	___	Industrial	___
Municipal	___	Irrigation	___
		Other	___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. 485165

WELL PROJECTS

Drill Hole Diameter	6 in.	Maximum Depth	15 ft.
Casing Diameter	2 in.		
Surface Seal Depth	3-5 ft.	Number	1

GEOTECHNICAL PROJECTS N/A

Number of Borings	___	Maximum Depth	___ ft.
Hole Diameter	___ in.		

ESTIMATED STARTING DATE 4/14/95
ESTIMATED COMPLETION DATE 4/14/95

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

APPLICANT'S SIGNATURE Deborah Underwood Date 4/4/95
for Kelly's Truck Repair

FOR OFFICE USE

PERMIT NUMBER 95201
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 12 Apr 95
Wyman Hong

91602

Appendix B

BORE & WELL CONSTRUCTION LOG: MW-1

BLYMYER ENGINEERS, INC.

Job No.: 95024
Client: D. K. Green
Site: 1370 7th Street
Oakland, California
Date Drilled: June 14, 1995
Logged By: D. Underwood

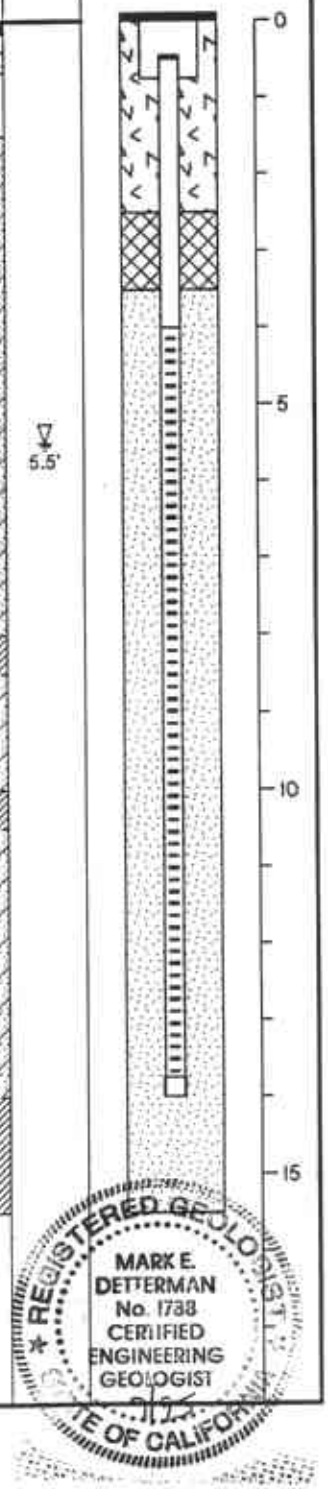
Drilling Company: Gregg Drilling & Testing
Driller: M. Hoover
Drilling Equipment: B-61 Hollow Stem Auger
Sample Method: Modified CA split-spoon
Bore Diameter: 8 in.
Total Depth: 15.5 ft.

Initial Water Depth: ▽ 5.5 ft.
Stabilized Water Depth: ▽

Well Completion Depth: 14 ft.

Component Size/Type	Depths in feet From	To
Surface Completion: Traffic-Rated Well Vault		
Surface Seal: Concrete	.00	2.50
Annular Seal: Bentonite	2.50	3.50
Seal: see above		
Sand Pack: #2/12 RMC Lonestar	3.50	15.50
Bottom Seal: N/A		
Blank Casing: 2" Diam. PVC	.50	4.00
Screened Casing: 0.01" Slot-2" Diam. PVC	4.00	14.00

Depth (ft.)	Blows/6 in.	P.I.D. (ppm)	Sample Intervals	LITHOLOGIC DESCRIPTION	Unified Soil Classification	Graphic Log	Water Depth
0				Hand-augered to 5 ft.			
				ASPHALT	A		
				CONCRETE	C		
				Void; maximum thickness of 10 in.			
				Orange-brown **clayey SAND**, with silt (from cuttings); 80% sand, mostly fine, fine to medium, subangular to subrounded; 20% fines; damp; no obvious odor	SC		
5	9 5			Brown to red-brown **clayey SAND**, with silt; 80% sand, mostly fine, fine to medium, subangular to subrounded; 20% fines; wet; trace amount of brick fragments at 5 ft.; no obvious odor; possibly fill			▽ 5.5'
	7 8	359		Mottled black and gray-green; wet; strong petroleum odor			
	11 23	29		Increased fine sediment content to 30% Gray-brown; moist; strong petroleum odor			
	8 9	21		Gray-brown **sandy CLAY**; 40% sand, fine; damp to moist; slight petroleum odor	CL		
	17 9			Gray-brown **clayey SAND**, with silt; 80% sand, mostly fine, fine to medium, subangular to subrounded; 20% fines; wet; slight petroleum odor	SC		
10	12 12	11		Moist	CL		
	5 9	68		Mottled brown and tan **sandy CLAY**; 40% sand, fine; moist; slight petroleum odor			
	13 5			Mottled light-brown and gray **clayey SAND**, with silt; 80% sand, mostly fine, fine to medium, subangular to subrounded; 20% fines; wet; slight petroleum odor	SC		
	5 8	11		Mottled dark and light brown and gray-green Mottled orange-brown and gray-green; increased fine sediment content to 30%; moist			
	5 8	20		Mottled dark brown, tan, and gray; slight petroleum odor	CL/SC		
15	9			Mottled light brown, gray, and orange-tan **sandy CLAY/clayey SAND**, with silt; 50% sand, fine; 50% fines; wet; slight petroleum odor			
				Moist			
				Bore terminated at 15.5 ft.			



