

RECEIVED

2:14 pm, Apr 01, 2009

Alameda County
Environmental Health



76 Broadway
Sacramento, California 95818

July 21, 2006

Mr. Don Hwang
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Re: **Report Transmittal**
Well Installation and Ozone Sparge Progress Report
76 Service Station # 5325
3220 Lakeshore Avenue
Oakland, CA

Dear Mr. Hwang:

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact

Shelby S. Lathrop (Contractor)
ConocoPhillips
Risk Management & Remediation
76 Broadway
Sacramento, CA 95818
Phone: 916-558-7609
Fax: 916-558-7639

Sincerely,

A handwritten signature in black ink that reads "Thomas H. Kosel". The signature is written in a cursive, flowing style.

Thomas Kosel
Risk Management & Remediation

Attachment



July 21, 2006

TRC Project No. 42013711

Mr. Don Hwang
Hazardous Materials Specialist
Alameda County Health Services
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

SITE: 76 SERVICE STATION NO. 5325
3220 LAKESHORE AVENUE
OAKLAND, CALIFORNIA

RE: WELL INSTALLATION AND OZONE SPARGE PROGRESS REPORT

Dear Mr. Hwang:

On behalf of ConocoPhillips Company (ConocoPhillips), TRC submits this Well Installation and Ozone Sparge Progress Report for activities conducted at 76 Service Station #5325, located at 3220 Lakeshore Avenue, Oakland, California.

If you have any questions regarding this report, please contact Keith Woodburne at (925) 688-2488.

Sincerely,
TRC

A handwritten signature in black ink, appearing to read "Rachelle", followed by a long, sweeping horizontal flourish.

Rachelle Dunn
Staff Geologist

A handwritten signature in black ink, appearing to read "Keith Woodburne", written in a cursive style.

Keith Woodburne, P.G.
Senior Project Geologist

cc: Shelby Lathrop, ConocoPhillips (electronic upload only)

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Alameda County
Environmental Health

WELL INSTALLATION AND OZONE SPARGE PROGRESS REPORT

July 21, 2006


76 Service Station No. 5325
3220 Lakeshore Avenue
Oakland, California

TRC Project No. 42013711


Prepared For:

ConocoPhillips Company
76 Broadway Street
Sacramento, CA

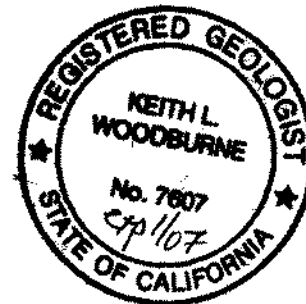
By:



Rachelle Dunn
Staff Geologist



Keith Woodburne, P.G.
Senior Project Geologist



TRC
1590 Solano Way
Concord, California
(925) 688-1200

TRC

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 SITE DESCRIPTION	1
3.0 SITE BACKGROUND	2
4.0 OZONE SPARGE WELL AND SYSTEM INSTALLATION	3
4.1 PRE-FIELD ACTIVITIES	4
4.2 OZONE SPARGE WELL INSTALLATION	4
4.3 OZONE SPARGE SYSTEM INSTALLATION	4
4.4 SOIL RESULTS	5
4.4 WASTE DISPOSAL	5
5.0 OZONE SYSTEM STATUS	5
6.0 CONCLUSIONS AND RECOMMENDATIONS	6
7.0 REFERENCES	6

Figures

- 1 Vicinity Map
- 2 Site Plan

Tables

- 1 Results of Laboratory Analysis of Soil Samples
- 2 Summary of Dissolved Oxygen Concentrations - Monitoring Well U-2

Appendices

- A Well Installation Permit and Ozone Sparge Well Installation Logs
- B Laboratory Analytical Reports and Chain of Custody Records

WELL INSTALLATION AND OZONE SPARGE PROGRESS REPORT

ConocoPhillips Station 5325

July 21, 2006

Page 1

1.0 INTRODUCTION

On behalf of ConocoPhillips Company (ConocoPhillips), TRC submits this Well Installation and Ozone Sparge Progress Report for activities conducted at 76 Service Station #5325, located at 3220 Lakeshore Avenue, Oakland, California (Figure 1).

The objective of this assessment is to treat the western portion of the dissolved-phase plume in the shallow water-bearing zone onsite in the vicinity of well U-2.

The scope of work for this assessment involved the following:

- Construction of three onsite ozone sparge wells in the vicinity of site well U-2
- Collection of soil samples for analysis at a state-certified laboratory
- Trench construction and installation of the ozone system piping
- Delivery and startup of the mobile ozone sparge system
- Weekly operations and maintenance on the system
- Preparation of a well installation and ozone sparge progress report documenting the sparge well installations, system installation and startup, current ozone sparge system status, laboratory results, and waste characterization and disposal.

This report documents the above-mentioned activities.

2.0 SITE DESCRIPTION

The site is an operating 76 Service Station situated on the southeast corner of the intersection of Lakeshore Avenue and Lake Park Avenue in Oakland, California (Figure 1). The site is bounded to the north by Lakeshore Avenue, to the west and southwest by Lake Park Avenue, to the southeast by a supermarket parking lot, and to the east by a pharmacy. Current site facilities consist of the service station building with three service bays, three product dispenser islands, and two 12,000-gallon double-wall fiberglass gasoline underground storage tanks (USTs). Locations of the pertinent site features are shown on Figure 2.

Geology and Hydrogeology

The subject site is situated on estuarine deposits northeast of the Lake Merritt basin and southwest of the Piedmont Hills at an elevation of approximately 7 to 11 feet (City of Oakland datum). These estuarine deposits consist primarily of unconsolidated, water-saturated, dark plastic clay and silty clay rich in organic material (GSI, 1994).

WELL INSTALLATION AND OZONE SPARGE PROGRESS REPORT

ConocoPhillips Station 5325

July 21, 2006

Page 2

Based on previous onsite subsurface investigations, silt and sand fill were observed in the vadose zone to varying depths up to 6 feet below grade (fbg). The site is underlain by fine-grained sediments, silts and clays to depths of approximately 25 fbg. The silts and clays contain from 10 percent to as much as 30 percent fine- to coarse-grained sand.

Within the predominantly fine-grained soil horizon are laterally discontinuous lenses of predominantly coarse-grained sediments, interbedded with fine-grained materials to the maximum depth explored of 26.5 fbg. The predominantly coarse-grained deposits vary in thickness and are encountered at varying depths across the site. These deposits consist of silty sand (SM), fine- to coarse-grained sand (SW and SP), and sandy gravel (GW). The predominantly coarse-grained sediments appear to be discontinuous across the site in an east-west orientation, and continuous across the site in a north-south orientation.

In the vicinity of well U-2, the coarse-grained sediments with observed hydrocarbon impacts are encountered between 6 and 9 fbg and are underlain by a clayey silt with sand that extends to a depth of approximately 14 fbg. The clayey silt with sand is underlain by a stiff clay to the total depth explored of 21.5 fbg.

Groundwater is unconfined and is typically encountered at approximately 6 to 10 fbg. Groundwater flow has been predominantly toward the northwest with a hydraulic gradient ranging from 0.002 to 0.02 (Gettler-Ryan, Inc., 2000).

Quarterly groundwater monitoring has been performed on the site wells since their installation. Well U-1 contained floating product (0.01 to 0.55 feet) during 1996 to 1998. Well U-2 contained floating product (sheen to 0.03 feet) during 1997 and 1998. Total purgeable petroleum hydrocarbons (TPPH) and MTBE remain elevated in these wells. (TRC, 2006).

3.0 SITE BACKGROUND

May 1990: Three exploratory soil borings (U-A, U-B, and U-C) were advanced adjacent to the UST complex to depths ranging from 10 to 12.5 feet below grade (fbg). Soil samples collected were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and xylenes (BTEX). The samples contained TPH-g concentrations ranging from 2 to 7,500 parts per million (ppm) and benzene concentrations ranging from 0.14 to 13 ppm (GSI, 1990a).

