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REPORT ENVIRONMENTAL INVESTIGATION RELATED TO UNDERGROUND TANK REMOVAL

at
ARCO Service Station No. 2152
22141 Center Street
Castro Valley, California

AGS Job No. 69013-2

Report prepared for

ARCO Products Company 2000 Alameda de las Pulgas San Mateo, California

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CONTENTS

INTRODUCTION 1 SITE DESCRIPTION AND BACKGROUND 2 FIELD WORK 6 Tank-Pit Excavation 6 Soil Sampling Beneath Tanks 8 Soil Sampling Beneath Product Lines 9 LABORATORY ANALYSES 10
AERATION AND DISPOSAL OF GASOLINE-CONTAMINATED SOIL . 13 CONCLUSIONS
TABLES
TABLE 1:RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES4TABLE 2:SUMMARY OF OBSERVATIONS DURING TANK EXAMINATION7
TABLE 3: RESULTS OF LABORATORY ANALYSES OF TANK-PIT SOIL SAMPLES
TABLE 4: RESULTS OF LABORATORY ANALYSES OF PRODUCT-LINE SOIL SAMPLES
TABLE 5: RESULTS OF LABORATORY ANALYSES OF STOCKPILED SOIL 14
PLATES
PLATE P-1: SITE VICINITY MAP
PLATE P-2: GENERALIZED SITE PLAN PLATE P-3: TANK-PIT SOIL SAMPLING LOCATIONS
PLATE P-4: PRODUCT-LINE SOIL SAMPLING LOCATIONS
APPENDIX A
FIELD PROCEDURES Site Safety Plan Tank Removal Sample Labeling and Handling Aeration and Sampling of Stockpiled Soil
APPENDIX B
CHAIN OF CUSTODY RECORDS (25) ANALYSIS REPORTS (93)

REPORT ENVIRONMENTAL INVESTIGATION RELATED TO UNDERGROUND TANK REMOVAL

ARCO Service Station No. 2152 22141 Center Street Castro Valley, California

For ARCO Products Company

INTRODUCTION

ARCO Products Company contracted with Applied GeoSystems to conduct an environmental investigation in conjunction with the removal of five underground storage tanks at ARCO Station No. 2152 in Castro Valley, California. This investigation involved the following tasks related to underground storage-tank removal: (1) observing the removal of four steel 6,000-gallon underground storage tanks and one fiberglass 12,000-gallon underground storage tank; (2) collecting soil samples from beneath each tank and from the limits of the excavation to assess the presence of hydrocarbon contamination in the soil in the tank area; (3) observing the removal of and collecting soil samples from beneath the product-transfer lines; (4) collecting samples of stockpiled soil onsite; (5) analyzing the soil samples in accordance with Environmental Protection Agency methods; (6) monitoring and recording activities related to excavating, stockpiling, and handling the contaminated soil; and (7) preparation of this report. This report describes the field work associated with the

above tasks, summarizes the results of analysis, and presents our conclusions. As requested by ARCO, our recommendations are included under separate cover.

SITE DESCRIPTION AND BACKGROUND

ARCO Service Station No. 2152 is an operating service station at the intersection of Center Street and Grove Way in Castro Valley, California, as shown on the Site Vicinity Map (Plate P-1). The Generalized Site Plan (Plate P-2) shows the approximate site boundaries and locations of pertinent features at the site. The site is on a relatively flat, asphalt- and concrete-covered lot. Residences are southeast and southwest of the site, and commercial developments are northwest across Grove Way and northeast across Center Street.

Five underground product-storage tanks were buried in the northeastern portion of the site, including four 6,000-gallon tanks and one 12,000-gallon tank. These tanks are designated T1 through T5 on Plate P-2; tank T1 was a 12,000-gallon unleaded supreme gasoline tank, tanks T2 through T4 were 6,000-gallon regular unleaded gasoline tanks, and tank T5 was a leaded regular gasoline tank. It is our understanding that the 12,000-gallon tank was installed in 1983, and the four 6,000-gallon tanks were installed in 1976.

Pressure testing of tanks T1 through T5 was performed in February 1989, by Paradiso Construction Company of Oakland, California. Paradiso indicated that two 6,000-gallon unleaded regular tanks (T2 and T4) failed the test and were put out of service.

Applied GeoSystems performed a site assessment on April 13, 1989, to evaluate the extent of potential soil contamination in the vicinity of the underground storage tanks (Applied GeoSystems Report No. 69013-1, dated May 26, 1989). This work included drilling three soil borings in the area of the product tanks. Results of laboratory analyses of soil samples collected from the borings indicated concentrations of total petroleum hydrocarbons as gasoline (TPHg) to be less than 6 parts per million (ppm) in the samples, with the exception of one soil sample, collected adjacent to T1 at a depth of 5 feet, indicating a concentration of 460 ppm. Ground water was not encountered in the borings to an approximate depth of 45 feet. Locations of the borings are shown on Plate P-2. The results of laboratory analyses of soil samples collected during the drilling are summarized in Table 1.

TABLE 1 RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES ARCO Station No. 2152

22141 Center Street Castro Valley, California Page 1 of 2

Date	Sample Identifier	TPHg	В	Т	E	X
4/13/89	S-10-B1	ND	ND	ND	ND	ND
4/13/89	S-20-B1	ND	0.11	0.15	ND	0.19
4/13/89	S-25-B1	ND	0.22	0.34	0.088	0.38
4/13/89	S-30-B1	5.1	0.42	0.89	0.11	0.56
4/13/89	S-35-B1	5.1	0.40	0.72	0.094	0.42
4/13/89	S-40-B1	ND	0.10	ND	ND	ND
4/13/89	S-45-B1	ND	ND	ND	ND	ND
4/13/89	S-10-B2	ND	ND	ND	ND	ND
4/13/89	S-20-B2	ND	ND	ND	ND	ND
4/13/89	S-25-B2	ND	ND	ND	ND	ND
4/13/89	S-30-B2	ND	ND	ND	ND	ND

See notes on page 2 of 2.

TABLE 1 RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES

ARCO Station No. 2152 22141 Center Street Castro Valley, California Page 2 of 2

Date	Sample Identifier	TPHg	В	Т	E	X
4/13/89	S-5-B3	460	5.1	34	9.6	51
4/13/89	S-10-B3	5.6	ND	0.11	ND	1.0
4/13/89	S-20-B3	ND	ND	ND	0.055	0.068
4/13/89	S-25-B3	ND	ND	ND	0.17	0.16
4/13/89	S-30-B3	ND	ND	ND	ND	ND

Results in milligrams per kilogram (mg/kg), or parts per million (ppm).

TPHg: Total petroleum hydrocarbons as gasoline

B:benzene T:toluene E:ethylbenzene X:total xylene isomers

ND: Less than the detection limit of the specified analysis.

Analytical Methods: TPHg: EPA 5030/8015

BTEX: EPA 8020

Sample identification:

- Soil sample

FIELD WORK

Tank-Pit Excavation

Field work performed at the site by Applied GeoSystems on behalf of ARCO was conducted in accordance with Applied GeoSystems' Site Safety Plan No. 69013-2S, dated July 21, 1989. On August 17, 1989, a field geologist from Applied GeoSystems was present at the site to observe removal of five underground storage tanks, inspect their outer surfaces, and collect soil samples from beneath each tank. Mr. Scott Seery of the Alameda County Department of Environmental Health was present to witness the removal of the storage tanks.

ARCO contracted Paradiso Construction Company (Paradiso) to perform the excavation, tank removal, and tank replacement. The contents of the tanks were evacuated by H & H Ship Service of San Francisco, California. Paradiso applied dry ice to the tanks to purge hydrocarbon vapor from the tanks prior to removal. The excavation to the tops of the tanks was conducted with a rubber-tired excavator. Tanks T1 through T5 were removed from the tank pit near the northeastern corner of the property. A summary of observations made of the condition of the tanks after their removal is presented in Table 2. ARCO contracted H & H Ship Service to transport the tanks to their recycling facility in San Francisco after tank examination.

TABLE 2 SUMMARY OF OBSERVATIONS DURING TANK EXAMINATION ARCO Station No. 2152 22141 Center Street Castro Valley, California August 17, 1989

- Tank T1 (gasoline): Fiberglass, 12,000-gallon-capacity, ruptured upon removal, no holes observed in two separate pieces removed.
- Tank T2 (gasoline): steel, tar-coated, 6,000-gallon-capacity, slightly rusted, no holes observed, dissolved tar coating at fill end.
- Tank T3 (gasoline): steel, tar-coated, 6,000-gallon-capacity, slightly rusted, no holes observed, dissolved tar coating at fill end.
- Tank T4 (gasoline): steel, tar-coated, 6,000-gallon-capacity, slightly rusted, no holes observed, dissolved tar coating at fill end.
- Tank T5 (gasoline): steel, tar-coated, 6,000-gallon-capacity, slightly rusted, no holes observed, dissolved tar coating at fill end.

The backfill material excavated from above and around the steel tanks was predominately sand. The backfill removed from above and around the fiberglass tank was pea gravel. Backfill material was monitored with an organic vapor meter (OVM) as the material was removed. Readings collected during this monitoring indicated hydrocarbon concentrations of 200 ppm to 600 ppm in the backfill. The native material beneath the tanks consisted of predominately silty clay and sandy clay. Ground water was not encountered in the tank pit. Three new 12,000-gallon fiberglass tanks were placed in the pit which was then backfilled with pea-gravel. Four 12 inch PVC conductor casings were positioned between the tanks

to provide access for future exploratory drilling and/or ground-water monitoring well installation. A summary of our field methods used during tank removal are presented in Field Procedures, Appendix A.

Soil Sampling Beneath Tanks

Between August 18 and August 30, 1989, a total of 24 samples of native soil were collected from the gasoline-tank pit at depths of 13 to 22 feet (the limit of the equipment). Samples were initially collected from beneath the fill port and opposite end of each tank. OVM measurements of native soil from beneath the storage tanks indicated hydrocarbon concentrations between 1 ppm and 40 ppm beneath the southwestern ends of the tanks and between 15 ppm and 700 ppm beneath the northeastern (fill-port ends) of the tanks.

Because obvious soil discoloration with OVM measurements of 700 ppm was noted in the soil from the bottom of the northeastern end of the tank pit at a depth of about 13 feet, and after discussion with Mr. Seery of the Alameda County Department of Environmental Health, additional excavation to a depth of 18 feet in the northeastern end was performed. One soil sample was collected from beneath each tank at a depth of approximately 18 feet. One additional soil sample was collected from beneath T5 at a depth of 22 feet. Soil samples also were collected from the walls of the excavation at the northern and eastern corners of the pit (corresponding to the fill-port ends of tanks T1 and T5) and from beneath

the vapor-recovery system, which was located in the southern-central portion of the pit. One soil sample was collected from the bottom of the pit in both the south corner and the west corner respectively. Soil sample locations from inside the tank pit are presented in Tank Pit Soil Sampling Locations, Plate P-3.

Soil Sampling Beneath Product Lines

Between September 9, and October 4, 1989, an Applied GeoSystems geologist was present at the site to observe the removal of the product-transfer lines and to collect soil samples from beneath the lines. An obvious product odor was noted in the soil beneath the product-transfer lines feeding the service islands near Center Street, with OVM measurements indicating hydrocarbon concentrations of up to 500 ppm. In addition to the existing lines, three abandoned lines were found between the two dispenser islands near Center Street. An area between the Center Street islands measuring approximately 35 feet by 20 feet by 3 feet deep was excavated and a total of fourteen soil samples collected from the bottom of the excavation in the areas of the existing and abandoned product lines.

Two soil samples were collected from beneath the existing product lines feeding the single dispenser island near Grove Way and two samples collected from beneath two abandoned lines adjacent to the Grove Way dispenser island. The locations where samples were collected along the former locations of the product lines are presented in Product-Line Soil

Sample Locations, Plate P-4. A summary of the sampling methods used to collect soil samples from within the tank pit and from beneath the former product lines are presented in Appendix A.

LABORATORY ANALYSES

Forty-two soil samples collected from the gasoline-tank pit and beneath the product lines were analyzed for TPHg by modified Environmental Protection Agency (EPA) Method 5030/8015 and for purgeable gasoline constituents benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) by EPA Method 8020. Soil samples were analyzed at the Applied GeoSystems laboratory (Hazardous Waste Testing Laboratory No. 153) in Fremont, California, or at Anametrix, Inc. (Hazardous Waste Testing Laboratory No. 151) in San Jose, California. The results of the laboratory analyses of soil samples from the gasoline-tank pit are presented in Table 3 and on Plate P-3. Laboratory results of analysis of samples collected from the product-line trenches are presented in Table 4 and are also shown on Plate P-4. Laboratory analytical reports are included in Appendix B.

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TABLE 3
RESULTS OF LABORATORY ANALYSES OF TANK-PIT SOIL SAMPLES
ARCO Station No. 2152
22141 Center Street, Castro Valley, California

Date	Sample Number	TPHg	В	Т	E	X
Tank-Pit E	excavation	· · · · · · · · · · · · · · · · · · ·		<u> </u>		
08/18/89	S-14-T1S	<2	0.24	< 0.05	40.05	. 0 0 =
08/18/89	S-13-T2S	<2	< 0.05	< 0.05	< 0.05	< 0.05
08/18/89	S-13-T3S	4.3	0.09	< 0.05 < 0.05	< 0.05	< 0.05
08/18/89	S-13-T4S	<2	< 0.05		< 0.05	< 0.05
08/18/89	S-13-T5S	2.4	< 0.05	< 0.05	< 0.05	< 0.05
08/18/89	S-14-T1N	1,400	0.72	< 0.05	< 0.05	< 0.05
08/18/89	S-13-T2N	<2	0.72	6.1	11	130
08/18/89	S-13-T3N	12		< 0.05	1.1	8.5
08/18/89	S-13-T4N	4.4	0.29	0.29	0.22	1.3
08/18/89	S-13-T5N	700	< 0.05	< 0.05	< 0.05	0.23
08/18/89	S-18-T1N	430	4.6	2.0	4.6	83
08/18/89	S-18-T2N		< 0.05	< 0.05	1.1	8.5
		<2	0.076	< 0.05	< 0.05	0.092
08/18/89	S-19-T3N	93	0.11	0.11	0.74	3.5
08/18/89	S-19-T4N	<2	< 0.05	< 0.05	< 0.05	< 0.05
08/18/89	S-19-T5N	3,800	< 0.05	15	18	150
08/24/89	S-22-T5N	6.5	< 0.05	0.36	0.093	0.82
08/22/89	S-14-NW1	<2	< 0.05	< 0.05	< 0.05	< 0.05
08/22/89	S-14-EW1	<2	< 0.05	< 0.05	< 0.05	< 0.05
08/30/89	S-14-NW2	3.4	< 0.005	< 0.005	< 0.005	.030
08/30/89	S-14-WW1	<1	< 0.005	< 0.005	< 0.005	< 0.005
08/30/8 9	S-14-SF1	<1	< 0.005	< 0.005	< 0.005	< 0.005
08/30/89	S-14-SF2	<1	< 0.005	< 0.005	< 0.005	< 0.005
08/30/89	S-14-VR1	2,300	<2	<2	19	146
08/30/89	S-22-VR1	37,000	<40	510	380	2,600

Results in parts per million (ppm). TPHg: Total petroleum hydrocarbons as gasoline; B: Benzene T: Toluene E: Ethylbenzene X: Total xylenes. <: Less than the method detection limit. Sample ID: S-14-T1S

Area of sample (See Plate P-4)

Approximate sample depth in feet

Soil sample

TABLE 3
RESULTS OF LABORATORY ANALYSES OF TANK-PIT SOIL SAMPLES
ARCO Station No. 2152
22141 Center Street, Castro Valley, California

