SOIL EXCAVATION AND REMEDIATION REPORT
FORMER TEXACO SERVICE STATION
424 MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA
JUNE 5, 1990

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INTRODUCTION

This remediation report presents the criteria for the soil excavation and the results of the on-site remediation of approximately 1,000-cubic yards of excavated soil at the former Texaco Service Station located at 424 Martin Luther King, Jr. Way in Oakland, California (Figure 1). This report covers the period from July, 1988 through March, 1990.

WORK PERFORMED

The work performed during the remediation of the site included a soil sample survey, the destruction of two groundwater monitoring wells, and the excavation of approximately 1,000 cubic yards of soil. Also included in this report are the remediation procedures and results, as well as the procedures and results of the groundwater-monitoring well sampling events.

SOIL SAMPLE SURVEY

On July 20, 1988, a permit was received from the Alameda County Flood Control and Water Conservation District for a subsurface soil-sample survey. A mobile analytical laboratory was contracted on July 27, 1988, to test soil samples from various locations around the former tank pit and pump island areas. Each soil borehole was created by driving a 3/4-inch,

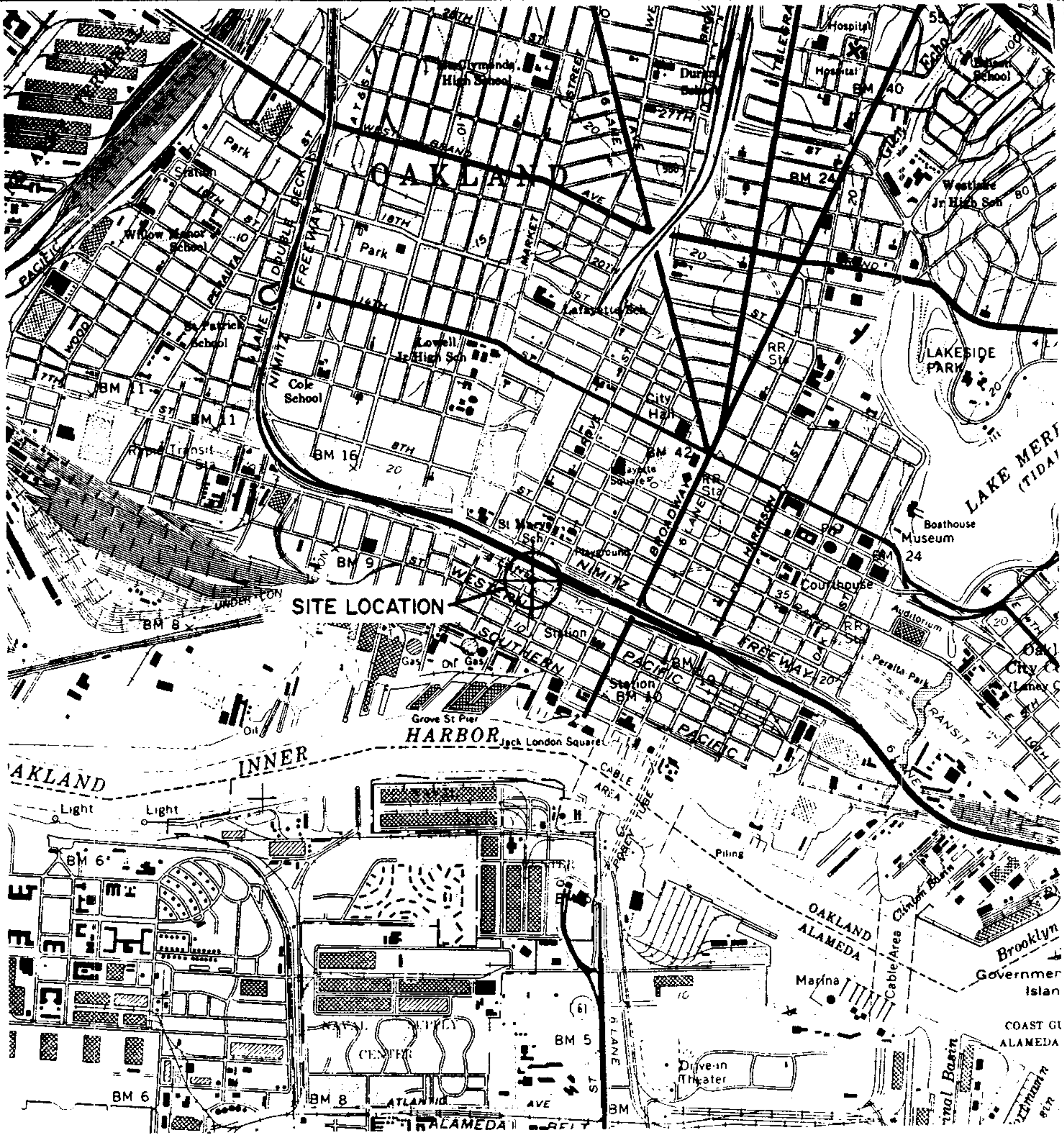

FIGURE 1
SITE LOCATION MAP

N

0 MILES 1

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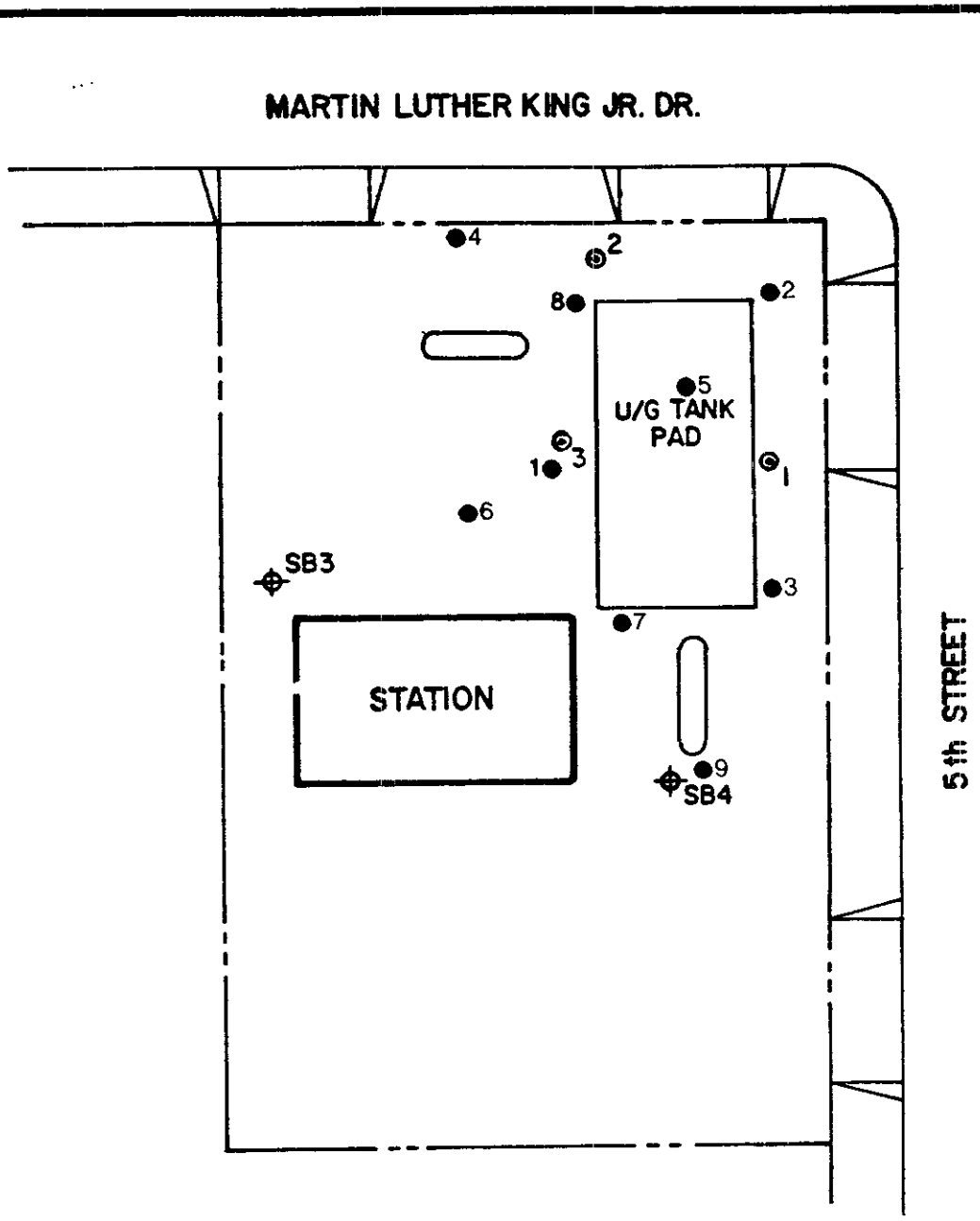
outside-diameter (O.D.), solid-steel rod to subsurface depths of approximately 8-1/2 to 11-feet by using an electric hammer. The rod was then removed from the borehole and a smaller, 5/8-inch, O.D. steel rod, equipped with a 3/8-inch, O.D., by 6-inch-long stainless-steel soil-sampling tube was inserted and lowered to the bottom of the hole. The sampling tube was lined with a Teflon^{R} sample tube. The Teflon^{R} lined sampling tube was driven 6 inches beyond the bottom of the borehole and then removed. The Teflon^{R} sample tube was then given to the on site mobile laboratory for analysis. Soil samples from 9 boreholes were tested in the Mobile Lab by Gas Chromatography (GC) using U.S. Environmental Protection Agency (EPA) modified Method 8015. Subsequent soil sampling locations (Figure 2) were selected in part by the analytical test results provided by the mobile laboratory. Each new soil sample location was based upon the analysis results from the previous soil samples. Duplicate soil samples were collected from soil sample locations 2, 4, and 8. These duplicate soil samples were taken to a State of California-certified laboratory for analyses for the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH)-as-gasoline using modified EPA Method 5030/8020/8015.

GROUNDWATER-MONITORING WELL ABANDONMENT

Groundwater-monitoring wells located inside the area to be excavated were abandoned before the excavation of the soil began. On August 12, 1988, a permit was obtained from the Alameda County Flood and Water Conservation District for the destruction of up to three monitoring wells. On September 15, 1988, two 2-inch groundwater-monitoring wells, MW-1 and MW-3, each approximately



LEGEND

- ⊙ MONITORING WELL
- ⊕ SOIL BORING
- ● SOIL SAMPLE LOCATION

FIGURE 2
SITE PLAN

N

0 FEET 30

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30-feet deep, were destroyed. A mobile drilling rig equipped with a 8-1/2-inch (O.D.) hollow-stem auger system was used to bore around the 2-inch polyvinyl chloride (PVC) casing of each monitoring well. The PVC casing with the associated cement-bentonite sanitary seal and the No. 2 sand pack around the PVC casing were removed from each monitoring well during the abandonment. Neat cement grout, a pure cement and water mixture, was pumped through the hollow augers to the bottom of the reamed out boreholes using a tremie pipe. The neat cement grout was placed into the boreholes from the bottom in 5-foot lifts as the hollow augers were removed to prevent borehole collapse. Each of the abandoned monitoring-well boreholes were filled with the neat cement grout to grade and leveled to conform to the parking lot surface.

Monitoring well MW-2 was outside the defined limits of the hydrocarbon-impacted soils and did not require destruction.

SOIL EXCAVATION

The work plan for the soil excavation and for the on-site remediation of the hydrocarbon-impacted soils was reviewed by Alameda County Health Care Services and was accepted on November 16, 1988.

Soil excavation took place from December 13 through December 16, 1988. A mobile bucket loader was used for the removal of the suspected soils. The soil was stockpiled along the sides of the excavation for the later construction of a soil treatment pile utilizing a controlled soil-venting and biodegradation system. As the soil excavation continued, two soil samples were collected each day to document the progress of the removal of the suspected

soils. Soil samples were taken to a State of California-certified laboratory to be analyzed for the presence of BTEX and TPH-as-gasoline using modified EPA Methods 5030/8020/8015. Additional soil samples were also collected to be analyzed for the presence of phosphate and ammonium by SM429 and WM417E methods, respectively, in order to obtain information for the design of the bioremediation system. The excavation work was discontinued on December 16, 1988, when the analytical results for the collected soil samples were less than Practical Quantitation Levels (<PQL), indicating that all of the hydrocarbon-impacted soil had been removed. The excavated pit reached a maximum depth of approximately 18 feet near the center of the excavation.