June 1990: Two 10,000-gallon gasoline USTs, one 550-gallon waste oil UST, and related product dispensers were replaced. Soil samples collected from the UST excavation sidewalls and bottom and product line trenches were reported to contain TPH-g and benzene at concentrations ranging from 12 to 2,800 ppm and 0.008 to 11 ppm, respectively. Approximately 250 cubic yards of soil and backfill material generated during the removal of USTs were aerated onsite to

reduce concentrations to below 100 ppm TPH-g, then transported to an appropriate soil disposal facility. Groundwater was encountered at approximately 7.5 feet fbg (GSI, 1990b).

September 1990: Monitoring wells U-1, U-2, and U-3 were installed. TPH-g was detected in soil samples collected from the capillary fringe in well borings U-1 and U-2 at concentrations of 110 and 480 ppm, respectively. Benzene was detected in the soil sample from well boring U-1 at a concentration of 4.5 ppm. Petroleum hydrocarbons were not detected in soil or groundwater samples from U-3. Groundwater samples collected from wells U-1 and U-2 were reported to contain 690 and 38 parts per billion (ppb) TPH-g and 780 and 27 ppb benzene, respectively (GSI, 1990b).

June 1994: Monitoring wells U-4, U-5, and U-6 were installed. TPH-g and benzene were detected in the capillary fringe soil sample collected from boring U-5 at concentrations of 400 and 1.9 ppm, respectively. TPH-g and benzene were not detected in soil samples collected from borings U-4 and U-6. Groundwater levels stabilized at depths between 8.8 and 9.2 feet fbg (GSI, 1994).

November 1996: One 550-gallon waste oil UST was removed and the product lines and dispensers were replaced. A soil sample collected from the sidewall of the waste oil UST excavation contained 1.5 ppm total petroleum hydrocarbons as diesel (TPH-d) and 78 ppm total oil and grease (TOG). TPH-g, benzene, methyl tertiary butyl ether (MTBE), halogenated volatile organic compounds (HVOCs), and semivolatile organic compounds (SVOCs) were not detected. Product line trench excavation and over excavation samples were reported to contain petroleum hydrocarbon concentrations ranging from non-detect to 880 ppm TPH-g, non-detect to 3.6 ppm benzene, and non-detect to 23 ppm MTBE. Approximately 276 tons of soil was excavated during the removal of a waste oil tank was transported to an appropriate disposal facility (GSI, 1997b).

June 1997: Two exploratory borings (U-D and U-E) and one UST observation well were installed. U-D was advanced off-site on Lakeshore Avenue. TPH-g, BTEX, and MTBE were detected in one or all of the soil samples collected at the capillary fringe from the soil borings. TPH-g and MTBE were detected at a maximum of 450 ppm and 1.1 ppm, respectively, in U-D (GSI, 1997a).

October 2003: Site environmental consulting responsibilities were transferred to TRC.

4.0 OZONE SPARGE WELL AND SYSTEM INSTALLATION

TRC installed three onsite ozone sparge wells and a setup a mobile ozone sparge treatment system for the purpose of evaluating ozone sparge technology as a remedial alternative for treating residual hydrocarbons and fuel oxygenates, specifically MTBE, near the western portion of the dissolved-phase plume within the shallow water-bearing zone.

WELL INSTALLATION AND OZONE SPARGE PROGRESS REPORT

ConocoPhillips Station 5325

July 21, 2006

Page 4

4.1 PRE-FIELD ACTIVITIES

Prior to commencing well and system installation activities, well permits were acquired from the Alameda County Public Works Agency (Appendix A). Underground Service Alert (USA) was notified at least two days prior to field activities to mark underground utilities at the property boundaries. A private utility locator was used to further confirm the absence of underground utilities at each boring/well location and along the trench location. Prior to drilling each boring, a pilot hole was cleared using a truck-mounted water knife to approximately 5 fbg to verify the absence of buried utilities.

A site- and job- specific health and safety plan was developed to promote personnel safety and preparedness during the planned activities. On the morning of the day that the field activities commenced, a "tailgate" meeting was conducted with all exclusion zone workers to discuss the health and safety issues and concerns related to the specific work.

4.2 OZONE SPARGE WELL INSTALLATION

On April 12, 2006, under the supervision of a TRC geologist, Woodward Drilling Company (Woodward) installed three ozone sparge wells (C-1 through C-3) to a maximum depth of 17 fbg using a hollow-stem auger (HSA) drilling rig. Monitoring well locations are shown in Figure 2. Soil samples were collected from each monitoring well pilot boring continuously to total depth using a split-spoon sampler. Samples were collected for lithologic description in accordance with the Unified Soil Classification System (ASTM D-2487), field hydrocarbon vapor screening using a photo-ionization detector (PID), and laboratory analysis.

Two soil samples per boring were submitted to a State-certified laboratory for analysis. Soil samples were analyzed for total purgeble petroleum hydrocarbons (TPPH), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and fuel oxygenates, including MTBE and ethanol, by EPA Method 8260B.

Ozone sparge well installation logs are presented in Appendix A.

4.3 OZONE SPARGE SYSTEM INSTALLATION

On May 30 through June 1, 2006, under the direction of a TRC field supervisor, Cornerstone Environmental Contractors Inc. (Cornerstone) completed the trench construction and installation of ozone sparge piping from each sparge well to a temporary treatment compound located on the western corner of the site. In addition, Cornerstone installed temporary treatment compound fencing to secure the mobile ozone sparge unit during the three month pilot study.

On June 14, 2006, under the supervision of a TRC field supervisor, Applied Process Technologies Inc. (APT) delivered and setup the PulseOx P-100 mobile ozone sparge unit.

The P-100 system is a trailer-mounted mobile treatment system that can produce up to 2 pounds per day (lbs/day) of ozone and can deliver ozone to the subsurface at 20 pounds per square inch (psi) in up to 8 sparge points simultaneously. The P-100 system can be operated in an unattended mode with minimal operations and maintenance. The P-100 system is connected directly to the sparge points via Teflon lines buried within PVC conduit. The P-100 system operates by introducing microbubbles of encapsulated ozone into the area of impacted groundwater to rapidly oxidize contaminants. Ozone not consumed in the direct reaction with dissolved phase hydrocarbons rapidly decomposes to oxygen. The introduction of excess oxygen has an added benefit of stimulating the natural biological degradation by increasing dissolved oxygen levels.

4.4 SOIL ANALYTICAL RESULTS

TPPH, Ethylbenzene, Total Xylenes, tertiary butyl alcohol (TBA), and MTBE were detected in some of the soil samples collected. TPPH, ethylbenzene, and total xylenes were detected at a maximum of 4,600 milligrams per kilogram (mg/kg), 76 mg/kg, and 340 mg/kg, respectively, in the soil sample collected from C-1 at 5 fbg. TBA was detected in two samples at a maximum of 0.17 mg/kg in the soil sample collected from C-1 at 10 fbg. MTBE was detected in four samples at a maximum of 1.9 mg/kg in the soil sample collected from C-3 at 5 fbg. Analytical results of soil samples collected during drilling activities are presented in Table 1. Copies of the laboratory analytical reports and chain of custody records are provided in Appendix B.

4.4 WASTE DISPOSAL

Soil cuttings generated during drilling were placed in 15 California Department of Transportation (DOT) approved 55-gallon drums. The drums were removed on June 9, 2006.