Date	Sample #	TPHg	В	Т	E	X
Tank-Pit Ex	xcavation				W 1111/000	, <u> </u>
08/18/89	S-14-T1S	<2	0.24	< 0.05	< 0.05	< 0.05
08/18/89	S-13-T2S	<2	< 0.05	< 0.05	< 0.05	< 0.05
08/18/89	S-13-T3S	4.3	0.09	< 0.05	< 0.05	< 0.05
08/18/89	S-13-T4S	<2	< 0.05	< 0.05	< 0.05	< 0.05
08/18/89	S-13-T5S	2.4	< 0.05	< 0.05	< 0.05	< 0.05
08/18/89	S-14-T1N	1,400	0.72	6.1	11	130
08/18/89	S-13-T2N	<2	0.076	< 0.05	1.1	8.5
08/18/89	S-13-T3N	12	0.29	0.29	0.22	1.3
08/18/89	S-13-T4N	4.4	< 0.05	< 0.05	< 0.05	0.23
08/18/89	S-13-T5N	<i>7</i> 00	4. 6	2.0	4.6	83
08/18/89	S-18-T1N	430	< 0.05	< 0.05	1.1	8.5
08/18/89	S-18-T2N	<2	0.076	< 0.05	< 0.05	0.092
08/18/89	S-19-T3N	93	0.11	0.11	0.74	3.5
08/18/89	S-19-T4N	<2	< 0.05	< 0.05	< 0.05	< 0.05
08/18/89	S-19-T5N	3,800	< 0.05	15	18	150
08/24/89	S-22-T5N	6.5	< 0.05	0.36	0.093	0.82
08/22/89	S-14-NW1	<2	< 0.05	< 0.05	< 0.05	< 0.05
08/22/89	S-14-EW1	<2	< 0.05	< 0.05	< 0.05	< 0.05
08/30/89	S-14-NW2	3.4	< 0.005	< 0.005	< 0.005	.030
08/30/89	S-14-WW1	<1	< 0.005	< 0.005	< 0.005	< 0.005
08/30/89	S-14-SF1	<1	< 0.005	< 0.005	< 0.005	< 0.005
08/30/89	S-14-SF2	<1	< 0.005	< 0.005	< 0.005	< 0.005
08/30/89	S-14-VR1	2,300	<2	<2	19	146

Results in milligrams per kilogram (mg/kg) or parts per million (ppm).

TPHg: Total petroleum hydrocarbons as gasoline

B: Benzene T: Toluene E: Ethylbenzene X: Total xylenes

<: Less than the detection limit for the analysis method.

Sample Identification: S-14-T1S

Area of sample (See Plate P-4)

Approximate sample depth in feet below grade
Soil sample

TABLE 4
RESULTS OF LABORATORY ANALYSES OF PRODUCT-LINE SOIL SAMPLES
ARCO Station No. 2152
22141 Center Street
Castro Valley, California

Date	Sample #	TPHg	В	Т	E	X
Center Str	eet Dispensers					
09/06/89	S-4-PL3	43	1.0	3.2	0.74	4.0
09/06/89	S-2-PL9	4.9	0.24	0.18	0.16	0.64
09/06/89	S-4-PL10	3.4	0.21	0.18	0.11	0.25
09/06/89	S-3.5-PL11	43	1.0	3.2	0.74	4.0
09/06/89	S-2-PL12	73	0.13	< 0.050	0.60	3.6
09/11/89	S-3-PL14	<2	< 0.050	< 0.050	< 0.050	< 0.050
09/11/89	S-3.5-PL15	<2	< 0.050	< 0.050	< 0.050	0.087
09/15/89	S-3-PL16	21	0.14	0.84	0.42	2.5
09/15/89	S-3-PL17	190	0.85	7.4	2.3	14
09/15/89	S-3-PL18	100	0.72	3.3	1.2	7.2
09/15/89	S-2.5-PL19	<2	< 0.050	< 0.050	< 0.050	< 0.050
09/15/89	S-3-PL20	<2	< 0.050	< 0.050	< 0.050	< 0.050
09/15/89	S-5-PL21	<2	< 0.050	< 0.050	< 0.050	< 0.050
09/15/89	S-3-PL22	<2	< 0.050	< 0.050	< 0.050	< 0.050
Grove Stre	et Dispensers					
09/06/89	S-1.5-PL1	130	1.6	3.8	2.4	13
09/19/89	S-4-PL22	13	0.20	0.97	0.16	1.2
10/04/89	S-3-PL25	<2	< 0.050	< 0.05	< 0.050	< 0.050
10/04/89	S-3-PL26	<2	< 0.050	< 0.050	< 0.050	< 0.050

Results in milligrams per kilogram (mg/kg) or parts per million (ppm).

TPHg: Total petroleum hydrocarbons as gasoline

B: Benzene T: Toluene E: Ethylbenzene X: Total xylenes

<: Less than the detection limit for the analysis method.

Sample identification:

S-4-PL3

Approximate sample depth in feet below grade

— Soil sample

AERATION AND DISPOSAL OF GASOLINE-CONTAMINATED SOIL

Approximately 1,850 cubic yards of soil excavated from the gasoline-tank pit and product-line trenches were stockpiled on asphalt at the site and covered with Visquene. From August 21, 1989 through October 10, 1989, a geologist from Applied GeoSystems periodically visited the site to collect composite samples of the stockpiled soil for laboratory analysis of TPHg and BTEX in the soil. Paradiso aerated the stockpiled soil by spreading and frequently turning the soil with a backhoe. A total of 45 composite samples were collected, each consisting of four brass sleeves for every 50 cubic yards of stockpiled soil tested.

Each composite soil sample collected was analyzed in the laboratory for TPHg and BTEX. Soil showing TPHg concentrations of 100 ppm or greater was aerated further and then resampled. Paradiso then arranged with Conrad Trucking of Escalon, California, to have the aerated soil transported to Redwood Landfill (Class III landfill) in Novato, California. The results of the laboratory analyses are presented in Table 5 and Appendix B. The methods used to aerate and to collect composite samples of the stockpiled soil are summarized in Appendix A.

Table 5
RESULTS OF LABORATORY ANALYSES OF STOCKPILED SOIL
ARCO Station No. 2152
22141 Center Street
Castro Valley, California (page 1 of 2)

Date	Sample #	TPHg	В	Т	E	X
Stockpiled	Soil	· ·				
08/21/89	S-0821-1A-D	3.2	< 0.050	< 0.050	< 0.050	< 0.050
08/21/89	S-0821-2A-D	<2	< 0.050	< 0.050	< 0.050	< 0.050
08/25/89	S-0825-1A-D	4.4	< 0.050	< 0.050	< 0.050	< 0.050
08/25/89	S-0825-2A-D	21	< 0.050	0.12	0.089	1.0
08/25/89	S-0825-3A-D	9.9	< 0.050	< 0.050	< 0.050	0.14
08/30/89	S-0830-1A-D	55	< 0.050	< 0.050	< 0.050	0.16
08/30/89	S-0830-2A-D	<1	< 0.005	< 0.005	< 0.005	< 0.005
08/30/89	S-0830-3A-D	<1	< 0.005	< 0.005	< 0.005	< 0.005
08/30/89	S-0830-4A-D	<1	< 0.005	< 0.005	< 0.005	< 0.005
08/30/89	S-0830-5A-D	<1	< 0.005	< 0.005	< 0.005	< 0.005
09/07/89	S-0907-AA-D	1,300	2.2	17	7.5	71
09/07/89	S-0907-BA-D	510	< 0.050	< 0.050	0.20	4.7
09/07/89	S-0907-CA-D	78	< 0.050	< 0.050	< 0.050	1.5
09/07/89	S-0907-DA-D	2.3	< 0.050	< 0.050	< 0.050	< 0.050
09/07/89	S-0907-EA-D	670	< 0.050	0.31	2.4	27
09/07/89	S-0907-FA-D	33	< 0.050	< 0.050	< 0.050	< 0.050
09/07/89	S-0907-GA-D	78	< 0.050	< 0.050	< 0.050	0.061
09/07/89	S-0907-HA-D	68	< 0.050	< 0.050	< 0.050	0.061
09/12/89	S-0912-1A-D	<u> 19</u>	< 0.05	< 0.050	< 0.050	< 0.050
09/12/89	S-0912-2A-D	48	< 0.050	< 0.050	< 0.050	0.19
09/12/89	S-0912-3A-D	42	< 0.050	< 0.050	< 0.050	0.37
09/12/89	S-0912-4A-D	73	< 0.050	< 0.050	< 0.050	1.6
09/13/89	S-0913-5A-D	49	< 0.050	< 0.050	< 0.050	0.28
09/13/89	S-0913-6A-D	92	< 0.050	< 0.050	< 0.050	1.5
09/13/89	S-0913-7A-D	560	< 0.050	0.063	0.24	23
09/13/89	S-0913-8A-D	67	< 0.050	< 0.050	< 0.050	1.4
09/14/89	S-0914-9A-D	25	< 0.050	< 0.050	< 0.050	0.22
09/14/89	S-0914-10A-D	35	< 0.050	< 0.050	< 0.050	0.23
09/14/89	S-0914-11A-D	20	< 0.050	< 0.050	< 0.050	0.13

See page 2 for notes.

TABLE 5
RESULTS OF LABORATORY ANALYSES OF STOCKPILED SOIL
ARCO Station No. 2152
22141 Center Street

Castro Valley, California (page 2 of 2)

Date	Sample #	TPHg	В	T	E	X
Stockpiled	Soil					
09/21/89	S-0921-12A-D	15	< 0.050	< 0.050	< 0.050	0.074
09/21/89	S-0921-13A-D	30	< 0.050	< 0.050	< 0.050	0.062
09/25/89	S-0925-14A-D	22	< 0.050	< 0.050	< 0.050	< 0.050
09/25/89	S-0925-15A-D	15	< 0.050	< 0.050	< 0.050	< 0.050
09/25/89	S-0925-16A-D	8.9	< 0.050	< 0.050	< 0.050	< 0.050
09/25/89	S-0925-17A-D	18	< 0.050	< 0.050	< 0.050	< 0.050
09/26/89	S-0926-18A-D	73	< 0.050	0.066	0.14	1.6
10/02/89	S-1002-19A-D	100	< 0.050	0.072	0.11	2.2
10/02/89	S-1002-20A-D	61	< 0.050	< 0.050	< 0.050	0.56
10/02/89	S-1002-21A-D	91	< 0.050	< 0.050	< 0.050	0.69
10/02/89	S-1002-22A-D	60	< 0.050	< 0.050	< 0.050	0.30
10/02/89	S-1002-23A-D	35	< 0.050	< 0.050	< 0.050	0.25
10/02/89	S-1002-24A-D	30	< 0.050	< 0.050	< 0.050	0.074
10/04/89	S-1004-25A-D	33	< 0.050	< 0.050	< 0.050	0.11
10/06/89	S-1006-26A-D	38	< 0.050	< 0.050	< 0.050	0.087
10/06/89	S-1006-27A-D	32	< 0.050	< 0.050	< 0.050	< 0.050

Results in milligrams per kilogram (mg/kg) or parts per million (ppm).

TPH: Total petroleum hydrocarbons

B: Benzene T: Toluene E: Ethylbenzene X: Total xylenes

<: Less than the detection limit for the analysis method.

Sample identification:

S-0821-1A-D

| Composite (ABCD)

| Sample collection date

Soil sample

CONCLUSIONS

From our investigation, we conclude that:

- Elevated levels of TPHg were present in the soil beneath the removed tanks. Results of laboratory analysis indicated TPHg concentrations of up to 1,400 ppm and 3,800 ppm in soil beneath the northeastern ends of the tanks at depths of approximately 14 and 19 feet, respectively.
- Elevated levels of TPHg were present in the soil beneath the former vaporrecovery system. Results of laboratory analysis indicated TPHg concentrations of 2,300 ppm and 37,000 ppm in the soil at depths of approximately 14 feet and 22 feet, respectively.
- The lateral extent of hydrocarbon contamination in the area of the former tanks and vapor-recovery system above depths of approximately 14 feet appears to be limited to the tank-pit area, with the possible exception of the northwestern side of the tank pit. This conclusion is based on the fact that nondetectable concentrations of TPHg are present in seven soil samples collected from the tank-pit floor and walls. This conclusion is supported further by results of analysis of soil samples collected from three soil borings

drilled in April 1989, indicating TPHg concentrations of 5.6 ppm and less at depths of 10 to 45 feet, and 460 ppm at a depth of 5 feet northwest of tank T1.

- The vertical extent of TPHg contamination in the tank pit area has not been delineated. This conclusion is based on results of analysis of a soil sample collected from beneath the vapor-recovery system at a depth of approximately 22 feet, indicating a concentration of 37,000 ppm as well as from a sample collected beneath T-1 indicating a TPHg concentration of 430 ppm at an approximate depth of 18 feet.
- Results of laboratory analyses of soil samples collected from beneath the product-dispenser lines suggest that the majority of contaminated soil has been removed. This is based on TPHg concentrations ranging from <2 ppm to 73 ppm in 11 soil samples collected from beneath the lines at a depth of approximately 3 feet. However, TPHg concentrations of 100 to 190 ppm in samples from the southwestern ends of the dispenser islands near Grove Way and Center Street indicate that the lateral and vertical extent of gasoline has not been delineated in these areas.

Copies of this report should be submitted to:

Mr. Tom Callaghan California Regional Water Quality Control Board San Francisco Region 1111 Jackson Street Room 6040 Oakland, California 94607

Mr. Bob Bowman Castro Valley Fire Department 20336 San Miguel Avenue Castro Valley, California 94546

Mr. Scott Seery
Alameda County Department of Environmental Health
Hazardous Materials Division
80 Swan Way
Suite 200
Oakland, California 94621

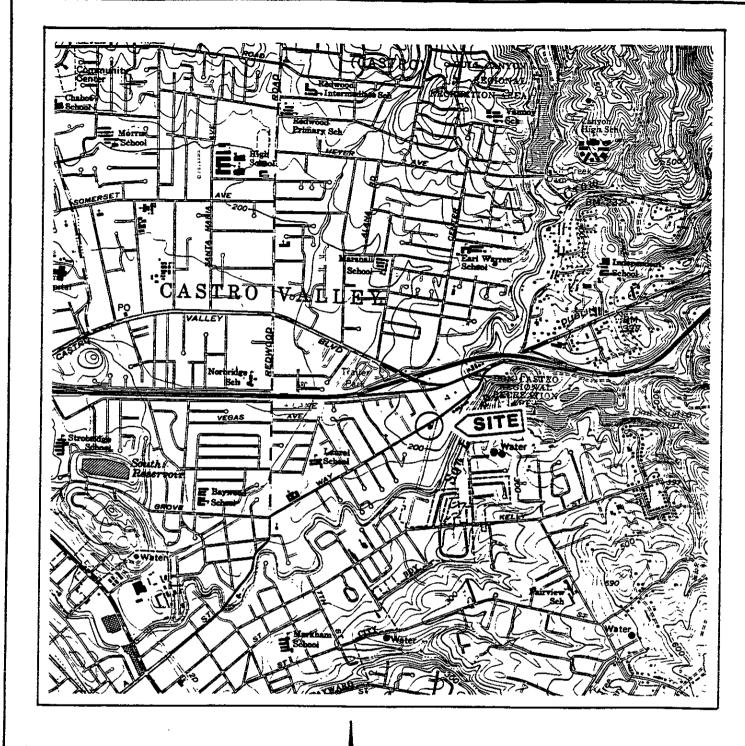
LIMITATIONS

This report was prepared in accordance with generally accepted standards of environmental geological practice in California at the time this investigation was performed. This investigation was conducted solely for the purpose of evaluating environmental conditions of the soil with respect to gasoline contamination related to the underground gasoline storage tanks and dispenser lines at the subject site. No soil engineering or geotechnical implications are stated or should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Subsurface conditions may vary away from the data points available. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation.