The soil excavation was backfilled with rod mill pea gravel to a depth of approximately 8-feet below grade. The rod mill pea gravel was field tested with a nuclear gauge for compaction by comparison with a compaction curve prepared earlier from a bulk sample. The remaining 8 feet of the excavation was backfilled with clean imported soil by a contractor. The imported clean soil was tested for compaction. The results of the compaction tests performed on the rod mill pea gravel and the imported soil are presented in Appendix A.

SOIL REMEDIATION

The stockpiled hydrocarbon-impacted soil was removed from along the sides of the excavation for the construction of a soil pile utilizing an aboveground aeration/biodegradation treatment system. A backhoe was used for the soil pile construction. A high-density, polyethylene liner was placed on the surface of the parking lot, and approximately 4 feet of hydrocarbon-impacted soil was placed on top of the liner. The base of the soil pile

was approximately 40-feet-wide and 60-feet-long. Three equal lengths of 2-inch, machine-slotted, Schedule 40 PVC well screen were then placed across the soil pile spaced about 10 feet apart across the short dimension. The soil pile was sprayed with a mixture of nutrient-laden water to enhance the development of the naturally occurring microbial flora which would degrade the hydrocarbons. Another 4-foot lift of hydrocarbon-impacted soil was then placed on the soil pile and two equal lengths of 2-inch slotted Schedule 40 PVC were placed at equal distances on top of the soil pile. The soil pile was again sprayed with the nutrient-laden water mixture, as before, and the remaining excavated soil was placed on top, creating a soil pile approximately 12-feet high. The nutrient-laden water mixture was then sprayed over the entire soil pile before it was covered with a wind-resistant tarp to prevent evaporation. The open-ended 2-inch slotted Schedule 40 PVC well screen was then attached to a manifold made of 2-inch diameter PVC pipe and air was pulled through the soil pile by a high-vacuum blower. The effluent air from the high-vacuum blower was vented through two 150-pound vapor-phase granular-activated-carbon canisters in series to remove volatilized hydrocarbons from the effluent air (Figure 3). Permission to operate the aboveground aeration/bioremediation system was granted by the Bay Area Air Quality Management District (BAAQMD) on November 7, 1989, for an initial testing and start up of the system (Appendix B).

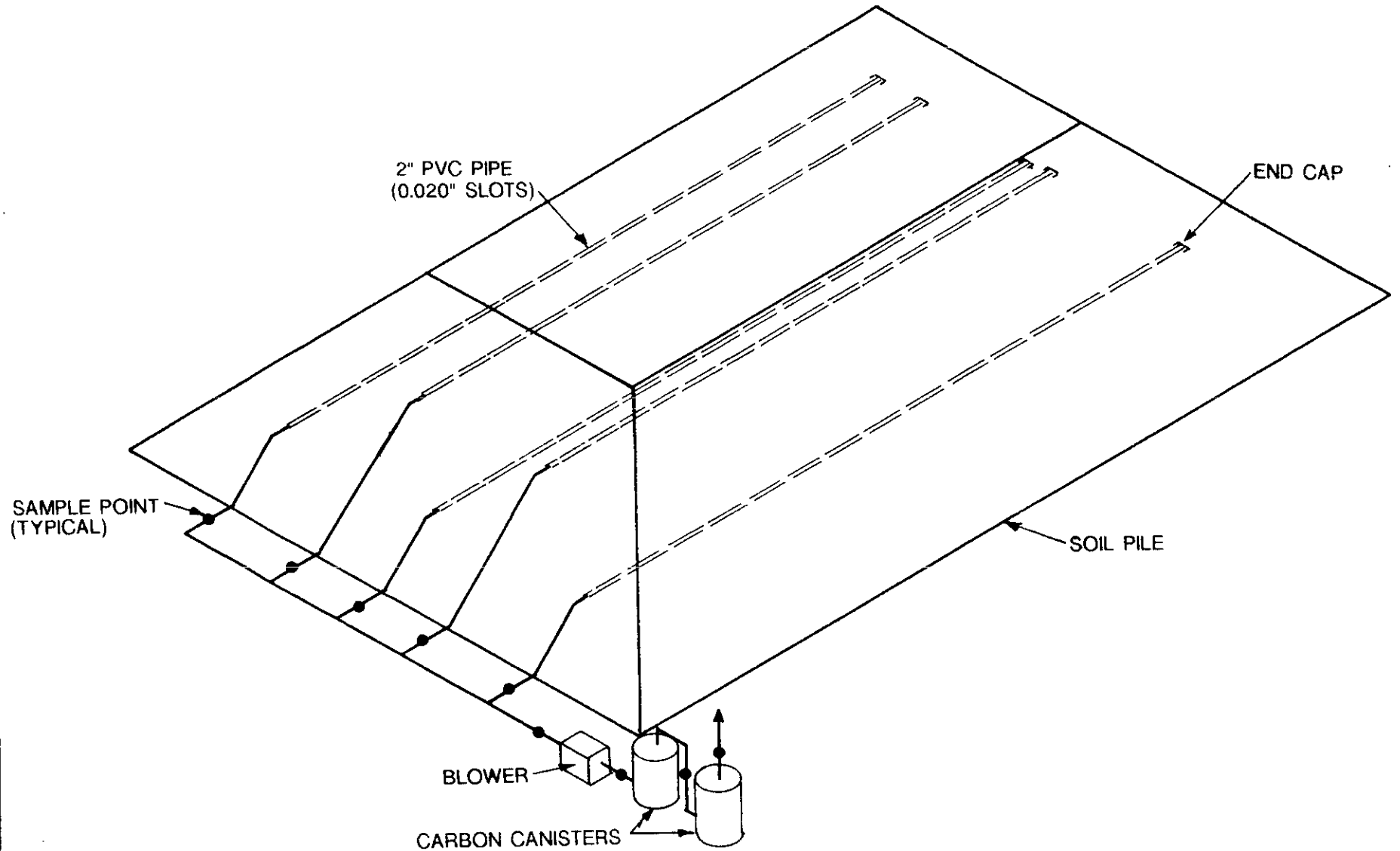

FIGURE 3
SPATIAL ARRANGEMENT OF VENT LINES

NO SCALE

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SOIL SAMPLING

Four soil samples were collected from the corners of the soil pile on February 1, 1989, after the initial start up test of the aeration system was completed. Four more soil samples were collected on May 9, 1989. Ten soil samples were collected on May 31, 1989, using a grid system that divided the soil pile into ten equal parts. A single soil sample was collected on June 22, 1989, from Section 10 of the grid system for additional documentation of the treatment of the soil pile.

On February 1, 1989, the soil samples were collected at approximately 3.5-feet below the top of the soil pile. On May 9, 1989, the soil samples were collected at depths of approximately 5 feet to 7 feet. On May 31, 1989, and June 22, 1989, the soil samples were collected at depths of approximately 1.5- to 2-feet.

Soil sample collection was accomplished by digging a pilot hole for a hand-driven soil auger. The hand-driven soil sampler, fitted with a 2-inch-diameter by 6-inch-long brass soil sampling tube was driven down approximately 12 inches into the soil for the actual sample collection. The soil sample in the brass tube was retrieved from the borehole and removed from the hand sampler. Both ends of the brass tube was covered with aluminum foil, fitted with plastic caps over the aluminum foil, and finally sealed with tape. A cloth label bearing the sample identification number, job number, type of analysis requested, time and the preparer's initials were placed onto the soil samples and the prepared sample was sealed in a plastic bag. The labeled brass tubes in the plastic bags were placed on ice inside an insulated cooler chest for transportation to a State of California-certified laboratory for analysis.

A Chain-of-Custody Manifest was filled out during each collection and handling, and it accompanied the soil samples until they were relinquished at the laboratory. The soil samples were analyzed for the presence of BTEX and TPH-as-gasoline using modified EPA Method 5030/8020/8015. Additional tests were also conducted for organic lead per California Department of Health Services (DHS) recommended methodology.

GROUNDWATER MONITORING

Groundwater-monitoring well MW-2 was monitored on March 28, 1990, for the depth-to-water (DTW) and to check for separate-phase hydrocarbons. Monitoring well MW-2 was left intact to monitor the effectiveness of the excavation and remediation work. Monitoring wells MW-1 and MW-3 were abandoned prior to the soil excavation. Monitoring well MW-2 is located downgradient of the excavation and should serve as a good indicator of the remediation effectiveness.

GROUNDWATER SAMPLING

Groundwater-monitoring well MW-2 was sampled on February 1, 1989, May 12, 1989, and March 28, 1990. The 2-inch-diameter groundwater-monitoring well was purged of groundwater with a clean acrylic hand bailer until stabilization of the pH, conductivity, and temperature occurred, or until approximately four well volumes were removed. The groundwater in the monitoring well was then allowed to recharge to at least 80 percent of the initial water level, or at the most, for an hour, if there was not sufficient water recharge, to assure quality control. A clean U.S. Environmental Protection Agency (EPA)-approved Teflon^{R} hand sampler was used for groundwater sample

collection. On each sampling date, two groundwater samples were gently decanted into sterile 40 milliliter (ml) vials. The 40 ml vials were sealed with Teflon^{R} septa in such a way that no air was trapped inside. A sample of the final rinse water from the Teflon^{R} bailer was similarly collected before sampling the well. Each sample was labeled and placed on ice in an insulated cooler chest along with the rinsate blank and a trip blank prepared earlier at a State of California-certified laboratory. The trip blank and rinsate blanks are used as part of the Quality Assurance/ Quality Control (QA/QC) procedures. After the groundwater samples were collected and labeled, a Chain-of-Custody Manifest was prepared to document the sample collection. The Chain-of-Custody Manifest accompanied the water samples to a State of California-certified laboratory where the samples were analyzed for the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX) and for total petroleum hydrocarbons (TPH)-as-gasoline using modified EPA Methods 5030/8020/8015.

RESULTS

SOIL SAMPLE SURVEY

The results of the soil sample survey conducted on July 27, 1988 are presented in Table 1. Soil borehole Samples 1 and 2 were collected from a depth of approximately 8-1/2 feet while the remaining bore-hole soil samples were collected from approximately 11-feet below grade. Duplicate soil samples from boreholes 2, 4, and 8 were analyzed at a State of California-certified laboratory for the presence of BTEX and TPH-as-gasoline using modified EPA Methods 5030/8020/8015. The analytical results from the duplicate soil samples and the soil survey results are presented in Appendix C.

The analytical results of the soil sample survey were used in the construction of a Total Volatile Hydrocarbon (TVH) plume map to define the areal extent of the hydrocarbon-impacted soil. Figure 4 displays the soil sample points and TVH concentrations as well as the limits of the defined hydrocarbon-impacted soils. Monitoring wells MW-1 and MW-3 were within the boundaries of the defined hydrocarbon-impacted soil located centrally around the underground storage tank vicinity.