REGISTERED GEOLOGIST
MARK E. DETTERMAN
No. 1738
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Appendix C

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

4080 Pike Lane
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
(800) 423-7143 Outside CA
(510) 825-0720 FAX

July 21, 1995

D. Underwood
Blymyer Engineers, Inc.
1829 Clement Ave.
Alameda, CA 94501-1396

RE: GTEL Client ID: BEI01BEI01
Login Number: C5060174
Project ID (number): 95024
Project ID (name): K. Green/1370 7th St., Oakland, CA

Dear D. Underwood:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 06/15/95.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes.

GTEL is certified by the Department of Health Service under Certification Number E1075.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Rashmi Shah
Laboratory Director

Client Number: BEI01BEI01
Project ID: K. Green
1370 7th St.
Oakland, CA
Work Order Number: C5-06-0174
Date Reissued: 07-27-95

ANALYTICAL RESULTS

TPH as Diesel in Soil

Method: Modified EPA 8015[a]

GTEL Sample Number		01[d]	GCJ 061895		
Client Identification		MW-1-5.5'	METHOD BLANK		
Date Sampled		06/14/95	--		
Date Extracted		06/17/95	06/17/95		
Date Analyzed		06/21/95	06/18/95		
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
TPH as diesel[c]	10	<10[d]	<10		
Kerosene (C8-C14)	10	400[b]	<10		
Detection Limit Multiplier		2	1		
OTP surrogate, % recovery		88.4	109		

a. O-Terphenyl surrogate recovery acceptability limits of 50-150% are derived from the 99% confidence interval of all samples during the previous quarter.
b. Hydrocarbon pattern within the range of kerosene. However, pattern is characteristic of weathered and/or degraded gasoline.
c. Due to method limitations and high concentration of target analyte the detection limit of diesel is reported at 10 mg/Kg.
d. The results for Diesel were reported from a non diluted analysis.

Client Number: BEI01BEI01
Project ID: K. Green
1370 7th St.
Oakland, CA
Work Order Number: C5-06-0174
Date Reissued: 07-24-95

ANALYTICAL RESULTS

TPH as Gasoline in Soil

EPA Method 8015[a]

GTEL Sample Number		01			
Client Identification		MW-1-5.5'			
Date Sampled		06/14/95			
Date Extracted		06/20/95			
Date Analyzed		06/20/95			
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
TPH as gasoline	1	2500			
Detection Limit Multiplier		10			
BFB surrogate, % recovery		115			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 60 - 119%

GTEL Client ID: BEI01BEI01
Login Number: C5060174
Project ID (number): 95024
Project ID (name): K. Green/1370 7th St., Oakland, CA

ANALYTICAL RESULTS

Volatile Organics
Method: EPA 8020
Matrix: Solids

GTEL Sample Number	C5060174-01	--	--	--
Client ID	MW-1-5.5'	--	--	--
Date Sampled	06/14/95	--	--	--
Date Analyzed	06/20/95	--	--	--
Dilution Factor	10.0	--	--	--

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
Benzene	0.005	mg/kg	0.26	--	--	--
Toluene	0.005	mg/kg	2.0	--	--	--
Ethylbenzene	0.005	mg/kg	4.3	--	--	--
Xylenes (total)	0.015	mg/kg	19.	--	--	--
BFB (Surrogate)	--		115.	--	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. BFB surrogate recovery acceptability limits are 60 - 119 %.

GTEL ENVIRONMENTAL LABORATORIES, INC.

GTEL Client ID: BEI01BEI01 QUALITY CONTROL RESULTS
Login Number: C5060174 Volatile Organics
Project ID (number): 95024 Method: EPA 8020
Project ID (name): K. Green/1370 7th St., Oakland, CA Matrix: Solids

Method Blank Results

QC Batch No: A062095-1
Date Analyzed: 26-JUN-95

Analyte	Method: EPA 8020	Concentration: mg/kg
Benzene	< 0.020	
Toluene	< 0.020	
Ethylbenzene	< 0.020	
Xylenes (Total)	< 0.060	

Notes:

GTEL ENVIRONMENTAL LABORATORIES, INC.

