Applied GeoSystems
43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906
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May 13, 1987
87042-1

Mr. Kent Sanderson
Exxon Company, U.S.A.
1646 N. California Blvd.
Suite 210
Walnut Creek, CA 94596-9740

Subject: Transmittal of letter report No. 87042-1 for the First Phase Soil Contamination Evaluation at Exxon Service Station No. 7-3006 located at 720 High Street, Oakland, California.

Mr. Sanderson:

A field geologist from our office was present at the above-referenced site on April 28, 1987 to evaluate the potential petroleum product contamination in soil excavated from two tank pits prior to tank removal on the following day. The location of the site is shown on the Site Vicinity Map, Plate P-1.

Approximate locations of the tanks and site structures are shown on the Generalized Site Plan, Plate P-2. Three underground storage tanks were located in a single tank cluster in the southern portion of the site. It is our understanding, based on information provided by personnel of Exxon Oil Company, U.S.A., that these tanks were of 8,000, 6,000, and 10,000 gallon capacities, and were used to store regular, super unleaded, and unleaded gasoline, respectively. One 1,000 gallon tank located behind the station building was used to store waste oil.

Project # 4538709
Fee Paid 600
Date 9/23/88

Letter Report No. 87042-1
Exxon Service Station No. 7-3006

May 13, 1987

FIELD WORK

The field geologist from Applied GeoSystems arrived at the site at approximately 8 a.m., as scheduled by Exxon Company, U.S.A.. Soil excavation and sampling was delayed until triple flushing of the tanks was completed.

A Foxboro 108 Organic Vapor Analyzer (OVA) was used to evaluate presence of product contamination in the newly exposed soil in the excavated vapor recovery and product line trenches. This field survey revealed relatively high qualitative OVA readings (>1000 parts per million-ppm) in the soil beneath the product and vapor lines servicing the three pump islands (at depths between three and five feet).

SOIL SAMPLE COLLECTION AND ANALYSIS

Field evaluation of exposed trench soil revealed a black contaminated layer approximately two to three feet deep that appeared to be present under product and vapor lines, and in the gasoline tank pit cluster. A soil sample was collected from the contaminated layer showing relatively high OVA readings in the trench between the gasoline tank pit and the central pump islands. This soil sample (S3-Trench) was analyzed for Total Extractable Hydrocarbons (TEH) by EPA Method 3550 and Modified Method 8015. This sample was analyzed for extractable, and not volatile hydrocarbons, due to the oily nature of contamination. Analytical results indicate 434 parts per million (ppm) extractable petroleum hydrocarbon constituents. Laboratory results are presented in Table 1 and on the Laboratory Record of Analysis included with this report. Chain of Custody documentation for the sample is also included in this report.

TABLE 1
LABORATORY ANALYSIS ON SOIL SAMPLE
Collected from product line trench
at the Exxon Service Station
Oakland, California

Identifier	TEH	Detection Limit
S3-Trench	434.0	5.0

Note: Results in milligrams/kilograms (parts per million - ppm)
TEH: Total Extractable Hydrocarbons

Samples were collected from soil removed at a depth of approximately five feet below the ground surface, surrounding the fill port and turbine pump on each of the gasoline storage tanks. OVA readings were taken in the field in conjunction with soil sampling and were relatively high. Two soil samples each were taken from soil excavated above the 8000 gallon, 6000 gallon, and 10,000 gallon tank (tank T1, T2, T3, respectively). A soil sample was also taken from soil excavated over the top of the waste oil tank (WOT). OVA readings in this soil were relatively low (less than 100 ppm).

Sample locations are shown on the enclosed Generalized Site Plan. The eight soil samples were collected from the excavated soil by driving laboratory-cleaned brass sleeves into the excavated soil pile. The sample sleeves were immediately sealed with aluminum foil, plastic caps, and air-tight tape, labeled and placed in iced storage for transport to the analytical laboratory for testing. The Chain Of Custody form for the samples' transferral is included with this letter report. Laboratory results of soils analyses are presented in Table 2 and on the Laboratory Record Of Analysis form included with this report.

