BROWN AND
CALDWELL

April 24, 1996

Mr. Alan Hargraves
Ralph M. Parsons Company
100 West Walnut Street
Pasadena, California 91124

12/3659-03

Subject: Perimeter Investigation Summary Report
Former Reservoirs #1 and #2
Unocal Carson Refinery
Carson California

Dear Mr. Hargraves:

Brown and Caldwell was retained by Ralph M. Parsons Company (Parsons) to conduct a subsurface investigation at the perimeters of former Reservoirs #1 and #2, located at the Unocal Carson Refinery. During the summer of 1995, Reservoirs #1 and #2 were razed. Perimeter berm materials were blended, graded and compacted into the reservoir cavities, producing a relatively level parcel for future development. Soils outside of the fill area, formerly overlain by the perimeter berm, were left relatively undisturbed during demolition of the reservoirs. The purpose of this investigation was to further characterize the relativley undisturbed perimeter soils located outside of the filled reservoir cavities.

The objectives of this investigation were to:

- estimate the extent of free-phase hydrocarbons present in the reservoir perimeter soils, and
- produce data for Shell's use to evaluate soil management alternatives which may include soil stability issues or hydrocarbon concentrations in excess of Waste Discharge Requirements previously applied to reservoir closure.

To accomplish the above objectives:

- continuous coring of soils was performed at 109 pre-determined boring locations,
- continuous core samples were collected in acetate liners and visually evaluated to assess soil lithology and the relative magnitude of hydrocarbon presence, and

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- soil samples were collected from 240 pre-determined sampling intervals and analyzed for volatile and semivolatile hydrocarbons.

This summary report includes:

- sampling methodologies,
- summary of findings,
- boring logs, and
- analytical laboratory results.

SAMPLING METHODOLOGY

This section contains a brief description of the field work conducted in March 1996. The workplan developed by Shell for this investigation is attached to this report as **Attachment A.**

A consistent boring and sample numbering scheme was utilized to simplify data correlation and interpretation. The perimeters of both reservoirs were subdivided into multiple, relatively equal sized sections. Each section was investigated using the same sampling protocol consisting of five regularly spaced Strataprobe borings (V, W, X, Y, and Z). Borings from each section sharing the same reference letter were generally an equal distance from the center of the reservoir; V always being nearest the center and Z always being farthest from the center. Generalized boring location plans for Reservoirs #1 and #2 are included as Figures 1 and 2, respectively.

The sample numbering scheme used for all samples employed 3 codes. The first code indicated whether the sample was collected from the perimeter of Reservoir #1 (R1) or Reservoir #2 (R2). The second code (Q1, Q2, etc.) identified which section the sample was collected in. The final code (V2, X5, etc.)identified the boring letter and depth of sample collection. A sample labeled R1-Q6-V8, was collected from the perimeter of Reservoir #1, from Section 6, Boring V, at a depth of 8 feet.

Strataprobe Borings

A total of 109 soil borings were advanced using a truck-mounted Strataprobe rig. The rig was equipped with a 3-foot long, 1.5-inch inside diameter, continuous core drive sleeve sampler. The sampler was driven with the Strataprobe by hydraulic pressure and rotary hammer assistance when needed. A series of 1-inch outer diameter threaded drive rods allowed the sampler to be driven through the appropriate sampling interval. Sample collection was performed from March 18 through March 22, 1996.

The samplers, drive rods, and sampling equipment were steam-cleaned prior to first use at the site. Before each use, sampling equipment was washed with a non-phosphate detergent (Liquinox) and water solution. Continuous cores were advanced to depths ranging from 2.5 feet to 11.5 feet below ground surface (bgs). Samples were collected for laboratory analysis from pre-determined intervals.

One of the 110 proposed borings, Boring No. R2-Q10-Z, was not cored due to safety concerns about the possibile presence of underground utilities.

Soil Sampling Methods. Core samples were collected continuously at all soil boring locations using a 3-foot long drive sampler containing a 1.5-inch diameter, clear, acetate liner. Samples were collected by driving the sampler into the subgrade soils using the strataprobe hydraulic and rotary hammer system. The sampler was disassembled after it was recovered from the boring, revealing the 3-foot long acetate liner containing soil.

The pre-selected 6-inch interval designated for laboratory analysis was removed from the core and packaged for delivery. The 6-inch sample was removed from the core by cutting through the acetate liner and soil at each end, using a razor knife. After each cut was completed, a teflon sheet was placed over the sample end and secured with a tight-fitting plastic cap. Each sample collected for laboratory analysis was labeled, enclosed in a zip-lock bag, and stored in an ice-chilled cooler. Sample labels included sample number, sampling date/time, samplers initials, and laboratory test method. Samples were shipped to BC Analytical in Anaheim, California. Chain-of-custody (COC) documentation was maintained as the samples were collected, and the COC form accompanied the samples to the laboratory.

Remaining soils collected in acetate liners were visually evaluated to assess soil lithology and the relative magnitude of hydrocarbons present. The acetate liners were split using a razor knife to access soil for close observation and classification. After classification was completed, the remaining soils and spent acetate liners were enclosed in separate, labeled, 55-gallon drums.

All soil samples collected from the pre-designated sampling intervals were analyzed for semivolatile total petroleum hydrocarbons (TPH) by EPA Method 8015 modified (prepared by extraction method). Half of the collected soil samples were pre-selected, using the methodology depicted in Figure 2 of the Workplan (Attachment A), to be analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and volatile TPH by modified EPA Methods 8015/8020 (prepared by purge and trap method).

Two of the 242 pre-determined sampling intervals were not sampled. Sample No. R2-Q10-Z2 was not collected for laboratory analysis since the boring was cancelled due to possible presence of underground utilities. Sample No. R2-Q4-X2 was not suited for laboratory analysis due to damage caused by acetate liner failure during sample collection.

SUMMARY OF FINDINGS

Borehole logs are included as **Attachment B**, and laboratory analytical reports and chain-of-custody forms are included as **Attachment C**.

Visual Evaluation

All core samples were evaluated in the field, and observations were recorded on boring log forms. Field observations included the classification of soil lithology based on visual-manual procedure and relative concentration of moisture content and/or liquid hydrocarbon content, when observed. The scale used to visually assess the relative concentration of hydrocarbon presence is described below:

- **no evidence of hydrocarbons** - used when no odors or visual staining indicative of hydrocarbons were observed in the soil.
- **damp with hydrocarbons** - used to describe soils that exhibited hydrocarbon staining over less than 100% of soil surface area and would transfer a slight oily stain to latex gloves when finger pressure was applied to the sample.
- **moist with hydrocarbons** - used to describe soils that exhibited hydrocarbon staining throughout the soil, or throughout a zone within the soil, and would transfer an oily stain or sheen to latex gloves when finger pressure was applied to the sample.
- **wet with hydrocarbons** - used to describe soils that exhibited liquid hydrocarbon freely flowing from the soil or bleeding to the surface of the acetate liner, and soils that would bubble or flow hydrocarbons when finger pressure was applied to the sample.

Based on a review of field observations the following general trends were identified:

- boreholes advanced closer to the interior of the reservoirs (boreholes V, W, and X) often exhibited soils moist or wet with hydrocarbons.
- Soils moist or wet with hydrocarbons were rarely observed in the outer perimeter boreholes (boreholes Y and Z).

Laboratory Analytical Results

Laboratory findings for all TPH and BTEX analyses are tabulated in Tables 1-1 through 1-22. The tables are ordered numerically by reservoir and section.

Review of the laboratory data identified the following general trends:

- samples collected from nearer the interior of the reservoirs have a far greater tendency to yield detectable hydrocarbon concentrations than samples from outer perimeter boreholes (See Tables 2-1 and 2-2), and

- samples collected from nearer the interior of the reservoirs (boreholes V, W, and X) exhibited higher average hydrocarbon concentrations than samples from outer perimeter boreholes (boreholes Y and Z) (See Tables 3-1 through 3-4).

If you have any questions, please feel free to contact us at (714) 660-1070.

Very truly yours,

BROWN AND CALDWELL

Robert Pope
Project Manager

Alison Brown
Program Manager

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Attachments

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DCN 100291

FIGURE 1-1

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 1, QUADRANT 1

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	<0.5	<0.5
Toluene	0.85	-	0.76	-	<0.5	-	<0.5	-	-	<0.5	<0.5
Ethylbenzene	0.56	-	0.54	-	<0.5	-	<0.5	-	-	<0.5	<0.5
Total Xylenes	3.1	-	2.7	-	<1	-	<1	-	-	<1	<1
TPH C6-C12	120	-	110	-	110	-	<10	-	-	140	<10
TPH C13-C22	17000	17000	21000	500	17000	7400	<100	39000	<100	7600	<100
TPH C23-C28	8400	8600	1000	250	5800	3000	<100	<10000	<100	1800	<100

FIGURE 1-2

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 1, QUADRANT 2

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	<0.5	-
Toluene	0.90	-	0.52	-	<0.5	-	<0.5	-	-	<0.5	-
Ethylbenzene	0.80	-	<0.5	-	<0.5	-	<0.5	-	-	<0.5	-
Total Xylenes	3.8	-	2.5	-	<1	-	<1	-	-	<1	-
TPH C6-C12	220	-	220	-	24	-	<10	-	-	<10	-
TPH C13-C22	23000	20000	18000	27000	1700	6900	<100	5300	<100	<100	<100
TPH C23-C28	9800	8700	7100	11000	600	2500	<100	1500	<100	<100	<100

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 1-3

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 1, QUADRANT 3

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	<0.5	-	<3	-	-	<0.5	<0.5
Toluene	<0.5	-	0.88	-	<0.5	-	4.6	-	-	<0.5	<0.5
Ethylbenzene	<0.5	-	0.80	-	<0.5	-	6.2	-	-	<0.5	<0.5
Total Xylenes	<1	-	4.1	-	<1	-	44	-	-	<1	<1
TPH C6-C12	42	-	240	-	42	-	1500	-	-	<10	<10
TPH C13-C22	2600	8800	20000	35000	3800	14000	17000	7600	<100	<100	<100
TPH C23-C28	1100	3300	8900	14000	1400	5300	4700	2300	<100	<100	<100

FIGURE 1-4

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 1, QUADRANT 4

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	2.3	-	<1	-	<0.5	-	-	<0.5	-
Toluene	<0.5	-	3.0	-	5.0	-	<0.5	-	-	<0.5	-
Ethylbenzene	<0.5	-	2.5	-	3.0	-	<0.5	-	-	<0.5	-
Total Xylenes	1.7	-	14	-	18	-	0.93	-	-	<1	-
TPH C6-C12	97	-	610	-	660	-	63	-	-	<10	-
TPH C13-C22	8100	8700	24000	19000	26000	32000	<100	220	<100	<100	610
TPH C23-C28	3600	3200	9800	7400	9800	12000	<100	<100	<100	<100	260

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 1-5

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 1, QUADRANT 5

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	<0.5	<0.5
Toluene	<0.5	-	0.80	-	<0.5	-	1.0	-	-	<0.5	<0.5
Ethylbenzene	<0.5	-	0.72	-	<0.5	-	1.2	-	-	<0.5	<0.5
Total Xylenes	<1	-	3.5	-	1.6	-	6.9	-	-	<1	<1
TPH C6-C12	28	-	300	-	44	-	760	-	-	<10	<10
TPH C13-C22	3700	11000	5100	6200	5400	19000	7600	2000	<100	<100	<100
TPH C23-C28	<100	5500	2000	2300	2100	7700	2000	210	<100	<100	<100

FIGURE 1-6

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 1, QUADRANT 6

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	0.62	-	<3	-	-	<0.5	-
Toluene	<0.5	-	0.87	-	2.4	-	4.4	-	-	<0.5	-
Ethylbenzene	<0.5	-	0.65	-	1.7	-	3.6	-	-	<0.5	-
Total Xylenes	<1	-	2.8	-	7.9	-	18	-	-	<1	-
TPH C6-C12	44	-	150	-	560	-	440	-	-	<10	-
TPH C13-C22	3300	19000	22000	14000	30000	6100	23000	16000	<100	<100	<100
TPH C23-C28	1200	8200	10000	6000	11000	2400	7500	5600	<100	<100	<100

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 1-7

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 1, QUADRANT 7

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<1	-	<0.5	-	<0.5	-	-	<0.5	<0.5
Toluene	<0.5	-	3.2	-	<0.5	-	<0.5	-	-	<0.5	<0.5
Ethylbenzene	<0.5	-	2.2	-	<0.5	-	<0.5	-	-	<0.5	<0.5
Total Xylenes	<1	-	8.8	-	2.0	-	<1	-	-	<1	<1
TPH C6-C12	100	-	190	-	80	-	<10	-	-	<10	<10
TPH C13-C22	4200	5700	25000	11000	19000	20000	<100	38000	<100	<100	<100
TPH C23-C28	1600	2200	11000	3900	7300	8000	<100	15000	<100	<100	<100

FIGURE 1-8

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 1, QUADRANT 8

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	<1	-	<0.5	-	-	<0.5	-
Toluene	<0.5	-	<0.5	-	1.2	-	<0.5	-	-	<0.5	-
Ethylbenzene	<0.5	-	0.73	-	1.1	-	<0.5	-	-	<0.5	-
Total Xylenes	<1	-	5.2	-	4.9	-	1.7	-	-	<1	-
TPH C6-C12	<10	-	580	-	410	-	87	-	-	<10	-
TPH C13-C22	340	10000	13000	920	30000	34000	6800	<100	670	<100	620
TPH C23-C28	180	3700	3800	430	12000	15000	2600	<100	460	<100	490

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 1-9

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 1, QUADRANT 9

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	<0.5	-	<1	-	-	<0.5	<0.5
Toluene	<0.5	-	<0.5	-	1.3	-	3.9	-	-	<0.5	<0.5
Ethylbenzene	<0.5	-	<0.5	-	0.86	-	2.4	-	-	<0.5	<0.5
Total Xylenes	3.0	-	2.0	-	4.4	-	14	-	-	<1	<1
TPH C6-C12	300	-	130	-	220	-	760	-	-	<10	<10
TPH C13-C22	14000	11000	16000	14000	37000	38000	15000	11000	<100	<100	<100
TPH C23-C28	4900	5200	7500	5400	16000	15000	4800	3500	<100	<100	<100

FIGURE 1-10

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 1, QUADRANT 10

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	<0.5	-	<1	-	-	<0.5	-
Toluene	0.84	-	<0.5	-	1.1	-	5.5	-	-	<0.5	-
Ethylbenzene	0.83	-	<0.5	-	0.77	-	3.5	-	-	<0.5	-
Total Xylenes	5.9	-	1.6	-	4.7	-	21	-	-	<1	-
TPH C6-C12	270	-	140	-	330	-	1100	-	-	<10	-
TPH C13-C22	9200	39000	10000	27000	46000	15000	11000	33000	3300	<100	<100
TPH C23-C28	3100	17000	3700	11000	19000	5900	2700	10000	770	<100	<100

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 1-11

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 1

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	1.7	-	<0.5	-	-	<0.5	<0.5
Toluene	1.8	-	1.1	-	12	-	<0.5	-	-	<0.5	<0.5
Ethylbenzene	1.1	-	0.68	-	4.5	-	<0.5	-	-	<0.5	<0.5
Total Xylenes	8.1	-	5.0	-	29	-	<1	-	-	<1	<1
TPH C6-C12	400	-	370	-	1100	-	32	-	-	<10	<10
TPH C13-C22	15000	11000	16000	29000	49000	15000	<100	140	<100	<100	<100
TPH C23-C28	3800	2000	3300	9300	11000	3200	<100	<100	<100	<100	<100

FIGURE 1-12

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 2

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	<0.5	-
Toluene	<0.5	-	0.69	-	1.7	-	<0.5	-	-	<0.5	-
Ethylbenzene	<0.5	-	0.58	-	0.94	-	<0.5	-	-	<0.5	-
Total Xylenes	<1	-	3.4	-	7.0	-	<1	-	-	<1	-
TPH C6-C12	190	-	390	-	510	-	31	-	-	<10	-
TPH C13-C22	5400	14000	7400	1700	12000	4500	4700	3500	<100	<100	<100
TPH C23-C28	1800	3300	1500	680	3100	1200	1000	840	<100	<100	<100

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 1-13

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 3

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<3	-	<3	-	<0.5	-	<0.5	-	-	<0.5	<0.5
Toluene	6.0	-	<3	-	0.80	-	<0.5	-	-	<0.5	<0.5
Ethylbenzene	4.2	-	<3	-	0.56	-	<0.5	-	-	<0.5	<0.5
Total Xylenes	30	-	13	-	4.3	-	<1	-	-	<1	<1
TPH C6-C12	2100	-	890	-	380	-	<10	-	-	<10	<10
TPH C13-C22	33000	4400	20000	51000	9400	4400	<100	480	<100	<100	<100
TPH C23-C28	6400	850	4300	10000	1700	840	<100	<100	<100	<100	<100

FIGURE 1-14

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 4

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<3	-	<0.5	-	-	-	-	<0.5	-
Toluene	<0.5	-	7.9	-	0.68	-	-	-	-	<0.5	-
Ethylbenzene	<0.5	-	6.0	-	1.6	-	-	-	-	<0.5	-
Total Xylenes	<1	-	25	-	6.6	-	-	-	-	<1	-
TPH C6-C12	<10	-	2000	-	510	-	-	-	-	<10	-
TPH C13-C22	<100	1000	15000	<100	3300	10000	-	18000	<100	<100	<100
TPH C23-C28	<100	290	4300	<100	770	3000	-	3600	<100	<100	<100

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 1-15

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 5

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	<0.5	<0.5
Toluene	<0.5	-	0.74	-	1.8	-	<0.5	-	-	<0.5	<0.5
Ethylbenzene	<0.5	-	<0.5	-	1.7	-	<0.5	-	-	<0.5	<0.5
Total Xylenes	<1	-	2.7	-	7.5	-	<1	-	-	<1	<1
TPH C6-C12	<10	-	150	-	400	-	<10	-	-	<10	<10
TPH C13-C22	6100	21000	3200	270	14000	3800	520	<100	<100	<100	590
TPH C23-C28	3300	5000	750	110	3400	980	310	<100	<100	<100	400

FIGURE 1-16

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 6

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<3	-	<3	-	<1	-	<0.5		-	<0.5	-
Toluene	4.4	-	<3	-	3.6	-	<0.5	-	-	<0.5	-
Ethylbenzene	3.4	-	<3	-	1.6	-	<0.5	-	-	<0.5	-
Total Xylenes	25	-	12	-	12	-	<1	-	-	<1	-
TPH C6-C12	1400	-	2200	-	510	-	<10	-	-	<10	-
TPH C13-C22	31000	24000	22000	22000	12000	13000	<100	<100	<100	<100	<100
TPH C23-C28	6000	5200	4100	6300	2000	2600	<100	<100	<100	<100	<100

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 1-17

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 7

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<3	-	<3	-	<1	-	<50	-	-	<0.5	<0.5
Toluene	7.2	-	5.3	-	1.7	-	<50	-	-	<0.5	<0.5
Ethylbenzene	4.8	-	4.6	-	1.6	-	<50	-	-	<0.5	<0.5
Total Xylenes	36	-	19	-	6.9	-	150	-	-	<1	<1
TPH C6-C12	2100	-	1900	-	680	-	6700	-	-	<10	<10
TPH C13-C22	40000	14000	25000	31000	13000	4100	14000	<100	<100	<100	<100
TPH C23-C28	<10000	2800	5100	7200	2700	800	3600	<100	<100	<100	<100

FIGURE 1-18

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 8

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<10	-	<3	-	<0.5	-	-	<0.5	-
Toluene	<0.5	-	<10	-	7.0	-	<0.5	-	-	<0.5	-
Ethylbenzene	<0.5	-	<10	-	<3	-	<0.5	-	-	<0.5	-
Total Xylenes	<1	-	36	-	22	-	<1	-	-	<1	-
TPH C6-C12	24	-	2500	-	1100	-	<10	-	-	<10	-
TPH C13-C22	760	10000	48000	2200	34000	3700	<100	6700	<100	<100	<100
TPH C23-C28	340	2300	<10000	1200	6200	890	<100	<2000	<100	<100	<100

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 1-19

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 9

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<1	-	1.3	-	<0.5	-	-	<0.5	<0.5
Toluene	<0.5	-	5.9	-	7.6	-	<0.5	-	-	<0.5	<0.5
Ethylbenzene	<0.5	-	4.7	-	3.7	-	<0.5	-	-	<0.5	<0.5
Total Xylenes	<1	-	27	-	17	-	<1	-	-	<1	<1
TPH C6-C12	<10	-	970	-	510	-	<10	-	-	<10	<10
TPH C13-C22	<100	11000	22000	12000	34000	26000	<100	13000	<100	<100	1300
TPH C23-C28	<100	2700	3700	4200	7400	5700	<100	2900	<100	<100	730

FIGURE 1-20

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 10

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<3	-	1.9	-	<0.5	-	-	<0.5	-
Toluene	<0.5	-	6.0	-	9.7	-	<0.5	-	-	<0.5	-
Ethylbenzene	<0.5	-	5.3	-	5.1	-	<0.5	-	-	<0.5	-
Total Xylenes	<1	-	24	-	25	-	<1	-	-	<1	-
TPH C6-C12	<10	-	1300	-	820	-	<10	-	-	<10	-
TPH C13-C22	2200	14000	49000	16000	34000	31000	<100	<100	<100	<100	-
TPH C23-C28	780	2500	11000	2900	6600	5800	<100	<100	<100	<100	-

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 1-21

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 11

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<3	-	<1	-	<0.5	-	-	<0.5	<0.5
Toluene	<0.5	-	5.0	-	<1	-	<0.5	-	-	<0.5	<0.5
Ethylbenzene	<0.5	-	3.1	-	<1	-	<0.5	-	-	<0.5	<0.5
Total Xylenes	<1	-	17	-	<2	-	<1	-	-	<1	<1
TPH C6-C12	75	-	980	-	150	-	110	-	-	<10	<10
TPH C13-C22	4000	6500	22000	12000	4100	5800	500	<100	<100	<100	<100
TPH C23-C28	1500	1200	4500	3000	1500	2000	160	<100	<100	<100	<100

FIGURE 1-22

SUMMARY OF LABORATORY FINDINGS

RESERVOIR 2, QUADRANT 12

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	<0.5	-	<1	-	<3	-	<0.5	-	-	<0.5	-
Toluene	<0.5	-	4.2	-	6.8	-	<0.5	-	-	<0.5	-
Ethylbenzene	<0.5	-	4.0	-	5.4	-	<0.5	-	-	<0.5	-
Total Xylenes	<1	-	18	-	33	-	<1	-	-	<1	-
TPH C6-C12	59	-	870	-	1200	-	12	-	-	<10	-
TPH C13-C22	3000	24000	32000	20000	13000	40000	<100	<100	<100	<100	<100
TPH C23-C28	1100	<5000	7800	5900	4500	<10000	<100	<100	<100	<100	<100

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 2-1

PERCENTAGE OF SAMPLES WITH CONCENTRATION EXCEEDING THE METHOD DETECTION LIMIT

RESERVOIR 1

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	0%	-	10%	-	10%	-	0%	-	-	0%	0%
Toluene	30%	-	70%	-	50%	-	50%	-	-	0%	0%
Ethylbenzene	30%	-	70%	-	50%	-	50%	-	-	0%	0%
Total Xylenes	50%	-	100%	-	70%	-	70%	-	-	0%	0%
TPH C6-C12	90%	-	100%	-	100%	-	70%	-	-	10%	0%
TPH C13-C22	100%	100%	100%	100%	100%	100%	60%	90%	20%	10%	20%
TPH C23-C28	100%	100%	100%	100%	100%	100%	60%	70%	20%	10%	20%

FIGURE 2-2

PERCENTAGE OF SAMPLES WITH CONCENTRATION EXCEEDING THE METHOD DETECTION LIMIT

RESERVOIR 2

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	0%	-	0%	-	25%	-	0%	-	-	0%	0%
Toluene	33%	-	75%	-	92%	-	0%	-	-	0%	0%
Ethylbenzene	33%	-	67%	-	83%	-	0%	-	-	0%	0%
Total Xylenes	33%	-	100%	-	92%	-	9%	-	-	0%	0%
TPH C6-C12	67%	-	100%	-	100%	-	45%	-	-	0%	0%
TPH C13-C22	83%	100%	100%	92%	100%	100%	36%	50%	0%	0%	18%
TPH C23-C28	75%	92%	92%	92%	100%	92%	36%	25%	0%	0%	18%

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 3-1

AVERAGE CONCENTRATIONS FOR HYDROCARBONS
ASSUMING NON-DETECT VALUES EQUAL THE DETECTION LIMIT

RESERVOIR 1

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	0.5	-	0.73	-	0.61	-	1.1	-	-	0.5	0.5
Toluene	0.61	-	1.15	-	1.35	-	2.2	-	-	0.5	0.5
Ethylbenzene	0.57	-	0.96	-	0.99	-	1.9	-	-	0.5	0.5
Total Xylenes	2.3	-	4.7	-	4.7	-	11.0	-	-	1	1
TPH C6-C12	120	-	270	-	250	-	470	-	-	20	10
TPH C13-C22	8500	15000	17000	15000	22000	19000	8100	15000	480	850	200
TPH C23-C28	3400	6600	6500	6200	8500	7700	2500	4800	200	270	160

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 3-2

AVERAGE CONCENTRATIONS FOR HYDROCARBONS
EXCLUDES SAMPLES BELOW THE DETECTION LIMIT

RESERVOIR 1

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	ND	-	2.3	-	0.62	-	ND	-	-	ND	ND
Toluene	0.86	-	1.43	-	2.2	-	3.9	-	-	ND	ND
Ethylbenzene	0.73	-	1.16	-	1.5	-	3.4	-	-	ND	ND
Total Xylenes	3.5	-	4.7	-	6.2	-	15	-	-	ND	ND
TPH C6-C12	136	-	267	-	248	-	673	-	-	140	ND
TPH C13-C22	8500	15000	17000	15000	22000	19000	13000	17000	2000	7600	620
TPH C23-C28	3800	6600	6500	6200	8500	7700	4100	5400	620	1800	380

All values expressed in milligrams per kilogram (mg/kg)

FIGURE 3-3

AVERAGE CONCENTRATIONS FOR HYDROCARBONS
ASSUMING NON-DETECT VALUES EQUAL THE DETECTION LIMIT

RESERVOIR 2

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	1.1	-	2.6	-	1.3	-	5.0	-	-	0.5	0.5
Toluene	2.0	-	4.4	-	4.5	-	5.0	-	-	0.5	0.5
Ethylbenzene	1.5	-	3.8	-	2.6	-	5.0	-	-	0.5	0.5
Total Xylenes	8.9	-	17	-	14	-	15	-	-	1	1
TPH C6-C12	530	-	1200	-	660	-	630	-	-	10	10
TPH C13-C22	11700	13000	23000	16400	19000	13000	1900	3500	100	100	250
TPH C23-C28	2900	2800	5000	4200	4200	3100	520	850	100	100	180

All values expressed in milligrams per kilogram (mg/kg)

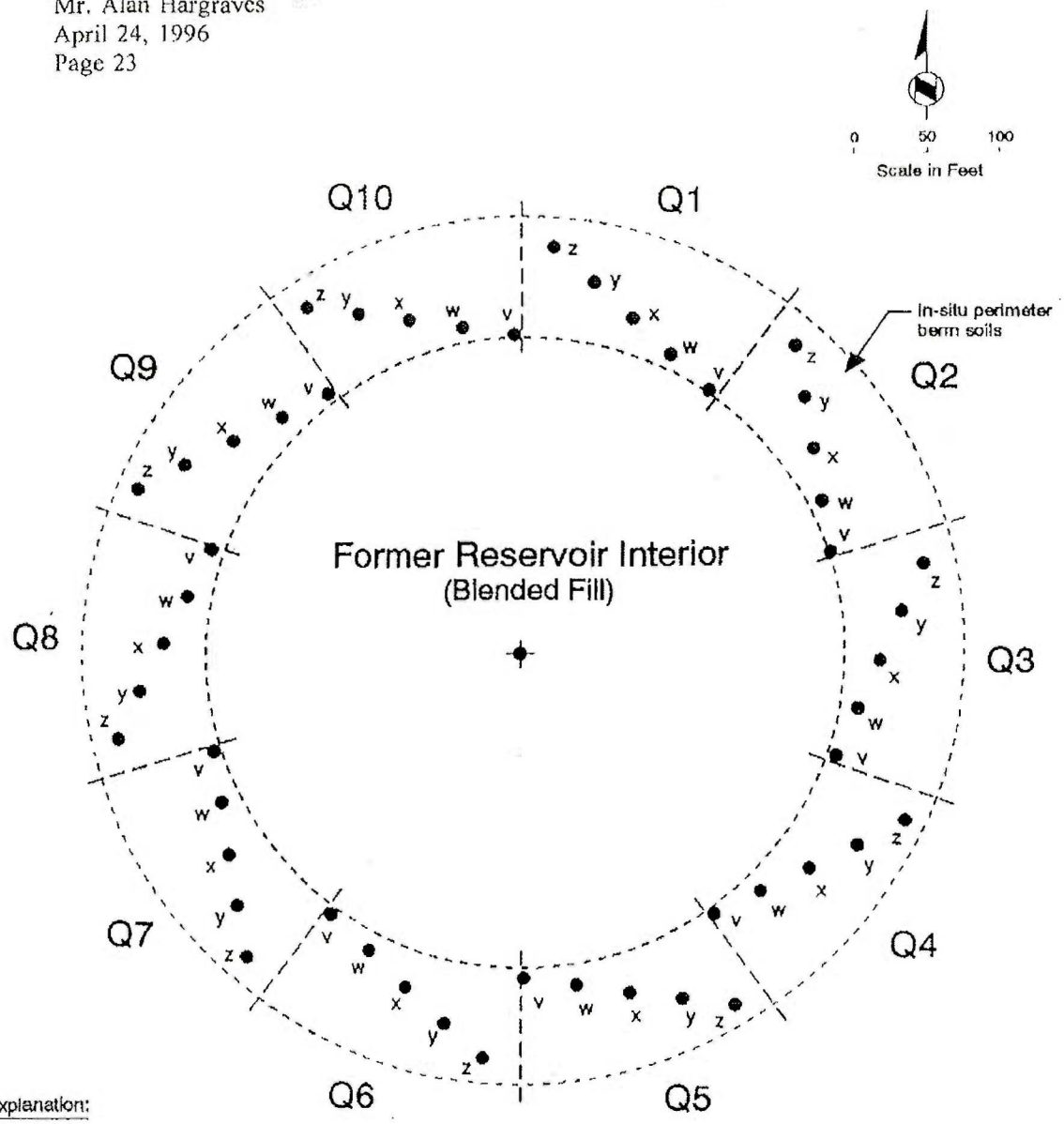
FIGURE 3-4

AVERAGE CONCENTRATIONS FOR HYDROCARBONS
EXCLUDES SAMPLES BELOW THE DETECTION LIMIT

RESERVOIR 2

Analyte	V2	V5	V8	W2	W5	W8	X2	X5	Y2	Y5	Z2
Benzene	ND	-	ND	-	1.6	-	ND	-	-	ND	ND
Toluene	4.9	-	4.1	-	4.9	-	ND	-	-	ND	ND
Ethylbenzene	3.4	-	3.6	-	2.7	-	ND	-	-	ND	ND
Total Xylenes	25	-	15	-	12	-	150	-	-	ND	ND
TPH C6-C12	790	-	1200	-	660	-	1400	-	-	ND	ND
TPH C13-C22	14000	13000	23000	16000	19000	13000	4900	7000	ND	ND	950
TPH C23-C28	2800	2600	4600	4200	4200	2500	1300	2400	ND	ND	570

All values expressed in milligrams per kilogram (mg/kg)



Explanation:

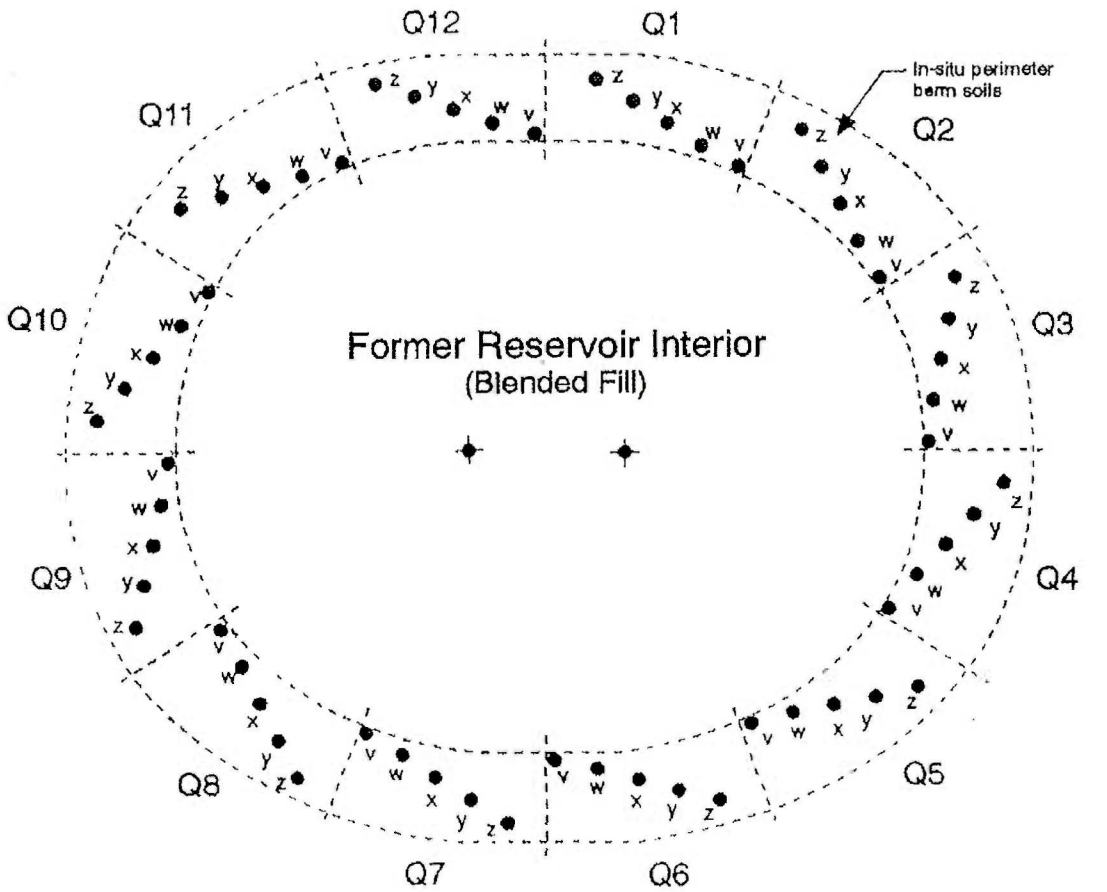
z ● Strataprobe Boring Location

Q6 Section Number

✦ Reference Point for Boring Layout

Reservoir No. 1 - Boring Location Plan

FIGURE 1



Explanation:

z● Strataprobe Boring Location

Q6 Section Number

-✦- Reference Point for Boring Layout

Reservoir No. 2 - Boring Location Plan

FIGURE 2

ATTACHMENT A

WORKPLAN

Shell Development Company
A Division of Shell Oil Company

Westhollow Research Center
P.O. Box 1380
Houston, Texas 77251-1380

WORKPLAN for RESERVOIR CLOSURE PROJECT
SUB-GRADE BERM SOIL SAMPLING

This workplan describes the activities required to complete the initial closure of two former crude oil storage reservoirs located on the former Wilmington section of the Shell Oil Company WMC. Work to empty the reservoirs and dismantle the roof structure was completed in March, 1994. A workplan to blend and grade the berm materials into the reservoir cavities was submitted to the RWQCB in August 1994. Waste discharge requirements (WDR's) were issued for the closure of the reservoirs in October, 1994. A final backfill and project completion report was submitted to the RWQCB in October, 1995. This workplan addresses the area of the reservoirs which was not blended and regraded as part of the closure activities. Specifically, this workplan addresses the areas under the former berms which were below grade and subsequently left in place.