BLYMYER ENGINEERS, INC.
1829 Clement Avenue
Alameda, CA 94501 (510) 521-3773 FAX (510) 865-2594

Soil

CHAIN OF CUSTODY RECORD

JOB # 95024

PROJECT NAME/LOCATION: K. GREEN 1370 7th St. OAKLAND, CA

SAMPLERS (SIGNATURE): D. UNDERWOOD [signature]

TURNAROUND TIME: NORMAL DAY(S)

DATE	LAB #	COMP	GRAB	SAMPLE NAME/LOCATION	# OF CONTAINERS	TPH AS GASOLINE + BTXE (MOD EPA 8015/8020)	TPH AS DIESEL (MOD EPA 8015) AND KEROSENE	VOC (EPA 624/8240)	SEMI-VOC (EPA 625/8270)	TRPH (EPA 418.1)	BTXE (EPA 8020/602)						HOLD	REMARKS
6/14/95	01		X	MW-1-5.5'	1		X				X							
6/14/95	02		X	MW-1-9'	1		↓				↓						X	HOLD
6/14/95	03		X	MW-1-10.5'	1		↓				↓						X	HOLD
6/14/95	04		X	MW-1-13'	1		↓				↓						X	HOLD
6/14/95	05		X	MW-1-15'	1		↓				↓						X	HOLD

BCN 06/22/95

REQUESTED BY: D. UNDERWOOD

RESULTS AND INVOICE TO: BLYMYER ENGINEERS, INC. 1829 CLEMENT AVE. ALAMEDA, CA 94501

RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)
[signature]	6/14 345	John Weber			

RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE / TIME	REMARKS
John Weber	6/15/95 08:30	Brian L. Cof	6/15/95 0830	ON ICE AS 4°C C5060174 D1/2 Y-FREEZER BHIE

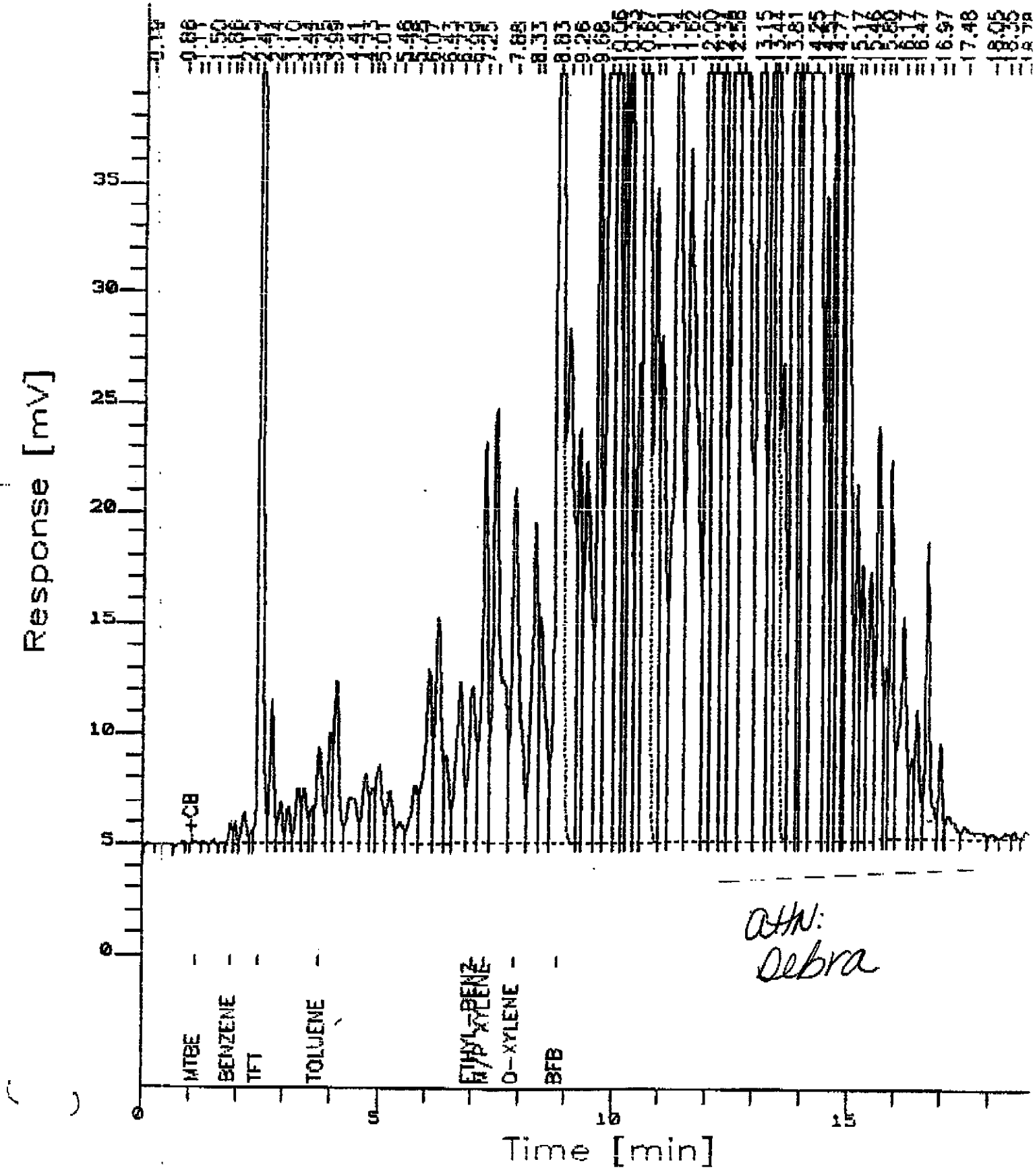
WHITE: Accompany Sample YELLOW: BEI, After Lab Signs PINK: Original Sampler

