1R - 234

REPORTS

DATE:

1996

Shell Oil Products Company

Two Shell Plaza
P. O. Box 2099
Houston, TX 77252-2099

December 18, 1996

William Olson
State of New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco St.
Santa Fe, New Mexico 87504

SUBJECT: ANNUAL MONITORING REPORT, DENTON STATION, LEA COUNTY, NEW MEXICO

Dear Mr. Olson,

Enclosed is the 1996 Monitoring Report for Denton Station. Monitoring and groundwater sampling was conducted quarterly with poly-aromatic hydrocarbons (PAHs) sampling in February only. Wells MW-2, MW-6, MW-9, MW-11, and MW-12 were sampled for BTEX and PAHs. The product recovery system is operating with pumps in WW-1, MW-3, MW-5, and MW-7.

Phase separated hydrocarbon (PSH) was found in MW-4 for the first time in February. Absorbent booms have been installed in MW-1 and MW-4. With one exception, there were no appreciable change in BTEX concentrations this year. Prior to the October sampling, MW-12 had been "ND" for BTEX. However the laboratory reported a concentration of 0.023 ppm benzene in the last sample. It is not known if this is possibly cross contamination in the sampling/field or laboratory error. As you are aware we still have to install a monitoring well down gradient of MW-11. As we discussed I want to wait until I receive the results of the January sampling to see if MW-12 is really impacted. If the impacts are real then we will install wells down gradient of MW-11 and MW-12 on the same trip. PAHs were only detected in MW-2, MW-6, and MW-11 (Table 6) and the concentrations were less than the New Mexico Water Quality Control Commission Groundwater Standards.

Considerable effort was expended on the product recovery system, in July, to get it operational. The system has been operating except for about two weeks in September when an apparent electrical surge brought it down. A total of 1170 gallons of PSH has been recovered with approximately 40% being recovered in the first nine months of 1996. Due to the fact that all wells pump into a central holding tank, we are only able to determine total product recovery.

I plan to continue our quarterly monitoring program in 1997 with the first sampling event scheduled for January. Upon receipt fo the laboratory results for MW-12, I will let you know of our plans for any additional offsite monitoring wells. If you have any additional questions concerning the information presented in this report, or otherwise, please do not hesitate to call me at 713-241-2961.

Sincerely,

Neal Stidham
Staff Engineer
Shell Oil Products Company
Representing Shell Pipe Line Corporation

cc: Paul Newman-EOTT Energy Corp.
Jerry Sexton-OCD Hobbs

ENERCON SERVICES, INC.
An Employee Owned Company

1221 River Bend, Suite 259
Dallas, TX 75247
(214) 631-7693
FAX (214) 631-7699

December 13, 1996

Mr. Neal D. Stidham
Shell Oil Products Company
Two Shell Plaza, Room 1452
777 Walker Street
Houston, Texas 77002

RE: ANNUAL GROUNDWATER MONITORING REPORT
DENTON STATION
LEA COUNTY, NEW MEXICO

ENERCON PROJECT NO. EV-378

Mr. Stidham:

Enercon Services, Inc., has completed the 1996 Annual Groundwater Sampling and Monitoring operations at the above-mentioned site. The sampling and monitoring program consisted of four separate quarterly events.

The 1996 Annual Report contains results from all four of the quarterly events and includes the collection of groundwater elevation measurements from thirteen onsite monitoring wells (MW-1 through MW-12 and WW-1). Groundwater samples were collected from all monitoring wells which did not contain phase-separated hydrocarbons (PSH). Outlined in this report are the gauging, purging, and sampling operations conducted on February 8, April 4, July 17, and October 1, 1996. Additionally, all groundwater elevation data collected during eleven (11) separate site visits beginning February 8, 1996 is also presented.

Groundwater Gradient

All monitoring wells were gauged in order to determine the depth to the groundwater table and the thickness of any phase-separated hydrocarbons (PSH). A summary of the groundwater elevations and PSH thicknesses is presented as Table 1. Figure 1 consists of a groundwater gradient map constructed from gauging data collected in December 1996, at the time the site was re-surveyed. The apparent groundwater flow direction is to the southeast and is concurrent with historical data.

PSH Recovery

Prior to the startup of the automated "Product Only" recovery system, hand bailing of the monitoring wells containing PSH was conducted periodically. Approximately 1,175 gallons of PSH have been removed to date (Tables 2 and 3). Approximately 153 gallons of PSH have been recovered by the remediation system between August 14, 1996 and October 1, 1996. It should be noted that the system is still being fine-tuned in order to maximize efficiency. In addition, a power surge caused the system to be put out of operation from approximately September 20, 1996 through October 1, 1996.

Groundwater Sampling

Following the gauging and purging operations monitoring wells MW-2, MW-6, MW-9, MW-11, and MW-12 were sampled. All samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) and dissolved oxygen content (DO). During the first quarterly sampling event (February 8, 1996) all samples were analyzed for poly-aromatic hydrocarbons (PAHs). All sampling was done in accordance with the requirements of the New Mexico Oil Conservation Division (NMOCD). Because the New Mexico Water Quality Control Commission (WQCC) regulations do not contain a groundwater standard for total petroleum hydrocarbons (TPH) none of the samples were submitted for TPH analysis. Monitoring Wells MW-1, MW-3, MW-4, MW-5, MW-7, and WW-1 were not sampled due to the presence of PSH. BTEX concentrations for monitoring wells MW-8 and MW-10 have historically been below laboratory detection limits (0.001 mg/L; ppm) and therefore were not sampled. Groundwater samples were also collected from monitoring wells MW-3, MW-8, and WW-1 and submitted for chloride analysis on July 17, 1996.

Results from the chloride analysis are presented as Table 4. All BTEX and DO water sample analytical results from this location are presented in Table 5. Figure 2 is a map of dissolved hydrocarbon concentrations constructed with the analytical results from the most recent sampling event (October 1, 1996).