TABLE 1

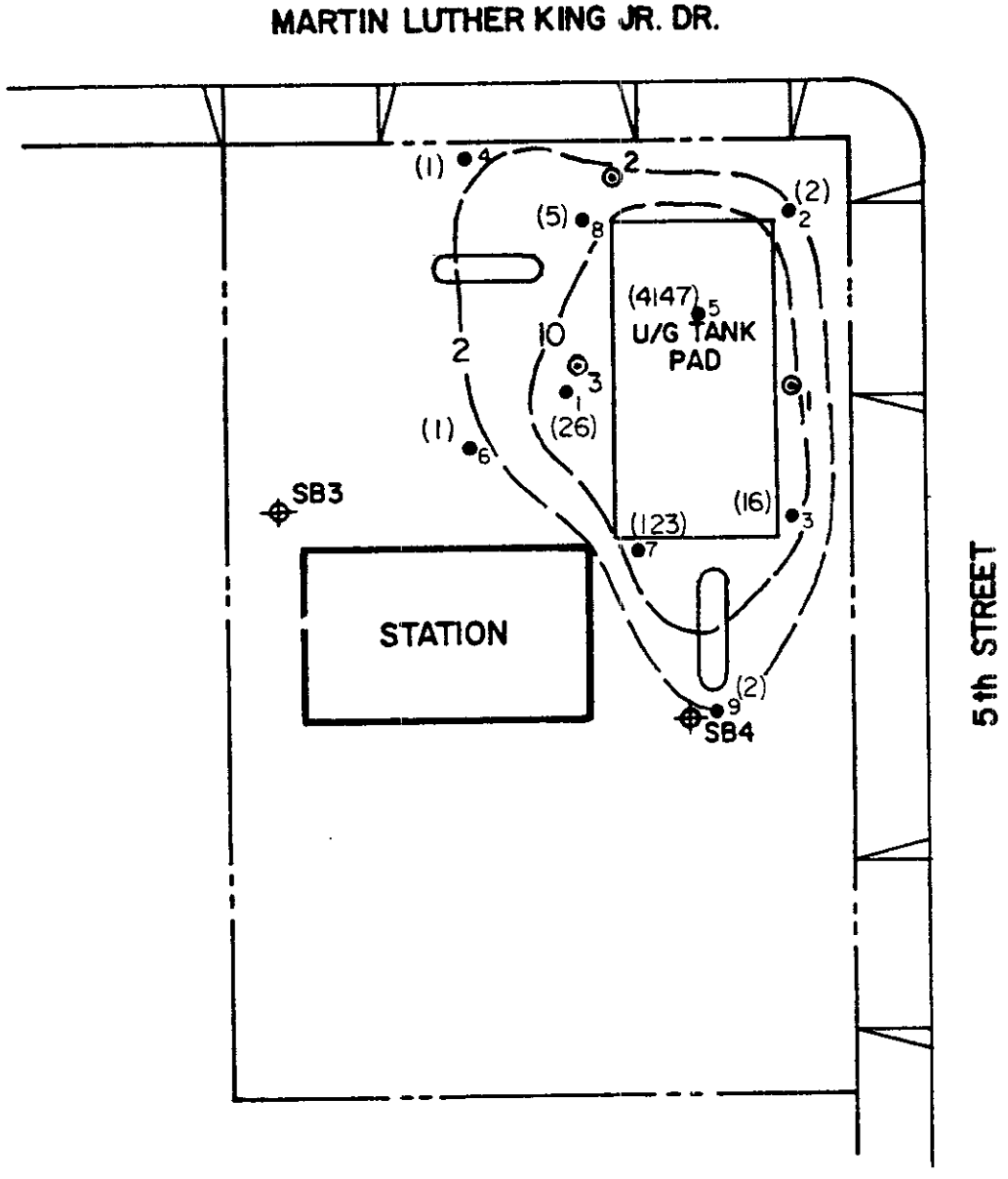
TOTAL VOLATILE HYDROCARBONS
(ppm)

SOIL SAMPLE	DEPTH (ft.)	TVH** (ppm)	BTEX AND TPH* (ppm)
1	8.5	26	
2	8.5	2	<PQL*
3	11	16	
4	11	1	<PQL*
5	11	4,147	
6	11	1	
7	11	123	
8	11	5	<PQL*
9	11	2	

* Analyzed by modified EPA Methods 5030/8020/8015 in a State of California-certified laboratory

PQL for TPH = 1 ppm
PQL for BTEX = 1 ppm benzene
3 ppm toluene
4 ppm ethylbenzene
15 ppm xylenes

** Analyzed by modified EPA Method 8015 in a State of California certified Mobile Laboratory.



LEGEND

- ⊙ MONITORING WELL
- ⊕ SOIL BORING
- ● SOIL-PROBE LOCATION
- ( ) TVH CONCENTRATION (ppm)
- – – – TVH CONTOUR

FIGURE 4
TVH AS GASOLINE IN SOIL
(7/27/88)

N

0 FEET 30

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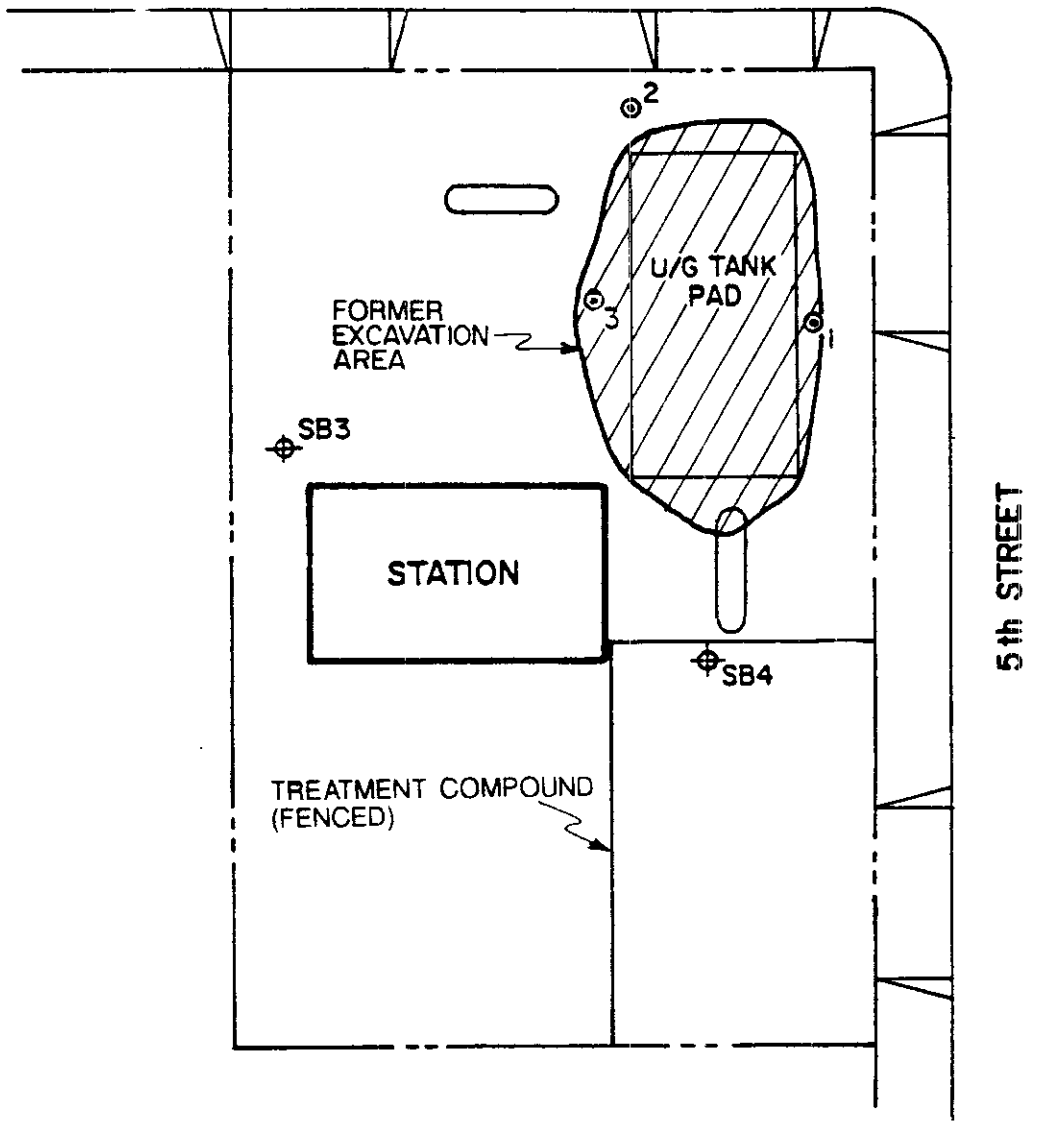
MONITORING WELL ABANDONMENT

Monitoring wells MW-1 and MW-3 were abandoned in accordance with the Groundwater Protection Ordinance Permit issued by Alameda County Flood Control and Water Conservation District on August 12, 1988 (Appendix D). Monitoring wells MW-1 and MW-3 were destroyed on August 15, 1988. Monitoring well MW-2, located downgradient from the planned excavation, was left intact to document the effectiveness of the remediation on groundwater quality.

SOIL EXCAVATION

Figure 5 represents the soil excavation area centralized around the former underground storage tanks. Soil was excavated to a depth of approximately 18 feet in the center of the excavation. Minor seepage of approximately less than 1 foot of water occurred into the excavation, although the monitoring wells had indicated a depth-to-water (DTW) of approximately 12-1/2 feet. The two soil samples taken each day during the excavation were analyzed by modified EPA Methods 5030/8020/8015 for BTEX and TPH-as-gasoline. Soil samples were analyzed within 24 hours to record progress of the excavation. Appendix E contains the laboratory analyses reports for samples analyzed for BTEX and TPH during the excavation from December 13, through 15, 1988. Analytical results from all soil samples collected and analyzed during the excavation were less than PQL for all constituents of BTEX and TPH-as-gasoline.



LEGEND
- ⊙ MONITORING WELL
- ⊕ SOIL BORING

FIGURE 5
EXCAVATION PLAN

N

0 FEET 30

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EXCAVATION BACKFILLING AND COMPACTION

The excavation was backfilled on January 3, 1989. Rod mill pea gravel was watered and rolled into the excavation with a backhoe to a depth of 8-feet below grade. Field density tests were performed on January 3, 1989, and the results were found to be within the limit of at least 90 percent compaction. Imported, clean backfill soil was used as fill for the remaining 8 feet of the excavation pit. Compaction tests were completed by the on-site contractor. Appendix A contains the results of the compaction tests performed during backfilling. The backfilled excavation was left unpaved until the soil treatment pile was removed, and then the entire parking lot was repaved.

SOIL TREATMENT

On January 9 through February 1, 1989, the system for the aboveground aeration/biodegradation treatment was activated and service test data was collected for the Bay Area Air Quality Management District (BAAQMD). Table 2 presents the air monitoring data collected during the initial two week start up. From the data collected, an operation and monitoring schedule using a carbon breakthrough curve was generated. The permit to operate the system continuously was issued by the BAAQMD on March 23, 1989. The aeration/biodegradation system was then restarted on April 4, 1989. Table 3 presents the results of air monitoring during the operational period from April 4, 1989 to May 31, 1989.

TABLE 2

START-UP TEST DATA

(ppm)

DATE SAMPLED	VACUUM BLOWER EFFLUENT (ppm)	#1 CARBON DRUM EFFLUENT (ppm)	#2 CARBON DRUM* EFFLUENT (ppm)	FIELD TEST INSTRUMENT
01/10/89	275	210	190	PID
01/10/89	250	0	0	PID
01/11/89	260	150	10	PID
01/11/89	250	2	0	PID
01/12/89	240	150	7	PID
01/12/89	240	4	0	PID
01/13/89	230	120	3	PID
01/13/89	230	5	0	PID
01/16/89	222	3	0	PID
01/17/89	202	50	3	PID
01/17/89	202	0	0	PID
01/18/89	190	47	2	PID
01/18/89	190	0	0	PID
01/19/89	174	17	0	PID
01/20/89	158	48	3	PID
01/20/89	158	2	0	PID
01/25/89	120	70	50	PID
02/01/89	145	0	0	PID

* After the initial carbon drum replacement a fresh carbon drum was rotated into the #2 carbon drum position to be subsequently rotated into the #1 carbon drum position.