SOIL

Chromatogram

Sample Name : 960617401 X 10 6/20A EXT
FileName : E:\GC_AIRFO\171A005.raw
Method : AB602M.ins
Start Time : 0.00 min End Time : 20.00 min
Scale Factor: 0 Plot Offset: 0 mV

Sample #: 5 Page 1 of 1
Date : 6/20/95 10:40 AM
Time of Injection: 6/20/95 10:20 AM
Low Point : 0.00 mV High Point : 40.00 mV
Plot Scale: 40 mV



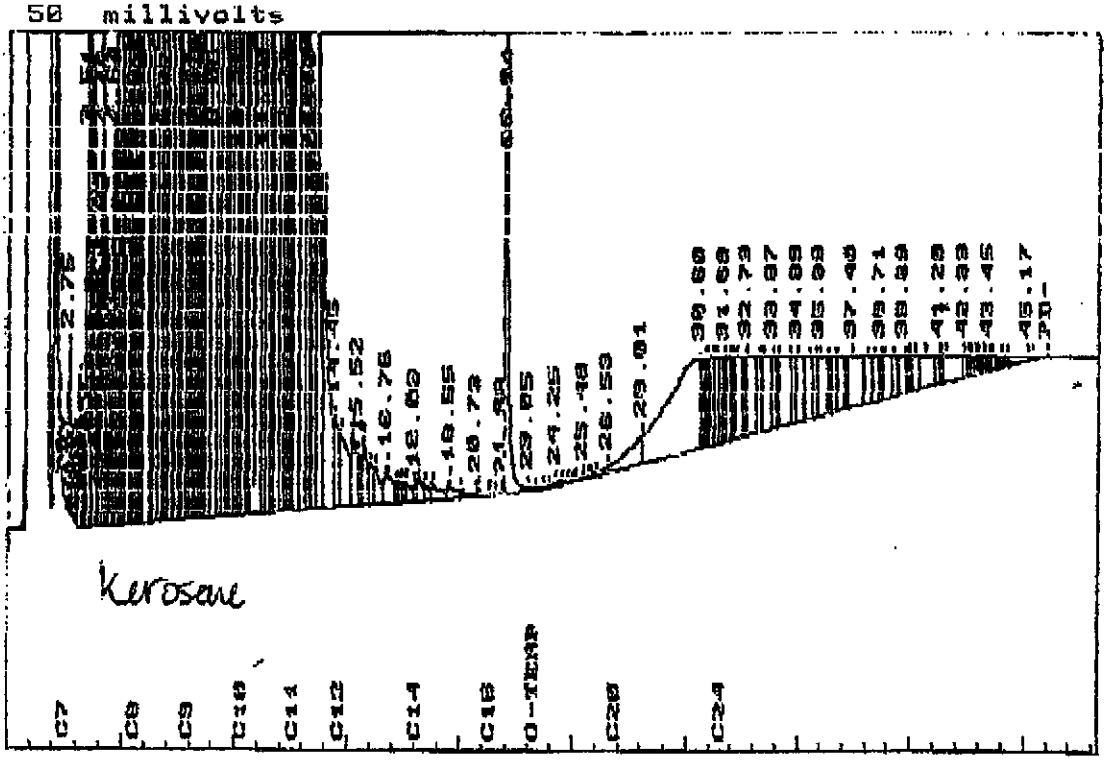
ATTN: Debra

138	36.760	10057	0.0042	2	4728	1.4	21.3
139	37.400	1657	0.1555	2	4445	2.6	41.8
140	38.067	87721	0.0735	2	4053	1.266	21.6
141	38.360	73477	0.0615	2	3890	1.061	18.9
142	38.707	29782	0.0249	2	3716	0.430	8.0
143	38.800	100121	0.0839	2	3679	1.447	27.2
144	39.227	54297	0.0455	2	3459	0.784	15.7
145	39.693	64651	0.0541	2	3215	0.933	20.1
146	39.827	20223	0.0169	2	3138	0.292	6.4
147	39.933	17401	0.0145	2	3094	0.250	5.6
148	39.987	13423	0.0112	2	3073	0.194	4.4
149	40.200	70367	0.0589	2	3012	1.015	23.3
150	40.653	113353	0.0951	2	2753	1.639	41.2
151	41.260	29166	0.0244	2	2415	0.421	12.1
152	41.373	15378	0.0129	2	2434	0.222	6.3
153	41.520	117397	0.0983	2	2445	1.695	48.0
154	42.333	26179	0.0219	2	1864	0.378	14.0
155	42.567	11065	0.0093	2	1722	0.160	6.4
156	42.640	16017	0.0134	2	1705	0.231	9.4
157	42.813	18978	0.0159	2	1603	0.274	11.8
158	42.973	11974	0.0100	2	1525	0.173	7.9
159	43.147	7907	0.0066	2	1420	0.114	5.6
160	43.240	7666	0.0064	2	1377	0.111	5.6
161	43.453	10043	0.0084	2	1266	0.145	7.9
162	43.587	18538	0.0156	2	1207	0.269	15.4
163	44.000	9646	0.0081	2	1015	0.139	9.5
164	44.293	12746	0.0107	2	867	0.184	14.7
165	45.173	30673	0.0254	2	404	0.438	75.1
166	45.320	8558	0.0072	3	342	0.124	25.0

Total Area: 1194245~~55~~ Area Rejects: 100 One sample per 0.800 sec.

$\frac{-8528}{(10896)(0.0330)} = 3660$ ppm calib range

Data File = D:JUN17J14.PTS Printed on 06-18-1995 at 03:53:33
Start time: 0.00 min. Stop time: 48.25 min. Offset: 0 mv.
Full Range: 50 millivolts



GTEL
ENVIRONMENTAL
LABORATORIES, INC.

4080 Pike Lane
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
(800) 423-7143 Outside CA
(510) 825-0720 FAX

July 21, 1995

D. Underwood
Blymyer Engineers, Inc.
1829 Clement Ave.
Alameda, CA 94501-1396

RE: GTEL Client ID: BEI01BEI01
Login Number: C5060271
Project ID (number): 95024
Project ID (name): K. Green/1370 7th St., Oakland, CA

Dear D. Underwood:

This report, previously dated 07/21/95, is a reissue.

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 06/23/95.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes.