This workplan establishes a sampling and analyses procedure to evaluate the percentage of the total area underlying the berm which may have to be removed or isolated with a barrier. The objective of this phase is to obtain sufficient data to develop an appropriate engineering approach to the management of the soils which may have either soil stability issues due to the presence of hydrocarbons, or have concentrations of specific hydrocarbon ranges in excess of the WDR's established for the reservoir closure project.

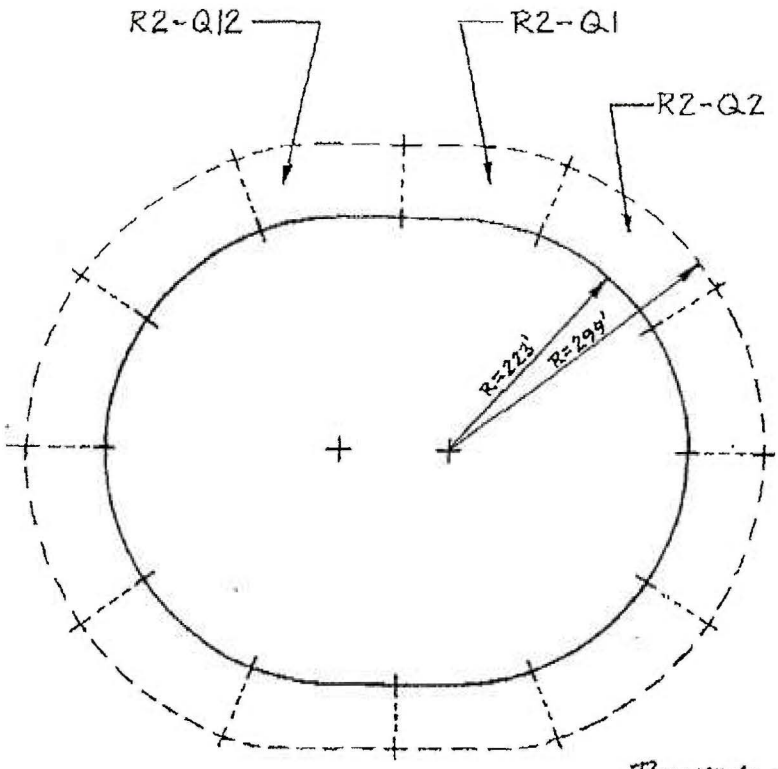
During the assessment phase of the closure project, samples of the above grade berm material were collected from 10 to 12 locations per reservoir. At each location samples were collected and analyzed from six points which represented a cross section of the berm at that location. Based on the results of this sampling, an estimate was made that the blending of the berm soils would produce an average soil concentration of TPH, weighted to specific carbon ranges, which would not be in excess of the WDR's. Based on the success of this sampling scheme, a similar approach is proposed for the sub-grade berm materials.

The areas outside of the clay cap which are included in the footprint of the former berms will be divided into segments for sampling. Reservoir 2 will have twelve segments and reservoir 1 will be divided into 10 segments (figure 1 shows these segments with a proposed labeling scheme). Each segment will have samples collected from five borings located as shown on figure 2. Borings will be drilled using Geoprobe equipment with each boring continuously cored and samples collected in clear acetate liners. The samples will be visually inspected and logged with careful attention to any evidence of hydrocarbon saturation at concentrations which may indicate the soils would provide any geotechnical stability issues or have the propensity for liquid hydrocarbon flowage.

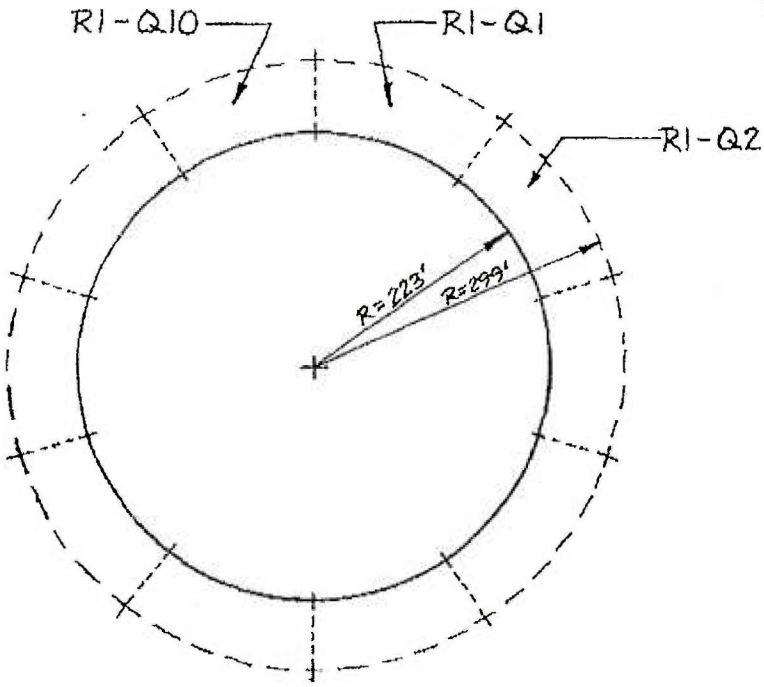
Samples will be collected for analyses from the depths shown on figure 3. Each sample interval (242 samples from both reservoirs combined) will analyzed for hydrocarbons with specific carbon ranges reported as per the modified 8015 method used in the previous phase of the project. In addition, fifty percent of the samples (121 samples from both reservoirs combined) will be analyzed for BTEX concentrations using method 8020. The samples which will be analyzed for BTEX are indicated by an asterisk on figure 3.

This data should provide an adequate basis for estimating the percentage of the sub-grade berm area which will have to be managed, and provide a basis for any blending calculation which may be necessary to implement an engineering solution. A summary report will be prepared which will detail the sampling methodology and present the analytical results in tabular form.

Prepared By: Robert W. Hastings
Registered Geologist 5452

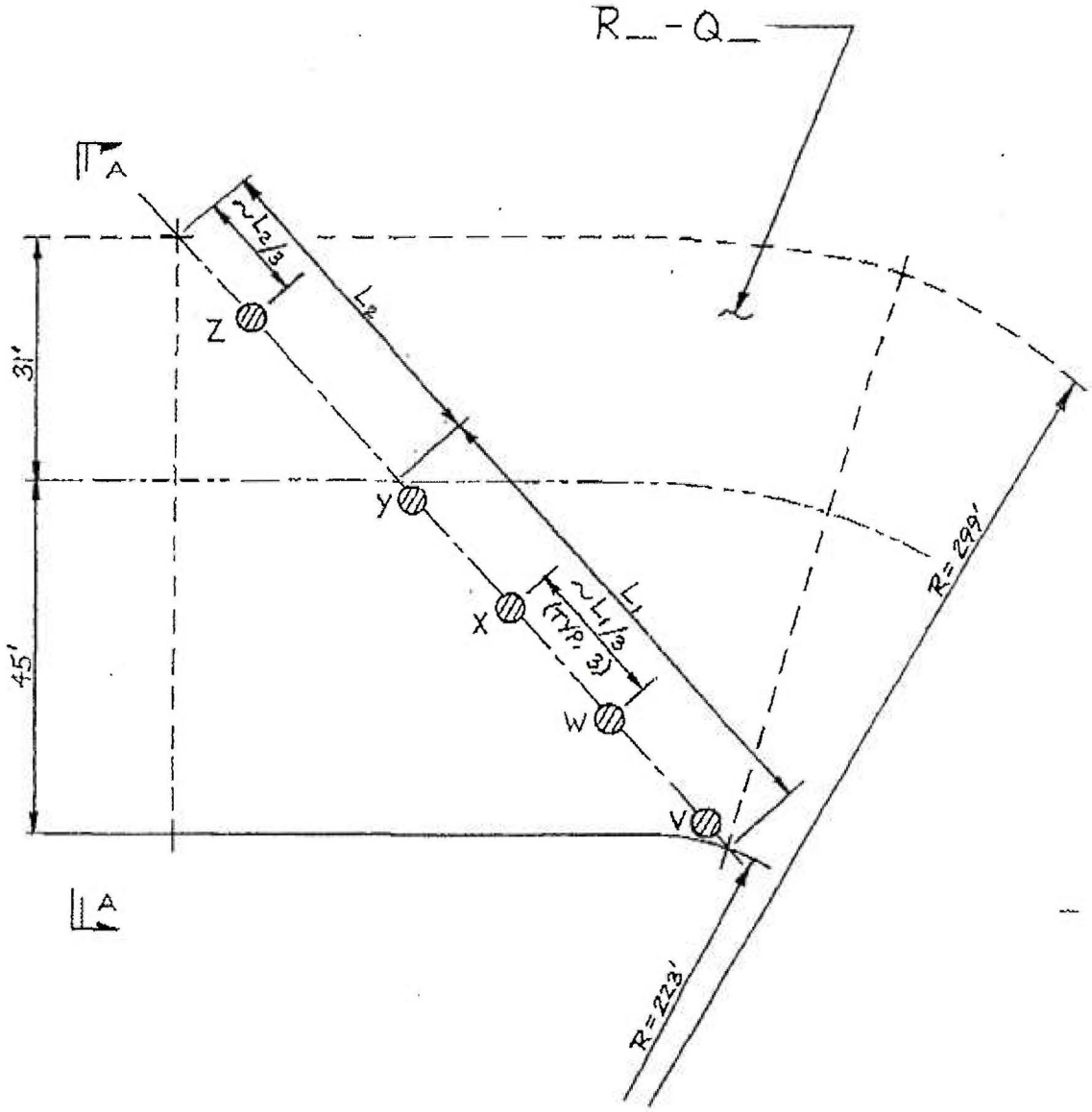


RESERVOIR #2



RESERVOIR #1

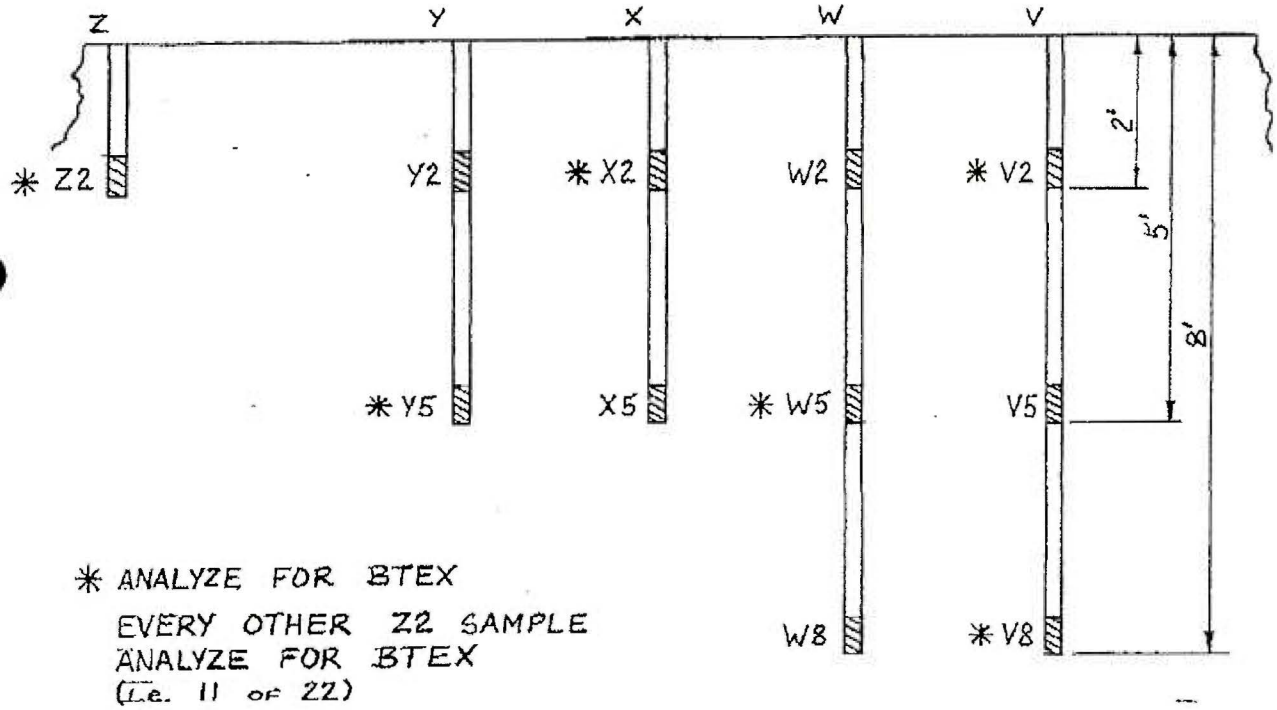
FIGURE 1



QUADRANT SAMPLING PATTERN

(TYP. 22 QUADRANTS)

FIGURE 2



SECTION A-A

FIGURE 3

ATTACHMENT B

BORING LOGS

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q1-V Sheet 1 of 1

Boring Location:	Reservoir 1, Section 1	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/18/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 10.5
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]			Water Depth (feet): N/A
Drilling Method:	Continuous Core	WELL CONSTRUCTION	
Backfill Material:	Granulated Bentonite	Type and Diameter of Well Casing:	N/A
Logged By: R. Pope	Checked By: A. Brown	Slot Size: N/A	Filter Material: N/A
		Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium brown, very fine- to fine-grained with trace medium- grained, damp.							
	SM	Silty SAND, medium to dark brown, very fine- to fine-grained, damp to moist.		*					11:00 - Sample #R1-Q1-V2 (2.0-2.5 feet). Moist with hydrocarbons @ 2.25 feet.
	SM	Silty SAND, medium to dark brown, very fine- to fine-grained, damp to moist.							Off-gassing hydrocarbon vapors. Nearly moist to moist with hydrocarbons.
5				*					11:08 - Sample #R1-Q1-V5 (5.0-5.5 feet).
	SW	Same as above							Damp to moist with hydrocarbons @ 6 feet
	CL	3-inch thick layer of silty CLAY, olive gray, firm							
	SW	Silty SAND and clayey SAND, mottled dark brown and olive brown, very fine- to fine-grained, moist to wet		*					Moist to wet with hydrocarbons @ 7 feet. Wet with hydrocarbons @ 7.5 feet. 11:11 - Sample #R1-Q1-V8 (7.8-8.3 feet). Damp with hydrocarbons @ 8.3 feet
10									
		Bottom of borehole at 10.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] — Monitoring Well [ ] — Boring Well Number: R1-Q1-W — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 1	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/18/96 — Date Finished: 3/18/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.0 — Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND with little gravel, light to medium brown, very fine- to fine-grained sand, dry to damp.							No evidence of hydrocarbons
				*					10:20 - Sample #R1-Q1-W2 (2.0-2.5 feet)
	SM	Silty SAND with trace clay, mottled medium brown to reddish brown, moist, slightly sticky.							
		Concrete - flat side coated with hydrocarbons (former reservoir liner material)							
5	SM	Silty SAND, dark brown, very fine- to fine-grained.		*					10:29 - Sample #R1-Q1-W5 (5.0-5.5 feet)
	SM	Silty SAND, medium brown, mottled with sugary SAND, dark brown to black, very fine- to fine-grained sand, moist with hydrocarbons							
				*					Moist with hydrocarbons (7.3-7.8 feet). 10:43 - Sample #R1-Q1-W8 (7.5-8.0 feet)
		Bottom of borehole at 8 feet. Groundwater not encountered in borehole.							
10		Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring / Well Number: R1-Q1-X — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 1	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/18/96 — Date Finished: 3/18/96
Drilling Equipment:	Stratoprobe	Borehole Diameter: 1.5"	Completed Depth, (feet): 11.3 — Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP	SAND with a little sandy gravel, light to medium brown, fine- to medium- grained sand, dry to damp.							
	SM	Silty SAND, grayish brown, very fine- to fine-grained, damp.							Hydrocarbon odors from 1.3-2.5 feet.
				*					9:22 - Sample #R1-Q1-X2 (2.0-2.5 feet)
	SM	Silty SAND, very dark grayish brown, very fine- to fine-grained, moist.							
				*					
5	SM	Silty SAND, very fine- to fine-grained, moist to wet with hydrocarbons							9:29 - Sample #R1-Q1-X5 (4.8-5.3 feet). Wet with Hydrocarbons. 5.6-6.1 feet - hydrocarbons in sand.
	SM	Same as above							6.9-7.1 feet - hydrocarbons sand. 7.7-7.9 feet - hydrocarbons in sand.
	ML	Sandy SILT with a little clay, gray, very fine- to fine-grained, slightly micaceous, damp.							Tip of sample probe contained hydrocarbons @ 8 feet.
10									
	SM	Silty SAND, olive, fine- to medium-grained, dense, damp.							
		Bottom of borehole at 11.3 feet. Groundwater not encountered in borehole							
		Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
15		* See remarks column for sample number							

Brown and Caldwell

BORING LOG

Project Name: SHILL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] | Monitoring Well [ ] | Boring Well Number: R1-Q1-Y | Sheet 1 of 1

Boring Location:	Reservoir 1, Section 1	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/18/96	Date Finished: 3/18/96
Drilling Equipment: Stratoprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 4.5	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, light to medium brown, very fine- to fine-grained, dry to damp.							
				*					Sample #R1-Q1-Y2 (1.5-2.0 feet) Prominent odor at 2.0 feet in core barrel tip
	SM	Silty SAND, dark olive gray, very fine- to fine-grained, odor, dry to damp.							
	SM	Silty SAND, dark gray to brownish gray, very fine- to fine-grained, dry to damp							
	SM	Silty SAND, dark gray, very fine- to fine-grained, dense, slightly moist.		*					Sample #R1-Q1-Y5 (4.0-4.5 feet) Slight hydrocarbon odor @ 4.5 feet.
5									
10									
15									

Bottom of borehole at 4.5 feet.
Groundwater not encountered in borehole.

Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures.

* See remarks column for sample number.

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q1-Z Sheet 1 of 1

Boring Location:	Reservoir 1, Section 1	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/18/96	Date Finished: 3/18/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 1.8	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP	SAND and base rock to 5", light brown, very fine- to fine-grained, dense.							Slight dark staining at 5-6 inches.
	SM	Silty SAND, medium brown, very fine- to fine-grained, dry.							
	SM	Silty SAND, dark gray, very fine- to fine-grained, dry.		*					08:45 - Sample #R1-Q1-Z2 (1.3-1.8 feet).
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Bottom of borehole at 1.8 feet.
Groundwater not encountered in borehole

Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures.

* See remarks column for sample number.

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q2-V Sheet 1 of 1

Boring Location:	Reservoir 1, Section 2	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/18/96	Date Finished: 3/18/96
Drilling Equipment: Strataprobe	Borehole Diameter 1.5"	Completed Depth (feet) 8.3	Water Depth: (feet) N/A
Sampling Method California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material	Granulated Bentonite	Slot Size: N/A	Filter Material N/A
Logged By: R. Pope	Checked By A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND with trace gravel, light brown, very fine- to fine-grained, dry to damp							
	SP SM	SAND to silty SAND, medium to dark brown, very fine- to fine-grained, moist.		*					No evidence of hydrocarbons Slight odor 12 05 - Sample #R1-Q2-V2 (1.5-2.0 feet) Damp with hydrocarbons @ 2 feet. Damp with hydrocarbons. Moderate hydrocarbon odor @ 3 feet.
	SP SM	Same as above.		*					12:14 - Sample #R1-Q2-V5 (4.3-4.8 feet). Trace hydrocarbons.
5	SP SM	Silty SAND to SAND, trace clay. Sand layers are moist with hydrocarbons, very fine- to fine-grained, damp to moist.							5.1-5 3 feet - Moist with hydrocarbons 5.6-5.9 feet - Moist with hydrocarbons.
	SM	Silty SAND with trace clay, mottled dark brown to olive, very fine- to fine-grained, moist.							Moist with hydrocarbons @ 6 8 feet.
				*					12:21 - Sample #R1-Q2-V8 (7 8-8.3 feet).
10		Bottom of borehole at 8.3 feet. Groundwater not encountered in borehole. Borehole logged from core samples The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q2-W Sheet 1 of 1

Boring Location:	Reservoir 1, Section 2	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/18/96	Date Finished: 3/18/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth. (feet): 8.3	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND with a little gravel, light to medium brown, very fine- to fine-grained.							
	SW	SAND to Silty SAND, dark brown, very fine- to fine-grained, sugary, slightly micaceous, moist.							Moderate hydrocarbon odor.
				*					12:33 - Sample #R1-Q2-W2 (2.0-2.5 feet).
	SM	Silty SAND, mottled dark brown to olive brown, very fine- to fine-grained, damp.							Moist with hydrocarbons @ 2.5 feet.
	ML	Sandy SILT with trace clay, light to medium brown, very fine- to fine- grained, medium dense to dense, dry to damp.							No evidence of hydrocarbons @ 4 feet.
5				*					12:37 - Sample #R1-Q2-W5 (5.0-5.5 feet).
	SM	Silty SAND, medium brown to dark brown, very fine- to fine-grained, dense, moist							Wet with hydrocarbons. Vertical veins of hydrocarbon migration.
	SM	Same as above, mottled appearance.							
				*					12:45 - Sample #R2-Q2-W8 (7.8-8.3 feet)
		Bottom of borehole at 8.3 feet. Groundwater not encountered in borehole.							
10		Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q2-X Sheet 1 of 1

Boring Location:	Reservoir 1, Section 2	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/18/96	Date Finished: 3/18/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	ML	Sandy SILT, medium brown, very fine- to fine-grained, damp to dry.							Slight hydrocarbon odor
				*					12:57 - Sample #R1-Q2-X2 (1.5-2.0 feet)
	SP	SAND to silty SAND, mottled medium to dark brown, very fine- to fine- grained, moist.							Slight hydrocarbon odor @ 3 feet.
									60-90% of mottled soil moist with hydrocarbons @ 3-5.5 feet.
5				*					13:00 - Sample #R1-Q2-X5 (4.8-5.3 feet).
	SP	Same as above.							5.75 & 6.5 feet - Moist with hydrocarbons @ 6 feet. No evidence of hydrocarbons @ 6.5 feet.
	ML	Sandy SILT with a little clay, medium brown, very fine- to fine-grained, damp							
		Bottom of borehole at 8.5 feet Groundwater not encountered in borehole							
10		Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] — Monitoring Well [ ] — Boring/Well Number: R1-Q2-Y — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 2	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/18/96 — Date Finished: 3/18/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 5.5 — Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]			WELL CONSTRUCTION
Drilling Method:	Continuous Core		Type and Diameter of Well Casing: N/A
Backfill Material:	Granulated Bentonite		Slot Size: N/A — Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown		Development Method: N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND to sandy SILT, pale to light brown, very fine- to fine-grained, brittle, dry to damp.							No visible hydrocarbons.
									Faint hydrocarbon odor @ 1.5 feet
				*					13:16 - Sample #R1-Q2-Y2 (2.0-2.5 feet).
	SM	Same as above.							Faint sweet smell @ 3 feet
									No evidence of hydrocarbons @ 4 feet.
5	SM	Same as above		*					13:19 - Sample #R1-Q2-Y5 (5.0-5.5 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] — Boring/Well Number: R1-Q2-Z — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 2	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/18/96 — Date Finished: 3/18/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 2.5 — Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material	Granulated Bentonite	Slot Size N/A	Filter Material: N/A
Logged By	R. Pope — Checked By A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, light brown, very fine- to fine-grained, damp							Very slight hydrocarbon odor No visual evidence of hydrocarbons @ 1.4 feet Sample #R1-Q2-Z2 (1.8-2.3 feet)
		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q3-V — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 3	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/18/96	Date Finished: 3/18/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 11.5	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP	SAND, light brown to reddish brown, very fine- to medium-grained, dry to damp.							
	ML	Sandy SILT with some CLAY, brown, very fine- to fine-grained, dry to damp.							No evidence of hydrocarbons in upper 6"
	CL	Sandy CLAY with some silt, olive gray, very fine- to fine-grained, dense, dry to damp		*					Strong sour odor @ 1 foot. 14:30 - Sample #R1-Q3-V2 (1.5-2.0 feet) Slight hydrocarbon odor @ 2 feet.
	CL	Sandy CLAY, mottled olive and black, fine-grained, moist to wet.		*					30-60% of soil affected with hydrocarbons @ 2.5 feet. 3.0-4.5 - Moist to wet with hydrocarbons along roots, mud cracks and worm tubes. 14:34 - Sample #R1-Q3-V5 (4.3-4.8 feet).
5	CL	Same as above, no mottling.							60-90% of soil affected with hydrocarbons @ 5.5 feet.
	SM	Grades to Silty SAND, very fine- to fine-grained, very moist to wet, micaceous.							90-100% of soil affected with hydrocarbons @ 7 feet.
	SP	SAND, medium to dark brown, very fine- to fine-grained, micaceous, loose, moist.		*					7.75-8.50 feet Moist to wet with hydrocarbons. 14:43 - Sample #R1-Q3-V8 (7.8-8.3 feet) Moist with hydrocarbons @ 8.5 feet.
10									Hydrocarbon staining and slight hydrocarbon odor to 11.5 feet
		Bottom of borehole at 11.5 feet. Groundwater not encountered in borehole							
		Borehole logged from core samples, the group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
15		* See remarks column for sample number							

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] — Monitoring Well [ ] — Boring/Well Number: R1-Q3-W — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 3	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/18/96 — Date Finished: 3/18/96
Drilling Equipment:	Stratoprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 10.0 — Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]			WELL CONSTRUCTION
Drilling Method:	Continuous Core		Type and Diameter of Well Casing: N/A
Backfill Material:	Granulated Bentonite		Slot Size: N/A — Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown		Development Method: N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND and clayey SAND, mottled dark brown to greenish gray, very fine- to fine-grained, dry to damp.							Veins 30-50% affected by hydrocarbons
				*					Strong hydrocarbon odor @ 1.0 feet.
	SP	SAND, very fine- to fine-grained, wet.							13:53 - Sample #R1-Q3-W2 (1.5-2.0 feet)
									Wet with hydrocarbons @ 1.8 feet.
	ML	Sandy SILT with little clay, mottled light brown to medium brown, very fine- to fine-grained, dense, brittle, moist.							Sands impacted with hydrocarbons (moist) @ 3.0 feet.
									15-25% Moist with hydrocarbons @ 5 feet.
5				*					13:56 - Sample #R1-Q3-W5 (4.5-5.0 feet).
									5-15% moist hydrocarbon veins @ 5 feet.
	SM	Grades to Silty SAND, medium brown, very fine- to fine-grained, damp.							No sample taken. Change to a smaller diameter sampler.
									Damp with hydrocarbons @ 7.0 feet.
				*					14.08 - Sample #R1-Q3-W8 (7.5-8.0 feet)
	SM SP	Silty SAND to SAND, dark brown, very fine- to fine-grained, damp.							Damp with hydrocarbons @ 8.0 feet
	SP	SAND, dark brown, very fine- to fine-grained, moist.							40-50% of veins affected by hydrocarbons @ 8.5 feet
10									100% of veins affected by hydrocarbons @ 9.8 feet.
		Bottom of borehole at 10 feet. Groundwater not encountered in borehole.							Moist with hydrocarbons @ 10.0 feet.
		Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q3-X Sheet 1 of 1

Boring Location:	Reservoir 1, Section 3	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/18/96 — Date Finished: 3/18/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 5.5 — Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A — Filter Material:	N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND with a little gravel, pale brown, dry, very fine- to fine-grained sand.							
	SM	Silty SAND, medium brown, very fine- to fine-grained, moist		*					No hydrocarbon staining. Prominent sour odor @ 1.3 feet 15:04 - Sample #R1-Q3-X2 (2.0-2.5 feet).
	SM	Same as above.							Moist with hydrocarbons @ 4.5 feet.
5	SP	SAND, medium brown, very fine- to fine-grained, micaceous, moist.		*					15:08 - Sample #R1-Q3-X5 (5.0-5.5 feet). Damp with hydrocarbons, strong sour hydrocarbon odor @ 5.5 feet.
10									
15									

Bottom of borehole at 5.5 feet.
Groundwater not encountered in borehole.