5.0 OZONE SYSTEM STATUS

The P-100 mobile ozone sparging system has been in operation continuously since startup on June 14, 2006. Operations and maintenance activities have been conducted weekly during which dissolved oxygen (DO) and temperature readings are collected from monitoring well U-2. Initially, the system was set to inject approximately ½ pound of ozone per day. However, after approximately one week of operation the field technician noticed a small leak had formed in the well seal on monitoring well U-2. The ozone generator was temporarily shut down to allow the drilling contractor to safely re-seal the well. During that one week period, the system continued to operate and inject oxygen in order to maintain the elevated DO levels. After the well had been re-sealed, the ozone generator was brought back online, at a slightly lower setting.

WELL INSTALLATION AND OZONE SPARGE PROGRESS REPORT

ConocoPhillips Station 5325

July 21, 2006

Page 6

Currently, the system is operational and injecting approximately ¼ pounds of ozone per day. DO measurements for the first month of operation are presented in Table 2. Pre-ozone injection DO measurements have historically ranged from 1.8 to 6.6 mg/l. However, since system startup, DO levels have increased dramatically, as shown in the weekly measurements, and did not significantly decrease over the approximately 2 week period during which only oxygen was being delivered. The most current DO measurement collected on July 7, 2006 was 209.6 mg/l. Temperature readings have remained fairly consistent.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the data obtained this far during this investigation, ozone sparging has dramatically increased the dissolved oxygen concentrations in groundwater in the vicinity of well U-2. If DO concentrations remain elevated for a significant period of time, a measurable decrease in dissolved-phase hydrocarbon and fuel oxygenate concentrations should be expected.

- TRC recommends that the ozone sparge pilot testing continue for the remaining two months as proposed in the Ozone Sparge Pilot Work Plan and approved by the ACHCS. Furthermore, a groundwater sample will be collected from well U-2 and the results compared with pre-test concentrations.
- TRC also recommends that up to six months (2 quarters) of post-event groundwater monitoring should be completed to evaluate the effectiveness of the three-month ozone microsparging event. Post-event monitoring will involve analysis of biodegradation parameters including: DO, ORP, manganese, nitrate, carbon dioxide, ferrous iron, phosphate and sulfate to evaluate the progress of natural attenuation in treating any residual hydrocarbons.

7.0 REFERENCES

Gettler-Ryan Inc., 2000, Site Conceptual Model for Tosco (76) Station No. 5325, 3220 Lakeshore Avenue, Oakland, California, dated June 19, 2000.

GeoStrategies Incorporated, 1990, Soil Boring Report, Unocal Service Station No. 5325, 3220 Lakeshore Avenue, Oakland, California, Dated June 12, 1990.

GeoStrategies Incorporated, 1990, Tank Replacement Report, Unocal Service Station No. 5325, 3220 Lakeshore Avenue, Oakland, California, Dated August 31, 1990.

GeoStrategies Incorporated, 1994, Monitoring Well Installation Report, Unocal Service Station No. 5325, 3220 Lakeshore Avenue, Oakland, California, Dated November 16, 1994.

WELL INSTALLATION AND OZONE SPARGE PROGRESS REPORT

ConocoPhillips Station 5325

July 21, 2006

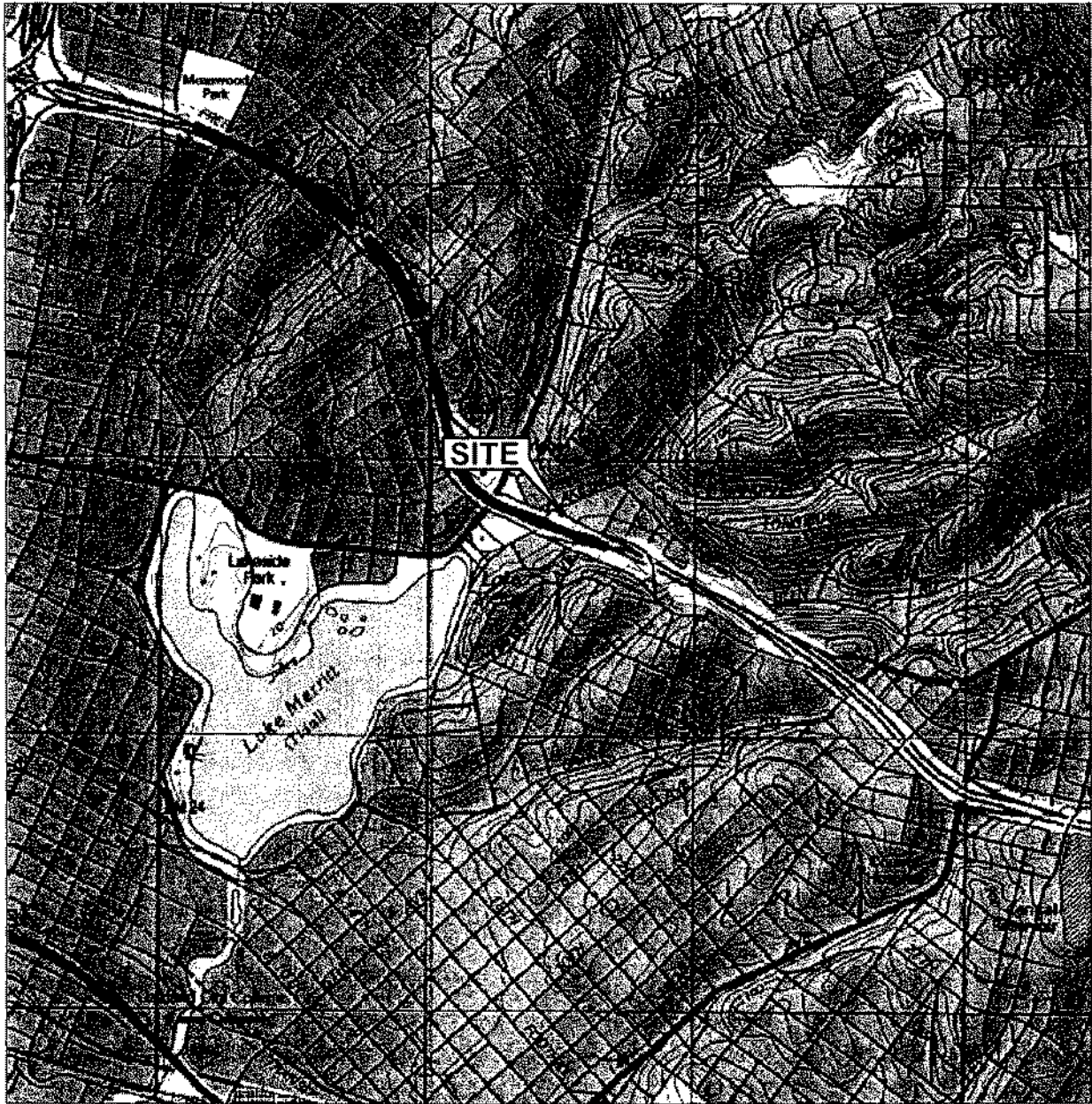
Page 7

GeoStrategies Incorporated, 1997, Soil Boring and Well Installation Report, Unocal Service Station No. 5325, 3220 Lakeshore Avenue, Oakland, California, Dated August 4, 1997.

GeoStrategies Incorporated, 1997, Waste Oil Tank Removal and Product Line Replacement Report, Unocal Service Station No. 5325, 3220 Lakeshore Avenue, Oakland, California, Dated January 24, 1997.

TRC, 2005, Quarterly Monitoring Report, January through March, 2006, 76 Station No. 5325, 3220 Lakeshore Avenue, Oakland, California, dated April 19, 2006.

