

ALCO  
HAZMAT  
94 JUL 12 PM 3:45

DESERT PETROLEUM  
Station #796

WASTE OIL UST REMOVAL,  
OVER-EXCAVATION SAMPLE REPORT.

LOCATED AT

2844 Mountain Boulevard  
OAKLAND, CALIFORNIA

MAY 31, 1994

BY

-WEGE-  
WESTERN GEO-ENGINEERS  
1386 E. BEAMER STREET  
WOODLAND, CALIFORNIA 95776  
(916) 668-5300

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CALIF CONTRACTOR # 513857 A CORPORATION  
REGISTERED GEOLOGISTS

May 31, 1994

Mr. John Rutherford  
High Desert  
P.O. Box 1601  
Oxnard, California 93032  
(805) 644-5892  
FAX (805) 654-0720

Dear Mr. Rutherford:

The following report represents our findings during the waste oil tank and the coincidental over-excavation of soil tainted with oil range hydrocarbons at former Desert Petroleum Station 796, located at 2844 Mountain Blvd., Oakland, Alameda County, California.

#### INTRODUCTION

Western Geo-Engineers (WEGE) obtained and documented the necessary samples during the underground storage tank (UST). Soil contaminated with oil range hydrocarbons was discovered beneath the waste oil tank and along the excavation sidewall nearest the station's store, beneath the drain pipe (filler pipe) to the waste oil tank., see Figure 3 and Table 1. Limited over excavation of the waste oil tank area successfully removed most of the contaminant from the soil beneath and beside the waste oil tank, down to saturated soil (top of ground water at approximately eight feet below ground surface). Water was observed in the hand augered hole along the south sidewall (restaurant side) at the seven and half foot depth. The following report documents the activities that have occurred at this site from the initial tank removal sampling through the limited over excavation of the waste oil tank area (April 27, 1994).

*saturated at 7 1/2'*

#### LOCATION

Former Desert Petroleum #796 is an active station, located on the southeast corner of the intersection of Mountain Blvd. and Werner Court at 2844 Mountain Blvd., Oakland, California, see Figure 1. Figure 2 is a portion of the U.S.G.S. Oakland East, photorevised 1980 7.5 minute quadrangle map and shows the site at an approximate elevation of 690 feet above mean sea level in projected section 28; T1S; R3W; MDB&M. Figure 3 represents the station conditions during tank removal and shows sample locations.

LOCAL GEOLOGY, HYDROGEOLOGY AND GEOMORPHOLOGY.GEOMORPHOLOGY

The site is situated on the western slope of the Berkeley Hills, east of Redwood Peak (elev. 1619' amsl) at an elevation of approximately 690 feet amsl. The Berkeley Hills are a northwest-southeast trending range within the Coastal Range Province of California. Erosion of the Coastal Ranges has filled the valleys within and bordering the Coastal Range with sequences of gravels, silts, sands and clays.

STRATIGRAPHY AND GROUND WATER OCCURRENCE

The native soil that comprised the sidewalls and floor of the waste oil tank excavation cavity consisted of a moist dark grey to black clay with very minor silt. Areas of green to black clay were also noted along the sidewall nearest the station store and the sidewall nearest the restaurant located south-southeast of the excavation. The sidewalls closest to Werner Court and Mountain Boulevard are of a dark grey to brown clay with an increase in silt content. Ground water as monitored at the site is very shallow; above the ten foot depth. During drilling and installation of the existing ground water monitoring wells, first encountered ground water was found between six and seven feet below the surface at wells RS-1 and RS-2.

UST REMOVAL

Manley and Sons excavated and removed one 280 gallon waste oil tank along with approximately 280 gallons of fluid and rinsate on April 27, 1994. ✓ These site activities were witnessed by Ms. Jennifer Eberle, Hazardous Materials Specialist, Alameda County Health Agency, see Appendix A. The waste oil tank and rinsate were transported for disposal by Manley and Sons Trucking that day.

NO-1  
The initial sample of the native soil beneath the waste oil tank was collected from the backhoe bucket and represents the seven foot six inch depth of the excavation, directly beneath the waste oil tank fill. ✓ A Western Geo-Engineers (WEGE) geologist working directly under California Registered Geologist #3037 obtained the samples as required in the August 10, 1990 TRI - REGIONAL BOARD STAFF RECOMMENDATIONS FOR PRELIMINARY EVALUATION AND INVESTIGATION OF UNDERGROUND TANK SITES, see Figure 3, Table 1 and Appendix B - field notes from tank removal and soil sampling.

UST SAMPLING AND RESULTS

Inspection of the UST after removal showed the tank to have only minor corrosion, and to be in good condition with no obvious

holes or pitting. During removal of the waste oil UST odor and staining were noted throughout the excavation. The excavation was along the sidewall of the building side of the UST that contained the remote fill pipe, which was entirely removed. Field observations indicated that the excavation was approximately two feet in all directions. Field screening (UV fluorescent scope with pentane extraction) was used to determine if over-excavation had removed the petroleum hydrocarbons that were found staining the north sidewall and beneath the tank. The UV screening favorably exploits petroleum hydrocarbon's fluorescing characteristics under ultraviolet light. A sample obtained with the original soil sample WO-1 (7 1/2 foot depth) showed a bright yellow-gold fluorescence. Field screening and sampling continued until no or trace amounts of visible fluorescence was detected. At that time confirmation samples were obtained from the base of the excavation (WO-Bottom - eight foot depth), and the sidewalls at approximately the six foot depth. Sample results showed that the field screening technique worked well for the oil range hydrocarbons that were found in the soil of the waste oil UST excavation, see Table 1 for certified laboratory results.

Other than the initial sample obtained beneath the waste oil tank (WO-1) which was obtained from the bucket of the backhoe, all other samples were obtained by hand augering (4" bucket auger) approximately six inches into the native soil, removing that soil from the auger and then hand augering a fresh sample from each sample point hole. Each of these deepen samples were placed into a 2" X 6" clean stainless steel sleeves. The sleeves were completely filled with the soil (no air space), then the ends were covered with teflon wraps, capped with plastic end caps and sealed with duct tape. Each sleeved sample was then labeled with individual sample ID, time and date sampled and analysis to be performed. The sample was then placed into a zip lock baggie, sealed and placed on ice in a chest and cooled to 4°C for chain of custody delivery to MATRIX Environmental Laboratories Inc. 3017 Kilgore Road #100, Rancho Cordova, California 95742, (916) 635-3962, (DHS Certified Laboratory #1676), see Appendix C.

The initial sample obtained beneath the waste oil tank (WO-1) was collected from the 7'6" depth and analyzed for Total Petroleum Hydrocarbons as Gasoline and Diesel (TPHg-d) 8015 modified, Oil and Grease 5520E, Benzene-Toluene-Ethylbenzene and Xylenes (BTEX), Volatile Organic Compounds 8240, Semi Volatile Organic Compounds 8270, and CAM Metals TTLC (Cd, Sr, Pb, Ni & Zn).

Diesel range hydrocarbons, PCB's, Volatile Organic Compounds, and Cadmium were below detection limits.

Gasoline range hydrocarbons, BTEX's, Oil and Grease, 8270 compounds, and the metals chromium, lead, nickel and zinc

were detected above the laboratories detection limits.

Samples obtained after the limited over-excavation showed a significant reduction in the gasoline and oil and grease range hydrocarbons and removed the 8270 compounds, see Table 1.

#### EXCAVATED SOIL

Approximately 40 cubic yards of soil was removed from the ~~oil tank~~ excavation. This soil was placed on and covered with 6 mil polyethylene liner and left at the site for later removal to Laidlaw-Buttonwillow, California by Manley and Sons as a non-RCRA, California Hazardous Waste. 40 yds<sup>3</sup>

The station is not now owned by Desert Petroleum, and at the present owner's request, Desert had the excavation backfilled with clean imported sand covered with a concrete slab, on April 27-28, 1994.

#### HEALTH AND SAFETY

This site has been classified as Level D. Common sense and standard construction safety measures are to be maintained at all times. All WEGE personnel involved with this site have a current Certificate for OSHA-SARA Safety Training, as prescribed in 29CFR 1910.120.

#### SUMMARY

Upon removal of the underground storage tank, oil range hydrocarbons were detected by odor and visual staining beneath the removed tank. Over-excavation of the waste oil tank area to top of saturated soil (top of ground water) removed the majority of ~~contaminated soil~~ from this area. UV fluorescent screening of the soil successfully identified the impacted soil. The excavated area was immediately backfilled with clean pea gravel and capped with concrete at the surface.

The excavated soil was manifested to Laidlaw, 2500 West Lokern Road, Buttonwillow, California for disposal as a non-RCRA California Hazardous Waste.

#### LIMITATIONS

This report is based upon the following:

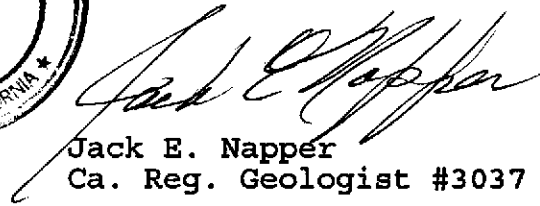
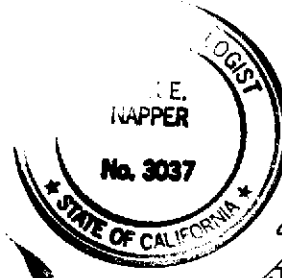
- A. The observations of field personnel.
- B. The results of laboratory analyses performed by a state certified laboratory.
- C. Referenced documents.
- D. Our understanding of the regulations of the State of California, Alameda County and the City of Oakland.

The services performed by Western Geo-Engineers, a corporation, under California Registered Geologist #3037 and/or Contractors License #513857, have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the State of California and the Oakland area. Our work and/or supervision of remediation and/or abatement operations, active or preliminary, at this site is in no way meant to imply that we are owners or operators of this site. Please note that known contamination of soil and/or ground water must be reported to the appropriate agencies in a timely manner. No other warranty, expressed or implied, is made.

Sincerely yours,



George L. Converse  
Project Geologist



Jack E. Napper  
Ca. Reg. Geologist #3037

cc: Ms. Jennifer Eberie, HMS, Alameda County Health  
(510) 271-4530

TABLE 1

SOIL SAMPLE CERTIFIED LABORATORY CHEMICAL RESULTS

FORMER DESERT PETROLEUM #796

2844 Mountain Blvd.

Oakland, California

ALAMEDA COUNTY HEALTH - WASTE OIL TANK REMOVAL (April 27, 1994)

EXCAVATED SOIL PILE, APPROXIMATELY 40 CUBIC YARDS

ND BELOW DETECTION LIMITS

NA NOT ANALYZED FOR

(see Appendix C for actual detection limits)

REMOVED FROM SITE TO LAIDLAW, BY MANLEY & SONS TRUCKING.

ALL RESULTS IN mg/Kg milligrams/Kilogram, parts per million (ppm)

SAMPLE LOCATION	initial BENEATH WO TANK	OVER EXCAVATE WASTE OIL EXCAVATION				
		BOTTOM	SIDEWALL WERNER STREET	SIDEWALL MOUNTAIN BLVD	SIDEWALL RESTAURANT	SIDEWALL BUILDING
SAMPLE ID#	WO-1	NO-BOTTOM	SW-WERNER	SW-MOUNTAIN	SW-REST	SW-BUILDING
DATE SAMPLED	4/27/94	4/27/94	4/27/94	4/27/94	4/27/94	4/27/94
SAMPLE DEPTH	7.5	8	6.5	6	5.5	6.5
LABORATORY METHOD 8015M						
GASOLINE 5030	160 ✓	38 ✓	<1 ✓	<1 ✓	<1 ✓	6.2 ✓
DIESEL mg/Kg	<1 ✓	<1 ✓	<1 ✓	<1 ✓	<1 ✓	<1 ✓
LABORATORY METHOD 5520E						
OIL AND GREASE	4600 ✓	700 ✓	<100 ✓	<100 ✓	120 ✓	280 ✓
LABORATORY METHOD 8020						
BENZENE	<0.05 ✓	0.18 ✓	<0.005 ✓	<0.005 ✓	<0.005 ✓	0.085 ✓
TOLUENE	0.073 ✓	0.25 ✓	<0.005 ✓	<0.005 ✓	<0.005 ✓	0.048 ✓
ETHYLBENZENE	0.7 ✓	0.12 ✓	<0.005 ✓	<0.005 ✓	<0.005 ✓	0.042 ✓
XYLENES	2.7 ✓	0.18 ✓	<0.015 ✓	<0.015 ✓	<0.015 ✓	0.11 ✓
8240-VOLATILE	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
LABORATORY METHOD 8270-SEMIVOLATILE ORGANICS						
POLYNUCLEAR AROMATICS						
ACENAPHTHENE	0.49	ND	ND	ND	ND	ND
ACENAPHTHYLENE	0.88	ND	ND	ND	ND	ND
ANTHRACENE	1.1	ND	ND	ND	ND	ND
BENZO [A] PYRENE	2	ND	ND	ND	ND	ND
BENZO [B] FLUORANTHENE	1.6	ND	ND	ND	ND	ND
BENZO [G, H, I] PERYLENE	0.38	ND	ND	ND	ND	ND
BENZO [K] FLUORANTHENE	0.39	ND	ND	ND	ND	ND
CRYSENE	0.68	ND	ND	ND	ND	ND
FLUORANTH	1.8	ND	ND	ND	ND	ND



TABLE 1

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Oakland, California

ALAMEDA COUNTY HEALTH - WASTE OIL TANK REMOVAL (April 27, 1994)

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SAMPLE LOCATION	mg/Kg	OVER EXCAVATE WASTE OIL EXCAVATION				
		BOTTOM	SIDEWALL	SIDEWALL	SIDEWALL	SIDEWALL
		WERNER STREET	MOUNTAIN BLVD	RESTAURANT	BUILDING	
SAMPLE ID#	WO-1	NO-BOTTOM	SW-WERNER	SW-MOUNTAIN	SW-REST	SW-BUILDING
FLUORENE	1.8	ND	ND	ND	ND	ND
INDENO (1,2,3-C,D)	0.66	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
PYRENE						
NAPHTHALENE	21	ND	ND	ND	ND	ND
PHENANTHRENE	4.9	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
PYRENE	5.6	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
		PHENOLS				
PHENOL	0.45	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
2,4-DICHLOROPHENOL	1.9	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
4-CHLORO-3-METHYL-PHENOL	0.39	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
4-NITROPHENOL	1.5	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
PCB'S	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
ANILINES	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
		CAM TLIC METALS				
CADMIUM	STL 1.0 <0.1 ✓	NA	NA	NA	NA	NA
CHROMIUM	5 120 ✓	NA	NA	NA	NA	NA
LEAD	5 31 ✓	NA	NA	NA	NA	NA
NICKEL	20 1113 ✓	NA	NA	NA	NA	NA
ZINC	250 25 ✓	NA	NA	NA	NA	NA