TABLE 2
LABORATORY ANALYSES ON SOIL SAMPLES
Collected from soil excavated out of the gasoline tank pit at the Exxon Service Station
Oakland, California

Identifier	TVH	TEH	Detection Limit
S5T1F	1846.0		5.0
S5T1P	2613.0		5.0
S5T2F	454.0		2.0
S5T2P	1735.0		5.0
S5T3F	1936.0		5.0
S5T3P	5995.0		10.0
S5WOT		ND	5.0

Note: Results in milligrams/kilograms (parts per million - ppm)
TVH: Total Volatile Hydrocarbons (EPA Method 8020)
TEH: Total Extractable Hydrocarbons (EPA Method 3550 and Modified 8015)
ND: Non-detectable

CONCLUSIONS AND RECOMMENDATIONS

On April 29, 1987, the underground storage tanks were removed by Pacific Southwest Construction and Service, Inc., under contract with Exxon Oil Company, U.S.A.. Applied Geosystems was not contacted to collect or analyze samples of the soil beneath the underground storage tanks.

The level of petroleum hydrocarbon contamination found in the soil sample taken from the product line trench is below the San Francisco Bay Regional Water Quality Control Board (S.F.B.R.W.Q.C.B) recommended action levels for soil excavation. However, this level indicates that contamination is present in the soil. We recommend that further soil sampling in the trenches be conducted.

Due to the presence of total volatile hydrocarbon concentrations in soil samples collected from the gasoline tank pit greater than 1000 parts per million, we recommend further excavation and sampling of the backfill and native soil after the tanks are removed.

Laboratory analysis on the sample collected from excavated soil above the waste oil tank revealed non-detectable levels of total extractable petroleum hydrocarbon contamination.

In response to our recommendations, Exxon Company, U.S.A. requested that Applied GeoSystems begin a second phase of soil contamination evaluation at the site on May 1, 1987. The purpose of the second phase is to evaluate the petroleum product contamination in backfill and native soil in the gasoline tank pit, and in the soil present beneath the product and vapor recovery lines. Exxon also requested that Applied GeoSystems work with Pacific Southwest Construction and Service in excavating soil containing contamination levels greater than 1000 ppm, and aerating this soil on site. We recommend conducting a third phase at the site that will involve the installation of four monitoring wells to evaluate whether ground water has been impacted by petroleum hydrocarbon contamination. One monitoring well be installed in the waste oil tank pit due to the presence of numerous holes in the bottom of the removed waste oil tank.

If you have any questions concerning the information presented in this first phase letter report for the site, please do not hesitate to call.