Borehole logged from core samples
The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures

* See remarks column for sample number

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q3-Y Sheet 1 of 1

Boring Location:	Reservoir 1, Section 3	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/18/96	Date Finished: 3/18/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 5.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM SP	Silty SAND to SAND, medium brown, very fine- to fine-grained, dry to damp.							No evidence of hydrocarbons.
				*					15:16 - Sample #R1-Q3-Y2 (2.0-2.5 feet)
	SM SP	Same as above.							No evidence of hydrocarbons.
5	SM SP	Same as above.		*					Sample #R1-Q3-Y5 (4.5-5.0 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring: [X] Monitoring Well: [ ] Boring/Well Number: R1-Q3-Z — Sheet 1 of 1

Boring Location	Reservoir 1, Section 3	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/18/96	Date Finished: 3/18/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 2.5	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, pale brown, very fine- to fine-grained.							No evidence of hydrocarbons
				*					15:29 - Sample #R1-Q3-Z2 (1.8-2.3 feet). Sample collected in stainless steel sleeve.
		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q4-V — Sheet 1 of 1

Boring Location:	Reservoir 1, Quadrant 4	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/18/96 — Date Finished: 3/18/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 8.5 — Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method	Continuous Core	Type and Diameter of Well Casing	N/A
Backfill Material:	Granulated Bentonite	Slot Size N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	CL	Sandy CLAY to clayey SAND, dark brown to greenish brown, very fine- to fine-grained, moist, firm.							
	CL	Sandy CLAY, medium to dark brown, very fine- to fine-grained, moist, firm.		*					Damp with hydrocarbons from near surface. 90-100% of soil coated with hydrocarbons. 15:44 - Sample #R1-Q4-V2 (1.5-2.0 feet).
	CL	Sandy CLAY, mottled olive and black, fine-grained sand, moist to wet.							60-80% of vein surfaces moist with hydrocarbons. 30% moist with hydrocarbons @ 4 feet.
5				*					15:50 - Sample #R1-Q4-V5 (4.75-5.3 feet).
	CL	Sandy CLAY, medium to dark brown and olive brown, very fine- to fine- grained, moist.							
	SP	SAND, dark brown, very fine- to fine-grained, loose, moist.							Moist with hydrocarbons @ 6 feet.
	SP	Same as above.		*					15:58 - Sample #R1-Q4-V8 (7.8-8.3 feet).
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number.							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q4-W Sheet 1 of 1

Boring Location:	Reservoir 1, Section 4	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/18/96 — Date Finished: 3/18/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.5 — Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SC	Clayey SAND, medium grayish brown, very fine- to fine-grained, sugary texture, dry to damp.							Strong sweet odor.
	CL	Sandy CLAY, olive gray, very fine- to fine-grained, thin sand lenses, moist.		*					Hydrocarbons in sand lenses from 1.5 to 2.5 feet. 16:08 - Sample #R1-Q4-W2 (2.0-2.5 feet). 30-40% of soils moist with hydrocarbons.
	CL	Same as above							5-15% of soils moist with hydrocarbons
5				*					16:13 - Sample #R1-Q4-W5 (4.3-5.3 feet)
	CL	Same as above.							60% of soils moist with hydrocarbons.
	SW	SAND, medium to dark brown, very fine- to fine-grained, moist.		*					80% of soils moist with hydrocarbons. 100% of soils moist with hydrocarbons. Damp with hydrocarbons. 16:17 - Sample #R1-Q4-W8 (7.5-8.0 feet).
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q4-X — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 4	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started 3/19/96 — Date Finished: 3/19/96
Drilling Equipment	Strataprobe	Borehole Diameter: 1.5"	Completed Depth, (feet) 5.5 — Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method.	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material	Granulated Bentonite	Slot Size. N/A	Filter Material: N/A
Logged By. R. Pope	Checked By: A. Brown	Development Method.	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM ML	Silty SAND to sandy SILT, light to medium reddish brown, very fine- to fine-grained, dense, dry.							
	SM SC	Silty SAND to clayey SAND, light to medium brown, very fine- to fine- grained, dense, dry							No evidence of hydrocarbons.
	CL	Sandy CLAY, light to medium brown, very fine- to fine-grained damp.		*					08:56 - Sample #R1-Q4-X2 (1 8-2 3 feet).
	SC	Clayey SAND, medium olive brown, very fine- to fine-grained sand, dense, moist, sticky.							No evidence of hydrocarbons
5				*					08:58 - Sample #R1-Q4-X5 (4.8-5 3 feet)
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q4-Y — Sheet 1 of 1

Boring Location: Reservoir 1, Section 4		Elevation and Datum: (feet) Ground Surface	
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 5.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, brown, very fine- to fine-grained, dense, dry to damp.							No evidence of hydrocarbons
	SM	Silty SAND, olive brown (5YR 3/2), very fine- to fine-grained, damp to moist.		*					09:09 - Sample #R1-Q4-Y2 (1.8-2.3 feet)
	SM	Silty SAND grades to clayey SAND, very fine- to fine-grained, moist, sticky, blocky.							09:16 - Push-pull cap broken 11:15 - TEG back on site No evidence of hydrocarbons.
5	SC	Clayey SAND, medium to dark olive to olive gray, very fine to fine grained sand, moist		*					11:25 - Sample #R1-Q4-Y5 (4.8-5.3 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q4-Z | Sheet 1 of 1

Boring Location	Reservoir 1, Section 4	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Date Started	3/19/96
Driller:	J. Coates	Date Finished:	3/19/96
Drilling Equipment	Strataprobe	Completed Depth (feet)	2.5
Borehole Diameter:	1.5"	Water Depth: (feet)	N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing	N/A
Backfill Material	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By	R. Pope	Checked By	A. Brown
		Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND with trace clay, light to medium brown, damp, very fine- to fine-grained, dense, slightly sticky		*					No evidence of hydrocarbons 11:37 - Sample #R1-Q4-Z2 (1.8-2.3 feet).
		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q5-V — Sheet 1 of 1

Boring Location	Reservoir 1, Section 5	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.0	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SC	Clayey SAND to silty SAND, medium brown to reddish brown, very fine- to fine-grained, damp to moist.							No evidence of hydrocarbons
				*					11:48 - Sample #R1-Q5-V2 (1.5-2.0 feet)
	SM	Silty SAND, light to medium reddish brown, very fine- to fine-grained, dry, brittle, blocky.							
	SC	Grades to Clayey SAND, dark brown, very fine- to fine-grained, damp.							100% of soil damp with hydrocarbons
	SC	Clayey SAND, very dark brown, firm, very fine- to fine-grained, damp to moist, somewhat sticky.							Prominent hydrocarbon odor.
5				*					11:53 - Sample #R1-Q5-V3 (4.8-5.3 feet).
	SC	SILT to clayey SAND, olive gray, buried wood debris.							Wood debris immediately underlain by soil moist w/ hydrocarbons.
	CL	Sandy CLAY, olive, very fine- to fine-grained, stiff, damp to moist.		*					Sandy features moist with hydrocarbons. Damp with hydrocarbons. < 10% of soil moist with hydrocarbons. 12:00 - Sample #R1-Q5-V8 (7.5-8.0 feet).
		Bottom of borehole at 8 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q5-W — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 5	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Contes	Date Started: 3/19/96 — Date Finished: 3/19/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth. (feet) 11.5 — Water Depth. (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A — Filter Material:	N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method:	N/A

Depth (Feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SC	Clayey SAND, very dark brown, very fine- to fine-grained, moist.							100% of soils damp with hydrocarbons.
	SM	Silty SAND, mottled olive gray to very dark brown, firm, damp.							10-30% of soils damp with hydrocarbons.
				*					12:50 - Sample #R1-Q5-W2 (1.5-2.0 feet).
	SC	Clayey SAND, mottled olive gray to very dark brown, very fine- to fine-grained, damp, firm							50-80% of soils damp with hydrocarbons. 10-30% of soils damp with hydrocarbons.
									0-10% of soils damp with hydrocarbons to 6 3 feet
5	SC	Same as above.		*					12:59 - Sample #R1-Q5-W5 (4.8-5 3 feet).
	SM SP	Silty SAND and SAND, very dark brown, very fine- to fine-grained, with occasional mottled olive gray clayey sand and sandy clay.							Moist with hydrocarbons @ 6.3 feet. 80-100% of soils damp with hydrocarbons.
									13:06 - Sample #R1-Q5-W8 (7 5-8 0 feet)
	SP	SAND, dark brown to black, very fine- to fine-grained, micaceous, moist.		*					100% of soils moist with hydrocarbons Very sticky and soft to touch. Possible hydrocarbon matrix.
10									
	SP	Same as above							
		Bottom of borehole at 11 5 feet Groundwater not encountered in borehole							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
15		* See remarks column for sample number.							

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] | Monitoring Well [ ] | Boring/Well Number: R1-Q5-X | Sheet 1 of 1

Boring Location:	Reservoir 1, Section 5	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor	TEG	Driller	J. Coates
Date Started	3/19/96	Date Finished:	3/19/96
Drilling Equipment	Strataprobe	Borehole Diameter:	1.5"
Completed Depth: (feet)	5.5	Water Depth: (feet)	N/A
Sampling Method: California Modified [ ]	Continuous [ ]	Split Spoon [ ]	
WELL CONSTRUCTION			
Drilling Method:	Continuous Core	Type and Diameter of Well Casing	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material N/A
Logged By	R. Pope	Checked By:	A. Brown
Development Method	N/A		

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, light to medium brown, very fine- to fine-grained, loose, moist.							No evidence of hydrocarbons
	SM SC	Silty SAND to clayey SAND, mottled olive gray/brown and dark brown, very fine- to fine-grained		*					50-80% of soils damp with hydrocarbons. 13.30 - Sample #R1-Q5-X2 (1 8-2.3 feet).
	SP SM	SAND to silty SAND, light to medium brown, very fine- to fine-grained, damp							No evidence of hydrocarbons.
	SP SM	Same as above, slightly mottled with olive clay, damp.		*					3 8-4.0 feet - 0-5% of soil moist with hydrocarbons. No evidence of hydrocarbons. 13 38 - Sample #R1-Q5-X5 (4 8-5.3 feet).
5		Bottom of borehole at 5 5 feet. Groundwater not encountered in borehole. Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q5-Y | Sheet 1 of 1

Boring Location:	Reservoir 1, Section 5	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 5.5	Water Depth. (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, light to medium brown, very fine- to fine-grained, damp to dry.							No evidence of hydrocarbons
				*					13 46 - Sample #R1-Q5-Y2 (1 8-2.3 feet)
	SP SM	Same as above.							
	SM	Silty SAND, medium olive brown, very fine- to fine-grained, grades to clayey sand, damp.							No evidence of hydrocarbons.
	SC								
5				*					13:52 - Sample #R2-Q5-Y5 (4.8-5.3 feet).
		Bottom of borehole at 5 5 feet. Groundwater not encountered in borehole							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q5-Z — Sheet 1 of 1

Boring Location	Reservoir 1, Section 5	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/19/96 — Date Finished: 3/19/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 2.5 — Water Depth, (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND to SAND, light brown, very fine- to fine-grained, dry to damp		*					No evidence of hydrocarbons. 14 00 - Sample #R1-Q5-Z2 (1 8-2.3 feet).
		Bottom of borehole at 2 5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q6-V — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 6	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started 3/19/96 — Date Finished: 3/19/96
Drilling Equipment:	Strataprobe	Borehole Diameter 1.5"	Completed Depth: (feet) 8.5 — Water Depth: (feet) N/A
Sampling Method. California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By A. Brown	Development Method.	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium brown, very fine- to fine-grained, damp.							No visible evidence of hydrocarbons. Slight hydrocarbon odor.
				*					14:15 - Sample #R1-Q6-V2 (1.8-2.3 feet). No visible evidence of hydrocarbons. Slight hydrocarbon odor.
	SM	Same as above.							
	SM	Same as above							
5	SP	SAND, dark brown, very fine- to fine-grained. Some intermixed clayey SAND and silty SAND.		*					14:19 - Sample #R1-Q6-V5 (4.8-5.3 feet) Damp to moist with hydrocarbons 80% of soils moist with hydrocarbons.
	SP	Same as above.							Damp to moist with hydrocarbons. Hydrocarbons similar in color to motor oil.
				*					80-100% of soils moist with hydrocarbons. 14:25 - Sample #R1-Q6-V8 (7.8-2.3 feet) 7.8 and 8.3 feet sandy layers wet with hydrocarbons
10		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q6-W Sheet 1 of 1

Boring Location:	Reservoir 1, Section 6	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.5	Water Depth. (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing	N/A
Backfill Material	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Mixed silty SAND with a little gravel, medium brown to reddish brown, very fine- to fine-grained, damp							No evidence of hydrocarbons.
	SP	SAND, dark brown, very fine- to fine-grained, moist, loose.							Damp with hydrocarbons to 2 feet.
				*					14:36 - Sample #R1-Q6-W2 (1.8-2.3 feet). Moist with hydrocarbons to 3.3 feet.
	SP	Same as above with some interbedded olive clay layers.							25-35% moist with hydrocarbons
5				*					Wet zones of hydrocarbons. 14:40 - sample #R1-Q6-W5 (4.8-5.3 feet).
	SW	SAND, black, very fine- to fine-grained, moist to wet.							5.3-6.0 feet wet with hydrocarbons.
	ML	Sandy SILT, olive gray, very fine- to fine-grained, dry.							Moist with hydrocarbons to 7 feet. No evidence of hydrocarbons.
	SM	Silty SAND, mottled dark brown and reddish to medium brown, very fine- to fine-grained.		*					Sample #R1-Q6-W8 (7.8-8.3 feet). 5-10% hydrocarbon viens
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q6-X — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 6	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Stratoprobe	Borehole Diameter 1.5"	Completed Depth: (feet) 8.5	Water Depth. (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing N/A	
Backfill Material: Granulated Bentonite		Slot Size N/A	Filter Material N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP	SAND and GRAVEL, medium brown, very fine- to fine-grained sand.							
	SW	SAND, very dark brown, very fine- to fine-grained, moist.							80-100% of soils moist with hydrocarbons.
				*					14:54 - Sample #R1-Q6-X2 (1.8-2.3 feet)
	SP	Same as above with some zones of olive silty CLAY, moist to wet							Three 1-inch thick zones wet w/ hydrocarbons @ 2.8, 3.5, 4 feet
									100% of soils moist with hydrocarbons.
5				*					Sample #R1-Q6-X5 (4.8-5.3 feet). Wet with hydrocarbons to 5.3 feet.
	CL	Grades to Silty CLAY, olive gray, minimal pathways of very fine- to fine-grained sand for hydrocarbon migration.							0-15% of soils moist with hydrocarbons.
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q6-Y Sheet 1 of 1

Boring Location:	Reservoir 1, Section 6	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter 1.5"	Completed Depth: (feet) 5.5	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, pale brown, very fine- to fine-grained, dry to damp.							No evidence of hydrocarbons.
				*					15:18 - Sample #R1-Q6-Y2 (1.8-2.3 feet).
	SM SP	Silty SAND to SAND, light brown, very fine- to fine-grained, damp to dry.							No evidence of hydrocarbons
5	SM SP	Same as above.		*					15:23 - Sample #R1-Q6-Y5 (4.8-5.3 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q6-Z Sheet 1 of 1

Boring Location:	Reservoir 1, Section 6	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/19/96	Date Finished 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 2.5	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing	N/A
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, light brown (2.5Y 5/3), very fine- to fine-grained, dry to damp.							No evidence of hydrocarbons.
	SP SM	Same as above.		*					15:33 - Sample #R1-Q6-Z2 (1.8-2.3 feet)
5		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q7-V

Sheet 1 of 1

Boring Location:	Reservoir 1, Section 7	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor	TEG	Driller: J. Coates	Date Started 3/19/96	Date Finished: 3/19/96
Drilling Equipment	Strataprobe	Borehole Diameter: 1.5"	Completed Depth feet 8.5	Water Depth: feet N/A
Sampling Method. California Modified [ ] Continuous [ ] Split Spoon [ ]			WELL CONSTRUCTION	
Drilling Method.	Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material:	Granulated Bentonite		Slot Size N/A	Filter Material N/A
Logged By. R. Pope	Checked By: A. Brown		Development Method N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND with a little gravel, dark brown to black, very fine- to fine-grained.							No visible evidence of hydrocarbons. Notable sweet hydrocarbon odor.
	SM	Silty SAND, medium brown, very fine- to fine-grained, damp.		*					15:52 - Sample #R1-Q7-V2 (1.8-2.3 feet).
	CL	CLAY with some gravel, dark brown, hard, dry							No evidence of hydrocarbons
	SM SP	Silty SAND to SAND, dark brown, very fine- to fine-grained, moist.							
5				*					15:57 - Sample #R1-Q7-V5 (4.8-5.3 feet). 80-100% of soil moist with hydrocarbons
	SM SP	Same as above							
				*					Sample #R1-Q7-V8 (7.8-8.3 feet).
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q7-W Sheet 1 of 1

Boring Location:	Reservoir 1, Section 7	Elevation and Datum, (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 10.5	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing	N/A
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium to light brown, very fine- to fine-grained, moist.							No visible hydrocarbons, slight odor.
				*					16:10 - Sample #R1-Q7-W2 (1.8-2.3 feet).
	SM SC	Silty SAND, medium brown, very fine- to fine-grained, varying to Clayey SAND, moist							Slight to moderate sweet odor.
5	SM SC	Same as above		*					16:14 - Sample #R1-Q7-W5 (4.8-5.3 feet).
	SP	SAND, dark brown, very fine- to fine-grained, moist, concrete pieces.							Piece of concrete from liner.
									Moist with hydrocarbons.
				*					Sample #R1-Q7-W8 (7.8-8.3 feet) Wet with hydrocarbons.
	SM	Silty SAND with some clay, mottled olive gray, very fine- to fine-grained, wet							
10									
		Bottom of borehole at 10.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SUFLJ Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q7-X | Sheet 1 of 1

Boring Location:	Reservoir 1, Section 7	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 5.5	Water Depth: feet N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SC	Mixed CLAY, SAND and GRAVEL, light to dark brown, dry.							Fill material.
	SM	Silty SAND to sandy SILT, medium brown, very fine- to fine-grained, damp							Hydrocarbons visible. Slight odor @ 1 foot.
				*					16:28 - Sample #R1-Q7-X2 (1.8-2.3 feet).
	SM	Silty SAND, medium brown, very fine- to fine-grained, firm, damp.							Moderate to strong hydrocarbon odor @ 3 feet.
5	SM	Silty SAND, medium to dark brown, very fine- to fine-grained, moist.		*					16:34 - Sample #R1-Q7-X5 (4.8-5.3 feet). Moist with hydrocarbons @ 5.2 feet

Bottom of borehole at 5.5 feet.
Groundwater not encountered in borehole.

Borehole logged from split spoon samples and cuttings. The group names, descriptions, and USCS descriptions and symbols are based entirely on visual-manual procedures.

* See remarks column for sample number.

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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q7-Y Sheet 1 of 1

Boring Location:	Reservoir 1, Section 7	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter 1.5"	Completed Depth (feet) 5.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size N/A	Filter Material: N/A
Logged By: R. Pope	Checked By A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND with some reddish orange clay, very fine- to medium-grained, dry							
	SM	Silty SAND, medium brown to gray brown, very fine- to fine-grained, damp.		*					No hydrocarbon odor. Possible hydrocarbon staining. Sample #R1-Q7-Y2 (1.8-2.3 feet)
	SM	Same as above							No evidence of hydrocarbons.
5	SM	Same as above.		*					16:45 - Sample #R1-Q7-Y5 (4.8-5.3 feet).
10		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual percentages. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring: [X] Monitoring Well: [ ] Boring/Well Number: R1-Q7-Z — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 7	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/19/96 — Date Finished: 3/19/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 2.5 — Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SC	Mixed CLAY, GRAVEL, and SAND, medium brown, dry.							
	SM	Silty SAND to SAND, medium brown (5Y 3/2), very fine- to fine-grained, damp.		*					No evidence of hydrocarbons Sample #R1-Q7-Z2 (1.8-2.3 feet).
	SP								
5		Bottom of borehole at 2.5 feet Groundwater not encountered in borehole. Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q8-V — Sheet 1 of 1

Boring Location	Reservoir 1, Section 8	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/19/96	Date Finished 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter 1.5"	Completed Depth (feet) 8.5	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SC	Clayey SAND to silty SAND some gravel, dark brown (5Y 2.5/1), very fine- to fine-grained, moist.							
	SM	Silty SAND, medium brown, very fine- to fine-grained, damp.							No evidence of hydrocarbons.
				*					08:00 - Sample #R1-Q8-V2 (2 0-2.5 feet) Slight sweet hydrocarbon odor @ 2 0 feet.
	SM	Silty SAND, medium brown (5Y 4/2), damp, firm							No evidence of hydrocarbons @ 4 feet.
5	CL	CLAY to sandy CLAY with a little gravel, dark brown (5Y 2.5/1), moist.		*					08.05 - Sample #R1-Q8-V5 (4 8-5.3 feet).
	SM SC	Silty SAND to clayey SAND, variable light and dark brown, very fine- to fine-grained, damp.							10-80% of soils damp with hydrocarbons @ 5 5-6 8 feet. Moderate hydrocarbon odor @ 5 5-6.8 feet.
	SM	Silty SAND, mottled light and medium brown, very fine- to fine-grained, damp							Trace evidence of hydrocarbons @ 6.8-8.5 feet.
				*					Sample #R1-Q8-V8 (7 8-8 3 feet).
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole.							
10		Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number R1-Q8-W Sheet 1 of 1

Boring Location:	Reservoir 1, Section 8	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth. (feet) 11.5	Water Depth: (feet) N/A
Sampling Method. California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing.	N/A
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM SC	Silty SAND to clayey SAND with a little gravel, mottled reddish and dark brown, very fine- to fine-grained sand.							No evidence of hydrocarbons. Sour odor
	SM SP	Silty SAND to SAND, medium reddish brown, very fine- to fine-grained.		*					08:24 - Sample #R1-Q8-W2 (2.0-2.5 feet). No evidence of hydrocarbons to 2.5 feet
	SC	Clayey SAND, dark brown to olive brown, very fine- to fine-grained sand, moist.							Damp with hydrocarbons @ 3.0-5.5 feet.
5	SC	Same as above with silty sand, olive gray seam to 5.5 feet		*					08:26 - Sample #R1-Q8-W5 (5.0-5.5 feet)
		Layered clayey SAND and silty SAND, dark brown to black, very fine- to fine-grained sand, moist to wet.							Sands wet with hydrocarbons @ 5.0 to 8.0 feet. Clays moist with hydrocarbons @ 5.0 to 8.0 feet.
	SC	Clayey SAND, medium to dark olive gray to olive, fine- to coarse-grained sand, sugary texture, moist to wet.		*					08:32 - Sample #R1-Q8-W8 (8.5-9.0 feet)
10									Wet with hydrocarbons in mottled pathways to 11.5 feet
	SC	Same as above.							Hydrocarbon has spent motor oil appearance, dark brown @ 11 feet.
		Bottom of borehole at 11.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
15		* See remarks column for sample number							

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q8-X — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 8	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Contes	Date Started 3/19/96 — Date Finished 3/19/96
Drilling Equipment	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 11.5 — Water Depth: (feet) N/A
Sampling Method California Modified [ ] Continuous [ ] Split Spoon [ ]			WELL CONSTRUCTION
Drilling Method:	Continuous Core		Type and Diameter of Well Casing: N/A
Backfill Material:	Granulated Bentonite		Slot Size: N/A — Filter Material: N/A
Logged By	R. Pope	Checked By	A. Brown — Development Method: N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND with a little gravel, medium dark to very dark brown, very fine- to fine-grained, damp							Dark staining. Sour fill odor.
	SM	Changes to silty SAND, light medium brown, very fine to fine grained, damp		*					09:04 - Sample #R1-Q8-X2 (2.0-2.5 feet)
	SM	Silty SAND, light to medium brown to olive brown, very fine to fine grained, damp							Slight hydrocarbon odor @ 3 feet.
5	CL	3-inch thick layer of CLAY with a little sandy gravel, dark brown, damp.							
	SC SM	Clayey SAND to silty SAND, mottled olive gray, very fine- to fine-grained, moist.		*					09:12 - Sample #R1-Q8-X5 (5.0-5.5 feet)
									20-30% of soils moist with hydrocarbons @ 6 feet.
									50% of soils moist with hydrocarbons @ 7 feet.
	SP SM	SAND to silty SAND, dark brown, very fine- to fine-grained, moist.		*					09:14 - Sample #R1-Q8-X8 (8.0-8.5 feet). Moist with hydrocarbons @ 8.0 to 9.5 feet.
10	SC	Clayey SAND and sandy CLAY, mottled medium olive brown, dry, dense							Wet with hydrocarbons @ 9.5 to 10.0 feet. No evidence of hydrocarbons below 10 feet.
		Bottom of borehole at 11.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual *procedures*							
15		* See remarks column for sample number.							

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q8-Y

Sheet 1 of 1

Boring Location:	Reservoir 1, Section 8	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 7.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [X] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By R. Pope	Checked By A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium to reddish brown, very fine- to fine-grained, moist							
	CL	Sandy CLAY to clayey SAND, mottled medium to dark brown, very fine- to fine-grained sand.		*					Sour odor. No evidence of hydrocarbons. 09:31 - Sample #R1-Q8-Y2 (2.0-2.5 feet).
	SM ML	Silty SAND to sandy SILT, medium brown to olive brown, very fine- to fine-grained.							No evidence of hydrocarbons @ 4 feet.
5				*					09:35 - Sample #R1-Q8-Y5 (5.0-5.5 feet).
	SP	SAND, medium grayish brown, very fine- to fine-grained, moist.							No evidence of hydrocarbons @ 5.5 to 7 feet.
		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number.							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q8-Z Sheet 1 of 1

Boring Location:	Reservoir 1, Section 8	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/19/96	Date Finished: 3/19/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 2.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM SC	Silty SAND to clayey SAND, medium to reddish brown, very fine- to fine-grained sand. Intermittent sandy clay and sandy clay, reddish to dark brown, moist.							No evidence of hydrocarbons.
				*					09:50 - Sample #R1-Q8-Z2 (2.0-2.5 feet)
		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q9-V — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 9	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/20/96	Date Finished 3/20/96
Drilling Equipment Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 12.5	Water Depth: feet N/A
Sampling Method California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By A. Brown	Development Method. N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM SC	Silty SAND to clayey SAND with a little sandy clay, medium brown to grayish brown, very fine- to fine-grained sand, moist							Blended fill material to 5.3 feet. No evidence of hydrocarbons.
	SM SP	Silty SAND to SAND, dark brown, very fine- to fine-grained, moist.		*					Moderate hydrocarbon odor @ 1 8 feet. 10:02 - Sample #R1-Q9-V2 (2.0-2 5 feet) No evidence of hydrocarbons @ 2.5 feet. 80-100% of soil damp with hydrocarbons @ 3 to 5 feet. No evidence of hydrocarbons @ 4 feet
5	CL	Clayey SAND to sandy CLAY, dark brown to greenish brown, very fine- to fine-grained sand, moist.		*					10:10 - Sample #R1-Q9-V5 (5.0-5 5 feet)
	SP SM	SAND to silty SAND, medium to dark brown, very fine- to fine-grained, damp to moist.							100% of soil damp to moist with hydrocarbons @ 5 to 7 8 feet.
	SP SM	Same as above.		*					Moist to wet with hydrocarbons @ 7.8 feet. Sample #R1-Q9-V8 (8.0-8.5 feet).
	CL	Sandy CLAY, olive gray, very fine- to fine-grained sand, wet to moist.							Wet with hydrocarbons in sandy zone at 10 3 feet.
10	CL	Same as above							0-10% of soil moist with hydrocarbons @ 11 feet
		Bottom of borehole at 12.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q9-W — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 9	Elevation and Datum (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started 3/20/96 — Date Finished: 3/20/96
Drilling Equipment	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 10.5 — Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]			WELL CONSTRUCTION
Drilling Method:	Continuous Core		Type and Diameter of Well Casing: N/A
Backfill Material	Granulated Bentonite		Slot Size: N/A — Filter Material: N/A
Logged By	R. Pope	Checked By A. Brown	Development Method: N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, light to medium brown, very fine- to fine-grained, dry to damp.							No evidence of hydrocarbons.
				*					10:37 - Sample #R1-Q9-W2 (2.0-2.5 feet).
	SM SC	Silty SAND to clayey SAND, mottled greenish brown, very fine- to fine-grained sand, moist.							40-60% of soil damp with hydrocarbons @ 3 feet
	SP	SAND, dark brown, very fine- to fine-grained, moist.							100% of soil moist with hydrocarbons @ 4.5 feet.
5				*					10:40 - Sample #R1-Q9-W5 (5.0-5.5 feet) Wet with hydrocarbons in sample @ 5.5 feet.
	SP	Same as above.							Soil wet with hydrocarbons @ 6 feet.
	CL	1-inch thick clay seam.							
	SP	Sand, mottled olive and brown.		*					10:47 - Sample #R1-Q9-W8 @ 8 feet
									Free flowing hydrocarbons in horizontal sand strata @ 9.3 feet
10									10-20% of soil affected by hydrocarbons @ 10 feet.
		Bottom of borehole at 10.5 feet. Groundwater not encountered in borehole							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation
Project Number: 3659-03
Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q9-X
Sheet 1 of 1

Boring Location:	Reservoir 1, Section 9	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/20/96	Date Finished: 3/20/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 8.5	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM SC	Silty SAND to clayey SAND, variable fill material, medium reddish brown to brown, very fine- to fine-grained sand, moist.							No evidence of hydrocarbons.
	SP	SAND, dark brown, very fine- to fine-grained, moist to wet.		*					11:10 - Sample #R1-Q9-X2 (2.0-2.5 feet). Sampler breaks @ 2.3 feet. Soil is damp with hydrocarbons. Hydrocarbon/Fill odor @ 2.5 feet.
	SP SM	SAND to silty SAND, dark brown, very fine- to fine-grained, moist.							Moist with hydrocarbons @ 3 feet. Lenses wet with hydrocarbons to 4.5 feet.
5				*					11:20 - Sample #R1-Q9-X5 (5.0-5.5 feet).
	SP SM	Same as above							Soil damp with hydrocarbons @ 7 feet
				*					11:30 - Sample #R1-Q9-X8 (8.0-8.5 feet)
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole.							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q9-Y | Sheet 1 of 1

Boring Location:	Reservoir 1, Section 9	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/20/96	Date Finished: 3/20/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 5.5	Water Depth: N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained, damp.							No evidence of hydrocarbons.
				*					13:07 - Sample #R1-Q9-Y2 (2.0-2.5 feet)
	SP SM	SAND to silty SAND, dark brown to gray brown, very fine- to fine-grained, dry to damp.							No evidence of hydrocarbons @ 4 feet.
5				*					13:10 - Sample #R1-Q9-Y5 (5.0-5.5 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q9-Z Sheet 1 of 1

Boring Location:	Reservoir 1, Section 9	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/20/96	Date Finished: 3/20/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 2.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material Granulated Bentonite		Slot Size: N/A	Filter Material N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown reddish brown, very fine- to fine-grained, dry to damp.							No evidence of hydrocarbons.
	SP SM	Same as above.		*					13.25 - Sample #R1-Q9-Z2 (2.0-2.5 feet)
5		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q10-V — Sheet 1 of 1

Boring Location	Reservoir 1, Section 10	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor	TEG	Driller: J. Coates	Date Started: 3/20/96 — Date Finished: 3/20/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (ft): 11.0 — Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged by: R. Pope	Checked by: A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown to very dark brown, very fine- to fine-grained.		*					Damp with hydrocarbons. 13:36 - Sample #R1-Q10-V2 (1.5-2.0 feet).
	SP SM	Same as above							100% of soil moist with hydrocarbons @ 3 feet. Zones of sand with w/ hydrocarbons at 3.2, 4.0, and 4.2 feet.
5	SP SM	Same as above.		*					Moist with hydrocarbons @ 4 feet. 13:43 - Sample #R1-Q10-V5 (4.5-5.0 feet).
	CL	Sandy CLAY, mottled grayish brown to dark brown, very fine- to fine-grained sand, moist							Zones of sand with w/ hydrocarbons at 5.2, 5.5, and 8.0 feet.
	SP SM	SAND to silty SAND, mottled greenish gray		*					30-60% of soil affected with hydrocarbons @ 6 feet. Sample #R1-Q10-V8 (7.5-8.0 feet)
	SP SM	Same as above.							10-50% of soil affected by variable amounts of hydrocarbons.
10									
		Bottom of borehole at 11 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q10-W — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 10	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/20/96	Date Finished: 3/20/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.0	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SC SM	Clayey SAND to silty SAND, dark brown, very fine- to fine-grained sand, firm, moist.							
				*					100% of soil moist with hydrocarbons 14.09 - Sample #R1-Q10-W2 (2.0-2.5 feet).
	SP	SAND with spongy matrix, dark brown, very fine- to fine-grained, moist							Moist with hydrocarbons @ 3 feet.
	SP	Same as above.							14:12 - Sample #R1-Q10-W5 (4.5-5.0 feet).
5				*					
	SC SM	Clayey SAND to silty SAND, mottled greenish brown, very fine- to fine-grained sand, damp							Soil wet with hydrocarbons @ 5.5 feet
									50-80% of soils moist with hydrocarbons at 5.3 and 7.6 feet.
				*					Sample #R1-Q10-W8 (7.5-8.0 feet).
		Bottom of borehole at 8 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
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		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q10-X | Sheet 1 of 1

Boring Location:	Reservoir 1, Section 10	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/20/96	Date Finished 3/20/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 10.0	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SC	SAND to clayey SAND, very dark brown, very fine- to fine-grained sand.							100% of soil damp with hydrocarbons. Zones of sand wet with hydrocarbons at 1 3 feet 14:27 - Sample #R1-Q10-X2 (2.0-2 5 feet).
	SP SC	Same as above		*					100% of soil damp with hydrocarbons @ 4 feet Sample #R1-Q10-X5 (4.5-5.0 feet). Sampler rod breaks @ 5 feet.
5	SP SC	Same as above.		*					
	SM SC	*Silty SAND to clayey SAND, very dark grayish* brown, very fine- to fine-grained sand, moist to wet.							Very moist with hydrocarbons @ 6 feet. Wet with hydrocarbons @ 6.8 feet.
	SM SC	Same as above							Sample coated w/ heavy dark brown oil resembling spent motor oil. Free flowing product @ 9 5 to 9.7 feet.
10		Bottom of borehole at 10 feet Groundwater not encountered in borehole							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation
Project Number: 3659-03
Soil Boring [X] Monitoring Well [ ] Boring Well Number: R1-Q10-Y
Sheet 1 of 1

Boring Location:	Reservoir 1, Section 10	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/20/96	Date Finished: 3/20/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 7.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, light brown to grayish brown, very fine- to fine-grained, damp.							No evidence of hydrocarbons.
				*					15'10 - Sample #R1-Q10-Y2 (2.0-2.5 feet).
	SM	Silty SAND, medium grayish brown, very fine- to fine-grained, damp							Damp with hydrocarbons @ 4.3 feet. Wet with hydrocarbons @ 4.7 feet.
5	SM	Same as above.		*					Sample #R1-Q10-Y5 (4 5-5.0 feet). Hydrocarbon on tip of sampler @ 5.5 feet.
		Bottom of borehole at 7 5 feet. Groundwater not encountered in borehole							
		Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
10		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R1-Q10-Z — Sheet 1 of 1