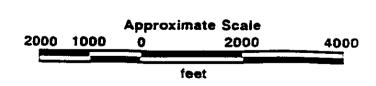
REFERENCES CITED

Applied GeoSystems. May 26, 1989. <u>Limited Environmental Site Assessment at ARCO Service Station No. 2152, 2214 Center Street, Castro Valley, California</u>. Report 69013-1.

Applied GeoSystems. July 21, 1989. Site Safety Plan, ARCO Station No. 2152, Castro Valley, California. Report 69013-2S.



Source: U.S. Geological Survey
7.5-Minute Quadrangle
Hayward, California
Photorevised 1980

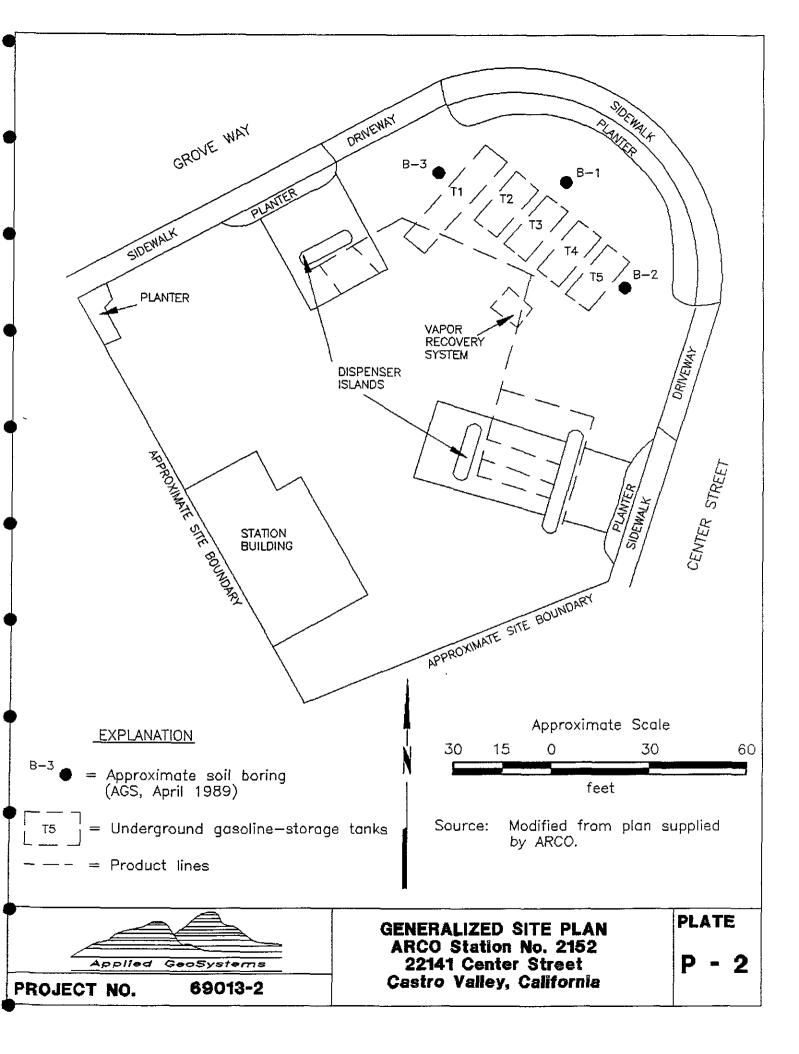


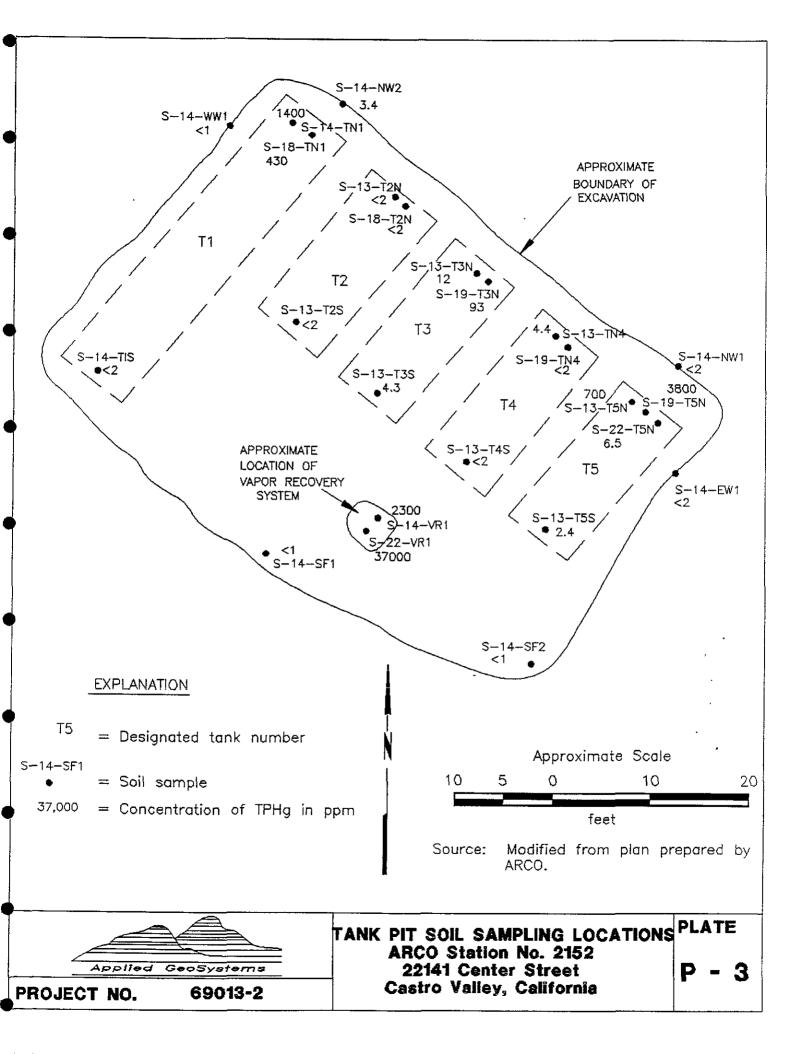


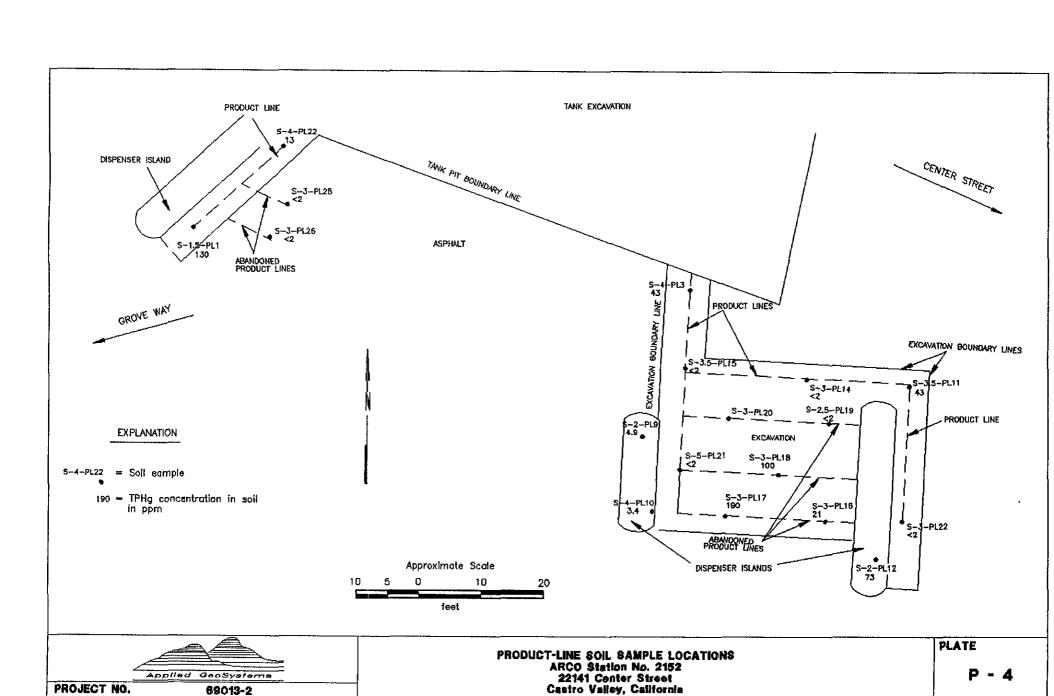
SITE VICINITY MAP ARCO Station No. 2152 22141 Center Street Castro Valley, California

PLATE

P-1







APPENDIX A

APPENDIX A

FIELD PROCEDURES

Site Safety Plan

Field work performed by Applied GeoSystems on behalf of ARCO at the site was conducted in accordance with Applied GeoSystems Site Safety Plan No. 69013-2S, dated July 21, 1989. This plan describes the safety requirements for the evaluation of soil, including soil sampling. The site safety plan is applicable to personnel of Applied GeoSystems and its subcontractors. Applied GeoSystems personnel and subcontractors of Applied GeoSystems scheduled to perform the work at the site were briefed on the contents of the site safety plan before work began. A copy of the site safety plan was available for reference by appropriate parties during the work. The Staff Geologist of Applied GeoSystems acted as the Site Safety Officer.

Tank Removal

Excavated soil was evaluated with an Organic Vapor Meter (OVM). This evaluation was done by removing the top portion of soil from the bucket and placing the intake probe of the OVM against the surface of the soil in the bucket. Field instruments such as the OVM are useful for measuring relative concentrations of vapor content but cannot be used to measure levels of contamination with the confidence of laboratory analysis. After removal of each tank, it was placed on its side for inspection. The underside of the tank then was scraped with a flat-nose shovel, and the tank was inspected for points of corrosion, pitting, through-going holes, and other indications of weakness.

Soil was excavated from below the former positions of the tank bottoms and evaluated with the OVM when the soil was brought to ground surface in the excavator bucket. Samples then were taken from the soil in the bucket by driving laboratory-cleaned brass sleeves into the soil. The samples were sealed in the sleeves with aluminum foil, plastic caps, and aluminized duct tape; labeled; and promptly placed in iced storage. Because field subjective analyses suggested the presence of hydrocarbons in the soil, additional excavation and soil sampling below the former position of the tank bottom was performed, using similar methods. The excavation was fenced prior to departure from the site.

Sampling Labeling and Handling

Sample containers were labeled in the field with the job number, sample location and depth, and date, and promptly placed in iced storage for transport to the laboratory. A Chain of Custody Record was initiated by the geologist and updated throughout handling of the samples, and accompanied the samples to a laboratory certified by the State of California for the analyses requested. Samples were transported to the laboratory promptly to help ensure that recommended sample holding times would not be exceeded. Samples will be disposed of properly after their useful life has expired.

Aeration and Sampling of Stockpiled Soil

The excavated soil was covered with Visquene immediately after it was stockpiled. In accordance with the Bay Area Air Quality Management District guidelines, the soil was uncovered and aerated in 50-cubic-yard to 600-cubic-yard increments depending on the concentrations of hydrocarbon contamination present. Aeration was accomplished through the use of a backhoe, which repeatedly turned the soil and spread it to a thickness of approximately 12 inches. One composite soil sample was collected for each 50 cubic yards of stockpiled soil.

Composite soil samples were obtained first by evaluating relatively high, average, and low areas of hydrocarbon concentration by digging approximately 1 to 2 feet into the stockpile and placing the intake probe of an OVM against the surface of the soil. We then collected one sample from the "high" reading area and three samples from the "average" areas. Samples were collected by removing the top 1 to 2 feet of soil, then driving laboratory-cleaned brass sleeves into the soil. The samples were sealed in the sleeves with aluminum foil, plastic caps, and aluminized duct tape; labeled; and promptly placed in iced storage for transport to the laboratory, where compositing was performed.

APPENDIX B

_	CHA	UN-OF C	USTODY RECORD	<u></u>
•		3315 Almaden E	se Branch Expressway, Suite 34	
SAMPLER (sign	nature):	San Jose, CA 95	118 (408)254-7723 <i>Applied</i>	GeoSystems
Phone: (408	x) 264-7723	((K))		
LABORATORY:	Applied bedys		SHIPPING INFORMATIO	
	TOPING GEORYST	ems	Shipper	-
			Address Date Shipped	
TURNAROUND	TIME: 2 wee	ks	Service Used	
Project Leader	steve Bittman	`	Airbill No.	Caaier Na.
	05) 264-7723			
Resinquished by	A- (gidustnies)	R	ecsived by: (signatures)	Date
(te	-Biltmen			
		Re	caived for laboratory by:	
1.000.0000			- ng lialia	n 8/18/89/1
YROTAROBAS	SHOULD SIGN UP	LABORAT	NO RETURN A COPY OF T ORY RESULTS	HIS FORM WITH THE
Sample No.	Site Identification	Date Sampled	Affiziyses Requested	Sample Condition Upon Receipt
5-14-T1N	69013-2	8-18-89	TPHG ATEX	Cool
S-18-T1N	<u> </u>		<u> </u>	9/1
S-13-T2N				
S-18-T2N S-19-T3N S-13-T4N S-19-T4N		(1)	TEN TO THE TEN TEN TEN TEN TEN TEN TEN TEN TEN TE	- 45
S-13-T4N			X6ARD A	
S-19-T4N		\$/	-9/	(b)
S-13-TEN	2	<u>/</u>	<u>V</u>	
				·····
				



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems
3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: 08-18-89

Laboratory Number: 90853S01

Project #: 69013-2 Sample #: S-14-TIN

Matrix: Soil

Parameter	Resu (mg/kg)	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	0.72 6.1 11 130		50 0.50 0.50 0.50 0.50		08-30-89 08-30-89 08-30-89 08-30-89 08-30-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-05-89



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HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118 Attention: Steve B.