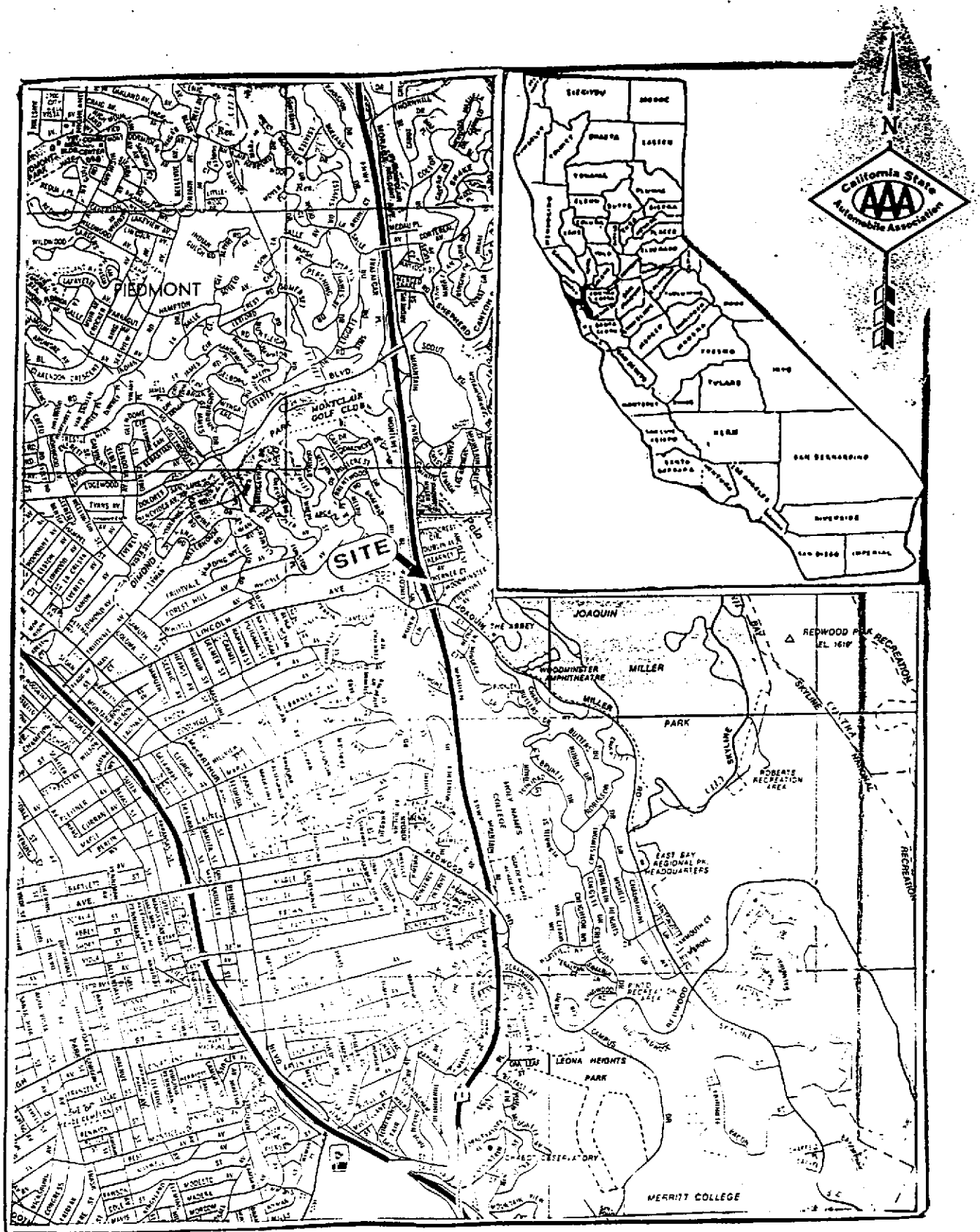


FIGURE 1

Location (AAA Map)

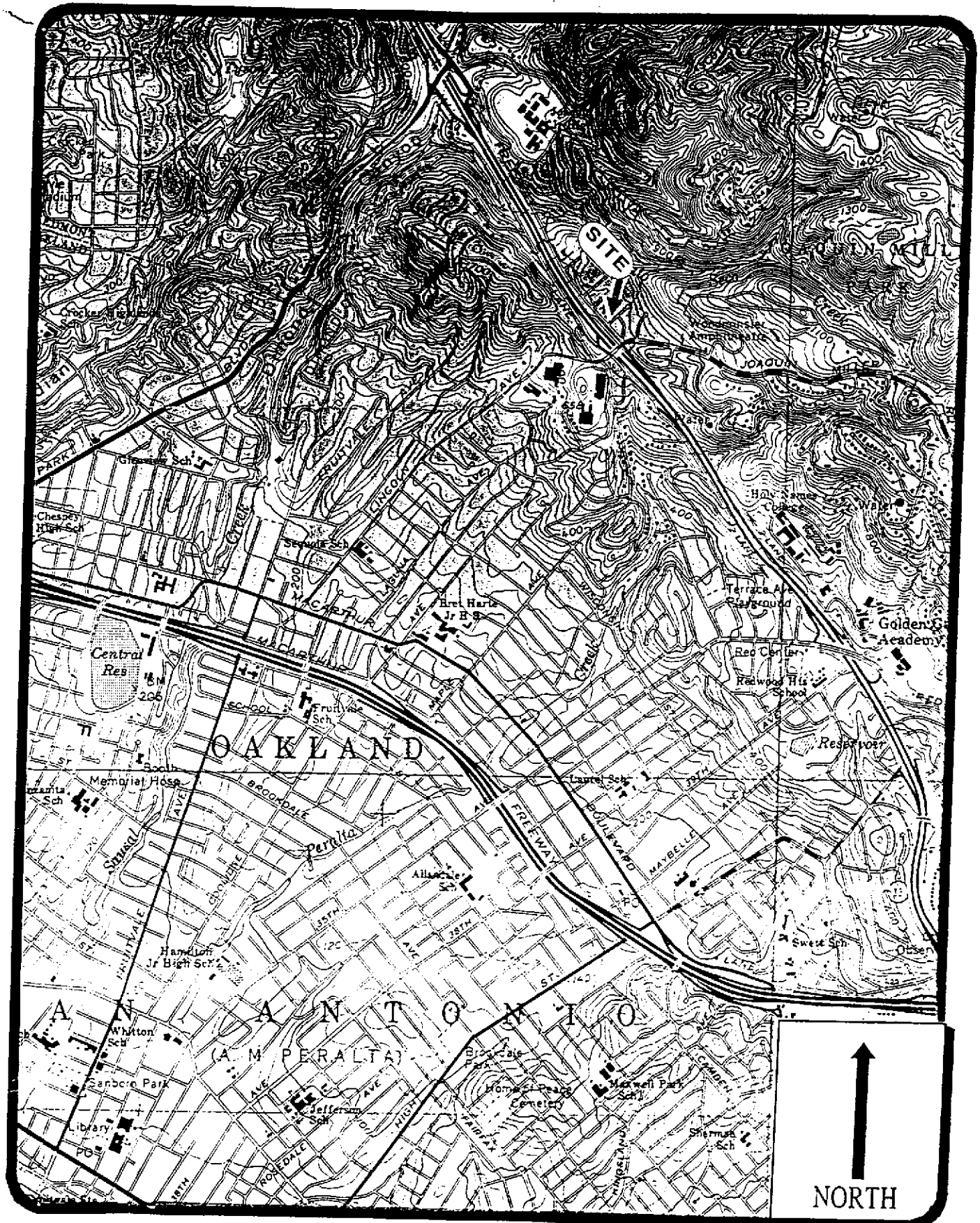
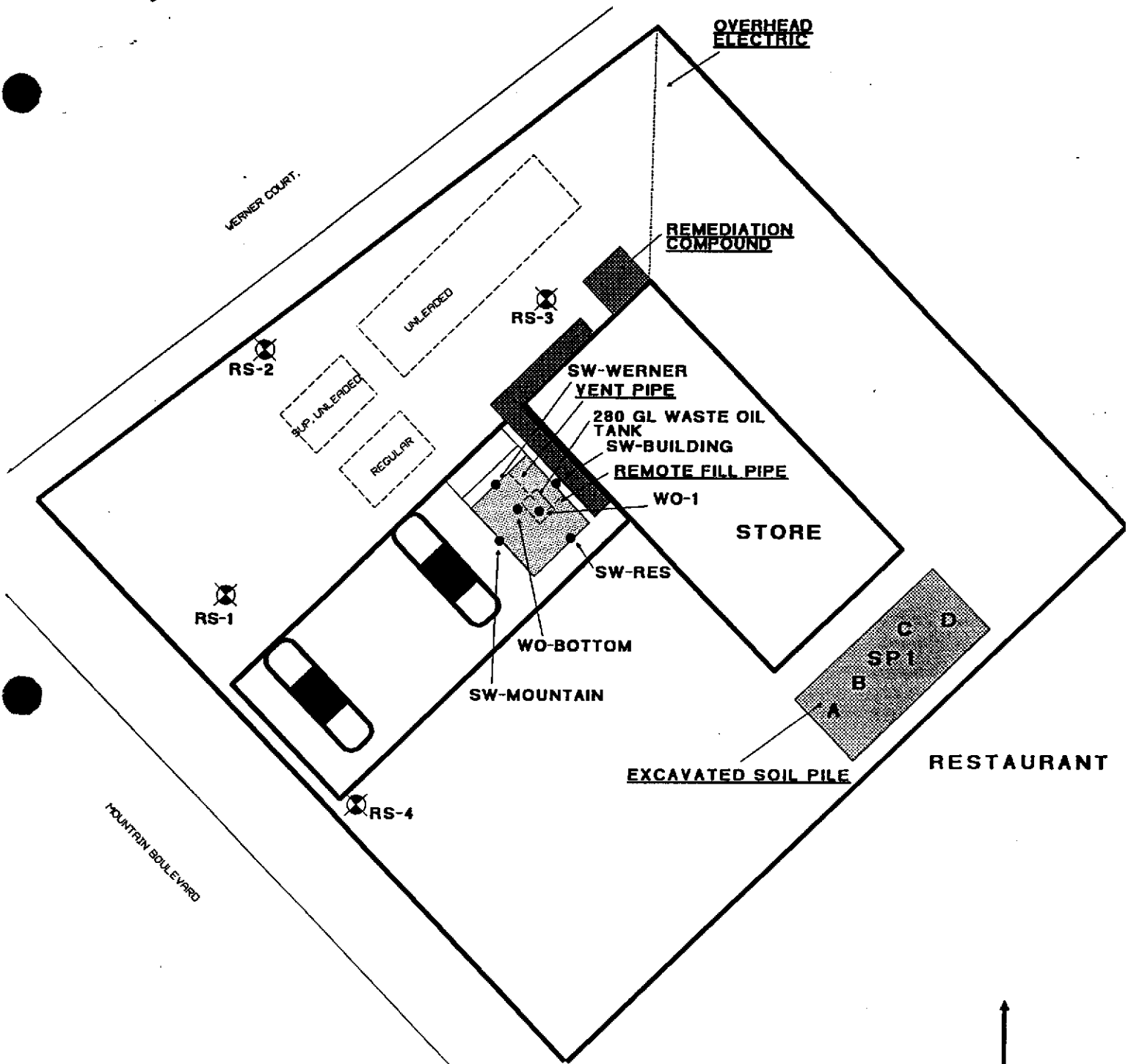


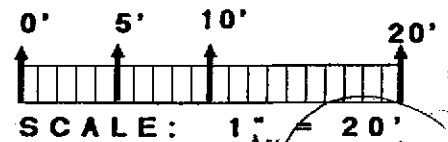
FIGURE 2, USGS TOPOGRAPHIC MAP



**FIGURE 3**

**FORMER DESERT PETROLEUM #796  
2844 MOUNTAIN BOULEVARD  
OAKLAND, CALIFORNIA**

**SITE CONDITIONS/SAMPLE  
LOCATIONS APRIL 27, 1994.**



⊗ **GROUND WATER  
MONITORING WELL.**  
RS-1

● **WO-1 SOIL SAMPLE LOCATION WITH  
SAMPLE DESIGNATION.**

white -env.health  
 yellow -facility  
 pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH  
 Hazardous Materials Inspection Form

80 Swan Way, #200  
 Oakland, CA 94621  
 (415) 271-4320

p. 1 of 2

II, III

Site ID # \_\_\_\_\_ Site Name Deert Petroleum Today's Date 4/27/94

II.A BUSINESS PLANS (Title 19)

- \_\_\_ 1. Immediate Reporting 2703
- \_\_\_ 2. Bus. Plan Stds. 25503(b)
- \_\_\_ 3. RR Cars > 30 days 25503.7
- \_\_\_ 4. Inventory Information 25504(a)
- \_\_\_ 5. Inventory Complete 2730
- \_\_\_ 6. Emergency Response 25504(b)
- \_\_\_ 7. Training 25504(c)
- \_\_\_ 8. Deficiency 25505(a)
- \_\_\_ 9. Modification 25505(b)

Site Address 2844 Ntn. Blvd.  
 City Oakland Zip 94 Phone \_\_\_\_\_

\_\_\_ MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

- \_\_\_ I. Haz. Mat/Waste GENERATOR/TRANSPORTER
- \_\_\_ II. Business Plans, Acute Hazardous Materials
- III. Underground Tanks

removal of 280-gal UST

• Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

II.B ACUTELY HAZ. MATLS

- \_\_\_ 10. Registration Form Filed 25533(a)
- \_\_\_ 11. Form Complete 25533(b)
- \_\_\_ 12. RMPP Contents 25534(c)
- \_\_\_ 13. Implement Sch. Req'd? (Y/N)
- \_\_\_ 14. OffSite Conseq. Assess. 25524(c)
- \_\_\_ 15. Probable Risk Assessment 25534(d)
- \_\_\_ 16. Persons Responsible 25534(g)
- \_\_\_ 17. Certification 25534(f)
- \_\_\_ 18. Exemption Request? (Y/N) 25536(b)
- \_\_\_ 19. Trade Secret Requested? 25538