Groundwater Analytical Results

For all four quarterly events in 1996, BTEX concentrations for monitoring well MW-9 have been reported to be below laboratory detection limits (BDL). Benzene concentrations for monitoring well MW-2 have ranged from 0.002 ppm to 0.56 ppm. Concentrations of toluene, ethylbenzene, and xylenes have consistently been reported to be below laboratory detection limits for this monitoring well. BTEX levels for monitoring well MW-6 remained between 1.206 ppm and 1.371 ppm during 1996 with the most recent concentration being 1.11 ppm. The BTEX concentrations for MW-11 ranged from 1.1 to 1.8 ppm during the year. For the first three quarters of 1996, benzene, toluene, ethylbenzene, and xylene concentrations have been reported to be BDL for monitoring well MW-12. The fourth quarter results reported a benzene concentration of 0.023 ppm.

PAH compounds were detected in three of the monitoring wells sampled. Results from monitoring well MW-2 reported concentrations of 2 ppb (µg/L) for both 1-Methylnapthalene and 2-Methylnapthalene. Napthalene was detected in the samples from MW-6 at a concentration of 5 ppb and MW-11 at a concentration of 14 ppb (Table 6).

ENERCON appreciates the opportunity to provide you with our professional consulting services. If you have any questions or concerns, please do not hesitate to contact us at (214) 631-7693.

Sincerely,
Enercon Services, Inc.

Michelle Williams
Environmental Geologist

Charles D. Harlan
Project Manager

Attachments

APPENDIX A

TABLES

TABLE 1
DENTON STATION
SUMMARY OF RELATIVE GROUNDWATER LEVEL ELEVATIONS AND PHASE-SEPARATED HYDROCARBON THICKNESSES

Monitor Well	Date Gauged	Relative Ground Surface Elevation (feet)	Relative Top of Casing Elevation (feet)*	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)**	Phase-Separated Hydrocarbon Thickness (feet)***
MW-1	10/12/95	101.07	103.47	55.24	48.83	0.73
	2/8/96	101.07	103.47	60.52	47.51	5.07
	3/7/96	101.07	103.47	57.32	47.22	1.19
	3/14/96	101.07	103.47	56.78	47.19	0.55
	3/21/96	101.07	103.47	56.74	47.15	0.47
	4/4/96	101.07	103.47	56.95	47.09	0.63
	7/17/96	101.07	103.47	58.99	47.14	2.96
	8/14/96	101.07	103.47	---	---	---
	8/21/96	101.07	103.47	---	---	---
	8/26/96	101.07	103.47	---	---	---
	9/5/96	101.07	103.47	---	---	---
	10/1/96	**99.53**	**101.96**	**58.49**	**45.44**	**2.19**
MW-2	10/12/95	99.17	101.35	53.82	47.53	0.00
	2/8/96	99.17	101.35	54.39	46.96	0.00
	3/7/96	99.17	101.35	54.37	46.98	0.00
	3/14/96	99.17	101.35	54.39	46.96	0.00
	3/21/96	99.17	101.35	---	---	---
	4/4/96	99.17	101.35	54.43	46.92	0.00
	7/17/96	99.17	101.35	54.56	46.79	0.00
	8/14/96	99.17	101.35	---	---	---
	8/21/96	99.17	101.35	---	---	---
	8/26/96	99.17	101.35	---	---	---
	9/5/96	99.17	101.35	---	---	---
	10/1/96	**97.68**	**99.83**	**54.73**	**45.10**	**0.00**
MW-3	10/12/95	101.01	101.00	60.17	45.66	5.82
	2/8/96	101.01	101.00	59.64	47.42	6.74
	3/7/96	101.01	101.00	59.08	47.94	6.69
	3/14/96	101.01	101.00	57.73	47.48	5.02
	3/21/96	101.01	101.00	57.28	47.37	4.06
	4/4/96	101.01	101.00	58.68	47.29	5.52
	7/17/96	101.01	101.00	59.69	47.31	6.67
	8/14/96	101.01	101.00	59.20	47.67	6.52
	8/21/96	101.01	101.00	57.42	47.29	4.12
	8/26/96	101.01	101.00	56.34	46.96	2.55
	9/5/96	101.01	101.00	59.18	47.27	6.05
	9/18/96	101.01	101.00	55.21	45.90	1.18
	10/1/96	**99.51**	**99.53**	**59.56**	**45.65**	**6.31**

TABLE 1
DENTON STATION
SUMMARY OF RELATIVE GROUNDWATER LEVEL ELEVATIONS AND PHASE-SEPARATED HYDROCARBON THICKNESSES

Monitor Well	Date Gauged	Relative Ground Surface Elevation (feet)	Relative Top of Casing Elevation (feet)*	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)**	Phase-Separated Hydrocarbon Thickness (feet)***
MW-4	10/12/95	99.98	101.46	53.97	47.49	0.00
	2/8/96	99.98	101.46	54.64	47.14	0.36
	3/7/96	99.98	101.46	54.74	47.16	0.49
	3/14/96	99.98	101.46	54.57	47.10	0.23
	3/21/96	99.98	101.46	54.48	47.11	0.14
	4/4/96	99.98	101.46	54.55	47.05	0.16
	7/17/96	99.98	101.46	55.05	46.96	0.61
	8/14/96	99.98	101.46	---	---	---
	8/21/96	99.98	101.46	---	---	---
	8/26/96	99.98	101.46	---	---	---
	9/5/96	99.98	101.46	---	---	---
	10/1/96	**98.25**	**99.97**	**55.12**	**45.33**	**0.53**
MW-5	10/12/95	101.71	101.86	58.74	47.20	4.92
	2/8/96	101.71	101.86	60.78	47.73	7.39
	3/7/96	101.71	101.86	56.15	47.77	2.29
	3/14/96	101.71	101.86	55.27	47.65	1.18
	3/21/96	101.71	101.86	54.88	47.53	0.61
	4/4/96	101.71	101.86	55.32	47.22	0.75
	7/17/96	101.71	101.86	57.75	47.20	3.43
	8/14/96	101.71	101.86	55.91	47.48	1.70
	8/21/96	101.71	101.86	54.84	47.26	0.27
	8/26/96	101.71	101.86	55.37	46.80	0.34
	9/5/96	101.71	101.86	54.87	47.21	0.24
	9/18/96	101.71	101.86	55.15	46.76	0.55
	10/1/96	**100.21**	**100.36**	**55.41**	**45.63**	**0.75**
MW-6	10/12/95	101.52	103.41	54.77	48.64	0.00
	2/8/96	101.52	103.41	55.96	47.45	0.00
	3/7/96	101.52	103.41	---	---	---
	3/14/96	101.52	103.41	55.97	47.44	0.00
	3/21/96	101.52	103.41	---	---	---
	4/4/96	101.52	103.41	56.02	47.39	0.00
	7/17/96	101.52	103.41	56.15	47.26	0.00
	8/14/96	101.52	103.41	---	---	---
	8/21/96	101.52	103.41	---	---	---
	8/26/96	101.52	103.41	---	---	---
	9/5/96	101.52	103.41	---	---	---
	10/1/96	**99.81**	**101.86**	**56.28**	**45.58**	**0.00**