Boring Location:	Reservoir 1, Section 10	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/20/96	Date Finished: 3/20/96
Drilling Equipment: Strataprobe	Borehole Diameter 1.5"	Completed Depth (feet) 2.5	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By R. Pope	Checked By A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, light to medium brown and gray brown, very fine- to fine-grained, damp.							No evidence of hydrocarbons.
	SM	Same as above		*					15:25 - Sample #R1-Q10-Z2 (2.0-2.5 feet).
5		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q1-V — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 1	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/20/96	Date Finished: 3/20/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 8.0	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM SP	Mixed silty SAND, SAND, and clayey SAND, little gravel, medium brown, reddish brown and dark brown, fine- to very fine-grained sand, moist.							Resembles blended backfill materials placed and compacted during reservoir demolition, Summer 1995.
	SC	Clayey SAND to sandy CLAY, medium olive-brown, fine- to very fine-grained sand, mottled, sugary texture, moist.		*					15:38 - Sample #R2-Q1-V2 (1.8-2.3 feet).
	SM	Grades to Silty SAND, medium to dark brown, fine to very fine-grained sand, damp							Mottled darker zones damp with hydrocarbons affecting 10-20% of the sample. Slightly damp w/ hydrocarbons, slight hydrocarbon odor @ 4 feet
5				*					15:45 - Sample #R2-Q1-V5 (4.5-5.0 feet). Hydrocarbon odor @ 6 feet.
	SM SP	Silty SAND to SAND, interbedded, little clay, medium to dark brown, fine- to very fine-grained sand, damp.		*					Damp with hydrocarbons @ 7 feet. 15:48 - Sample #R2-Q1-V8 (7.5-8.0 feet).
		Bottom of borehole at 8 feet. Groundwater not encountered in borehole.							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q1-W — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 1	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/20/96 — Date Finished: 3/20/96
Drilling Equipment:	Stratuprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.0 — Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SC	Clayey SAND, very dark brown to black, very fine- to fine-grained sand, very dense, damp.							Slightly damp with hydrocarbons Hydrocarbon odor.
	SP SM	SAND to silty SAND, very dark brown, very fine- to fine-grained sand, moist		*					15 56 - Sample #R2-Q1-W2 (1.8-2.3 feet)
5				*					Sandy zone moist with hydrocarbons @ 4 3-4 4 feet 16.02 - Sample #R2-Q1-W5 (4.5-5 0 feet)
	SM	Silty SAND, medium olive to olive brown, mottled, very fine- to fine-grained, moist							3-inch thick sandy zone wet with hydrocarbons @ 5 3 feet Mottled darker zones damp with hydrocarbons affecting 20-40% of the sample.
	SP SM	SAND to silty SAND, very dark brown, very fine- to fine-grained, moist.		*					16·07 - Sample #R2-Q1-W8 (7 5-8 0 feet) Thin sandy zone wet with hydrocarbons @ 7 8 feet
10		Bottom of borehole at 8 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring: [X] — Monitoring Well: [ ] — Boring Well Number: R2-Q1-X — Sheet 1 of 1

Boring Location	Reservoir 2, Section 1	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/20/96	Date Finished: 3/20/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 5.0	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, little clay, medium reddish brown (10 YR 3/4), very fine- to fine-grained, moist.							
	SM	Silty SAND, medium brown (10 YR 3/2), very fine- to fine-grained, moist.							No hydrocarbons observed.
	SM	Silty SAND, medium gray-brown, very fine- to fine-grained, moist.		*					16:17 - Sample #R2-Q1-X2 (1.8-2.3 feet).
	SM	Same as above, (2.5 YR 3/2).							No hydrocarbons observed @ 4 feet
5				*					16:22 - Sample #R2-Q1-X5 (4.5-5.0 feet).
		Bottom of borehole at 5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring: [X] Monitoring Well: [ ] Boring/Well Number: R2-Q1-Y

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 1	Elevation and Datum (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/20/96 / Date Finished: 3/20/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 5.0 / Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]			WELL CONSTRUCTION
Drilling Method:	Continuous Core		Type and Diameter of Well Casing: N/A
Backfill Material:	Granulated Bentonite		Slot Size: N/A / Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown		Development Method: N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium reddish brown, very fine- to fine-grained, dry to damp.							
	SM	Silty SAND, medium brown to grayish brown (5Y 3/2), very fine to fine grained, dry to damp		*					No visible hydrocarbon staining. 16:29 - Sample #R2-Q1-Y2 (1.5-2.0 feet)
5				*					No hydrocarbon odor or staining @ 4 feet 16:31 - Sample #R2-Q1-Y5 (4.5-5.0 feet).
		Bottom of borehole at 5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, textures, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q1-Z Sheet 1 of 1

Boring Location:	Reservoir 2, Section 1	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/20/96	Date Finished 3/20/96
Drilling Equipment: Strataprobe	Borehole Diameter 1.5"	Completed Depth. (feet) 2.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing	N/A
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material N/A
Logged By R. Pope	Checked By: A. Brown	Development Method. N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium reddish brown, very fine- to fine-grained, damp		*					No hydrocarbon odor or staining 16:40 - Sample #R2-Q1-Z2 (1.5-2.0 feet).
5		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q2-V — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 2	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/20/96 — Date Finished: 3/20/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.0 — Water Depth (feet): N/A
Sampling Method, California Modified	[ ] Continuous [ ] Split Spoon [ ]	WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A — Filter Material:	N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, reddish brown, very fine- to fine-grained, dense, damp.							No hydrocarbon staining or odor.
				*					16 46 - Sample #R2-Q2-V2 (1.8-2.0 feet).
	CL	3-inch thick CLAY layer, very stiff							
	SM	Silty SAND, little clay, olive gray and brown mottled, very fine- to fine-grained, moist.							20-40% moist with hydrocarbons, hydrocarbon odor @ 3 feet.
	SP SM	SAND to silty SAND, dark brown, very fine- to fine-grained, damp.							
				*					16.53 - Sample #R2-Q2-V5 (4.5-5 0 feet).
5	CL	Sandy CLAY to clayey SAND, medium gray to brown, very fine- to fine-grained, mottled, moist to wet.							Slightly damp w/ hydrocarbons, moderate hydrocarbon odor Wet with hydrocarbons @ 5 25 feet. Some migration pathways observed @ 6 feet 20-50% moist with hydrocarbons, hydrocarbon odor @ 7 feet Wet with hydrocarbons @ 7 25 and 7.75 feet.
				*					17:01 - Sample #R2-Q2-V8 (7.5-8.0 feet)
		Bottom of borehole at 8 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELI Reservoir Investigation — Project Number: 3659-03

Soil Boring ☒ Monitoring Well ☐ — Boring/Well Number: R2-Q2-W — Sheet 1 of 1

Boring Location	Reservoir 2, Section 2	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.0	Water Depth: (feet) N/A
Sampling Method: California Modified ☐ Continuous ☐ Split Spoon ☐		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium brown, very fine- to fine-grained, dense, damp.							No visible hydrocarbon staining or odor.
				*					07:57 - Sample #R2-Q2-W2 (1.8-2.0 feet)
	CL	Sandy CLAY, dark brown, very fine- to fine-grained sand, dense, moist							Moderate hydrocarbon odor @ 4 feet.
5				*					Dark staining evenly distributed. Damp with hydrocarbons. Sample #R2-Q2-W5 (4.5-5.0 feet).
	SM	Sand (2" layer)							30-60% moist with hydrocarbons @ 5 feet.
	CL	Sandy CLAY, mottled with black, very fine- to fine-grained sand, olive gray, damp.							2-inch thick very fine to fine grained sand @ 5.2 feet
				*					08:05 - Sample #R2-Q2-W8 (7.5-8.0 feet)
		Bottom of borehole at 8 feet Groundwater not encountered in borehole Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number R2-Q2-X Sheet 1 of 1

Boring Location:	Reservoir 2, Section 2	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 7.5	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, light to medium brown, very fine- to fine-grained, damp to dry. Trace of blended dark brown, very fine to fine grained sand (oily), damp to dry.							Fill material. No evidence of hydrocarbons except in blended dark brown soils.
				*					08:00 - Sample #R2-Q2-X2 (2.0-2.5 feet)
		Blended fill soils (same as above).							
5				*					08:12 - Sample #R2-Q2-X5 (5.0-5.5 feet)
	SM	Silty SAND, mottled with dark brown very fine- to fine-grained sand, olive brown to olive gray.							Interbedded zones of sand, 10-60% moist with hydrocarbons. Wet with hydrocarbons @ 6.1 and 7.3 feet.
		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q2-Y Sheet 1 of 1

Boring Location:	Reservoir 2, Section 2	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/21/96	Date Finished: 3/21/96
Drilling Equipment Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 5.5	Water Depth: (feet) N/A
Sampling Method California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By R. Pope	Checked By A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	SAND to silty SAND, medium brown, very fine- to fine-grained, moist.							Possible fill material
				*					08:25 - Sample #R2-Q2-Y2 (2.0-2.5 feet).
	SW	SAND, olive gray to olive brown, very fine- to fine-grained, moist.							No evidence of hydrocarbon staining or odor.
5				*					08:31 - Sample #R2-Q2-Y5 (5.0-5.5 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q2-Z — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 2	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 5.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP	SAND, medium brown, damp. (resembles blended fill)							
		Some zones of slightly varying color.		*					08:36 - Sample #R2-Q2-Z2 (2.0-2.5 feet). Possible fill material to 5.3 feet. No hydrocarbon odors or evidence of free product
5	SP	Layered silty SAND (native), olive gray to brown, moist.		*					08:38 - Sample #R2-Q2-Z5 (5.0-5.5 feet)
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q3-V — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 3	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 11.5	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (Feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, very dark brown with mottled dark olive brown, very fine- to fine-grained, damp to moist.							Damp with hydrocarbons.
				*					08:52 - Sample #R2-Q3-V2 (2.0-2.5 feet)
									2" layer wet with hydrocarbons @ 2.8 feet
									Moist to wet with hydrocarbons @ 4 feet
5	CL	Sandy CLAY with some dark brown sand, olive brown mottled, very fine- to fine-grained sand, moist to wet.		*					3" layer wet with hydrocarbons @ 4.3 feet. 08:54 - Sample #R2-Q3-V5 (4.5-5.0 feet). Hydrocarbon migration along horizontal and vertical fractures, root tubes, etc.
									3" layer wet with hydrocarbons @ 5.8 feet
				*					09:02 - Sample #R2-Q3-V8 (7.5-8.0 feet).
10	SP	SAND, very dark brown, very fine- to fine-grained, strong odor, wet							Wet with hydrocarbons @ 10 feet.
	SP	Alternating layers of medium brown and very dark brown, fine grained SAND, moist to wet.							11.3-11.5 wet with hydrocarbons.
		Bottom of borehole at 11.5 feet. Groundwater not encountered in borehole							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
15		* See remarks column for sample number							

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q3-W — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 3	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Stratoprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 10.5	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, dark brown to very dark brown, very fine to fine grained, moist.							Damp to moist with hydrocarbons. 100% grain surface coverage.
	SP SM	Same as above, with 20-30% mottled clayey SAND, olive		*					09:18 - Sample #R2-Q3-W2 (2.5-3.0)
									Saturated with free flowing hydrocarbons.
	CL	Sandy CLAY with 20-40% fine grained sand stuctures carrying oil, olive yellowish brown, mottled, very fine to fine grained.							
5				*					Damp with hydrocarbons. 09:23 - Sample #R2-Q3-W5 (5.0-5.5)
									Small fractures and preferential pathways with hydrocarbons.
				*					09:33 - Sample #R2-Q3-W8 (7.5-8.0)
10									2-inch thick sand layer with free flowing hydrocarbons.
		Bottom of borehole at 10.5 feet. Groundwater not encountered in borehole							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q3-X

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 3	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 5.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing	N/A
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SC	Approximately 6-8" of blended fill materials: variable SAND and clayey SAND, very fine- to fine-grained sand, damp.							
	SP SM	SAND to silty SAND, grayish brown to olive brown, very fine- to fine-grained, damp.							
				*					10:01 - Sample #R2-Q3-X2 (2.0-2.5 feet).
	SP SM	SAND to silty SAND, grayish brown, very fine- to fine-grained.							
									No hydrocarbon staining or odors.
5	SW	2-inch thick wet zone (no hydrocarbons). Sandy CLAY to clayey SAND, mottled olive brown, very fine- to fine-grained sand, stiff.		*					10:05 - Sample #R2-Q3-X5 (5.0-5.5 feet).
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Bottom of borehole at 5.5 feet.
Groundwater not encountered in borehole.

Borehole logged from core samples
The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.

* See remarks column for sample number

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q3-Y — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 3	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/21/96 — Date Finished: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 5.5 — Water Depth (feet) N/A
Sampling Method:	California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION
Drilling Method:	Continuous Core		Type and Diameter of Well Casing: N/A
Backfill Material	Granulated Bentonite		Slot Size: N/A — Filter Material: N/A
Logged By:	R. Pope — Checked By: A. Brown		Development Method: N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SC	Fill - SAND with variable clayey sand and silty clay, reddish brown (10YR 4/4), very fine- to fine-grained, damp.							
	SM SP	Silty SAND to SAND, grayish brown (10YR 3/2), very fine- to fine-grained, moist.							
				*					10:17 - Sample #R2-Q3-Y2 (2.0-2.5 feet).
									No hydrocarbon odor or evidence of free product.
5	SP	to 4 inch thick SAND layer, very fine- to fine grained, wet.		*					10:20 - Sample #R2-Q3-Y5 (5.0-5.5 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q3-Z

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 3	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 2.5
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]			Date Finished: 3/21/96
Drilling Method:	Continuous Core		Water Depth (feet): N/A
Backfill Material:	Granulated Bentonite		WELL CONSTRUCTION
Logged By:	R. Pope	Checked By: A. Brown	Type and Diameter of Well Casing: N/A
			Slot Size: N/A
			Filter Material: N/A
			Development Method: N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SC	Fill - SAND with variable clayey sand and silty clay, reddish brown (10YR 4/4), very fine- to fine-grained sand.							No hydrocarbon odor or evidence of free product.
	SM SP	Silty SAND to SAND, grayish brown (10YR 3/2), very fine- to fine-grained, moist		*					10-31 - Sample #R2-Q3-Z2 (2.0-2.5 feet)
5		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
15		* See remarks column for sample number							

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R2-Q4-V | Sheet 1 of 1

Boring Location:	Reservoir 2, Section 4	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 8.5	Water Depth feet N/A
Sampling Method. California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing	N/A
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material N/A
Logged By R. Pope	Checked By A. Brown	Development Method N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SC	Clayey SAND, medium grayish brown, very fine- to fine-grained, sugary texture, damp							Blended fill soils to 2.8 feet. No evidence of hydrocarbons
				*					10:40 - Sample #R2-Q4-V2 (2.0-2.5 feet). Free flowing water @ 2.3 feet
	SP	SAND, very dark brown, very fine- to fine-grained, moist to wet.							
	SP	SAND with some silt and clay, olive brown to medium brown (2.5YR 4/4), very fine- to fine-grained, moist.							Hydrocarbon odor. 100% damp with hydrocarbons @ 4 feet
5									Slight hydrocarbon odor @ 4.8 feet.
				*					10:43 - Sample #R2-Q4-V5 (5.0-5.5 feet).
	SC	Clayey SAND to sandy CLAY, olive brown to medium brown, very fine- to fine-grained sand, moist.							10-20% of sand structures moist with hydrocarbons to 8.5 feet.
				*					10:52 - Sample #R2-Q4-V8 (8.0-8.5 feet).
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole.							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation
Project Number: 3659-03
Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q4-W
Sheet 1 of 1

Boring Location:	Reservoir 2, Section 4	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/21/96 / Date Finished: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter 1.5"	Completed Depth (feet) 8.5 / Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By R. Pope	Checked By A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Blended fill including: silty SAND, silty CLAY, sandy CLAY of varying color, very fine- to fine-grained sand, damp							No visible hydrocarbons.
				*					11:02 - Sample #R2-Q4-W2 (2.0-2.5 feet).
	SC	Clayey SAND to sandy CLAY, reddish orange, very fine- to fine-grained, damp.							
	SC	Same as above, olive brown to medium brown, damp							10-20% of sandy structures affected by hydrocarbons @ 4 feet.
5				*					Dark brown soil damp with hydrocarbons @ 4.2 feet. Slight hydrocarbon odor @ 4.8 feet.
	CL	Sandy CLAY, mottled olive brown to medium brown, very fine- to fine-grained sand, moist.							11:04 - Sample #R2-Q4-W5 (5.0-5.5 feet). No free hydrocarbons @ 6 feet.
				*					11:10 - Sample #R2-Q4-W8 (8.0-8.5 feet). Slight hydrocarbon odor @ 8.3 feet.
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole.							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q4-X Sheet 1 of 1

Boring Location:	Reservoir 2, Section 4	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 5.5	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SW	Blended fill materials of varying lithology to 2.1 feet.							No evidence of hydrocarbons.
	SM	Silty SAND, little clay, dark brown, very fine- to fine-grained, moist.							No sample taken @ 2 feet. Moderate hydrocarbon odor @ 2 to 2.2 feet
	SM SC	Silty SAND to clayey SAND, mottled medium brown to olive brown, very fine- to fine-grained sand, moist.							Slight hydrocarbon odor @ 4 feet. 10-20% of sandy structures damp w/ hydrocarbons @ 4 to 5 feet.
5				*					11:24 - Sample #R2-Q4-X5 (5.0-5.5 feet)
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q4-Y — Sheet 1 of 1

Boring Location	Reservoir 2, Section 4	Elevation and Datum (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/21/96 — Date Finished: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 5.5 — Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Blended fill including: silty SAND, silty CLAY, sandy CLAY of varying color, very fine- to fine-grained sand, damp.							Slight hydrocarbon odors.
	SP	SAND, medium brown, very fine- to fine-grained, moist, possible fill.		*					No hydrocarbon odor or discolorations. 11:35 - Sample #R2-Q4-Y2 (2.0-2.5 feet).
	SM SP	Silty SAND to SAND (native), olive brown, very fine- to fine-grained, moist.							No hydrocarbon odor or discolorations.
5				*					11:36 - Sample #R2-Q4-Y5 (5.0-5.5 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring ☒ | Monitoring Well ☐ | Boring/Well Number: R2-Q4-Z | Sheet 1 of 1

Boring Location	Reservoir 2, Section 4	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 2.5	Water Depth: (feet) N/A
Sampling Method: California Modified ☐ Continuous ☐ Split Spoon ☐			WELL CONSTRUCTION	
Drilling Method:	Continuous Core		Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By A. Brown		Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium brown (2.5YR 4/3), very fine- to fine-grained, moist.		*					No hydrocarbon staining or odors. 11:49 - Sample #R2-Q4-Z2 (2.0-2.5 feet)
5		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring: ☒ Monitoring Well: ☐ — Boring Well Number: R2-Q5-V — Sheet 1 of 1

Boring Location	Reservoir 2, Section 5	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Date Started	3/21/96
Driller:	J. Coates	Date Finished:	3/21/96
Drilling Equipment:	Strataprobe	Completed Depth (feet)	8.0
Borehole Diameter:	1.5"	Water Depth: (feet)	N/A
Sampling Method: California Modified ☐ Continuous ☐ Split Spoon ☐		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By	R. Pope	Checked By:	A. Brown
		Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Blended fill including: silty SAND, silty CLAY, sandy CLAY of varying color, very fine- to fine-grained, damp.							Intermittent odor
	SM SC	Silty SAND to clayey SAND mottled, olive brown, very fine- to fine- grained, moist		*					Sample #R2-Q5-V2 (2.0-2.5 feet). 10-30% of soil moist with hydrocarbons @ 3 feet
5	SM SC	Same as above.		*					Sample #R2-Q5-V5 (4.5-5.0 feet). 20-40% of soil moist with hydrocarbons @ 6 feet.
				*					Sample #R2-Q5-V8 (7.5-8.0 feet).
10		Bottom of borehole at 8 feet. Groundwater not encountered in borehole. Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q5-W — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 5	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.0	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP	SAND with little clay, medium brown, very fine- to fine-grained, wet.							Fill to 3 feet
				*					Some hydrocarbons in isolated portions. 13:40 - Sample #R2-Q5-W2 (2.0-2.5 feet). 3 to 4 feet: thin zones moist with hydrocarbons
	SM	Silty SAND, olive gray, very fine- to fine-grained, wet.							
	CL	Sandy CLAY, mottled olive gray, very fine- to fine-grained sand, moderately dense, damp.							
5				*					13:45 - Sample #R2-Q5-W5 (4.5-5.0 feet). 10-40% of soil damp with hydrocarbons @ 5 feet.
	CL	Same as above, very dense, damp to wet.							
				*					30-40% of soil wet with hydrocarbons @ 7 feet. 13:51 - Sample #R2-Q5-W8 (7.5-8.0 feet).
		Bottom of borehole at 8 feet. Groundwater not encountered in borehole.							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation
Project Number: 3659-03
Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q5-X
Sheet 1 of 1

Boring Location:	Reservoir 2, Section 5	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.0	Water Depth: (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Variable silty SAND and CLAY, moist.							Blended fill material
									Slight hydrocarbon odor.
				*					Sample #R2-Q5-X2 (2.0-2.5 feet).
	CL	Sandy CLAY, olive gray to brown, very fine- to fine-grained sand.							No visible staining or hydrocarbon odor @ 3 feet.
5				*					Sample #R2-Q5-X5 (4.5-5.0 feet)
				*					Sample #R2-Q5-X8 (7.5-8.0 feet).
		Bottom of borehole at 8 feet Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q5-Y — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 5	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started 3/21/96 — Date Finished: 3/21/96
Drilling Equipment:	Stratuprobe	Borehole Diameter. 1.5"	Completed Depth (feet) 5.0 — Water Depth. (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By. A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Blended fill including: silty SAND, silty CLAY, sandy CLAY of varying color, very fine- to fine-grained, damp							
	CL	Sandy CLAY, olive brown (5Y 3/2), very fine- to fine-grained sand, moist.		*					Sample #R2-Q5-Y2 (2.5-3.0 feet).
5				*					No evidence of staining or hydrocarbon odors. Sample #R2-Q5-Y5 (4.5-5.0 feet).
		Bottom of borehole at 5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring: [X] Monitoring Well: [ ] Boring/Well Number: R2-Q5-Z — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 5	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/21/96 — Date Finished: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 2.5 — Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Blended fill including: silty SAND, silty CLAY, sandy CLAY of varying color, very fine- to fine-grained, damp.							Blended fill material. Slight hydrocarbon odor in some fill types. No evidence of staining or hydrocarbon odor. Pieces of asphalt @ 1.2 feet
	CL	Sandy CLAY, olive gray, very fine- to fine-grained sand, moist.		*					Sample #R2-Q5-Z2 (2.0-2.5 feet).
5		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q6-V Sheet 1 of 1

Boring Location:	Reservoir 2, Section 6	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 8.0	Water Depth, feet N/A
Sampling Method California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size N/A	Filter Material: N/A
Logged By R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, variable medium to dark brown, very fine- to fine-grained, moist.							Slight sour odor.
	SP	SAND, little sandy CLAY interdispersed, mottled dark brown, very fine- to fine-grained, moist to wet		*					Hydrocarbon odor @ 2 feet. 1.9-2.0 moist with hydrocarbons. 14:33 - Sample #R2-Q6-V2 (2.0-2.5 feet). 80-100% of soil damp with hydrocarbons @ 3 feet. 3.7-5.0 feet Moist with hydrocarbons. 4.0-7.0 feet Variable thin zones wet with hydrocarbons.
5				*					14:38 - Sample #R2-Q6-V5 (5.0-5.5 feet). 5.5-6.8 feet Variable thin zones wet with hydrocarbons.
									Moist with hydrocarbons
				*					14:47 - Sample #R2-Q6-V8 (7.5-8.0 feet)
		Bottom of borehole at 8 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q6-W — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 6	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/21/96 — Date Finished: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 8.0 — Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing	N/A
Backfill Material	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium brown, very fine- to fine-grained, dry to damp.							No evidence of hydrocarbons.
	SM	Silty SAND, dark brown, very fine to fine grained, very moist.							1.0-2.5 feet - Soil very moist with hydrocarbons.
				*					14.51 - Sample #R2-Q6-W2 (2.0-2.5 feet).
		Same as above.							
5	CL	Sandy CLAY, mottled reddish brown, very fine- to fine-grained sand, dense, damp.		*					4.5-5.0 feet - Wet with hydrocarbons. Sample #R2-Q6-W5 (5.0-5.5 feet).
									Damp with hydrocarbons @ 6 feet
	SP	2-inch thick sandy layer @ 6.5 feet.							
	CL	Sandy CLAY, olive gray and brown, very fine to fine grained. 20-40% dark roots. Horizontal semi-planar zones of dark stained sands, moist to wet.							Wet zone of hydrocarbons @ 6.5 feet
				*					Sample #R2-Q6-W8 (7.5-8.0 feet).
		Bottom of borehole at 8 feet. Groundwater not encountered in borehole.							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q6-X — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 6	Elevation and Datum (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/21/96 — Date Finished: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 7.5 — Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained, damp.							No evidence of hydrocarbons observed
	SM	Silty SAND, olive brown to gray, very fine- to fine-grained, damp.		*					15:08 - Sample #R2-Q6-X2 (2.0-2.5 feet). No evidence of hydrocarbons observed @ 4 feet.
5				*					15:10 - Sample #R2-Q6-X5 (5.0-5.5 feet).
	CL	Sandy CLAY, reddish brown, very fine- to fine-grained sand, damp.							
	CL	Sandy CLAY, olive, very fine- to fine-grained sand, damp.							
		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q6-Y Sheet 1 of 1

Boring Location:	Reservoir 2, Section 6	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter 1.5"	Completed Depth (feet) 5.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained, somewhat loose, damp.							No evidence of hydrocarbons observed.
	CL	Sandy CLAY to clayey SAND, reddish brown, very fine- to fine-grained sand, moist.		*					15 23 - Sample #R2-Q6-Y2 (2.0-2.5 feet).
	SP	2-inch thick SAND layer, very fine to fine grained, free water @ 3.5 feet.							No evidence of hydrocarbons observed @ 3.5 feet.
	SC SM	Clayey SAND to silty SAND, medium brown, very fine- to fine-grained sand, damp, firm.							
5				*					15.25 - Sample #R2-Q6-Y5 (5 0-5.5 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R2-Q6-Z

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 6	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 2.5	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained		*					No evidence of hydrocarbons observed. 15:30 - Sample #R2-Q6-Z2 (2.0-2.5 feet)
5		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q7-V — Sheet 1 of 1

Boring Location	Reservoir 2, Section 7	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started 3/21/96 — Date Finished: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 7.5 — Water Depth (feet) N/A
Sampling Method California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material	Granulated Bentonite	Slot Size: N/A — Filter Material:	N/A
Logged By	R. Pope — Checked By: A. Brown	Development Method	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Blended fill including: silty SAND, silty CLAY, sandy CLAY of varying color, very fine- to fine-grained sand, damp.							
	SP SM	Silty SAND to SAND, little clay, mottled dark brown (80%) and olive brown (20%), very fine- to fine-grained, damp to moist.		*					No evidence of hydrocarbons observed. Moderate odor @ 1.5 feet. 15:44 - Sample #R2-Q7-V2 (2.0-2.5 feet) Damp to moist with hydrocarbons @ 2.2 feet. Strong odor. Moist with hydrocarbons @ 4 feet.
5	CL	Sandy CLAY, mottled dark olive brown, very fine- to fine-grained sand, damp, very firm.		*					15:48 - Sample #R2-Q7-V5 (5.0-5.5 feet). 20-40% of dark sands damp with hydrocarbons @ 5.5 feet 1-inch thick wet zone, wet with hydrocarbons @ 6 feet.
	CL	Sandy CLAY, mottled dark reddish brown, very fine- to fine-grained, very firm, damp		*					15:50 - Sample #R2-Q7-V8 (7.0-7.5 feet).
10		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q7-W Sheet 1 of 1

Boring Location:	Reservoir 2, Section 7	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/21/96	Date Finished. 3/21/96
Drilling Equipment Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 8.0	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By. R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP	SAND, very dark brown, very fine- to fine-grained, moist.							Very moist with hydrocarbons. Strong odor.
									15 53 - Sample #R2-Q7-W2 (2.0-2.5 feet). Wet layer of hydrocarbons @ 2 feet.
	SP	SAND, dark brown, very fine- to fine-grained, some olive mottled sandy clay, moist to wet.							4 0-5 5 feet - thin zones of wet hydrocarbons.
5				*					16:01 - Sample #R2-Q7-W5 (5.0-5.5 feet).
	CL	Grades to Sandy CLAY, medium brown to olive brown, very fine- to fine-grained sand, mottled with <20% very dark brown sand, moist to wet							Wet with hydrocarbons in sandy layers. Moist with hydrocarbons in dark mottled soils.
				*					16:04 - Sample #R2-Q7-W8 (7.5-8.0 feet)
		Bottom of borehole at 8 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number R2-Q7-X Sheet 1 of 1

Boring Location:	Reservoir 2, Section 7	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/21/96	Date Finished: 3/21/96
Drilling Equipment: Strataprobe	Borehole Diameter 1.5"	Completed Depth (feet) 7.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By R. Pope	Checked By A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, dark brown, very fine- to fine-grained, firm, damp.							Slightly damp with hydrocarbons.
				*					16 09 - Sample #R2-Q7-X2 (2 0-2 5 feet).
	SM	Same as above.							Sweet hydrocarbon odor. No free hydrocarbons @ 4 feet.
5				*					16:12 - Sample #R2-Q7-X5 (5 0-5 5 feet).
	SP SC	Grades to silty SAND to clayey SAND, light olive brown, dense, damp.							No evidence of hydrocarbons @ 6.5 feet.
		Bottom of borehole at 7 5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q7-Y

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 7	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/21/96 / Date Finished: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 5.5 / Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained, moist							No evidence of hydrocarbons
				*					16:41 - Sample #R2-Q7-Y2 (2.0-2.5 feet).
	SP SM	Same as above. Occasional layers of clayey SAND or silty SAND approximately 1-inch thick, very fine- to fine-grained sand, slightly stiff.							No evidence of hydrocarbons.
5	SP SM	Same as above.		*					16:24 - Sample #R2-Q7-Y5 (5.0-5.5 feet).

Bottom of borehole at 5.5 feet.
Groundwater not encountered in borehole.

Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures

* See remarks column for sample number.