: Steve Bittman

Date Received:
Laboratory Number:

08-18-89 90853S02

Project #:

69013-2

Sample #:

S-18-TIN

Matrix:

Soil

Parameter	Resi (mg/kg)	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	430 ND ND 1.1 8.5		10 0.50 0.50 0.50 0.50		08-30-89 08-30-89 08-30-89 08-30-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

<u>09-05-89</u>



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ANALYSIS REPORT

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Report Prepared for: Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90853S03

Laboratory Number: 90853S03 Project #: 69013-2 Sample #: S-13-T2N

Matrix: Soil

Parameter	Result (mg/kg) (mg/L)		Detection Limit (mg/kg) (mg/L)		Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND 0.076 ND 1.1 8.5		2.0 0.050 0.050 0.050 0.050		08-30-89 08-30-89 08-30-89 08-30-89	nr nr

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-05-89



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ANALYSIS REPORT

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Report Prepared for: Applied GeoSystems

3315 Almaden Expressway, Suite 34 Project #:

San Jose, CA 95118

Attention: Steve Bittman

Date Received: 08-18-89

Laboratory Number: 90853S04
Project #: 69013-2

Sample #: S-18-T2N Matrix: Soil

Parameter	Result (mg/kg) (mg/L)		Detection Limit (mg/kg) (mg/L)		Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND 0.076 ND ND 0.092		2.0 0.050 0.050 0.050 0.050		08-30-89 08-30-89 08-30-89 08-30-89 08-30-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mq/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-05-89



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ANALYSIS REPORT

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Report Prepared for: Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

08-18-89 90853505

Laboratory Number: Project #:

69013-2

Sample #:

S-19-T3N

Matrix:

Soil

Parameter	Resi (mg/kg)	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	93 0.11 0.11 0.74 3.5		2.0 0.050 0.050 0.050 0.050		08-31-89 08-31-89 08-31-89 08-31-89 08-31-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-06-89



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ANALYSIS REPORT

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Report Prepared for: Applied GeoSystems

3315 Almaden Expressway, Suite 34 Project #:

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number:

08-18-89 90853506

Project #: Sample #:

69013-2 S-13-T4N

Matrix:

Soil

Parameter	Resu (mg/kg)	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline	4.4		2.0		08-31-89	NR
TEH as Diesel Benzene Toluene	ND ND		0.050 0.050		08-31-89 08-31-89	NR
Ethylbenzene Total Xylenes	ND 0.23		0.050		08-31-89 08-31-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

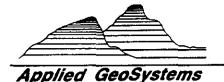
TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-06-89 Date Reported



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HOUSTON

ANALYSIS REPORT

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Report Prepared for:

Date Received: Laboratory Number:

08-18-89 90853S07

Applied GeoSystems

69013~2

San Jose, CA 95118

3315 Almaden Expressway, Suite 34 Project #: Sample #:

S-19-T4N

Attention: Steve Bittman

Matrix:

Soil

Parameter	Rest (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	ND	2.0		08-31-89	NR NR
Benzene	ND	0.050		08-31-89	
Toluene	ND	0.050		08-31-89	
Ethylbenzene	ND	0.050		08-31-89	
Total Xylenes	ND	 0.050		08-31-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-06-89



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HOUSTON

ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34 Project #:

San Jose, CA 95118

Attention: Steve Bittman

08-18-89 Date Received:

Laboratory Number: 90853808

69013-2 Sample #: S-13-T5N

Matrix: Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	700 4.6 2.0 4.6 83	2.0 1.0 1.0 1.0		08-31-89 08-31-89 08-31-89 08-31-89 08-31-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

= Not detected. Compound(s) may be present at concentrations below the detection limit. ND

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-06-89 Date Reported

CHAIN OF CUSTOMY RECORD

		San Jose	Greesway, Suite 34	
SAMPLER (sign	Steve Bitt	San Jose, CA 951	18 (408)264-7723	d GeoSystems
Phone: (40	08) 264-7723 : Applied Geos	ysTems	SHIPPING INFORMATION Shipper	
Project Leader	TIME: 24 hrs Steve Billman (408) 264-7713		Address Date Shipped Service Used Alrbill No.	
Relinquished b	y: (signatures) - Rullmas	Rec	eived by: (signatures)	Date
		ON RECEIPT AN	sived for laboratory by:	THIS FORM WITH THE
Sampie No.	Site (dentification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-14-T15/ S-13-T25/ S-13-T35/	69013-2	8-18-89	TPHS) BTEX	Cool
S-13-T45, S-13-T85	00	4, 8, 4	THE TELL	Jul
5-13-T3N= 5-19-T5N=		\$		53/



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

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HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for: Applied GeoSystems

Date Received: Laboratory Number: 08-18-89

3315 Almaden Expressway, Suite 34

Project #:

90852506 69013-2

San Jose, CA 95118

Sample #:

S-14-T1S

Attention:

Steve Bittman

Matrix:

Soil

Parameter	Resi (mg/kg)		Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	ND	-	2.0		08-18-89	NR NR
Benzene Toluene Ethylbenzene	0.24 ND ND		0.050 0.050 0.050		08-18-89 08-18-89 08-18-89	NR
Total Xylenes	ND ND		0.050		08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-21-89



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ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90852S01

Project #: 69013-2 Sample #: 5-13-T2S

Matrix: Soil

Parameter	Resu (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND ND	2.0 0.050 0.050 0.050 0.050		08-18-89 08-18-89 08-18-89 08-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-21-89



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ANALYSIS REPORT

Report Prepared for: Applied GeoSystems

3315 Almaden Expressway, Suite 34 Project #:

San Jose, CA 95118

Attention: Steve Bittman

Date Received: 08-18-89

Laboratory Number: 90852S03 Project #: 69013-2

Sample #: S-13-T3S

Matrix: Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	4.3 0.090 ND ND ND	2.0 0.050 0.050 0.050 0.050		08-18-89 08-18-89 08-18-89 08-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

<u>08-21-89</u>



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HOUSTON

ANALYSIS REPORT

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Report Prepared for: Applied GeoSystems

Date Received: 08-18-89 Laboratory Number: 90852S04

3315 Almaden Expressway, Suite 34

Project #: 69013-2 S-13-T4S Sample #:

San Jose, CA 95118

Attention: Steve Bittman

Matrix:

Soil

Parameter	Resu (mg/kg)	•	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	ИD		2.0		08-18-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND		0.050 0.050 0.050 0.050		08-18-89 08-18-89 08-18-89 08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-21-89



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ANALYSIS REPORT

Date Received:

0212lab.frm 08-18-89

Report Prepared for: Applied GeoSystems

Laboratory Number: 90852S05

3315 Almaden Expressway, Suite 34 95118

Project #: 69013-2 S-13-T5S

San Jose, CA

Sample #:

Attention: Steve Bittman

Matrix: Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	2.4	2.0		08-18-89	NR NR
Benzene	ND	0.050	'	08-18-89	
Toluene	ND	0.050		08-18-89	
Ethylbenzene Total Xylenes	ND ND	0.050 0.050		08-18-89 08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-21-89



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ANALYSIS REPORT

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34 Project #:

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

02121ab.frm 08-18-89

Laboratory Number:

90852S02

Sample #:

69013-2 S-13-T3N

Matrix:

Soil

Parameter	Rest (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	12	2.0		08-18-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	0.29 0.29 0.22 1.3	0.050 0.050 0.050 0.050		08-18-89 08-18-89 08-18-89 08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

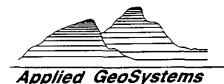
TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-21-89



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ANALYSIS REPORT

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Report Prepared for: Applied GeoSystems

08-18-89 90852S07

3315 Almaden Expressway, Suite 34

Laboratory Number: Project #:

Date Received:

69013-2

San Jose, CA 95118

Sample #:

S-19-T5N

Attention: Steve Bittman

Matrix:

Soil

Parameter	Resi (mg/kg)	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	3800	j	50	ļ	08-18-89	
TEH as Diesel						NR
Benzene	ND		5.0	•	08-18-89	
Toluene	15		5.0		08-18-89	
Ethylbenzene	18		5.0		08-18-89	
Total Xylenes	150		5.0	ļ	08-18-89]

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Lawa Kuck Laura Kuck, Laboratory Manager

08-21-89

CHAIN OF CUSTOUT RECORD

		3315 Almaden	DSe Branch Expressway, Suite 34	
SAMPLER (sign	sture) Ster Bittin	San Jose, CA	95118 (408)254-7723 <i>Applied</i>	GeoSystems
Phone: (408)				
LABORATORY		Systems	SHIPPING INFORMATIO	
. ———			Address	
TURNAROUND	TIME: 48 km		Date Shipped Service Used	
Project Leader	Steve Bittmo 08) 264-7723		Airbiil No.	Capier No.
Retinguished b	y: (signatures)		Received by: (signatures)	Date
6	to Battoner			
	L-DIN Mrs			
			Received for (aboratory by: /	
			ngliste	u 8/22/89
YROTAROBAL-	SHOULD SIGN UP	ON RECEIPT LABORA	AND RETURN A COPY OF T	HIS FORM WITH THE
Sample No.	Site Identification	Date Sampled	Anziyses Requested	Sample Condition
S-14-NWI	69013-2	8-77-89	TPHRI BTEX	Col
5-14-EWI	69013-2	8-22-89		Cul
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			-	



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ANALYSIS REPORT

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Report Prepared for: Applied GeoSystems

Date Received: 08-22-89 Laboratory Number: 90860S01

3315 Almaden Expressway, Suite 34

Project #: 69013-2 Sample #: S-14-EW1

San Jose, CA 95118 Attention: Steve Bittman

Matrix: Soil

Parameter	Resi	•	Detection Limit (mg/kg) (mg/L)		Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND		2.0 0.050 0.050 0.050 0.050		08-24-89 08-24-89 08-24-89 08-24-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-24-89



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HOUSTON

ANALYSIS REPORT

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Report Prepared for: Applied GeoSystems

Date Received: 08-22-89 Laboratory Number: 90860S02

3315 Almaden Expressway, Suite 34 Project #: San Jose, CA 95118 Sample #:

Project #: 69013-2 Sample #: S-14-NW1

Attention: Steve Bittman

Matrix: Soil

Parameter			on Limit (mg/L)			
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND ND		2.0 0.050 0.050 0.050 0.050		08-24-89 08-24-89 08-24-89 08-24-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-24-89

				SEP 17 198	(h.,
SAMPLER (signa	sture): Sta Ba	Homen	Applied C	GeoSystems Co	b
Phone: (408)		<i>y</i> ************************************	43255 Mission Blva Suite B Fr	remont LA 94539 415) 6	51-1906
ABORATORY:			SHIPPING INFORMATION	:	
	Applied be	asytems	Shipper		
			Address		· · · · · · · · · · · · · · · · ·
	7		Date Shipped		
URNAROUND	TIME: 2 weeks		Service Used	Cooler No.	
Project Leader:	Steve Bittman 4-7723	<u> </u>	All Dill No.	. 500101 110.	
Phone No. $\frac{\infty}{1}$		R	eceived by: (signatures)	Date	Tim
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		<u>1</u>	eceived for laboratory by:		-
ABORATORY	SHOULD SIGN UP	ON RECEIPT	AND RETURN A COPY OF TH		_
Sample	Site	ON RECEIPT / LABORAT	AND RETURN A COPY OF TH	Sample Condit Upon Receip	ion
Sample No.	Site Identification	ON RECEIPT / LABORAT Date Sampled	AND RETURN A COPY OF THEORY RESULTS Analyses Requested	Sample Condit Upon Receip	ion
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43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number:

08-25-89 90866501 69013-2

Project #:
Sample #:

69013-2 S-22-T5N

Matrix: Soil

Parameter				Detection Limit (mg/kg) (mg/L)		Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	6.5		2.0		08-31-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	ND 0.36 0.093 0.82		0.050 0.050 0.050 0.050		08-31-89 08-31-89 08-31-89 08-31-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-06-89

CHAIN OF CUSTODY RECORD

SAMPLER (signs	sture): Steer Bet	3315 Almaden	Se Branch Expressway, Suite 34 95118 (408)264-7723	Applied	GeoSystems
Phone: (408) 264-7723				
LABORATORY:	Anamotrix The 1961 Concurre San Jok B	Dr. Sude E	Address		¥ :
	TIME: A du		Service Used		
Phone No. 408)	<u>Steve Bittman</u> 264-7723		Airbill No		_ Capier No
Relinquished by	(signatures)		Received by: (signati	ures)	Date T
(T. B.H			··········	
	Il- DINM	<u> </u>			
LABORATORY S	SHOULD SIGN UP		Received for laborate		8 30/89 13
Sample No.	Site Identification	LABORA Date Sampled	Analys Reques	Jes	Sample Condition Upon Receipt
5-14-NWZ	69013-2 891	8-30-89	TPHO B	TEX	Corl
S-14-66/ S-14-5F1 S-14-VRI	18/ 18/	2) ************************************	JOHOS.	ATEL 97	cod
S-JL-VRI S-14-SFL	<u>*/</u>		S		9
	<u></u>				
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	- 				
					

ANAMETRIX INC

Environmental & Analytical Chemistry Pot Condourse Drive Suite & Can Lose, CA 95431 (403) 472 (1921) Fax (408) 432-8496



Steve Bittman Applied GeoSystems 3315 Almaden Expressway Suite 34 San Jose, CA 95118

September 06, 1989 Anametrix W.O.#: 8908237 Date Received : 08/30/89

Project Number#: 69013-2

Dear Mr. Bittman:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS and QUALITY ASSURANCE.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Terry Cooke TPH Supervisor

TC/dm

REPORT SUMMARY ANAMETRIX, INC. (408) 432-8192

Client : Applied GeoSystems Address : 3315 Almaden Expressway Anametrix W.O.#: 8908237 Date Received: 08/30/89
Purchase Order#: N/A
Project No.: 69013-2
Date Released: 09/06/89 Suite 34

Suite 34
City : San Jose, CA 95118
Attn. : Steve Bittman

Anametrix I.D.	Sample I.D.	 Matrix	Date Sampled	 Method	Date Extract		Inst I.D.
RESULTS							
8908237-01 8908237-02 8908237-03 8908237-04 8908237-05 8908237-06	S-14-WW1 S-14-SF1 S-14-VR1 S-22-VR1	SOIL SOIL SOIL SOIL SOIL	08/30/89 08/30/89 08/30/89 08/30/89 08/30/89 08/30/89	TPH TPH TPH TPH TPH TPH		09/01/89 08/31/89 09/01/89 09/01/89 09/01/89 09/01/89	N/A N/A N/A N/A
RESULTS							
8908237-02 8908237-03		SOIL SOIL	08/30/89 08/30/89			08/31/89 09/01/89	

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 69013-2 S-14-NW2 Matrix : SOIL Anametrix I.D.: 8908237-01

Analyst : C/3
Supervisor : 7C
Date released : 09/06/89 Date sampled: 08/30/89 Date anl. TPHg: 09/01/89

Date ext. TOG : N/A Date ext.TPHd: N/A Date anl. TOG : N/A Date anl. TPHd: N/A

Reporting Amount Limit Found (ug/kg) (ug/kg) CAS # Compound Name ND 5 ND 5 ND 1000 3400 3400

ND - Not detected at or above the practical quantitation limit for the method.

TPHq - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 69013-2 S-14-WW1 Anametrix I.D. : 8908237-02

Matrix : SOIL Analyst : CB
Date sampled: 08/30/89 Supervisor : 77

Date anl.TPHg: 08/31/89

Date released: 09/06/89

Date ext.TPHd: N/A

Date anl.TPHd: N/A

Date anl. TOG: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	5 5 5 5 1000	ND ND ND ND ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 69013-2 S-14-SF1 Anametrix I.D.: 8908237-03

Analyst : CB
Supervisor : 7C
Date released : 09/06/89
Date ext. TOG : N/A
Date anl. TOG : N/A Matrix : SOIL Date sampled: 08/30/89

Date anl.TPHg: 09/01/89

Date ext.TPHd: N/A Date anl. TPHd: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	5 5 5 5 1000	ND ND ND ND ND ND

Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 69013-2 S-14-VR1 Anametrix I.D. : 8908237-04

Matrix : SOIL Analyst : CB
Date sampled: 08/30/89 Supervisor : To
Date anl.TPHg: 09/01/89 Date released : 09/0

Date anl.TPHg: 09/01/89

Date ext.TPHd: N/A

Date anl.TPHd: N/A

Date anl.TOG: N/A

Date anl.TOG: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	2000 2000 2000 2000 2000 40000	ND ND 19000 146000 2300000

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 69013-2 S-22-VR1 Matrix : SOIL Anametrix I.D.: 8908237-05

Analyst : 6
Supervisor : 7 Date sampled: 08/30/89

Date released : 09/06/89
Date ext. TOG : N/A
Date anl. TOG : N/A Date anl.TPHg: 09/01/89 Date ext.TPHd: N/A Date anl. TPHd: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	40000 40000 40000 40000 800000	ND 510000 380000 2600000 37000000

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 69013-2 S-14-SF2

Matrix SOII

Anametrix I.D. : 8908237-06

Matrix: SOIL Analyst: CB
Date sampled: 08/30/89 Supervisor: TC
Date anl.TPHg: 09/01/89 Date released: 09/06/89

Date anl.TPHg: 09/01/89
Date ext.TPHd: N/A
Date anl.TPHd: N/A
Date anl.TPHd: N/A
Date anl.TOG: N/A

 CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	5.0 5.0 5.0 5.0 1000	ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT EPA METHOD 5030 WITH GC/FID ANAMETRIX, INC. (408) 432-8192

: S-14-WW1 Anametrix I.D.: 8908237-02 Sample I.D.