TABLE 1
DENTON STATION
SUMMARY OF RELATIVE GROUNDWATER LEVEL ELEVATIONS AND PHASE-SEPARATED HYDROCARBON THICKNESSES

Monitor Well	Date Gauged	Relative Ground Surface Elevation (feet)	Relative Top of Casing Elevation (feet)*	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)**	Phase-Separated Hydrocarbon Thickness (feet)***
MW-7	10/12/95	100.82	100.69	59.14	46.92	6.47
	2/8/96	100.82	100.69	60.54	48.15	8.89
	3/7/96	100.82	100.69	59.03	48.01	7.06
	3/14/96	100.82	100.69	57.18	47.80	4.77
	3/21/96	100.82	100.69	56.47	48.16	4.38
	4/4/96	100.82	100.69	58.31	47.51	5.70
	7/17/96	100.82	100.69	60.68	47.62	8.28
	8/14/96	100.82	100.69	59.90	47.84	7.83
	8/21/96	100.82	100.69	58.98	46.74	6.61
	8/26/96	100.82	100.69	55.89	43.42	2.92
	9/5/96	100.82	100.69	56.72	47.37	3.78
	9/18/96	100.82	100.69	55.60	45.29	2.25
	10/1/96	**99.24**	**99.16**	**59.61**	**45.98**	**7.14**
MW-8	10/12/95	101.56	103.49	54.43	49.06	0.00
	2/8/96	101.56	103.49	55.23	48.26	0.00
	3/7/96	101.56	103.49	---	---	---
	3/14/96	101.56	103.49	---	---	---
	3/21/96	101.56	103.49	---	---	---
	4/4/96	101.56	103.49	55.29	48.20	0.00
	7/17/96	101.56	103.49	55.42	48.07	0.00
	8/14/96	101.56	103.49	---	---	---
	8/21/96	101.56	103.49	---	---	---
	8/26/96	101.56	103.49	---	---	---
	9/5/96	101.56	103.49	---	---	---
	10/1/96	**99.91**	**101.92**	**55.54**	**46.38**	**0.00**
MW-9	10/12/95	99.66	101.71	53.76	47.95	0.00
	2/8/96	99.66	101.71	54.34	47.37	0.00
	3/7/96	99.66	101.71	---	---	---
	3/14/96	99.66	101.71	---	---	---
	3/21/96	99.66	101.71	---	---	---
	4/4/96	99.66	101.71	54.41	47.30	0.00
	7/17/96	99.66	101.71	54.55	47.16	0.00
	8/14/96	99.66	101.71	---	---	---
	8/21/96	99.66	101.71	---	---	---
	8/26/96	99.66	101.71	---	---	---
	9/5/96	99.66	101.71	---	---	---
	10/1/96	**98.16**	**100.22**	**54.66**	**45.56**	**0.00**

TABLE 1
DENTON STATION
SUMMARY OF RELATIVE GROUNDWATER LEVEL ELEVATIONS AND PHASE-SEPARATED HYDROCARBON THICKNESSES

Monitor Well	Date Gauged	Relative Ground Surface Elevation (feet)	Relative Top of Casing Elevation (feet)*	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)**	Phase-Separated Hydrocarbon Thickness (feet)***
MW-10	10/12/95	99.66	99.79	52.04	47.75	0.00
	2/8/96	99.66	99.79	52.50	47.29	0.00
	3/7/96	99.66	99.79	---	---	---
	3/14/96	99.66	99.79	---	---	---
	3/21/96	99.66	99.79	---	---	---
	4/4/96	99.66	99.79	52.56	47.23	0.00
	7/17/96	99.66	99.79	52.81	46.98	0.00
	8/14/96	99.66	99.79	---	---	---
	8/21/96	99.66	99.79	---	---	---
	8/26/96	99.66	99.79	---	---	---
	9/5/96	99.66	99.79	---	---	---
	10/1/96	**98.20**	**98.28**	**52.89**	**45.39**	**0.00**
MW-11	10/12/95	100.98	100.97	53.40	47.57	0.00
	2/8/96	100.98	100.97	54.02	46.95	0.00
	3/7/96	100.98	100.97	---	---	---
	3/14/96	100.98	100.97	---	---	---
	3/21/96	100.98	100.97	---	---	---
	4/4/96	100.98	100.97	54.08	46.89	0.00
	7/17/96	100.98	100.97	54.21	46.76	0.00
	8/14/96	100.98	100.97	---	---	---
	8/21/96	100.98	100.97	---	---	---
	8/26/96	100.98	100.97	---	---	---
	9/5/96	100.98	100.97	---	---	---
	10/1/96	**99.38**	**99.45**	**54.36**	**45.09**	**0.00**
MW-12	10/12/95	98.50	98.39	52.15	46.24	0.00
	2/8/96	98.50	98.39	51.68	46.71	0.00
	3/7/96	98.50	98.39	---	---	---
	3/14/96	98.50	98.39	---	---	---
	3/21/96	98.50	98.39	---	---	---
	4/4/96	98.50	98.39	51.74	46.65	0.00
	7/17/96	98.50	98.39	51.86	46.53	0.00
	8/14/96	98.50	98.39	---	---	---
	8/21/96	98.50	98.39	---	---	---
	8/26/96	98.50	98.39	---	---	---
	9/5/96	98.50	98.39	---	---	---
	10/1/96	**96.69**	**98.84**	**52.03**	**44.81**	**0.00**