PID = Photo-ionization Detector

TABLE 3

OPERATIONAL EFFLUENT AIR MEASUREMENTS

(ppm)

DATE SAMPLED	VACUUM BLOWER EFFLUENT (ppm)	#1 CARBON DRUM EFFLUENT (ppm)	#2 CARBON DRUM EFFLUENT (ppm)	FIELD TEST INSTRUMENT
4/04/89	60	0	0	PID
4/06/89	70	0	0	PID
4/11/89	50	<5	0	PID
4/13/89	160	12	2	FID
4/19/89	38	19	0	PID
4/21/89	35	10	0	PID
4/21/89	120	90	30	FID
4/24/89	38	32	15	PID
4/24/89	98	95	24	FID
4/26/89	95	18	0	FID
5/01/89	26	13	0	PID
5/05/89	22	10	0	PID
5/09/89	12	6	0	PID
5/12/89	16	16	5	PID
5/18/89	12.0	2.0	0	PID
5/26/89	12	10	0	PID

PID = Photo-ionization detector
FID = Flame-ionization

The system was operated from April 4, 1989 to May 31, 1989. Because the carbon canister closest to the blower effluent line (carbon canister 1) exceeded breakthrough, the canister was replaced. Carbon canister 2 replaced carbon canister number 1 and a fresh carbon canister was used to replace carbon canister 2. This switching and replacing of carbon canisters continued until the soil pile TPH values had fallen to below measurable levels.

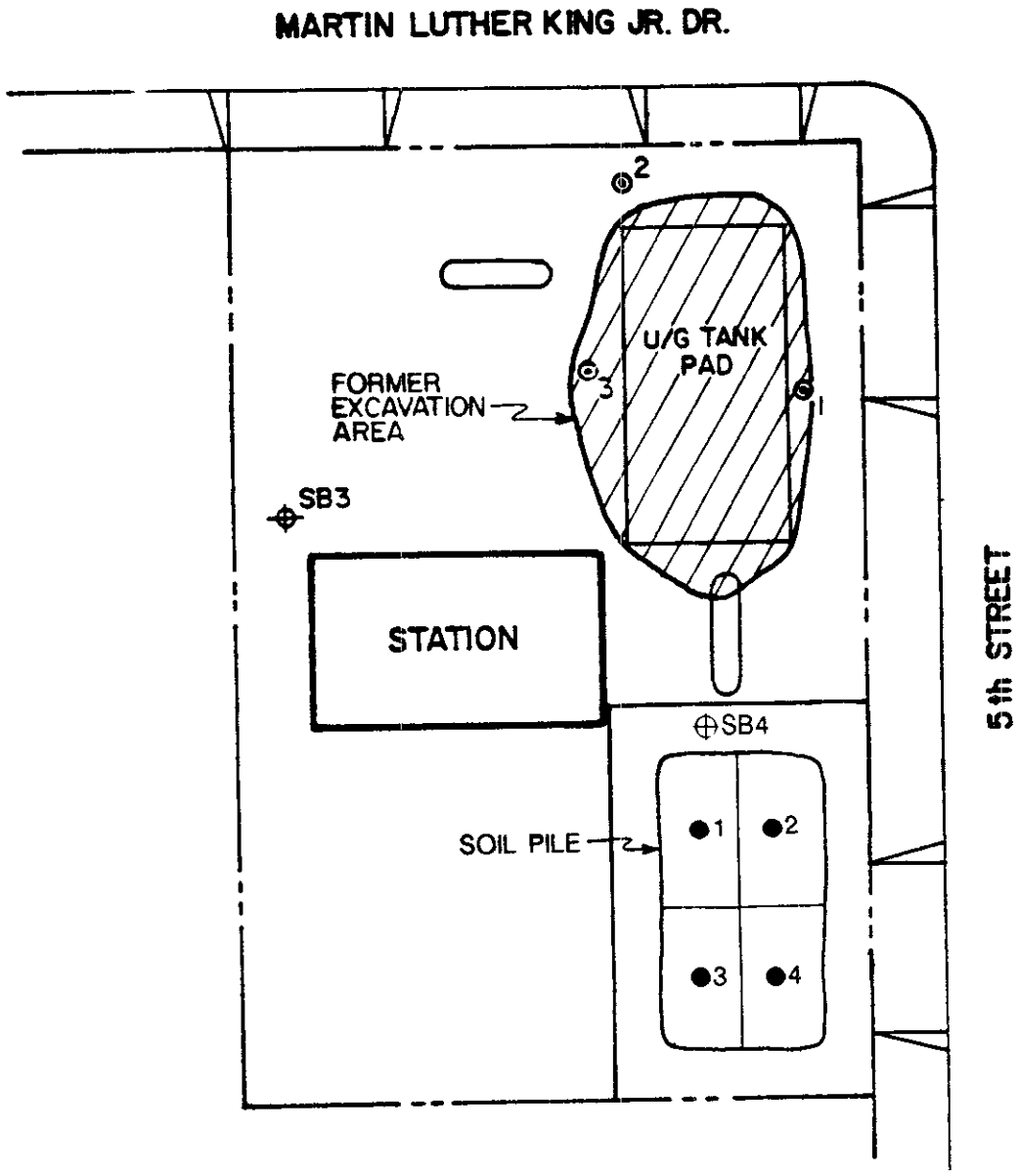
SOIL SAMPLING

Four soil samples were collected on February 1, 1989, after the initial system start up (Figure 6). Results of these preliminary soil analyses showed a range for TPH-as-gasoline of 140 parts per million (ppm) to 1,500 ppm and a range for BTEX from 3 ppm to 160 ppm. Four more soil samples were collected on May 9, 1989. Analyses results showed that these soil samples contained from 18 ppm to 530 ppm of TPH-as-gasoline without constituents of BTEX present. On May 31, 1989, ten soil samples were collected using a grid system to divide the soil treatment pile into ten equal areas for sampling (Figure 7). Analytical results from these samples showed all soil samples collected to be below Practical Quantitation Levels (<PQL) for BTEX. Results indicated that two of the soil samples had small amounts of residual TPH-as-gasoline of 13 ppm and 590 ppm. The soil pile was resampled in the suspected area on June 22, 1989 and found at that time to contain only 2 ppm TPH-as-gasoline. Table 4 summarizes the soil pile analyses results from February 1, through June 22, 1989, soil sample collections.

Additional soil analyses for the presence of organic lead were conducted on soil samples collected on May 31, 1989 and June 22, 1989. All results for organic lead were less than the Method Detection Limit (MDL). Results of these soil analyses are presented in Appendix F.

SOIL REMOVAL

Soil was removed from the treatment site to the Durham Road Landfill in Fremont on September 13, 1989. The site was cleaned and, on request of the present owner, the entire parking lot was repaved. The temporary security fence was removed from the site.



LEGEND
- ⊙ MONITORING WELL
- ⊕ SOIL BORING
- ● SOIL SAMPLE LOCATION

FIGURE 6
SOIL PILE SAMPLE LOCATIONS
FEB. 1 - MAY 9, 1989

N

0 FEET 30

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ML 5/90

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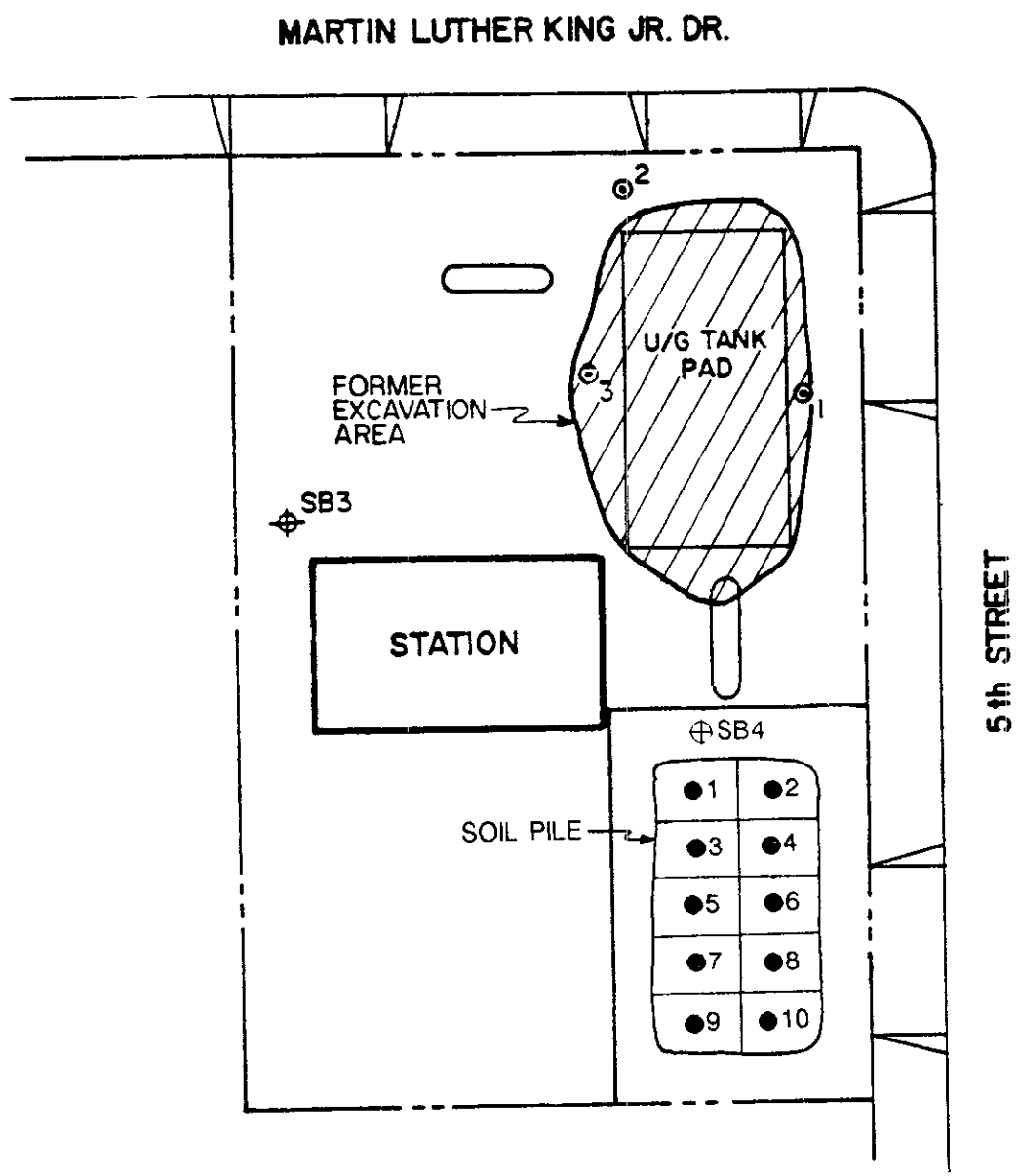

LEGEND
- ⊙ MONITORING WELL
- ⊕ SOIL BORING
- ● SOIL SAMPLE LOCATION

FIGURE 7
SOIL PILE SAMPLE LOCATIONS
MAY 31 - JUNE 22, 1989

N

0 FEET 30

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ML 5/90

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TABLE 4

SOIL PILE SAMPLE ANALYSIS

SAMPLE I.D.	DEPTH (ft.)	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENE	TPH-AS-GASOLINE
February 1, 1989						
1	3.5	<PQL	<PQL	<PQL	<PQL	140
2	3.5	3	22	22	110	1,500
3	3.5	<PQL	<PQL	<PQL	<PQL	180
4	3.5	<PQL	<PQL	<PQL	21	1,200
May 9, 1989						
1	5-7	<PQL	9	<PQL	<PQL	80
2	5-7	<PQL	<PQL	<PQL	<PQL	530
3	5-7	<PQL	<PQL	<PQL	<PQL	18
4	5-7	<PQL	<PQL	<PQL	<PQL	250
May 31, 1989						
1	2	<PQL	<PQL	<PQL	<PQL	<PQL
2	2	<PQL	<PQL	<PQL	<PQL	<PQL
3	2	<PQL	<PQL	<PQL	<PQL	<PQL
4	2	<PQL	<PQL	<PQL	<PQL	<PQL
5	2	<PQL	<PQL	<PQL	<PQL	<PQL
6	2	<PQL	<PQL	<PQL	<PQL	<PQL
7	2	<PQL	<PQL	<PQL	<PQL	<PQL
8	2	<PQL	<PQL	<PQL	<PQL	<PQL
9	2	<PQL	<PQL	<PQL	<PQL	13
10	2	<PQL	<PQL	<PQL	<PQL	590
June 22, 1989						
10	2	<PQL	<PQL	<PQL	<PQL	2