GTEL is certified by the Department of Health Service under Certification Number E1075.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Edwin Padua
for,

Rashmi Shah
Laboratory Director

Client Number: BEI01BEI01
Project ID: K.Green
1370 7th St.
Oakland, CA
Work Order Number: C5-06-0271
Reissued Date: 07-24-95

ANALYTICAL RESULTS

Hydrocarbons in Water

Method: GC-FID[a]

GTEL Sample Number		01[b]	GCJ 062895		
Client Identification		MW-1	METHOD BLANK		
Date Sampled		06/23/95	--		
Date Extracted		06/27/95	06/27/95		
Date Analyzed		06/29/95	06/28/95		
Analyte	Detection Limit, ug/L	Concentration, ug/L			
TPH as kerosene (C8-C14)	50	4000[c]	<50		
TPH as diesel fuel	50	<50	<50		
Detection Limit Multiplier		1	1		
O-Terphenyl surrogate, % recovery		112	117		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, USEPA, November, 1986. O-Terphenyl surrogate acceptability limits are 50-150%.

b. Results based on multiple dilutions.

c. Hydrocarbon pattern within kerosene range. However, pattern is characteristic of weathered and/or degraded gasoline.

GTEL ENVIRONMENTAL LABORATORIES, INC.

Client Number: BEI01BEI01
Project ID: K.Green
1370 7th St.
Oakland, CA
Work Order Number: C5-06-0271
Reissued Date: 07-24-95

ANALYTICAL RESULTS

TPH as Gasoline in Water

EPA Method 8015[a]

GTEL Sample Number		01			
Client Identification		MW-1			
Date Sampled		06/23/95			
Date Analyzed		06/28/95			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
TPH as gasoline	1	5500[b]			
Detection Limit Multiplier		1			
BFB surrogate, % recovery		82.2			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 60 - 119%

b. Estimated concentration: Result is greater than highest calibration level.

GTEL Client ID: BEI01BEI01
Login Number: C5060271
Project ID (number): 95024
Project ID (name): K. Green/1370 7th St., Oakland, CA

ANALYTICAL RESULTS

Volatile Organics
Method: EPA 8020
Matrix: Aqueous

GTEL Sample Number	C5060271-01	--	--	--
Client ID	MW-1	--	--	--
Date Sampled	06/23/95	--	--	--
Date Analyzed	06/28/95	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting Limit	Units	Concentration:			
Benzene	0.3	ug/L	140	--	--	--
Toluene	0.3	ug/L	19.	--	--	--
Ethylbenzene	0.3	ug/L	3.2	--	--	--
Xylenes (total)	0.5	ug/L	240	--	--	--
BFB (Surrogate)	--	%	82.2	--	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1.

GTEL ENVIRONMENTAL LABORATORIES, INC.