TABLE 1
DENTON STATION
SUMMARY OF RELATIVE GROUNDWATER LEVEL ELEVATIONS AND PHASE-SEPARATED HYDROCARBON THICKNESSES

Monitor Well	Date Gauged	Relative Ground Surface Elevation (feet)	Relative Top of Casing Elevation (feet)*	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)**	Phase-Separated Hydrocarbon Thickness (feet)***
WW-1	10/12/95	100.55	102.21	---	---	---
	2/8/96	100.55	102.21	61.99	46.65	7.14
	3/7/96	100.55	102.21	61.78	46.72	6.99
	3/14/96	100.55	102.21	58.32	46.36	2.74
	3/21/96	100.55	102.21	57.26	46.91	2.18
	4/4/96	100.55	102.21	57.83	46.19	2.01
	7/17/96	100.55	102.21	61.52	46.42	6.37
	8/14/96	100.55	102.21	59.12	46.22	3.48
	8/21/96	100.55	102.21	58.36	46.15	2.55
	8/26/96	100.55	102.21	57.66	46.54	2.21
	9/5/96	100.55	102.21	57.50	46.02	1.46
	9/18/96	100.55	102.21	57.83	44.53	1.66
	10/1/96	**99.11**	**100.16**	**58.92**	**47.42**	**6.87**

* 10/12/95 to 9/18/96 Measured from a relative datum (benchmark = 100.00 feet) located at the northeast corner of the concrete sump pad.
* 10/1/96 Measured from the concrete pad located at the southwest corner of the remediation system building.
** Correction Equation for Phase-Separated Hydrocarbons: Corrected Groundwater Elevation = Top of Casing Elevation - (Depth to Water Below Top of Casing - [SG] [PSH Thickness])
Specific Gravity (SG) = 0.9 for crude oil.
*** Crude oil recovery system in MW3, MW-5, MW-7 and WW-1 not operating due to electrical failure upon arrival at site on 10/1/96.
-- Not Gauged.

TABLE 2
DENTON STATION
PHASE-SEPARATED HYDROCARBON RECOVERY

Monitor Well	Date	PSH Thickness (feet)	PSH Recovery (gallons)	PSH Cumulative Recovery (gallons)	Type of Recovery
WW-1	10/12/95	---	5	327	Remediation System
	2/21/96	7.14	---	327	---
	3/7/96	6.99	16	343	Hand Bailed
	3/14/96	2.74	9	352	Hand Bailed
	3/21/96	2.18	3	355	Hand Bailed
	4/4/96	2.01	4	359	Hand Bailed
	7/17/96	6.37	20	379	Hand Bailed
	7/18/96	1.51	2.5	381.5	Hand Bailed
MW-1	10/12/95	0.73	1	10	Hand Bailed
	2/21/96	5.07	6	16	Hand Bailed
	3/7/96	1.19	1	17	Hand Bailed
	3/14/96	0.55	0.5	17.5	Hand Bailed
	3/21/96	0.47	0.25	17.75	Hand Bailed
	4/4/96	0.63	0.5	18.25	Hand Bailed
	7/17/96	2.96	4.5	22.75	Hand Bailed
	7/18/96	0.26	0.5	23.25	Hand Bailed
MW-3	10/12/95	5.82	8	134	Remediation System
	2/21/96	6.74	10	144	Hand Bailed
	3/7/96	6.69	7	151	Hand Bailed
	3/14/96	5.02	7.5	158.5	Hand Bailed
	3/21/96	4.06	5.0	163.5	Hand Bailed
	4/4/96	5.52	7	170.5	Hand Bailed
	7/17/96	6.67	12.5	183	Hand Bailed
MW-4	10/12/95	0.00	---	---	---
	2/21/96	0.41	---	---	---
	3/7/96	0.49	0.25	0.25	Hand Bailed
	3/14/96	0.23	0.25	0.5	Hand Bailed
	3/21/96	0.14	0.10	0.6	Hand Bailed
	4/4/96	0.16	0.10	0.7	Hand Bailed
	7/17/96	0.61	1	1.7	Hand Bailed
MW-5	10/12/95	4.92	5	144	Remediation System
	2/21/96	7.39	9	153	Hand Bailed
	3/7/96	2.29	2	155	Hand Bailed
	3/14/96	1.18	3.5	158.5	Hand Bailed
	3/21/96	0.61	1.25	159.75	Hand Bailed
	4/4/96	0.75	1	160.75	Hand Bailed
	7/17/96	3.43	3	163.75	Hand Bailed

TABLE 2
DENTON STATION
PHASE-SEPARATED HYDROCARBON RECOVERY

Monitor Well	Date	PSH Thickness (feet)	PSH Recovery (gallons)	PSH Cumulative Recovery (gallons)	Type of Recovery
MW-7	10/12/95	6.47	4	123	Remediation System
	2/21/96	8.89	13	136	Hand Bailed
	3/7/96	7.06	8	144	Hand Bailed
	3/14/96	4.77	8.5	152.5	Hand Bailed
	3/21/96	4.38	4.75	157.25	Hand Bailed
	4/4/96	5.70	7	164.25	Hand Bailed
	7/17/96	8.28	12	176.25	Hand Bailed

As of 8/14/96, recovery from WW-1, MW-3, MW- 5 and MW-7 is from operation of the ORS remediation system (See Table 3).