FIGURES



1 MILE 3/4 1/2 1/4 0 1 MILE



SCALE 1 : 24,000



SOURCE:

United States Geological Survey
7.5 Minute Topographic Maps:
Oakland East and Oakland West
Quadrangles, California

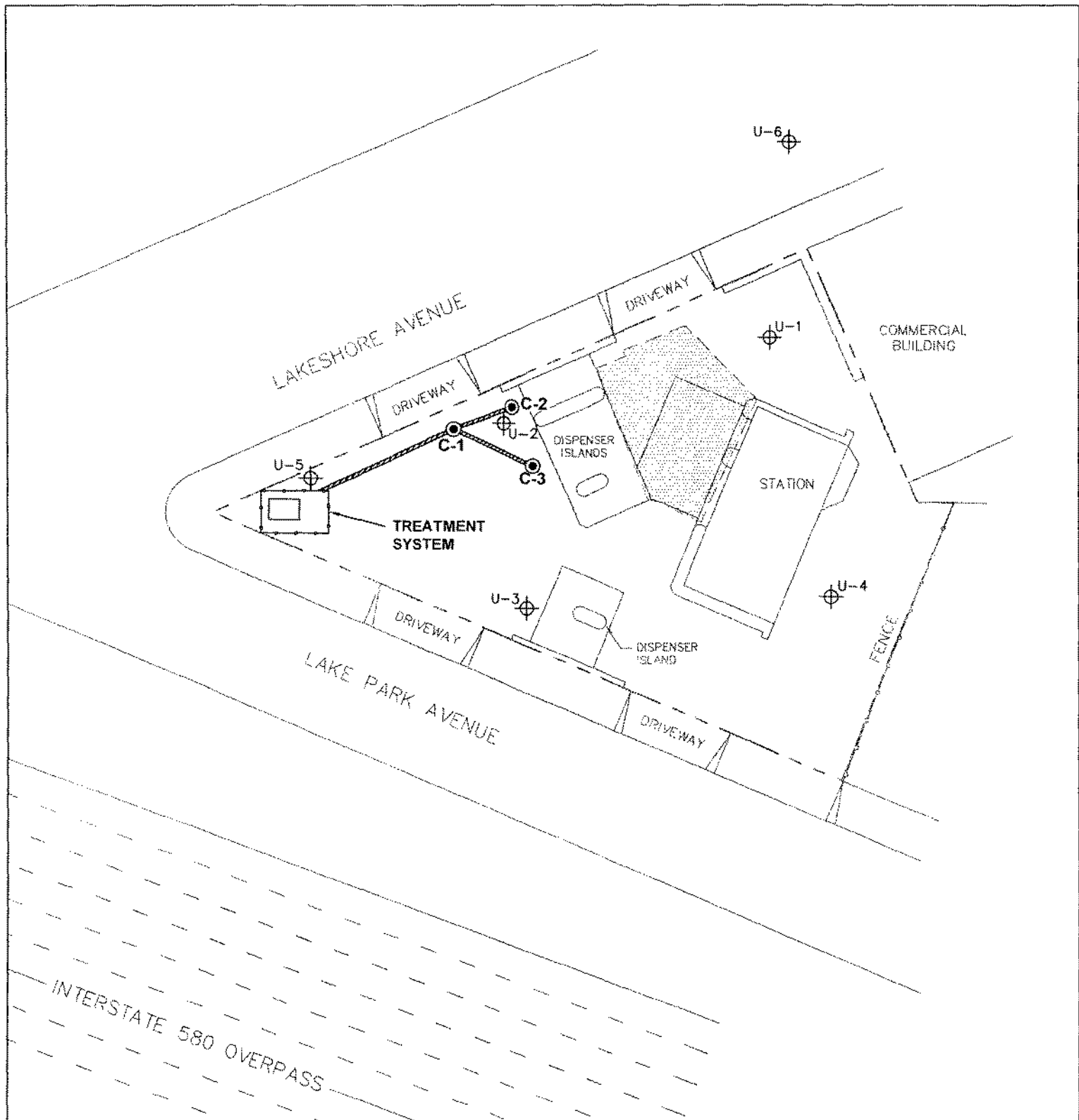


VICINITY MAP

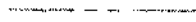
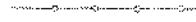




76 Service Station #5325
3220 Lakeshore Avenue
Oakland, California

TRC

FIGURE 1



LEGEND

-  Property boundary
-  Fence
-  Approximate location of 1990 UST excavation
-  U-6 Monitoring well
-  C-3 Sparge point
-  Trenching

SPARGE POINTS AND TREATMENT SYSTEM LAYOUT

76 Service Station #5325
 3200 Lakeshore Avenue
 Oakland, California

TRC

FIGURE 2

TABLES

Table 1

RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES
76 Service Station # 5325
3220 Lakeshore Avenue, Oakland, California

Sample Number	Sample Date	Depth (fbg)	TPPH	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	Ethanol	Lead
			(mg/kg) EPA 8260B	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
C-1 @ 5'	4/12/2006	5	4,600	<9.7	<9.7	76	340	<19	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<190	---
C-1 @ 10'	4/12/2006	10	<0.23	<0.0045	<0.0045	<0.0045	<0.0091	0.17	0.029	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.45	---
C-2 @ 7'	4/11/2006	7	1.2	<0.0050	<0.0050	<0.0050	<0.010	0.047	0.16	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.50	---
C-3 @ 5'	4/11/2006	5	<47	<0.94	<0.94	<0.94	<1.9	<1.9	1.9	<0.94	<0.94	<0.94	<0.94	<0.94	<19	---
Composite	4/12/2006	na	4.4	<0.024	<0.024	<0.024	0.068	2.2	1.0	<0.024	<0.024	<0.024	<0.024	<0.024	<2.4	4.7

Notes:

TPPH = total purgeable petroleum hydrocarbons	1,2-DCA = 1,2-dichloroethane
TBA = tertiary butyl alcohol	EDB = ethylene dibromide
MTBE = methyl tertiary butyl ether	fbg = feet below grade
DIPE = di-isopropyl ether	mg/kg = milligrams per kilogram
ETBE = ethyl tertiary butyl ether	--- = not analyzed
TAME = tertiary amyl methyl ether	na = not applicable

Table 2

SUMMARY OF DISSOLVED OXYGEN CONCENTRATIONS
MONITORING WELL U-2
76 Service Station # 5325
3220 Lakeshore Avenue, Oakland, California

Date	Dissolved Oxygen (mg/l)	Temperature (°C)	Comments
6/14/2006	10.12	19.3	baseline, collected before system start up
6/21/2006	381.05	19.8	
6/27/2026	335.16	20.8	
7/7/2006	209.61	19.1	

Notes:

mg/l = milligrams per liter
°C = degrees centigrade

APPENDIX A

**WELL INSTALLATION PERMITS
AND
OZONE SPARGE WELL INSTALLATION LOGS**

Alameda County Public Works Agency - Water Resources Well Permit



399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 03/28/2006 **By:** jamesy
Permits Issued: W2006-0222 to W2006-0224

Receipt Number: WR2006-0137
Permits Valid from: 04/10/2006 to 04/11/2006

Application Id: 1143143074311
Site Location: 3220 Lakeshore ave
Project Start Date: 04/10/2006

City of Project Site: Oakland
Completion Date: 04/11/2006

Applicant: TRC - Keith Woodburne
1590 Solano Way, Ste A, Oakland, CA 94520

Phone: 925-688-1200

Property Owner: Conoco Phillips
76 Broadway, Sacramento, CA 95818

Phone: --

Client: ** same as Property Owner **
Contact: Keith Woodburne

Phone: 925-688-1200
Cell: 925-260-1373

	Total Due:	\$900.00
	Total Amount Paid:	\$900.00
Payer Name : TRC Solutions Inc.	Paid By: CHECK	PAID IN FULL

Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 3 Wells

Driller: Woodward Drilling - Lic #: 710079 - Method: hstem

Work Total: \$900.00

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2006-0222	03/28/2006	07/09/2006	RW-1	8.00 in.	1.00 in.	5.00 ft	15.00 ft
W2006-0223	03/28/2006	07/09/2006	RW-2	8.00 in.	1.00 in.	5.00 ft	15.00 ft
W2006-0224	03/28/2006	07/09/2006	RW-3	8.00 in.	1.00 in.	5.00 ft	15.00 ft

Specific Work Permit Conditions

1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

2. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained.