GTEL Client ID: BEI01BEI01 QUALITY CONTROL RESULTS

Login Number: C5060271 Volatile Organics

Project ID (number): 95024 Method: EPA 8020

Project ID (name): K. Green/1370 7th St., Oakland, CA Matrix: Aqueous

Method Blank Results

QC Batch No: M062795-15

Date Analyzed: 27-JUN-95

Analyte	Method: EPA 8020 Concentration: ug/L
Benzene	< 0.30
Toluene	< 0.30
Ethylbenzene	< 0.30
Xylenes (Total)	< 0.50

Notes:

GTEL ENVIRONMENTAL LABORATORIES, INC.

BLYMYER
ENGINEERS, INC.
1829 Clement Avenue
Alameda, CA 94501 (510) 521-3773 FAX (510) 865-2594

CHAIN OF CUSTODY RECORD

JOB # 95024

PROJECT NAME/LOCATION: K. Green / Oakland CA

SAMPLERS (SIGNATURE): Stephen W Mann

LAB #	DATE	TIME	COMP	GRAB	SAMPLE NAME/LOCATION	# OF CONTAINERS	TPH AS GASOLINE + BTXE (MOD EPA 8015/8020)	TPH AS DIESEL (MOD EPA 8015) *	VOC (EPA 624/8240)	SEMI-VOC (EPA 625/8270)	TRPH (EPA 418.1)	BTXE (EPA 8020/602)	HOLD
01	6/23/95	1040		X	mw-1	5		X				X	

TURNAROUND TIME: Standard DAY(S)

REMARKS:

* Please run for TPH-d and Kerosene by mod 8015

4°C

Rec'd on ice at 5°C

REQUESTED BY: Debra Underwood

RESULTS AND INVOICE TO: Blymyer Engineers, Inc

RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)
Stephen W Mann	6/23/95 1420	Joan Weber
Joan Weber	6/23/95 1620	Brian L. Cy

RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)

DATE / TIME: 6/23/95 1620

REMARKS: GTEL C5060271

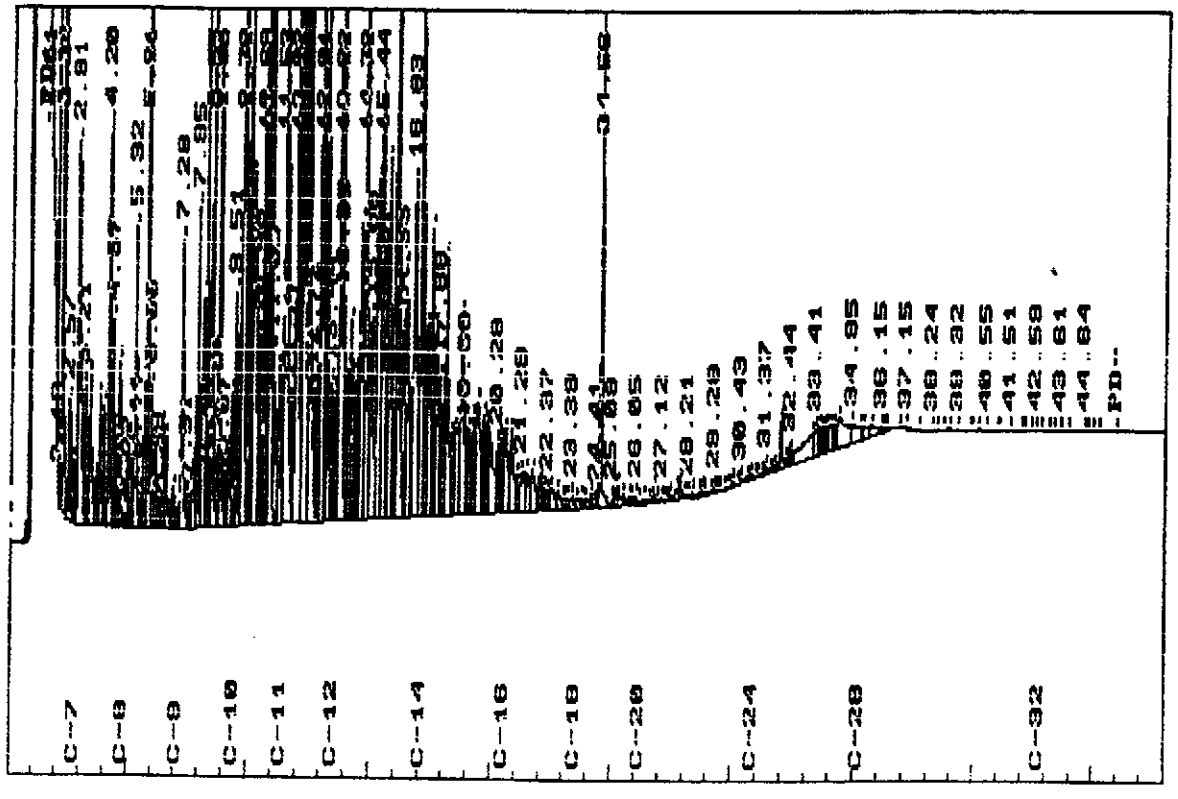
WHITE: Accompany Sample YELLOW: BEI, After Lab Signs PINK: Original Sampler