GROUNDWATER MONITORING

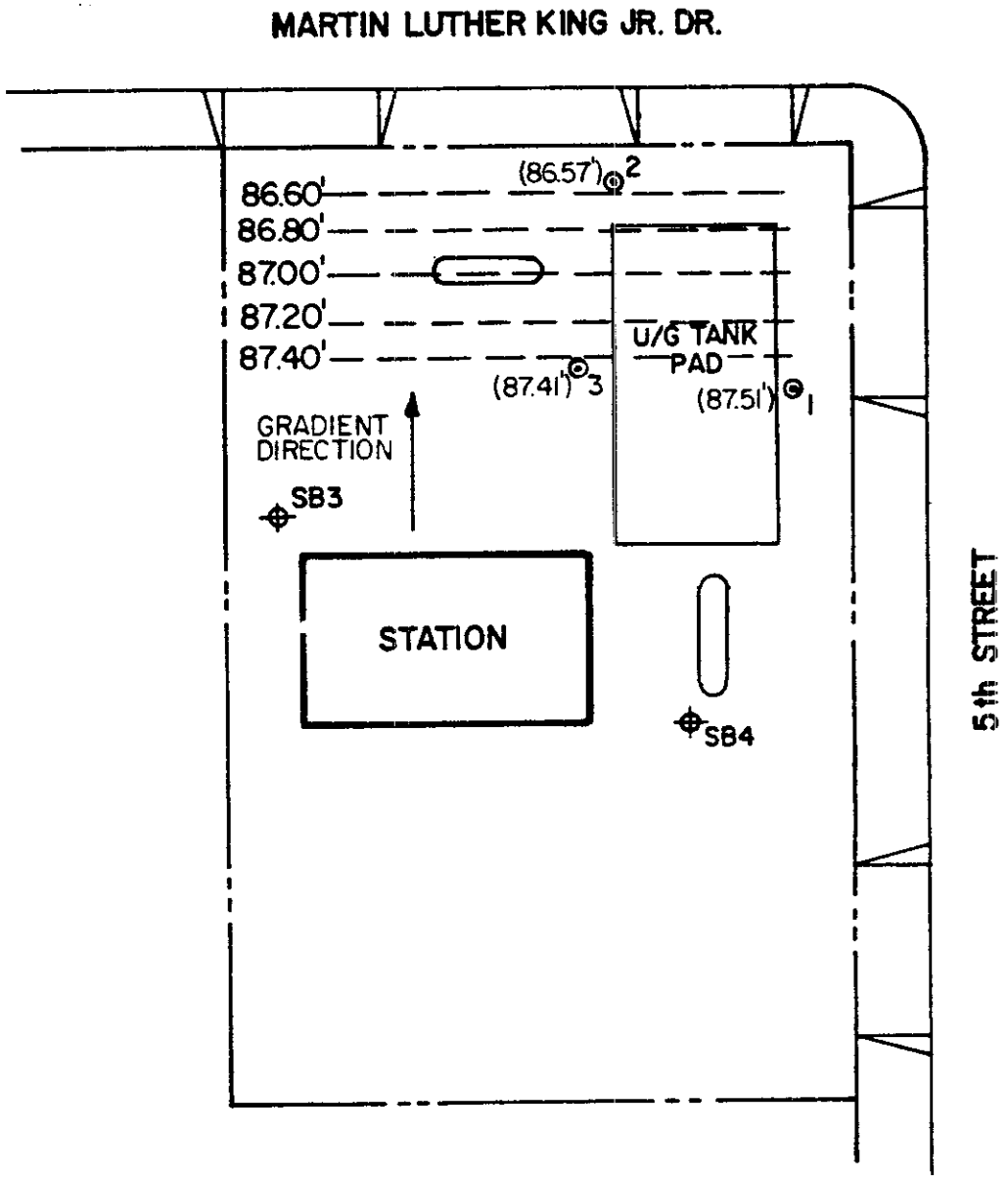
Groundwater monitoring data for monitoring well MW-2, as well as the previous tabulated data, are presented in Appendix G. Monitoring wells MW-1 and MW-3 were abandoned prior to the soil excavation. Figure 8 presents a past potentiometric surface map that generally indicates historical gradient direction towards MW-2.

GROUNDWATER SAMPLE RESULTS

Analytical results for the groundwater sample collected from monitoring well MW-2 on February 1, 1989, indicated 8 ppb of TPH-as-gasoline without BTEX constituents. The analytical results for the May 12, 1989 groundwater samples from monitoring well MW-2, including the rinsate blank, were <PQL for TPH-as-gasoline and BTEX constituents. Analytical results from the March 28, 1990 sampling event indicate levels of TPH-as-gasoline and BTEX constituents were below the detection limits of 1 ppb and 0.5 ppb, respectively. Laboratory analytical reports and the Chain-of-Custody Manifests are presented in Appendix H.

SUMMARY

A soil sample survey was conducted with a mobile laboratory to define the hydrocarbon-impacted soil boundaries. Two monitoring wells within the defined boundary of hydrocarbon-impacted soil were abandoned. Approximately 1,000 cubic yards of hydrocarbon-impacted soils were excavated for the construction of a soil pile utilizing an enhanced bioremediation system including forced soil aeration. The soil pile was sampled for the presence



LEGEND
- ⊙ MONITORING WELL
- ⊕ SOIL BORING
- ( ) GROUNDWATER ELEVATION
- – – GROUNDWATER CONTOUR

FIGURE 8
GROUNDWATER GRADIENT MAP
(7/27/88)

N

0 FEET 30

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OAKLAND, CALIFORNIA

GROUNDWATER TECHNOLOGY, INC.

of hydrocarbons remaining within the soil pile to verify the progress of the bioremediation. The clean soil pile was removed from the site to a landfill. The parking lot under the soil pile, as well as the compacted fill soil in the excavation were repaved. One remaining groundwater monitoring well located downgradient was sampled for the presence of hydrocarbons. Analytical results of groundwater samples collected in May 1989 and March 1990 have shown no detectable hydrocarbons.

BAY AREA Geotechnical Group
[redacted]
950 Industrial Ave, Palo Alto, Calif (415) 852-9133

[redacted]

JM/

DAILY REPORT

PAGE NO. 1

JOB NO. 88-B-88 NAME G.T.I. DATE 12-22-88
LOCATION Oakland DAY OF WEEK Thursday
WEATHER clear, mild SIGNED M. Hernandez
SOURCE OF SOIL import FILL PLACED TODAY [illegible] CU. YDS
FILLED TO BE PLACED CU. YDS
CONTRACTORS EQUIPMENT IN USE None

Test No.	LOCATION	Elevation Feet	Compaction Curve	Optimum Moisture Content, %	Maximum Dry Density, pcf	Field Moisture Content, %	Field Dry Density, pcf	Percent Compaction	REF
	None								

REMARKS M. Hernandez on site am.

Made site visit to perform density tests in backfill of test excavation. Upon arrival met with David Kaufman (G.T.I.) who informed me area not yet ready for testing. Testing will be rescheduled.

Note - Depth of excavation at time of visit was at 8' below FSG. Elevation.

[redacted]

BAY AREA GEOTECHNICAL GROUP

[redacted]

950 INDUSTRIAL AVE. PALO ALTO, CA 94303

[redacted]

JM. file

DAILY REPORT

PAGE NO. 2

JOB NO. 88-B-88 NAME G.T.I DATE 1-3-89

LOCATION Oakland DAY OF WEEK Tuesday

WEATHER Clear-Cool SIGNED EJ

SOURCE OF SOIL Red Mill Pea Gravel FILL PLACED TODAY _____ CU. YDS

FILLED TO BE PLACED _____ CU. YDS

CONTRACTORS EQUIPMENT IN USE Back hoe

Test No.	LOCATION	Elevation Feet	Compaction Curve	Optimum Moisture Content, %	Maximum Dry Density, pcf	Field Moisture Content, %	Field Dry Density, pcf	Percent Compaction	REF.
1W	West Side	-8"	1	9	117	4.9	108	92	
2W	East Side	-8"	1	9	117	4.2	112	96	

REMARKS EJ on site P.M.

Performed ~~two~~ field density tests in the red mill pea gravel that was watered & rolled in with a backhoe.

Tests indicate adequate compaction was Achieved.

They plan on hauling fill in on late Wednesday or Thursday, weather permitting.

TERRASEARCH INC. DAILY FIELD RECORD OF EARTHWORK

JOB NO. 6001-C | JOB NAME: 5th ST & Martin Luther King Jr
B LOCATION: Oakland | CLIENT: Holub
DATE: 1/4/89 | SHEET #
WEATHER: Sunny
CONTRACTOR: Holub
Curve # 1 PCF: 119.0 @ 11.0 %:
Material Desc.: LT. Brown Silty Sand
Curve # PCF: %:
Material Desc.:

The following was noted:

We've been Contracted by Mr. Ron Holub to test the 6 imported soil in site. The site is a gas station. The fill is placed in already dug hole where a tank used to be (according to Mr. Holub). Fill was hauled in from Heritage Oaks in Pleasant Hills a job that we've been doing. The Curve is used of that job.

Tomorrow will be needed on the job per Mr. Holub. Mr. Holub signed a work order & agreed on paying whatever it takes to finish job. Test results would be given to him at end of work.

Standard Counts: 5137 / 5189 | Mode & Depth | 6" | RELATIVE COMPACTION TEST DATA | GAUGE NO. 830

Test No.	Location	D.F.G.	Density Count	Density Count Ratio	Wet Density pcf	Moisture Count	Moisture Count Ratio	Mois. Content pcf	Mois. Con. %	Dry Density pcf	Rel. Comp. %	Soil Type & Remarks
1	Tank Removal Site	3.0	6532	6532	129.0	1622	.295	19.2	17.0	110	92	(1)
2	↓ ↓	3.0	6329	1.23	130.5	1717	.312	20.5	19.0	110	92	↓

I only went to the site once. That was on 1/4/89 as this daily shows. I tested the fill at 3' from finish grade per Mr. Holub. I did not provide any recommendations, only tested & gave the results to Mr. Holub.

1 3/28/90

SUMMARY OF HOURS CHARGED:
Arrive: 2 Travel 1
Depart: 3 Worked 1
Total 2

FIELD REPRESENTATIVE(S) DATE 1/4/89

WHITE: Main File YELLOW: Payroll PINK: Field File GOLD: Job Site

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT TO OPERATE NO. 1831

PLANT NO. 3773

Groundwater Technology, Inc.

IS HEREBY GRANTED A PERMIT TO OPERATE THE FOLLOWING EQUIPMENT: SOURCE NO. 1

Above-Ground Aeration/Biodegradation, ORS High-vacuum blower model 1132008, 1.5 HP, 127 CFM abated by A-1 Activated Carbon, Cameron-Yakima, Inc. "Tub Scrub", two-150 pound granular activated carbon canisters in series

LOCATED AT: 424 Martin Luther King Jr. Drive
Oakland, CA 94607

CONDITIONS: ☑ YES ☐ NO

1. *This source shall not discharge into the atmosphere more than 300 ppm carbon on a dry basis or more than 15 pounds of volatile organic compounds (VOC) per day.*
2. *To determine compliance with condition 1, the operator of this source shall:*
   a. *Sample the lead carbon canister for breakthrough on a regular basis.*
   b. *Samples shall be taken at the inlet and outlet of the lead carbon canister and the outlet of the final canister. The samples shall be analyzed to determine concentrations of volatile organic compounds.*
   c. *When breakthrough occurs in the lead carbon canister, the final canister shall be placed in the lead position and the lead canister shall be recharged with fresh carbon and placed in the final position.*
3. *The following records shall be kept and made available for District inspection for a period of 12 months following the date on which a record was made:*
   a. *days of operation*
   b. *air flow rate*
   c. *air sampling date*
   d. *air analysis results*
   e. *calculated emissions of total VOC in pounds per day.*
   f. *date on which the carbon is replaced.*

MILTON FELDSTEIN
AIR POLLUTION CONTROL OFFICER

DATE November 9, 1989

BY John A Swanson
PERMIT SERVICES DIVISION

EXPIRATION DATE: November 9, 1990

THIS PERMIT DOES NOT AUTHORIZE ANY VIOLATION OF THE RULES AND REGULATIONS OF THE BAAQMD OR THE HEALTH & SAFETY CODE OF THE STATE OF CALIFORNIA.