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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q7-Z

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 7	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/21/96 / Date Finished: 3/21/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 2.5 / Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]			WELL CONSTRUCTION
Drilling Method:	Continuous Core		Type and Diameter of Well Casing: N/A
Backfill Material:	Granulated Bentonite		Slot Size: N/A / Filter Material: N/A
Logged By: R. Pope	Checked By A. Brown		Development Method: N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained, moist.							No evidence of hydrocarbons.
				*					16 46 - Sample #R2-Q7-Z2 (2.0-2.5 feet).
		Bottom of borehole at 2.5 feet Groundwater not encountered in borehole Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring: [X] Monitoring Well: [ ] Boring/Well Number: R2-Q8-V — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 8	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/22/96 — Date Finished: 3/22/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 10.0 — Water Depth: (feet) N/A
Sampling Method, California Modified	[ ] Continuous	[X] Split Spoon [ ]	WELL CONSTRUCTION
Drilling Method:	Continuous Core		Type and Diameter of Well Casing: N/A
Backfill Material:	Granulated Bentonite		Slot Size: N/A — Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown		Development Method: N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM SC	Silty SAND and clayey SAND, very fine- to fine-grained, damp.							Variable blended fill material
									Occasional slight hydrocarbon odor in dark silty sand fill
	CL	3-inch thick brown CLAY with trace gravel @ 2.5 feet							
	SM SC	Silty SAND and Clayey SAND, very fine- to fine-grained, damp.		*					07 56 - Sample #R2-Q8-V2 (2.0-2.5 feet).
5									
	CL	Sandy CLAY, dark olive brown, very fine- to fine-grained sand, mottled with very dark brown to black sand, moist		*					08:03 - Sample #R2-Q8-V5 (5.0-5.5 feet)
									30-60% of soil moist with hydrocarbons @ 6 feet.
	SP	SAND, black, very fine- to fine-grained, moist.		*					08 09 - Sample #R2-Q8-V8 (7.0-7.5 feet).
	CL	Grades to sandy CLAY, olive brown, very fine- to fine-grained sand, mottled with dark brown sand, damp to moist.							10-25% of soil damp with hydrocarbons @ 8 feet.
10		Bottom of borehole at 10 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R2-Q8-W

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 8	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/22/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Date Finished: 3/22/96
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		Completed Depth (feet) 8.5	Water Depth: (feet) N/A
Drilling Method:	Continuous Core	WELL CONSTRUCTION	
Backfill Material:	Granulated Bentonite	Type and Diameter of Well Casing	N/A
Logged By R. Pope	Checked By A. Brown	Slot Size: N/A	Filter Material: N/A
		Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND to clayey SAND, medium brown, very fine- to fine-grained, damp.							Fill to 3.8 feet.
									No evidence of hydrocarbons.
				*					08.26 - Sample #R2-Q8-W2 (2.0-2.5 feet)
	SC	Clayey SAND to sandy CLAY, dark olive brown, very fine- to fine-grained sand, damp							30-80% of soil damp with hydrocarbons @ 4 feet
5				*					08:31 - Sample #R2-Q8-W5 (5.0-5.5 feet).
	SC	Clayey SAND, dark olive brown, very fine- to fine-grained sand.							Wet hydrocarbons in thin zones from 6.0-6.5 feet. Moist with hydrocarbons @ 6.5 feet.
	CL	Sandy CLAY, mottled dark olive brown, very fine- to fine-grained sand, moist.		*					08.34 - Sample #R2-Q8-W8 (7.5-8.0 feet).
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Bore. Well Number: R2-Q8-X

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 8	Elevation and Datum (feet)	Ground Surface
Drilling Contractor:	TEG	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment:	Strataprobe	Completed Depth (feet): 8.0	Water Depth: (feet) N/A
Borehole Diameter:	1.5"		
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material	Granulated Bentonite	Slot Size: N/A	Filter Material N/A
Logged By	R. Pope	Checked By: A. Brown	Development Method N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium to dark brown, very fine- to fine-grained.							Blended fill material to 1.7 feet. Slight hydrocarbon odor.
	SP SM	SAND to silty SAND, medium olive brown to medium brown, very fine- to fine-grained, moist.		*					08:43 - Sample #R2-Q8-X2 (2.0-2.5 feet). Sweet hydrocarbon odor @ 3 feet. Moist with hydrocarbons @ 4.5 feet.
5				*					08:45 - Sample #R2-Q8-X5 (5.0-5.5), free hydrocarbons in sample.
	CL	Grades to a slightly mottled sandy CLAY, olive, very fine- to fine-grained sand, moist, very firm.							<10% of sample is dark sand, damp with hydrocarbons @ 6 feet.
10		Bottom of borehole at 8 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q8-Y | Sheet 1 of 1

Boring Location:	Reservoir 2, Section 8	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 7.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [X] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material N/A
Logged By: R. Pope	Checked By A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium brown, very fine- to fine-grained, damp to moist.							No evidence of hydrocarbons
				*					08:55 - Sample #R2-Q8-Y2 (2.0-2.5 feet).
	SP SM	SAND to silty SAND, medium brown to olive brown, very fine- to fine-grained, moist.							No evidence of hydrocarbons @ 4 feet
5		2-inch wet zone @ 4.8 feet.							
				*					08:56 - Sample #R2-Q8-Y5 (5.0-5.5 feet).
	CL	Sandy CLAY, medium olive, very moist to wet.							No evidence of hydrocarbons @ 7 feet.
		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole.							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q8-Z

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 8	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor	TEG	Driller: J. Coates	Date Started 3/22/96	Date Finished. 3/22/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 2.5	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]			WELL CONSTRUCTION	
Drilling Method	Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material:	Granulated Bentonite		Slot Size: N/A	Filter Material. N/A
Logged By. R. Pope	Checked By. A. Brown		Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium brown, very fine- to fine-grained, damp.							No evidence of hydrocarbons.
	SM	Silty SAND, olive brown, very fine- to fine-grained.		*					09:07 - Sample #R2-Q8-Z2 (2.0-2.5 feet).
		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation
Project Number: 3659-03
Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q9-V
Sheet 1 of 1

Boring Location:	Reservoir 2, Section 9	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 8.0	Water Depth: (feet) N/A
Sampling Method California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Silty SAND, medium brown, very fine- to fine-grained, damp							No evidence of hydrocarbons.
				*					09 14 - Sample #R2-Q9-V2 (2.0-2.5 feet).
									No evidence of hydrocarbons @ 4 feet
5	SM	Silty SAND, dark brown, very fine- to fine-grained, damp to moist.		*					09:22 - Sample #R2-Q9-V5 (5.0-5.5 feet). Moist with hydrocarbons, dark staining. Hydrocarbon odor.
	SM	Same as above with 10-20% mottled olive brown sandy CLAY, moist to wet							5 8-7 0 feet, thin layers wet with hydrocarbons.
				*					09:25 - Sample #R2-Q9-V8 (7.5-8 0 feet).
		Bottom of borehole at 8 feet Groundwater not encountered in borehole. Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring ☒ Monitoring Well ☐ Boring/Well Number: R2-Q9-W — Sheet 1 of 1

Boring Location	Reservoir 2, Section 9	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/22/96 — Date Finished: 3/22/96
Drilling Equipment	Strataprobe	Borehole Diameter 1.5"	Completed Depth (feet) 8.0 — Water Depth: (feet) N/A
Sampling Method: California Modified ☐ Continuous ☐ Split Spoon ☐		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size N/A	Filter Material: N/A
Logged By: R. Pope	Checked By A. Brown	Development Method	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	CL	Sandy CLAY and clayey SAND, very dark brown, very fine- to fine-grained sand, mottled with very dark brown to black sand, damp.							Blended fill material to 0 8 feet No evidence of hydrocarbons Sand damp with hydrocarbons @ 1-2 feet. Hydrocarbon odor. 09:32 - Sample #R2-Q9-W2 (2.0-2.5 feet).
	CL	Sandy CLAY, medium olive brown, very fine- to fine-grained sand, with mottled dark brown sand, damp		*					10-30% of sand damp with hydrocarbons. 4.5-5.0 feet, 1/2 inch thick layers with free hydrocarbons. 09:36 - Sample #R2-Q9-W5 (5.0-5.5 feet). Damp with hydrocarbons @ 5 5 feet.
5	SP	SAND, very dark brown, very fine- to fine-grained, moist.		*					Moist with hydrocarbons @ 6.5 feet. 2-inch thick layer with free hydrocarbons @ 7 3 feet. 09 34 - Sample #R2-Q9-W8 (7.5-8.0 feet).
10		Bottom of borehole at 8 feet. Groundwater not encountered in borehole. Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q9-X

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 9	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor	TEG	Driller: J. Coates	Date Started: 3/22/96 / Date Finished: 3/22/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth. (feet) 7.5 / Water Depth. (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material. N/A
Logged By R. Pope	Checked By A. Brown	Development Method. N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM SC	Medium brown silty SAND to reddish brown clayey SAND, very fine- to fine-grained sand, damp.							Variable fill material to 2 feet No evidence of hydrocarbons.
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained, damp.		*					09:47 - Sample #R2-Q9-X2 (2.0-2.5)
	SM	Silty SAND, medium olive borwn, very fine- to fine-grained, moist.							No evidence of hydrocarbons.
5				*					09:49 - Sample #R2-Q9-X5 (5.0-5.5)
	CL	CLAY to sandy CLAY, olive brown, very fine- to fine-grained sand, moist to wet.							Sandy zone wet with hydrocarbons @ 6.5 to 7.5 feet. 1/2-inch thick layer of sand, wet with hydrocarbons @ 7.2 feet.
10		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q9-Y

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 9	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/22/96 / Date Finished: 3/22/96
Drilling Equipment:	Stratapnobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 7.5 / Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]			WELL CONSTRUCTION
Drilling Method:	Continuous Core		Type and Diameter of Well Casing: N/A
Backfill Material:	Granulated Bentonite		Slot Size: N/A / Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown		Development Method: N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	Variable SAND to silty SAND, medium brown, very fine- to fine-grained, damp							Variable fill material.
									No evidence of hydrocarbons
				*					10:00 - Sample #R2-Q9-Y2 (2.0-2.5 feet)
	SP SM	Same as above, moist.							
									No evidence of hydrocarbons @ 4 feet.
5				*					10:02 - Sample #R2-Q9-Y5 (5.0-5.5 feet).
	SM	Silty SAND, olive brown, very fine- to fine-grained, moist.							
									No evidence of hydrocarbons @ 6.5 feet.
		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R2-Q9-Z Sheet 1 of 1

Boring Location:	Reservoir 2, Section 9	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/22/96	Date Finished 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 2.5	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing	N/A
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained, damp.		*					Blended fill material. No evidence of hydrocarbons. 10-13 - Sample #R2-Q9-Z2 (2.0-2.5 feet).
5		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] — Monitoring Well [ ] — Boring/Well Number: R2-Q10-V — Sheet 1 of 1

Boring Location	Reservoir 2, Section 10	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor	TEG	Driller: J. Coates	Date Started 3/22/96 — Date Finished 3/22/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 9.5 — Water Depth (feet) N/A
Sampling Method California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A — Filter Material:	N/A
Logged By R. Pope	Checked By A. Brown	Development Method	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SC	Silty SAND to clayey SAND, medium brown to dark brown, very fine- to fine-grained, damp.							Trace hydrocarbon odor.
	SP SM	SAND to silty SAND, very dark brown, very fine- to fine-grained, damp.		*					10:24 - Sample #R2-Q10-V2 (2.0-2.5 feet) Damp with hydrocarbons @ 2.5 feet.
	SM	Silty SAND, olive brown, very fine- to fine-grained, mottled with little clayey sand, moist							Moist with hydrocarbons @ 4 feet.
5	SP	SAND, very dark brown, very fine- to fine-grained, moist to wet.		*					1-inch thick layer of sand wet with hydrocarbons @ 4.8 feet. 10:28 - Sample #R2-Q10-V5 (5.0-5.5 feet)
	SM SC	Silty SAND to clayey SAND, dark olive brown, moist to wet.							Hydrocarbon odor @ 5.10 feet
				*					10:32 - Sample #R2-Q10-V8 (7.0-7.5 feet).
	SM SC	Same as above.							3-inch zone wet with hydrocarbons @ 7.8 feet.
									Dark brown sand 50-80% moist with hydrocarbons
10		Bottom of borehole at 9.5 feet Groundwater not encountered in borehole							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R2-Q10-W — Sheet 1 of 1

Boring Location	Reservoir 2, Section 10	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 9.5	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SW	Fill with variable lithologies.							Blended fill material.
	SP SC	SAND to clayey SAND, medium brown to reddish brown, very fine- to fine-grained, damp.							Moderate hydrocarbon odor No free hydrocarbons @ 1.5 feet.
				*					10:43 - Sample #R2-Q10-W2 (2.0-2.5 feet).
	SM	Silty SAND, medium to dark brown, very fine- to fine-grained, damp to moist.							Prominent hydrocarbon odor @ 3.5 feet.
5	SM	Same as above		*					10:47 - Sample #R2-Q10-W5 (5.0-5.5 feet) Sampler wet with hydrocarbons from 5.5 to 9.5 feet. Moist with hydrocarbons @ 6 feet.
	CL	Sandy CLAY, olive brown, very fine- to fine-grained sand		*					Wet with hydrocarbons @ 6.8 to 7.5 feet. 10:50 - Sample #R2-Q10-W8 (7.0-7.5 feet) 20-50% of soil moist with hydrocarbons @ 8.5 feet.
10		Bottom of borehole at 9.5 feet Groundwater not encountered in borehole. Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R2-Q10-X — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 10	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 9.5	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (Feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP	SAND with little silty SAND, medium brown to gray brown, damp							Blended fill material.
									Slight sour odor. No evidence of free hydrocarbons
				*					11:09 - Sample #R2-Q10-X2 (2.0-2.5 feet).
	SP	Same as above.							No evidence of hydrocarbons @ 4 feet.
5				*					11:12 - Sample #R2-Q10-X5 (5.0-5.5 feet)
	SC	Grades to mottled clayey SAND and sandy CLAY, olive brown, very fine- to fine-grained sand.							Damp with hydrocarbons @ 5.5 feet. Moist with hydrocarbons @ 6 feet. 3-inch think layer wet with hydrocarbons @ 7 feet.
	SM	Silty SAND, gray brown, very fine- to fine-grained, moist, firm.							Strong hydrocarbon odor Moist with hydrocarbons @ 8 feet.
10		Bottom of borehole at 9.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q10-Y — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 10	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/22/96 — Date Finished: 3/22/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 7.5 — Water Depth: (feet) N/A
Sampling Method: Cahforma Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, and clayey SAND, medium reddish brown to brown, damp to moist, loose							Blended fill material to 2 feet.
									No evidence of hydrocarbons
	SP	SAND, medium brown, very fine- to fine-grained, moist.		*					11.33 - Sample #R2-Q10-Y2 (2.0-2.5 feet)
	SP	Same as above.							No evidence of hydrocarbons @ 4 feet.
5				*					11:42 - Sample #R2-Q10-Y5 (5.0-5.5 feet).
	SP	SAND, with some silt and clay, olive brown, very fine- to fine-grained, moist to wet.							
									No evidence of hydrocarbons @ 7 feet.
		Bottom of borehole at 7.5 feet Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number							
10									
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q11-V — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 11	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 8.5	Water Depth (feet): N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM SC	Medium brown silty sand, reddish brown clayey sand, and dark brown silty sand, very fine- to fine-grained sand, damp.							Blended fill material to 2.6 feet.
									Strong sour odor in darker soils.
				*					No free product @ 2 feet Sample #R2-Q11-V2 (2.0-2.5 feet)
	SM SC	Silty SAND and clayey SAND, dark olive brown, very fine- to fine-grained, dense, damp							30-60% of sand damp with hydrocarbons @ 3 feet.
5	SM SC	Same as above		*					11:55 - Sample #R2-Q11-V5 (5.0-5.5 feet).
	CL	Sandy CLAY, very fine- to fine-grained sand, moist to wet.							4-inch thick layer wet with hydrocarbons @ 6 feet.
									3-inch thick layer wet with hydrocarbons @ 7 feet.
	CL	CLAY, olive gray to olive, damp.		*					12:02 - Sample #R2-Q11-V8 (8.0-8.5 feet)
		Bottom of borehole at 8.5 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q11-W Sheet 1 of 1

Boring Location:	Reservoir 2, Section 11	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 7.5	Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By R. Pope	Checked By A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SM	Mixed medium brown to reddish brown silty SAND, very fine- to fine-grained, moist							Fill material.
									No evidence of hydrocarbons
	SP SM	SAND to silty SAND, dark brown, very fine- to fine-grained, damp.		*					Moderate hydrocarbon odor @ 1.75 feet. 13:23 - Sample #R2-Q11-W2 (2.0-2.5 feet)
	SM	Silty SAND, medium brown to olive brown, very fine- to fine-grained, damp.							Very slight hydrocarbon odor @ 3 feet.
5	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained, damp.		*					13:26 - Sample #R2-Q11-W5 (5.0-5.5 feet).
									No evidence of hydrocarbons @ 6 feet.
				*					13:33 - Sample #R2-Q11-W8 (7.0-7.5 feet).
		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q11-X | Sheet 1 of 1

Boring Location	Reservoir 2, Section 11	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor.	TEG	Driller: J. Coates	Date Started: 3/22/96 / Date Finished: 3/22/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 9.5 / Water Depth (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method	Continuous Core	Type and Diameter of Well Casing	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By. A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND, silty SAND, and clayey SAND, medium to dark brown, very fine- to fine-grained sand, damp, moderately firm.							Blended fill material to 5.8 feet.
				*					Slight hydrocarbon odor. No free product. Slight discoloration in some fill types 13:41 - Sample #R2-Q11-X2 (2.0-2.5 feet)
	SP SM	Same as above.							
5				*					Sample #R2-Q11-X5 (5.0-5 5 feet)
	CL	Silty CLAY to sandy CLAY to silty SAND, medium olive gray, very fine- to fine-grained sand, moist to wet.							
				*					Sample #R2-Q11-X8 (7-7 5 feet), reddish-colored free product. Moist to wet with hydrocarbons @ 8 - 9 5 feet.
	CL	Same as above.							
10		Bottom of borehole at 9 5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures							
		* See remarks column for sample number.							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation

Project Number 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q11-Y

Sheet 1 of 1

Boring Location:	Reservoir 2, Section 11	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 7.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SC	Medium brown SAND and reddish brown clayey SAND, very fine- to fine-grained sand, damp.							Fill material to 2.5 feet. No evidence of hydrocarbons.
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained, moist.		*					14:05 - Sample #R2-Q11-Y2 (2.0-2.5 feet). No evidence of hydrocarbons @ 4 feet.
5	SP SM	SAND to silty SAND, olive brown to olive gray, very fine- to fine-grained, moist to wet. Water in sand @ 6.8 feet.		*					14:11 - Sample #R2-Q11-Y5 (5.0-5.5 feet). No evidence of hydrocarbons @ 7 feet.
		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q11-Z Sheet 1 of 1

Boring Location:	Reservoir 2, Section 11	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet) 2.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size N/A	Filter Material N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	GP	6-inches of GRAVEL dry.							
	SP	SAND, medium brown, very fine- to fine-grained, moist.							No evidence of hydrocarbons
				*					14:22 - Sample #R2-Q11-Z2 (2.0-2.5 feet)
		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
5									
		* See remarks column for sample number.							
10									
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] — Monitoring Well [ ] — Boring/Well Number: R2-Q12-V — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 12	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor:	TEG	Driller: J. Coates	Date Started: 3/22/96 — Date Finished: 3/22/96
Drilling Equipment:	Strataprobe	Borehole Diameter: 1.5"	Completed Depth (feet): 7.5 — Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method:	Continuous Core	Type and Diameter of Well Casing:	N/A
Backfill Material:	Granulated Bentonite	Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method:	N/A

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Lithology	Well	PID/FID Readings PPM	Remarks
	SP SM	Medium reddish orange clayey SAND, medium brown SAND and silty SAND, very fine- to fine-grained, damp.							Blended fill material to 2.8 feet. No evidence of hydrocarbons.
				*					14 37 - Sample #R2-Q12-V2 (2.0-2 5 feet).
	SM	Silty SAND, mottled dark olive brown and dark brown (10-30% olive), very fine- to fine-grained, damp to moist (native).							Moderate hydrocarbon odor. Damp to moist with hydrocarbons.
5	SM	Same as above, very dark brown, moist to wet		*					Sample #R2-Q12-V5 (5.0-5 5 feet)
									Very moist with some thin wet zones of hydrocarbons @ 6 feet.
	SM	Same as above.		*					Sample #R2-Q12-V8 (7 0-7.5 feet).
		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
10		* See remarks column for sample number.							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation — Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q12-W — Sheet 1 of 1

Boring Location:	Reservoir 2, Section 12	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 7.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, dark brown, very fine- to fine-grained, damp							Fill material to 9 inches.
				*					Moderate to strong hydrocarbon odor. Damp with hydrocarbons. 14:50 - Sample #R2-Q12-W2 (2.0-2.5 feet).
	SP SM	Same as above.							
5	SP SM	Same as above.		*					Moderate to strong hydrocarbon odor. Damp with hydrocarbons. 14:56 - Sample #R2-Q12-W5 (5.0-5.5 feet).
	SM	Silty SAND with little sandy CLAY, very dark brown and olive, very fine- to fine-grained, moist to wet.							Damp to moist with hydrocarbons @ 6 feet. 1-inch thick layer wet with hydrocarbons @ 6.8 feet
				*					15:00 - Sample #R2-Q12-W8 (7.0-7.5 feet).
		Bottom of borehole at 7.5 feet. Groundwater not encountered in borehole							
10		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
15									

Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R2-Q12-X Sheet 1 of 1

Boring Location:	Reservoir 2, Section 12	Elevation and Datum. (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 5.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing	N/A
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND with a a little silty SAND, medium brown, very fine- to fine-grained, damp.							Possible fill material to 2 feet.
									No evidence of hydrocarbons.
				*					15:08 - Sample #R2-Q12-X2 (2.0-2.5 feet).
	SP SM	Same as above.							
									No evidence of hydrocarbons @ 4 feet.
5	SP SM	Same as above.		*					15:10 - Sample #R2-Q12-X5 (5.0-5.5 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
10									
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Brown and Caldwell

BORING LOG

Project Name: SHELL Reservoir Investigation | Project Number: 3659-03

Soil Boring [X] Monitoring Well [ ] Boring Well Number: R2-Q12-Y Sheet 1 of 1

Boring Location:	Reservoir 2, Section 12	Elevation and Datum: (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 5.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained, dry to damp.							No evidence of hydrocarbons.
	SM	Grades to silty SAND, olive brown, very fine- to fine-grained, damp		*					15:21 - Sample #R2-Q12-Y2 (2.0-2.5 feet)
									No evidence of hydrocarbons @ 4 feet.
5				*					15:24 - Sample #R2-Q12-Y5 (5.0-5.5 feet).
		Bottom of borehole at 5.5 feet. Groundwater not encountered in borehole.							
		Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures.							
		* See remarks column for sample number.							
10									
15									

Brown and Caldwell

BORING LOG

Project Name: SHLL Reservoir Investigation
Project Number: 3659-03
Soil Boring [X] Monitoring Well [ ] Boring/Well Number: R2-Q12-Z
Sheet 1 of 1

Boring Location:	Reservoir 2, Section 12	Elevation and Datum (feet)	Ground Surface
Drilling Contractor: TEG	Driller: J. Coates	Date Started: 3/22/96	Date Finished: 3/22/96
Drilling Equipment: Strataprobe	Borehole Diameter: 1.5"	Completed Depth: (feet) 2.5	Water Depth: (feet) N/A
Sampling Method: California Modified [ ] Continuous [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: Continuous Core		Type and Diameter of Well Casing: N/A	
Backfill Material: Granulated Bentonite		Slot Size: N/A	Filter Material: N/A
Logged By: R. Pope	Checked By: A. Brown	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	PID/FID Readings PPM	Remarks
	SP SM	SAND to silty SAND, medium brown, very fine- to fine-grained sand, dry to damp.							No evidence of hydrocarbons.
				*					15:33 - Sample #R2-Q12-Z2 (2.0-2.5 feet).
		Bottom of borehole at 2.5 feet. Groundwater not encountered in borehole. Borehole logged from core samples. The group names, descriptions, densities, estimated percentages, and USCS descriptions and symbols are based entirely on visual-manual procedures. * See remarks column for sample number.							
5									
10									
15									

ATTACHMENT C

LABORATORY REPORTS

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

RECEIVED
APR 0 1 1996
BROWN CALDWELL

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-1	03-497-2	03-497-3
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q1-Z2	R1-Q1-Y5	R1-Q1-X2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/21/96	03/22/96	03/21/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	1	10	1
TPH-d C13-C22, mg/kg	<100	7600	<100
TPH-d C23-C28, mg/kg	<100	1800	<100
Surrogates **			
Naphthalene Reported, mg/kg	42.1	0 NC	52.0
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

BCA

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-1	03-497-2	03-497-3
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION NON-AQUEOUS	R1-Q1-Z2	R1-Q1-Y5	R1-Q1-X2
Volatile HC (8015M)			
Date Analyzed	03/21/96	03/21/96	03/21/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	<0.5
Ethylbenzene, mg/kg	<0.5	<0.5	<0.5
Total Xylene Isomers, mg/kg	<1	<1	<1
TPH-g C6-C12, mg/kg	<10	140	<10
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	5.27	4.52	5.10
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-4	03-497-5	03-497-6
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q1-W5	R1-Q1-V8	R1-Q1-V2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	02/22/96	03/22/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	20	50	50
TPH-d C13-C22, mg/kg	17000	21000	17000
TPH-d C23-C28, mg/kg	5800	1000	8400
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-4	03-497-5	03-497-6
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q1-W5	R1-Q1-V8	R1-Q1-V2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/22/96	03/22/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	0.76	0.85
Ethylbenzene, mg/kg	<0.5	0.54	0.56
Total Xylene Isomers, mg/kg	<1	2.7	3.1
TPH-g C6-C12, mg/kg	110	110	120
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	4.78	4.81	4.38
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-7	03-497-8	03-497-9
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q2-V2	R1-Q2-V8	R1-Q2-W5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/22/96	03/22/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	50	50	5
TPH-d C13-C22, mg/kg	23000	18000	1700
TPH-d C23-C28, mg/kg	9800	7100	600
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	60.8
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-7	03-497-8	03-497-9
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q2-V2	R1-Q2-V8	R1-Q2-W5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/22/96	03/22/96	03/21/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	0.90	0.52	<0.5
Ethylbenzene, mg/kg	0.80	<0.5	<0.5
Total Xylene Isomers, mg/kg	3.8	2.5	<1
TPH-g C6-C12, mg/kg	220	220	24
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	4.86	4.22	5.77
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-10	03-497-11	03-497-12
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q2-X2	R1-Q2-Y5	R1-Q3-V2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/21/96	03/21/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	1	1	5
TPH-d C13-C22, mg/kg	<100	<100	2600
TPH-d C23-C28, mg/kg	<100	<100	1100
Surrogates **			
Naphthalene Reported, mg/kg	100	53.8	60.3
Naphthalene Theoretical, mg/kg	100	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-10	03-497-11	03-497-12
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q2-X2	R1-Q2-Y5	R1-Q3-V2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/21/96	03/21/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	<0.5
Ethylbenzene, mg/kg	<0.5	<0.5	<0.5
Total Xylene Isomers, mg/kg	<1	<1	<1
TPH-g C6-C12, mg/kg	<10	<10	42
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	5.04	5.12	4.93
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-13	03-497-14	03-497-15
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q3-V8	R1-Q3-W5	R1-Q3-X2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/22/96	03/22/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	50	5	50
TPH-d C13-C22, mg/kg	20000	3800	17000
TPH-d C23-C28, mg/kg	8900	1400	4700
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	59.9	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-13	03-497-14	03-497-15
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q3-V8	R1-Q3-W5	R1-Q3-X2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/26/96	03/21/96	03/21/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	100	500
Benzene, mg/kg	<0.5	<0.5	<3
Toluene, mg/kg	0.88	<0.5	4.6
Ethylbenzene, mg/kg	0.80	<0.5	6.2
Total Xylene Isomers, mg/kg	4.1	<1	44
TPH-g C6-C12, mg/kg	240	42	1500
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	4.13	4.90	16.3
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	25.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-16	03-497-17	03-497-18
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION NON-AQUEOUS	R1-Q3-Y5	R1-Q3-Z2	R1-Q4-V2
Semi-volatile HC (8015M)			
Date Analyzed	03/21/96	03/21/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	1	1	10
TPH-d C13-C22, mg/kg	<100	<100	8100
TPH-d C23-C28, mg/kg	<100	<100	3600
Surrogates **			
Naphthalene Reported, mg/kg	43.8	50.9	35.3
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-16	03-497-17	03-497-18
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q3-Y5	R1-Q3-Z2	R1-Q4-V2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/21/96	03/21/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	<0.5
Ethylbenzene, mg/kg	<0.5	<0.5	<0.5
Total Xylene Isomers, mg/kg	<1	<1	1.7
TPH-g C6-C12, mg/kg	<10	<10	97
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	4.98	4.87	4.90
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-19	03-497-20	03-497-21
DATE SAMPLED	18 MAR 96	18 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q4-V8	R1-Q4-W5	R1-Q4-X2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/22/96	03/22/96	03/21/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	50	50	1
TPH-d C13-C22, mg/kg	24000	26000	<100
TPH-d C23-C28, mg/kg	9800	9800	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	56.0
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-19	03-497-20	03-497-21
DATE SAMPLED	18 MAR 96	18 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q4-V8	R1-Q4-W5	R1-Q4-X2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/22/96	03/22/96	03/21/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	200	200	100
Benzene, mg/kg	2.3	<1	<0.5
Toluene, mg/kg	3.0	5.0	<0.5
Ethylbenzene, mg/kg	2.5	3.0	<0.5
Total Xylene Isomers, mg/kg	14	18	0.93
TPH-g C6-C12, mg/kg	610	660	63
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	8.43	7.49	4.81
a,a,a-Trifluorotoluene Th., mg/kg	10.0	10.0	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-22	03-497-23	03-497-24
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q4-Y5	R1-Q5-V2	R1-Q5-V8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/21/96	03/22/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	1	10	10
TPH-d C13-C22, mg/kg	<100	3700	5100
TPH-d C23-C28, mg/kg	<100	<1000	2000
Surrogates **			
Naphthalene Reported, mg/kg	38.8	45.8	57.0
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-22	03-497-23	03-497-24
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q4-Y5	R1-Q5-V2	R1-Q5-V8
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/21/96	03/22/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	0.80
Ethylbenzene, mg/kg	<0.5	<0.5	0.72
Total Xylene Isomers, mg/kg	<1	<1	3.5
TPH-g C6-C12, mg/kg	<10	28	300
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	5.79	6.43	4.52
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-25	03-497-26	03-497-27
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q5-W5	R1-Q5-X2	R1-Q5-Y5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/23/96	03/23/96	03/21/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	10	10	1
TPH-d C13-C22, mg/kg	5400	7600	<100
TPH-d C23-C28, mg/kg	2100	2000	<100
Surrogates **			
Naphthalene Reported, mg/kg	60.2	75.3	45.2
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-25	03-497-26	03-497-27
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q5-W5	R1-Q5-X2	R1-Q5-Y5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/21/96	03/22/96	03/21/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	1.0	<0.5
Ethylbenzene, mg/kg	<0.5	1.2	<0.5
Total Xylene Isomers, mg/kg	1.6	6.9	<1
TPH-g C6-C12, mg/kg	44	760	<10
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	4.98	3.52	5.17
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-28	03-497-29	03-497-30
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q5-Z2	R1-Q6-V2	R1-Q6-V8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/21/96	03/23/96	03/23/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	1	10	50
TPH-d C13-C22, mg/kg	<100	3300	22000
TPH-d C23-C28, mg/kg	<100	1200	10000
Surrogates **			
Naphthalene Reported, mg/kg	43.0	42.5	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-28	03-497-29	03-497-30
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION NON-AQUEOUS	R1-Q5-Z2	R1-Q6-V2	R1-Q6-V8
Volatile HC (8015M)			
Date Analyzed	03/21/96	03/22/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	0.87
Ethylbenzene, mg/kg	<0.5	<0.5	0.65
Total Xylene Isomers, mg/kg	<1	<1	2.8
TPH-g C6-C12, mg/kg	<10	44	150
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	5.34	5.65	5.37
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-31	03-497-32	03-497-33
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q6-W5	R1-Q6-X2	R1-Q6-YZ
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/23/96	03/23/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	50	50	1
TPH-d C13-C22, mg/kg	30000	23000	<100
TPH-d C23-C28, mg/kg	11000	7500	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	46.2
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-31	03-497-32	03-497-33
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q6-W5	R1-Q6-X2	R1-Q6-YZ
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/22/96	03/21/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	500	100
Benzene, mg/kg	0.62	<3	<0.5
Toluene, mg/kg	2.4	4.4	<0.5
Ethylbenzene, mg/kg	1.7	3.6	<0.5
Total Xylene Isomers, mg/kg	7.9	18	<1
TPH-g C6-C12, mg/kg	560	440	<10
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	3.63	23.2	5.81
a,a,a-Trifluorotoluene Th., mg/kg	5.00	25.0	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-34	03-497-35	03-497-36
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q7-V2	R1-Q7-V8	R1-Q7-W5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/23/96	03/23/96	03/23/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	10	50	50
TPH-d C13-C22, mg/kg	4200	25000	19000
TPH-d C23-C28, mg/kg	1600	11000	7300
Surrogates **			
Naphthalene Reported, mg/kg	25.4	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-34	03-497-35	03-497-36
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q7-V2	R1-Q7-V8	R1-Q7-W5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/22/96	03/22/96	03/21/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	200	100
Benzene, mg/kg	<0.5	<1	<0.5
Toluene, mg/kg	<0.5	3.2	<0.5
Ethylbenzene, mg/kg	<0.5	2.2	<0.5
Total Xylene Isomers, mg/kg	<1	8.8	2.0
TPH-g C6-C12, mg/kg	100	190	80
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	5.56	7.10	4.88
a,a,a-Trifluorotoluene Th., mg/kg	5.00	10.0	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-37	03-497-38	03-497-39
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION NON-AQUEOUS	R1-Q7-X2	R1-Q7-Y5	R1-Q7-Z2
Semi-volatile HC (8015M)			
Date Analyzed	03/22/96	03/22/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	1	1	1
TPH-d C13-C22, mg/kg	<100	<100	<100
TPH-d C23-C28, mg/kg	<100	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	47.8	46.1	46.1
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-37	03-497-38	03-497-39
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q7-X2	R1-Q7-Y5	R1-Q7-Z2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/21/96	03/21/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	<0.5
Ethylbenzene, mg/kg	<0.5	<0.5	<0.5
Total Xylene Isomers, mg/kg	<1	<1	<1
TPH-g C6-C12, mg/kg	<10	<10	<10
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	5.72	5.64	4.91
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-40	03-497-41	03-497-42
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q1-Y2	R1-Q1-X5	R1-Q1-W8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/22/96	03/23/96	03/25/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	1	100	20
TPH-d C13-C22, mg/kg	<100	39000	7400
TPH-d C23-C28, mg/kg	<100	<10000	3000
Surrogates **			
Naphthalene Reported, mg/kg	46.3	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
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Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-43	03-497-44	03-497-45
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q1-W2	R1-Q1-V5	R1-Q2-V5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/25/96	03/25/96	03/25/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	1	50	50
TPH-d C13-C22, mg/kg	500	17000	20000
TPH-d C23-C28, mg/kg	250	8600	8700
Surrogates **			
Naphthalene Reported, mg/kg	42.8	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-46	03-497-47	03-497-48
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q2-W2	R1-Q2-W8	R1-Q2-Y2 x5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/25/96	03/25/96	03/25/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	50	20	10
TPH-d C13-C22, mg/kg	27000	6900	5300
TPH-d C23-C28, mg/kg	11000	2500	1500
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-49	03-497-50	03-497-51
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q2-Y2	R1-Q2-Z2	R1-Q3-V5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/22/96	03/22/96	03/25/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	1	1	20
TPH-d C13-C22, mg/kg	<100	<100	8800
TPH-d C23-C28, mg/kg	<100	<100	3300
Surrogates **			
Naphthalene Reported, mg/kg	46.7	43.7	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-52	03-497-53	03-497-54
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q3-W2	R1-Q3-W8	R1-Q3-X5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/25/96	03/25/96	03/25/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	50	20
TPH-d C13-C22, mg/kg	35000	14000	7600
TPH-d C23-C28, mg/kg	14000	5300	2300
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-55	03-497-56	03-497-57
DATE SAMPLED	18 MAR 96	18 MAR 96	18 MAR 96
SAMPLE DESCRIPTION	R1-Q3-Y2	R1-Q4-V5	R1-Q4-W2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/22/96	03/25/96	03/25/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	1	20	50
TPH-d C13-C22, mg/kg	<100	8700	19000
TPH-d C23-C28, mg/kg	<100	3200	7400
Surrogates **			
Naphthalene Reported, mg/kg	46.3	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-58	03-497-59	03-497-60
DATE SAMPLED	18 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION NON-AQUEOUS	R1-Q4-W8	R1-Q4-X5	R1-Q4-Y2
Semi-volatile HC (8015M)			
Date Analyzed	03/26/96	03/22/96	03/22/96
Date Extracted	03/21/96	03/21/96	03/21/96
Dilution Factor, Times	100	1	1
TPH-d C13-C22, mg/kg	32000	220	<100
TPH-d C23-C28, mg/kg	12000	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	36.8	45.7
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-61	03-497-62	03-497-63
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q4-Z2	R1-Q5-V5	R1-Q5-W2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/25/96	03/23/96	03/23/96
Date Extracted	03/22/96	03/22/96	03/22/96
Dilution Factor, Times	1	20	10
TPH-d C13-C22, mg/kg	610	11000	6200
TPH-d C23-C28, mg/kg	260	5500	2300
Surrogates **			
Naphthalene Reported, mg/kg	50.7	0 NC	109
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
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Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-64	03-497-65	03-497-66
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q5-W8	R1-Q5-X5	R1-Q5-Y2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/23/96	03/26/96	03/22/96
Date Extracted	03/22/96	03/22/96	303/22/96
Dilution Factor, Times	50	5	1
TPH-d C13-C22, mg/kg	19000	2000	<100
TPH-d C23-C28, mg/kg	7700	210	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	47.2	66.5
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-67	03-497-68	03-497-69
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q6-V5	R1-Q6-W2	R1-Q6-W8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/25/96	03/25/96	03/26/96
Date Extracted	03/22/96	03/22/96	03/22/96
Dilution Factor, Times	50	50	20
TPH-d C13-C22, mg/kg	19000	14000	6100
TPH-d C23-C28, mg/kg	8200	6000	2400
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-70	03-497-71	03-497-72
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q6-X5	R1-Q6-Y2	R1-Q6-Z2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/26/96	03/22/96	03/22/96
Date Extracted	03/22/96	03/22/96	03/22/96
Dilution Factor, Times	50	1	1
TPH-d C13-C22, mg/kg	16000	<100	<100
TPH-d C23-C28, mg/kg	5600	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	62.4	63.7
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-73	03-497-74	03-497-75
DATE SAMPLED	19 MAR 96	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q7-V5	R1-Q7-W2	R1-Q7-W8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/26/96	03/26/96	03/26/96
Date Extracted	03/22/96	03/22/96	03/22/96
Dilution Factor, Times	20	20	50
TPH-d C13-C22, mg/kg	5700	11000	20000
TPH-d C23-C28, mg/kg	2200	3900	8000
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-497-76	03-497-77
DATE SAMPLED	19 MAR 96	19 MAR 96
SAMPLE DESCRIPTION	R1-Q7-X5	R1-Q7-Y2
NON-AQUEOUS		
Semi-volatile HC (8015M)		
Date Analyzed	03/26/96	03/22/96
Date Extracted	03/22/96	03/22/96
Dilution Factor, Times	100	1
TPH-d C13-C22, mg/kg	38000	<100
TPH-d C23-C28, mg/kg	15000	<100
Surrogates **		
Naphthalene Reported, mg/kg	0 NC	64.1
Naphthalene Theoretical, mg/kg	50.0	50.0