III. UNDERGROUND TANKS (Title 23)

- \_\_\_ 1. Permit Application 25284 (H&S)
- \_\_\_ 2. Pipeline Leak Detection 25292 (H&S)
- \_\_\_ 3. Records Maintenance 2712
- \_\_\_ 4. Release Report 2651
- \_\_\_ 5. Closure Plans 2670

- \_\_\_ 6. Method
  - 1) Monthly Test
  - 2) Daily Vadose
    - Semi-annual groundwater
    - One time soils
  - 3) Daily Vadose
    - One time soils
    - Annual tank test
  - 4) Monthly Groundwater
    - One time soils
  - 5) Daily Inventory
    - Annual tank testing
    - Cont pipe leak det
    - Vadose/groundwater mon.
  - 6) Daily Inventory
    - Annual tank testing
    - Cont pipe leak det
  - 7) Weekly Tank Gauge
    - Annual tank testing
  - 8) Annual Tank Testing
    - Daily Inventory
  - 9) Other \_\_\_\_\_

- \_\_\_ 7. Precs Tank Test 2643
  - Date: \_\_\_\_\_
- \_\_\_ 8. Inventory Rec. 2644
- \_\_\_ 9. Soil Testing 2646
- \_\_\_ 10. Ground Water 2647

- \_\_\_ 11. Monitor Plan 2632
- \_\_\_ 12. Access. Secure 2634
- \_\_\_ 13. Plans Submit 2711
  - Date: \_\_\_\_\_
- \_\_\_ 14. As Built 2635
  - Date: \_\_\_\_\_

Comments:  
 10:00 arrived on site, but they're not ready to remove tank... 10:15 left site!  
 Tanker truck (Manley) is pumping contents.  
 2:00 Arrived back on site!  
 (L & L) + (FL) 6". OFD not onsite.  
 JR tried to get them on phone several times but only got a recording. JR said ~600 gal. total (oil + water) pumped out during rinsing (+ or - contents).  
 2:15 removal of UST. UST is gal-walled steel, rusted, but no obvious holes.  
 2:20 entire piping (leading under beds) removed. I+3 1 1/2' bas to bottom of tank. Soil in pit is discolored + has anaerobic odor.  
 2:35 Dig down to 4 1/2' base (2' below UST invert)  
 3:45 Took soil sample at ~1 1/2' (10C-1). Soil is greenish w/HC odor, + clayey.  
 3:50 Excavated the sides of pit.  
 3:55 Took side sample (SWS - Werner) at ~6 1/2' bgs. Soil is brown + grey w/HC odor, clay.

Monitoring for Existing Tanks

New Tanks

Rev 6/88

Contact: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: George L. Converse

Inspector: \_\_\_\_\_

Signature: [Signature]

II, III

white -env.health  
 yellow -facility  
 pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH  
 Hazardous Materials Inspection Form

80 Swan Way, #200  
 Oakland, CA 94621  
 (415) 271-4320

p. 2 of 2

II, III

Site ID # \_\_\_\_\_ Site Name Desert Petroleum Today's Date 4/27/94

II.A BUSINESS PLANS (Title 19)

- \_\_\_ 1. Immediate Reporting 2703
- \_\_\_ 2. Bus. Plan Stas. 25503(b)
- \_\_\_ 3. RR Cars > 30 days 25503.7
- \_\_\_ 4. Inventory Information 25504(a)
- \_\_\_ 5. Inventory Complete 2730
- \_\_\_ 6. Emergency Response 25504(b)
- \_\_\_ 7. Training 25504(c)
- \_\_\_ 8. Deficiency 25505(a)
- \_\_\_ 9. Modification 25505(b)

II.B ACUTELY HAZ. MATLS

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- \_\_\_ 19. Trade Secret Requested? 25538

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- \_\_\_ 4. Release Report 2651
- \_\_\_ 5. Closure Plans 2670
- \_\_\_ 6. Method
  - 1) Monthly Test
  - 2) Daily Vadose Semi-annual groundwater One time soils
  - 3) Daily Vadose Annual tank test One time soils
  - 4) Monthly Gndwater Annual tank testing Cont pipe leak det One time soils
  - 5) Daily Inventory Annual tank testing Cont pipe leak det Vadose/gndwater mon.
  - 6) Daily Inventory Annual tank testing Cont pipe leak det Weekly Tank Gauge Annual tank testing
  - 8) Annual Tank Testing Daily Inventory
  - 9) Other \_\_\_\_\_
- \_\_\_ 7. Precs Tank Test Date: 2643
- \_\_\_ 8. Inventory Rec. 2644
- \_\_\_ 9. Soil Testing 2646
- \_\_\_ 10. Ground Water. 2647

- \_\_\_ 11. Monitor Plan 2632
- \_\_\_ 12. Access. Secure 2634
- \_\_\_ 13. Plans Submit Date: 2711
- \_\_\_ 14. As Built Date: 2635

Site Address 2844 Ntn. Blvd.  
 City Oakland Zip 94602 Phone \_\_\_\_\_

\_\_\_ MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

- \_\_\_ I. Haz. Mat/Waste GENERATOR/TRANSPORTER
- \_\_\_ II. Business Plans, Acute Hazardous Materials
- III. Underground Tanks

\* Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

Comments:

4:10 Took sidewall sample (SW-Ntn. Blvd) at ~ 6' bgs. Soil is brown-grey, no odor clay. ... Excavated the slough out of pit. JTK wants to backfill today because they need to continue discharging gas - (cost \$5.00 Sidewall on restaurant side is saturated at ~ 6' bgs. The soil there is stained + odorous. ... (The sampling tubes were sealed w/ end caps + duct tape)

5:15 Took sidewall (SW-Restaurant) 1' min below electric water lines at ~ 5 1/2' bgs. Soil is stained but not odorous, still brown.

5:45 Took sidewall (SW-Blvd) at ~ 6' bgs. Soil has no odor, is brown-grey clay.

5:50 Pit will be backfilled w/ clean pea gravel tonight. UST will be transported by Mantley Trucking under HLE manifest # 91015185 Final dimensions of excavation: 12' x 8' x 7' deep. left note

Monitoring for Existing Tanks

New Tanks

Rev 6/88

Contact: \_\_\_\_\_

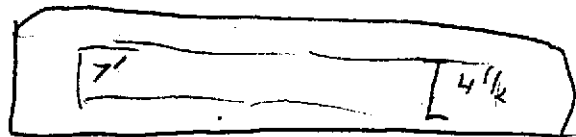
Title: \_\_\_\_\_

Signature: [Signature]

Inspector: \_\_\_\_\_

Signature: [Signature]

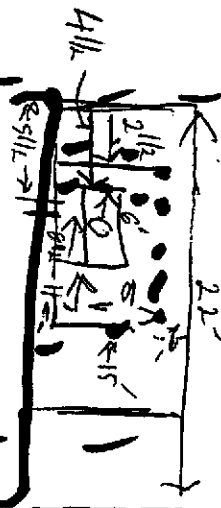
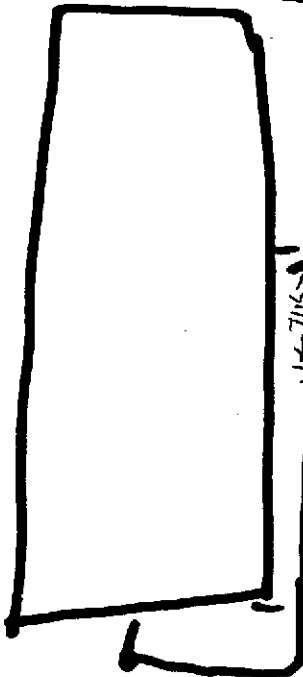
II, III



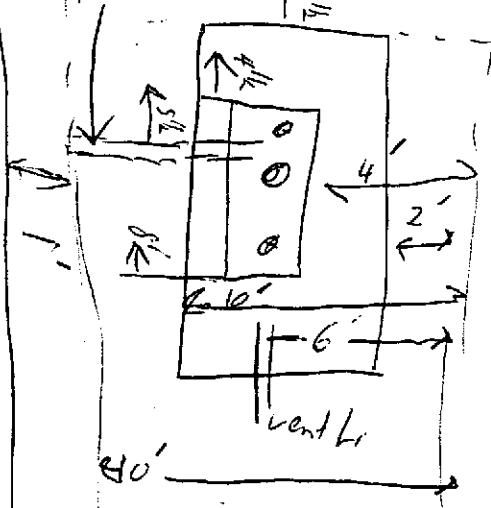
12

48

27'



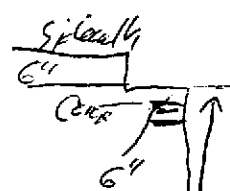
remote fire



LEL = 6%

O<sub>2</sub> = 21%

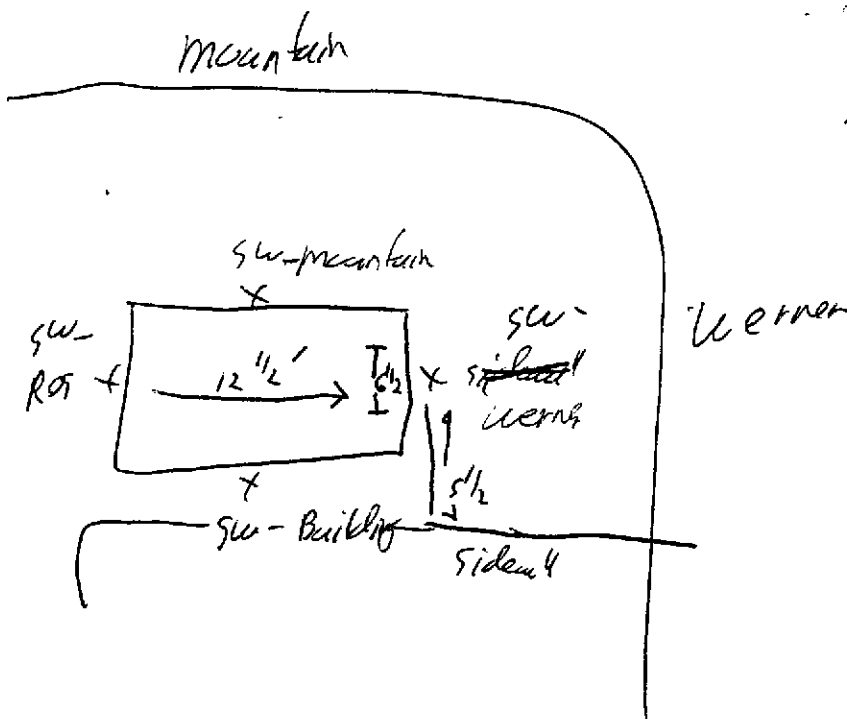
2 ppm



well on property

Floor-UV = 20 sandy  
7 1/2'

UO-1 7 1/2' 14:45



SW-Werner  
12 1/2' towards Werner  
6 1/2' deep  
5 1/2' from sidecut

SW-Mountain  
11' towards Mountain  
8' towards Werner  
6' deep

SW-ROST  
5 1/2' Door  
at Saw cut

SW-Building  
6 1/2' Door  
7' from SW cut ROST  
6" into sidecut

UO-Bottom  
8' deep  
center



PROJECT I.D. <u>DP 796</u>					NO. of CONTAINERS	ANALYSIS												
CLIENT CHAIN OF CUSTODY #						BTEX	TPH (TPH-G)	TPH-D	824/8240	825/8270	818/O&G	5520/503 O&G	METALS	CAMS TITLE	SAMPLE CONDITION			
LAB I.D. #	SAMPLE I.D.	DATE SAMPLED	TIME SAMPLED	MATRIX														
941193	WO-1	4/27/94	1445	SOIL	0	1	X	X	X	X	X	X	X					
941194	SW-WERNER		1540		0	1					X	X						
941195	SW-MOUNTAIN		1600		0	1					X	X						
941196	SW-REST		1715		0	1					X	X						
941197	SW-BUILDING		1745		0	1					X	X						
941198	WO-BOTTOM	✓	1830	↓	0	1					X							

COMMENTS:  
 IF WO-1  
 (+) for  
 any test,  
 analyze  
 all samples  
 for that  
 test.  
 If metals  
 low, call  
 George first

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature) <i>George Converse</i>	Date/Time <i>4/25/94 1830</i>	Received for Laboratory by: (Signature) <i>M Herten</i>

Special Instructions  
 Report To: *Western GEO ; George Converse*  
 Bill To: *WGEO*

**SITE SAFETY PLAN**

**FACILITY BACKGROUND**

**APRIL 26, 1994**

Owners Name: DESERT PETROLEUM, INC.  
P.O. BOX 1601  
OXNARD, CALIFORNIA 93032

CONTACT PERSON: JOHN RUTHERFORD  
DIRECTOR, ENVIRONMENTAL AFFAIRS  
(805) 644 5892

Site Address: 2844 MOUNTAIN BLVD., OAKLAND, California.

Directions to Site: South on 113, west on Interstate 80, south on 580, take Park Blvd. east to Mountain Blvd. south to site.

**KEY PERSONNEL AND RESPONSIBILITIES**

Tank pull contractor: Manley & Sons Trucking, Inc.  
8896 Elder Creek Road  
Sacramento, CA 95828  
(916) 381-6864 FAX (916) 381-1573

Foreman/Health and Safety Officer: Mark Manley

Responsible for permitting, tank closure report, overall health and safety, supervision of all activities involved during the tank removal and closure.

Consultant on Site: Western Geo-Engineers  
1386 E. Beamer Street  
Woodland, CA 95695  
(916) 668-5300

Project Manager: George Converse

Sampler, sampling Safety Officer: George Converse

**ENTRY OBJECTIVES**

Type of Facility: *Active* ~~Inactive~~ ~~BP~~ Service Station.

Site Activities: Excavate and remove Waste Oil Tank. Sample soil beneath tank as describe in TRI-REGIONAL BOARD STAFF RECOMMENDATIONS FOR PRELIMINARY EVALUATION AND INVESTIGATION OF UNDERGROUND TANK SITES, 10 AUGUST 1990, TABLE 1, PAGE 160.

