gettler — ryan inc.

October 22, 1990

GROUNDWATER SAMPLING REPORT

UNOCAL
Post Office Box 5155
San Ramon, California 94583

Referenced Site: UNOCAL Service Station #5325
3220 Lakeshore Avenue
Oakland, California

Sampling Date: October 8, 1990

This report presents the results of the quarterly groundwater sampling and analytical program conducted by Gettler-Ryan Inc. on October 8, 1990 at the referenced location. The site is occupied by an operating service station located southeast of Lakeshore Avenue and Lake Park Avenue. The service station has underground storage tanks containing unleaded, super unleaded gasoline products, and waste oil.

There are currently three groundwater monitoring wells on site at the locations shown on the attached site map. Wells U-1, U-2 and U-3 were developed October 4, 1990. Prior to sampling, each well was inspected for total well depth, water levels, and presence of separate phase product using an electronic interface probe. A clean acrylic bailer was used to visually confirm the presence and thickness of separate phase product. Groundwater depths ranged from 8.76 to 12.23 feet below grade. Separate phase product was not observed in any of the monitoring wells.

The wells were then purged and sampled. Standard sampling procedure calls for a minimum of four case volumes to be purged from each well. Each well was purged while pH, temperature, and conductivity measurements were monitored for stability. Details of the final well purging results are presented on the attached Table of Monitoring Data. In cases where a well dewatered or less than four case volumes were purged, groundwater samples were obtained after the physical parameters had stabilized. Under such circumstances the sample may not represent actual formation water, due to low flow conditions.

Samples were collected, using Teflon bailers, in properly cleaned and laboratory prepared containers. All sampling equipment was thoroughly cleaned after each well was sampled and steam cleaned upon completion of work at the site. The samples were labeled, stored on blue ice, and transported to the laboratory for analysis. A trip blank, supplied by the laboratory was included and analyzed to assess quality control. Analytical results for the blank are included in the Certified Analytical Report (CAR's). Chain of custody records were established noting sample identification numbers, time, date, and custody signatures.

2150 west winton avenue • hayward, california 94545-1210 • (415) 783-7500

The samples were analyzed at International Technology Corporation - Santa Clara Valley Laboratory, located at 2055 Junction Avenue, San Jose, California. The laboratory is assigned a California DHS-HMTL Certification number of 137. The results are presented as a Certified Analytical Report, a copy of which is attached to this report.