LOG NO: G96-03-497

Received: 20 MAR 96
Mailed : 28 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO		03-497-78	
DATE SAMPLED		19 MAR 96	
SAMPLE DESCRIPTION		R1-Q5-W11	
NON-AQUEOUS			
Sample Held, Not Analyzed		HOLD	

Dick Swenson, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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BC ANALYTICAL, GLENDALE
QC REPORT FOR 9603497
DATE PRINTED: 28 MAR 1996

NON-AQUEOUS SAMPLES	UNITS	METHOD BLANK RESULT	RDL	FLG	LAB CONTROL LCS %REC	FLG	LCSD %REC	FLG	LCL	UCL	RPD	RPD UCL	RPD FLG	MATRIX QC MS %REC	FLG	MSD %REC	FLG	LCL	UCL	RPD	RPD UCL	RPD FLG
Batch: GAS*9676001 Method: 8015M - Modified 8015																						
Benzene	mg/kg	0	0.5	-	110	-	-	-	72	162	-	-	-	113	-	120	-	67	134	6	24	-
Toluene	mg/kg	0	0.5	-	85	-	-	-	65	144	-	-	-	88	-	92	-	57	137	5	25	-
Ethylbenzene	mg/kg	0	0.5	-	89	-	-	-	66	152	-	-	-	91	-	96	-	55	138	6	33	-
Total Xylene Isomers	mg/kg	0	1	-	87	-	-	-	64	132	-	-	-	90	-	95	-	44	147	5	29	-
TPH-g C6-C12	-	0	0	-	114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[a,a,a-Trifluorotoluene]	Percent	100	0	-	98	-	-	-	75	117	-	-	-	96	-	98	-	63	136	-	-	-
Batch: GAS*9676002 Method: 8015M - Modified 8015																						
Benzene	mg/kg	0	0.5	-	139	-	-	-	72	162	-	-	-	131	-	143	Q	67	134	9	24	-
Toluene	mg/kg	0	0.5	-	96	-	-	-	65	144	-	-	-	91	-	99	-	57	137	8	25	-
Ethylbenzene	mg/kg	0	0.5	-	98	-	-	-	66	152	-	-	-	96	-	103	-	55	138	7	33	-
Total Xylene Isomers	mg/kg	0	1	-	87	-	-	-	64	132	-	-	-	84	-	91	-	44	147	8	29	-
TPH-g C6-C12	-	0	0	-	96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[a,a,a-Trifluorotoluene]	Percent	107	0	-	128	Q	-	-	75	117	-	-	-	127	-	129	-	63	136	-	-	-
Batch: FUEL*9610 Method: 8015M - Modified 8015																						
TPH-d C13-C22	-	0	-	-	91	-	85	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-
TPH-d C23-C28	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	100	-	-	77	-	72	-	55	127	-	-	-	77	-	75	-	52	145	-	-	-
Batch: FUEL*9611 Method: 8015M - Modified 8015																						
TPH-d C13-C22	-	0	-	-	89	-	95	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-
TPH-d C23-C28	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	102	-	-	70	-	73	-	55	127	-	-	-	84	-	85	-	52	145	-	-	-
Batch: FUEL*9612 Method: 8015M - Modified 8015																						
TPH-d C13-C22	-	0	-	-	96	-	89	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-
TPH-d C23-C28	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	95	-	-	79	-	77	-	55	127	-	-	-	74	-	71	-	52	145	-	-	-
Batch: FUEL*9613 Method: 8015M - Modified 8015																						
TPH-d C13-C22	-	0	-	-	95	-	95	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-
TPH-d C23-C28	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	138	-	-	101	-	101	-	55	127	-	-	-	95	-	93	-	52	145	-	-	-

CHAIN OF CUSTODY RECORD

BCA Log Number _____

Client name: BC IRU	Project or PO#: [illegible]
Address:	Phone #: 266 6178
City, State, Zip:	Report attention: [illegible]

Analyses required: CLM DISSOLVED; BNEX GC/MS; Hazardous sample Special handling required

PAGE 1 of [illegible]

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by [illegible] / Sample description	Number of containers	CLM DISSOLVED	BNEX GC/MS	Hazardous sample Special handling required	Remarks
	3/16	8:40	[illegible]	R1-Q1-Z2	1	X	X		Std TAT
		[illegible]:08		R1-Q1-Y2		X	X		
		[illegible]		R1-Q1-Y5		X	X		
		[illegible]:27		R1-Q1-X2		X	X		NA = no time
		NA		R1-Q1-X5		X			(ES)
		10:43		R1-Q1-W2		X			
		10:30		R1-Q1-W5		X	X		
		10:24		R1-Q1-U2		X			* Please add
		11:11		R1-Q1-U5		X	X		Time sampled
		11:08		R1-Q1-U5		X			from Jar label
		11:03		R1-Q1-U2		X	X		to log
		11:05		R1-Q2-U5		X	X		

	Signature	Print Name	Company	Date	Time
Relinquished by	[illegible]	ROBERT REAL	BC-IRU		
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

1085 Shary Circle, Concord CA 94518 (510) 825-3894

801 Western Avenue, Glendale CA 91201 (818) 247-5737

X 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 2103497

Client name: BC IRV

Project or PO#:

Address:

Phone #:

City, State, Zip:

Report attention: ROPE

PAGE 2 of 8

Sampled by: ROPE

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	SEM DEC 8015	BTEX 8260	Hazardous sample Special handling required	Remarks
	3/18	12:15	SO	K1-Q2 V5	1	X			STD TAT
		12:21		K1-Q2-V6		X	X		
		12:34		K1-Q2-W2		X			
		NA		K1-Q2-W5		X	X		
		12:49		K1-Q2-W6		X			
		12:58		K1-Q2-X2		X	X		
		1:01		K1 Q2-X5		X			
		1:19		K1-Q2-Y2		X			* [illegible]
		1:22		K1 Q2-Y5		X	X		[illegible] from [illegible]
		1:34		K1 Q2-Z2		X			label to [illegible]
		2:32		K1-Q3-V2		X	X		
		2:34		K1-Q3-V5		X			

	Signature	Print Name	Company	Date	Time
Relinquished by	[illegible]	ROBERT ROPE	BC-IRV		
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

☐ 1085 Shary Circle, Concord, CA 94518 (510) 825 0894

☐ 801 Western Avenue Glendale, CA 91201 (818) 247 5737

☒ 1200 Gene Autry Way, Anaheim CA 92805 (714) 978 0113

Note Samples are discarded 30 days after results are reported unless other arrangements are made Hazardous samples will be returned to client or disposed of at client's expense

Disposal arrangements _____

*KEY AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 69065497

Client name: BC - SRU	Project or PO#: 3159 - C2
Address:	Phone #: 714 220 6178
City, State, Zip:	Report attention: TRPE

PAGE 3 of 8

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: POPE Sample description	Number of containers	Analyses required: Sim D.S. 8015M	BTEX 8020			Hazardous sample Special handling required		Remarks
	3/18	2:44	SO	R1-Q3-U8	1	X	X					Std TAT
		1:50		R1-Q3-W2		X						
		1:58		R1-Q3-W5		X	X					
		2:08		R1-Q3-W6		X						
		3:06		R1-Q3-X2		X	X					
		3:10		R1-Q3-X5		X						
		3:17		R1-Q3-Y2		X						
		3:21		R1-Q3-Y5		X	X					
		3:31		R1-Q3-Z2		X	X					
		3:45		R1-Q4-V2		X	X					
		3:52		R1-Q4-V5		X						
		3:59		R1-Q4-U8		X	X					

	Signature	Print Name	Company	Date	Time
Relinquished by		ROBERT POPE	BC-SRU		
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Relinquished by					
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☐ 801 Western Avenue [illegible] CA 91201 (818) 247-5737
☒ 1200 Gene Autry Way [illegible] CA 92805 (714) 978 0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

SCA Log Number 6960349

Client name: BC INV

Project or PO#: 5654-02

Phone #: 760 1070 x 178

City, State, Zip:

Report attention: POPE

PAGE 4 of 8

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: POPE — Sample description	Number of containers	Analyses required: Jan Dis BOSA	BTEX E120	Hazardous Special	Remarks
	3/18	4:09	SO	R1-Q4-102	1	X			
	3/18	4:13	SO	R1-Q4-105	1	X	X		
	3/18	4:21	SO	R1-Q4-108	1	X			
				[redacted]					
				[redacted]					
				[redacted]					
				[redacted]					

	Signature	Print Name	Company	Date	Time
Relinquished by		ROBERT POPE	BC-INV		
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

[ ] 1085 Shary Circle Concord, CA 94 [illegible] -3894

[ ] 801 Western Avenue Glendale CA [illegible] 247 5737

[X] 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978 0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number G9602497

Client name: BC - IRU	Project or PO#: 3659-02
Address:	Phone #: 660 1070 x 178
City, State, Zip:	Report attention: POPE

PAGE 5 of 8

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: POPE — Sample description	Number of containers	Sim Dis 8015M	BTEX 8020	Hazardous sample Special handling required	Remarks
	7-19	8:56	SO	R1 - Q4 - X2	1	X	X		
		8:58		R1 - Q4 - X5		X			
		9:09		R1 - Q4 - Y2		X			* Sample R1Q5W-11 time 1:20pm also received; not on c-o-c. (ES)
		11:28		R1 - Q4 - Y5		X	X		
		11:36		R1 - Q4 - Z2		X			
		11:51		R1 - Q5 - V2		X	X		
		11:53		R1 - Q5 - V5		X			
		12:06		R1 - Q5 - V8		X	X		* Please record time sampled from sample label to chain of custody form
		12:54		R1 - Q5 - W2		X			
		12:57		R1 - Q5 - W5		X	X		
		1:00		R1 - Q5 - W8		X			
		1:34		R1 - Q5 - X2		X	X		

	Signature	Print Name	Company	Date	Time
Relinquished by	[illegible]	ROBERT POPE	BC - IRU	[illegible]	[illegible]
Received by	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

☐ 1255 Powell Street, Emeryville, CA 94608 (510) 428-2300
☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
☒ 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

CHAIN OF CUSTODY RECORD

BCA Log Number 6960[illegible]5497

Client name: BC - JRV

Project or PO#: 3659-02

Address:

Phone #:

City, State, Zip:

Report attention: POPE

Sampled by: POPE

Page 6 of 8

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Analyses required: SVOCs 8015M	BTEX 8020	Hazardous sample Special handling required	Remarks
	3-19	~~3:24~~ 1:40	SO	R1 - Q5 - X5	1	X			
		1:49		R1 - Q5 - Y2		X			
		1:52		R1 - Q5 - Y5		X	X		
		2:54		R1 - Q5 - Z2		X	X		
		2:19		R1 - Q6 - V2		X	X		
		2:22		R1 - Q6 - V5		X			
		2:28		R1 - Q6 - V8		X	X		
		2:37		R1 - Q6 - W2		X			
		NA		R1 - Q6 - W5		X	X		* Add sample time from Jar labels to log
		2:46		R1 - Q6 - W8		X			
		2:51		R1 - Q6 - X2		X	X		
		3:00		R1 - Q6 - X5		X			

	Signature	Print Name	Company	Date	Time
Relinquished by	[illegible]	ROBERT POPE	BC - JRV		
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

☐ 1255 Powell Street, Emeryville, CA 94608 (510) 428-2300

☐ 801 Western Avenue, Glendale CA 91201 (818) 247-5737

☒ 1200 Gene Autry Way, Anaheim CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY AO—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

CHAIN OF CUSTODY RECORD

BCA Log Number C9601457

Client name: BC-SRU

Project or PO#: 3659-02

Address:

Phone #: 660 1070

City, State, Zip:

Report attention: POPE

Sampled by: POPE

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Analyses required: Sim Dis	BTEX GC70	Hazardous sample Special handling required	Remarks
	3-19	3:21	SO	R1 - Q6 - Y2	1	X			
		3:24		R1 - Q6 - Y5		X	X		
		3:34		R1 - Q6 - Z2		X			
		3:56		R1 - Q7 - V2		X	X		
		4:01		R1 - Q7 - V5		X			
		4:06		R1 - Q7 - V8		X	X		
		4:13		R1 - Q7 - W2		X			
		NA		R1 - Q7 - W5		X	X		
		4:21		R1 - Q7 - W8		X			
		NA		R1 - Q7 - X2		X	X		
		NA		R1 - Q7 - X5		X			
		4:44		R1 - Q7 - Y2		X			

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	ROBERT POPE	BC-SRU		
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

1255 Powell Street Emeryville, CA 94608 (510) 428-2300

801 Western Avenue, Glendale, CA 91201 (818) 247-5737

1200 Gene Autry Way Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

CHAIN OF CUSTODY RECORD

BCA Log Number 5[illegible]497

Client name: BC - JRU	Project or PO#: 36-39-02
Address:	Phone #: 660 1070 x 178
City, State, Zip:	Report attention: PUPE

PAGE 8 of 8

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: PUPE Sample description	Number of containers	Analyses required: 5mDis 8015		BTEX 8020				Hazardous sample Special handling required	Remarks
	3/19	4:48	SO	R1-Q7-Y5	1	X		X					
		4:50		R1-Q7-Z2		X		X					

	Signature	Print Name	Company	Date	Time
Relinquished by	[illegible]	RUBERT PUPE	BC - JRU		
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

☐ 1255 Powell Street Emeryville CA 94608 (510) 428-2300
☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
☒ 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note Samples are discarded 30 days after results are reported unless other arrangements are made
Hazardous samples will be returned to client or disposed of at client's expense

Disposal arrangements _____

*KEY AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil OT—Other PE—Petroleum

ANALYTICAL REPORT

B C Analytical

1200 Gene Autry Way
Anaheim, CA 92805
714/978-0113
Fax: 714/978-9284

LOG NO: G96-03-609

Received: 25 MAR 96

Mailed: 4/8/96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-1	03-609-2	03-609-3
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q8-V2	R1-Q8-V8	R1-Q8-W5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/27/96	04/04/96	03/30/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	20	50
TPH-d C13-C22, mg/kg	340	13000	30000
TPH-d C23-C28, mg/kg	180	3800	12000
Surrogates **			
Naphthalene Reported, mg/kg	41.0	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

BCA

B C Analytical

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-1	03-609-2	03-609-3
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q8-V2	R1-Q8-V8	R1-Q8-W5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/27/96	03/27/96	03/27/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	200
Benzene, mg/kg	<0.5	<0.5	<1
Toluene, mg/kg	<0.5	<0.5	1.2
Ethylbenzene, mg/kg	<0.5	0.73	1.1
Total Xylene Isomers, mg/kg	<1	5.2	4.9
TPH-g C6-C12, mg/kg	<10	580	410
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	4.77	3.29	8.52
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	10.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-4	03-609-5	03-609-6
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q8-X2	R1-Q8-Y5	R1-Q9-V2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/02/96	03/27/96	04/02/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	10	1	20
TPH-d C13-C22, mg/kg	6800	<100	14000
TPH-d C23-C28, mg/kg	2600	<100	4900
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	36.3	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-4	03-609-5	03-609-6
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q8-X2	R1-Q8-Y5	R1-Q9-V2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/27/96	03/27/96	03/27/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	<0.5
Ethylbenzene, mg/kg	<0.5	<0.5	<0.5
Total Xylene Isomers, mg/kg	1.7	<1	3.0
TPH-g C6-C12, mg/kg	87	<10	300
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	4.65	4.70	4.13
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-7	03-609-8	03-609-9
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q9-V8	R1-Q9-W5	R1-Q9-X2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/30/96	03/30/96	03/30/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	20	100	20
TPH-d C13-C22, mg/kg	16000	37000	15000
TPH-d C23-C28, mg/kg	7500	16000	4800
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-7	03-609-8	03-609-9
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q9-V8	R1-Q9-W5	R1-Q9-X2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/27/96	03/27/96	03/29/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	200
Benzene, mg/kg	<0.5	<0.5	<1
Toluene, mg/kg	<0.5	1.3	3.9
Ethylbenzene, mg/kg	<0.5	0.86	2.4
Total Xylene Isomers, mg/kg	2.0	4.4	14
TPH-g C6-C12, mg/kg	130	220	760
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	4.78	4.41	9.64
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	10.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-10	03-609-11	03-609-12
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q9-Y5	R1-Q9-Z2	R2-Q2-V8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/27/96	03/27/96	04/02/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	1	10
TPH-d C13-C22, mg/kg	<100	<100	7400
TPH-d C23-C28, mg/kg	<100	<100	1500
Surrogates **			
Naphthalene Reported, mg/kg	40.0	39.2	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-10	03-609-11	03-609-12
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q9-Y5	R1-Q9-Z2	R2-Q2-V8
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/29/96	03/29/96	03/29/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	0.69
Ethylbenzene, mg/kg	<0.5	<0.5	0.58
Total Xylene Isomers, mg/kg	<1	<1	3.4
TPH-g C6-C12, mg/kg	<10	<10	390
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	5.30	5.30	3.57
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-13	03-609-14	03-609-15
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q10-V2	R1-Q10-V8	R1-Q10-W5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/30/96	04/01/96	03/30/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	10	20	100
TPH-d C13-C22, mg/kg	9200	10000	46000
TPH-d C23-C28, mg/kg	3100	3700	19000
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-13	03-609-14	03-609-15
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q10-V2	R1-Q10-V8	R1-Q10-W5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/27/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	0.84	<0.5	1.1
Ethylbenzene, mg/kg	0.83	<0.5	0.77
Total Xylene Isomers, mg/kg	5.9	1.6	4.7
TPH-g C6-C12, mg/kg	270	140	330
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	3.57	4.58	3.74
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-16	03-609-17	03-609-18
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q10-X2	R1-Q10-Y5	R2-Q1-V2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/04/96	03/27/96	03/30/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	20	1	20
TPH-d C13-C22, mg/kg	11000	<100	15000
TPH-d C23-C28, mg/kg	2700	<100	3800
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	38.3	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-16	03-609-17	03-609-18
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q10-X2	R1-Q10-Y5	R2-Q1-V2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/27/96	03/27/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	200	100	100
Benzene, mg/kg	<1	<0.5	<0.5
Toluene, mg/kg	5.5	<0.5	1.8
Ethylbenzene, mg/kg	3.5	<0.5	1.1
Total Xylene Isomers, mg/kg	21	<1	8.1
TPH-g C6-C12, mg/kg	1100	<10	400
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	7.56	4.33	3.73
a,a,a-Trifluorotoluene Th., mg/kg	10.0	5.00	5.00

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-19	03-609-20	03-609-21
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION NON-AQUEOUS	R2-Q1-V8	R2-Q1-W5	R2-Q1-X2
Semi-volatile HC (8015M)			
Date Analyzed	03/30/96	03/30/96	03/27/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	20	100	1
TPH-d C13-C22, mg/kg	16000	49000	<100
TPH-d C23-C28, mg/kg	3300	11000	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	56.3
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-19	03-609-20	03-609-21
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R2-Q1-V8	R2-Q1-W5	R2-Q1-X2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/27/96	03/27/96	03/27/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	200	100
Benzene, mg/kg	<0.5	1.7	<0.5
Toluene, mg/kg	1.1	12	<0.5
Ethylbenzene, mg/kg	0.68	4.5	<0.5
Total Xylene Isomers, mg/kg	5.0	29	<1
TPH-g C6-C12, mg/kg	370	1100	32
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	4.01	8.40	4.76
a,a,a-Trifluorotoluene Th., mg/kg	5.00	10.0	5.00

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
Brown and Caldwell Consultants
16735 Von Karman, Suite 200
Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-22	03-609-23	03-609-24
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R2-Q1-Y5	R2-Q1-Z2	R2-Q2-V2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/30/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	1	5
TPH-d C13-C22, mg/kg	<100	<100	5400
TPH-d C23-C28, mg/kg	<100	<100	1800
Surrogates **			
Naphthalene Reported, mg/kg	45.1	46.6	37.1
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-22	03-609-23	03-609-24
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R2-Q1-Y5	R2-Q1-Z2	R2-Q2-V2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/27/96	03/27/96	03/27/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	<0.5
Ethylbenzene, mg/kg	<0.5	<0.5	<0.5
Total Xylene Isomers, mg/kg	<1	<1	<1
TPH-g C6-C12, mg/kg	<10	<10	190
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	5.08	6.23	4.17
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-25	03-609-26	03-609-27
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q2-W5	R2-Q2-X2	R2-Q2-Y5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/30/96	03/30/96	03/28/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	10	5	1
TPH-d C13-C22, mg/kg	12000	4700	<100
TPH-d C23-C28, mg/kg	3100	1000	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	42.2
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-25	03-609-26	03-609-27
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q2-W5	R2-Q2-X2	R2-Q2-Y5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/27/96	03/27/96	03/27/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	1.7	<0.5	<0.5
Ethylbenzene, mg/kg	0.94	<0.5	<0.5
Total Xylene Isomers, mg/kg	7.0	<1	<1
TPH-g C6-C12, mg/kg	510	31	<10
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	2.77	4.83	4.23
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-28	03-609-29	03-609-30
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q3-V2	R2-Q3-V8	R2-Q3-W5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/30/96	03/30/96	04/01/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	50	20	10
TPH-d C13-C22, mg/kg	33000	20000	9400
TPH-d C23-C28, mg/kg	6400	4300	1700
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	35.4
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-28	03-609-29	03-609-30
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q3-V2	R2-Q3-V8	R2-Q3-W5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/29/96	03/27/96	03/27/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	500	500	100
Benzene, mg/kg	<3	<3	<0.5
Toluene, mg/kg	6.0	<3	0.80
Ethylbenzene, mg/kg	4.2	<3	0.56
Total Xylene Isomers, mg/kg	30	13	4.3
TPH-g C6-C12, mg/kg	2100	890	380
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	16.8	16.8	3.63
a,a,a-Trifluorotoluene Th., mg/kg	25.0	25.0	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-31	03-609-32	03-609-33
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q3-X2	R2-Q3-Y5	R2-Q3-Z2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/28/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	1	1
TPH-d C13-C22, mg/kg	<100	<100	<100
TPH-d C23-C28, mg/kg	<100	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	41.1	39.2	40.7
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-31	03-609-32	03-609-33
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q3-X2	R2-Q3-Y5	R2-Q3-Z2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/27/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	<0.5
Ethylbenzene, mg/kg	<0.5	<0.5	<0.5
Total Xylene Isomers, mg/kg	<1	<1	<1
TPH-g C6-C12, mg/kg	<10	<10	<10
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	4.05	4.24	5.08
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-34	03-609-35	03-609-36
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q4-V2	R2-Q4-V8	R2-Q4-W5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/28/96	04/02/96	04/01/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	20	5
TPH-d C13-C22, mg/kg	<100	15000	3300
TPH-d C23-C28, mg/kg	<100	4300	770
Surrogates **			
Naphthalene Reported, mg/kg	38.2	0 NC	72.3
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-34	03-609-35	03-609-36
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q4-V2	R2-Q4-V8	R2-Q4-W5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/27/96	03/29/96	03/27/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	500	100
Benzene, mg/kg	<0.5	<3	<0.5
Toluene, mg/kg	<0.5	7.9	0.68
Ethylbenzene, mg/kg	<0.5	6.0	1.6
Total Xylene Isomers, mg/kg	<1	25	6.6
TPH-g C6-C12, mg/kg	<10	2000	510
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	4.88	20.6	3.43
a,a,a-Trifluorotoluene Th., mg/kg	5.00	25.0	5.00

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-38	03-609-39	03-609-40
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q4-Y5	R2-Q5-V2	R2-Q5-V8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/28/96	04/02/96	04/01/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	20	5
TPH-d C13-C22, mg/kg	<100	6100	3200
TPH-d C23-C28, mg/kg	<100	3300	750
Surrogates **			
Naphthalene Reported, mg/kg	39.5	0 NC	53.8
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-38	03-609-39	03-609-40
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q4-Y5	R2-Q5-V2	R2-Q5-V8
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/27/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	0.74
Ethylbenzene, mg/kg	<0.5	<0.5	<0.5
Total Xylene Isomers, mg/kg	<1	<1	2.7
TPH-g C6-C12, mg/kg	<10	<10	150
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	4.87	5.39	4.96
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-41	03-609-42	03-609-43
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q5-W5	R2-Q5-X2	R2-Q5-Y5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/02/96	04/02/96	03/28/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	20	1	1
TPH-d C13-C22, mg/kg	14000	520	<100
TPH-d C23-C28, mg/kg	3400	310	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	39.2	54.7
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-41	03-609-42	03-609-43
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q5-W5	R2-Q5-X2	R2-Q5-Y5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	1.8	<0.5	<0.5
Ethylbenzene, mg/kg	1.7	<0.5	<0.5
Total Xylene Isomers, mg/kg	7.5	<1	<1
TPH-g C6-C12, mg/kg	400	<10	<10
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	4.04	5.00	4.86
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-44	03-609-45	03-609-46
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q5-Z2	R2-Q6-V2	R2-Q6-V8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/02/96	04/01/96	04/01/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	50	20
TPH-d C13-C22, mg/kg	590	31000	22000
TPH-d C23-C28, mg/kg	400	6000	4100
Surrogates **			
Naphthalene Reported, mg/kg	40.2	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-44	03-609-45	03-609-46
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q5-Z2	R2-Q6-V2	R2-Q6-V8
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	500	500
Benzene, mg/kg	<0.5	<3	<3
Toluene, mg/kg	<0.5	4.4	<3
Ethylbenzene, mg/kg	<0.5	3.4	<3
Total Xylene Isomers, mg/kg	<1	25	12
TPH-g C6-C12, mg/kg	<10	1400	2200
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	4.64	20.2	15.7
a,a,a-Trifluorotoluene Th., mg/kg	5.00	25.0	25.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-47	03-609-48	03-609-49
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q6-W5	R2-Q6-X2	R2-Q6-Y5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/01/96	03/28/96	03/28/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	10	1	1
TPH-d C13-C22, mg/kg	12000	<100	<100
TPH-d C23-C28, mg/kg	2000	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	49.0	51.8
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-47	03-609-48	03-609-49
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q6-W5	R2-Q6-X2	R2-Q6-Y5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	200	100	100
Benzene, mg/kg	<1	<0.5	<0.5
Toluene, mg/kg	3.6	<0.5	<0.5
Ethylbenzene, mg/kg	1.6	<0.5	<0.5
Total Xylene Isomers, mg/kg	12	<1	<1
TPH-g C6-C12, mg/kg	510	<10	<10
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	8.86	4.59	4.71
a,a,a-Trifluorotoluene Th., mg/kg	10.0	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-50	03-609-51	03-609-52
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q7-V2	R2-Q7-V8	R2-Q7-W5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/30/96	04/01/96	04/03/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	100	50	20
TPH-d C13-C22, mg/kg	40000	25000	13000
TPH-d C23-C28, mg/kg	<10000	5100	2700
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-50	03-609-51	03-609-52
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q7-V2	R2-Q7-V8	R2-Q7-W5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	500	500	200
Benzene, mg/kg	<3	<3	<1
Toluene, mg/kg	7.2	5.3	1.7
Ethylbenzene, mg/kg	4.8	4.6	1.6
Total Xylene Isomers, mg/kg	36	19	6.9
TPH-g C6-C12, mg/kg	2100	1900	680
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	16.3	23.2	7.18
a,a,a-Trifluorotoluene Th., mg/kg	25.0	25.0	10.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-53	03-609-54	03-609-55
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q7-X2	R2-Q7-Y5	R2-Q7-Z2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/02/96	03/28/96	03/28/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	20	1	1
TPH-d C13-C22, mg/kg	14000	<100	<100
TPH-d C23-C28, mg/kg	3600	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	54.6	51.1
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-53	03-609-54	03-609-55
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q7-X2	R2-Q7-Y5	R2-Q7-Z2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/29/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	10000	100	100
Benzene, mg/kg	<50	<0.5	<0.5
Toluene, mg/kg	<50	<0.5	<0.5
Ethylbenzene, mg/kg	<50	<0.5	<0.5
Total Xylene Isomers, mg/kg	150	<1	<1
TPH-g C6-C12, mg/kg	6700	<10	<10
Surrogates **			--
a,a,a-Trifluorotoluene Rep., mg/kg	463	4.36	4.63
a,a,a-Trifluorotoluene Th., mg/kg	500	5.00	5.00