TABLE 3
DENTON STATION
CUMULATIVE PHASE-SEPARATED HYDROCARBON RECOVERY
ORS REMEDIATION SYSTEM

Date	Meter Reading (gallons)	PSH Thickness (inches)	PSH Recovery (gallons)	PSH Cumulative Recovery (gallons)	Remarks
8/14/96	---	---	92.75	92.75	Started System
8/26/96	---	---	40.50	133.25	Manually drained - est. volume
9/5/96	---	14	84.16	217.41	
9/18/96	---	17	21.04	238.44	New flow meter installed. Cumulative PSH thickness from 9/5/96
10/1/96 *	---	18	7.01	245.46	Cumulative PSH thickness from 9/5/96

Note: Total estimated cumulative recovery as of 10/1/96 = 1174.91 gallons. As of 8/14/96, recovery from WW-1, MW-3, MW- 5 and MW-7 is from operation of the ORS remediation system. Recovery on 8/26/96 is calculated based on prior hand bailing recovery factors.

Remarks: System began operation on 8/14/96, pumping from wells WW-1, MW-3, MW-5 and MW-7.
Product recovery is calculated from product thickness in tank (dimensions 60" x 44" x 27"), subtracting out 2" for non-recoverable product below the outlet.
Calculated initial product volume in tank was 92.75 gallons (recovery prior to 8/14/96).
PSH Recovery in gallons = ((PSH Thickness in inches - 2") x 60" x 27") / 231 in^3 /gal)
* System shut down due to electrical surge, restarted 10/1/96.

TABLE 4 DENTON STATION WATER SAMPLE ANALYTICAL RESULTS FOR CHLORIDE		
Monitor Well	**Date Sampled**	**Chloride**
WW-1	7/17/96	12
MW-3	7/17/96	22
MW-8	7/17/96	17
Results listed in mg/L (parts per million; ppm) by Southern Petroleum Laboratories.		

TABLE 5
DENTON STATION
WATER SAMPLE ANALYTICAL RESULTS

Monitor Well	Date Sampled	Benzene	Toluene	Ethyl-benzene	Xylenes	Total BTEX	Dissolved Oxygen
MW-1	10/12/95	PSH	PSH	PSH	PSH	PSH	PSH
	2/8/96	PSH	PSH	PSH	PSH	PSH	PSH
	4/4/96	PSH	PSH	PSH	PSH	PSH	PSH
	7/17/96	PSH	PSH	PSH	PSH	PSH	PSH
	10/1/96	**PSH**	**PSH**	**PSH**	**PSH**	**PSH**	**PSH**
MW-2	10/12/95	0.002	<0.001	<0.001	<0.001	0.002	3.8
	2/8/96	0.310	<0.001	<0.001	<0.001	0.310	2.9
	4/4/96	0.150	<0.001	<0.001	<0.001	0.150	3.3
	7/17/96	0.430	<0.001	<0.001	<0.001	0.430	4.15*
	10/1/96	**0.560**	**<0.003**	**<0.003**	**<0.003**	**0.560**	**4.0**
MW-3	10/12/95	PSH	PSH	PSH	PSH	PSH	PSH
	2/8/96	PSH	PSH	PSH	PSH	PSH	PSH
	4/4/96	PSH	PSH	PSH	PSH	PSH	PSH
	7/17/96	PSH	PSH	PSH	PSH	PSH	PSH
	10/1/96	**PSH**	**PSH**	**PSH**	**PSH**	**PSH**	**PSH**
MW-4	10/12/95	---	---	---	---	---	---
	2/8/96	PSH	PSH	PSH	PSH	PSH	PSH
	4/4/96	PSH	PSH	PSH	PSH	PSH	PSH
	7/17/96	PSH	PSH	PSH	PSH	PSH	PSH
	10/1/96	**PSH**	**PSH**	**PSH**	**PSH**	**PSH**	**PSH**
MW-5	10/12/95	PSH	PSH	PSH	PSH	PSH	PSH
	2/8/96	PSH	PSH	PSH	PSH	PSH	PSH
	4/4/96	PSH	PSH	PSH	PSH	PSH	PSH
	7/17/96	PSH	PSH	PSH	PSH	PSH	PSH
	10/1/96	**PSH**	**PSH**	**PSH**	**PSH**	**PSH**	**PSH**
MW-6	10/12/95	1.200	0.005	0.026	0.140	1.371	3.6
	2/8/96	1.200	<0.010	0.022	0.076	1.296	2.5
	4/4/96	1.100	<0.005	0.021	0.135	1.256	3.2
	7/17/96	1.100	<0.001	0.021	0.085	1.206	1.85*
	10/1/96	**0.990**	**<0.003**	**<0.002**	**0.120**	**1.11**	**1.65**
MW-7	10/12/95	PSH	PSH	PSH	PSH	PSH	PSH
	2/8/96	PSH	PSH	PSH	PSH	PSH	PSH
	4/4/96	PSH	PSH	PSH	PSH	PSH	PSH
	7/17/96	PSH	PSH	PSH	PSH	PSH	PSH
	10/1/96	**PSH**	**PSH**	**PSH**	**PSH**	**PSH**	**PSH**