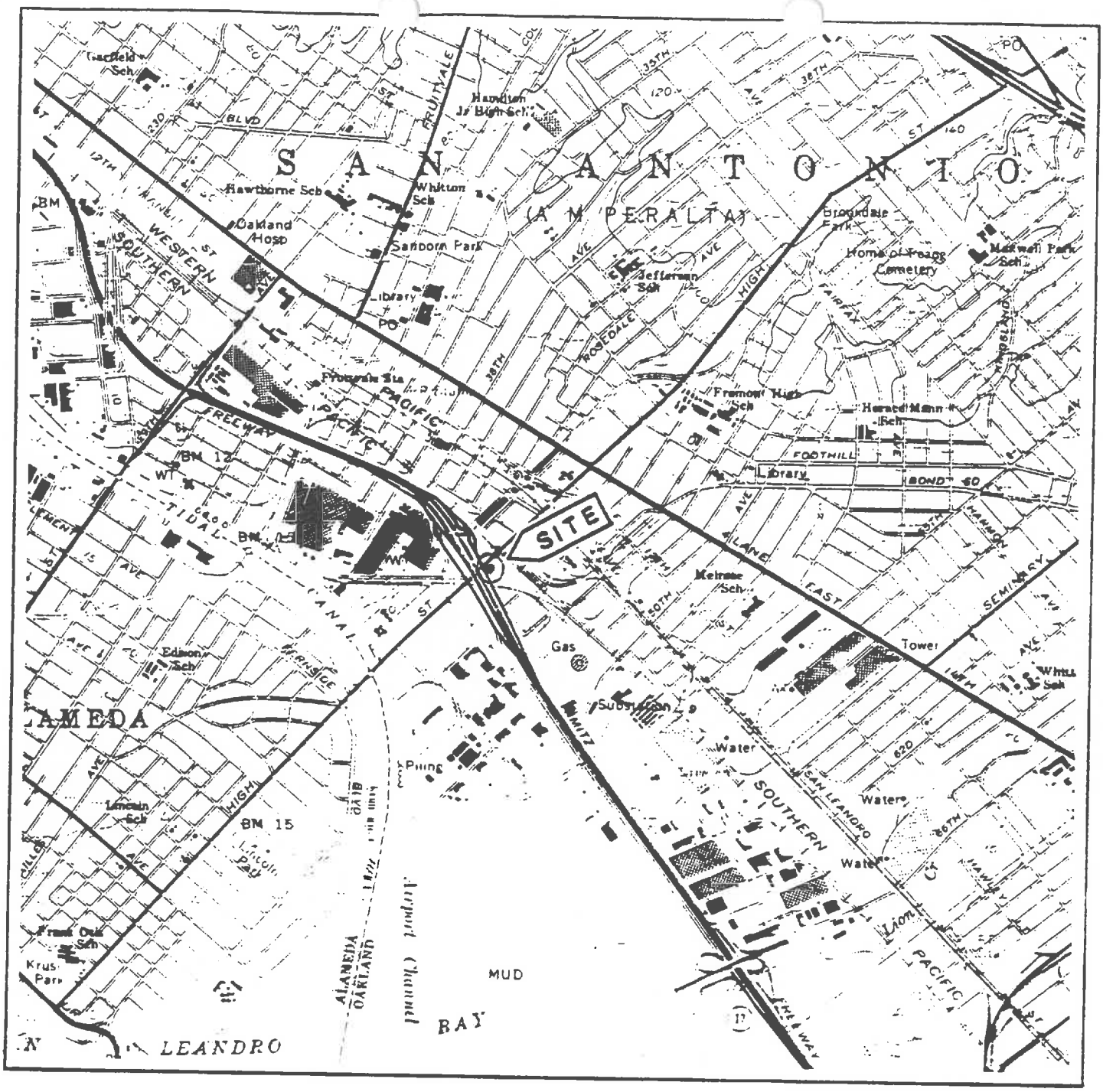
Sincerely,
Applied GeoSystems

C. Robin Ross

C. Robin Ross
Project Geologist/Marketing

Michael N. Clark
C.E.G. 1264

Attachments: Site Vicinity Map
Generalized Site Plan
Chain Of Custodies
Record of Analyses