200	36.907	1359	0.0031	2	120	0.028	11.3
201	37.147	3169	0.0073	2	340	0.065	9.3
202	37.667	208	0.0005	1	47	0.004	4.4
203	38.240	1227	0.0028	2	92	0.025	13.4
204	38.413	969	0.0022	2	80	0.020	12.1
205	38.680	662	0.0015	2	80	0.014	8.3
206	38.933	3382	0.0078	2	226	0.069	14.9
207	39.320	547	0.0013	2	66	0.011	8.3
208	39.853	2734	0.0063	2	166	0.056	16.4
209	39.907	2612	0.0060	2	191	0.054	13.7
210	40.200	3366	0.0077	2	225	0.069	14.9
211	40.547	1534	0.0035	2	111	0.032	13.9
212	40.973	676	0.0016	2	163	0.014	4.1
213	41.040	2218	0.0051	2	197	0.046	11.3
214	41.507	470	0.0011	1	60	0.010	7.9
215	42.013	254	0.0006	2	50	0.005	5.0
216	42.133	769	0.0018	2	77	0.016	10.0
217	42.427	263	0.0006	2	55	0.005	4.8
218	42.587	413	0.0009	2	64	0.008	6.5
219	42.840	170	0.0004	2	44	0.003	3.9
220	43.147	767	0.0018	2	78	0.016	9.9
221	43.333	410	0.0009	2	41	0.008	10.1
222	43.613	546	0.0013	2	70	0.011	7.9
223	43.960	408	0.0009	2	7	0.008	60.8
224	44.213	389	0.0009	2	-67	0.008	-5.8
225	44.213	356	0.0008	2	-67	0.007	-5.3
227	44.640	310	0.0007	2	37	0.006	8.3
228	44.760	190	0.0004	2	65	0.004	2.9
229	44.947	173	0.0004	2	34	0.004	5.1
231	45.267	149	0.0003	2	36	0.003	4.1

Total Area: 43475952 Area Reject: 100 One sample per 0.800 sec.

MW-1 by extractio

Data File = D:JUN27K33.PTS Printed on 06-29-1995 at 03:59:55
Start time: 0.00 min. Stop time: 48.00 min. Offset: 0 mv.
Full Range: 100 millivolts



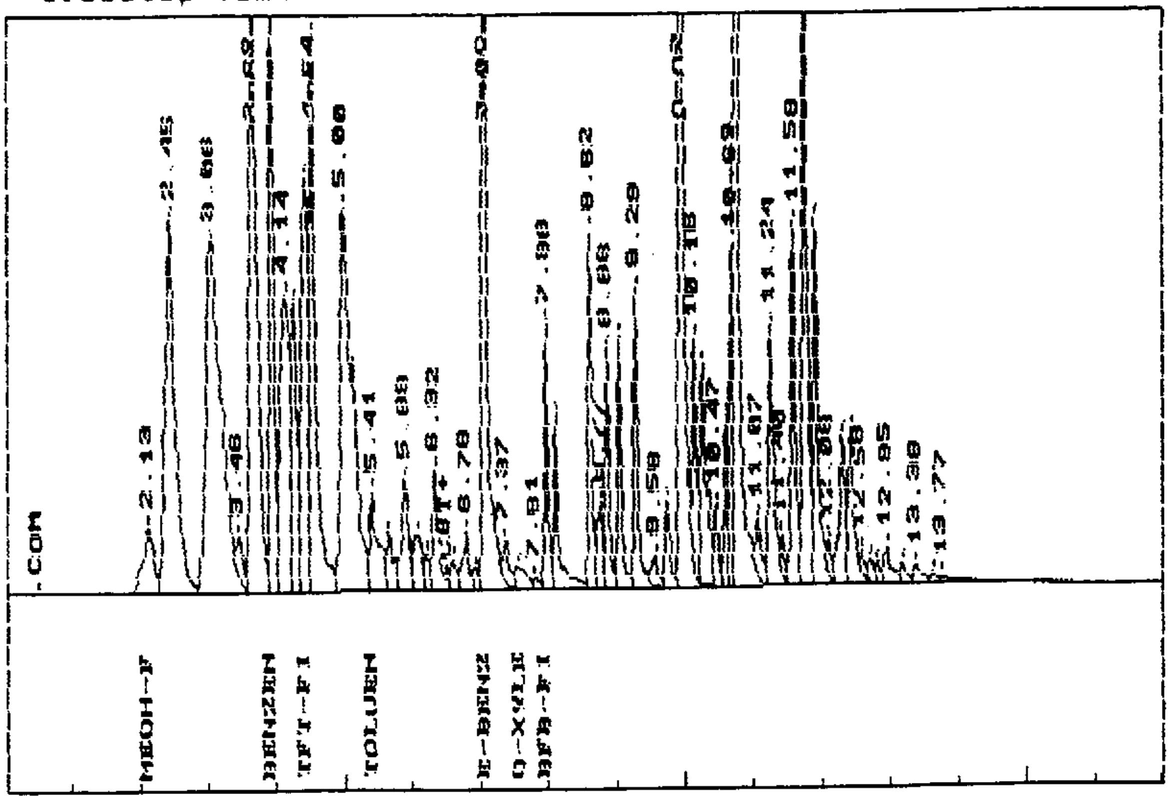
48	12.297	81.5784	1.1452%	44140	7140	6.2 2	[illegible]
49	12.431	98.7834	1.3868%	53454	7488	7.1 3	1.8480E-03
50	12.578	10.5522	0.1481%	5710	1032	5.5 4	1.8480E-03
51	12.712	13.0081	0.1826%	7039	1130	6.2 4	1.8480E-03
52	12.819	10.1292	0.1422%	5481	998	5.5 2	1.8480E-03
53	12.952	23.9478	0.3362%	12959	1721	7.5 2	1.8480E-03
54	13.100	10.3114	0.1448%	5580	938	6.0 2	1.8480E-03
55	13.380	13.2238	0.1856%	7156	809	8.8 2	1.8480E-03
56	13.634	5.7684	0.0810%	3121	440	7.1 2	1.8480E-03
57	13.768	5.4473	0.0765%	2948	270	10.9 2	1.8480E-03