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-56	03-609-57	03-609-58
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q8-V2	R2-Q8-V8	R2-Q8-W5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/02/96	03/30/96	04/01/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	100	50
TPH-d C13-C22, mg/kg	760	48000	34000
TPH-d C23-C28, mg/kg	340	<10000	6200
Surrogates **			
Naphthalene Reported, mg/kg	44.3	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-56	03-609-57	03-609-58
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q8-V2	R2-Q8-V8	R2-Q8-W5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/29/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	2000	500
Benzene, mg/kg	<0.5	<10	<3
Toluene, mg/kg	<0.5	<10	7.0
Ethylbenzene, mg/kg	<0.5	<10	<3
Total Xylene Isomers, mg/kg	<1	36	22
TPH-g C6-C12, mg/kg	24	2500	1100
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	4.70	68.4	23.2
a,a,a-Trifluorotoluene Th., mg/kg	5.00	100	25.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-59	03-609-60	03-609-61
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q8-X2	R2-Q8-Y5	R2-Q9-V2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/28/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	1	1
TPH-d C13-C22, mg/kg	<100	<100	<100
TPH-d C23-C28, mg/kg	<100	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	54.6	58.9	56.0
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-59	03-609-60	03-609-61
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q8-X2	R2-Q8-Y5	R2-Q9-V2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/29/96	03/29/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	<0.5
Ethylbenzene, mg/kg	<0.5	<0.5	<0.5
Total Xylene Isomers, mg/kg	<1	<1	<1
TPH-g C6-C12, mg/kg	<10	<10	<10
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	4.49	4.43	5.10
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-62	03-609-63	03-609-64
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION NON-AQUEOUS	R2-Q9-V8	R2-Q9-W5	R2-Q9-X2
Semi-volatile HC (8015M)			
Date Analyzed	04/02/96	04/03/96	03/28/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	20	50	1
TPH-d C13-C22, mg/kg	22000	34000	<100
TPH-d C23-C28, mg/kg	3700	7400	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	56.0
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-62	03-609-63	03-609-64
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q9-V8	R2-Q9-W5	R2-Q9-X2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	200	100	100
Benzene, mg/kg	<1	1.3	<0.5
Toluene, mg/kg	5.9	7.6	<0.5
Ethylbenzene, mg/kg	4.7	3.7	<0.5
Total Xylene Isomers, mg/kg	27	17	<1
TPH-g C6-C12, mg/kg	970	510	<10
Surrogates **			–
a,a,a-Trifluorotoluene Rep., mg/kg	7.86	3.73	4.83
a,a,a-Trifluorotoluene Th., mg/kg	10.0	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-65	03-609-66	03-609-67
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q9-Y5	R2-Q9-Z2	R2-Q10-V2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/28/96	04/02/96	04/01/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	5	5
TPH-d C13-C22, mg/kg	<100	1300	2200
TPH-d C23-C28, mg/kg	<100	730	780
Surrogates **			
Naphthalene Reported, mg/kg	55.1	0 NC	57.2
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-65	03-609-66	03-609-67
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q9-Y5	R2-Q9-Z2	R2-Q10-V2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	100
Benzene, mg/kg	<0.5	<0.5	<0.5
Toluene, mg/kg	<0.5	<0.5	<0.5
Ethylbenzene, mg/kg	<0.5	<0.5	<0.5
Total Xylene Isomers, mg/kg	<1	<1	<1
TPH-g C6-C12, mg/kg	<10	<10	<10
Surrogates **			–
a,a,a-Trifluorotoluene Rep., mg/kg	5.10	5.12	5.03
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-68	03-609-69	03-609-70
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q10-V8	R2-Q10-W5	R2-Q10-X2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/30/96	04/02/96	03/28/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	100	50	1
TPH-d C13-C22, mg/kg	49000	34000	<100
TPH-d C23-C28, mg/kg	11000	6600	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	51.3
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-68	03-609-69	03-609-70
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q10-V8	R2-Q10-W5	R2-Q10-X2
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	500	200	100
Benzene, mg/kg	<3	1.9	<0.5
Toluene, mg/kg	6.0	9.7	<0.5
Ethylbenzene, mg/kg	5.3	5.1	<0.5
Total Xylene Isomers, mg/kg	24	25	<1
TPH-g C6-C12, mg/kg	1300	820	<10
Surrogates **			
a,a,a-Trifluorotoluene Rep., mg/kg	23.0	8.76	4.79
a,a,a-Trifluorotoluene Th., mg/kg	25.0	10.0	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-71	03-609-72	03-609-73
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q10-Y5	R2-Q11-V2	R2-Q11-V8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/28/96	04/02/96	04/02/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	5	20
TPH-d C13-C22, mg/kg	<100	4000	22000
TPH-d C23-C28, mg/kg	<100	1500	4500
Surrogates **			
Naphthalene Reported, mg/kg	56.3	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-71	03-609-72	03-609-73
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q10-Y5	R2-Q11-V2	R2-Q11-V8
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/28/96	03/28/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	200	500
Benzene, mg/kg	<0.5	<1	<3
Toluene, mg/kg	<0.5	<1	5.0
Ethylbenzene, mg/kg	<0.5	<1	3.1
Total Xylene Isomers, mg/kg	<1	<2	17
TPH-g C6-C12, mg/kg	<10	75	980
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	4.87	9.88	23.8
a,a,a-Trifluorotoluene Th., mg/kg	5.00	10.0	25.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-74	03-609-75	03-609-76
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q11-W5	R2-Q11-X2	R2-Q11-Y5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/02/96	03/30/96	03/28/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	5	1	1
TPH-d C13-C22, mg/kg	4100	500	<100
TPH-d C23-C28, mg/kg	1500	160	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	50.6	48.9
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-74	03-609-75	03-609-76
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q11-W5	R2-Q11-X2	R2-Q11-Y5
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/28/96	03/29/96	03/29/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	200	100	100
Benzene, mg/kg	<1	<0.5	<0.5
Toluene, mg/kg	<1	<0.5	<0.5
Ethylbenzene, mg/kg	<1	<0.5	<0.5
Total Xylene Isomers, mg/kg	<2	<1	<1
TPH-g C6-C12, mg/kg	150	110	<10
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	9.26	4.91	5.16
a,a,a-Trifluorotoluene Th., mg/kg	10.0	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-77	03-609-78	03-609-79
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q11-Z2	R2-Q12-V2	R2-Q12-V8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/28/96	04/02/96	04/02/96
Date Extracted	03/27/96	03/27/96	03/27/96
Dilution Factor, Times	1	5	50
TPH-d C13-C22, mg/kg	<100	3000	32000
TPH-d C23-C28, mg/kg	<100	1100	7800
Surrogates **			
Naphthalene Reported, mg/kg	53.5	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-77	03-609-78	03-609-79
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q11-Z2	R2-Q12-V2	R2-Q12-V8
NON-AQUEOUS			
Volatile HC (8015M)			
Date Analyzed	03/29/96	03/29/96	03/29/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	100	100	200
Benzene, mg/kg	<0.5	<0.5	<1
Toluene, mg/kg	<0.5	<0.5	4.2
Ethylbenzene, mg/kg	<0.5	<0.5	4.0
Total Xylene Isomers, mg/kg	<1	<1	18
TPH-g C6-C12, mg/kg	<10	59	870
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	5.09	5.26	8.54
a,a,a-Trifluorotoluene Th., mg/kg	5.00	5.00	10.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-80	03-609-81	03-609-82
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q12-W5	R2-Q12-X2	R2-Q12-Y5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/02/96	03/26/96	03/26/96
Date Extracted	03/27/96	03/26/96	03/26/96
Dilution Factor, Times	20	1	1
TPH-d C13-C22, mg/kg	13000	<100	<100
TPH-d C23-C28, mg/kg	4500	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	49.4	49.9
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-80	03-609-81	03-609-82
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION NON-AQUEOUS	R2-Q12-W5	R2-Q12-X2	R2-Q12-Y5
Volatile HC (8015M)			
Date Analyzed	03/29/96	03/29/96	03/29/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	500	100	100
Benzene, mg/kg	<3	<0.5	<0.5
Toluene, mg/kg	6.8	<0.5	<0.5
Ethylbenzene, mg/kg	5.4	<0.5	<0.5
Total Xylene Isomers, mg/kg	33	<1	<1
TPH-g C6-C12, mg/kg	1200	12	<10
Surrogates **			—
a,a,a-Trifluorotoluene Rep., mg/kg	23.2	4.66	4.77
a,a,a-Trifluorotoluene Th., mg/kg	25.0	5.00	5.00

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-83	03-609-84	03-609-85
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION NON-AQUEOUS	R1-Q8-V5	R1-Q8-W2	R1-Q8-W8
Semi-volatile HC (8015M)			
Date Analyzed	03/27/96	03/27/96	04/04/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	20	1	50
TPH-d C13-C22, mg/kg	10000	920	34000
TPH-d C23-C28, mg/kg	3700	430	15000
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	45.6	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-86	03-609-87	03-609-88
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q8-X5	R1-Q8-Y2	R1-Q8-Z2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/27/96	03/27/96	03/30/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	1	1	2
TPH-d C13-C22, mg/kg	<100	670	620
TPH-d C23-C28, mg/kg	<100	460	490
Surrogates **			
Naphthalene Reported, mg/kg	44.6	70.1	28.9
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-89	03-609-90	03-609-91
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q9-V5	R1-Q9-W2	R1-Q9-W8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/30/96	03/30/96	03/30/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	20	20	100
TPH-d C13-C22, mg/kg	11000	14000	38000
TPH-d C23-C28, mg/kg	5200	5400	15000
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-92	03-609-93	03-609-94
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q9-X5	R1-Q9-Y2	R1-Q10-V5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/30/96	03/26/96	03/30/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	20	1	100
TPH-d C13-C22, mg/kg	11000	<100	39000
TPH-d C23-C28, mg/kg	3500	<100	17000
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	46.2	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-95	03-609-96	03-609-97
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q10-W2	R1-Q10-W8	R1-Q10-X5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/30/96	03/30/96	03/30/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	50	20	100
TPH-d C13-C22, mg/kg	27000	15000	33000
TPH-d C23-C28, mg/kg	11000	5900	10000
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-98	03-609-99	03-609-100
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q10-Y2	R1-Q10-Z2	R2-Q2-V5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/27/96	03/26/96	03/30/96
Date Extracted	03/26/96	03/26/96	03/26/96
Dilution Factor, Times	5	1	20
TPH-d C13-C22, mg/kg	3300	<100	14000
TPH-d C23-C28, mg/kg	770	<100	3300
Surrogates **			
Naphthalene Reported, mg/kg	147	44.3	0 NC
Naphthalene Theoretical, mg/kg	150	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-101	03-609-102	03-609-103
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R2-Q1-V5	R2-Q1-W2	R2-Q1-W8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/03/96	04/03/96	04/03/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	10	50	20
TPH-d C13-C22, mg/kg	11000	29000	15000
TPH-d C23-C28, mg/kg	2000	9300	3200
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Received: 25 MAR 96

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-104	03-609-105	03-609-106
DATE SAMPLED	20 MAR 96	20 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q1-X5	R2-Q1-Y2	R2-Q2-W2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/29/96	03/29/96	04/03/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	1	1	5
TPH-d C13-C22, mg/kg	140	<100	1700
TPH-d C23-C28, mg/kg	<100	<100	680
Surrogates **			
Naphthalene Reported, mg/kg	62.8	56.2	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-107	03-609-108	03-609-109
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q2-W8	R2-Q2-X5	R2-Q2-Y2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/03/96	04/03/96	03/29/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	10	5	1
TPH-d C13-C22, mg/kg	4500	3500	<100
TPH-d C23-C28, mg/kg	1200	840	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	56.6
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-110	03-609-111	03-609-112
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q2-Z2	R2-Q3-V5	R2-Q3-W2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/29/96	04/03/96	04/03/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	1	5	100
TPH-d C13-C22, mg/kg	<100	4400	51000
TPH-d C23-C28, mg/kg	<100	850	10000
Surrogates **			
Naphthalene Reported, mg/kg	59.8	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-113	03-609-114	03-609-115
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q3-W8	R2-Q3-X5	R2-Q3-Y2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/03/96	03/29/96	03/29/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	5	1	1
TPH-d C13-C22, mg/kg	4400	480	<100
TPH-d C23-C28, mg/kg	840	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	36.1	50.6
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-116	03-609-117	03-609-118
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q4-V5	R2-Q4-W2	R2-Q4-W8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/29/96	03/29/96	04/03/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	1	1	20
TPH-d C13-C22, mg/kg	1000	<100	10000
TPH-d C23-C28, mg/kg	290	<100	3000
Surrogates **			
Naphthalene Reported, mg/kg	40.3	52.1	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-119	03-609-120	03-609-121
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q4-X5	R2-Q4-Y2	R2-Q4-Z2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/03/96	03/29/96	03/29/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	20	1	1
TPH-d C13-C22, mg/kg	18000	<100	<100
TPH-d C23-C28, mg/kg	3600	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	46.3	51.8
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-122	03-609-123	03-609-124
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q5-V5	R2-Q5-W2	R2-Q5-W8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/03/96	03/29/96	04/03/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	40	1	5
TPH-d C13-C22, mg/kg	21000	270	3800
TPH-d C23-C28, mg/kg	5000	110	980
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	53.1	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-125	03-609-126	03-609-127
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q5-X5	R2-Q5-Y2	R2-Q6-V5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/29/96	04/03/96	04/03/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	1	1	50
TPH-d C13-C22, mg/kg	<100	<100	24000
TPH-d C23-C28, mg/kg	<100	<100	5200
Surrogates **			
Naphthalene Reported, mg/kg	56.4	42.5	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-128	03-609-129	03-609-130
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q6-W2	R2-Q6-W8	R2-Q6-X5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/03/96	04/03/96	03/29/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	50	20	1
TPH-d C13-C22, mg/kg	22000	13000	<100
TPH-d C23-C28, mg/kg	6300	2600	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	54.9
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-131	03-609-132	03-609-133
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q6-Y2	R2-Q6-Z2	R2-Q7-V5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/29/96	03/29/96	04/03/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	1	1	20
TPH-d C13-C22, mg/kg	<100	<100	14000
TPH-d C23-C28, mg/kg	<100	<100	2800
Surrogates **			
Naphthalene Reported, mg/kg	52.2	52.5	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

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REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-134	03-609-135	03-609-136
DATE SAMPLED	21 MAR 96	21 MAR 96	21 MAR 96
SAMPLE DESCRIPTION	R2-Q7-W2	R2-Q7-W8	R2-Q7-X5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/03/96	04/03/96	03/29/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	50	5	1
TPH-d C13-C22, mg/kg	31000	4100	<100
TPH-d C23-C28, mg/kg	7200	800	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	51.5
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

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Received: 25 MAR 96

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-137	03-609-138	03-609-139
DATE SAMPLED	21 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q7-Y2	R2-Q8-V5	R2-Q8-W2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/29/96	04/03/96	04/03/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	1	10	5
TPH-d C13-C22, mg/kg	<100	10000	2200
TPH-d C23-C28, mg/kg	<100	2300	1200
Surrogates **			
Naphthalene Reported, mg/kg	53.4	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-140	03-609-141	03-609-142
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q8-W8	R2-Q8-X5	R2-Q8-Y2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/03/96	04/04/96	03/29/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	5	20	1
TPH-d C13-C22, mg/kg	3700	6700	<100
TPH-d C23-C28, mg/kg	890	<2000	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	58.2
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-143	03-609-144	03-609-145
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q8-Z2	R2-Q9-V5	R2-Q9-W2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/29/96	04/04/96	04/04/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	1	20	20
TPH-d C13-C22, mg/kg	<100	11000	12000
TPH-d C23-C28, mg/kg	<100	2700	4200
Surrogates **			
Naphthalene Reported, mg/kg	59.8	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-146	03-609-147	03-609-148
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q9-W8	R2-Q9-X5	R2-Q9-Y2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/04/96	04/04/96	03/29/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	50	20	1
TPH-d C13-C22, mg/kg	26000	13000	<100
TPH-d C23-C28, mg/kg	5700	2900	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	54.3
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-149	03-609-150	03-609-151
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q10-V5	R2-Q10-W2	R2-Q10-W8
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/04/96	04/04/96	04/04/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	20	20	50
TPH-d C13-C22, mg/kg	14000	16000	31000
TPH-d C23-C28, mg/kg	2500	2900	5800
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-152	03-609-153	03-609-154
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q10-X5	R2-Q10-Y2	R2-Q11-V5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/29/96	03/29/96	04/04/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	1	1	10
TPH-d C13-C22, mg/kg	<100	<100	6500
TPH-d C23-C28, mg/kg	<100	<100	1200
Surrogates **			
Naphthalene Reported, mg/kg	53.6	52.4	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-155	03-609-156	03-609-157
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q11-W2	R2-Q11-W8	R2-Q11-X5
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/04/96	04/04/96	03/29/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	20	5	1
TPH-d C13-C22, mg/kg	12000	5800	<100
TPH-d C23-C28, mg/kg	3000	2000	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	0 NC	55.7
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-158	03-609-159	03-609-160
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q11-Y2	R2-Q12-V5	R2-Q12-W2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	03/29/96	04/04/96	04/04/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	1	50	50
TPH-d C13-C22, mg/kg	<100	24000	20000
TPH-d C23-C28, mg/kg	<100	<5000	5900
Surrogates **			
Naphthalene Reported, mg/kg	53.8	0 NC	0 NC
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

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Project 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-161	03-609-162	03-609-163
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	R2-Q12-W8	R2-Q12-X5	R2-Q12-Y2
NON-AQUEOUS			
Semi-volatile HC (8015M)			
Date Analyzed	04/04/96	03/30/96	03/30/96
Date Extracted	03/28/96	03/28/96	03/28/96
Dilution Factor, Times	100	1	1
TPH-d C13-C22, mg/kg	40000	<100	<100
TPH-d C23-C28, mg/kg	<10000	<100	<100
Surrogates **			
Naphthalene Reported, mg/kg	0 NC	53.4	52.0
Naphthalene Theoretical, mg/kg	50.0	50.0	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-164
DATE SAMPLED	22 MAR 96
SAMPLE DESCRIPTION	R2-Q12-Z2
NON-AQUEOUS	
Semi-volatile HC (8015M)	
Date Analyzed	03/30/96
Date Extracted	03/28/96
Dilution Factor, Times	1
TPH-d C13-C22, mg/kg	<100
TPH-d C23-C28, mg/kg	<100
Surrogates **	
Naphthalene Reported, mg/kg	49.4
Naphthalene Theoretical, mg/kg	50.0

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-165	03-609-166	03-609-167
DATE SAMPLED	22 MAR 96	22 MAR 96	22 MAR 96
SAMPLE DESCRIPTION	TAR1-2.5	TAR1-5.5	R2-Q11-X8
NON-AQUEOUS			
Sample Held, Not Analyzed	HOLD	HOLD	HOLD

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-168	03-609-169	03-609-170
DATE SAMPLED	22 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R2-Q11-Y8	R2-Q2-Z5	R2-Q3-W10
NON-AQUEOUS			
Sample Held, Not Analyzed	HOLD	HOLD	HOLD

LOG NO: G96-03-609

Received: 25 MAR 96

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Irvine, CA 92714

Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-171	03-609-172	03-609-173
DATE SAMPLED	20 MAR 96	20 MAR 96	20 MAR 96
SAMPLE DESCRIPTION	R1-Q9-X8	R1-Q8-X8	R1-Q8-W8.5
NON-AQUEOUS			
Sample Held, Not Analyzed	HOLD	HOLD	HOLD

LOG NO: G96-03-609

Received: 25 MAR 96

Mr. Bob Pope
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Project: 3659-02

REPORT OF ANALYTICAL RESULTS

LOG NO	03-609-37
DATE SAMPLED	21 MAR 96
SAMPLE DESCRIPTION	R2-Q4-X2
NON-AQUEOUS	
Order Cancelled , Date	CANCEL

Dick Swenson, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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BC ANAL[illegible]AL, GLENDALE
QC REPORT FOR 9603609
DATE PRINTED: 08 APR 1996

NON-AQUEOUS SAMPLES

		METHOD BLANK			LAB CONTROL									MATRIX QC								
					LCS		LCSD					RPD	RPD	MS		MSD				RPD	RPD	
	UNITS	RESULT	RDL	FLG	%REC	FLG	%REC	FLG	LCL	UCL	RPD	UCL	FLG	%REC	FLG	%REC	FLG	LCL	UCL	RPD	UCL	FLG
Batch: GAS*9676008 Method: 8015M - Modified 8015																						
Benzene	mg/kg	0	0.5	-	118	-	-	-	72	162	-	-	-	131	-	115	-	67	134	13	24	-
Toluene	mg/kg	0	0.5	-	92	-	-	-	65	144	-	-	-	101	-	99	-	57	137	2	25	-
Ethylbenzene	mg/kg	0	0.5	-	95	-	-	-	66	152	-	-	-	104	-	101	-	55	138	3	33	-
Total Xylene Isomers	mg/kg	0	1	-	94	-	-	-	64	132	-	-	-	103	-	101	-	44	147	2	29	-
TPH-g C6-C12	mg/kg	0	10	-	102	-	-	-	-	-	-	-	-	118	-	114	-	-	-	4	-	-
[a,a,a-Trifluorotoluene]	Percent	103	0	-	104	-	-	-	75	117	-	-	-	94	-	85	-	63	136	-	-	-
Batch: GAS*9676009 Method: 8015M - Modified 8015																						
Benzene	mg/kg	0	0.5	-	86	-	-	-	72	162	-	-	-	79	-	74	-	67	134	6	24	-
Toluene	mg/kg	0	0.5	-	94	-	-	-	65	144	-	-	-	91	-	86	-	57	137	6	25	-
Ethylbenzene	mg/kg	0	0.5	-	82	-	-	-	66	152	-	-	-	75	-	73	-	55	138	2	33	-
Total Xylene Isomers	mg/kg	0	1	-	92	-	-	-	64	132	-	-	-	86	-	83	-	44	147	4	29	-
TPH-g C6-C12	mg/kg	0	10	-	111	-	-	-	-	-	-	-	-	99	-	97	-	-	-	2	-	-
[a,a,a-Trifluorotoluene]	Percent	115	0	-	99	-	-	-	75	117	-	-	-	94	-	88	-	63	136	-	-	-
Batch: GAS*9676010 Method: 8015M - Modified 8015																						
Benzene	mg/kg	0	0.5	-	80	-	-	-	72	162	-	-	-	94	-	78	-	67	134	19	24	-
Toluene	mg/kg	0	0.5	-	83	-	-	-	65	144	-	-	-	84	-	84	-	57	137	1	25	-
Ethylbenzene	mg/kg	0	0.5	-	72	-	-	-	66	152	-	-	-	76	-	74	-	55	138	4	33	-
Total Xylene Isomers	mg/kg	0	1	-	79	-	-	-	64	132	-	-	-	82	-	80	-	44	147	2	29	-
TPH-g C6-C12	mg/kg	0	10	-	93	-	-	-	-	-	-	-	-	105	-	105	-	-	-	1	-	-
[a,a,a-Trifluorotoluene]	Percent	98	0	-	106	-	-	-	75	117	-	-	-	127	-	107	-	63	136	-	-	-
Batch: GAS*9676011 Method: 8015M - Modified 8015																						
Benzene	mg/kg	0	0.5	-	113	-	-	-	72	162	-	-	-	114	-	118	-	67	134	3	24	-
Toluene	mg/kg	0	0.5	-	89	-	-	-	65	144	-	-	-	90	-	94	-	57	137	4	25	-
Ethylbenzene	mg/kg	0	0.5	-	93	-	-	-	66	152	-	-	-	93	-	97	-	55	138	4	33	-
Total Xylene Isomers	mg/kg	0	1	-	92	-	-	-	64	132	-	-	-	92	-	96	-	44	147	4	29	-
TPH-g C6-C12	mg/kg	0	10	-	112	-	-	-	-	-	-	-	-	102	-	98	-	-	-	3	-	-
[a,a,a-Trifluorotoluene]	Percent	106	0	-	100	-	-	-	75	117	-	-	-	98	-	105	-	63	136	-	-	-
Batch: GAS*9676012 Method: 8015M - Modified 8015																						
Benzene	mg/kg	0	0.5	-	73	-	-	-	72	162	-	-	-	83	-	82	-	67	134	1	24	-
Toluene	mg/kg	0	0.5	-	86	-	-	-	65	144	-	-	-	86	-	85	-	57	137	1	25	-
Ethylbenzene	mg/kg	0	0.5	-	75	-	-	-	66	152	-	-	-	76	-	74	-	55	138	3	33	-
Total Xylene Isomers	mg/kg	0	1	-	82	-	-	-	64	132	-	-	-	83	-	83	-	44	147	0	29	-
TPH-g C6-C12	mg/kg	0	10	-	107	-	-	-	-	-	-	-	-	101	-	108	-	-	-	7	-	-
[a,a,a-Trifluorotoluene]	Percent	110	0	-	111	-	-	-	75	117	-	-	-	109	-	105	-	63	136	-	-	-

BC ANAL[illegible]AL, GLENDALE
QC REPORT FOR 9603609
DATE PRINTED: 08 APR 1996

NON-AQUEOUS SAMPLES

		METHOD BLANK			LAB CONTROL									MATRIX QC								
					LCS		LCSD					RPD	RPD	MS		MSD				RPD	RPD	
	UNITS	RESULT	RDL	FLG	%REC	FLG	%REC	FLG	LCL	UCL	RPD	UCL	FLG	%REC	FLG	%REC	FLG	LCL	UCL	RPD	UCL	FLG
Batch: FUEL*9614 Method: 8015M - Modified 8015																						
TPH-d C13-C22	mg/kg	0	100	-	86	-	85	-	-	-	1	-	-	120	-	100	-	-	-	10	-	-
TPH-d C23-C28	mg/kg	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	70	-	-	96	-	89	-	55	127	-	-	-	89	-	86	-	52	145	-	-	-
Batch: FUEL*9615 Method: 8015M - Modified 8015																						
TPH-d C13-C22	mg/kg	0	100	-	111	-	114	-	-	-	2	-	-	85	-	91	-	-	-	7	-	-
TPH-d C23-C28	mg/kg	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	106	-	-	101	-	106	-	55	127	-	-	-	91	-	93	-	52	145	-	-	-
Batch: FUEL*9616 Method: 8015M - Modified 8015																						
TPH-d C13-C22	mg/kg	0	100	-	90	-	85	-	-	-	6	-	-	85	-	81	-	-	-	4	-	-
TPH-d C23-C28	mg/kg	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	82	-	-	98	-	98	-	55	127	-	-	-	107	-	109	-	52	145	-	-	-
Batch: FUEL*9617 Method: 8015M - Modified 8015																						
TPH-d C13-C22	mg/kg	0	100	-	99	-	109	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-
TPH-d C23-C28	mg/kg	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	103	-	-	109	-	103	-	55	127	-	-	-	106	-	106	-	52	145	-	-	-
Batch: FUEL*9618 Method: 8015M - Modified 8015																						
TPH-d C13-C22	mg/kg	0	100	-	102	-	99	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
TPH-d C23-C28	mg/kg	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	96	-	-	118	-	84	-	55	127	-	-	-	-	-	-	-	-	-	-	-	-
Batch: FUEL*9619 Method: 8015M - Modified 8015																						
TPH-d C13-C22	mg/kg	0	100	-	103	-	103	-	-	-	0	-	-	156	-	156	-	-	-	0	-	-
TPH-d C23-C28	mg/kg	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	107	-	-	104	-	114	-	55	127	-	-	-	122	-	107	-	52	145	-	-	-
Batch: FUEL*9620 Method: 8015M - Modified 8015																						
TPH-d C13-C22	mg/kg	0	100	-	102	-	109	-	-	-	6	-	-	99	-	110	-	-	-	11	-	-
TPH-d C23-C28	mg/kg	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	102	-	-	104	-	104	-	55	127	-	-	-	103	-	108	-	52	145	-	-	-
Batch: FUEL*9621 Method: 8015M - Modified 8015																						
TPH-d C13-C22	mg/kg	0	100	-	105	-	106	-	-	-	1	-	-	103	-	101	-	-	-	2	-	-
TPH-d C23-C28	mg/kg	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	102	-	-	119	-	80	-	55	127	-	-	-	109	-	99	-	52	145	-	-	-

BC ANAL[illegible]AL, GLENDALE
QC REPORT FOR 9603609
DATE PRINTED: 08 APR 1996

NON-AQUEOUS SAMPLES

		METHOD BLANK			LAB CONTROL									MATRIX QC								
					LCS		LCSD					RPD	RPD	MS		MSD					RPD	RPD
	UNITS	RESULT	RDL	FLG	%REC	FLG	%REC	FLG	LCL	UCL	RPD	UCL	FLG	%REC	FLG	%REC	FLG	LCL	UCL	RPD	UCL	FLG
Batch: FUEL*9622 Method: 8015M - Modified 8015																						
TPH-d C13-C22	mg/kg	0	100	-	89	-	103	-	-	-	14	-	-	94	-	96	-	-	-	2	-	-
TPH-d C23-C28	mg/kg	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[Naphthalene]	Percent	102	-	-	103	-	113	-	55	127	-	-	-	105	-	108	-	52	145	-	-	-

CHAIN OF CUSTODY RECORD

BCA Log Number Q46-[illegible]-604

Client name: BC-IRV

Project or PO#: 3659-02

Address:

Phone #: (714) 660 1070 x178

City, State Zip:

Report attention: ROPE

PAGE 1 OF 15

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampler: ROPE Sample description	Number of containers	Analysis required: Sim Dis (6015m)	BTEX (8020)				Remarks
	3/20	8:03	SO	R1 - Q8 - V2	1	X	X				
		8:08		- V5		X					
		8:18		- V8		X	X				
		8:23		- W2		X					
		8:27		- W5		X	X				
		8:44		- W8		X					
		9:06		- X2		X	X				
		9:10		- X5		X					
		9:31		- Y2		X					
		9:36		- Y5		X	X				
		9:52		- Z2		X					

	Signature	Print Name	Company	Date	Time
Relinquished by		ROBERT ROPE	BC-IRV	3/25/96	9:25
Received by	Hal Cochran	HAL COCHRAN	BC Analytical	3/25/96	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

[ ] 1085 [illegible] Pepe CA 94518 (510) 825 3994

[ ] 501 [illegible] Glendale CA 91201 (818) 247 5737

[X] 1200 Gene [illegible] Ave. Anaheim CA 92805 (714) 978 0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number: 696-0[illegible]609

Name: BC - IRVINE

Project or PO#: 3654-02

Address:

Phone #: (714) 660 1070 x178

City State Zip:

Report attention: POPE

PAGE 2 OF 15

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: POPE / Sample description	Number of containers	Analyses required: SM DHS (8015M)	Analyses required: BTEX (8020)	Analyses required: Hazardous Sar / Special hand	Remarks
	3/20	10:03	SO	R1 - Q9 - V2	1	X	X		
		10:07		- V5		X			
		10:13		- V8		X	X		
		10:40		- W2		X			
		10:43		- W5		X	X		
		10:50		- W8		X			
		N/A		- X2		X	X		
		11:26		- X5		X			
		N/A		- Y2		X			
		N/A		- Y5		X	X		
		1:25		- Z2		X	X		
		5:01		R2 - Q2 - V8		X	X		

	Print Name	Company	Date	Time
Relinquished by	ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/96	9:25
Received by	Hal Cochran	BC ANALYTICAL	3/25/96	9:25
Relinquished by				
Received by				
Relinquished by				
Received by Laboratory				

B C ANALYTICAL

1085 Sh[illegible] Richmond CA 94512 510 835 3894

50[illegible] Glendale CA 91201 818 247 5737

1250 Gar[illegible] Anaheim CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number: 46-03-604

Client name: BC - IRVINE

Project or PO#: 3659-02

Address:

Phone #: (714) 660 1070 x178

City State Zip:

Report attention: POPE

PAGE 3 of 15

Sampled by: POPE

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Semi Vols (8015m)	BTEX (8020)	Hazardous samples Special handling required	Remarks
	3/20	1:41	SO	R1 - Q10 - V2	1	X	X		
		1:44		- V5		X			
		1:50		- V8		X	X		
		2:06		- W2		X			
		2:09		- W5		X	X		
		2:15		- W8		X			
		2:25		- X2		X	X		
		2:35		- X5		X			
		3:00		- Y2		X			
		- N/A		- Y5		X	X		
		3:21		- Z2		X			
		4:53		R2 - Q2 - V5		X			

	Signature	Print Name	Company	Date	Time
Relinquished by		ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/96	9:25
Received by	Hal Cochran	HAL COCHRAN	BC ANALYTICAL	3/25/96	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

[illegible] 3684

[illegible] 2 [illegible]-5724

[illegible] 305-714-9780 0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 696-[illegible]-609

Client name: SC - IRVINE
Project or PO#: 3659-02
Address:
Phone #: (714) 660 1070 x178
City State Zip:
Report attention: POPE
Sampled by: POPE

PAGE 4 of 15

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Semi Vols (8015M)	BTEX (8020)	Hazardous sample Special handling required	Remarks
	3/20	3:38	SO	R2 - Q1 - V2	1	X	X		
		3:43		- V5		X			
		3:49		- V8		X	X		
		3:57		- W2		X			
		4:02		- W5		X	X		
		4:07		- W8		X			
		4:17		- X2		X	X		
		4:22		- X5		X			
		4:27		- Y2		X			
		4:35		- Y5		X	X		
		4:37		- Z2		X	X		
		4:45		R2 - Q2 - V2		X	X		