Source: U.S. Geological Survey
Oakland East
7.5 Minute Quadrangle

N

Approximate Scale

2000 1000 0 2000 4000

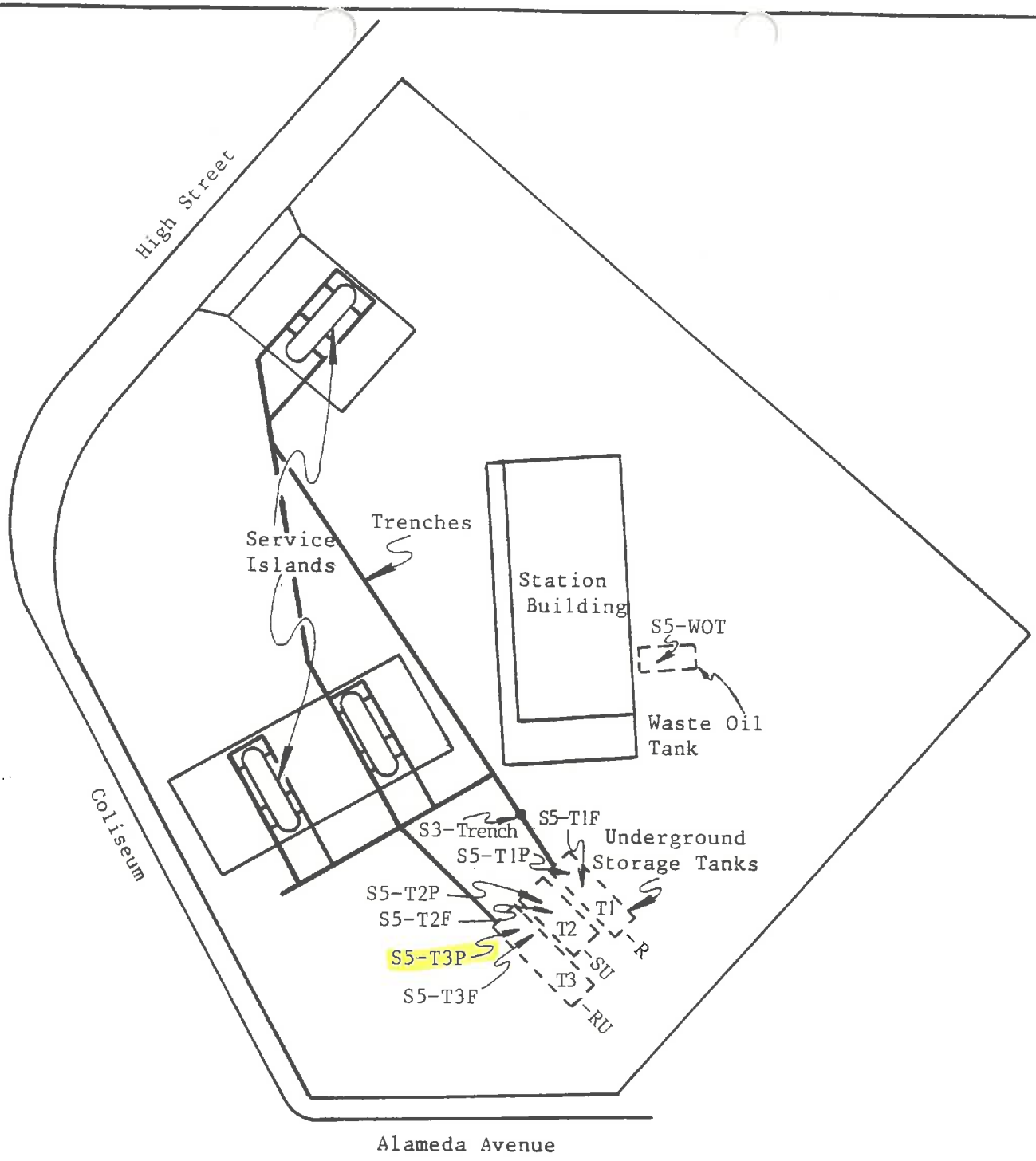
feet

Applied GeoSystems

PROJECT NO. 87042-1

SITE VICINITY MAP
Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 1



Source: Modified from Map supplied by EXXON

N

Approximate Scale

40 0 40 80

feet

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PROJECT NO. 87042-

GENERALIZED SITE PLAN
EXXON Station #7-3006
720 High Street
Oakland, California

PLATE

P-2

CHAIN OF CUSTODY RECORD

Applied GeoSystems

43255 Mission Blvd. Suite B Fremont, CA 94539 (415) 651-1906

SAMPLER (signature): William Olivera

Phone: (415) 651-1906

LABORATORY: APPLIED GEOSYSTEMS

TURNAROUND TIME: 2 WEEK

Attention: ROBIN ROSS

Phone No. (415) 651-1906

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
William Olivera			
	Received for laboratory by: [signature]	5-1-87	2:00 PM

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S3 Trench	87042-1	4-29-87	TEH Mod. 8015	ICE

Applied GeoSystems 43255 Mission Blvd. Suite B Fremont, CA 94539 (415) 651-1906

RECORD OF ANALYSIS

Date 5-11-87

Applied GeoSystems
43255 Mission Blvd.
Fremont, CA. 94539

Attention: C. Robin Ross

Date Received: 5-1-87
Date Analyzed: 5-7-87

Laboratory# 8705DS02

Procedure:

The soil sample was analyzed for high boiling point hydrocarbons by EPA method 3550 for soil extraction. The sample was injected into a 5890 Hewlett Packard gas chromatograph fitted with a Flame Ionization detector (FID). The limit of detection for this sample is 5 milligrams/kilogram (parts per million = ppm).

The results are presented in the table below:

SAMPLE	SITE	TOTAL EXTRACTABLE HYDROCARBONS
S-3-TRENCH	87042-2	434

Results in milligrams/kilogram (parts per million = ppm).

Tia Tran, Chemist

Applied GeoSystems is a State of California, Department of Health Services Certified Hazardous Waste Testing Laboratory (No. 153).

CHAIN OF CUSTODY RECORD

Applied GeoSystems
43255 Mission Blvd. Suite B Fremont, CA 94539 (415) 651-1906

SAMPLER (signature): William Chiou
Phone: (415) 651-1906

LABORATORY: APPLIED GEOSYSTEMS

TURNAROUND TIME: 24 HRS
Attention: ROBIN ROSS
Phone No. (415) 651-1906

SHIPPING INFORMATION:
Shipper
Address
Date Shipped
Service Used
Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
William Chiou			
	Received for laboratory by:	4-29-87	8:00AM

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S5T1F	87042-1	4/28/87	TVH	ICE
S5T1P	"	"	"	"
S5T2F	"	"	"	"
S5T2P	"	"	"	"
S5T3F	"	"	"	"
S5T3P	"	"	"	"

Applied GeoSystems 43255 Mission Blvd. Suite B Fremont, CA 94539 (415) 651-1906

RECORD OF ANALYSIS

Date 5-1-87

Applied GeoSystems
43255 Mission Blvd.
Fremont, CA. 94539

Attention: C. Robin Ross

Date Received: 4-29-87
Date Analyzed: 4-29-87

Laboratory# 8704S072

Procedure:

The soil samples referenced on the attached Chain-of-Custody were analyzed for Total Volatile Hydrocarbons (TVH) by EPA method 8020. The samples were concentrated on a Tekmar LSC-2 and ALS automatic sampler prior to injection into a 5890 Hewlett Packard gas chromatograph fitted with a Flame Ionization detector (FID). The limit of detection for these samples is 5.0 milligrams/kilogram (parts per million = ppm).