FORM P-103
8/89

SOIL BORING ANALYSIS
TEXACO - Martin Luther

Job No. 203 150 4314

Sensitivity factor = .0003
ND = Not Detectable

Hole & Sample #	Depth (ft.)	GC Run	Peak Height	Scale	Mult	TVH (ppm)
1	8.5	3	275	8	1	26
2	8.5	5	20	8	1	2
3	11	7	170	8	1	16
4	11	8	13	8	1	1
5	11	11	270	128	10	4147
6	11	13	15	8	1	1
7	11	14	320	32	1	123
8	11	15	55	8	1	5
9	11	16	20	8	1	2

Collected with mini-soil core tube

GTEL Environmental Laboratories
Division of Groundwater Technology, Inc.

Western Region
4080-C Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

08/05/88 aa
CLIENT: Lynn Pera
Groundwater Technology, Inc.
4080 Pike Lane
Concord, CA 94520
PROJECT#: 203-199-4314-7

SAMPLED: 07/27/88 BY: B. Schaal
RECEIVED: 07/29/88 BY: K. Fillinger
ANALYZED: 08/03/88 BY: E. Popek
MATRIX: Soil
UNITS: ppm

TEST RESULTS

COMPOUNDS	LAB # / I.D.#	28135 / S-8	28136 / S-4	28137 / S-2		
Benzene		< PQL	< PQL	< PQL		
Toluene		< PQL	< PQL	< PQL		
Ethylbenzene		< PQL	< PQL	< PQL		
Xylenes		< PQL	< PQL	< PQL		
Total BTEX		< PQL	< PQL	< PQL		
Total Petroleum Hydrocarbons as Gasoline		< PQL	< PQL	< PQL		

Results rounded to two significant figures.
PQL = Less than Practical Quantitation Levels as per EPA Federal Register, November 13, 1985, page 46906.

METHOD:
Modified EPA Method 5030/8020/8015

SAFY KHALIFA, Ph.D., Director

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

PROJ. NO. 4314 | PROJECT NAME: GTI CONCORD

SAMPLERS: (Signature) SCHAAL / Peloton

CHECK ANALYSIS TYPE REQUESTED

SAMPLE I.D. NUMBER	# OF CONTAINERS	WATER	SOIL	SED.	SOURCE OF SAMPLE	COMP.	GRAB	DATE	TIME	ACIDIFIED	ICED	GASOLENE HYDROCARBONS BY ☐ 602 ☐ HS 8020	VOLATILE ORGANICS BY EPA ☐ 624 ☐ 624 + HSL ☐ 601 ☐ 602	EXTRACTABLES BY EPA 625 ☐ B/N ☐ ACIDS ☐ B/N/A	METALS ☐ 13 PRIORITY POL ☐ RCRA ☐ EP TOX	OTHER	REMARKS
S8	01		X				X	7-27	1555		X	X					soils prepped with methanol by W. Schaal 7-29-88
S4	01		X				X	7-27	1630		X	X					
S2	01		X				X	7-27	1650		X	X					
																	S8: 11.7 g soil in 11.7 ml MeOH
																	S4: 10.7 g soil in 10.7 ml MeOH
																	S2: 6.8 g soil in 6.8 ml MeOH
																	Expect low values

Relinquished by:	Date	Time	Received by:
Bill Schaal	7-29-88	10:20	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by laboratory:
	11/21	10:25	

CLIENT NAME/OFFICE LOCATION: GTI - Concord

PROJECT MANAGER: Lynn Pera

PHONE NO.: x237

GTI Environmental Laboratories
A division of Groundwater Technology, Inc.
Western Region
4080-C Pike Ln., Concord, CA 94520
(415) 685-7852
In CA: (800) 544-3422
Outside CA: (800) 423-7143

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94566 ♦ [illegible]

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

(1) LOCATION OF PROJECT 424 Martin Luther King Jr. Drive, Oakland, CA

(2) CLIENT
Name Texaco Refining and Marketing, Inc.
Address 10 Universal City Plaza Phone 818-505-2476
City Universal City, CA Zip 91603

) APPLICANT
Name Groundwater Technology, Inc.
Address 4C3C Pike Lane #D Phone (415) 671-2337
City Concord, CA Zip 94520

) DESCRIPTION OF PROJECT
Water Well Construction ___ Geotechnical ___
Cathodic Protection ___ Well Destruction ✓

) PROPOSED WATER WELL USE
Domestic ___ Industrial ___ Irrigation ___
Municipal ___ Monitoring ✓ Other ___

) PROPOSED CONSTRUCTION
Drilling Method:
Mud Rotary ___ Air Rotary ___ Auger ✓
Cable ___ Other ___

WELL PROJECTS (To Be Destroyed)
Drill Hole Diameter 8 in. Depth(s) 30 ft.
Casing Diameter 2 in. Number
Surface Seal Depth 5 ft. of Wells 3
Driller's License No. 434343

GEOTECHNICAL PROJECTS
Number ___
Diameter ___ in. Maximum Depth ___ ft.

) ESTIMATED STARTING DATE 8/22/88
ESTIMATED COMPLETION DATE 8/22/88

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

APPLICANT'S SIGNATURE Lynn E Perry Date 8/11/88

FOR OFFICE USE

PERMIT NUMBER 88403
LOCATION NUMBER 1S/4W 34F80, 34F81, 34F82

Approved Wyman Hong Date 12 Aug 88
Wyman Hong

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. Notify this office (484-2600) at least one day prior to starting work on permitted work and before placing well seals.
3. 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 bore hole logs and location sketch for geotechnical projects. Permitted work is completed when the last surface seal is placed or the last boring is completed.
4. 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, or equivalent.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material.

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

(E.) WELL DESTRUCTION. See attached.

91987

GTEL ENVIRONMENTAL LABORATORIES, INC.

Western Region
4080-C Pike Lane, Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

12/17/88 jp

WORK ORD#: 8812177
CLIENT: Lynn Pera
Groundwater Technology, Inc.
4080 Pike Lane
Concord, CA 94520
PROJECT#: 203-199-4314-8
LOCATION: Oakland & Martin Luther Way

SAMPLED: 12/13/88 BY: D. Drury
RECEIVED: 12/13/88 BY: K. Biava
ANALYZED: 12/15/88 BY: P. Hanners
MATRIX: Soil
UNITS: mg/kg (ppm)

TEST RESULTS

PARAMETER	SAMPLE # I.D.	01A 1A	02A 2A			
Benzene		<PQL	<PQL			
Toluene		<PQL	<PQL			
Ethylbenzene		<PQL	<PQL			
Xylenes		<PQL	<PQL			
Total BTEX		<PQL	<PQL			
Total Petroleum Hydrocarbons as Gasoline		<PQL	<PQL			

PQL = Less than Practical Quantitation Levels per EPA Federal Register, November 13, 1985, page 46906.
Results rounded to two significant figures.

METHOD:
Modified EPA Method 5030/8020/8015

Emma Popek EMP
EMMA P. POPEK, Director

GTEL ENVIRONMENTAL LABORATORIES, INC.

Western Region
4080-C Pike Lane, Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

WORK ORD#: 8812201
CLIENT: LYNN PERA
GROUNDWATER TECHNOLOGY, INC.
4080-D PIKE LANE
CONCORD, CA 94520
PROJECT#: 203-199-4314-9
LOCATION: GTI - CONCORD

SAMPLED: 12/14/88 BY: D. Drury
RECEIVED: 12/15/88 BY: E. Larsen
ANALYZED: 12/15/88 BY: P. Hanners

MATRIX: Soil
UNITS: mg/Kg (ppm)

PARAMETER	SAMPLE # I.D. 01 13A	02 13B				
Benzene	<PQL	<PQL				
Toluene	<PQL	<PQL				
Ethylbenzene	<PQL	<PQL				
Xylenes	<PQL	<PQL				
Total BTEX	<PQL	<PQL				
Misc. Hydrocarbons (C4-C12)	<PQL	<PQL				
Total Petroleum Hydrocarbons as Gasoline	<PQL	<PQL				

Results rounded to two significant figures.
PQL = Less than Practical Quantitation Levels as per EPA Federal Register, November 13, 1985, page 46906.

METHOD: Modified EPA 5030/8020/8015

Emma P. Popek

EMMA P. POPEK, Director

GTEL ENVIRONMENTAL LABORATORIES, INC.

Western Region
4080-C Pike Lane, Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

12/21/88mt

WORK ORD#: 8812233
CLIENT: Lynn Pera/Amy Patton
Groundwater Technology, Inc.
4080 Pike Ln., Suite D
Concord, CA 94520
PROJECT#: 203-199-4314-10
LOCATION: Martin Luther King Jr. Way

SAMPLED: 12/15/88 BY: D. Drury
RECEIVED: 12/15/88 BY: C. Manuel
ANALYZED: 12/16/88 BY: P. Hanners
MATRIX: Soil
UNITS: ppm

TEST RESULTS

PARAMETER	SAMPLE # / I.D.	01A / 4A	02A / 4B		
Benzene		<PQL	<PQL		
Toluene		<PQL	<PQL		
Ethylbenzene		<PQL	<PQL		
Xylenes		<PQL	<PQL		
Total Petroleum Hydrocarbons as Gasoline		<PQL	<PQL		

PQL = Less than Practical Quantitation Levels per EPA Federal Register, November 13, 1985, page 46906.
Results rounded to two significant figures.

METHOD:
Modified EPA Method 5030/8020/8015

Emma P. Popek

EMMA P. POPEK, Director

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Western Region
4080-C Pike Lane, Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

01/14/89 rw

CLIENT: Lynn Pera/Amy Patter
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

PROJECT#: 900-199-4314-11

SAMPLED: 12/15/88 BY: D. Drumy
RECEIVED: 12/15/88 BY: C. Manuel
ANALYZED: 01/13/89 BY: T. Alue!
MATRIX: Soil P. Haines
UNITS: mg/kg

TEST RESULTS

PARAMETER	MDL	SAMPLE # I.D.	35630 M1	35631 M2	35632 M3	
Ammonium (NH_4)	0.05		0.15	0.07	0.09	
Phosphate	1		11	11	11	

MDL = Method Detection Limit: compound below this level would not be detected.