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well destruction (Sections 13750 through 13755 (Division 7, Chapter

Alameda County Public Works Agency - Water Resources Well Permit

10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including permit number and site map.

5. Applicant shall contact George Cashen for an inspection time at 510-670-6610 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.

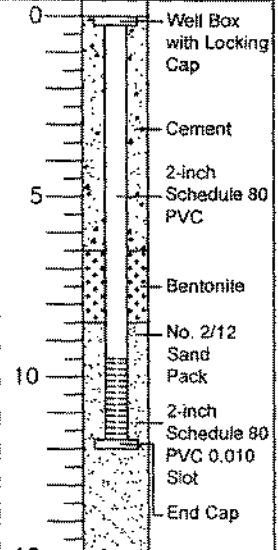
7. Minimum surface seal thickness is two inches of cement grout placed by tremie

8. Minimum seal depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.

9. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.

PROJECT NO.: 42-0137-07	DATE DRILLED: 4/12/06	NORTHING: NOT SURVEYED
LOCATION: 76 Station #5325	LOGGED BY: R. Dunn	EASTING: NOT SURVEYED
3200 Lakeshore Ave.	APPROVED BY: K. Woodburne, RG	ELEVATION: NOT SURVEYED
Oakland, California	DRILLING CO.: Woodward Drilling	

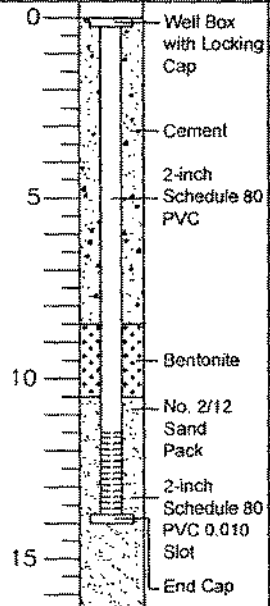
PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DRILLING METHOD: 8-inch Hollow-Stem Auger	USCS	LITHOLOGY	WELL CONSTRUCTION DETAIL
					SAMPLER TYPE: 2-inch Split Spoon			
				0	Vacuum cleared to 5'.			0
883	2	1.0/2.0		5	SANDY SILT (ML): Dark greenish gray (GLE Y1 4/10Y), 85% fines, 15% fine-grained sand, nonplastic, soft, wet, slight hydrocarbon odor. - @ 7': sand increases to 25%.	ML		5
275	1	1.0/2.0						
43.0	0	2.0/2.0		10	- @ 10.5': becomes stiffer.			10
33.0	6	2.0/2.0			- @ 11.5': color change to greenish gray (GLE Y1 5/5GY), sand decreases to 10%, stiff.			
2.9	2	2.0/2.0		15	CLAY (CL): Greenish gray (GLE Y1 6/10Y), 95% fines, 5% fine-grained sand, medium plastic, stiff, wet.	CL		15
				20				20
				25				25
				30				30
				35				35
				40				40



SPARGE POINT INSTALLATION LOG

PROJECT NO.: 42-0137-07	DATE DRILLED: 4/12/06	NORTHING: NOT SURVEYED
LOCATION: 76 Station #5325	LOGGED BY: R. Dunn	EASTING: NOT SURVEYED
3200 Lakeshore Ave.	APPROVED BY: K. Woodburne, RG	ELEVATION: NOT SURVEYED
Oakland, California	DRILLING CO.: Woodward Drilling	

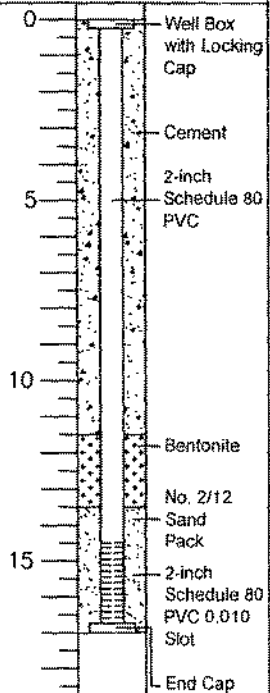
PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE DEPTH (feet below grade)	DRILLING METHOD: 8-inch Hollow-Stem Auger SAMPLER TYPE: 2-inch Split Spoon TOTAL DEPTH: Boring - 17.0 feet; Well - 14.0 feet DEPTH TO WATER: 6.0 feet		USCS	LITHOLOGY	WELL CONSTRUCTION DETAIL
				DESCRIPTION				
			0	Vacuum cleared to 5'.				0
608	3	0.5/2.0	5	SILTY SAND (SM): Very dark greenish gray (GLE Y1 3/5GY), 30% fines, 70% fine-grained sand, loose, wet.		SM		5
17.1	2	1.0/2.0						
17.3	1	2.0/2.0	10	SANDY SILT (ML): Very dark greenish gray (GLE Y1 3/10Y), 70% fines, 30% fine- to medium-grained sand, nonplastic, soft, wet.		ML		10
2.8	2	1.0/2.0						
2.4	1	2.0/2.0						
0.7	2	2.0/2.0	15	CLAY (CL): Greenish gray (GLE Y1 6/10Y), 90% fines, 10% fine-grained sand, medium plastic, stiff, wet. - @ 16': color change to pale brown (10YR 6/3).		CL		15
			20					20
			25					25
			30					30
			35					35
			40					40



SPARGE POINT INSTALLATION LOG

PROJECT NO.: 42-0137-07	DATE DRILLED: 4/12/06	NORTHING: NOT SURVEYED
LOCATION: 76 Station #5325	LOGGED BY: R. Dunn	EASTING: NOT SURVEYED
3200 Lakeshore Ave.	APPROVED BY: K. Woodburne, RG	ELEVATION: NOT SURVEYED
Oakland, California	DRILLING CO.: Woodward Drilling	

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE DEPTH (feet below grade)	DRILLING METHOD: 8-inch Hollow-Stem Auger SAMPLER TYPE: 2-inch Split Spoon TOTAL DEPTH: Boring - 17.0 feet; Well - 17.0 feet DEPTH TO WATER: 6.0 feet		USCS	LITHOLOGY	WELL CONSTRUCTION DETAIL
				DESCRIPTION				
			0	Vacuum cleared to 5'.				0
17.5	0	2.0/2.0	5	SAND (SM): Greenish black (GLE Y 1 2.5/10Y), 30% fines, 70% fine-grained sand, loose, wet, hydrocarbon odor.		SM		5
2.1	1	1.0/2.0		SANDY SILT (ML): Very dark greenish gray (GLE Y 1 3/10Y), 80% fines, 20% fine-grained sand, nonplastic, soft, wet.				
5.7	1	2.0/2.0	10	- @ 10': color change to dark greenish gray (GLE Y 1 4/10Y), fine- to medium-grained sand, stiff, moist.		ML		10
1.2	2	2.0/2.0		SILTY SAND (SM): Pale brown (10YR 6/3), 20% fines, 80% fine-grained sand, dense, wet.				
0.0	2	2.0/2.0	15			SM		15
4.0	2	2.0/2.0						
			20					20
			25					25
			30					30
			35					35
			40					40



SPARGE POINT INSTALLATION LOG

APPENDIX B
LABORATORY ANALYTICAL REPORTS
AND
CHAIN OF CUSTODY RECORDS



STL

ANALYTICAL REPORT

Job Number: 720-3175-1

Job Description: Conoco Phillips #5325 (3220 Lakeshore Av

For:
TRC Solutions, Inc.
1590 Solano Way, Suite A
Concord, CA 94520

Attention: Mr. Keith Woodburne

A handwritten signature in black ink, appearing to read "D Sharma", written over a horizontal line.