Matrix : SOIL Analyst : 65

: 72 Date sampled: 08-30-89 Date analyzed: 08-31-89 Supervisor

Date Released: 09-05-89

COMPOUND	SPIKE AMT. (ug/Kg)	MS (ug/Kg)	%REC MS	MSD (ug/Kg)	%REC MSD	RPD	%REC LIMITS
Gasoline	500	390	78%	400	80%	3%	50-150

^{*} Limits established by Anametrix, Inc.

Quality Assurance - Page 1

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT EPA METHOD 5030 WITH GC/FID ANAMETRIX, INC. (408) 432-8192

Anametrix I.D. : 8908237-03Analyst : $\mathcal{C}\mathcal{B}$ Sample I.D. : S-14-SF1

: SOIL Matrix Analyst

Date sampled: 08-30-89 : TC Supervisor

Date analyzed: 09-01-89 Date Released : 09-05-89

COMPOUND	SPIKE AMT. (ug/Kg)	MS (ug/Kg)	%REC MS	MSD (ug/Kg)	%REC MSD	RPD	%REC LIMITS
Gasoline	500	450	90%	470	94%	4%	50-150

^{*} Limits established by Anametrix, Inc.

Quality Assurance - Page 2

CHAIN OF CUSTODY RECORD

LABORATORY: Appled TURNAROUND Project Leader:	trausz/Jane B) 264-7723 Geosystems TIME: 24 hr. Steve Bit	tman	#3255 Mission Blvd Suite B Frem SHIPPING INFORMATION: Shipper Address Date Shipped Service Used Airbill No.	
Relinquished by Lanet Bur		3	Received by: (signatures)	9/12/89 2:
LABORATORY	SHOULD SIGN UPC	N RECEIPT	AND RETURN A COPY OF THIS	FORM WITH THE
Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
5-0912-1a -1b -1c -1d 5-0912-2a	69013-2	9/12/89	TPH g \$ BT EX	iced

CHAIN OF CUSTODY RECORD

Fre inc TURNAROUND Project Leader:	R. Strang	-han	43255 Mission Blva Suite B SHIPPING INFORMATION Shipper Address Date Shipped Service Used	_ Cooler No
Relinquished by	(signatures)	Red	ceived by: (signatures)	Date Time
I fa.	Strong			96-89 134
)			
		Rec	selved for laboratory by:	lean 9-6-89 13°
Sample No.	Site Identification	Sampled	Analyses Requested TPHa, BTEX	Sample Condition Upon Receipt
S-1/2-PL1 S-2-PL9 S-4-PL10 S-2-PL12	69013-Z	9-6-89 1630 1130 140 1216	1717g, PIFA	n n



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number:

09-06-89 90910S01

Project #: Sample #:

69013-2 S-1.5-PL1

Matrix:

Soil

Parameter	Resu (mg/kg)	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	130 1.6 3.8 2.4 13		5.0 0.050 0.050 0.050 0.050		09-06-89 09-06-89 09-06-89 09-06-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-07-89



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ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Attention: Steve Bittman

Date Received: 09-06-89

Laboratory Number: 90910S02 Project #: 69013-2

Sample #: S-2-PL9
Matrix: Soil

Parameter	Resi	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	4.9	2.0		09-06-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	0.24 0.18 0.16 0.64	0.050 0.050 0.050 0.050		09-06-89 09-06-89 09-06-89 09-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-07-89



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number:

09-06-89 90910S03

Project #: Sample #:

69013-2 S-4-PL10

Matrix: Soil

Parameter	Resu (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	3.4 0.21 0.18 0.11 0.25	2.0 0.050 0.050 0.050 0.050		09-06-89 09-06-89 09-06-89 09-06-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-07-89 Date Reported



Report Prepared for:

Applied GeoSystems

San Jose, CA 95118

Attention: Steve Bittman

43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

0212lab.frm Date Received: 09-06-89

Laboratory Number: 90910504

3315 Almaden Expressway, Suite 34 69013-2 Project #: S-2-PL12 Sample #:

Matrix: Soil

Parameter	Result			on Limit		Notes
	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	Analyzed	
TVH as Gasoline					- "	NR
TPH as Gasoline	73		2.0]	09-06-89	ļ
TEH as Diesel						NR
Benzene	0.13		0.050		09-06-89	
Toluene	ND		0.050		09-06-89	
Ethylbenzene	0.60		0.050	ŀ	09-06-89	
Total Xylenes	3.6		0.050		09-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-07-89

CHAIN OF CUSTODY RECORD

SAMPLER (sign	naturoi* _ /	3315 Almaden 6 San Jose, CA 95	se Branch Expressway, Suite 34 118 (408)264-7723	
	Sta Bij	three	Applied	d GeoSystems
Phone: [408	_) 264-7723			
LABORATORY:	Applied Geo.	Systems	SHIPPING INFORMATION Shipper	
			Address	
	Ann		Date Shipped	
	TIME: MAN		Service Used	_
roject Leader	5te Bith 8) 264-7223	non	Airbill No	Capier No
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4	-Bittmen			
212	- De Munen			
		170	Desived for laboratory by:	9-26-89 11
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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:
Laboratory Number:

09-26-89 90947501

Project #:

69013-2

Sample #:

S-4-PL22

Matrix: Soil

Parameter	Rest (mg/kg)	Detection (mg/kg)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	13 0.20 0.97 0.16 1.2	2.0 0.050 0.050 0.050 0.050	09-27-89 09-27-89 09-27-89 09-27-89 09-27-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-29-89

CHAIN OF CUSTODY RECORD

Câteni CD (-2	·	3315 Almadei	Ose Branch Expresswey, Suite 34 95118 (408)264-7723	
SAMPLER (sign	S/em Se	Homes	Applied	GeoSystems
Phone: 408	164-7723			
LABORATORY:	Applied be	io Systems	SHIPPING INFORMATIO Shipper Address	
			Date Shipped	
TURNAROUND	TIME: 1 week		Service Used	
Project Leaden Phone No	: Steve Bittman (408) 264-2213		Airbill No.	_ Capier No
Relinquished by			Received by: (signatures)	Date
C.	D : LL			
Sla	Onthron			
·			B	
			Received for laboratory by:	10-489 1
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Sampie No.	Site Identification	Date Sampled	Anaiyses Requested	Sample Condition Upon Receipt
S-3-PL25	69013-2	10-4-89	TPHG) BTEX	Cool
5-3-PL26		V		
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ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:
Laboratory Number:

10-04-89 91010S01

Project #:
Sample #:

69013-2 S-3-PL25

Matrix: Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND ND	2.0 0.050 0.050 0.050 0.050		10-06-89 10-06-89 10-06-89 10-06-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-09-89



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ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number:

10-04-89 91010S02

Project #: Sample #: 69013-2 S-3-PL26

Matrix: Soil

Parameter	Resu (mg/kg)	Detection (mg/kg)	 Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	ND	2.0	10-06-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND	0.050 0.050 0.050 0.050	10-06-89 10-06-89 10-06-89 10-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-09-89

CHAIN OF CUSTODY RECORD

	3315	an Jose Bi	way, Suite 34	
SAMPLER (signat	ture):	ose, CA 95118 (4	08)254-7723	eoSystems
Phone. 408			_	
LABORATORY: Apolic 43253	-d Geosysti	. 1	SHIPPING INFORMATION Shipper Address	
	L CA		Date Shipped	
	IME: 48-		Service Used	
Project Leader:	Ster Bit	tmah	Airbill No	
Phone No.		l n	- caived by:(signatures)	Date Tin
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		Re	ceived for laboratory by	9-15-89 143
ABORATORY S	HOULD SIGN UP	ON RECEIPT A	ND RETURN A COPY OF THORY RESULTS Analyses	Sample Condition
No.	Identification	Sampled	Requested	Upon Receipt
5-4-PL3	69013-2	9/6/89	TPHG BTEX	iced
5-31/2-PLII	5-5	9/6/89	$\frac{1}{2}$	
5-3-PL14		9/11/89		
1-31/2-PLIS		9/11/84		
- 3-PL16		9/15/89		
-3-PL17		3-		
5-3-PL14 5-31/2-PL15 5-3-PL16 5-3-PL17 5-3-PL18 5-21/2-PL19				
1-112-PL19				
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0-5-PLZ1	- }	30		
5-3-PL22	رد –		<u> </u>	
				
				
				



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COSTA MESA

SACRAMENTO

Date Received:

HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for: Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118 Attention: Steve Bittman

Laboratory Number: Project #:

09-15-89 90931S01

Sample #:

69013-2 S-4-PL3

Matrix:

Soil

Parameter	Resu (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	43 1.0 3.2 0.74 4.0	2.0 0.050 0.050 0.050 0.050		09-18-89 09-18-89 09-18-89 09-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89



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HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: 09
Laboratory Number: 90

09-15-89 90931S02

Project #:

69013-2

Sample #: Matrix:

S-3.5-PL11 Soil

Parameter	Rest (mg/kg)	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND ND		2.0 0.050 0.050 0.050 0.050		09-18-89 09-18-89 09-18-89 09-18-89 09-18-89	nr nr

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:
Laboratory Number:

09-15-89 90931S03

Project #:

69013-2

Sample #: Matrix:

S-3-PL14 Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND ND	2.0 0.050 0.050 0.050 0.050		09-18-89 09-18-89 09-18-89 09-18-89 09-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

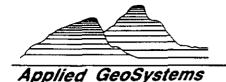
TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89

Date Reported

APPLIED GEOSYSTEMS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: 09-15-89

Laboratory Number: 90931S04

Project #: 69013-2

Sample #: S-3.5-PL15 Matrix: Soil

Parameter	Resi (mg/kg)	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND O.087		2.0 0.050 0.050 0.050 0.050		09-18-89 09-18-89 09-18-89 09-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-15-89 90931S05

Laboratory Number: Project #:

69013-2

Sample #:

S-3-PL16

Matrix: Soil

Parameter	Resi	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	1		2.0 0.050 0.050 0.050 0.050		09-18-89 09-18-89 09-18-89 09-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89

Date Reported

APPLIED GEOSYSTEMS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number:

09-15-89 90931S06

Project #:

69013-2

Sample #: Matrix:

S-3-PL17 Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene	190 0.85 7.4 2.3	10 0.50 0.50 0.50		09-18-89 09-18-89 09-18-89 09-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34 Project #:

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number: 09-15-89 90931807

69013-2

Sample #: Matrix:

S-3-PL18 Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	100 0.72 3.3 1.2 7.2	2.0 0.050 0.050 0.050 0.050		09-18-89 09-18-89 09-18-89 09-18-89 09-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

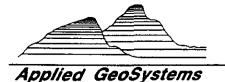
TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89

Date Reported

APPLIED GEOSYSTEMS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-15-89 er: 90931S08

Laboratory Number: Project #:

69013-2

Sample #:

S-2.5-PL19

Matrix:

Soil

Parameter	Resu (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND ND	2.0 0.050 0.050 0.050 0.050		09-18-89 09-18-89 09-18-89 09-18-89 09-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

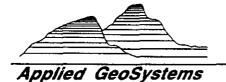
TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89

Date Reported

APPLIED GEOSYSTEMS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-15-89 Laboratory Number: 90931S09

Project #: Sample #:

69013-2 S-3-PL20

Soil Matrix:

Parameter	Resi (mg/kg)	_	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND ND		2.0 0.050 0.050 0.050 0.050		09-18-89 09-18-89 09-18-89 09-18-89	nr nr

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-15-89 Laboratory Number: 90931S10

Project #:

69013-2

Sample #: Matrix:

S-5-PL21 Soil

Parameter	Resi (mg/kg)	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND ND		2.0 0.050 0.050 0.050 0.050		09-18-89 09-18-89 09-18-89 09-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

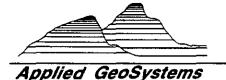
TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89

Date Reported

APPLIED GEOSYSTEMS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY



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HOUSTON

ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-15-89 90931S11

Laboratory Number: Project #:

69013-2

Sample #: Matrix:

S-3-PL22 Soil

Parameter	Resi	•	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND ND		2.0 0.050 0.050 0.050 0.050		09-18-89 09-18-89 09-18-89 09-18-89 09-18-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

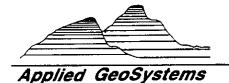
09-20-89

Date Reported

APPLIED GEOSYSTEMS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH
SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY

CHAIN OF CUSTOUY RECORD

SAMPLER (signa	sture): Ster. Bith	3315 Almaden Ex	e Brancii pressway, Suite 34 18 (408)264-7723 Applied	GeoSystems
Phone: (408)	264-7723			
LABORATORY:	Applied bee	oswTems	SHIPPING INFORMATION Shipper Address Date Shipped	APPLIED OFFISIEMS
TURNAROUND	time: 24 ha		Service Used	
Project Leader:	Steve BiTTman 8) 264-7723		Alrhill No.	Casier No
Retinquished by:		Re	- ceived by: (Signatures)	Date
Ste	Bulley			
LABORATORY S	HOULD SIGN UP	ON RECEIPT AI	Taure Curlos of T	THIS FORM WITH THE
Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition
5-0821-19 10	69013-2	8-21-89	TPHYS BTEX	(wh
5-0821-16/3	83 9			
5-0821-1c (2 5-0821-1d)	0/ 0/ 0/		Very Very	(dg)
2-0871-79 /3 2-0871-70 (8 2-0871-79 /3	*/			
				4
-				



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HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for: Applied GeoSystems

Date Received: 08-21-89 Laboratory Number:

90854S01

3315 Almaden Expressway, Suite 34 Project #:

69013-2

San Jose, CA 95118

Sample #:

S-0821-1(abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Resi (mg/kg)	. — -	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	3.2 ND ND ND ND		2.0 0.050 0.050 0.050 0.050		08-21-89 08-21-89 08-21-89 08-21-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-22-89



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Date Received: 08-Laboratory Number: 908

08-21-89 90854S02

Applied GeoSystems
3315 Almaden Expressway, Suite 34

Laboratory
Project #:

69013-2

San Jose, CA 95118

Sample #:

S-0821-2 (abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Resi (mg/kg)	i	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND ND		2.0 0.050 0.050 0.050 0.050		08-21-89 08-21-89 08-21-89 08-21-89 08-21-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-22-89



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for: Applied GeoSystems

Date Received: Laboratory Number: 08-25-89

3315 Almaden Expressway, Suite 34

Project #:

90865S01 69013~2

San Jose, CA 95118

Sample #:

S-0825-1(abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	4.4 ND ND ND ND	2.0 0.050 0.050 0.050 0.050		08-28-89 08-28-89 08-28-89 08-28-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

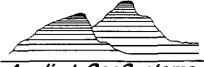
TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-28-89