TOTAL AMOUNT = 7123.1089

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
MEOH-FID	2.12	TFT-FID
MP XYLENE-FID	7.20	BFB-FID
END PEAK	50.51	BFB-FID

Plot of data file: C:KUN27M19.PTS
Date: 06-30-1995 Time: 16:19:37
Sample Name: 06027101 MW1
Start Time= 0.01Stop Time = 17.02Min. Scale= -1000Max. Scale= 29000



MW-1

Appendix D

GREGG

MONITORING WELL DEVELOPMENT LOG

Page ____ of ____

All measurements taken from: ☒ Top of Casing ☐ Protective Casing ☐ Ground Level

Sample ID ____

Well Number ____
Date 6/20/95
Time Start: ____ End: ____
Client Blymyer
Project 1370 - 7th St. Oakland
Job Number ____
Installation Date ?
Well Diameter 2"

Borehole Diameter 8"
Screen Length ?
Measured Depth (pre-development) 14.49
Measured Depth (post-development) ____
Static Water Level (ft.) 5.03
Standing Water Column (ft.) 9.46 x .17
One Well Volume (gal.) 1.6
One Annulus Vol. (gal.) ____

Qty. of Drilling Fluid Lost ____
Minimum Gal. to be Purged ____
Development Method Surge, Bail
____
Purging Equipment ____
Water Level Equipment Solonst
pH/EC Meter HyDAC
Turbidity Meter Hf Scientific
Other ____

Time	Amount Purged (gal)	Field Parameters Measured: EC X/00	pH	Temp.	Turbidity	PID			Comments	Field Tech.
9:40	3	13.76	6.91	71.5	>200				Solid Bottom - Odor in Water - Slow recharge	
9:49	6	13.16	6.57	68.7	>200				Pumping w/12V pump	
10:07	10	10.17	6.85	77.5	>200				Well dewatered	
10:22	13	8.56	6.86	70.1	>200					
10:29	15	9.63	6.99	70.4	"					
10:41	17	7.47	6.72	70.2	"					

JUL 1995
RECEIVED

FINAL FIELD PARAMETER MEASUREMENTS

Appendix E

Well Purging and Sampling Data

Date	6/23/95	Project Number	95024	Project Name	K. Green
Well Number	MW-1	Boring Diameter	N/A	Casing Diameter	2"

Column of Liquid in Well		Volume to be Removed	
Depth to product	N/A	Gallons per foot of casing	= 0.17 gal/ft.
Depth to water	5.08 ft.	Column of water	x 9.32 ft.
Total depth of well	14.40 ft.	Volume of casing	= 1.58 gal.
Column of water	9.32 ft.	No. of volumes to remove	x 3
		Total volume to remove	= 4.74 gal.

Method of measuring liquid	Oil/water interface probe
Method of purging well	Disposable polyethylene bailer
Method of decontamination	Liqui-nox and distilled water

Physical appearance of water (clarity, color, particulates, odor)	
Initial	Clear, no odor
During	Silty, tan color, no odor
Final	Silty, tan color, no odor

Field Analysis	Initial	During		Final
Time	09:48	09:56	10:01	10:05
Temperature (F)	71.7	70.4	69.8	69.9
Conductivity (us/cm)	646	794	780	817
pH	7.10	6.84	6.80	6.71
Method of measurement	Hydac meter			
Total volume purged	5.25 gal.			
Comments	Sampled with disposable polyethylene bailer			

Sample Number	Amount of Sample
MW-1	3-40ml VOAs w/ HCl
	2-1L amber bottles

Signed/Sampler	Stephen W Moore	Date	6/23/95
Signed/Reviewer	[illegible]	Date	7/6/95