Preserve samples and Chain of Custody delivered to Matrix

Environmental Laboratories (DHS 1676) for analysis as described on Table 2, page 16 for Waste and Used Oil.

LABORATORY DETECTION LIMITS

	SOIL	WATER
TPH G	1.0 MG/KG	50.0 UG/L
TPH D	1.0 MG/KG	50.0 UG/L
BTX&E	5.0 UG/KG	0.5 UG/L
O & G	50.0 MG/KG	5.0 MG/L

JOB HAZARD ANALYSES

Hazardous Substance: USE OIL - WASTE AND MIXED OIL  
TITLE 22, 66261.126 waste code - 221  
DOT - 1270

Expected Concentration: < 50 mg/KG  
Health Affects: See attached Hazard Analysis / TLV  
Physical Hazards

Noise	No
Traffic	No
Underground Hazards	No
Overhead Hazards	No
Excavations/Trenches	Yes
Mechanical Equipment	Yes

Level of Protective Equipment

A    B    C    D

Personal Protective Equipment Required

Hard Hat	Yes
Safety Boots	Yes
Orange Vests	No
Hearing Protection	No
Tyvek Coveralls	No
5 Min. Escape Resp.	No

Respirator No  
Gloves Yes Type Work gloves  
for hammering, disposable plastic for sample handling.

**MONITORING EQUIPMENT ON SITE**

Organic Vapor Analyzer Yes  
Oxygen Meter/LEL Yes  
Combustible Gas Meter Yes  
PID w/lamp of 10.2 eV Yes

**RISK ASSESSMENT**

The primary safety goal during the contamination analysis is to protect the sampling person while he collects representative samples and monitors air quality. Due to the unconfined nature of the project site, vapors released during operations will be sufficiently diluted by ambient air so that the surrounding community will not be exposed to petroleum vapors. In order to assure that vapor dispersal is adequate, a portable photo ionizing (PID) detector will be used to monitor vapor concentrations.

**EXPOSURE MONITORING PLAN**

Environmental exposure will be monitored periodically using a hand held PID. Personal exposure monitoring (in addition to the required annual check-up) will not be conducted.

**WORK ZONES AND SECURITY MEASURES**

Access to the site will be restricted by security fencing that surrounds the site and excavation.

**DECONTAMINATION MEASURES**

AT THE END OF EACH WORK DAY ALL WEGE PERSONNEL (AND SUBCONTRACTORS) WILL THOROUGHLY WASH THEIR HANDS, FACE AND FOOTWEAR BEFORE LEAVING THE SITE. IN THE EVENT THAT PERSONNEL PROTECTIVE EQUIPMENT IS NECESSARY, ALL DISPOSABLE ITEMS WILL BE DEPOSITED INTO A STEEL DRUM CONTAINER ON SITE AND ALL REUSABLE ITEMS WILL BE WASHED WITH TSP DETERGENT AND RINSED WITH CLEAN WATER. RESIDUAL LIQUID WILL BE PLACED IN A STEEL DRUM CONTAINER ON SITE. PERSONNEL WILL NOT BE ALLOWED TO LEAVE THE CONTAMINATED AREA WITHOUT COMPLETING THE DECONTAMINATION PROCESS. ALL WASTE MATERIAL WILL BE PLACED IN ENVIRONMENTAL DRUMS OR TANKS AND STORED AT SITE. ALL CONTAINERS WILL BE PROPERLY LABELED AS PER CURRENT CITY, COUNTY AND STATE REGULATIONS.

**GENERAL SAFE WORK PRACTICES**

ALL PERSONNEL PERFORMING SAMPLING WILL WEAR DISPOSABLE GLOVES TO PREVENT CONTAMINATION OF THEIR HANDS AND BODY. ANYONE ENTERING THE SITE WITH OUT AUTHORIZATION WILL BE ASKED TO LEAVE AND ESCORTED OUT OF THE CONTROL AREA.

**MEDICAL CONTINGENCY PLAN**

Hospital: Highland General Hospital, 1411 East 31 Street,  
Oakland, California Phone (510) 534-8055.

Any personnel at the site who are injured must notify the Site Safety Officer. Paramedics can be at the site location within 10 minutes for extreme emergencies. If any chemical exposures are exceeded, a medical exam will be required.

Site Hazard Information Provided By:

Signature: \_\_\_\_\_

Phone Number: (916) 668-5300

Date:

## Job Hazard Analysis

### Waste Oil - Mixed Oils

MAY BE AN IRRITANT, PRIMARY CONCERNS ARE WHAT IS ASSOCIATED WITH THE WASTE OIL: SOLVENTS, METALS, GASOLINE, DIESEL, ETC.

#### Gasoline and/or Diesel Range Hydrocarbons

THE MAIN COMPOUND OF INTEREST IS PETROLEUM RANGE HYDROCARBONS IN WATER AND SOIL. GASOLINE AND ITS CONSTITUENTS POSE HEALTH HAZARDS IN TWO MAJOR CLASSIFICATIONS: EXPLOSIVITY AND TOXICITY. THE EXTREME FLAMMABILITY OF GASOLINE IS COMMONLY KNOWN. THE LOWER EXPLOSION LIMIT (LEL) OF GASOLINE VAPOR IS 1.3 PERCENT IN AIR. IF THE CONCENTRATION OF GASOLINE VAPOR IN AIR EXCEEDS 1.3 PERCENT (13,000 PARTS PER MILLION) AND SUFFICIENT QUANTITIES OF OXYGEN ARE PRESENT, THEN THE INTRODUCTION OF SUFFICIENT HEAT, SPARK OR FLAME WILL RESULT IN AN EXPLOSION.

A LESSER KNOWN HEALTH HAZARD RESULTING FROM EXPOSURE TO GASOLINE IS TOXICITY. SEVERAL COMMON CONSTITUENTS OF GASOLINE HAVE BEEN LINKED TO VARIOUS HEALTH PROBLEMS. THE CONSTITUENTS OF GASOLINE THAT HAVE BEEN SHOWN TO CAUSE SERIOUS HEALTH PROBLEMS RESULTING FROM RELATIVELY MINOR EXPOSURES INCLUDE BENZENE, TOLUENE, META, PARA, AND ORTHO XYLENES, ETHYL BENZENE, AND TETRAETHYL LEAD. TYPICAL PERCENTAGES (BY WEIGHT) OF THESE CONSTITUENTS IN GASOLINE ARE: BENZENE - 0.12-3.50%, TOLUENE - 2.73-21.80%, META XYLENE - 1.77-3.87%, PARA XYLENE - 0.77-1.58%, ORTHO XYLENE - 0.68-2.686%, AND ETHYL BENZENE - 0.36-2.86%. TYPICAL PERCENTAGE OF TETRAETHYL LEAD IS NOT AVAILABLE.

UNITS USED TO DESCRIBE OCCUPATIONAL EXPOSURES TO HAZARDOUS SUBSTANCES INCLUDE: EXPOSURE LIMIT, ALSO KNOWN AS THE "THRESHOLD LIMIT VALUE" (TLV), CEILING LIMIT, AND THE CONCENTRATION LEVEL THAT IS "IMMEDIATELY DANGEROUS TO LIFE AND HEALTH" (IDLH). THE EXPOSURE LIMIT DEFINES THE MAXIMUM CONCENTRATION OF A SUBSTANCE TO WHICH ONE CAN BE EXPOSED DURING AN 8 HOUR PERIOD WITHOUT SUFFERING SIGNIFICANT HEALTH EFFECTS. THE CEILING LIMIT IS THE CONCENTRATION LEVEL THAT CANNOT BE EXCEEDED AT ANY TIME; i.e., A SUITABLE RESPIRATOR MUST BE WORN IF CONCENTRATION VALUES REACH THE CEILING LIMIT. THE IDHL LEVEL REPRESENTS A MAXIMUM CONCENTRATION FROM WHICH ONE COULD ESCAPE WITHIN 30 MINUTES OF RESPIRATOR FAILURE WITHOUT EXPERIENCING ESCAPE-IMPAIRMENT OR IRREVERSIBLE HEALTH DAMAGE. IDLH VALUES ARE NOT LISTED FOR SUBSTANCES THAT ARE POTENTIAL HUMAN CARCINOGENS.

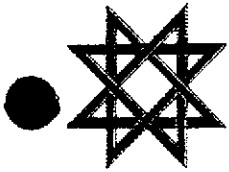
#### EXPOSURE TABLE

SUBSTANCE	EXPOSURE LIMIT	CEILING LIMIT	IDLH
BENZENE	0.1ppm (8hrs)	1ppm (15min)	CARCINOGEN

TOLUENE	100ppm (10hrs)	200ppm (10min)	2000ppm
XYLENE	100ppm (8hrs)	200ppm (10min)	1000ppm
ETHYL BENZENE	100ppm (8hrs)	N.A.	2000ppm
TETRAETHYL LEAD	0.0067PPM	N.A.	3.6ppm

PROLONGED EXPOSURES TO CONCENTRATIONS ABOVE THE LIMITS NOTED MAY AFFECT THE CENTRAL NERVOUS SYSTEM, CARDIOVASCULAR SYSTEM, RESPIRATORY SYSTEM, EYES, SKIN, KIDNEYS, BONES AND BONE MARROW. RESEARCH HAS SHOWN THAT BENZENE IS A KNOWN CARCINOGEN.

IMMEDIATE SYMPTOMS OF OVER-EXPOSURE INCLUDE: EYE, NOSE AND THROAT IRRITATION, HEADACHE, NAUSEA, DIZZINESS, DROWSINESS, WEAKNESS, CONFUSION, EUPHORIA, EXCITEMENT, STAGGERED GAIT, ABDOMINAL PAIN, RESPIRATORY DIFFICULTIES, MUSCLE FATIGUE, AND COMA.



**MATRIX**

ENVIRONMENTAL LABORATORIES INC.

---

Western GEO  
1386 Beamer Street  
Woodland, Ca 95776

5/20/94

ATTN: George Converse

Re: Project: D.P. 796  
Lab Reference Number: 4422  
Date Samples Received: 4/28/94  
No. Samples Received: 6

The samples were received by Matrix Environmental Laboratories intact and in good condition. Samples conformed to required sampling protocols for the requested analyses and were accompanied by required documentation.

Please call if we can be of further assistance.

Sincerely,

Charles R. Todd, *for*  
Laboratory Director



PROJECT I.D. <u>DP 796</u>					NO. of CONTAINERS	ANALYSIS													SAMPLE CONDITION ICED	COMMENTS:
PAGE <u>1</u> OF <u>1</u>		CLIENT CHAIN OF CUSTODY #				BTEX	TPH (TPH-G)	TPH-D	624/6240	MCD	625/6270	MOD	418/O&G	5520/503 O&G	METALS	CANSTTL				
LAB I.D. #	SAMPLE I.D.	DATE SAMPLED	TIME SAMPLED	MATRIX																
941193	W0-1	4/27/94	1445	SOIL	0	1	X	X	X	X	X	X	X	X	X	X	IF W0-1 (+) for any test, analyze all samples for that test. If metals low, call George first  STD TAT but start today.			
941194	SW-VIERNER		1540		0	1	X	X	X	X	X	X	X							
941195	SW-MOUNTAIN		1600		0	1	X	X	X	X	X	X	X							
941196	SW-REST		1715		0	1	X	X	X	X	X	X	X							
941197	SW-BUILDING		1745		0	1	X	X	X	X	X	X	X							
941198	W0-BOTTOM	↓	1830	↓	0	1	X	X	X	X	X	X	X							

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature) <i>George Converse</i>	Date/Time 4/29/94 9:30	Received for Laboratory by: (Signature) <i>M Herten</i>

Special Instructions  
 Report To: Western GEO ; George Converse  
 Bill To: WGEO

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: BTEX, EPA 8020

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: N/A  
Lab ID: Method Blank

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 5/2/94  
Date of Analysis: 5/2/94  
Matrix: SOIL

COMPOUND	mg/kg (ppm)	REPORTING LIMIT (ppm)
BENZENE	ND	0.005
TOLUENE	ND	0.005
ETHYLBENZENE	ND	0.005
XYLENES	ND	0.015
SURROGATE RECOVERY	87%	ACCEPTABLE RANGE 70% TO 130%

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: BTEX, EPA 8020

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: WO - 1  
Lab ID: 941193

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 4/28/94  
Date of Analysis: 5/2/94  
Matrix: SOIL

COMPOUND	mg/kg (ppm)	REPORTING LIMIT (ppm)
BENZENE	ND ✓	0.050
TOLUENE	0.073 ✓	0.050
ETHYLBENZENE	0.70 ✓	0.050
XYLENES	2.7 ✓	0.15
SURROGATE RECOVERY	87%	ACCEPTABLE RANGE 70% TO 130%

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

This sample was diluted to a 1:10 ratio and the reporting limits adjusted accordingly.

# MATRIX ENVIRONMENTAL LABORATORIES

3017 KILGORE ROAD #100 RANCHO CORDOVA, CA 95742

PHONE (916) 635-3962 FAX (916) 635-9331

## ANALYSIS: TPH-GASOLINE by EPA 5030 PURGE-AND-TRAP

*CLIENT:* Western GEO  
*CONTACT:* G. Converse  
*COC No:* 4422  
*Project No:* DP 796  
*Matrix:* SOIL

*Date Sampled:* 4/27/94  
*Date Received:* 4/28/94  
*Date Extracted:* 4/28/94  
*Date of Analysis:* 5/2/94

Sample ID	Lab ID		GASOLINE mg/kg (ppm)	REPORTING LIMIT mg/kg (ppm)	SURROGATE RECOVERY
WO - 1	941193	**	160	10.0	88%
N/A	Method Blank		ND	1.0	98%

\*\* This sample was analyzed at 1: 10 dilution and the reporting limit adjusted accordingly.