SAMPLER (sign	APPLIED 3 0 1989 12 ture): JE 25 27 27 27 27 27 27 27 27 27 27 27 27 27	San Jose, CA 951	e Branch (pressway, Suite 34) 118 (408)264-7723 Applied	GeoSystems
11100101)264-7723			
LABORATORY:	Applied Geo	Sxitems	SHIPPING INFORMATION Shipper	
)	70		Address	
TURNIARCHUR	TIME: 24 hrs		Date Shipped	
Project Leader	0 1 00 00		Service Used	Capier No
Phone No. (4)	08)264-7723		_	
Retinquished by	: (signatures)	Re	ceived by: (signatures)	Date
	Cto Riffin	mo		
	-ien mound			
		fiec	caived for laboratory by:	can \$/25/8"
LABORATORY	SHOULD SIGN UPO	N RECEIPT AN	NO RETURN A COPY OF TH	, , , , ,
Sampie No.	Site Identification	Date Sampled	Anaiyses Requested	Sample Conditio
5-0825-19/8	69013-L	8-25-89	TPHO BTEX	coal
7-4812-11 13				9
(-0015-1	: 0/			
7-0872-19		/	/	
5-0815-10 5-0815-1d 5-0815-1a				
5-0815-1d 5-0815-1d 5-0815-1d		18/ 18/		
5-0812-79 2-0812-79 2-0812-79 2-0812-79 2-0812-79		7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7	A	
5-0825-1d 5-0825-26 5-0825-26 5-0825-26 5-0825-26 5-0825-26 5-0825-26		7, 7,		
5-0825-1d 5-0825-26 5-0825-26 5-0825-26 5-0825-26 5-0825-26 5-0825-26 5-0825-26 5-0825-26			A	
5-0825-1a 5-0825-1a 5-0825-2b 5-0825-2c 5-0825-3c 5-0825-3c 5-0825-3c 5-0825-3c		718	A	
2-0812-19 2-0812-19 2-0812-79 2-0812-79 2-0812-79 2-0812-99 2-0812-39 2-0812-39				
S-0825-1a) & S-0825-1a) & S-0825-1a) & S-0825-1a) & S-0825-2a & S-0825-2a & S-0825-2a & S-0825-2a & S-0825-3c & S-				
7-0872-59 7-0872-79 7-0872-79 7-0872-79 7-0872-79 7-0872-79 7-0872-79 7-0872-79 7-0872-79 7-0872-79 7-0872-79				



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for: Applied GeoSystems

Date Received: Laboratory Number: 08-25-89

3315 Almaden Expressway, Suite 34

Project #:

90865S01 69013-2

San Jose, CA 95118

Sample #:

S-0825-1(abcd)

Matrix:

Soil

Parameter	Resi (mg/kg)	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	4.4 ND ND ND ND		2.0 0.050 0.050 0.050 0.050		08-28-89 08-28-89 08-28-89 08-28-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

<u>08-28-89</u>



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Date Received: Laboratory Number: 08-25-89

Applied GeoSystems 3315 Almaden Expressway, Suite 34 Project #:

90865S02 69013-2

San Jose, CA 95118

Sample #:

S-0825-2 (abcd)

Steve Bittman Attention:

Matrix:

Soil

MC CCHETOH.	5001	-	
[-			
1		1	

Parameter	Resi (mg/kg)	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline	21		2.0		08-28-89	NR
TEH as Diesel Benzene	ND		0.050		08-28-89	NR
Toluene Ethylbenzene Total Xylenes	0.12 0.089 1.0		0.050 0.050 0.050		08-28-89 08-28-89 08-28-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH -- Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-28-89



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Laboratory Number:

08-25-89 90865S03

Applied GeoSystems 3315 Almaden Expressway, Suite 34

Project #:

Date Received:

69013-2

San Jose, CA 95118 Sample #:

S-0825-3 (abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Rest	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline	9.9	2.0		08-28-89	NR
TEH as Diesel Benzene	ND	0.050	<u> </u>	08-28-89	NR
Toluene	ND	0.050		08-28-89	
Ethylbenzene Total Xylenes	ND 0.14	0.050 0.050		08-28-89 08-28-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-28-89

CHAIN OF CUSTODY RECORD

SAMPLER (sign	nturo): Steve Bit		Expressway, Suite 34 5118 (408)254-7723 Applied	GeoSystems
Phone: (408)2		men		
ABORATORY:			SHIPPING INFORMATIO	n:
	Ahametrix In	<u> </u>	Shipper	
		Dr Suite E	Address	
	Son Jose C	9	Date Shipped	
roject Leader:	TIME: 24 hr Steve Bittmen		Service Used	Coning No.
hone No	(408) 264-7713		Angin Re.	
Relinquished by			eceived by: (signatures)	Date
5	tere By Hrvey			
	Da Dro man			
		B	acqued for laboratory/by.	
		T i	color Manny - Ide	8 30,80
YROTAROBA.	SHOULD SIGN UP	ON RECEIPT	ghi Memarzade And Return a copy of t	HIS FORM WITH THE
Sample	Site	PON RECEIPT LABORAT	AND RETURN A COPY OF TORY RESULTS Analyses	HIS FORM WITH THE Sample Condition
Sample No.	Site Identification	ON RECEIPT LABORAT	AND RETURN A COPY OF TORY RESULTS Analyses Requested	HIS FORM WITH THE
Sample No. -0830- a \&	Site	PON RECEIPT LABORAT	AND RETURN A COPY OF TORY RESULTS Analyses	HIS FORM WITH THE Sample Condition Upon Receipt
Sample No. -0830- a c -0830- b c -0830- c c	Site Identification 69013-2	PON RECEIPT LABORAT	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Corl
Sample No. 1-0830- a c -0830- b c -0830- c c -0830- d c	Site Identification 69013-2	PON RECEIPT LABORAT	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Corl
Sample No. 5-0830-19 6 -0830-16 6 -0830-16 7 -0830-19	Site Identification 69013-2	PON RECEIPT LABORAT	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Corl
Sample No. 5-0830-19 6 -0830-16 6 -0830-16 7 -0830-19	Site Identification 69013-2	PON RECEIPT LABORAT	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Cul
Sample No. 5-0830-19 6 -0830-16 7 -0830-16 7 -0830-26 6 -0830-26 6	Site Identification 69013-2	PON RECEIPT LABORAT	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Corl
Sample No. 5-0830-1a 6 5-0830-1b 78 5-0830-1c 5-7 -0830-1c 5-7 -0830-1d 7 -0830-2b 8 -0830-2c 8 -0830-2d 7	Site Identification 69013-2	PON RECEIPT LABORAT	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Cul
Sample No. 5-0830-1a 6 5-0830-1b 6 5-0830-1c 5 5-0830-1c 5 5-0830-1d 6 5-0830-2c 6 5-0830-2c 6 5-0830-2c 7 5-0830-3c 7 5-0830-3c 7	Site Identification 69013-2	Date Sampled 8-30-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Cul
Sample No. 5-0830-19 (5) -0830-16 (5) -0830-16 (5) -0830-16 (5) -0830-26 (5) -0830-26 (5) -0830-36 (6) -0830-36 (6) -0830-36 (6) -0830-36 (6)	Site Identification 69013-2	Date Sampled 8-30-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Cul
Sample No. 5-0830-19 (5) -0830-16 (5) -0830-16 (5) -0830-16 (5) -0830-16 (5) -0830-26 (5) -0830-26 (5) -0830-36 (6) -0830-36 (7) -0830-36 (7) -0830-36 (7)	Site Identification 69013-2	Date Sampled 8-30-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Cul
Sample No. 5-0830-1a 6-0830-1b 6-0830-1c 6-0830-1c 6-0830-2c 6-0830-2c 6-0830-3c 6-0830-4a	Site Identification 69013-2	Date Sampled 8-30-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Cul
Sample No. 5-0830-19 (5) -0830-16 (5) -0830-16 (5) -0830-16 (5) -0830-16 (5) -0830-26 (5) -0830-26 (5) -0830-36 (6) -0830-36 (7) -0830-36 (7) -0830-36 (7)	Site Identification 69013-2	Date Sampled 8-30-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Condition Upon Receipt Cul

CHAIN OF CUSTODY RECORD

SAMPLER (signa	sturo): Jen Bith	3315 Almaden E	e Branch Expressway, Suite 34 118 (408)254-7723 Applied	GeoSystems
	Anametrix. Inc	Dr. Suite E	SHIPPING INFORMATION Shipper Address Date Shipped	
Project Leader:	TIME: 24 hrs (teve Bittm US 264-7723		Service Used	Capier No.
Relinquished by:	(signatures) B. Huw	Re	eceived by: (signatures)	Date
LABORATORY S	HOULD SIGN UP	ON RECEIPT A	Served for laboratory by: Served for laboratory	THIS FORM WITH THE
Sample No.	Site	Date Sampled	Anniyses Requested	Sample Condition Upon Receipt
5-0830-5a 5-0830-56 5-0830-50 3-0830-50	69013-2	8-30-89	THE BIEX	(crl (w) 138

ANAMETRIX INC

Environmental & Analytical Chemistry 1961 Concourse Drive Suite E. San Jose CA 95131 (408) 432-5192 • Fax (408) 432-8198

MELLEVED

3E 7, 1989



APPLIED GEOSYSTEMS
SAN JOSE BRANCH

Steve Bittman Applied GeoSystems 3315 Almaden Expressway Suite 34 San Jose, CA 95118

August 31, 1989

Anametrix W.O.#: 8908236 Date Received : 08/30/89 Project Number : 69013-2

Dear Mr. Bittman:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Terry Cooke TPH Supervisor

TC/dag

REPORT SUMMARY ANAMETRIX, INC. (408) 432-8192

Client : Applied GeoSystems
Address : 3315 Almaden Expressway
Suite 34
City : San Jose, CA 95118
Attn. : Steve Bittman Anametrix W.O.#: 8908236 Date Received : 08/30/89 Purchase Order#: N/A Project No. : 69013-2 Date Released : 08/31/89

		Date Released . 00/31/09					
Anametrix I.D.	Sample I.D.	 Matrix	Date Sampled	Method	Date Extract	Date Analyzed	Inst I.D.
RESULTS							-
8908236-02 8908236-03 8908236-04	S-0830-1 (A-D) COMP S-0830-2 (A-D) COMP S-0830-3 (A-D) COMP S-0830-4 (A-D) COMP S-0830-5 (A-D) COMP	SOIL SOIL SOIL	08/30/89 08/30/89 08/30/89 08/30/89 08/30/89	TPHG TPHG TPHG		08/30/89 08/31/89 08/30/89 08/31/89 08/31/89	N/A N/A N/A

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 69013-2 S-0830-1(A-D)COMP. Matrix : SOIL Anametrix I.D.: 8908236-01

Date sampled : 08/30/89

Analyst : 2/3
Supervisor : 7Date released : 08/31/89
Date ext. TOG : N/A
Date anl. TOG : N/A Date anl.TPHg: 08/30/89 Date ext.TPHd: N/A Date anl. TPHd: N/A

Reporting Amount Limit Found (ug/kg) (ug/kg) CAS # Compound Name |71-43-2 | Benzene |108-88-3 | Toluene |100-41-4 | Ethylbenzene |1330-20-7 | Total Xylenes | TPH as Gasoline 50 ND 50 ND 50 ND 160 50 55000 1000

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D.: 69013-2 S-0830-2(A-D)COMP. Anametrix I.D.: 8908236-02

Matrix : SOIL Analyst : CB Date sampled : 08/30/89 Supervisor : TC

Date released : 08/31/89
Date ext. TOG : N/A
Date anl. TOG : N/A Date anl. TPHg: 08/31/89 Date ext. TPHd: N/A

Date anl. TPHd: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	5 5 5 5 1000	ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHq - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 69013-2 S-0830-3(A-D)COMP. Anametrix I.D.: 8908236-03

Matrix Analyst : CB : SOIL Date sampled : 08/30/89 Supervisor : 76-

Date anl.TPHg: 08/30/89

Date released : 08/31/89
Date ext. TOG : N/A
Date anl. TOG : N/A Date ext.TPHd: N/A Date anl. TPHd: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	5 5 5 1000	ND ND ND ND ND

ND -Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 69013-2 S-0830-4(A-D)COMP. Anametrix I.D.: 8908236-04

Analyst : CB Matrix : SOIL Date sampled : 08/30/89 : 70 Supervisor

Date anl. TPHg: 08/31/89 Date released : 08/31/89 Date ext. TOG : N/A

Date ext.TPHd: N/A Date anl. TOG : N/A Date anl. TPHd: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	5 5 5 5 1000	ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 69013-2 S-0830-5(A-D)COMP. Anametrix I.D. : 8908236-05

Matrix : SOIL Analyst : CB Date sampled: 08/30/89 Supervisor : 75

Date anl. TPHg: 08/31/89

Date released: 08/31/89

Date ext. TPHd: N/A
Date anl. TPHd: N/A
Date anl. TOG: N/A
Date anl. TOG: N/A

 CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	5	l ND
108-88-3	Toluene	j 5	ND i
100-41-4	Ethylbenzene	5	ND
1330-20-7	Total Xylenes	5	j nd j
İ	TPH as Gasoline	1000	i nd i

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

CHAIN OF CUSTODY RECORD

SAMPLER (signa Steve S	nture): strausz/Jan	et Burag	caf	Applied	GeoSyste	ms	
	8) 264-7723		43255 Mission		Fremont, CA 945	539 415)6°	1-1906
LABORATORY:				NFORMATION			
Applied	Geosystems						
							
						····	
	TIME: _24 hr		Service Use			 	
Project Leader:	steve Bi	ttman	Airbill No		_ Cooler No		<u> </u>
Phone No.	08-264-772					Date	Tim
Relinquished by	^		Received by: (signa	tures)		9/12/89	2:3
Janet Bur	ag rof					17701	
· · · · · · · · · · · · · · · · · · ·							
			Received for labora	tory by:/			
			Received for labora			9-12-89	
Samala		LABOR	AND RETURN A ATORY RESULTS		Samp	ie Conditi	on
Sample No.	Site Identification	Date Sampled	Anai Requi	yses ested	Samp		on
No. 5-0912-10	Site Identification	Date	Anai Requi	yses ested	Samp	ie Conditi	on
No. S-0912-1a -1b 8	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. S-0912-1a	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. S-0912-10 -16 -1c -1d	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. 5-0912-10 -16 -1c -1c -1d 5-0912-2a 6	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. 5-0912-10 -16 -1c -1c -1d 5-0912-2a 2b(s	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. S-0912-10 -16 -1c -1c -1d 5-0912-2a 2b/s 2c	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. S-0912-1a -1b -1c -1c S-0912-2a 2b 2c 2d	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	ion
No. S-0912-10 -16 -1c -1c -1d S-0912-2a 2b 2c 2d 5-0912-3a	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. S-0912-10 -16 -1c -1c -1c -1c -1c -1c -1c	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. S-0912-10 -16 -1c -1c -1c S-0912-2a 2b 2c 2d 5-0912-3a 3b 3c	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	ion
No. 5-0912-10 -1c -1c -1c -1c 5-0912-2a 2b 2c 2d 5-0912-3a 3b 3c 3d	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. S-0912-10 -16 -1c -1c -1c -1c -1c -1c -1c	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. S-0912-10 -16 S-0912-2a -1d S-0912-2a 2b 2c 2d 5-0912-3a 3c 3c 3c 3c 4b 4b	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on
No. 5-0912-10 -16 -1c -1c -1c -1c -1c -1c -1c	Site Identification	Date Sampled	Anai Requi	yses ested	Samp	ie Conditi	on



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-12-89 90924S01

Laboratory Number: Project #:

69013-2

Sample #:

S-0912-1(abcd)

Matrix: Soil

Parameter	Resu (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	19 ND ND ND ND	2.0 0.050 0.050 0.050 0.050		09-12-89 09-12-89 09-12-89 09-12-89 09-12-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-13-89



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-12-89 Laboratory Number: 90924S02

Project #:

69013-2

Sample #:

S-0912-2 (abcd)