METHOD: Phosphate - SM 429
Ammonium - SM 417E

Emma P. Popek

EMMA P. POPEK, Director

GTEL ENVIRONMENTAL LABORATORIES, INC

4080-C Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: L. Perra

Phone #: x237

Address: Concord

FAX #:

Project Number: G.T.I./Concord

Project Name: 203199 4314

Project Location: Oakland/Martinez Way

Sampler Signature:

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	ICE	NONE	OTHER	Sampling: DATE	TIME
1A		1			X						X			12/13	1230
2A		1			X						X			12/13	1400

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
	X																
	X																

OTHER

SPECIAL HANDLING

PRIORITY ONE SERVICE (24 hr)	EXPEDITED SERVICE (2-4 days)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
X				

Relinquished by:	Date	Time	Received by:
Relinquished by	Date	Time	Received by:
Relinquished by	Date 12/13/95	Time	Received by Laboratory:

Remarks: Note 24-hr turnaround

20t22Ci

GTEL ENVIRONMENTAL LABORATORIES, INC

4080-C Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: L. Pera / A. Patton

Phone #: X 237

Address: GTI / Concord

FAX #:

Project Number: 203 199 4314

Project Name: Martin Luther

Project Location: Martin Luther King Jr. Way

Sampler Signature: [signature]

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	Matrix: SOIL	Matrix: AIR	Matrix: SLUDGE	Matrix: OTHER	Method Preserved: HCl	Method Preserved: HNO_3	Method Preserved: ICE	Method Preserved: NONE	Method Preserved: OTHER	Sampling: DATE	Sampling: TIME
3A	01A	1			X									12-14	3:00
3B	02A	1			X									12-14	4:00

ANALYSIS REQUEST

Sample ID	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
3A		X																
3B		X																

OTHER / **SPECIAL HANDLING**

Sample ID	PRIORITY ONE SERVICE (24 hr)	EXPEDITED SERVICE (2-4 days)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
3A	X				
3B	X				

Relinquished by:	Date	Time	Received by:

Relinquished by	Date	Time	Received by:

Relinquished by	Date	Time	Received by Laboratory:
[signature]	12/14	5:35	Michelle C. Hatch

Remarks: 24 hr Rush

<4°C

GTEL ENVIRONMENTAL LABORATORIES, INC

4080-C Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: [illegible] Phone #: [illegible]

Address: [illegible] FAX #:

Project Number: [illegible] Project Name: [illegible]

Project Location: [illegible] Sampler Signature: [illegible]

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	ICE	NONE	OTHER	Sampling: DATE	TIME
4A		1			X									1/6	1:30
4B		1			X									1/5	1:45

ANALYSIS REQUEST A

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
	X																
	X																

OTHER

SPECIAL HANDLING

PRIORITY ONE SERVICE (24 hr)	EXPEDITED SERVICE (2-4 days)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
X				
X				

Relinquished by:	Date	Time	Received by:
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:

Remarks:

4°C

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

GROUNDWATER TECHNOLOGY INC.
BIORECLAMATION LABORATORY

4080 Pike Lane
Suite B
Concord, CA 94520
(415) 671-2387
Fax No. (415) 685-9148

PROJECT NUMBER: 194 4314-1

PROJECT NAME: GTI Concord

SAMPLERS: (Signature) [signature]

CHECK ANALYSIS TYPE REQUESTED

TYPE OF CONTAMINANT: GAS

SAMPLE I.D. NUMBER	# OF CONTAINERS	WATER	SOIL	SEDIMENT	COMPOSITE	GRAB	DATE	TIME	ICED	MICROBIOLOGY (List by letter) see below	CHEMISTRY (List by letter) see below	REMARKS
M1	1		X			✓	12/15	2:00	X	B C	AA JJ	☺
M2	1		X			✓	12/15	2:00	X	B C	AA JJ	
M3	1		X			✓	12/15	2:00	X	B C	AA JJ	

MICROBIOLOGY:
- A Standard Plate Count
- (B) Nutrient Enrichment Count
- C Hydrocarbon Utilizers
- D Chlorinated Solvent Utilizers
- E Single Component Organic Utilizers
- F Mixed Organic Utilizers
- G Special Substrate Utilizers
- H Total Coliforms
- I Fecal Coliforms
- J Iron Bacteria (quantitative)
- K Iron Bacteria (qualitative)
- L Sulfate Reducers
- M Nitrate Reducing Bacteria
- N Actinomycetes
- O Algae
- P Protista
- Q Fungi (yeasts, molds)
- R BOD
- S Determinative Bacteriology
- T Other

CHEMISTRY:
- (AA) Ammonium
- BB Nitrate
- CC Nitrite
- DD Total Hardness
- EE Calcium
- FF Magnesium
- GG Total Iron
- HH Soluble Iron
- II Sulfate
- (JJ) Phosphate
- KK Manganese
- LL Chloride
- MM Sodium
- NN Potassium
- OO Alkalinity
- PP pH/Eh
- QQ Total Dissolved Solids
- RR Total Suspended Solids
- SS Total Solids
- TT COD
- UU Dry Weight/Moisture Content
- VV Specific Gravity

R M Bly 1/13/89

RELINQUISHED BY:	DATE: / TIME:	RECEIVED BY:
		[signature]
RELINQUISHED BY: [signature]	DATE: 12/15 TIME: 6:35	RECEIVED BY LABORATORY: [signature]

PROJECT MANAGER: L Pera / M Catton

OFFICE: Concord X237

GTEL ENVIRONMENTAL LABORATORIES, INC.

Western Region
4080-C Pike Lane, Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

02/14/89mt

WORK ORD#: 8902042
CLIENT: LYNN PERA
GROUNDWATER TECHNOLOGY, INC.
4080-D PIKE LANE
CONCORD, CA 94520
PROJECT#: 203-199-4314-13
LOCATION: MOUNTAIN LUTHER KING DRIVE

SAMPLED: 02/01/89 BY: D. KAUFMAN
RECEIVED: 02/02/89
ANALYZED: 02/06/89 BY: P. HANNERS

MATRIX: Soil
UNITS: mg/Kg (ppm)

PARAMETER	SAMPLE # I.D.	01 SS-1	02 SS-2	03 SS-3	04 SS-4		
Benzene		<PQL	3	<PQL	<PQL		
Toluene		<PQL	22	<PQL	<PQL		
Ethylbenzene		<PQL	22	<PQL	<PQL		
Xylenes		<PQL	110	<PQL	21		
Total BTEX		<PQL	160	<PQL	21		
Total Petroleum Hydrocarbons as Gasoline		140	1500	180	1200		

<PQL = Less than Practical Quantitation Levels per EPA Federal Resgister, November 13, 1985, page 46906.
Results rounded to two significant figures.
METHOD: Modified EPA 5030/8020/8015

Emma P. Popek

EMMA P. POPEK, Laboratory Director

GTEL
ENVIRONMENTAL LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520

(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

05/17/89MT Page 1 of 1

WORK ORD#: C905244
CLIENT: LYNN PERA
GROUNDWATER TECHNOLOGY, INC.
4080-D PIKE LANE
CONCORD, CA 94520
PROJECT#: 203-199-4314-14
LOCATION: MARTIN LUTHER & 5TH STREET

SAMPLED: 05/09/89 BY: D. KAUFMAN
RECEIVED: 05/10/89
ANALYZED: 05/11/89 BY: K. PATTON

MATRIX: Soil
UNITS: mg/Kg (ppm)

PARAMETER	SAMPLE # I.D.	01 SS#1	02 SS#2	03 SS#3	04 SS#4	
Benzene		<PQL	<PQL	<PQL	<PQL	
Toluene		<PQL	<PQL	<PQL	<PQL	
Ethylbenzene		<PQL	<PQL	<PQL	<PQL	
Xylenes		<PQL	<PQL	<PQL	<PQL	
Total BTEX		<PQL	<PQL	<PQL	<PQL	
Total Petroleum Hydrocarbons as Gasoline		80	530	18	250	

<PQL = Less than Practical Quantitation Levels per EPA Federal Register, November 13, 1985, page 46906.
Results rounded to two significant figures.
METHOD: Modified EPA 5030/8020/8015

Emma P. Popek

EMMA P. POPEK, Laboratory Director

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(800) 423-7143 *from outside California*

06/07/89 MH

WORK ORD#: C906031
CLIENT: LYNN PERA
GROUNDWATER TECHNOLOGY, INC.
4080-D PIKE LANE
CONCORD, CA 94520
PROJECT#: 203-199-4314-16
LOCATION: MARTIN LUTHER KING JR.

SAMPLED: 05/31-06/89 BY: D. KAUFMAN
RECEIVED: 06/02/89
ANALYZED: 06/06/89 BY: K. PATTON

MATRIX: Soil
UNITS: mg/Kg (ppm)

PARAMETER	SAMPLE # I.D.	01 1	02 2	03 4	04 5	05 6
Benzene		<PQL	<PQL	<PQL	<PQL	<PQL
Toluene		<PQL	<PQL	<PQL	<PQL	<PQL
Ethylbenzene		<PQL	<PQL	<PQL	<PQL	<PQL
Xylenes		<PQL	<PQL	<PQL	<PQL	<PQL
Total BTEX		<PQL	<PQL	<PQL	<PQL	<PQL
Total Petroleum Hydrocarbons as Gasoline		<PQL	<PQL	<PQL	<PQL	<PQL

<PQL = Less than Practical Quantitation Levels per EPA Federal Resgister, November 13, 1985, page 46906.
Results rounded to two significant figures.
METHOD: Modified EPA 5030/8020/8015

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(800) 544-3422 from inside California
(800) 423-7143 from outside California

WORK ORD#: C906031

CLIENT: LYNN PERA
PROJECT#: 203-199-4314-16
LOCATION: MARTIN LUTHER KING JR.

MATRIX: Soil
UNITS: mg/Kg (ppm)

PARAMETER	SAMPLE # / I.D.	06 / 8	07 / 9	08 / 10		
Benzene		<PQL	<PQL	<PQL		
Toluene		<PQL	<PQL	<PQL		
Ethylbenzene		<PQL	<PQL	<PQL		
Xylenes		<PQL	<PQL	<PQL		
Total BTEX		<PQL	<PQL	<PQL		
Total Petroleum Hydrocarbons as Gasoline		<PQL	13	590		

<PQL = Less than Practical Quantitation Levels per EPA Federal Resgister, November 13, 1985, page 46906.
Results rounded to two significant figures.
METHOD: Modified EPA 5030/8020/8015

Emma P. Popek
EMMA P. POPEK, Laboratory Director

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4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

06/07/89 JP

WORK ORD#: C906032
CLIENT: LYNN PERA
GROUNDWATER TECHNOLOGY, INC.
4080-D PIKE LANE
CONCORD, CA 94520
PROJECT#: 203-199-4314-7
LOCATION: MARTIN LUTHER KING JR

SAMPLED: 05/31-06/89 BY: D. KAUFMAN
RECEIVED: 06/02/89
ANALYZED: 06/06/89 BY: J. THOMAS

MATRIX: Soil
UNITS: mg/Kg (ppm)

PARAMETER	MDL	SAMPLE # I.D.	01 1	02 2	03 4	04 5	05 6
Lead (organic)	0.25		<0.25	<0.25	<0.25	<0.25	<0.25

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.

METHOD: per California DHS

GTEL ENVIRONMENTAL LABORATORIES, INC.
Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

WORK ORD#: C906032

CLIENT: LYNN PERA
PROJECT#: 203-199-4314-7
LOCATION: MARTIN LUTHER KING JR

MATRIX: Soil
UNITS: mg/Kg (ppm)

PARAMETER	MDL	SAMPLE # I.D.	06 8	07 9	08 10		
Lead (organic)	0.25		<0.25	<0.25	<0.25		

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.

METHOD: per California DHS

Emma P. Popek
EMMA P. POPEK, Laboratory Director

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

06/29/89 MH

WORK ORD#: C906478
CLIENT: LYNN PERA
GROUNDWATER TECHNOLOGY, INC.
4080-D PIKE LANE
CONCORD, CA 94520
PROJECT#: 203-199-4314-18
LOCATION: OAKLAND, CA

SAMPLED: 06/22/89 BY: C. ROBERTSON
RECEIVED: 06/22/89
ANALYZED: 06/26/89 BY: K. PATTON

MATRIX: Soil
UNITS: mg/Kg (ppm)

PARAMETER	SAMPLE # I.D. 01 SEC 10				
Benzene	<PQL				
Toluene	<PQL				
Ethylbenzene	<PQL				
Xylenes	<PQL				
Total BTEX	<PQL				
Total Petroleum Hydrocarbons as Gasoline	2				

<PQL = Less than Practical Quantitation Levels per EPA Federal Resgister, November 13, 1985, page 46906.
Results rounded to two significant figures.
METHOD: Modified EPA 5030/8020/8015

Emma P. Popek

EMMA P. POPEK, Laboratory Director

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LABORATORIES, INC.

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(800) 423-7143 from outside California

06/23/89 JP

WORK ORD#: C906479
CLIENT: LYNN PERA
GROUNDWATER TECHNOLOGY, INC.
4080-D PIKE LANE
CONCORD, CA 94520
PROJECT#: 203-199-4314-19
LOCATION: OAKLAND, CA

SAMPLED: 06/22/89 BY: C. ROBERTSON
RECEIVED: 06/22/89
ANALYZED: 06/22/89 BY: M. ISKANDER

MATRIX: Soil
UNITS: mg/Kg (ppm)

PARAMETER	MDL	SAMPLE # I.D.	01 SEC 10
Lead (organic)	0.25		<0.25

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.