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

3017 KILGORE ROAD #100 RANCHO CORDOVA, CA 95742

PHONE (916) 635-3962 FAX (916) 635-9331

## ANALYSIS: TPH-GASOLINE SPIKE SUMMARY

**CLIENT:** Western GEO  
**CONTACT:** G. Converse  
**COC No:** 4422  
**Project No:** DP 796  
**Sample ID:** N/A  
**Lab ID:** LCS/LCSD

**Date Sampled:** N/A  
**Date Received:** N/A  
**Date Extracted:** 5/2/94  
**Date of Analysis:** 5/2/94  
**Matrix:** SOIL

COMPOUND	CONC SPIKED mg/kg (ppm)	CONC MEASURED		PERCENT RECOVERY		
		LCS	LCSD	LCS	LCSD	RPD
GASOLINE	4.55	4.52	5.02	99%	110%	10%

LCS= LABORATORY CONTROL SPIKE  
LCSD= LABORATORY CONTROL SPIKE DUPLICATE  
RPD= RELATIVE PERCENT DIFFERENCE  
CONC= CONCENTRATION

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: BTEX, EPA 8020

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: N/A  
Lab ID: Method Blank

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 5/6/94  
Date of Analysis: 5/9/94  
Matrix: SOIL

COMPOUND	mg/kg (ppm)	REPORTING LIMIT (ppm)
BENZENE	ND	0.005
TOLUENE	ND	0.005
ETHYLBENZENE	ND	0.005
XYLENES	ND	0.015
SURROGATE RECOVERY	84%	ACCEPTABLE RANGE 70% TO 130%

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: BTEX, EPA 8020

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW - Werner  
Lab ID: 941194

Date Sampled: 4/27/94  
Date Received: 4/27/94  
Date Extracted: 5/6/94  
Date of Analysis: 5/9/94  
Matrix: SOIL

COMPOUND	mg/kg (ppm)	REPORTING LIMIT (ppm)
BENZENE	ND	0.005
TOLUENE	ND	0.005
ETHYLBENZENE	ND	0.005
XYLENES	ND	0.015
SURROGATE RECOVERY	80%	ACCEPTABLE RANGE 70% TO 130%

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: BTEX, EPA 8020

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW - Mountain  
Lab ID: 941195

Date Sampled: 4/27/94  
Date Received: 4/27/94  
Date Extracted: 5/6/94  
Date of Analysis: 5/9/94  
Matrix: SOIL

COMPOUND	mg/kg (ppm)	REPORTING LIMIT (ppm)
BENZENE	ND	0.005
TOLUENE	ND	0.005
ETHYLBENZENE	ND	0.005
XYLENES	ND	0.015
SURROGATE RECOVERY	80%	ACCEPTABLE RANGE 70% TO 130%

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.



# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: BTEX, EPA 8020

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW - Rest  
Lab ID: 941196

Date Sampled: 4/27/94  
Date Received: 4/27/94  
Date Extracted: 5/6/94  
Date of Analysis: 5/9/94  
Matrix: SOIL

COMPOUND	mg/kg (ppm)	REPORTING LIMIT (ppm)
BENZENE	ND	0.005
TOLUENE	ND	0.005
ETHYLBENZENE	ND	0.005
XYLENES	ND	0.015
SURROGATE RECOVERY	76%	ACCEPTABLE RANGE 70% TO 130%

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: BTEX, EPA 8020

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW - Building  
Lab ID: 941197

Date Sampled: 4/27/94  
Date Received: 4/27/94  
Date Extracted: 5/6/94  
Date of Analysis: 5/9/94  
Matrix: SOIL

COMPOUND	mg/kg (ppm)	REPORTING LIMIT (ppm)
BENZENE	0.085 /	0.005
TOLUENE	0.048 /	0.005
ETHYLBENZENE	0.042 /	0.005
XYLENES	0.11 /	0.015
SURROGATE RECOVERY	84%	ACCEPTABLE RANGE 70% TO 130%

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: BTEX, EPA 8020

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: WO - Bottom  
Lab ID: 941198

Date Sampled: 4/27/94  
Date Received: 4/27/94  
Date Extracted: 5/6/94  
Date of Analysis: 5/9/94  
Matrix: SOIL

COMPOUND	mg/kg (ppm)	REPORTING LIMIT (ppm)
BENZENE	0.18 /	0.005
TOLUENE	0.25 /	0.005
ETHYLBENZENE	0.12 /	0.005
XYLENES	0.18	0.015
SURROGATE RECOVERY	89%	ACCEPTABLE RANGE 70% TO 130%

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: BTEX SPIKE SUMMARY

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: N/A  
Lab ID: LCS/LCSD

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 5/6/94  
Date of Analysis: 5/9/94  
Matrix: SOIL

COMPOUND	CONC SPIKED mg/kg (ppm)	CONC MEASURED		PERCENT RECOVERY		RPD
		LCS	LCSD	LCS	LCSD	
BENZENE	0.588	0.634	0.650	108%	111%	3%
TOLUENE	0.896	0.959	0.975	107%	109%	2%
ETHYL BENZENE	0.690	0.709	0.728	103%	105%	3%
TOTAL XYLENES	1.76	1.81	1.85	103%	105%	2%

LCS= LABORATORY CONTROL SPIKE  
LCSD= LABORATORY CONTROL SPIKE DUPLICATE  
RPD= RELATIVE PERCENT DIFFERENCE  
CONC= CONCENTRATION

# MATRIX ENVIRONMENTAL LABORATORIES

3017 KILGORE ROAD #100 RANCHO CORDOVA, CA 95742

PHONE (916) 635-3962 FAX (916) 635-9331

## ANALYSIS: TPH-GASOLINE by EPA 5030 PURGE-AND-TRAP

**CLIENT:** Western GEO  
**CONTACT:** G. Converse  
**COC No:** 4422  
**Project No:** DP 796  
**Matrix:** SOIL

**Date Sampled:** 4/27/94  
**Date Received:** 4/27/94  
**Date Extracted:** 5/6/94  
**Date of Analysis:** 5/9/94

Sample ID	Lab ID	GASOLINE mg/kg (ppm)	REPORTING LIMIT mg/kg (ppm)	SURROGATE RECOVERY
SW - Werner	941194	ND /	1.0	86%
SW - Mountain	941195	ND /	1.0	82%
SW - Rest	941196	ND /	1.0	78%
SW - Building	941197	6.2 /	1.0	88%
WO - Bottom	941198	38 /	1.0	130%
N/A	Method Blank	ND /	1.0	96%

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

3017 KILGORE ROAD #100 RANCHO CORDOVA, CA 95742

PHONE (916) 635-3962 FAX (916) 635-9331

## ANALYSIS: TPH-GASOLINE SPIKE SUMMARY

*CLIENT:* Western GEO  
*CONTACT:* G. Converse  
*COC No:* 4422  
*Project No:* DP 796  
*Sample ID:* N/A  
*Lab ID:* LCS/LCSD

*Date Sampled:* N/A  
*Date Received:* N/A  
*Date Extracted:* 5/6/94  
*Date of Analysis:* 5/9/94  
*Matrix:* SOIL

COMPOUND	CONC SPIKED mg/kg (ppm)	CONC MEASURED		PERCENT RECOVERY		
		LCS	LCSD	LCS	LCSD	RPD
GASOLINE	4.55	4.69	4.21	103%	93%	11%

LCS= LABORATORY CONTROL SPIKE  
LCSD= LABORATORY CONTROL SPIKE DUPLICATE  
RPD= RELATIVE PERCENT DIFFERENCE  
CONC= CONCENTRATION

# MATRIX ENVIRONMENTAL LABORATORIES

3017 KILGORE ROAD #100 RANCHO CORDOVA, CA 95742

PHONE (916) 635-3962 FAX (916) 635-9331

## ANALYSIS: TPH-D, EPA 8015 mod.

Client: Western GEO  
Contact: G. Converse  
COC No: 4422  
Project No: D.P. 796  
Matrix: SOIL

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/12/94  
Date of Analysis: 5/12/94

Lab ID	Sample ID	Diesel mg/Kg (ppm)	REPORTING LIMIT mg/Kg (ppm)
METHOD BLANK	N/A	ND	1.
941193	WO-1	ND /	1.
941194	SW-WERNER	ND /	1.
941195	SW-MOUNTAIN	ND /	1.
941196	SW-REST	ND /	1.
941197	SW-BUILDING	ND /	1.
941198	WO-BOTTOM	ND /	1.

NOTE: (ND) = NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

3017 KILGORE ROAD #100 RANCHO CORDOVA, CA 95742

PHONE (916) 635-3962 FAX (916) 635-9331

## ANALYSIS: TPH MATRIX SPIKE SUMMARY

Client: Western GEO  
Contact: G. Converse  
COC No: 4422  
Project No: D.P. 796  
Matrix: SOIL

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 5/12/94  
Date of Analysis: 5/12/94

COMPOUND	CONC SPIKED (mg/L)	CONC MEASURED		PERCENT RECOVERY		RPD
		LCS	LCSD	LCS	LCSD	
DIESEL	100	81	78	81%	78%	4%

LCS= LABORATORY CONTROL SPIKE  
LCSD= LABORATORY CONTROL SPIKE DUPLICATE  
RPD= RELATIVE PERCENT DIFFERENCE  
CONC= CONCENTRATION



# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP-796  
Sample ID: N/A  
Lab ID: Method Blank

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 4/29/94  
Date of Analysis: 4/29/94  
Matrix: SOIL

File: D2994MB

ANALYTES	CONCENTRATION mg/Kg(ppm)	REPORTING LIMIT(ppm)
1,1,1-trichloroethane	ND	1
1,1,2,2-tetrachloroethane	ND	1
1,1,2-trichloroethane	ND	1
1,1-dichloroethane	ND	1
1,1-dichloroethene	ND	1
1,2-dichlorobenzene	ND	1
1,2-dichloroethane	ND	1
1,2-dichloropropane	ND	1
1,3-dichlorobenzene	ND	1
1,4-dichlorobenzene	ND	1
2-chloroethylvinyl ether	ND	1
bromodichloromethane	ND	1
bromomethane	ND	2
carbon tetrachloride	ND	1
chlorobenzene	ND	1
chloroethane	ND	2
chloroform	ND	1
chloromethane	ND	2
cis-1,3-dichloropropene	ND	1
dibromochloromethane	ND	1
tetrachloroethene	ND	2
trans-1,2-dichloroethene	ND	1
trans-1,3-dichloropropene	ND	1
trichloroethene	ND	1
trichlorofluoromethane	ND	2
vinyl chloride	ND	2

ND = Not Detected at, or Above the Report Limit

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP-796  
Sample ID: N/A  
Lab ID: Method Blank

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 4/29/94  
Date of Analysis: 4/29/94  
Matrix: SOIL

File: D2994MB

### SURROGATE RECOVERY

Surrogate	Amount	Spike	%Recov
1,2-dichloroethane-d-4 (Surr)	42.7	50.0	85.3
toluene-d8 (Surr)	42.0	50.0	83.9
4-bromofluorobenzene (Surr)	55.8	50.0	111.6

Surrogate Recovery Range = 50 - 150

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP-796  
Sample ID: WO-1  
Lab ID: 941193

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 4/29/94  
Date of Analysis: 4/29/94  
Matrix: SOIL

File: 9411193.D

ANALYTES	CONCENTRATION mg/Kg(ppm)	REPORTING LIMIT(ppm)
1,1,1-trichloroethane	ND	1
1,1,2,2-tetrachloroethane	ND	1
1,1,2-trichloroethane	ND	1
1,1-dichloroethane	ND	1
1,1-dichloroethene	ND	1
1,2-dichlorobenzene	ND	1
1,2-dichloroethane	ND	1
1,2-dichloropropane	ND	1
1,3-dichlorobenzene	ND	1
1,4-dichlorobenzene	ND	1
2-chloroethylvinyl ether	ND	1
bromodichloromethane	ND	1
bromomethane	ND	2
carbon tetrachloride	ND	1
chlorobenzene	ND	1
chloroethane	ND	2
chloroform	ND	1
chloromethane	ND	2
cis-1,3-dichloropropene	ND	1
dibromochloromethane	ND	1
tetrachloroethene	ND	2
trans-1,2-dichloroethene	ND	1
trans-1,3-dichloropropene	ND	1
trichloroethene	ND	1
trichlorofluoromethane	ND	2
vinyl chloride	ND	2

ND = Not Detected at, or Above the Report Limit

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP-796  
Sample ID: WO-1  
Lab ID: 941193

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 4/29/94  
Date of Analysis: 4/29/94  
Matrix: SOIL

File: 9411193.D

### SURROGATE RECOVERY

Surrogate	Amount	Spike	%Recov
1,2-dichloroethane-d-4	36.0	50.0	72.0
toluene-d8	50.5	50.0	101.0
4-bromofluorobenzene	41.6	50.0	83.2

Surrogate Recovery Range = 50 - 150

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method 8240

COC No: 4422  
Lab ID: LCS/D

Date of Analysis: 4/29/94  
Matrix: SOIL

File: D2994LS.D

### LABORATORY CONTROL SPIKE

COMPOUND	LEVEL ug/Kg (ppb)	LCS AMNT ug/Kg (ppb)	% RCVRY	LCSD AMNT ug/Kg (ppb)	% RCVRY	RPD
1,1-dichloroethene	50.0	49.05	98.10	51.28	102.56	4.45
benzene	50.0	51.83	103.66	53.39	106.78	2.97
chlorobenzene	50.0	52.65	105.30	53.88	107.76	2.31
toluene	50.0	51.42	102.84	51.84	103.68	0.81
trichloroethene	50.0	38.72	77.44	38.85	77.70	0.34

% RECOVERY RANGE = 50-150

RPD RANGE = 0- 25

LCS = LABORATORY CONTROL SPIKE

LCSD = LABORATORY CONTROL SPIKE DUPLICATE

RPD = RELATIVE PERCENT DEVIATION

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: N/A  
Lab ID: Method Blank

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 5/10/94  
Date of Analysis: 5/10/94  
Matrix: SOIL

File: E1094MB.D

ANALYTES	CONCENTRATION mg/Kg(ppm)	REPORTING LIMIT(ppm)
1,1,1-trichloroethane	ND	1
1,1,2,2-tetrachloroethane	ND	1
1,1,2-trichloroethane	ND	1
1,1-dichloroethane	ND	1
1,1-dichloroethene	ND	1
1,2-dichlorobenzene	ND	1
1,2-dichloroethane	ND	1
1,2-dichloropropane	ND	1
1,3-dichlorobenzene	ND	1
1,4-dichlorobenzene	ND	1
2-chloroethylvinyl ether	ND	1
bromodichloromethane	ND	1
bromomethane	ND	2
carbon tetrachloride	ND	1
chlorobenzene	ND	1
chloroethane	ND	2
chloroform	ND	1
chloromethane	ND	2
cis-1,3-dichloropropene	ND	1
dibromochloromethane	ND	1
tetrachloroethene	ND	2
trans-1,2-dichloroethene	ND	1
trans-1,3-dichloropropene	ND	1
trichloroethene	ND	1
trichlorofluoromethane	ND	2
vinyl chloride	ND	2