Dimple Sharma
Project Manager I
dsharma@stl-inc.com
04/28/2006

Project Manager: Dimple Sharma

METHOD SUMMARY

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS	STL-SF	SW846 8260B	
Purge and Trap for Solids	STL-SF		SW846 5030B
Purge-and-Trap for Aqueous Samples/High	STL-SF		SW846 5030B
Inductively Coupled Plasma - Atomic Emission Spectrometry	STL-SF	SW846 6010B	
Acid Digestion of Sediments, Sludges, and Soils	STL-SF		SW846 3050B

LAB REFERENCES:

STL-SF = STL-San Francisco

METHOD REFERENCES:

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986
And Its Updates.

SAMPLE SUMMARY

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-3175-1	C-3@5'	Solid	04/11/2006 0835	04/14/2006 1520
720-3175-2	C-2@7'	Solid	04/11/2006 1414	04/14/2006 1520
720-3175-3	C-1@5'	Solid	04/12/2006 0952	04/14/2006 1520
720-3175-4	C-1@10'	Solid	04/12/2006 1005	04/14/2006 1520
720-3175-9	COMPOSITE	Solid	04/12/2006 1030	04/14/2006 1520

Analytical Data

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Client Sample ID: C-3@5'

Lab Sample ID: 720-3175-1

Date Sampled: 04/11/2006 0835

Client Matrix: Solid

Date Received: 04/14/2006 1520

8260B Volatile Organic Compounds by GC/MS

Method:	8260B	Analysis Batch:	720-8206	Instrument ID:	Varian 3900A
Preparation:	5030B	Prep Batch:	720-8273	Lab File ID:	c:\saturnws\data\200604\04
Dilution:	200			Initial Weight/Volume:	5.30 g
Date Analyzed:	04/25/2006 1306			Final Weight/Volume:	10 mL
Date Prepared:	04/24/2006 1639				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
1,2-Dichloroethane		ND		0.94
Benzene		ND		0.94
Ethanol		ND		19
Ethylbenzene		ND		0.94
MTBE		1.9		0.94
TAME		ND		0.94
Toluene		ND		0.94
Xylenes, Total		ND		1.9
TBA		ND		1.9
DIPE		ND		0.94
EDB		ND		0.94
Gasoline Range Organics (GRO)-C6-C12		ND		47
Ethyl tert-butyl ether		ND		0.94
Surrogate		%Rec		Acceptance Limits
Toluene-d8		85		50 - 130
1,2-Dichloroethane-d4		90		60 - 140

Analytical Data

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Client Sample ID: C-2@7'

Lab Sample ID: 720-3175-2

Date Sampled: 04/11/2006 1414

Client Matrix: Solid

Date Received: 04/14/2006 1520

8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 720-8177

Instrument ID: Varian 3900E

Preparation: 5030B

Lab File ID: c:\varianws\data\200604\04

Dilution: 1.0

Initial Weight/Volume: 4.98 g

Date Analyzed: 04/25/2006 1513

Final Weight/Volume: 10 mL

Date Prepared: 04/25/2006 1513

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
1,2-Dichloroethane		ND		0.0050
Benzene		ND		0.0050
Ethanol		ND		0.50
Ethylbenzene		ND		0.0050
MTBE		0.16		0.0050
TAME		ND		0.0050
Toluene		ND		0.0050
Xylenes, Total		ND		0.010
TBA		0.047		0.010
DIPE		ND		0.0050
EDB		ND		0.0050
Gasoline Range Organics (GRO)-C6-C12		1.2		0.25
Ethyl tert-butyl ether		ND		0.0050
Surrogate		%Rec		Acceptance Limits
Toluene-d8		96		70 - 130
1,2-Dichloroethane-d4		96		60 - 140

Analytical Data

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Client Sample ID: C-1@5'

Lab Sample ID: 720-3175-3

Date Sampled: 04/12/2006 0952

Client Matrix: Solid

Date Received: 04/14/2006 1520

8260B Volatile Organic Compounds by GC/MS

Method:	8260B	Analysis Batch: 720-8206	Instrument ID: Varian 3900A
Preparation:	5030B	Prep Batch: 720-8273	Lab File ID: c:\satumws\data\200604\04
Dilution:	2000		Initial Weight/Volume: 5.13 g
Date Analyzed:	04/25/2006 1350		Final Weight/Volume: 10 mL
Date Prepared:	04/24/2006 1639		

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
1,2-Dichloroethane		ND		9.7
Benzene		ND		9.7
Ethanol		ND		190
Ethylbenzene		76		9.7
MTBE		ND		9.7
TAME		ND		9.7
Toluene		ND		9.7
Xylenes, Total		340		19
TBA		ND		19
DIPE		ND		9.7
EDB		ND		9.7
Gasoline Range Organics (GRO)-C6-C12		4600		490
Ethyl tert-butyl ether		ND		9.7
Surrogate		%Rec		Acceptance Limits
Toluene-d8		111		50 - 130
1,2-Dichloroethane-d4		119		60 - 140

Analytical Data

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Client Sample ID: C-1@10'

Lab Sample ID: 720-3175-4

Date Sampled: 04/12/2006 1005

Client Matrix: Solid

Date Received: 04/14/2006 1520

8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 720-8078

Instrument ID: Varian 3900A

Preparation: 5030B

Lab File ID: c:\satumws\data\200604\04

Dilution: 1.0

Initial Weight/Volume: 5.50 g

Date Analyzed: 04/22/2006 0053

Final Weight/Volume: 10 mL

Date Prepared: 04/22/2006 0053

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
1,2-Dichloroethane		ND		0.0045
Benzene		ND		0.0045
Ethanol		ND		0.45
Ethylbenzene		ND		0.0045
MTBE		0.029		0.0045
TAME		ND		0.0045
Toluene		ND		0.0045
Xylenes, Total		ND		0.0091
TBA		0.17		0.0091
DIPE		ND		0.0045
EDB		ND		0.0045
Gasoline Range Organics (GRO)-C6-C12		ND		0.23
Ethyl tert-butyl ether		ND		0.0045
Surrogate		%Rec		Acceptance Limits
Toluene-d8		92		70 - 130
1,2-Dichloroethane-d4		109		60 - 140

Analytical Data

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Client Sample ID: COMPOSITE

Lab Sample ID: 720-3175-9

Date Sampled: 04/12/2006 1030

Client Matrix: Solid

Date Received: 04/14/2006 1520

8260B Volatile Organic Compounds by GC/MS

Method: 8260B Analysis Batch: 720-8177 Instrument ID: Varian 3900E
Preparation: 5030B Lab File ID: c:\varianws\data\200604\04
Dilution: 1.0 Initial Weight/Volume: 1.06 g
Date Analyzed: 04/25/2006 1709 Final Weight/Volume: 10 mL
Date Prepared: 04/25/2006 1709

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
1,2-Dichloroethane		ND		0.024
Benzene		ND		0.024
Ethanol		ND		2.4
Ethylbenzene		ND		0.024
MTBE		1.0		0.024
TAME		ND		0.024
Toluene		ND		0.024
Xylenes, Total		0.068		0.047
TBA		2.2		0.047
DIPE		ND		0.024
EDB		ND		0.024
Gasoline Range Organics (GRO)-C6-C12		4.4		1.2
Ethyl tert-butyl ether		ND		0.024
Surrogate		%Rec		Acceptance Limits
Toluene-d8		97		70 - 130
1,2-Dichloroethane-d4		94		60 - 140