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/96	9:25
Received by	[signature]	Hal Cochran	BC ANALYTICAL	3/25/96	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL
1085 Shary Circle Concord CA 94518 (510) 685 3694
[illegible] Glendale CA (818) 247 5737
[illegible] Anaheim CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 6916-[illegible]-609

Client name: BC-IRU

Project or PO#: 3659-02

Address:

Phone #: (714) 660 1070 x178

City State Zip:

Report attention: ROPE

Sampled by: ROPE

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Analyses required: Stat Dis (8015m)	BTEX (8020)	Hazardous sample Special handling required	Remarks
	3/21	7:57	SO	RZ-QZ-WZ	1	X			
		8:01		W5		X	X		
		8:03		W8		X			
		N/A		XZ		X	X		
		N/A		X5		X			
		N/A		YZ		X			
		8:29		Y5		X	X		
		8:36		ZZ		X			
		8:52		RZ-Q3-VQ		X	X		
		8:54		V5		X			
		9:02		V8		X	X		
		9:18		WZ		X			

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	ROBERT ROPE	BC-IRU	3/25/96	9:25
Received by	[signature]	TOM COCHRAN	BC ANALYTICAL	3/25/96	9:05
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

[illegible] Santa Ana CA [illegible]

[illegible] Glendale CA [illegible]

[illegible] Anaheim CA 92505 [illegible]

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number: 16-93-609

Client name: SC-IRU

Project or PO#: 3659-C2

Address:

Phone #: (714) 660 1070 x178

City, State, Zip:

Report attention: PEPE

Sampled by: PEPE

PAGE 6 of 15

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Semi Dis (8015m)	BTEX (8020)	HOLD	Hazardous sample Special handling required	Remarks
	3/21	9:23	SO	RZ-Q3-W5	1	X	X			
		9:33		W8		X				
		10:01		X2		X	X			
		10:05		X5		X				
		10:17		Y2		X				
		10:20		Y5		X	X			
		10:31		Z2		X	X			
	3/22	3:44		TAR1 - 2.5				X		
		3:44		TAR1 - 5.5				X		
		1:52		RZ-Q11-X8				X		
		2:14		RZ-Q11-Y8				X		

	Signature	Print Name	Company	Date	Time
Relinquished by		ROBERT PUDE	BC-IRU	3/25/96	9:24
Received by	Hal Corkhan	HAL CORKHAN	BC ANALYTICAL	3/25/96	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

1085 [illegible] Concord CA 94518 (510) 825 3894

801 [illegible] Glendale CA 91201 (818) 247 5737

1200 [illegible] Anaheim CA 92805 (714) 978-0[illegible]

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

FF: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 696-04604

Client name: BC - IRVINE

Project or PO#: 3659-02

Address:

Phone #: (714) 660 1070 x178

City State Zip:

Report attention: POPE

PAGE 7 of 15

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Semi Vols (8015m)	BTEX (8020)	Hazardous sample Special handling required	Remarks
	3/21	10:40	SO	R2 - Q4 - V2 (Sampled by POPE)	1	X	X		
		10:43		- V5		X			
		10:52		- V8		X	X		
		11:02		- W2		X			
		11:04		- W5		X	X		
		11:10		- W8		X			
		—		- X2		X	X		Sample was not received
		11:24		- X5		X			
		11:35		- Y2		X			
		11:36		- Y5		X	X		
		11:49		- Z2		X			

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/96	9:45
Received by	[signature]	Hal Cochran	BC ANALYTICAL	3/25/96	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

1085 Starry Circle Concord CA 94518 (510) 825 3894

801 Allen Avenue Glendale CA 91201 (818) 247 5737

200 Gene Autry Way Anaheim CA 92805 (714) 875 0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 696-[illegible]-609

Client name: BC - IRVINE
Project or PO#: 3659-C2
Address:
Phone #: (714) 660 1070 x178
City State Zip:
Report attention: POPE

PAGE 8 OF 15

Sampled by: POPE

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Semi Vols (8015m)	BTEX (8020)	Hazardous sample Special handling required	Remarks
	3/21	N/A	SO	R2 - Q5 - V2	1	X	X		
		N/A		- V5		X			
		N/A		- V8		X	X		
		N/A		- W2		X			
		N/A		- W5		X	X		
		1:48		- W8		X			
		1:59		- X2		X	X		
		2:03		- X5		X			
		2:17		- Y2		X			
		2:17		- Y5		X	X		
		N/A		- Z2		X	X		
					V				

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/96	9:25
Received by	[signature]	HAL COCHRAN	BC ANALYTICAL	3/25/96	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

1058 Shary Circle Concord CA 94518-2510 (510) 825-3894
130 Western Avenue Glendale CA 91201 (818) 247-5737
X 1200 Gene Autry Way, Anaheim CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 696-[illegible]-609

Client name: 3C - IRVINE

Project name or PO#: 3654-02

Address:

Phone # (714) 660 1070 x178

City, State, Zip:

Report attention: POPE

PAGE 9 OF 15

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: POPE Sample description	Number of containers	Semi Vols (8015M)	BTEX (8120)	Hazardous sample Special handling required	Remarks
	3/21	N/A	SO	R2-Q6 - V2	1	X	X		
		2:38		- V5		X			
		N/A		- V8		X	X		
		2:50		- W2		X			
		2:56		- W5		X	X		
		3:00		- W8		X			
		3:08		- X2		X	X		
		3:14		- X5		X			
		3:23		- Y2		X			
		3:25		- Y5		X	X		
		3:37		- Z2		X			

	Signature	Print Name	Company	Date	Time
Relinquished by		ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/90	9:25
Received by	Hal Cochran	HAL COCHRAN	BC ANALYTICAL	3/25/90	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

[illegible] Sharp Circle [illegible] (619) 535 3894

[illegible] Western Ave [illegible] CA 91201 (818) 247 5737

X 1200 Gene Autry Way, Anaheim CA 92805 (714) 978 0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 646[illegible]3-604

Client name: BC - IRVINE

Project or PO#: 3654-02

Address:

Phone #: (714) 660 1070 x178

City, State, Zip:

Report attention: POPE

Sampled by: POPE

PAGE 10 of 15

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Semi DVS (8015M)	BTEX (8020)	Hazardous sample Special handling required	Remarks
	3/25	3:44	SO	R2-Q7-V2	1	X	X		
		3:46		-V5		X			
		3:50		-V8		X	X		
		3:55		-W2		X			
		4:01		-W5		X	X		
		4:04		-W8		X			
		4:09		-X2		X	X		
		4:12		-X5		X			
		4:21		-Y2		X			
		4:24		-Y5		X	X		
		N/A		-Z2		X	X		

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/90	9:25
Received by	[signature]	HAL COCHRAN	BC ANALYTICAL	3/25/90	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

[illegible] Circle Corona CA 91518 (510) 825-3894

[illegible] Avenue Glendale CA 91201 (818) 247 5737

X 1200 Gene Autry Way Anaheim CA 92805 (714) 978 0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 6963-60C1

Project name: BC - IRVINE
Project or PO#: 3659-02
Address:
Phone #: (714) 660 1070 x178
City State Zip:
Report attention: POPE

Sampled by: POPE

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Semi Vols (8015m)	BTEX (8020)			Hazardous sample Special handling required	Remarks
	3/22	8:00	SO	R2 - Q8 - V2	1	X	X				
		8:03		- V5		X					
		8:09		- V8		X	X				
		8:26		- W2		X					
		8:31		- W5		X	X				
		8:34		- W8		X					
		8:42		- X2		X	X				
		8:44		- X5		X					
		8:55		- U2		X					
		8:56		- Y5		X	X				
		9:07		- Z2		X					

Analyses required

PAGE 11 of 15

	Signature	Print Name	Company	Date	Time
Relinquished by		ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/90	9:25
Received by	Hal Cochran	Hal Cochran	BC ANALYTICAL	3/25/90	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL
Stanton Center Concord CA 945[illegible] [illegible]894
Western Avenue Glendale CA 9[illegible] [illegible] 5737
X 1200 Gene Autry Way Anaheim CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 6463-604

Client name: BC - IRVINE

Project or PO#: 3659-02

Address:

Phone #: (714) 660 1070 x178

City, State, Zip:

Report attention: POPE

PAGE 12 of 15

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: POPE — Sample description	Number of containers	5-m Dis (8015)	BTEX (8020)				Hazardous sample special handling required	Remarks
	3/22	9:19	SO	R2-Q9-V2	1	X	X					
		9:22		-V5		X						
		9:25		-V8		X	X					
		9:33		-W2		X						
		9:36		-W5		X	X					
		9:40		-W8		X						
		9:48		-X2		X	X					
		9:49		-X5		X						
		10:00		-Y2		X						
		10:02		-Y5		X	X					
		10:14		-Z2		X	X					

	Signature	Print Name	Company	Date	Time
Relinquished by		ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/96	9:25
Received by	Heidi Cochran	HEIDI COCHRAN	BC ANALYTICAL	3/25/96	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

1085 Sharp Circle Concord CA 94518 (510) 525 3894

801 Western Avenue Glendale CA 91201 (818) 247-5737

1200 Gene Autry Way Anaheim CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Lab Number 9603-604

PAGE 13 of 15

Client name: BC - IRVINE

Project or PO#: 3659-02

Address:

Phone #: (714) 660 1070 x178

City State Zip:

Report attention: POPE

Sampled by: POPE

Analyses requested

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Sim Dis (8015M)	BTEX (8020)	Hazardous sample Special handling required	Remarks
	3/22	10:24	SO	RZ-Q10-V2	1	X	X		
		10:27		-V5		X			
		10:32		-V8		X	X		
		10:44		-W2		X			
		10:47		-W5		X	X		
		10:50		-W8		X			
		11:08		-X2		X	X		
		11:10		-X5		X			
		11:33		-Y2		X			
		N/A		-Y5		X	X		
				~~-Z2~~					

	Print Name	Company	Date	Time
Relinquished by	ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/96	9:25
Received by	Hal Cochran	BC ANALYTICAL	3/25/96	9:25
Relinquished by				
Received by				
Relinquished by				
Received by Laboratory				

B C ANALYTICAL

☐ 1055 Shary Circle Concord CA 94518 (510) 825-3994

☐ 801 Western Avenue Glendale CA 91201 (818) 247-5737

☒ 1250 Gene Autry Way Anaheim CA 92805 (714) 978 0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 0963-604

Client name: BC - IRVINE

Project or PO#: 3659-02

Phone #: (714) 660 1070 x178

Report attention: POPE

Sampled by: POPE

Lab Sample Number*	Date sampled	Time sampled	Type Sample Code	Sample description	Number of containers	Sim Dis (8015M)	BTEX (8020)	Hazardous sample Special handling required	Remarks
	3/22	11:53	SO	R2 - Q11 - V2	1	X	X		
		11:55		- V5		X			
		12:02		- V8		X	X		
		1:21		- W2		X			
		1:27		- W5		X	X		
		1:33		- W8		X			
		1:41		- X2		X	X		
		1:47		- X5		X			
		2:05		- Y2		X			
		2:11		- Y5		X	X		
		3:22		- Z2		X	X		

	Signature	Print Name	Company	Date	Time
Relinquished by		ROBERT POPE	BROWN & CALDWELL - IRVINE	3/25/96	9:25
Received by	Hal Cochran	HAL COCHRAN	BC ANALYTICAL	3/25/96	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

1035 Sugar Creek Canyon [illegible] (801) 825 3894

801 Nesbitt [illegible] Island [illegible] (818) 247-5737

X 1250 Gurnee [illegible] Anaheim CA 92806 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

CHAIN OF CUSTODY RECORD

BCA Log Number 5465-15-604

Client name: BC - IRVINE

Project or PO#: 3659-C2

Address:

Phone #: (714) 660 1070 x178

City State Zip:

Report attention: POPE

Sampled by: POPE

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Analyses required: 5-m Dis (8015M)	BTEX (8020)	Hazardous sample Special handling required	Remarks
	3/27	2:35	SO	R2 - Q12 - V2	1	X	X		
		2:40		- V5		X			
		2:43		- V8		X	X		Also received:
		2:50		- W2		X			R-2-Q2-Z5 8:38
		N/A		- W5		X	X		R2-Q3-W10 @ 9:50
		2:59		- W8		X			R1-Q9-X8 @ 11:31
		3:07		- X2		X	X		R1-Q8-X8 @ 9:14
		3:13		- X5		X			R1-Q8-W8.5 @ 8:43
		3:19		- Y2		X			put on HOLD per
		3:24		- Y5		X	X		B.P.
		3:33		- Z2		X			

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	ROBERT POPE	BROWN & CALDWELL - IRVINE	3/27/96	9:25
Received by	Hal Cochran	HAL COCHRAN	BC ANALYTICAL	3/27/96	9:25
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- 1085 Shary Circle Concord, CA 94518 (510) 825-3894
- 801 Western Avenue Glendale CA 91201 (818) 247-5737
- X 1200 Gene Autry Way, Anaheim CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

TABLE 3
Phase III - Reservoir 1
Complete TPH and BTEX Analytical Results for Fill Placement Monitoring
Including Log of Corrective Actions (Page 7 of 13)

Sample Section	Sample Number	Date Collected	TPH C6-C12	TPH C13-C22	TPH C23-C28	B	T	E	X	Corrective Action
Reservoir 2 South Side from Base Elevation of 33 feet to 34 feet										
SE-b	176-2-1*	6/20/95	120	200	<100	<0.10	0.23	0.33	2.10	reblend
	201-2-1	6/22/95	56	450	250	<0.10	0.18	0.16	1.10	PASS
SE-a	177-2-2*	6/20/95	150	540	690	<0.10	0.83	0.91	5.60	reblend
	202-2-2	6/22/95	79	<100	<100	<0.10	<0.10	<0.10	0.45	PASS
SW-b	178-2-3*	6/20/95	210	900	400	<0.10	0.30	0.82	5.90	reblend
	203-2-3	6/22/95	140	1600	470	<0.10	0.12	0.42	2.90	reblend
	209-2-3	6/26/95	42	570	460	<0.10	<0.10	<0.10	0.37	PASS
SW-a	179-2-4*	6/20/95	35	<100	<100	<0.10	0.10	0.10	0.42	PASS
C-b	180-2-C*	6/20/95	86	730	340	<0.10	0.27	0.20	1.60	PASS
S-b	181-2-SE*	6/20/95	36	1200	280	<0.10	<0.10	<0.10	0.22	PASS
S-a	182-2-SW*	6/20/95	32	320	200	<0.10	<0.10	<0.10	<0.10	PASS
Reservoir 1 East Side from Base Elevation of 34 feet to 35 feet										
NE-a	183-1-1a*	6/20/95	44	800	450	<0.10	<0.10	<0.10	<0.10	PASS
NE-b	184-1-1b*	6/20/95	130	1400	730	<0.10	0.12	<0.10	1.10	PASS
SE-b	185-1-2a*	6/20/95	75	920	450	<0.10	<0.10	<0.10	<0.10	PASS
SE-a	186-1-2b*	6/20/95	91	700	440	<0.10	<0.10	<0.10	0.80	PASS
C-b	187-1-C*	6/20/95	67	1000	600	<0.10	<0.10	<0.10	0.38	PASS

Notes: * = designates first sample representative of a specific 500 cubic yard volume.
< = indicates analyte was not detected at or above specified detection limit
- = indicates analyte not tested
WDR = Waste Discharge Requirements as specified by RWQCB.
Underlined values exceeded WDR limits, requiring corrective action and retesting.

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TABLE 3
Phase III - Reservoir 1
Complete TPH and BTEX Analytical Results for Fill Placement Monitoring
Including Log of Corrective Actions (Page 8 of 13)

Sample Section	Sample Number	Date Collected	TPH C6-C12	TPH C13-C22	TPH C23-C28	B	T	E	X	Corrective Action
Reservoir 1 West Side from Base Elevation of 34 feet to 35 feet										
SW-b	193-1-3a*	6/21/95	45	2300	1200	<0.10	<0.10	<0.10	<0.10	PASS
SW-a	194-1-3b*	6/21/95	140	2800	1500	<0.10	0.15	0.49	2.00	reblend
	204-1-3B	6/22/95	NS	2200	1100	<0.10	<0.10	<0.10	0.57	PASS
NW-a	195-1-4a*	6/21/95	110	1700	780	<0.10	<0.10	<0.10	0.98	PASS
NW-b	196-1-4b*	6/21/95	58	2200	1100	<0.10	<0.10	<0.10	<0.10	PASS
C-a	197-1-C*	6/21/95	110	2700	1500	0.10	0.10	<0.10	0.85	PASS
WDR limits			1000	10000	15000	0.10	4.20	2.90	1.70	
Reservoir 1 NE Side from Base Elevation of 35 to 36 feet										
NE-a	205-1-1a*	6/22/95	43	3100	1700	<0.10	<0.10	<0.10	<0.10	PASS
NE-b	206-1-1b*	6/22/95	82	3200	1800	<0.10	<0.10	<0.10	<0.10	PASS
C-b	207-1-C*	6/22/95	64	2300	1600	<0.10	<0.10	<0.10	<0.10	PASS
Reservoir 2 North Side from Base Elevation of 34 feet to 35 feet										
NW-a	210-2-4a*	6/26/95	53	1900	560	<0.10	<0.10	<0.10	<0.10	PASS
NW-b	211-2-4b*	6/26/95	110	820	310	<0.10	0.19	0.36	1.20	PASS
N-a	212-2-NW*	6/26/95	14	820	1000	<0.10	<0.10	<0.10	<0.10	PASS
N-b	213-2-NE*	6/26/95	200	370	200	<0.10	0.31	1.00	4.50	reblend
	228-2-NE	6/28/95	110	-	-	<0.10	<0.10	0.27	1.20	PASS
NE-a	214-2-1a*	6/26/95	160	550	200	<0.10	0.42	0.58	3.90	reblend
	229-2-1a	6/28/95	67	-	-	<0.10	<0.10	<0.10	<0.10	PASS
NE-b	215-2-1b*	6/26/95	230	3100	690	0.11	0.96	0.75	4.10	reblend
	230-2-1b	6/28/95	42	-	-	<0.10	<0.10	<0.10	0.12	PASS
C-a	216-2-C*	6/26/95	62	1200	470	0.10	0.10	0.10	0.50	PASS
WDR limits			1000	10000	15000	0.10	4.20	2.90	1.70	

Notes: * = designates first sample representative of a specific 500 cubic yard volume.
< = indicates analyte was not detected at or above specified detection limit.
- = indicates analyte not tested.
WDR = Waste Discharge Requirements as specified by RWQCB.
Underlined values exceeded WDR limits, requiring corrective action and retesting.

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TABLE 3
Phase III - Reservoir 1
Complete TPH and BTEX Analytical Results for Fill Placement Monitoring
Including Log of Corrective Actions (Page 9 of 13)

Sample Section	Sample Number	Date Collected	TPH C6-C12	TPH C13-C22	TPH C23-C28	B	T	E	X	Corrective Action
Reservoir 1 West Side from Base Elevation of 35 feet to 36 feet										
SW-b	220-1-3a*	6/27/95	360	810	460	<0.50	2.20	2.20	15.00	reblend
	250-1-3a	6/30/95	100	-	-	<0.10	<0.10	<0.10	0.64	PASS
SW-a	221-1-3b*	6/27/95	140	2800	1200	<0.10	0.47	0.65	4.30	reblend
	251-1-3b	6/30/95	113	-	-	<0.10	0.21	0.31	2.40	reblend
	257-1-3b	7/5/95	88	-	-	<0.10	0.12	0.32	2.50	reblend
	273-1-3b	7/6/95	120	-	-	<0.10	0.11	<0.10	1.40	PASS
NW-a	222-1-4a*	6/27/95	130	2500	1400	<0.10	0.24	0.36	2.50	reblend
	252-1-4a	6/30/95	160	-	-	<0.10	0.11	0.27	2.70	reblend
	258-1-4a	7/5/95	340	3300	1300	0.28	1.50	1.60	11.00	reblend
	274-1-4a	7/6/95	140	-	-	<0.10	0.11	<0.10	2.10	reblend
	276-1-4a	7/7/95	120	-	-	<0.10	0.13	<0.10	2.10	reblend
	289-1-4a	7/11/95	<10	-	-	<0.10	<0.10	<0.10	<0.10	PASS
NW-b	223-1-4b*	6/27/95	130	25000	17000	0.37	1.50	0.85	5.40	reblend
	253-1-4b	6/30/95	160	-	-	<0.10	0.21	0.34	2.70	reblend
	259-1-4b	7/5/95	150	-	-	<0.10	0.71	0.81	5.60	reblend
	275-1-4b	7/6/95	61	1300	650	<0.10	<0.10	<0.10	0.81	PASS
C-a	224-1-C*	6/27/95	390	7400	4100	0.51	2.40	1.70	12.00	reblend
	254-1-C	6/30/95	87	-	-	0.10	0.10	<0.10	0.55	PASS
WDR limits			1000	10000	15000	0.10	4.20	2.90	1.70	

Notes. * = designates first sample representative of a specific 500 cubic yard volume.
< = indicates analyte was not detected at or above specified detection limit.
- = indicates analyte not tested.
WDR = Waste Discharge Requirements as specified by RWQCB.
Underlined values exceeded WDR limits, requiring corrective action and retesting.

e:\hmd\1116\tables\table 3

TABLE 3
Phase III - Reservoir 1
Complete TPH and BTEX Analytical Results for Fill Placement Monitoring
Including Log of Corrective Actions (Page 10 of 13)

Sample Section	Sample Number	Date Collected	TPH C6-C12	TPH C13-C22	TPH C23-C28	B	T	E	X	Corrective Action
Reservoir 2 NW From Base Elevation of 35 feet to 36 feet SW From Base Elevation of 34 feet to 35 feet										
S-a	231-2-SW*	6/28/95	100	1000	320	<0.10	0.17	0.20	1.40	PASS
SW-b	232-2-3a*	6/28/95	110	680	270	<0.10	0.13	0.36	1.90	reblend
	248-2-3a	6/30/95	62	-	-	<0.10	<0.10	<0.10	<0.10	PASS
SW-a	233-2-3b*	6/28/95	54	<100	<100	<0.10	<0.10	<0.10	<0.10	PASS
NW-a	234-2-4a*	6/28/95	83	250	180	<0.10	<0.10	<0.10	0.42	PASS
NW-b	235-2-4b*	6/28/95	260	4200	1300	0.26	1.70	1.20	6.60	reblend
	249-2-4b	6/30/95	130	-	-	<0.10	<0.10	<0.10	0.52	PASS
N-a	236-2-NW*	6/28/95	140	340	<100	<0.10	<0.10	<0.10	1.20	PASS
C-a	237-2-C*	6/28/95	120	810	250	<0.10	0.21	0.23	1.30	PASS
Reservoir 2 SE from Base Elevation of 34 feet to 35 feet										
SE-b	244-2-2a*	6/30/95	13	<100	<100	<0.10	<0.10	<0.10	<0.10	PASS
SE-a	245-2-2b*	6/30/95	210	4200	840	<0.10	0.79	0.94	4.80	reblend
	260-2-2b	7/5/95	98	-	-	<0.10	<0.10	<0.10	0.39	PASS
S-b	246-2-SE*	6/30/95	220	4200	1000	<0.10	0.29	0.69	4.90	reblend
	261-2-SE	7/5/95	23	-	-	0.14	<0.10	<0.10	<0.10	reblend
	281-2-SE	7/7/95	100	-	-	<0.10	<0.10	<0.10	0.35	PASS
C-b	247-2-C*	6/30/95	150	1000	<100	<0.10	0.26	0.36	2.40	reblend
	262-2-C	7/5/95	300	-	-	2.50	7.60	2.40	15.00	reblend
	282-2-C	7/7/95	56	-	-	0.10	0.10	0.10	0.11	PASS
WDR limits			1000	10000	15000	0.10	4.20	2.90	1.70	

Notes: * = designates first sample representative of a specific 500 cubic yard volume.
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- = indicates analyte not tested.
WDR = Waste Discharge Requirements as specified by RWQCB.
Underlined values exceeded WDR limits, requiring corrective action and retesting.

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TABLE 3
Phase III - Reservoir 1
Complete TPH and BTEX Analytical Results for Fill Placement Monitoring
Including Log of Corrective Actions (Page 11 of 13)

Sample Section	Sample Number	Date Collected	TPH C6-C12	TPH C13-C22	TPH C23-C28	B	T	E	X	Corrective Action
Reservoir 2 NW from Base Elevation of 36 feet to 37 feet SW from Base Elevation of 35 feet to 36 feet										
S-a	263-2-SW*	7/5/95	140	3100	770	<0.10	0.15	0.26	1.30	PASS
C-a	264-2-W*	7/5/95	1300	27000	5200	1.60	11.00	6.90	33.00	reblend
	277-2-W	7/7/95	190	2600	610	<0.10	0.26	0.46	2.70	reblend
	297-2-W	7/11/95	69	-	-	<0.10	<0.10	<0.10	<0.10	PASS
N-a	265-2-NW*	7/5/95	200	1500	510	<0.10	0.33	0.54	3.20	reblend
	278-2-NW	7/7/95	190	-	-	<0.10	0.41	0.49	1.90	reblend
	298-2-NW	7/11/95	41	-	-	<0.10	<0.10	<0.10	<0.10	PASS
NW-b	266-2-4b*	7/5/95	39	180	120	<0.10	0.18	0.13	0.84	PASS
NW-a	267-2-4a*	7/5/95	350	2700	680	0.70	2.60	1.60	7.80	reblend
	279-2-4a	7/7/95	190	1600	500	<0.10	0.72	0.52	2.60	reblend
	299-2-4a	7/11/95	110	-	-	<0.10	<0.10	<0.10	0.39	PASS
SW-a	268-2-3b*	7/5/95	83	1200	300	<0.10	0.13	<0.10	0.52	PASS
SW-b	269-2-3a*	7/5/95	430	8400	2500	0.60	2.80	2.20	12.00	reblend
	280-2-3a	7/7/95	380	-	-	0.50	2.10	1.50	7.20	reblend
	300-2-3a	7/11/95	83	-	-	<0.10	<0.10	<0.10	<0.10	PASS
Reservoir 2 NE from Base Elevation of 35 feet to 36 feet										
N-b	283-2-NE*	7/7/95	150	<100	<100	<0.10	0.26	0.35	2.20	reblend
	301-2-NE	7/11/95	87	-	-	<0.10	<0.10	0.33	1.20	PASS
NE-a	284-2-1a*	7/7/95	150	970	220	<0.10	<0.10	<0.10	<0.10	PASS
NE-b	285-2-1b*	7/7/95	130	1500	340	<0.10	<0.10	0.10	0.10	PASS
WDR limits			1000	10000	15000	0.10	4.20	2.90	1.70	

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WDR = Waste Discharge Requirements as specified by RWQCB.
Underlined values exceeded WDR limits, requiring corrective action and retesting

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TABLE 3
Phase III - Reservoir 1
Complete TPH and BTEX Analytical Results for Fill Placement Monitoring
Including Log of Corrective Actions (Page 12 of 13)

Sample Section	Sample Number	Date Collected	TPH C6-C12	TPH C13-C22	TPH C23-C28	B	T	E	X	Corrective Action
Reservoir 1 South Side from Base Elevation of 36 feet to 37 feet										
SE-b	290-1-2a*	7/11/95	130	1400	720	<0.10	0.31	0.56	3.50	reblend
	310-1-2a	7/12/95	-	-	-	<0.10	0.12	0.36	2.20	reblend
	329-1-2a	7/13/95	97	-	-	<0.10	<0.10	<0.10	0.91	PASS
SE-a	291-1-2b*	7/11/95	140	2900	1400	<0.10	0.35	0.64	4.30	reblend
	311-1-2b	7/12/95	-	-	-	<0.10	<0.10	0.14	0.94	PASS
SW-b	292-1-3a*	7/11/95	120	1600	720	<0.10	0.19	0.43	2.80	reblend
	312-1-3a	7/12/95	-	-	-	<0.10	0.13	0.33	2.10	reblend
	330-1-3a	7/13/95	100	-	-	<0.10	<0.10	<0.10	0.81	PASS
SW-a	293-1-3b*	7/11/95	230	5600	2800	<0.10	0.96	0.98	5.20	reblend
	313-1-3b	7/12/95	-	-	-	<0.10	<0.10	<0.10	0.33	PASS
C-b	294-1-C*	7/11/95	220	3800	1800	<0.10	0.38	0.88	5.50	reblend
	314-1-C	7/12/95	-	-	-	<0.10	<0.10	0.17	1.10	PASS
Reservoir 1 North Side from Base Elevation of 36 feet to 37 feet										
NW-a	302-1-4a*	7/11/95	280	3200	1400	0.13	0.51	<0.10	6.50	reblend
	315-1-4a	7/12/95	-	-	-	<0.10	<0.10	<0.10	0.81	PASS
NW-b	303-1-4b*	7/11/95	69	1200	600	<0.10	<0.10	<0.10	0.54	PASS
NE-a	304-1-1a*	7/11/95	140	2500	1400	<0.10	0.24	0.46	3.00	reblend
	316-1-1a	7/12/95	-	-	-	<0.10	<0.10	<0.10	0.70	PASS
NE-b	305-1-1b*	7/11/95	270	4500	2500	<0.10	0.63	0.73	4.10	reblend
	317-1-1b	7/12/95	-	-	-	0.20	1.10	0.79	4.70	reblend
	328-1-1b	7/13/95	70	-	-	<0.10	0.10	0.16	0.89	PASS
C-a	300-1-NC*	7/11/95	140	3600	1600	0.10	0.17	0.20	1.40	PASS
WDR limits			1000	10000	15000	0.10	1.20	2.90	1.70	

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WDR = Waste Discharge Requirements as specified by RWQCB.
Underlined values exceeded WDR limits, requiring corrective action and retesting.

TABLE 3
Phase III - Reservoir 1
Complete TPH and BTEX Analytical Results for Fill Placement Monitoring
Including Log of Corrective Actions (Page 13 of 13)

Sample Section	Sample Number	Date Collected	TPH C6-C12	TPH C13-C22	TPH C23-C28	B	T	E	X	Corrective Action
Reservoir 2 NW from Base Elevation of 37 feet to 38 feet SW from Base Elevation of 36 feet to 37 feet										
S-a	318-2-SW*	7/13 95	35	1200	530	<0 10	<0.10	<0.10	<0 10	PASS
SW-b	319-2-3a*	7/13 95	55	1100	360	<0 10	<0.10	<0 10	<0.10	PASS
SW-a	320-2-3b*	7/13 95	140	<100	<100	<0.10	0.21	0.78	3.70	reblend
	334-2-3b	7/18/95	36	-	-	<0.10	<0.10	<0.10	0.12	PASS
NW-a	321-2-4a*	7/13/95	<10	970	850	<0.10	<0 10	<0.10	<0.10	PASS
NW-b	322-2-4b*	7/13/95	43	680	270	<0.10	0 25	0.24	1.50	PASS
N-a	323-2-NW*	7/13/95	31	<100	<100	<0.10	<0.10	<0.10	<0.10	PASS
C-a	324-2-C*	7/13/95	51	710	250	<0.10	<0.10	<0.10	<0.10	PASS
Reservoir 1 West Side from Base Elevation of 37 feet to 38 feet										
SW-b	335-1-3a*	7/18/95	120	1200	740	<0.10	0.28	0.48	3.20	reblend
	335-1-3aQ	7/18/95	150	1400	590	<0 10	0.44	0.72	4.50	reblend
	340-1-3a	7/19/95	34	-	-	<0.10	<0.10	<0 10	0.20	PASS
SW-a	336-1-3b*	7/18/95	110	3100	1600	<0.10	0 35	0.35	2.30	reblend
	336-1-3bQ	7/18/95	140	1200	720	<0.10	0.36	0.67	4.60	reblend
	341-1-3b	7/19/95	61	-	-	<0.10	<0.10	0 13	0.91	PASS
NW-a	337-1-4a*	7/18/95	250	3400	1700	0.28	1.40	1.40	10.00	reblend
	337-1-4aQ	7/18/95	100	1300	770	<0.10	0 46	0.51	3.40	reblend
	342-1-4a	7/19/95	59	-	-	<0.10	<0 10	<0.10	0.55	PASS
NW-b	338-1-4b*	7/18/95	120	3300	1600	<0.10	0.30	0.43	3.00	reblend
	338-1-4bQ	7/18/95	110	3200	1800	<0 10	0.21	0.30	2.10	reblend
	343-1-4b	7/19/95	55	-	-	<0.10	<0.10	<0.10	<0.10	PASS
C-a	339-1-C*	7/18/95	97	1400	740	<0.10	0.13	0 25	1.80	reblend
	339-1-CQ	7/18/95	47	4500	2300	<0.10	<0.10	<0.10	0.50	reblend
	344-1-C	7 19 95	67	-	-	0 10	<0 10	0 10	0 22	PASS
WDR limits			1000	10000	15000	0 10	4 20	2 90	1 70	

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