ND = Not Detected at, or Above the Report Limit

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: N/A  
Lab ID: Method Blank

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 5/10/94  
Date of Analysis: 5/10/94  
Matrix: SOIL

File: E1094MB.D

### SURROGATE RECOVERY

Surrogate	Amount	Spike	%Recov
1,2-dichloroethane-d-4 (Surr)	53.6	50.0	107.2
toluene-d8 (Surr)	56.3	50.0	112.6
4-bromofluorobenzene (Surr)	49.2	50.0	98.3

Surrogate Recovery Range = 50 - 150

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Werner  
Lab ID: 941194

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/10/94  
Date of Analysis: 5/10/94  
Matrix: SOIL

File: 941194.D

ANALYTES	CONCENTRATION mg/Kg(ppm)	REPORTING LIMIT(ppm)
1,1,1-trichloroethane	ND	1
1,1,2,2-tetrachloroethane	ND	1
1,1,2-trichloroethane	ND	1
1,1-dichloroethane	ND	1
1,1-dichloroethene	ND	1
1,2-dichlorobenzene	ND	1
1,2-dichloroethane	ND	1
1,2-dichloropropane	ND	1
1,3-dichlorobenzene	ND	1
1,4-dichlorobenzene	ND	1
2-chloroethylvinyl ether	ND	1
bromodichloromethane	ND	1
bromomethane	ND	2
carbon tetrachloride	ND	1
chlorobenzene	ND	1
chloroethane	ND	2
chloroform	ND	1
chloromethane	ND	2
cis-1,3-dichloropropene	ND	1
dibromochloromethane	ND	1
tetrachloroethene	ND	2
trans-1,2-dichloroethene	ND	1
trans-1,3-dichloropropene	ND	1
trichloroethene	ND	1
trichlorofluoromethane	ND	2
vinyl chloride	ND	2

ND = Not Detected at, or Above the Report Limit



# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Werner  
Lab ID: 941194

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/10/94  
Date of Analysis: 5/10/94  
Matrix: SOIL

File: 941194.D

### SURROGATE RECOVERY

Surrogate	Amount	Spike	%Recov
1,2-dichloroethane-d-4 (Surr)	57.4	50.0	114.9
toluene-d8 (Surr)	54.5	50.0	109.0
4-bromofluorobenzene (Surr)	56.3	50.0	112.7

Surrogate Recovery Range = 50 - 150

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Mountain  
Lab ID: 941195

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/10/94  
Date of Analysis: 5/10/94  
Matrix: SOIL

File: 941195.D

ANALYTES	CONCENTRATION mg/Kg(ppm)	REPORTING LIMIT(ppm)
1,1,1-trichloroethane	ND	1
1,1,2,2-tetrachloroethane	ND	1
1,1,2-trichloroethane	ND	1
1,1-dichloroethane	ND	1
1,1-dichloroethene	ND	1
1,2-dichlorobenzene	ND	1
1,2-dichloroethane	ND	1
1,2-dichloropropane	ND	1
1,3-dichlorobenzene	ND	1
1,4-dichlorobenzene	ND	1
2-chloroethylvinyl ether	ND	1
bromodichloromethane	ND	1
bromomethane	ND	2
carbon tetrachloride	ND	1
chlorobenzene	ND	1
chloroethane	ND	2
chloroform	ND	1
chloromethane	ND	2
cis-1,3-dichloropropene	ND	1
dibromochloromethane	ND	1
tetrachloroethene	ND	2
trans-1,2-dichloroethene	ND	1
trans-1,3-dichloropropene	ND	1
trichloroethene	ND	1
trichlorofluoromethane	ND	2
vinyl chloride	ND	2

ND = Not Detected at, or Above the Report Limit

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Mountain  
Lab ID: 941195

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/10/94  
Date of Analysis: 5/10/94  
Matrix: SOIL

File: 941195.D

### SURROGATE RECOVERY

Surrogate	Amount	Spike	%Recov
1,2-dichloroethane-d-4 (Surr)	53.8	50.0	107.6
toluene-d8 (Surr)	54.7	50.0	109.3
4-bromofluorobenzene (Surr)	56.3	50.0	112.5

Surrogate Recovery Range = 50 - 150

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Rest  
Lab ID: 941196

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/10/94  
Date of Analysis: 5/10/94  
Matrix: SOIL

File: 941196.D

ANALYTES	CONCENTRATION mg/Kg(ppm)	REPORTING LIMIT(ppm)
1,1,1-trichloroethane	ND	1
1,1,2,2-tetrachloroethane	ND	1
1,1,2-trichloroethane	ND	1
1,1-dichloroethane	ND	1
1,1-dichloroethene	ND	1
1,2-dichlorobenzene	ND	1
1,2-dichloroethane	ND	1
1,2-dichloropropane	ND	1
1,3-dichlorobenzene	ND	1
1,4-dichlorobenzene	ND	1
2-chloroethylvinyl ether	ND	1
bromodichloromethane	ND	1
bromomethane	ND	2
carbon tetrachloride	ND	1
chlorobenzene	ND	1
chloroethane	ND	2
chloroform	ND	1
chloromethane	ND	2
cis-1,3-dichloropropene	ND	1
dibromochloromethane	ND	1
tetrachloroethene	ND	2
trans-1,2-dichloroethene	ND	1
trans-1,3-dichloropropene	ND	1
trichloroethene	ND	1
trichlorofluoromethane	ND	2
vinyl chloride	ND	2

ND = Not Detected at, or Above the Report Limit

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Rest  
Lab ID: 941196

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/10/94  
Date of Analysis: 5/10/94  
Matrix: SOIL

File: 941196.D

### SURROGATE RECOVERY

Surrogate	Amount	Spike	%Recov
1,2-dichloroethane-d-4 (Surr)	53.7	50.0	107.3
toluene-d8 (Surr)	54.9	50.0	109.9
4-bromofluorobenzene (Surr)	56.7	50.0	113.3

Surrogate Recovery Range = 50 - 150

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Bulding  
Lab ID: 941197

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/10/94  
Date of Analysis: 05/10/94  
Matrix: SOIL

File: 941194.D

ANALYTES	CONCENTRATION mg/Kg(ppm)	REPORTING LIMIT(ppm)
1,1,1-trichloroethane	ND	1
1,1,2,2-tetrachloroethane	ND	1
1,1,2-trichloroethane	ND	1
1,1-dichloroethane	ND	1
1,1-dichloroethene	ND	1
1,2-dichlorobenzene	ND	1
1,2-dichloroethane	ND	1
1,2-dichloropropane	ND	1
1,3-dichlorobenzene	ND	1
1,4-dichlorobenzene	ND	1
2-chloroethylvinyl ether	ND	1
bromodichloromethane	ND	1
bromomethane	ND	2
carbon tetrachloride	ND	1
chlorobenzene	ND	1
chloroethane	ND	2
chloroform	ND	1
chloromethane	ND	2
cis-1,3-dichloropropene	ND	1
dibromochloromethane	ND	1
tetrachloroethene	ND	2
trans-1,2-dichloroethene	ND	1
trans-1,3-dichloropropene	ND	1
trichloroethene	ND	1
trichlorofluoromethane	ND	2
vinyl chloride	ND	2

ND = Not Detected at, or Above the Report Limit

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Bulding  
Lab ID: 941197

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/10/94  
Date of Analysis: 05/10/94  
Matrix: SOIL

File: 941194.D

### SURROGATE RECOVERY

Surrogate	Amount	Spike	%Recov
1,2-dichloroethane-d-4	55.4	50.0	110.8
toluene-d8	54.0	50.0	108.0
4-bromofluorobenzene	55.9	50.0	111.8

Surrogate Recovery Range = 50 - 150

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: WO-Bottom  
Lab ID: 941198

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/10/94  
Date of Analysis: 05/10/94  
Matrix: SOIL

File: 941194.D

ANALYTES	CONCENTRATION mg/Kg(ppm)	REPORTING LIMIT(ppm)
1,1,1-trichloroethane	ND	1
1,1,2,2-tetrachloroethane	ND	1
1,1,2-trichloroethane	ND	1
1,1-dichloroethane	ND	1
1,1-dichloroethene	ND	1
1,2-dichlorobenzene	ND	1
1,2-dichloroethane	ND	1
1,2-dichloropropane	ND	1
1,3-dichlorobenzene	ND	1
1,4-dichlorobenzene	ND	1
2-chloroethylvinyl ether	ND	1
bromodichloromethane	ND	1
bromomethane	ND	2
carbon tetrachloride	ND	1
chlorobenzene	ND	1
chloroethane	ND	2
chloroform	ND	1
chloromethane	ND	2
cis-1,3-dichloropropene	ND	1
dibromochloromethane	ND	1
tetrachloroethene	ND	2
trans-1,2-dichloroethene	ND	1
trans-1,3-dichloropropene	ND	1
trichloroethene	ND	1
trichlorofluoromethane	ND	2
vinyl chloride	ND	2

ND = Not Detected at, or Above the Report Limit



# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method M8240

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: WO-Bottom  
Lab ID: 941198

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/10/94  
Date of Analysis: 05/10/94  
Matrix: SOIL

File: 941194.D

### SURROGATE RECOVERY

Surrogate	Amount	Spike	%Recov
1,2-dichloroethane-d-4	53.2	50.0	106.4
toluene-d8	54.2	50.0	108.4
4-bromofluorobenzene	55.9	50.0	111.8

Surrogate Recovery Range = 50 - 150

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: Volatile Organic Analytes EPA Method 8240

COC No: 4422  
Lab ID: LCS/D

Date of Analysis: 05/12/94  
Matrix: SOIL

File: E1094LS.D

### LABORATORY CONTROL SPIKE

COMPOUND	LEVEL ug/Kg (ppb)	LCS AMNT ug/Kg (ppb)	% RCVRY	LCSD AMNT ug/Kg (ppb)	% RCVRY	RPD
1,1-dichloroethene	50.0	49.10	98.20	51.50	103.00	4.77
benzene	50.0	48.40	96.80	50.90	101.80	5.04
chlorobenzene	50.0	47.20	94.40	49.60	99.20	4.96
toluene	50.0	48.70	97.40	51.90	103.80	6.36
trichloroethene	50.0	43.50	87.00	46.60	93.20	6.88

% RECOVERY RANGE = 50-150

RPD RANGE = 0- 25

LCS = LABORATORY CONTROL SPIKE

LCSD = LABORATORY CONTROL SPIKE DUPLICATE

RPD = RELATIVE PERCENT DEVIATION

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western Geo**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP-796**  
Sample ID: **N/A**  
Lab ID: **Method Blank**

Date Sampled: **N/A**  
Date Received: **N/A**  
Date Extracted: **4/28/94**  
Date of Analysis: **4/29/94**  
Matrix: **SOIL**

File: **D2994MB.D**

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
POLYNUCLEAR AROMATICS		
Acenaphthene	ND	0.3
Acenaphthylene	ND	0.3
Anthracene	ND	0.3
Benzo[a]pyrene	ND	0.3
Benzo[b]fluoranthene	ND	0.3
Benzo[g,h,i]perylene	ND	0.3
Benzoic acid	ND	0.3
Benzo[k]fluoranthene	ND	0.3
Benzyl alcohol	ND	0.6
Chrysene	ND	0.3
Dibenzofuran	ND	0.3
Fluoranthene	ND	0.3
Fluorene	ND	0.3
Indeno(1,2,3-c,d)pyrene	ND	0.3
Naphthalene	ND	0.3
Phenanthrene	ND	0.3
Pyrene	ND	0.3
POLYCHLOROBIPHENYLS(PCB)		
Aroclor 1016	ND	1.5
Aroclor 1221	ND	1.5
Aroclor 1232	ND	1.5
Aroclor 1242	ND	1.5
Aroclor 1248	ND	1.5
Aroclor 1254	ND	1.5
Aroclor 1260	ND	1.5
CREOSOTE	ND	0.3

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western Geo**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP-796**  
Sample ID: **N/A**  
Lab ID: **Method Blank**

Date Sampled: **N/A**  
Date Received: **N/A**  
Date Extracted: **4/28/94**  
Date of Analysis: **4/29/94**  
Matrix: **SOIL**

File: **D2994MB.D**

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
ANILINES		
4-Chloroaniline	ND	0.6
2-Nitroaniline	ND	1.5
3-Nitroaniline	ND	1.5
4-Nitroaniline	ND	1.5
PHENOLS		
Pentachlorophenol	ND	0.3
Phenol	ND	0.3
2-Chlorophenol	ND	0.3
2-Methylphenol	ND	0.3
4-Methylphenol	ND	0.3
2-Nitrophenol	ND	0.3
2,4-Dichlorophenol	ND	0.3
4-Chloro-3-methylphenol	ND	0.3
2,4,5-Trichlorophenol	ND	0.3
2,4,6-Trichlorophenol	ND	0.3
4-Nitrophenol	ND	0.3
2-Methyl-4,6-dinitrophenol	ND	0.3

ND = Not detected at or above the Report Limit.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western Geo**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP-796**  
Sample ID: **N/A**  
Lab ID: **Method Blank**

Date Sampled: **N/A**  
Date Received: **N/A**  
Date Extracted: **4/28/94**  
Date of Analysis: **4/29/94**  
Matrix: **SOIL**

File: **D2994MB.D**

### SURROGATE RECOVERY

Surrogate	Amount	Spike	Recovery	Range
2-Fluorophenol (S)	53.69	200	26.84	20-100
Phenol-D6 (S)	42.00	200	21.00	10- 94
Nitrobenzene-D5 (S)	56.41	100	56.41	35-114
2-Fluorobiphenyl (S)	46.79	100	46.79	43-116
Tribromophenol (S)	71.06	200	35.53	10-123
4-Terphenyl-D14 (S)	44.00	100	44.00	33-141

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western Geo**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP-796**  
Sample ID: **WO-1**  
Lab ID: **941193**

Date Sampled: **4/27/94**  
Date Received: **4/28/94**  
Date Extracted: **4/28/94**  
Date of Analysis: **4/29/94**  
Matrix: **SOIL**