Matrix: Soil

Parameter	Resu (mg/kg)	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene	48 ND		2.0		09 - 12-89	NR NR
Toluene Ethylbenzene Total Xylenes	ND ND 0.19		0.050 0.050 0.050		09-12-89 09-12-89 09-12-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Supervisor

09-13-89



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ANALYSIS REPORT

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Report Prepared for:

Date Received:

09-12-89

Applied GeoSystems

Laboratory Number:

90924503 69013-2

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Project #: Sample #:

S-0912-3 (abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Resu (mg/kg)	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	42 ND ND ND 0.37		2.0 0.050 0.050 0.050 0.050		09-12-89 09-12-89 09-12-89 09-12-89 09-12-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-13-89



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ANALYSIS REPORT

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Report Prepared for:

Date Received:

09-12-89

Applied GeoSystems

Laboratory Number:

90924504 69013-2

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Project #: Sample #:

S-0912-4 (abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Resi (mg/kg)		Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	73 ND ND ND	·	2.0 0.050 0.050 0.050 0.050		09-12-89 09-12-89 09-12-89 09-12-89 09-12-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm. mq/L

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

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TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-13-89

SAMPLER Signa	3315 San Jo	Amaden Expresses, CA 95118	seway, Suite 34 (408)254-7723	GeoSystems
1405 4405	264-7723			
ABORATORY:			SHIPPING INFORMAT	ION:
Applied	Geosystem		Shipper	
	Missice Blu	<i>₹</i>	Address	
Fremant	TIME: 24-	hour	Service Used	
	Store Bo			Cooler No
Phone No. 4	08-264-772	7		
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x-ur-) Malla			
			Received for laboratory by:	2 70 10
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<u> </u>	SHOULD SIGN UP	LABORA	AND RETURN A COPY OF TORY RESULTS	THIS FORM WITH THE
Sample No.	Site Identification	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested	THIS FORM WITH THE Sample Condition Upon Receipt
Sample No. -09/3-5a7	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	Sample Condition Upon Receipt
Sample No. -0913-507	Site Identification	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested	THIS FORM WITH THE Sample Condition Upon Receipt
Sample No. -0913-5a7 -0913-5b7	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	Sample Condition Upon Receipt
Sample No. -0913-50 -0913-56 -0913-50	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	Sample Condition Upon Receipt
Sample No. -0913-5a7 -0913-5b7 -0913-5c7 -0913-6a7	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	THIS FORM WITH THE Sample Condition Upon Receipt
Sample No. -0913-5a7 -0913-5b7 -0913-5c7 -0913-6a7 -0913-6b7 -0913-6c7	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	THIS FORM WITH THE Sample Condition Upon Receipt
Sample No. -0913-5a7 -0913-5b7 -0913-5c7 -0913-5d7 -0913-6a7 -0913-6c7 -0913-6d7	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	Sample Condition Upon Receipt
Sample No. -0913-50 -0913-56 -0913-50 -0913-60 -0913-60 -0913-60 -0913-60	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	THIS FORM WITH THE Sample Condition Upon Receipt
Sample No. -0913-50 -0913-56 -0913-50 -0913-60 -0913-60 -0913-60 -0913-60 -0913-76	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	THIS FORM WITH THE Sample Condition Upon Receipt
Sample No. -0913-50 -0913-56 -0913-50 -0913-60 -0913-60 -0913-60 -0913-76 -0913-76	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	Sample Condition Upon Receipt
Sample No. -0913-50 -0913-56 -0913-50 -0913-60 -0913-60 -0913-60 -0913-76 -0913-76	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	Sample Condition Upon Receipt
Sample No. -0913-50 -0913-56 -0913-50 -0913-60 -0913-60 -0913-60 -0913-76 -0913-76	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	Sample Condition Upon Receipt
Sample No. -0913-5a -0913-5b -0913-5c -0913-5d -0913-6a -0913-6b -0913-6c -0913-6c -0913-76	Site Identification 69013-2	Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested Toho STEX	Sample Condition Upon Receipt



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ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-13-89

Laboratory Number:

90926501

Project #:

69013-2

Sample #: Matrix:

S-0913-5(abcd) Soil

Parameter	Resu (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes		2.0 0.050 0.050 0.050 0.050		09-13-89 09-13-89 09-13-89 09-13-89 09-13-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-14-89



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ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Date Received:

09-13-89

Applied GeoSystems

Laboratory Number:

90926502 69013-2

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Project #: Sample #:

Matrix:

S-0913-6 (abcd) Soil

Attention: Steve Bittman

Parameter	Resu (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene	92 ND ND ND	2.0 0.050 0.050 0.050		09-13-89 09-13-89 09-13-89 09-13-89	NR NR
Total Xylenes	1.5	0.050		09-13-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-14-89



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ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-13-89 Laboratory Number: 90926S04

Project #:

69013-2

Sample #:

S-0913-8 (abcd)

Soil Matrix:

Parameter	Resu (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	67 ND ND ND	2.0 0.050 0.050 0.050 0.050		09-13-89 09-13-89 09-13-89 09-13-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-14-89



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-13-89 90926S03

Laboratory Number: Project #:

69013-2

Sample #:

S-0913-7 (abcd)

Matrix:

Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	560	2.0	09-13-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	ND 0.063 0.24 23	0.050 0.050 0.050 0.050	09-13-89 09-13-89 09-13-89 09-13-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-14-89



Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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HOUSTON

ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems
3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-13-89 90926S04

Laboratory Number: Project #:

69013-2

Sample #:

S-0913-8 (abcd)

Matrix: Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	67 ND ND ND	2.0 0.050 0.050 0.050 0.050		09-13-89 09-13-89 09-13-89 09-13-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

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PROCEDURES

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TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-14-89

AMPLE	// San J	Almaden Expresose, CA 95118	(408)264-7723	GeoSystems	
hone. 408	264 782	7			
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hone No. 4	08.264-77			Date	ĪΤ
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ABORATORY	SHOULD SIGN UP	ON RECEIPT	AND RETURN A COPY OF	THIS FORM WITH TH	E
ABORATORY : Sample No.	SHOULD SIGN UP Site Identification	ON RECEIPT	AND RETURN A COPY OF		ition
Sample No. -0914-9a7:	Site Identification 69013-2	PON RECEIPT LABORA Date	AND RETURN A COPY OF TORY RESULTS	Sample Cond Upon Recei	IE ition
Sample No. -0914-9a7:	Site Identification 69013-2	PON RECEIPT LABORA Date Sampled	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Cond Upon Recei	IE ition
Sample No. -0914-9a7:	Site Identification 69013-2	PON RECEIPT LABORA Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Cond Upon Recei	IE ition
Sample No. -0914-96 -0914-96 -0914-96	Site Identification 69013-2	PON RECEIPT LABORA Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Cond Upon Recei	IE ition
Sample No. -0914-96 -0914-96 -0914-96	Site Identification 69013-2	PON RECEIPT LABORA Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Cond Upon Recei	IE ition
Sample No. -0914-967 -0914-96 -0914-96 -0914-1067 -0914-1067	Site Identification 69013-2	PON RECEIPT LABORA Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Cond Upon Recei	ition
Sample No. -0914-967 -0914-96 -0914-96 -0914-1067 -0914-1067	Site Identification 69013-2	PON RECEIPT LABORA Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Cond Upon Recei	ition
Sample No. -0914-967 -0914-96 -0914-96 -0914-1067 -0914-1067	Site Identification 69013-2	PON RECEIPT LABORA Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Cond Upon Recei	ition
Sample No. -0914-967 -0914-96 -0914-96 -0914-1067 -0914-1067	Site Identification 69013-2	PON RECEIPT LABORA Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested	Sample Cond Upon Recei	IE ition
Sample No. -0914-967 -0914-96 -0914-96 -0914-1067 -0914-1067	Site Identification 69013-2	Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested TPHg BTEX	Sample Cond Upon Recei	IE ition
Sample No. -0914-967 -0914-96 -0914-96 -0914-1067 -0914-1067	Site Identification 69013-2	PON RECEIPT LABORA Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested TPHg BTEX	Sample Cond Upon Recei	IE ition
Sample No. -0914-967 -0914-96 -0914-96 -0914-1067 -0914-1067	Site Identification 69013-2	Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested TPHg BTEX	Sample Cond Upon Recei	IE ition
Sample No. -0914-967 -0914-96 -0914-96	Site Identification 69013-2	Date Sampled 9-14-89	AND RETURN A COPY OF TORY RESULTS Analyses Requested TPHg BTEX	Sample Cond Upon Recei	IE ition



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-14-89

Laboratory Number:

90928S01 69013-2

Soil

Project #: Sample #:

S-0914-9(abcd)

Matrix:

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	25 ND ND ND O.22	2.0 0.050 0.050 0.050 0.050		09-14-89 09-14-89 09-14-89 09-14-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-15-89



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-14-89

Laboratory Number:

90928S02 69013-2

Soil

Project #: Sample #:

S-0914-10(abcd)

Matrix:

Parameter	Resu (mg/kg)	ılt (mg/L)	Detection (mg/kg)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene	35 ND ND ND		2.0 0.050 0.050 0.050	09-14-89 09-14-89 09-14-89 09-14-89	NR NR
Total Xylenes	0.23		0.050	09-14-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mq/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-15-89



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HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-14-89 Laboratory Number: 90928503

Project #: 69013-2 S=0914-11 (abcd)Sample #:

Matrix: Soil

Parameter	Rest (mg/kg)	 Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	20	2.0		09-14-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND 0.13	0.050 0.050 0.050 0.050		09-14-89 09-14-89 09-14-89 09-14-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Supervisor

09-15-89

Phone: (408)264-2723	bran	SHIPPING INFORMATION	N:
	Applied Geo.	y: Tems	ShipperAddress	
Project Lesder	TIME: 24 hrs. Steve Bittm	an	Sarvice Used Airbill No	
Phone No. The Retinquished by		Re	csived by: (signatures)	Date T
	Ster Beth	ren		
	3.XI		Coived for laboratory by:	7-21-89 12
LABORATORY	Should Sign upo	on receipt a	NO RETURN A COPY OF TH	IS FORM WITH THE
Sample No.	Site	Date Sampled	ND RETURN A COPY OF THORY RESULTS Analyses Requested	Sample Condition
Sample No. 5-0921-/24	Site identification 69013-1	Date	DRY RESULTS	
Sample No. 5-0921-12A 5-0921-12C 5-0921-12C	Site Identification 69013-1	Date Sampled	Analyses Requested THE RTEX	Sample Condition Upon Receipt
Sample No. 5-0921-12A 5-0921-12C 5-0921-12d 5-0921-136 5-0921-136 5-0921-136	Site Identification 69013-1	Date Sampled 9-11-89	Analyses Requested TPHO BTEX	Sample Condition Upon Receipt
Sample No. 5-0921-12A 5-0921-12C 5-0921-12d 5-0921-13b 5-0921-13b	Site Identification 69013-1	Date Sampled 9-21-89	Analyses Requested THE RTEX	Sample Condition Upon Receipt
Sample No. 5-0921-12A 5-0921-12C 5-0921-12d 5-0921-13q	Site Identification 69013-1	Date Sampled 9-21-89	Analyses Requested THE RTEX	Sample Condition Upon Receipt



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HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number: 09-21-89 90939801

Project #:

69013-2

Sample #:

S-0921-12(abcd)

Matrix: Soil

Parameter	Resu (mg/kg)	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	15 ND ND ND 0.074		2.0 0.050 0.050 0.050 0.050		09-21-89 09-21-89 09-21-89 09-21-89 09-21-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-22-89



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ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number:

09-21-89 90939502

Project #:

69013-2

Sample #:

S-0921-13 (abcd)

Matrix:

Soil

Parameter	Resi (mg/kg)	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes			2.0 0.050 0.050 0.050 0.050		09-21-89 09-21-89 09-21-89 09-21-89 09-21-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-22-89

Received for laboratory by: ABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS Sample No. Identification Sampled Requested Upon Receipt S-0925-149 69013-1 9-15-89 TPHS BTEX	SAMPLER (signa	iture):	3315 Almaden San Jose, CA 9	Se Branch Expressway, Suite 34 05118 (408)264-7723	Gen Suptema
SHIPPING INFORMATION: Shipper Address Date Shipped Service Used Althill No. Carrier No. Phone No. (108) 264-7713 Received by: (signatures) Date Analyses Recuired Banacies Recuire	. (408) 26		Mucu	Applied	
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ABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS Sample No. Identification Sampled Requested Upon Receipt S-0925-14a G-0925-14a G-0925-14a G-0925-15a G-0925-15a G-0925-15a G-0925-15a G-0925-15a G-0925-15a G-0925-15a G-0925-16a G-				Received by: (signatures)	Date T
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HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number:

09-25-89 90941S01

Project #:

69013-2

Sample #:

S-0925-14 (abcd)

Matrix: Soil

Parameter	Rest	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	22 ND ND ND ND		2.0 0.050 0.050 0.050 0.050		09-25-89 09-25-89 09-25-89 09-25-89 09-25-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

<u>09-26-89</u>



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HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Date Received:

09-25-89

Applied GeoSystems

Laboratory Number:

90941502

3315 Almaden Expressway, Suite 34

Project #:

69013-2

San Jose, CA 95118

Sample #:

S-0925-15(abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Rest	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	15 ND ND ND ND	2.0 0.050 0.050 0.050 0.050		09-25-89 09-25-89 09-25-89 09-25-89 09-25-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm. mq/L

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

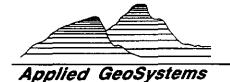
TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-26-89



FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Date Received:

09-25-89

Applied GeoSystems

Laboratory Number:

90941503

3315 Almaden Expressway, Suite 34

Project #: Sample #:

69013-2 S-0925-16 (abcd)

San Jose, CA 95118 Attention: Steve Bittman

Ethylbenzene

Total Xylenes

Matrix:

0.050

0.050

s 0,23 10(abca) Soil

09-25-89

09-25-89

Parameter	Resi		on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	8.9	 2.0		09-25-89	NR NR
Benzene Toluene	ND ND	0.050 0.050		09-25-89 09-25-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND

ND

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

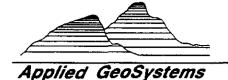
TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

<u>09-26-89</u>



FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-25-89 Laboratory Number: 90941504

Project #:

69013-2

Sample #:

S-0925-17 (abcd)

Matrix:

Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	18 ND ND ND	2.0 0.050 0.050 0.050 0.050		09-25-89 09-25-89 09-25-89 09-25-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

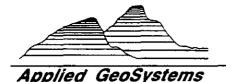
TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-26-89

SAMPLER (signa	ture): 👉 🛛 🗇	3315 Almaden San Jose, CA 9	Se Branch Expressway, Suite 34 5118 (408)264-7723 Applied	GeoSystems
Phone: (408)	Stere B.) 264-7723	Minen		deodystems
AROBATORY:	Applied Geo	Systems	SHIPPING INFORMATION Shipper Address	
TIDMARONNO :	rime: 24 ha		Date Shipped Service Used	
roject Leader:			Alrhill No.	Capier No.
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		1	Received for laboratory by:	
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ABORATORY S Sample No.	HOULD SIGN UP Site Identification			HIS FORM WITH THE
Sample No. -0926-18q	Site	Date Sampled	AND RETURN A COPY OF TOTORY RESULTS Analyses Requested TPHO BTE	Sample Condition
Sample No. -0926-184	Site Identification 69013-)	LABORA Date Sampled	AND RETURN A COPY OF TOTORY RESULTS Analyses Requested	HIS FORM WITH THE Sample Condition Upon Receipt
Sample No. -0926-184	Site Identification 69013-)	Date Sampled 9-26-89	AND RETURN A COPY OF TOTORY RESULTS Analyses Requested TPHG BTEG	Sample Condition Upon Receipt
Sample No. -0926-184	Site Identification 69013-)	Date Sampled 9-26-89	AND RETURN A COPY OF TOTORY RESULTS Analyses Requested TPHG BTEG	Sample Condition Upon Receipt
Sample No. 0-0926-184 0-0926-186	Site Identification 69013-)	Date Sampled 9-26-89	AND RETURN A COPY OF TOTORY RESULTS Analyses Requested TPHG BTEG	Sample Condition Upon Receipt
Sample No. 5-0926-184 5-0926-186	Site Identification 69013-)	Date Sampled 9-26-89	AND RETURN A COPY OF TOTORY RESULTS Analyses Requested TPHG BTEG	Sample Condition Upon Receipt
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Sample No. 5-0926-184	Site Identification 69013-)	Date Sampled 9-26-89	AND RETURN A COPY OF TOTORY RESULTS Analyses Requested TPHG BTEG	Sample Condition Upon Receipt



FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-26-89

Laboratory Number:

90946S01 69013-2

Project #: Sample #:

S-0926-18 (abcd)

Matrix:

Soil

Parameter	Resi (mg/kg)	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	73		2.0		09-26-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	ND 0.066 0.14 1.6		0.050 0.050 0.050 0.050		09-26-89 09-26-89 09-26-89 09-26-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-27-89

SAMPLER (sign	- lend 17	Three	5118 (408)254-7723 <i>Applied</i>	GeoSystems
LABORATORY:	Applied Geo	Systems	SHIPPING INFORMATION Shipper Address	
TURNAROUND	TIME: 24 hrs		Date Shipped Service Used	
Phone No.	Steve Billman 08) 264-7723		Alrbill No.	Capier No
Relinquished by	: (signatures)		lecsived by: (signatures)	Date T
	Sten Batter	en		
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Sampie	Site	Date	AND RETURN A COPY OF TORY RESULTS Analyses	Sample Condition
Sample No.	Site Identification	Date Sampled 10-1-89	TORY RESULTS	
Sample No.	Site Identification	Date Sampled 10-1-89	Analyses Requested	Sample Condition Upon Receipt
Sample No. 5-1002-196) 8 5-1002-196 8 5-1002-196	Site Identification	Date Sampled 10-1-89	Analyses Requested	Sample Condition Upon Receipt
Sample No. 5-1002-196 & 5-1002-196 & 5-1002-19d	Site Identification 69013-1	Date Sampled 10-1-89	Analyses Requested	Sample Condition Upon Receipt
Sample No. 5-1002-196 } 5-1002-196 } 5-1002-190 5-1002-206 5-1002-206	Site Identification 69613-1	Date Sampled 10-1-89	Analyses Requested	Sample Condition Upon Receipt
Sample No. 5-1002-196 } 5-1002-196 } 5-1002-190 5-1002-206 5-1002-206	Site Identification 69013-1	Date Sampled 10-1-89	Analyses Requested TPH(s) BTEX	Sample Condition Upon Receipt
Sample No. 5-1002-196 } 5-1002-196 } 5-1002-190 5-1002-206 5-1002-206 5-1002-206	Site Identification 69613-1	Date Sampled 10-1-89	Analyses Requested	Sample Condition Upon Receipt
Sample No. 5-1002-196 } 5-1002-196 } 5-1002-196 5-1002-206 5-1002-206 5-1002-206 5-1002-206	Site Identification 69613-1	Date Sampled 10-1-89	Analyses Requested TPH(s) BTEX	Sample Condition Upon Receipt
Sample No. 5-1002-196 } 5-1002-196 } 5-1002-196 5-1002-206 5-1002-206 5-1002-206 5-1001-206 5-1001-206 5-1001-206	Site Identification 69613-1	Date Sampled 10-1-89	Analyses Requested TPH(s) BTEX	Sample Condition Upon Receipt (orl
Sample No. S-1002-196 S-1002-196 S-1002-196 S-1002-206 S-1002-206 S-1002-206 S-1002-206 S-1002-206 S-1002-216 S-1002-216 S-1002-216	Site Identification 69613-1	Date Sampled 10-1-89	Analyses Requested TPH(s) BTEX	Sample Condition Upon Receipt (or)
Sample No. S-1002-196 S-1002-196 S-1002-196 S-1002-206 S-1002-206 S-1002-206 S-1002-206 S-1002-206 S-1002-216 S-1002-216 S-1002-216	Site Identification 69613-1	Date Sampled 10-1-89	Analyses Requested TPH(s) BTEX	Sample Condition Upon Receipt

TURNAROUND TIME: JU Project Leader: Struct Phone No. 48 164-7713 Relinquished by: (signatures) LABORATORY SHOULD SIGN Sample Site	beosystem hrs	SHIPPING INFORMATION Shipper Address Date Shipped Service Used Airbill No. Received by: (signatures)	Capier No.
Project Leader: Street Phone No. 48 164-7713 Relinquished by: (signatures) LABORATORY SHOULD SIGN Sample Site	3. Timan	Service Used Airbill No	Capier No
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Sample Site		Received for laboratory by:	10-2-89 14
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43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

COSTA MESA

SACRAMENTO

HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Laboratory Number:

10-02-89 91001501

Applied GeoSystems

Project #:

Date Received:

69013-2

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Sample #:

S-1002-19 (abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Resu (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes		2.0 0.050 0.050 0.050 0.050		10-02-89 10-03-89 10-03-89 10-03-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Date Received:

10-02-89

Applied GeoSystems

Laboratory Number:

91001S02 69013-2

3315 Almaden Expressway, Suite 34 San Jose. CA 95118

Project #: Sample #:

S-1002-20 (abcd)

Matrix:

Soil

Attention:	Steve	Bittman

Parameter	Resi	 Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline	61	2.0		10-02-89	NR
TEH as Diesel Benzene	ND	0.050		10-03-89	NR
Toluene	ND	0.050		10-03-89	
Ethylbenzene Total Xylenes	ND 0.56	0.050 0.050		10-03-89 10-03-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm. mg/L

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89



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ANALYSIS REPORT

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Report Prepared for:

Date Received:

10-02-89

Applied GeoSystems

Laboratory Number:

91001S03 69013-2

San Jose, CA 95118

3315 Almaden Expressway, Suite 34 Project #: Sample #:

S-1002-21(abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Rest	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	91 ND ND ND 0.69		2.0 0.050 0.050 0.050 0.050		10-02-89 10-03-89 10-03-89 10-03-89	nr nr

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

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TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

10-02-89

Laboratory Number:

91001504

Project #: Sample #:

69013-2 S-1002-22(abcd)

Matrix:

Soil

Parameter	Resi (mg/kg)	1	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	60 ND ND ND 0.30		2.0 0.050 0.050 0.050 0.050		10-02-89 10-03-89 10-03-89 10-03-89 10-03-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

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TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

10-02-89 91001S05

Laboratory Number: Project #:

69013-2

Sample #:

S-1002-23 (abcd)

Matrix: Soil

Parameter			Date Analyzed	Notes		
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	35 ND ND ND O.25		2.0 0.050 0.050 0.050 0.050		10-02-89 10-03-89 10-03-89 10-03-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

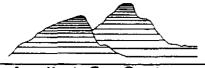
TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number:

10-02-89 91001506

Project #:

69013-2

Sample #: Matrix:

S-1002-24 (abcd) Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline					NR
TPH as Gasoline	30	2.0		10-02-89	
TEH as Diesel]			NR
Benzene	ND	0.050		10-03-89	
Toluene	ND	0.050		10-03-89	
Ethylbenzene	ND	0.050		10-03-89	
Total Xylenes	0.074	0.050		10-03-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89

SAMPLER (sign	nature): 🖊 - p.	3315 Almader	Ose Branch Expressway, Suite 34 95118 (408)264-7723	
Phone: (408).	Ster Bit	Tman	Applied	d GeoSystems
LABORATORY:		eusystems	SHIPPING INFORMATION Shipper Address	
TURNAROUND	TIME: 48 hrs		Date Shipped	
	- Steve Bittman		Service Used Airbill No	Capier No.
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	2 12 MOVIME			
			Received for laboratory by:	- 10-4-89 110
		LABORA	AND RETURN A COPY OF TORY RESULTS	
Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
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5-1004-25c 5 5-1004-25d/	\$ 			
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43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

FREMONT

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HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for: Applied GeoSystems

3315 Almaden Expressway, Suite 34 Project #:

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number: 10-04-89 91009S01

69013-2

Sample #:

S-1004-25 (abcd) Soil

Matrix:

Parameter	Resu (mg/kg)	i .	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	33 ND ND ND O.11		2.0 0.050 0.050 0.050 0.050		10-05-89 10-05-89 10-05-89 10-05-89 10-05-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

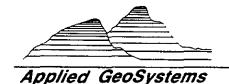
TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-06-89 Date Reported

SAMPLER (signature):	3315 Almaden	Se Branch Expressway, Suite 34 5118 (408)284-7723 Applied	GeoSystems
Phone: (408) 264-7723 LABORATORY: Applied	teo Systems	SHIPPING INFORMATION Shipper Address Date Shipped	
TURNAROUND TIME: 24 Project Leader: Steve F Phone No. (408) 264-7713	Sittman	Service Used	
Relinquished by: (signatures	a Bathner	Received by: (signatures)	Date
LABORATORY SHOULD SIG	N UPON RECEIPT	AND RETURN A COPY OF TH	10-6-89 1
Sample Site Identificat 5-1006-26 69013-2	ion Sampled	Analyses Requested TPHO RTEX	Sample Condition Upon Receipt
S-1006-266 S-1006-266 S-1006-266 S-1006-276	\$\frac{1}{2}\frac{1}{2		\J2\ \J2\
S-1006-276 (\$ S-1006-27c (\$ S-1006-27a)			
			·



FREMONT

COSTA MESA

SACRAMENTO

• HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Date Received:

10-06-89

Applied GeoSystems

Laboratory Number:

91015S01 69013-2

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Project #: Sample #:

S-1006-26(abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Resu (mg/kg)	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	38 ND ND ND O.087		2.0 0.050 0.050 0.050 0.050		10-06-89 10-06-89 10-06-89 10-06-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-09-89



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ANALYSIS REPORT

0212lab.frm

Report Prepared for:

Date Received:

10-06-89

Applied GeoSystems

Laboratory Number:

91015S02 69013-2

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Project #: Sample #:

S-1006-27 (abcd)

San Jose, CA 95118
Attention: Steve Bittman

Ethylbenzene

Total Xylenes

Matrix:

0.050

0.050

(abcd) (Soil

10-06-89

10-06-89

Parameter	•		Date Analyzed	Notes		
TVH as Gasoline TPH as Gasoline TEH as Diesel	32		2.0		10-06-89	NR NR
Benzene Toluene	ND ND		0.050		10-06-89 10-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND

ND

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-09-89

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Phone No.	108.264.772				
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43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

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Report Prepared for:

Date Received:

09-07-89

Applied GeoSystems

Laboratory Number:

90915801

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Project #: Sample #:

69013-2

Attention: Steve Bittman

Matrix:

S-0907-A(abcd) Soil

Parameter	1		Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes	
TVH as Gasoline TPH as Gasoline TEH as Diesel	1300		2.0		09-07-89	NR NR	
Benzene Toluene Ethylbenzene Total Xylenes	2.2 17 7.5 71		0.050 0.050 0.050 0.050		09-07-89 09-07-89 09-07-89 09-07-89		

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89



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ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34 Project #:

San Jose, CA 95118

Attention: Steve Bittman

Date Received: Laboratory Number: 09-07-89 90915S02

69013-2

Sample #:

S-0907-B(abcd)

Matrix: Soil

Parameter	Resu (mg/kg)	ilt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline	510		2.0		09-07-89	NR
TEH as Diesel Benzene Toluene	ND ND		0.050		09-07-89 09-07-89	NR
Ethylbenzene Total Xylenes	0.20 4.7		0.050 0.050		09-07-89 09-07-89	

mq/kq = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-07-89 Laboratory Number: 90915803

Project #:

69013-2

Sample #:

S-0907-C(abcd)

Matrix: Soil

Parameter	Rest	ılt (mg/L)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	78 ND ND ND		2.0 0.050 0.050 0.050 0.050		09-07-89 09-07-89 09-07-89 09-07-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm. mg/L

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:
Laboratory Number:

09-07-89 90915804

Project #:

60013-3

Sample #:

69013-2 S-0907-D(abcd)

Matrix:

Soil

Parameter	Resu (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel	2.3	2.0		09-07-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND ND	0.050 0.050 0.050 0.050		09-07-89 09-07-89 09-07-89 09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89



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ANALYSIS REPORT

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Report Prepared for:

Date Received:

09-07-89

Applied GeoSystems

Laboratory Number:

90915505 69013-2

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Project #: Sample #:

S-0907-E(abcd)

Attention: Steve Bittman

Matrix:

Soil

Parameter	Resi (mg/kg)	Detection (mg/kg)	on Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene		2.0 0.050 0.050		09-07-89 09-07-89 09-07-89	NR NR
Ethylbenzene Total Xylenes	2.4 27	0.050 0.050		09-07-89 09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm.

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH -- Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

<u>09-</u>08-<u>89</u>



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ANALYSIS REPORT

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Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

09-07-89

Laboratory Number:

90915S06 69013-2

Project #: Sample #:

S-0907-F(abcd)

Matrix:

Soil

Parameter	Rest	ılt (mg/L)	Detection (mg/kg)	Date Analyzed	Notes	
TVH as Gasoline TPH as Gasoline TEH as Diesel Benzene Toluene Ethylbenzene Total Xylenes	33 ND ND ND		2.0 0.050 0.050 0.050 0.050		09-07-89 09-07-89 09-07-89 09-07-89 09-07-89	NR NR

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89



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ANALYSIS REPORT

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09-07-89

Report Prepared for:

Applied GeoSystems

3315 Almaden Expressway, Suite 34

San Jose, CA 95118

Attention: Steve Bittman

Date Received:

Laboratory Number:

90915S07 69013-2

Project #: Sample #:

S-0907-G(abcd)

Matrix: Soil

Parameter	Resu (mg/kg)	ılt (mg/L)	Detection (mg/kg)	Date Analyzed	Notes	
TVH as Gasoline TPH as Gasoline TEH as Diesel	78 ND		2.0		09-07-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND 0.061		0.050 0.050 0.050		09-07-89 09-07-89 09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

mg/L = milligrams per liter = ppm.

ND = Not detected. Compound(s) may be present at

concentrations below the detection limit.

NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89



43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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HOUSTON

ANALYSIS REPORT

02121ab.frm

Report Prepared for:

Date Received:

09-07-89

Applied GeoSystems

Laboratory Number: Project #:

90915S08 69013-2

3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Sample #:

S-0907-H(abcd)

Matrix:

Soil

Attention:	Steve	Bittman	
			_
J 5		Dogwii	_

Parameter	Result Detection Limit (mg/kg) (mg/L) (mg/kg) (mg/L)			Date Analyzed	Notes	
TVH as Gasoline TPH as Gasoline TEH as Diesel	68		2.0		09-07-89	NR NR
Benzene Toluene Ethylbenzene Total Xylenes	ND ND ND 0.061		0.050 0.050 0.050 0.050		09-07-89 09-07-89 09-07-89 09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).

= milligrams per liter = ppm. mg/L

= Not detected. Compound(s) may be present at ND

concentrations below the detection limit.

= Analysis not required. NR

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89

Applied GeoSystems 3315 Almaden Expressway, Suite 34 San Jose, California 95118. (408) 264-7723 FAX (408) 264-2435

TRANSMITTAL FORM

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