Analytical Data

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Client Sample ID: COMPOSITE

Lab Sample ID: 720-3175-9
Client Matrix: Solid

Date Sampled: 04/12/2006 1030
Date Received: 04/14/2006 1520

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B Analysis Batch: 720-7845 Instrument ID: Varian ICP
Preparation: 3050B Prep Batch: 720-7818 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1.02 g
Date Analyzed: 04/18/2006 1313 Final Weight/Volume: 50 mL
Date Prepared: 04/18/2006 0637

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Lead		4.7		0.98

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description
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Quality Control Results

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC/MS VOA				
Analysis Batch:720-8078				
LCS 720-8078/23	Lab Control Spike	Solid	8260B	
LCSD 720-8078/22	Lab Control Spike Duplicate	Solid	8260B	
MB 720-8078/24	Method Blank	Solid	8260B	
720-3171-A-5 MS	Matrix Spike	Solid	8260B	
720-3171-A-5 MSD	Matrix Spike Duplicate	Solid	8260B	
720-3175-4	C-1@10'	Solid	8260B	
Analysis Batch:720-8177				
LCS 720-8177/20	Lab Control Spike	Solid	8260B	
LCSD 720-8177/19	Lab Control Spike Duplicate	Solid	8260B	
MB 720-8177/21	Method Blank	Solid	8260B	
720-3175-2	C-2@7'	Solid	8260B	
720-3175-9	COMPOSITE	Solid	8260B	
720-3301-A-1 MS	Matrix Spike	Solid	8260B	
720-3301-A-1 MSD	Matrix Spike Duplicate	Solid	8260B	
Prep Batch: 720-8273				
LCS 720-8273/1-A	Lab Control Spike	Solid	5030B	
LCSD 720-8273/2-A	Lab Control Spike Duplicate	Solid	5030B	
MB 720-8273/3-A	Method Blank	Solid	5030B	
720-3175-1	C-3@5'	Solid	5030B	
720-3175-3	C-1@5'	Solid	5030B	
Analysis Batch:720-8206				
LCS 720-8273/1-A	Lab Control Spike	Solid	8260B	720-8273
LCSD 720-8273/2-A	Lab Control Spike Duplicate	Solid	8260B	720-8273
MB 720-8273/3-A	Method Blank	Solid	8260B	720-8273
720-3175-1	C-3@5'	Solid	8260B	720-8273
720-3175-3	C-1@5'	Solid	8260B	720-8273
Metals				
Prep Batch: 720-7818				
LCS 720-7818/2-A	Lab Control Spike	Solid	3050B	
LCSD 720-7818/3-A	Lab Control Spike Duplicate	Solid	3050B	
MB 720-7818/1-A	Method Blank	Solid	3050B	
720-3175-9	COMPOSITE	Solid	3050B	
Analysis Batch:720-7845				
LCS 720-7818/2-A	Lab Control Spike	Solid	6010B	720-7818
LCSD 720-7818/3-A	Lab Control Spike Duplicate	Solid	6010B	720-7818
MB 720-7818/1-A	Method Blank	Solid	6010B	720-7818
720-3175-9	COMPOSITE	Solid	6010B	720-7818

STL San Francisco

Quality Control Results

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Method Blank - Batch: 720-8078

**Method: 8260B
Preparation: 5030B**

Lab Sample ID: MB 720-8078/24
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/21/2006 1857
Date Prepared: 04/21/2006 1857

Analysis Batch: 720-8078
Prep Batch: N/A
Units: mg/Kg

Instrument ID: Varian 3900A
Lab File ID: c:\saturnws\data\200604\04
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
1,2-Dichloroethane	ND		0.0050
Benzene	ND		0.0050
Ethanol	ND		0.50
Ethylbenzene	ND		0.0050
MTBE	ND		0.0050
TAME	ND		0.0050
Toluene	ND		0.0050
Xylenes, Total	ND		0.010
TBA	ND		0.010
DIPE	ND		0.0050
EDB	ND		0.0050
Gasoline Range Organics (GRO)-C6-C12	ND		0.25
Ethyl tert-butyl ether	ND		0.0050
Surrogate	% Rec	Acceptance Limits	
Toluene-d8	93	70 - 130	
1,2-Dichloroethane-d4	93	60 - 140	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

**Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 720-8078**

**Method: 8260B
Preparation: 5030B**

LCS Lab Sample ID: LCS 720-8078/23
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/21/2006 1813
Date Prepared: 04/21/2006 1813

Analysis Batch: 720-8078
Prep Batch: N/A
Units: mg/Kg

Instrument ID: Varian 3900A
Lab File ID: c:\saturmws\data\200604\042
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 720-8078/22
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/21/2006 1835
Date Prepared: 04/21/2006 1835

Analysis Batch: 720-8078
Prep Batch: N/A
Units: mg/Kg

Instrument ID: Varian 3900A
Lab File ID: c:\saturmws\data\200604\042
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	95	100	69 - 129	4	20		
MTBE	95	102	65 - 165	7	20		
Toluene	97	98	70 - 130	1	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Toluene-d8	88		91		70 - 130		
1,2-Dichloroethane-d4	85		87		60 - 140		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-8078**

**Method: 8260B
Preparation: 5030B**

MS Lab Sample ID: 720-3171-A-5 MS
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/21/2006 1942
Date Prepared: 04/21/2006 1942

Analysis Batch: 720-8078
Prep Batch: N/A

Instrument ID: Varian 3900A
Lab File ID: c:\saturnws\data\200604\04
Initial Weight/Volume: 5.00 g
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 720-3171-A-5 MSD
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/21/2006 2004
Date Prepared: 04/21/2006 2004

Analysis Batch: 720-8078
Prep Batch: N/A

Instrument ID: Varian 3900A
Lab File ID: c:\saturnws\data\200604\04
Initial Weight/Volume: 5.07 g
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Benzene	94	94	69 - 129	1	20		
MTBE	100	102	65 - 165	1	20		
Toluene	92	91	70 - 130	2	20		
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
Toluene-d8	93		93	70 - 130			
1,2-Dichloroethane-d4	99		96	60 - 140			

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Method Blank - Batch: 720-8177

**Method: 8260B
Preparation: 5030B**

Lab Sample ID: MB 720-8177/21
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/25/2006 1021
Date Prepared: 04/25/2006 1021

Analysis Batch: 720-8177
Prep Batch: N/A
Units: mg/Kg

Instrument ID: Varian 3900E
Lab File ID: c:\varianws\data\200604\04
Initial Weight/Volume: 5.0 g
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
1,2-Dichloroethane	ND		0.0050
Benzene	ND		0.0050
Ethanol	ND		0.50
Ethylbenzene	ND		0.0050
MTBE	ND		0.0050
TAME	ND		0.0050
Toluene	ND		0.0050
Xylenes, Total	ND		0.010
TBA	ND		0.010
DIPE	ND		0.0050
EDB	ND		0.0050
Gasoline Range Organics (GRO)-C6-C12	ND		0.25
Ethyl tert-butyl ether	ND		0.0050
Surrogate	% Rec	Acceptance Limits	
Toluene-d8	95	70 - 130	
1,2-Dichloroethane-d4	102	60 - 140	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

**Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 720-8177**

**Method: 8260B
Preparation: 5030B**

LCS Lab Sample ID: LCS 720-8177/20
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/25/2006 0938
Date Prepared: 04/25/2006 0938

Analysis Batch: 720-8177
Prep Batch: N/A
Units: mg/Kg

Instrument ID: Varian 3900E
Lab File ID: c:\varianws\data\200604\1042
Initial Weight/Volume: 5.0 g
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 720-8177/19
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/25/2006 1000
Date Prepared: 04/25/2006 1000