File: **941193.D**

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
POLYNUCLEAR AROMATICS		
Acenaphthene	0.49	0.3
Acenaphthylene	0.88	0.3
Anthracene	1.1	0.3
Benzo[a]pyrene	2.	0.3
Benzo[b]fluoranthene	1.6	0.3
Benzo[g,h,i]perylene	0.38	0.3
Benzoic acid	ND	0.3
Benzo[k]fluoranthene	0.39	0.3
Benzyl alcohol	ND	0.6
Chrysene	0.68	0.3
Dibenzofuran	ND	0.3
Fluoranthene	1.8	0.3
Fluorene	1.8	0.3
Indeno(1,2,3-c,d)pyrene	0.66	0.3
Naphthalene	21.	0.3
Phenanthrene	4.9	0.3
Pyrene	5.6	0.3
POLYCHLOROBIPHENYLS(PCB)		
Aroclor 1016	ND	1.5
Aroclor 1221	ND	1.5
Aroclor 1232	ND	1.5
Aroclor 1242	ND	1.5
Aroclor 1248	ND	1.5
Aroclor 1254	ND	1.5
Aroclor 1260	ND	1.5
CREOSOTE	ND	0.3

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western Geo  
CONTACT: G Converse  
COC No: 4422  
Project No: DP-796  
Sample ID: WO-1  
Lab ID: 941193

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 4/28/94  
Date of Analysis: 4/29/94  
Matrix: SOIL

File: 941193.D

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
ANILINES		
4-Chloroaniline	ND	0.6
2-Nitroaniline	ND	1.5
3-Nitroaniline	ND	1.5
4-Nitroaniline	ND	1.5
PHENOLS		
Pentachlorophenol	ND	0.3
Phenol	0.45	0.3
2-Chlorophenol	ND	0.3
2-Methylphenol	ND	0.3
4-Methylphenol	ND	0.3
2-Nitrophenol	ND	0.3
2,4-Dichlorophenol	1.9	0.3
4-Chloro-3-methylphenol	0.39	0.3
2,4,5-Trichlorophenol	ND	0.3
2,4,6-Trichlorophenol	ND	0.3
4-Nitrophenol	1.5	0.3
2-Methyl-4,6-dinitrophenol	ND	0.3

ND = Not detected at or above the Report Limit.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western Geo  
CONTACT: G Converse  
COC No: 4422  
Project No: DP-796  
Sample ID: WO-1  
Lab ID: 941193

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 4/28/94  
Date of Analysis: 4/29/94  
Matrix: SOIL

File: 941193.D

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### SURROGATE RECOVERY

Surrogate	Amount	Spike	Recovery	Range
2-Fluorophenol (S)	46.04	200	23.02	20-100
Phenol-D6 (S)	48.62	200	24.31	10- 94
Nitrobenzene-D5 (S)	56.41	100	56.41	35-114
2-Fluorobiphenyl (S)	53.57	100	53.57	43-116
Tribromophenol (S)	72.03	200	36.01	10-123
4-Terphenyl-D14 (S)	53.29	100	53.29	33-141



# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method 8270

COC No: 4422  
Project No: DP-796  
Sample ID: N/A  
Lab ID: LCS/LCSD

Date Extracted: 4/28/94  
Date of Analysis: 4/29/94  
Matrix: SOIL

File: D2994LS.D

### LABORATORY CONTROL SPIKE

COMPOUND	LEVEL	LCS AMNT	% RECVRY	LCSD AMNT	% RECVRY	RECVRY RANGE	RPD
Phenol	200	50.9	25.5	47.9	24.0	5-112	6.1
2-Chlorophenol	200	78.7	39.4	72.7	36.4	23-134	7.9
4-Dichlorobenzene	100	40.7	40.7	45.0	45.0	20-124	10.0
N-Nitrosodi-n-propyl am	100	78.4	78.4	77.3	77.3	1-230	1.4
1,2,4-Trichlorobenzene	100	47.1	47.1	42.6	42.6	32-142	10.0
4-Chloro-3-methylphenol	200	46.6	23.3	42.2	21.1	22-147	9.9
Acenaphthene	100	41.5	41.5	41.2	41.2	30-145	0.7
4-Nitrophenol	200	79.8	39.9	78.5	39.3	1-132	1.6
2,4-Dinitrotoluene	100	46.6	46.6	50.3	50.3	20-139	7.6
Pentachlorophenol	200	65.2	32.6	68.6	34.3	14-176	5.1
Pyrene	100	139.6	139.6	132.0	132.0	32-145	5.6

RPD RANGE = 0- 25

All concentrations are in mg/Kg (ppm)

LCS=LABORATORY CONTROL SPIKE

LCSD=LABORATORY CONTROL SPIKE DUPLICATE

RPD = RELATIVE PERCENT DEVIATION

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: N/A  
Lab ID: Method Blank

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: E1694MB.D

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
POLYNUCLEAR AROMATICS		
Acenaphthene	ND	0.3
Acenaphthylene	ND	0.3
Anthracene	ND	0.3
Benzo[a]pyrene	ND	0.3
Benzo[b]fluoranthene	ND	0.3
Benzo[g,h,i]perylene	ND	0.3
Benzoic acid	ND	0.3
Benzo[k]fluoranthene	ND	0.3
Benzyl alcohol	ND	0.6
Chrysene	ND	0.3
Dibenzofuran	ND	0.3
Fluoranthene	ND	0.3
Fluorene	ND	0.3
Indeno(1,2,3-c,d)pyrene	ND	0.3
Naphthalene	ND	0.3
Phenanthrene	ND	0.3
Pyrene	ND	0.3
POLYCHLOROBIPHENYLS(PCB)		
Aroclor 1016	ND	1.5
Aroclor 1221	ND	1.5
Aroclor 1232	ND	1.5
Aroclor 1242	ND	1.5
Aroclor 1248	ND	1.5
Aroclor 1254	ND	1.5
Aroclor 1260	ND	1.5

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western GEO**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP 796**  
Sample ID: **N/A**  
Lab ID: **Method Blank**

Date Sampled: **N/A**  
Date Received: **N/A**  
Date Extracted: **5/11/94**  
Date of Analysis: **5/16/94**  
Matrix: **SOIL**

File: **E1694MB.D**

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
ANILINES		
4-Chloroaniline	ND	0.6
2-Nitroaniline	ND	1.5
3-Nitroaniline	ND	1.5
4-Nitroaniline	ND	1.5
PHENOLS		
Pentachlorophenol	ND	0.3
Phenol	ND	0.3
2-Chlorophenol	ND	0.3
2-Methylphenol	ND	0.3
4-Methylphenol	ND	0.3
2-Nitrophenol	ND	0.3
2,4-Dichlorophenol	ND	0.3
4-Chloro-3-methylphenol	ND	0.3
2,4,5-Trichlorophenol	ND	0.3
2,4,6-Trichlorophenol	ND	0.3
4-Nitrophenol	ND	0.3
2-Methyl-4,6-dinitrophenol	ND	0.3
CREOSOTE	ND	0.3

ND = Not detected at or above the Report Limit.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: N/A  
Lab ID: Method Blank

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: E1694MB.D

### SURROGATE RECOVERY

Surrogate	Amount	Spike	Recovery	Range
2-Fluorobiphenyl (S)	76.97	100	76.97	30-115
2-Fluorophenol (S)	95.40	200	47.70	25-121
4-Terphenyl-D14 (S)	62.92	100	62.92	18-137
Nitrobenzene-D5 (S)	54.40	100	54.40	23-120
Phenol-D6 (S)	99.54	200	49.77	24-113
Tribromophenol (S)	71.24	200	35.62	19-122

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Werner  
Lab ID: 941194

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: 941194.D

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
POLYNUCLEAR AROMATICS		
Acenaphthene	ND	0.3
Acenaphthylene	ND	0.3
Anthracene	ND	0.3
Benzo[a]pyrene	ND	0.3
Benzo[b]fluoranthene	ND	0.3
Benzo[g,h,i]perylene	ND	0.3
Benzoic acid	ND	0.3
Benzo[k]fluoranthene	ND	0.3
Benzyl alcohol	ND	0.6
Chrysene	ND	0.3
Dibenzofuran	ND	0.3
Fluoranthene	ND	0.3
Fluorene	ND	0.3
Indeno(1,2,3-c,d)pyrene	ND	0.3
Naphthalene	ND	0.3
Phenanthrene	ND	0.3
Pyrene	ND	0.3
POLYCHLOROBIPHENYLS(PCB)		
Aroclor 1016	ND	1.5
Aroclor 1221	ND	1.5
Aroclor 1232	ND	1.5
Aroclor 1242	ND	1.5
Aroclor 1248	ND	1.5
Aroclor 1254	ND	1.5
Aroclor 1260	ND	1.5

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Werner  
Lab ID: 941194

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: 941194.D

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
ANILINES		
4-Chloroaniline	ND	0.6
2-Nitroaniline	ND	1.5
3-Nitroaniline	ND	1.5
4-Nitroaniline	ND	1.5
PHENOLS		
Pentachlorophenol	ND	0.3
Phenol	ND	0.3
2-Chlorophenol	ND	0.3
2-Methylphenol	ND	0.3
4-Methylphenol	ND	0.3
2-Nitrophenol	ND	0.3
2,4-Dichlorophenol	ND	0.3
4-Chloro-3-methylphenol	ND	0.3
2,4,5-Trichlorophenol	ND	0.3
2,4,6-Trichlorophenol	ND	0.3
4-Nitrophenol	ND	0.3
2-Methyl-4,6-dinitrophenol	ND	0.3
CREOSOTE	ND	0.3

ND = Not detected at or above the Report Limit.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western GEO**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP 796**  
Sample ID: **SW-Werner**  
Lab ID: **941194**

Date Sampled: **4/27/94**  
Date Received: **4/28/94**  
Date Extracted: **5/11/94**  
Date of Analysis: **5/16/94**  
Matrix: **SOIL**

File: **941194.D**

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### SURROGATE RECOVERY

Surrogate	Amount	Spike	Recovery	Range
2-Fluorobiphenyl (S)	112.50	100	112.50	30-115
2-Fluorophenol (S)	182.35	200	91.18	25-121
4-Terphenyl-D14 (S)	94.65	100	94.65	18-137
Nitrobenzene-D5 (S)	87.25	100	87.25	23-120
Phenol-D6 (S)	105.84	200	52.92	24-113
Tribromophenol (S)	118.99	200	59.50	19-122

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Mountain  
Lab ID: 941195

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: 941195.D

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
POLYNUCLEAR AROMATICS		
Acenaphthene	ND	0.3
Acenaphthylene	ND	0.3
Anthracene	ND	0.3
Benzo[a]pyrene	ND	0.3
Benzo[b]fluoranthene	ND	0.3
Benzo[g,h,i]perylene	ND	0.3
Benzoic acid	ND	0.3
Benzo[k]fluoranthene	ND	0.3
Benzyl alcohol	ND	0.6
Chrysene	ND	0.3
Dibenzofuran	ND	0.3
Fluoranthene	ND	0.3
Fluorene	ND	0.3
Indeno(1,2,3-c,d)pyrene	ND	0.3
Naphthalene	ND	0.3
Phenanthrene	ND	0.3
Pyrene	ND	0.3
POLYCHLOROBIPHENYLS(PCB)		
Aroclor 1016	ND	1.5
Aroclor 1221	ND	1.5
Aroclor 1232	ND	1.5
Aroclor 1242	ND	1.5
Aroclor 1248	ND	1.5
Aroclor 1254	ND	1.5
Aroclor 1260	ND	1.5



# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western GEO**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP 796**  
Sample ID: **SW-Mountain**  
Lab ID: **941195**

Date Sampled: **4/27/94**  
Date Received: **4/28/94**  
Date Extracted: **5/11/94**  
Date of Analysis: **5/16/94**  
Matrix: **SOIL**

File: **941195.D**

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
ANILINES		
4-Chloroaniline	ND	0.6
2-Nitroaniline	ND	1.5
3-Nitroaniline	ND	1.5
4-Nitroaniline	ND	1.5
PHENOLS		
Pentachlorophenol	ND	0.3
Phenol	ND	0.3
2-Chlorophenol	ND	0.3
2-Methylphenol	ND	0.3
4-Methylphenol	ND	0.3
2-Nitrophenol	ND	0.3
2,4-Dichlorophenol	ND	0.3
4-Chloro-3-methylphenol	ND	0.3
2,4,5-Trichlorophenol	ND	0.3
2,4,6-Trichlorophenol	ND	0.3
4-Nitrophenol	ND	0.3
2-Methyl-4,6-dinitrophenol	ND	0.3
CREOSOTE	ND	0.3

ND = Not detected at or above the Report Limit.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western GEO**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP 796**  
Sample ID: **SW-Mountain**  
Lab ID: **941195**

Date Sampled: **4/27/94**  
Date Received: **4/28/94**  
Date Extracted: **5/11/94**  
Date of Analysis: **5/16/94**  
Matrix: **SOIL**

File: **941195.D**

### SURROGATE RECOVERY

Surrogate	Amount	Spike	Recovery	Range
2-Fluorobiphenyl (S)	121.34	100	121.34	30-115
2-Fluorophenol (S)	177.66	200	88.83	25-121
4-Terphenyl-D14 (S)	93.02	100	93.02	18-137
Nitrobenzene-D5 (S)	88.97	100	88.97	23-120
Phenol-D6 (S)	110.21	200	55.11	24-113
Tribromophenol (S)	120.35	200	60.18	19-122

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western GEO**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP 796**  
Sample ID: **SW-Rest**  
Lab ID: **941196**

Date Sampled: **4/27/94**  
Date Received: **4/28/94**  
Date Extracted: **5/11/94**  
Date of Analysis: **5/16/94**  
Matrix: **SOIL**

File: **941196.D**

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
POLYNUCLEAR AROMATICS		
Acenaphthene	ND	0.3
Acenaphthylene	ND	0.3
Anthracene	ND	0.3
Benzo[a]pyrene	ND	0.3
Benzo[b]fluoranthene	ND	0.3
Benzo[g,h,i]perylene	ND	0.3
Benzoic acid	ND	0.3
Benzo[k]fluoranthene	ND	0.3
Benzyl alcohol	ND	0.6
Chrysene	ND	0.3
Dibenzofuran	ND	0.3
Fluoranthene	ND	0.3
Fluorene	ND	0.3
Indeno(1,2,3-c,d)pyrene	ND	0.3
Naphthalene	ND	0.3
Phenanthrene	ND	0.3
Pyrene	ND	0.3
POLYCHLOROBIPHENYLS(PCB)		
Aroclor 1016	ND	1.5
Aroclor 1221	ND	1.5
Aroclor 1232	ND	1.5
Aroclor 1242	ND	1.5
Aroclor 1248	ND	1.5
Aroclor 1254	ND	1.5
Aroclor 1260	ND	1.5