TABLE 5
DENTON STATION
WATER SAMPLE ANALYTICAL RESULTS

Monitor Well	Date Sampled	Benzene	Toluene	Ethyl-benzene	Xylenes	Total BTEX	Dissolved Oxygen
MW-8	10/12/95	---	---	---	---	---	---
	2/8/96	---	---	---	---	---	---
	4/4/96	---	---	---	---	---	---
	7/17/96	---	---	---	---	---	---
	10/1/96	---	---	---	---	---	---
MW-9	10/12/95	<0.001	<0.001	<0.001	<0.001	<0.001	6.4
	2/8/96	<0.001	<0.001	<0.001	<0.001	<0.001	5.1
	4/4/96	<0.001	<0.001	<0.001	<0.001	<0.001	4.9
	7/17/96	<0.001	<0.001	<0.001	<0.001	<0.001	9.2*
	10/1/96	**<0.002**	**<0.003**	**<0.003**	**<0.003**	**<0.003**	**9.4**
MW-10	10/12/95	---	---	---	---	---	---
	2/8/96	---	---	---	---	---	---
	4/4/96	---	---	---	---	---	---
	7/17/96	---	---	---	---	---	---
	10/1/96	---	---	---	---	---	---
MW-11	10/12/95	1.500	0.003	<0.001	0.005	1.508	4.7
	2/8/96	1.100	<0.001	<0.001	<0.001	1.100	3.1
	4/4/96	1.300	<0.005	<0.005	<0.005	1.300	3.8
	7/17/96	1.800	<0.001	<0.001	<0.001	1.800	1.5*
	10/1/96	**1.400**	**<0.003**	**<0.003**	**<0.003**	**1.400**	**2.3**
MW-12	10/12/95	<0.001	<0.001	<0.001	<0.001	<0.001	4.0
	2/8/96	<0.001	<0.001	<0.001	<0.001	<0.001	5.1
	4/4/96	<0.001	<0.001	<0.001	<0.001	<0.001	4.1
	7/17/96	<0.001	<0.001	<0.001	<0.001	<0.001	6.0*
	10/1/96	**0.023**	**<0.003**	**<0.003**	**<0.003**	**0.023**	**5.8**

A total dissolved solids (TDS) concentration of 515 ppm was reported for MW-2 on 9/27/93.
BTEX results listed in mg/l (parts per million; ppm) with method detection limits listed on the certificate of analysis.
Analyses were conducted using EPA Method 8020 (BTEX) by SPL.
--- Not Sampled.
* D.O. readings obtained with field meter prior to 7/17/96. D.O. readings including and after 7/17/96 obtained by Hach field test kit.

TABLE 6

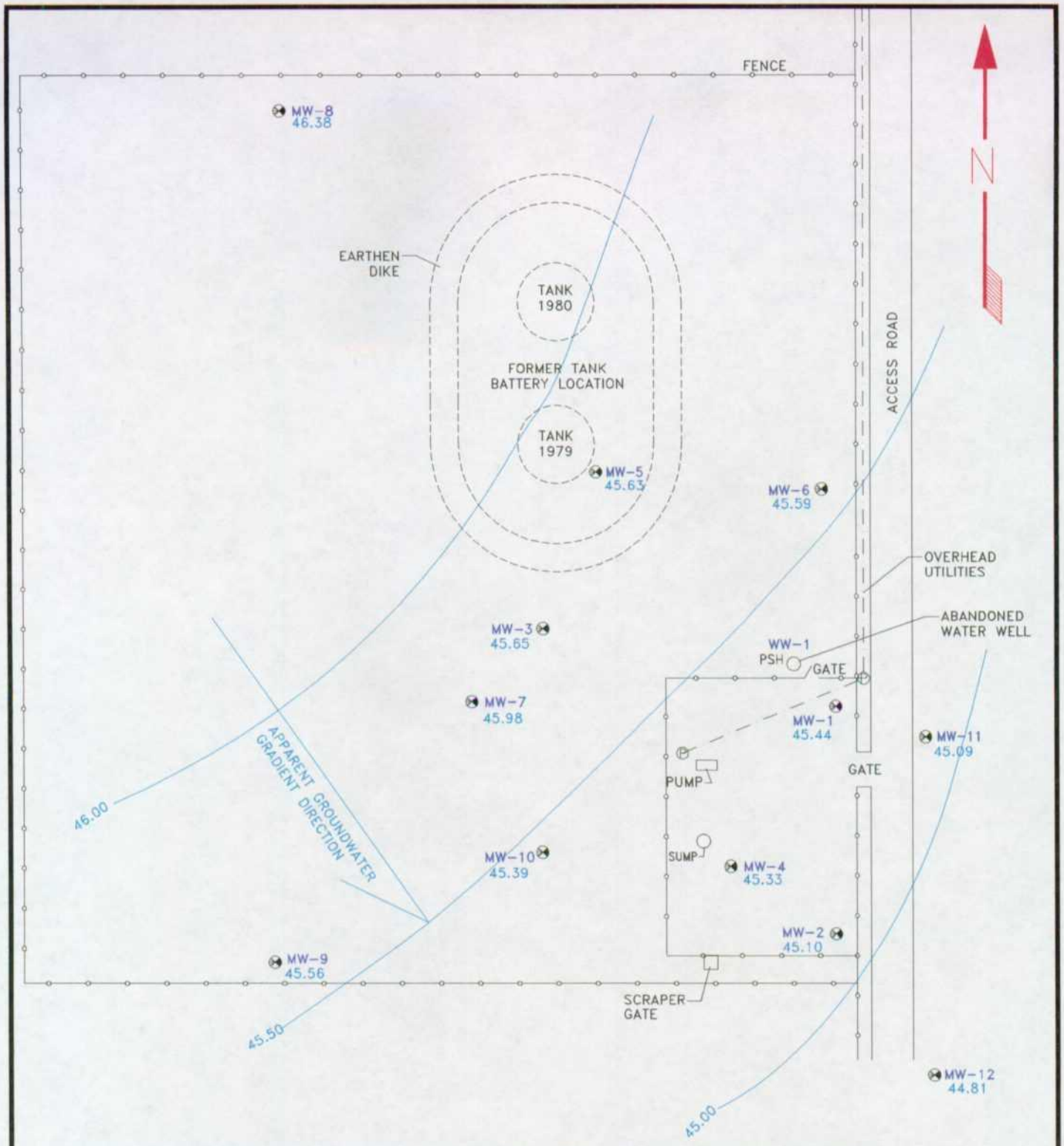
DENTON STATION

PAH ANALYTICAL RESULTS

Monitor Well	Date Sampled	1-Methylnapthalene	2-Methylnapthalene	Napthalene
MW-2	2/8/96	0.002	0.002	ND
MW-6	2/8/96	ND	ND	0.005
MW-11	2/8/96	ND	ND	0.014