The results are presented in the table below:

SAMPLE	SITE	TOTAL VOLATILE HYDROCARBONS
S5 T1F	87042-1	1846
S5 T1P	87042-1	2613
S5 T2P	87042-1	1735
S5 T3F	87042-1	1936

Results in milligrams/kilogram (parts per million = ppm).

Tia Tran, Chemist

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RECORD OF ANALYSIS

Date 5-1-87

Applied GeoSystems
43255 Mission Blvd.
Fremont, CA. 94539

Attention: C. Robin Ross

Date Received: 4-29-87
Date Analyzed: 4-29-87

Laboratory# 8704S077

Procedure:

The soil sample referenced on the attached Chain-of-Custody was analyzed for Total Volatile Hydrocarbons (TVH) by EPA method 8020. The sample was concentrated on a Tekmar LSC-2 and ALS automatic sampler prior to injection into a 5890 Hewlett Packard gas chromatograph fitted with a Flame Ionization detector (FID). The limit of detection for this sample is 10 milligrams/kilogram (parts per million = ppm).

The results are presented in the table below:

SAMPLE	SITE	TOTAL VOLATILE HYDROCARBONS
S5 T3P	87042-1	5995

Results in milligrams/kilogram (parts per million = ppm).

Tia Tran, Chemist

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RECORD OF ANALYSIS

Date 5-1-87

Applied GeoSystems
43255 Mission Blvd.
Fremont, CA. 94539

Attention: C. Robin Ross

Date Received: 4-29-87
Date Analyzed: 4-29-87

Laboratory# 8704S074

Procedure:

The soil sample referenced on the attached Chain-of-Custody was analyzed for Total Volatile Hydrocarbons (TVH) by EPA method 8020. The sample was concentrated on a Tekmar LSC-2 and ALS automatic sampler prior to injection into a 5890 Hewlett Packard gas chromatograph fitted with a Flame Ionization detector (FID). The limit of detection for this sample is 2.0 milligrams/kilogram (parts per million = ppm).

The results are presented in the table below:

SAMPLE	SITE	TOTAL VOLATILE HYDROCARBONS
S5 T2F	87042-1	454

Results in milligrams/kilogram (parts per million = ppm).

Tia Tran, Chemist

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CHAIN OF CUSTODY RECORD

Applied GeoSystems
43255 Mission Blvd. Suite B Fremont, CA 94539 (415) 651-1906

SAMPLER (signature): William C Rivera
Phone: (415) 651-1906

LABORATORY: APPLIED GEOSYSTEMS

TURNAROUND TIME: 24 HRS
Attention: ROBIN ROSS
Phone No. (415) 651-1906

SHIPPING INFORMATION:
Shipper
Address
Date Shipped
Service Used
Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
William C Rivera			
	Received for laboratory by: [signature]	4-29-87	8:00 AM

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S5 WOT	87042-1	4-28-87	TEH	ICE

Applied GeoSystems 43255 Mission Blvd. Suite B Fremont, CA 94539 (415) 651-1906

RECORD OF ANALYSIS

Date 5-1-87

Applied GeoSystems
43255 Mission Blvd.
Fremont, CA. 94539

Attention: C. Robin Ross

Date Received: 4-29-87
Date Analyzed: 4-29-87

Laboratory# 8704DS15

Procedure:

The soil sample was analyzed for high boiling point hydrocarbons by EPA method 3550 for soil extraction. The sample was injected into a 5890 Hewlett Packard gas chromatograph fitted with a Flame Ionization detector (FID). The limit of detection for this sample is 5 milligrams/kilogram (parts per million = ppm).

The results are presented in the table below:

SAMPLE	SITE	TOTAL EXTRACTABLE HYDROCARBONS
S-5-WOT	87042-1	ND

Results in milligrams/kilogram (parts per million = ppm).
ND=Non Detectable - Less than 5 milligrams/kilogram (ppm).

Tia Tran, Chemist

Applied GeoSystems is a State of California, Department of Health Services Certified Hazardous Waste Testing Laboratory (No. 153).