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: BW-Rest  
Lab ID: 941196

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: 941196.D

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
ANILINES		
4-Chloroaniline	ND	0.6
2-Nitroaniline	ND	1.5
3-Nitroaniline	ND	1.5
4-Nitroaniline	ND	1.5
PHENOLS		
Pentachlorophenol	ND	0.3
Phenol	ND	0.3
2-Chlorophenol	ND	0.3
2-Methylphenol	ND	0.3
4-Methylphenol	ND	0.3
2-Nitrophenol	ND	0.3
2,4-Dichlorophenol	ND	0.3
4-Chloro-3-methylphenol	ND	0.3
2,4,5-Trichlorophenol	ND	0.3
2,4,6-Trichlorophenol	ND	0.3
4-Nitrophenol	ND	0.3
2-Methyl-4,6-dinitrophenol	ND	0.3
CREOSOTE	ND	0.3

ND = Not detected at or above the Report Limit.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western GEO**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP 796**  
Sample ID: **SW-Rest**  
Lab ID: **941196**

Date Sampled: **4/27/94**  
Date Received: **4/28/94**  
Date Extracted: **5/11/94**  
Date of Analysis: **5/16/94**  
Matrix: **SOIL**

File: **941196.D**

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### SURROGATE RECOVERY

Surrogate	Amount	Spike	Recovery	Range
2-Fluorobiphenyl (S)	111.24	100	111.24	30-115
2-Fluorophenol (S)	175.29	200	87.65	25-121
4-Terphenyl-D14 (S)	95.22	100	95.22	18-137
Nitrobenzene-D5 (S)	89.82	100	89.82	23-120
Phenol-D6 (S)	122.35	200	61.18	24-113
Tribromophenol (S)	134.24	200	67.12	19-122

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Building  
Lab ID: 941197

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: 941197.D

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
POLYNUCLEAR AROMATICS		
Acenaphthene	ND	0.3
Acenaphthylene	ND	0.3
Anthracene	ND	0.3
Benzo[a]pyrene	ND	0.3
Benzo[b]fluoranthene	ND	0.3
Benzo[g,h,i]perylene	ND	0.3
Benzoic acid	ND	0.3
Benzo[k]fluoranthene	ND	0.3
Benzyl alcohol	ND	0.6
Chrysene	ND	0.3
Dibenzofuran	ND	0.3
Fluoranthene	ND	0.3
Fluorene	ND	0.3
Indeno(1,2,3-c,d)pyrene	ND	0.3
Naphthalene	ND	0.3
Phenanthrene	ND	0.3
Pyrene	ND	0.3
POLYCHLOROBIPHENYLS(PCB)		
Aroclor 1016	ND	1.5
Aroclor 1221	ND	1.5
Aroclor 1232	ND	1.5
Aroclor 1242	ND	1.5
Aroclor 1248	ND	1.5
Aroclor 1254	ND	1.5
Aroclor 1260	ND	1.5

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Building  
Lab ID: 941197

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: 941197.D

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
ANILINES		
4-Chloroaniline	ND	0.6
2-Nitroaniline	ND	1.5
3-Nitroaniline	ND	1.5
4-Nitroaniline	ND	1.5
PHENOLS		
Pentachlorophenol	ND	0.3
Phenol	ND	0.3
2-Chlorophenol	ND	0.3
2-Methylphenol	ND	0.3
4-Methylphenol	ND	0.3
2-Nitrophenol	ND	0.3
2,4-Dichlorophenol	ND	0.3
4-Chloro-3-methylphenol	ND	0.3
2,4,5-Trichlorophenol	ND	0.3
2,4,6-Trichlorophenol	ND	0.3
4-Nitrophenol	ND	0.3
2-Methyl-4,6-dinitrophenol	ND	0.3
CREOSOTE	ND	0.3

ND = Not detected at or above the Report Limit.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-Building  
Lab ID: 941197

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: 941197.D

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### SURROGATE RECOVERY

Surrogate	Amount	Spike	Recovery	Range
2-Fluorobiphenyl (S)	110.99	100	110.99	30-115
2-Fluorophenol (S)	177.35	200	88.68	25-121
4-Terphenyl-D14 (S)	94.33	100	94.33	18-137
Nitrobenzene-D5 (S)	90.21	100	90.21	23-120
Phenol-D6 (S)	121.32	200	60.66	24-113
Tribromophenol (S)	129.88	200	64.94	19-122



# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: WO-Bottom  
Lab ID: 941198

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: 941198.D

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
POLYNUCLEAR AROMATICS		
Acenaphthene	ND	0.3
Acenaphthylene	ND	0.3
Anthracene	ND	0.3
Benzo[a]pyrene	ND	0.3
Benzo[b]fluoranthene	ND	0.3
Benzo[g,h,i]perylene	ND	0.3
Benzoic acid	ND	0.3
Benzo[k]fluoranthene	ND	0.3
Benzyl alcohol	ND	0.6
Chrysene	ND	0.3
Dibenzofuran	ND	0.3
Fluoranthene	ND	0.3
Fluorene	ND	0.3
Indeno(1,2,3-c,d)pyrene	ND	0.3
Naphthalene	ND	0.3
Phenanthrene	ND	0.3
Pyrene	ND	0.3
POLYCHLOROBIPHENYLS(PCB)		
Aroclor 1016	ND	1.5
Aroclor 1221	ND	1.5
Aroclor 1232	ND	1.5
Aroclor 1242	ND	1.5
Aroclor 1248	ND	1.5
Aroclor 1254	ND	1.5
Aroclor 1260	ND	1.5

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: **Western GEO**  
CONTACT: **G Converse**  
COC No: **4422**  
Project No: **DP 796**  
Sample ID: **WO-Bottom**  
Lab ID: **941198**

Date Sampled: **4/27/94**  
Date Received: **4/28/94**  
Date Extracted: **5/11/94**  
Date of Analysis: **5/16/94**  
Matrix: **SOIL**

File: **941198.D**

ANALYTES	CONCENTRATION mg/Kg (ppm)	REPORTING LIMIT(ppm)
<b>ANILINES</b>		
4-Chloroaniline	ND	0.6
2-Nitroaniline	ND	1.5
3-Nitroaniline	ND	1.5
4-Nitroaniline	ND	1.5
<b>PHENOLS</b>		
Pentachlorophenol	ND	0.3
Phenol	ND	0.3
2-Chlorophenol	ND	0.3
2-Methylphenol	ND	0.3
4-Methylphenol	ND	0.3
2-Nitrophenol	ND	0.3
2,4-Dichlorophenol	ND	0.3
4-Chloro-3-methylphenol	ND	0.3
2,4,5-Trichlorophenol	ND	0.3
2,4,6-Trichlorophenol	ND	0.3
4-Nitrophenol	ND	0.3
2-Methyl-4,6-dinitrophenol	ND	0.3
<b>CREOSOTE</b>	ND	0.3

ND = Not detected at or above the Report Limit.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

CLIENT: Western GEO  
CONTACT: G Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: WO-Bottom  
Lab ID: 941198

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 5/11/94  
Date of Analysis: 5/16/94  
Matrix: SOIL

File: 941198.D

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### SURROGATE RECOVERY

Surrogate	Amount	Spike	Recovery	Range
2-Fluorobiphenyl	109.54	100	109.54	30-115
2-Fluorophenol	168.61	200	84.31	25-121
4-Terphenyl-D14	95.81	100	95.81	18-137
Nitrobenzene-D5	88.35	100	88.35	23-120
Phenol-D6	120.00	200	60.00	24-113
Tribromophenol	119.72	200	59.86	19-122

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SemiVolatile Organics EPA Method M8270

COC No: 4422  
Sample ID: N/A  
Lab ID: LCS/LCSD

Date of Analysis: 5/16/94  
Matrix: SOIL

File: E1694LS.D

### LABORATORY CONTROL SPIKE

COMPOUND	LEVEL	LCS AMNT	% RECVRY	LCSD AMNT	% RECVRY	RECVRY RANGE	RPD
Phenol	200	182.3	91.2	180.9	90.4	5-112	0.8
2-Chlorophenol	200	188.7	94.4	162.5	81.3	23-134	14.9
4-Dichlorobenzene	100	82.4	82.4	73.9	73.9	20-124	11.0
Nitrosodi-n-propyl a	100	88.4	88.4	80.6	80.6	1-230	9.2
1,2,4-Trichlorobenzene	100	75.4	75.4	67.0	67.0	32-142	11.8
4-Chloro-3-methylpheno	200	203.7	101.8	185.4	92.7	22-147	9.4
Acenaphthene	100	92.1	92.1	83.0	83.0	30-145	10.4
4-Nitrophenol	200	126.1	63.1	107.6	53.8	D-132	15.8
2,4-Dinitrotoluene	100	92.5	92.5	82.1	82.1	20-139	11.9
Pentachlorophenol	200	118.3	59.1	100.3	50.1	14-176	16.5
Pyrene	100	119.5	119.5	112.0	112.0	32-145	6.5

RPD RANGE = 0- 25

All concentrations are in mg/Kg (ppm)

LCS = LABORATORY CONTROL SPIKE  
LCSD = LABORATORY CONTROL SPIKE DUPLICATE  
RPD = RELATIVE PERCENT DEVIATION

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SM 5520, OIL & GREASE

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: N/A  
Lab ID: METHOD BLANK

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 4/29/94  
Date of Analysis: 5/2/94  
Matrix: SOIL

COMPOUND	(mg/kg) (ppm)	REPORTING LIMIT (mg/kg)
OIL & GREASE	ND	100

NOTE: (ND) NOT DETECTED AT OR ABOVE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SM 5520, OIL & GREASE

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: WO-1  
Lab ID: 941193

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 4/29/94  
Date of Analysis: 5/2/94  
Matrix: SOIL

COMPOUND	(mg/kg) (ppm)	REPORTING LIMIT (mg/kg)
OIL & GREASE	4,600	100

NOTE: (ND) NOT DETECTED AT OR ABOVE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SM 5520, OIL & GREASE

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-REST  
Lab ID: 941196

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 4/29/94  
Date of Analysis: 5/2/94  
Matrix: SOIL

COMPOUND	(mg/kg) (ppm)	REPORTING LIMIT (mg/kg)
OIL & GREASE	120	100

NOTE: (ND) NOT DETECTED AT OR ABOVE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SM 5520, OIL & GREASE

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: SW-BUILDING  
Lab ID: 941197

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 4/29/94  
Date of Analysis: 5/2/94  
Matrix: SOIL

COMPOUND	(mg/kg) (ppm)	REPORTING LIMIT (mg/kg)
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OIL & GREASE

280 ✓

100

NOTE: (ND) NOT DETECTED AT OR ABOVE REPORTING LIMITS.



# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: SM 5520, OIL & GREASE

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: WO-BOTTOM  
Lab ID: 941198

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 4/29/94  
Date of Analysis: 5/2/94  
Matrix: SOIL

COMPOUND	(mg/kg) (ppm)	REPORTING LIMIT (mg/kg)
OIL & GREASE	700 ✓	100

NOTE: (ND) NOT DETECTED AT OR ABOVE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: OIL & GREASE SPIKE SUMMARY

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: N/A  
Lab ID: LCS/LCSD

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 4/29/94  
Date of Analysis: 5/02/94  
Matrix: SOIL

COMPOUND	CONC SPIKED	CONC MEASURED		PERCENT RECOVERY		RPD
		LCS	LCSD	LCS	LCSD	
OIL & GREASE	500	553	595	111%	119%	7%

LCS= LABORATORY CONTROL SPIKE  
LCSD= LABORATORY CONTROL SPIKE DUPLICATE  
RPD= RELATIVE PERCENT DIFFERENCE

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: METALS CAM 5 TTLC

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: N/A  
Lab ID: METHOD BLANK

Date Sampled: N/A  
Date Received: N/A  
Date Extracted: 4/28/94  
Date of Analysis: 4/28/94  
Matrix: SOIL

COMPOUND	mg/Kg (ppm)	REPORTING LIMIT mg/Kg (ppm)	Method
CADMIUM	ND	.1	7130
CHROMIUM	ND	.2	7190
LEAD	ND	.5	7420
NICKEL	ND	.2	7520
ZINC	ND	.8	7920

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: METALS CAM 5 TTLC

CLIENT: Western GEO  
CONTACT: G. Converse  
COC No: 4422  
Project No: DP 796  
Sample ID: WO-1  
Lab ID: 941193

Date Sampled: 4/27/94  
Date Received: 4/28/94  
Date Extracted: 4/28/94  
Date of Analysis: 4/28/94  
Matrix: SOIL

COMPOUND	mg/Kg (ppm)	REPORTING LIMIT	Method
		mg/Kg (ppm)	
CADMIUM	ND ✓	.1	7130
CHROMIUM	120. ✓	.2	7190
LEAD	31. ✓	.5	7420
NICKEL	1,113. ✓	.2	7520
ZINC	25. ✓	.8	7920

NOTE: (ND) NOT DETECTED AT OR ABOVE THE REPORTING LIMITS.

# MATRIX ENVIRONMENTAL LABORATORIES

## ANALYSIS: METALS LABORATORY CONTROL SPIKE SUMMARY

CLIENT: **Western GEO**  
CONTACT: **G. Converse**  
COC No: **4422**  
Project No: **DP 796**  
Sample ID: **N/A**  
Lab ID: **LCS/LCSD**

Date Sampled: **N/A**  
Date Received: **N/A**  
Date Extracted: **4/28/94**  
Date of Analysis: **4/28/94**  
Matrix: **SOIL**

COMPOUND	CONC SPIKED (PPM)	CONC MEASURED		PERCENT RECOVERY		RPD
		LCS	LCSD	LCS	LCSD	
CADMIUM	2.0	1.8	1.7	90%	85%	6%
CHROMIUM	2.0	1.8	1.8	90%	90%	0%
LEAD	2.0	1.9	2.0	95%	100%	5%
NICKEL	2.0	2.0	1.9	100%	95%	5%
ZINC	2.0	1.7	1.8	85%	90%	6%

LCS= LABORATORY CONTROL SPIKE  
LCSD= LABORATORY CONTROL SPIKE DUPLICATE  
RPD= RELATIVE PERCENT DIFFERENCE  
CONC= CONCENTRATION