PAH results listed in mg/l (parts per million; ppm).
Analyses were conducted using EPA Method 8310 by SPL.
ND - None Detected

APPENDIX B
FIGURES

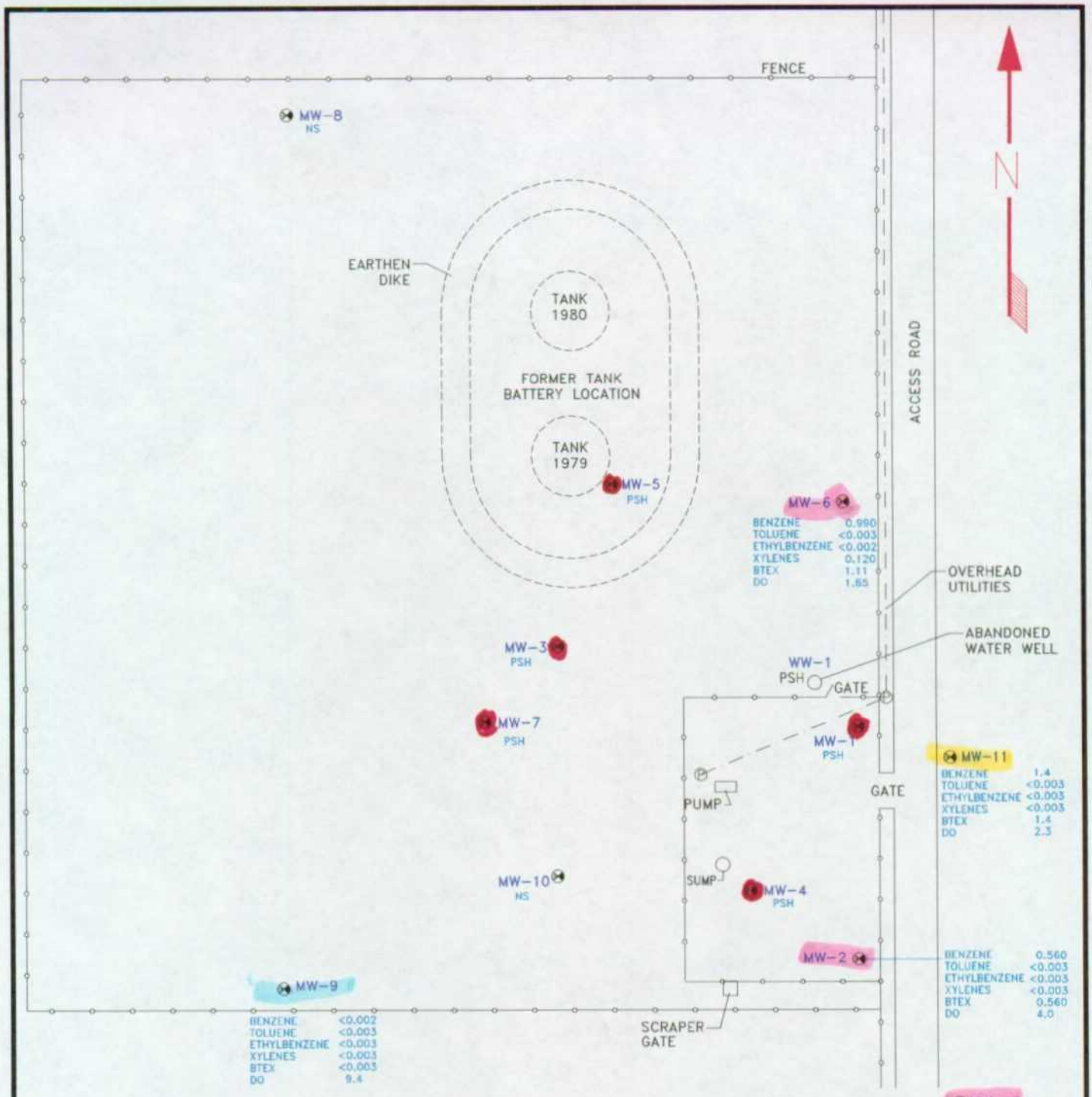


GROUNDWATER GRADIENT MAP (REMEDIATION SYSTEM OFF)

STATIC WATER LEVELS OBTAINED 12/09/96
CONTOUR INTERVAL = 0.50 FEET
WW-1 WAS NOT USED IN DETERMINING GROUNDWATER GRADIENT

0 100'
APPROXIMATE SCALE

ENERCON SERVICES, INC. 1221 RIVER BEND, SUITE 259 DALLAS, TEXAS 75247	DENTON STATION SHELL PIPE LINE CORPORATION LEA COUNTY, NEW MEXICO	DATE: DEC. 1996	SCALE: SEE ABOVE
		PROJECT NO. EV-378	FIGURE NO. 1



DISSOLVED HYDROCARBON CONCENTRATION MAP

- SAMPLES OBTAINED 10/01/96
- CONCENTRATION LISTED IN mg/l (ppm)
- NS: NOT SAMPLED

ENERCON SERVICES, INC. 1221 RIVER BEND, SUITE 259 DALLAS, TEXAS 75247	DENTON STATION SHELL PIPE LINE CORPORATION LEA COUNTY, NEW MEXICO	DATE: OCT. 1996	SCALE: SEE ABOVE
		PROJECT NO. EV-378	FIGURE NO. 2

APPENDIX C
ANALYTICAL RESULTS

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: 96 - 02 - 502

Approved for release by:

M. Scott Sample Date: 2/21/96

M. Scott Sample, Laboratory Director

Debbie Proctor Date: 2/21/96

Debbie Proctor, Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-01

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Enercon Services
SAMPLE ID: MW-9

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/08/96 11:30:00
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	ND		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	121 «
4-Bromofluorobenzene	141