Analysis Batch: 720-8177
Prep Batch: N/A
Units: mg/Kg

Instrument ID: Varian 3900E
Lab File ID: c:\varianws\data\200604\1042
Initial Weight/Volume: 5.0 g
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	91	99	69 - 129	9	20		
MTBE	85	87	65 - 165	2	20		
Toluene	83	93	70 - 130	11	20		
Surrogate	LCS % Rec		LCSD % Rec	Acceptance Limits			
Toluene-d8	86		90	70 - 130			
1,2-Dichloroethane-d4	100		99	60 - 140			

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-8177**

**Method: 8260B
Preparation: 5030B**

MS Lab Sample ID: 720-3301-A-1 MS
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/25/2006 1220
Date Prepared: 04/25/2006 1220

Analysis Batch: 720-8177
Prep Batch: N/A

Instrument ID: Varian 3900E
Lab File ID: c:\varianws\data\200604\104
Initial Weight/Volume: 5.47 g
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 720-3301-A-1 MSD
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/25/2006 1242
Date Prepared: 04/25/2006 1242

Analysis Batch: 720-8177
Prep Batch: N/A

Instrument ID: Varian 3900E
Lab File ID: c:\varianws\data\200604\104
Initial Weight/Volume: 5.19 g
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Benzene	86	92	69 - 129	12	20		
MTBE	80	75	65 - 165	1	20		
Toluene	90	89	70 - 130	4	20		
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
Toluene-d8		106	99			70 - 130	
1,2-Dichloroethane-d4		96	99			60 - 140	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Method Blank - Batch: 720-8273

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-8273/3-A
Client Matrix: Solid
Dilution: 200
Date Analyzed: 04/25/2006 1243
Date Prepared: 04/24/2006 1639

Analysis Batch: 720-8206
Prep Batch: 720-8273
Units: mg/Kg

Instrument ID: Varian 3900A
Lab File ID: c:\saturnws\data\200604\04
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
1,2-Dichloroethane	ND		1.0
Benzene	ND		1.0
Ethanol	ND		20
Ethylbenzene	ND		1.0
MTBE	ND		1.0
TAME	ND		1.0
Toluene	ND		1.0
Xylenes, Total	ND		2.0
TBA	ND		2.0
DIPE	ND		1.0
EDB	ND		1.0
Gasoline Range Organics (GRO)-C6-C12	ND		50
Ethyl tert-butyl ether	ND		1.0
Surrogate	% Rec	Acceptance Limits	
Toluene-d8	93	50 - 130	
1,2-Dichloroethane-d4	97	60 - 140	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

**Laboratory Control//
Laboratory Control Duplicate Recovery Report - Batch: 720-8273**

**Method: 8260B
Preparation: 5030B**

LCS Lab Sample ID: LCS 720-8273/1-A
Client Matrix: Solid
Dilution: 200
Date Analyzed: 04/25/2006 1604
Date Prepared: 04/24/2006 1639

Analysis Batch: 720-8206
Prep Batch: 720-8273
Units: mg/Kg

Instrument ID: Varian 3900A
Lab File ID: c:\satumws\data\200604\042
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 720-8273/2-A
Client Matrix: Solid
Dilution: 200
Date Analyzed: 04/25/2006 1626
Date Prepared: 04/24/2006 1639

Analysis Batch: 720-8206
Prep Batch: 720-8273
Units: mg/Kg

Instrument ID: Varian 3900A
Lab File ID: c:\satumws\data\200604\042
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	80	78	69 - 129	4	20		
MTBE	78	76	65 - 165	3	20		
Toluene	81	79	70 - 130	3	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Toluene-d8	111		98		50 - 130		
1,2-Dichloroethane-d4	108		96		60 - 140		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Method Blank - Batch: 720-7818

**Method: 6010B
Preparation: 3050B**

Lab Sample ID: MB 720-7818/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/18/2006 1202
Date Prepared: 04/18/2006 0637

Analysis Batch: 720-7845
Prep Batch: 720-7818
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Lead	ND		1.0

**Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 720-7818**

**Method: 6010B
Preparation: 3050B**

LCS Lab Sample ID: LCS 720-7818/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/18/2006 1205
Date Prepared: 04/18/2006 0637

Analysis Batch: 720-7845
Prep Batch: 720-7818
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 720-7818/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/18/2006 1209
Date Prepared: 04/18/2006 0637

Analysis Batch: 720-7845
Prep Batch: 720-7818
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Lead	99	97	80 - 120	2	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

ConocoPhillips Chain Of Custody Record

40451

STL-San Francisco

1220 Quarry Lane
Pleasanton, CA 94566

(925) 484-1919 (925) 484-1096 fax

ConocoPhillips Site Manager: INVOICE REMITTANCE ADDRESS: <div style="font-size: 2em; font-weight: bold; text-align: center;">720-3175</div>	ConocoPhillips Work Order Number: <div style="font-size: 1.2em; font-weight: bold; text-align: center;">1394TRC006</div> ConocoPhillips Cost Object: WNO. 1394
CONOCOPHILLIPS Attn: Dee Hutchinson 3611 South Harbor, Suite 200 Santa Ana, CA. 92704	DATE: 4/11/06 PAGE: 1 of 1

SAMPLING COMPANY: TRC	Valid Value ID: TRCC	CONOCOPHILLIPS SITE NUMBER: 5325	GLOBAL ID NO.: T0600101463
ADDRESS: 1590 Solano Way, Suite A Concord, CA 94520		CONOCOPHILLIPS SITE MANAGER: Thomas Kosel	
PROJECT CONTACT (Hardcopy or PDF Report to): Keith Woodburne		EDF DELIVERABLE TO (RP or Designee): Keith Woodburne	PHONE NO.: (925) 688-2488
TELEPHONE: (925) 688-2488	FAX: (925) 688-0388	E-MAIL: kwoodburne@trcsolutions.com	E-MAIL: kwoodburne@trcsolutions.com
SAMPLER NAME(S) (Print): Rachelle Dunn		CONSULTANT PROJECT NUMBER: 42019603	

TURNAROUND TIME (CALENDAR DAYS): <input checked="" type="checkbox"/> 14 DAYS <input type="checkbox"/> 7 DAYS <input type="checkbox"/> 72 HOURS <input type="checkbox"/> 48 HOURS <input type="checkbox"/> 24 HOURS <input type="checkbox"/> LESS THAN 24 HOURS 5 Day turn around time	REQUESTED ANALYSES
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SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NEEDED <input type="checkbox"/> Please CC: rdunn@trcsolutions on all pdf and edf emails.	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes TEMPERATURE ON RECEIPT C° 2
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LAB. USE ONLY	Sample Identification/Field Point Name*	SAMPLING		MATRIX	NO. OF CONT.	8015m - TPHd Extractable	8260B - TPHg	8260B - BTEX	8260B - B oxygenates	8260B-MTBE	8260B - VOCs	8270C - Semi-VOC's	1664 - Total Oil and Grease	8015 - Hydraulic Oil	8270C - PCBs	6010 - LUFT 5 Metals	8260 - TPPH	Total Lead	TEMPERATURE ON RECEIPT C°	
		DATE	TIME																	
	C-3@ 5'	4/11	0835	S	1			X	X											
	C-2@ 7'	↓	1414	↓	↓															
	C-1@ 5'	4/12	0952	↓	↓															
	C-1@ 10'	↓	1005	↓	↓															
	Composite	↓	1030	↓	4															

Relinquished by (Signature): <i>Rachelle Dunn</i> Relinquished by (Signature): <i>STL-SF</i>	Received by (Signature): <i>Rachelle Dunn Refrigerator</i> Received by (Signature): <i>STL-SF</i> Received by (Signature): <i>Jim Gulik</i>	Date: 4/13/06 Date: 4/14/06 Date: 4/14/06	Time: 0800 Time: 0945 Time: 1520
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LOGIN SAMPLE RECEIPT CHECK LIST

Client: TRC Solutions, Inc.

Job Number: 720-3175-1

Login Number: 3175

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present, is intact.	NA	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	