METHOD: per California DHS

Emma P. Popek/EMF
EMMA P. POPEK, Laboratory Director

GTEL Environmental Laboratories, Inc.

4080-C Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Invoice 8902042

B2 3

Project Manager: LYNN PENA.

Phone #:

Address: CONCORD GTI

FAX #:

Project Number: 203 199 4314 -13

Project Name: GTI CONCORD

Project Location: MTN LUTHER KING DR.

Sampler Signature: [signature]

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	Matrix: SOIL	Matrix: AIR	Matrix: SLUDGE	Matrix: OTHER	Method Preserved: HCl	Method Preserved: HNO3	Method Preserved: ICE	Method Preserved: NONE	Method Preserved: OTHER	Sampling: DATE	Sampling: TIME
SS# 1	01A				X									2/1	
# 2	02A				↓									↓	
# 3	03A				↓									↓	
4	04A				↓									↓	

Analysis Request / Special Handling:

Sample ID	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD	OTHER	PRIORITY ONE SERVICE (24 hr)	EXPEDITED SERVICE (2-4 days)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
SS# 1		X																						X
# 2		X																						↓
# 3		X																						↓
4		X																						X

Relinquished by	Date	Time	Received by
[signature]	2/1	14:40	Pam Sna
	2/2/89	8:30	Received by Laboratory: Kathy Biava

Remarks: 1 P-

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080-C Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: L. Pera

Phone #:

Address: Concord GTI

FAX #:

Project Number: 203 1994314

Project Name: GTI Concord

Project Location: Martin Luther & Sears

Sampler Signature: D Kof

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	Matrix: SOIL	Matrix: AIR	Matrix: SLUDGE	Matrix: OTHER	Method Preserved: HCl	Method Preserved: HNO3	Method Preserved: ICE	Method Preserved: NONE	Method Preserved: OTHER	Sampling: DATE	Sampling: TIME
SS # 1		1			✓									5/9	
# 2		1			✓									5/9	
# 3		1			✓									5/9	
# 4		1			✓									5/9	

ANALYSIS REQUEST

Sample ID	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
SS # 1		X																
# 2		X																
# 3		X																
# 4		X																

SPECIAL HANDLING

Sample ID	PRIORITY ONE SERVICE	EXPEDITED SERVICE	VERBAL	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
SS # 1					X
# 2					X
# 3					X
# 4					X

Relinquished by:	Date	Time	Received by:
D. K.	5/9/89		
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
	5-9	14:50	E. Kasten

Remarks:

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080-C Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:
Phone #:
Address:
FAX #:
Project Number: -17
Project Name:
Project Location:
Sampler Signature:

Project A

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	Matrix: SOIL	Matrix: AIR	Matrix: SLUDGE	Matrix: OTHER	Method Preserved: HCl	Method Preserved: HNO_3	Method Preserved: ICE	Method Preserved: NONE	Method Preserved: OTHER	Sampling: DATE	Sampling: TIME	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD	OTHER	PRIORITY ONE SERVICE (24 hr)	EXPEDITED SERVICE (2-4 days)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
	001	1			x																																		x
	002																																						x
	003																																						x
	004																																						x
	005																																						x
	006																																						x
	007																																						x
	008																																						x

Relinquished by:	Date	Time	Received by:
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:

Remarks:

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080-C Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

project

Project Manager: Lynn Pera

Phone #: X 237

Address: GTI Concord

FAX #:

Project Number: 203 - [redacted] - 4314 - 18

Project Name: GTE-Concord [redacted]

Project Location: Texaco/Martin Luther/Oakland

Sampler Signature:

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	ICE	NONE	OTHER	Sampling: DATE	TIME
Sec 10	01	2			X						X			4/26/94	10:45

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
	X																X

OTHER: 19

SPECIAL HANDLING

PRIORITY ONE SERVICE (24 hr)	EXPEDITED SERVICE (2-4 days)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)
	X		

Relinquished by:	Date	Time	Received by:
Relinquished by	Date	Time	Received by:
Relinquished by	Date 4/27/94	Time	Received by Laboratory:

Remarks:

Samples taken 6" into pile.
Sealed with foil, caps, and tape

5 day Turnaround

APPENDIX G

GROUNDWATER MONITORING DATA

		MW-1	MW-2	MW-3
WELLHEAD ELEV.(ft)*		100.00	98.45	99.65
DATE				
08/20/87	DTW	11.71	98.45	NM
	DTP	-	-	-
ELEV. WATER		88.29	86.96	
9/01/87	DTW	11.98	11.40	11.77
	DTP	-	-	-
ELEV. WATER		88.02	87.05	87.88
11/05/87	DTW	NM	NM	11.92
	DTP			-
ELEV. WATER				87.73
01/29/88	DTW	11.60	11.07	11.37
	DTP	-	-	-
ELEV. WATER		88.40	87.38	88.28
03/03/88	DTW	11.81	11.32	11.52
	DTP	-	-	-
ELEV. WATER		88.19	87.13	88.13
07/27/88	DTW	12.49	11.88	12.24
	DTP	-	-	-
ELEV. WATER		87.51	86.57	87.41
03/28/90	DTW	**	98.45	**
	DTP	**	11.54	**
ELEV. WATER			86.91	

DTW = Depth To Water (FT)
DTP = Depth To Product (FT)
* = Relative datum
** = Destroyed on September 15, 1988
NM = Not Measured

MD4314A

GTEL ENVIRONMENTAL LABORATORIES, INC.

Western Region
4080-C Pike Lane, Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

WORK ORD#: 8902041
CLIENT: LYNN PERA
GROUNDWATER TECHNOLOGY, INC.
4080-D PIKE LANE
CONCORD, CA 94520
PROJECT#: 203-199-43114-12
LOCATION: MARTIN LUTHER KING DRIVE

SAMPLED: 02/01/89 BY: D. KAUFMAN
RECEIVED: 02/02/89
ANALYZED: 02/07/89 BY: R. CONDIT

MATRIX: Water
UNITS: ug/L (ppb)

PARAMETER	SAMPLE # I.D. 01 MW-2
Benzene	<PQL
Toluene	<PQL
Ethylbenzene	<PQL
Xylenes	<PQL
Total BTEX	<PQL
Total Petroleum Hydrocarbons as Gasoline	8

<PQL = Less than Practical Quantitation Levels per EPA Federal Register, November 13, 1985, page 46906.
Results rounded to two significant figures.

METHOD: Modified EPA 5030/8020/8015

Emma P. Popek

EMMA P. POPEK, Laboratory Director

GTEL ENVIRONMENTAL LABORATORIES, INC.
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800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: LYNN PENA
Phone #:
Address: GTI CONCORD
FAX #:
Project Number: 203 199 4314 -12
Project Name: GTI CONCORD
Project Location: MARTIN LUTHER KING DR.
Sampler Signature: [signature]

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	Matrix: SOIL	Matrix: AIR	Matrix: SLUDGE	Matrix: OTHER	Method Preserved: HCl	Method Preserved: HNO3	Method Preserved: ICE	Method Preserved: NONE	Method Preserved: OTHER	Sampling: DATE	Sampling: TIME	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD	OTHER	OTHER	OTHER	OTHER	OTHER	PRIORITY ONE SERVICE (24 hr)	EXPEDITED SERVICE (2-4 days)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
MW#2	1A	2	40 ml	X					X					2/1			X																										X

Relinquished by:	Date	Time	Received by:
[signature]	2/1	4:40	Pr[illegible] nunder Sg
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	2/2/89	8:30	Kathy Biava

Remarks: [illegible handwritten initials] 2/7/89

GTEL ENVIRONMENTAL LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520

(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

05/15/89 KF PAGE 1 OF 1

WORK ORD#: C905341
CLIENT: LYNN PERA
GROUNDWATER TECHNOLOGY, INC.
4080-D PIKE LANE
CONCORD, CA 94520
PROJECT#: 203-199-4314-15
LOCATION: HEARST & OXFORD STREET

SAMPLED: 05/12/89 BY: D. KAUFMAN
RECEIVED: 05/12/89
ANALYZED: 05/13/89 BY: R. CONDIT

MATRIX: WATER
UNITS: ug/L (ppb)

PARAMETER	SAMPLE # I.D. 01 MW #1	02 MW #1B			
Benzene	<PQL	<PQL			
Toluene	<PQL	<PQL			
Ethylbenzene	<PQL	<PQL			
Xylenes	<PQL	<PQL			
Total BTEX	<PQL	<PQL			
Total Petroleum Hydrocarbons as Gasoline	<PQL	<PQL			

<PQL = Less then Practical Quantitation Levels per EPA Federal Register, November 13, 1985, page 46906.
Results rounded to two significant figures.
METHOD: Modified EPA 5030/8020/8015

Emma P. Popek
EMMA P. POPEK, Laboratory Director

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080-C Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: LYNN PENA.
Phone #:

Address: CONCORD GTI
FAX #:

Project Number: 203 199 4311 15
Project Name: GTI CONCORD

Project Location: HEARST & OXFORD.
Sampler Signature: [signature]

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO_3	ICE	NONE	OTHER	Sampling: DATE	TIME
MW#1		2	40 ml	✓							X				
MW#1B		1	40 ml	✓							X				

Sample ID	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
MW#1		X																
MW#1B		X																

Sample ID	OTHER					PRIORITY ONE SERVICE (24 hr)	EXPEDITED SERVICE (2-4 days)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
MW#1										X
MW#1B										X

Relinquished by:	Date	Time	Received by:
[signature]			
Relinquished by:	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
	5/12	15:10	Karla Dillinger

Remarks: 4°C
RCS 13/11

Project Number: 203-199-4314
Work Order Number: D0-03-865
Location: 424 Martin Luther King Jr. Way
Oakland, CA.
Date Sampled: 28-Mar-90

Table 1a

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water EPA Methods 5030, 8020 and modified 8015[a]

[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 Control Board LUFT Manual protocols, May 1988 revision.

GTEL Sample Number		01			
Client Identification		MW-2			
Date Analyzed		04/05/90			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	<0.5			
Toluene	0.5	<0.5			
Ethylbenzene	0.5	<0.5			
Xylene, total	0.5	<0.5			
TPH as gasoline	1	<1			
Detection limit multiplier		1			

GTEL ENVIRONMENTAL LABORATORIES INC

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4080- Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

72- 4060

CUSTODY RECORD

Project Manager: Tim Watchers

Phone #: 671-2381

FAX #:

Address: GTI Concord

Site location: 424 Martin Luther King Jr. Way, Oakland

Project Number: 203 199 4314

Project Name: GTI Concord

I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler Name (Print):

Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	NONE	OTHER	Sampling: DATE	TIME
MW-2B			1	X					X			X			28 MAR 90	12:45
MW-2			2	X					X			X			28 MAR 90	12:47

ANALYSIS REQUEST

BTEX 602 ☐ 8020 ☐ with MTBE ☐	BTEX/TPH Gas 602/8015 ☐ 8020/8015 ☐ MTBE ☐	TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel	Product I.D. by GC (SIMDIS) ☐	Total Oil & Grease: 413.1 ☐ 413.2 ☐ 503A ☐	Total Petroleum Hydrocarbons: 418.1 ☐ 503E ☐	EPA 601 ☐ 8010 ☐ DCA only ☐	EPA 602 ☐ 8020 ☐	EPA 608 ☐ 8080 ☐ PCBs only ☐	EPA 610 ☐ 8310 ☐	EPA 624 ☐ 8240 ☐ NBS +15 ☐	EPA 625 ☐ 8270 ☐ NBS +25 ☐	EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi VOA ☐	EPA Priority Pollutant Metals ☐ HSL ☐	LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐	CAM Metals ☐ STLC ☐ TTLC	Corrosivity ☐ Flashpoint ☐ Reactivity ☐	Keep cool
	X																X	

SPECIAL HANDLING

24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER _____(#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify)

Detection limit not < PQL

SPECIAL REPORTING REQUIREMENTS (Specify)

yes

REMARKS: acidified
normal turnaround
repeat all 3 xylene isomers

Lab Use Only Storage Location

Lot #: Work Order #:

Relinquished by Sampler:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by Laboratory:
									3/29/90	7:06	

May bill #