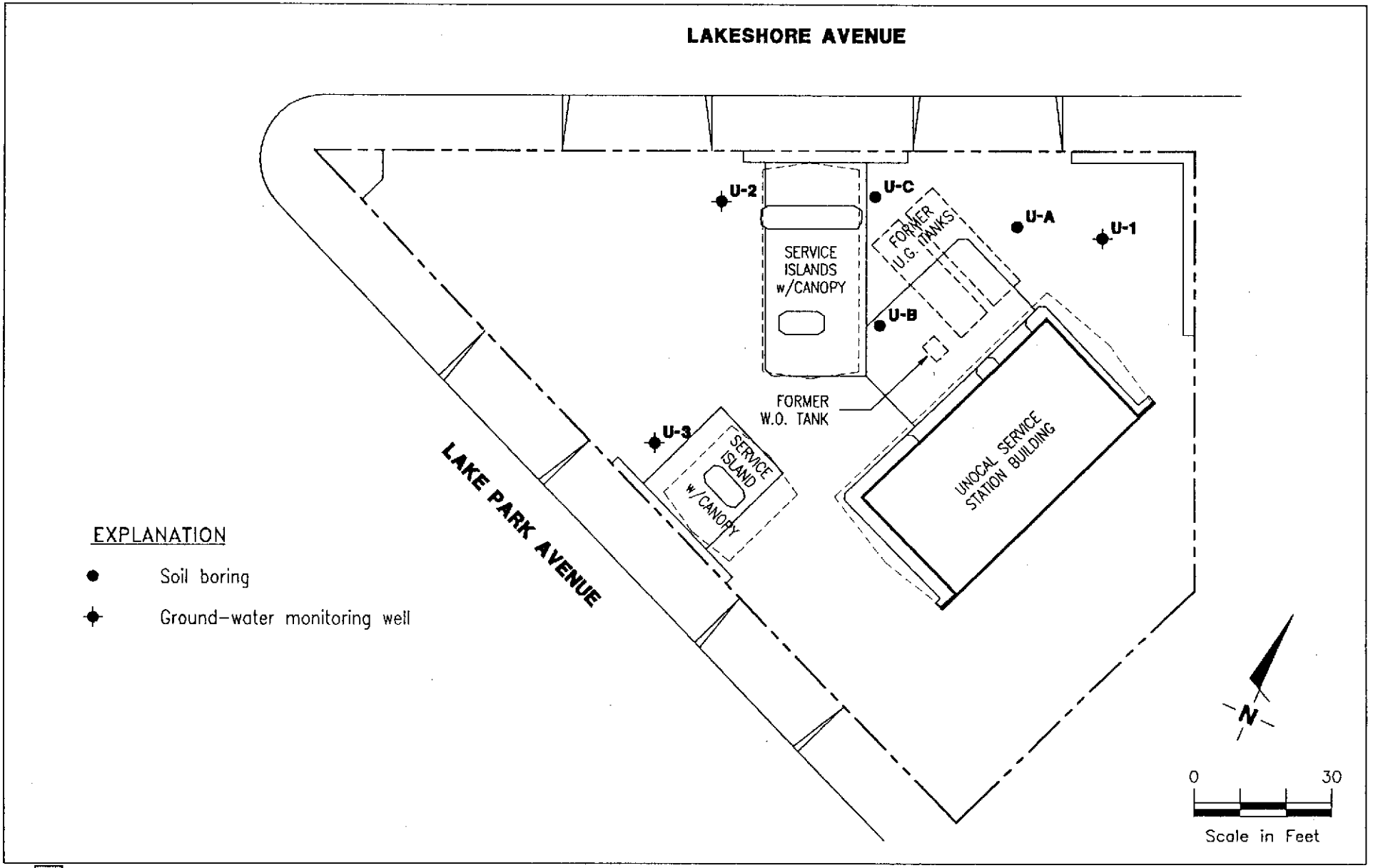
Tom Paulson
Sampling Manager

attachments

TABLE OF MONITORING DATA
GROUNDWATER WELL SAMPLING REPORT

WELL I.D.	U-1	U-2	U-3
Casing Diameter (inches)	3	3	3
Total Well Depth (feet)	20.2	19.9	20.0
Depth to Water (feet)	9.30	8.76	12.23
Free Product (feet)	none	none	none
Reason Not Sampled	----	----	----
Calculated 4 Case Vol.(gal.)	16.6	16.8	12.0
Did Well Dewater?	no	yes	yes
Volume Evacuated (gallons)	21.0	7.5	8.0
Purging Device	Bailer	Bailer	Bailer
Sampling Device	Bailer	Bailer	Bailer
Time	16:09	16:32	16:21
Temperature (F)*	68.4	69.7	69.4
pH*	7.67	6.94	8.02
Conductivity (umhos/cm)*	3150	19950	1094

* Indicates Stabilized Value



GeoStrategies Inc.

SITE PLAN
UNOCAL Service Station #5325
3220 Lakeshore Avenue
Oakland, California

PLATE
2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE
7814	RG/CEG 12/92	10/90	

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 10/19/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
Tom Paulson

Work Order: TO-10-126 P.O. Number: 3814

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3814, Unocal #5325
Date Received: 10/09/90
Number of Samples: 4
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 10/19/90
Client Work ID: GR3814, Unocal #5325

Work Order: TO-10-126

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **U-1**
SAMPLE DATE: **10/08/90**
LAB SAMPLE ID: **TO10126-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/15/90
Low Boiling Hydrocarbons	Mod.8015		10/15/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	50.	690.
BTEX		
Benzene	0.5	38.
Toluene	0.5	75.
Ethylbenzene	0.5	8.6
Xylenes (total)	0.5	130.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 10/19/90
Client Work ID: GR3814, Unocal #5325

Work Order: TO-10-126

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **U-2**
SAMPLE DATE: **10/08/90**
LAB SAMPLE ID: **T010126-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/18/90
Low Boiling Hydrocarbons	Mod.8015		10/18/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	250.	780.
BTEX		
Benzene	2.5	27.
Toluene	2.5	46.
Ethylbenzene	2.5	15.
Xylenes (total)	2.5	130.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 10/19/90
Client Work ID: GR3814, Unocal #5325

Work Order: TO-10-126

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **U-3**
SAMPLE DATE: **10/08/90**
LAB SAMPLE ID: **T010126-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/17/90
Low Boiling Hydrocarbons	Mod.8015		10/17/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons		
calculated as Gasoline	50.	None
BTEX		
Benzene	0.5	None
Toluene	0.5	None
Ethylbenzene	0.5	None
Xylenes (total)	0.5	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 10/19/90
Client Work ID: GR3814, Unocal #5325

Work Order: TO-10-126

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **Trip Blank**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T010126-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/15/90
Low Boiling Hydrocarbons	Mod.8015		10/15/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons		
calculated as Gasoline	50.	None
BTEX		
Benzene	0.5	None
Toluene	0.5	None
Ethylbenzene	0.5	None
Xylenes (total)	0.5	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 10/19/90
Client Work ID: GR3814, Unocal #5325

Work Order: TO-10-126

TEST CODE **TPHVB** TEST NAME **TPH Gas,BTEX by 8015/8020**

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Getter - Ryan Inc. — ENVIRONMENTAL DIVISION — Chain of Custody

COMPANY Unocal SS #5325 JOB NO.

JOB LOCATION 3220 Lakeshore Ave

CITY Oakland PHONE NO. (415) 788-7500

AUTHORIZED Tom Paulson DATE 10-8-90 P.O. NO. 3814

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
U-1	3	Liquid	10-8-90/16:09	THC(gas) BTXE	Cool
U-2	↓	↓	/16:32	↓	↓
U-3	↓	↓	/16:21	↓	↓
Trip blank	1	↓	/—	↓	↓

RELINQUISHED BY: Guadalupe Sanchez 10-8-90 18:12 RECEIVED BY: Refrigerator 10-9-90 08:00

RELINQUISHED BY: 10-9-90 16:50 RECEIVED BY:

RELINQUISHED BY: RECEIVED BY LAB: 10/9/90 1650

DESIGNATED LABORATORY: IT SCV DHS #: 137

REMARKS:

Normal TAT

DATE COMPLETED 10-8-90 FOREMAN Guadalupe Sanchez

ORIGINAL

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

October 15, 1990
Project 4710

Mr. Chris Palmer
Geostrategies, Inc.
2140 W. Winton Avenue
Hayward, Ca. 94545

Subject: Permeability Test

Geostrategies Project: 7814

Dear Mr. Palmer:

A clay sample, collected by your staff, was delivered to our laboratory on October 2, 1990 for a permeability test. The results are summarized below.

Permeability Test Results

Sample No.	Depth (ft.)	K (cm/s)	Before Test: Dry Density (pcf)	Before Test: Water Content (%)	After Test: Dry Density (pcf)	After Test: Water Content (%)
U-1	21.5	1.5×10^{-8}	81.9	38.6	81.9	40.7

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

Sincerely,

TERRATECH, INC.

Frank R. Rancadore

Frank R. Rancadore
Laboratory Director

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