METHOD 5030/8020 ***
Analyzed by: JZL
Date: 02/16/96

ND - Not detected. (P) - Practical Quantitation Limit
« - Recovery beyond control limits.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-01

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Enercon Services
SAMPLE ID: MW-9

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/08/96 11:30:00
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	MDL*	UNITS
Naphthalene	ND	1.80	µg/L
Acenaphthylene	ND	0.05	µg/L
Acenaphthene	ND	0.1	µg/L
Fluorene	ND	0.2	µg/L
Phenanthrene	ND	0.2	µg/L
Anthracene	ND	0.1	µg/L
Fluoranthene	ND	0.1	µg/L
Pyrene	ND	0.1	µg/L
Chrysene	ND	0.08	µg/L
Benzo (a) anthracene	ND	0.08	µg/L
Benzo (b) fluoranthene	ND	0.06	µg/L
Benzo (k) fluoranthene	ND	0.07	µg/L
Benzo (a) pyrene	ND	0.03	µg/L
Dibenzo (a,h) anthracene	ND	0.07	µg/L
Benzo (g,h,i) perylene	ND	0.1	µg/L
Indeno (1,2,3-cd) pyrene	ND	0.08	µg/L
1-Methylnaphthalene	ND	4.0	µg/L
2-Methylnaphthalene	ND	4.0	µg/L

SURROGATES	% RECOVERY
Biphenyl	CI
Coronene	67

ANALYZED BY: JZL DATE/TIME: 02/15/96 20:37:46
EXTRACTED BY: JK DATE/TIME: 02/13/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Method Detection Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: CI - Indicates co-eluting interference.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-02

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Enercon Services
SAMPLE ID: MW-6

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/08/96 11:45:00
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	1200	10 P	µg/L
TOLUENE	ND	10 P	µg/L
ETHYLBENZENE	22	10 P	µg/L
TOTAL XYLENE	76	10 P	µg/L
TOTAL BTEX	1298		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	103
4-Bromofluorobenzene	106

METHOD 5030/8020 ***
Analyzed by: YN
Date: 02/19/96

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc. - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-02

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Enercon Services
SAMPLE ID: MW-6

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/08/96 11:45:00
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	MDL*	UNITS
Naphthalene	5	4.50	µg/L
Acenaphthylene	ND	2.50	µg/L
Acenaphthene	ND	5.0	µg/L
Fluorene	ND	10.0	µg/L
Phenanthrene	ND	10.0	µg/L
Anthracene	ND	5.0	µg/L
Fluoranthene	ND	5.0	µg/L
Pyrene	ND	5.0	µg/L
Chrysene	ND	4.00	µg/L
Benzo (a) anthracene	ND	4.00	µg/L
Benzo (b) fluoranthene	ND	3.00	µg/L
Benzo (k) fluoranthene	ND	3.50	µg/L
Benzo (a) pyrene	ND	1.50	µg/L
Dibenzo (a,h) anthracene	ND	3.50	µg/L
Benzo (g,h,i) perylene	ND	5.0	µg/L
Indeno (1,2,3-cd) pyrene	ND	4.00	µg/L
1-Methylnaphthalene	ND	10.0	µg/L
2-Methylnaphthalene	ND	10.0	µg/L

SURROGATES	% RECOVERY
Biphenyl	D
Coronene	D

ANALYZED BY: JZL DATE/TIME: 02/15/96 21:28:44
EXTRACTED BY: JK DATE/TIME: 02/13/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Method Detection Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: D - Indicates surrogate diluted out.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-03

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Enercon Services
SAMPLE ID: MW-2

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/08/96 12:15:00
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	310	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	310		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	130 «
4-Bromofluorobenzene	139

METHOD 5030/8020 ***
Analyzed by: JZL
Date: 02/17/96

(P) - Practical Quantitation Limit ND - Not detected.
« - Recovery beyond control limits.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc. - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-03

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Enercon Services
SAMPLE ID: MW-2

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/08/96 12:15:00
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	MDL*	UNITS
Naphthalene	ND	2.25	µg/L
Acenaphthylene	ND	0.05	µg/L
Acenaphthene	ND	0.1	µg/L
Fluorene	ND	0.2	µg/L
Phenanthrene	ND	0.2	µg/L
Anthracene	ND	0.1	µg/L
Fluoranthene	ND	0.1	µg/L
Pyrene	ND	0.1	µg/L
Chrysene	ND	0.08	µg/L
Benzo (a) anthracene	ND	0.08	µg/L
Benzo (b) fluoranthene	ND	0.06	µg/L
Benzo (k) fluoranthene	ND	0.07	µg/L
Benzo (a) pyrene	ND	0.03	µg/L
Dibenzo (a,h) anthracene	ND	0.07	µg/L
Benzo (g,h,i) perylene	ND	0.1	µg/L
Indeno (1,2,3-cd) pyrene	ND	0.08	µg/L
1-Methylnaphthalene	2	0.2	µg/L
2-Methylnaphthalene	2	0.2	µg/L

SURROGATES	% RECOVERY
Biphenyl	CI
Coronene	61

ANALYZED BY: JZL DATE/TIME: 02/16/96 19:25:56
EXTRACTED BY: JK DATE/TIME: 02/13/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Method Detection Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: CI - Indicates co-eluting interference.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-04

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Enercon Services
SAMPLE ID: MW-12

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/08/96 12:40:00
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	ND		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	116
4-Bromofluorobenzene	114

METHOD 5030/8020 ***
Analyzed by: JZL
Date: 02/17/96

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-04

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Enercon Services
SAMPLE ID: MW-12

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/08/96 12:40:00
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	MDL*	UNITS
Naphthalene	ND	0.09	µg/L
Acenaphthylene	ND	0.05	µg/L
Acenaphthene	ND	0.1	µg/L
Fluorene	ND	0.2	µg/L
Phenanthrene	ND	0.2	µg/L
Anthracene	ND	0.1	µg/L
Fluoranthene	ND	0.1	µg/L
Pyrene	ND	0.1	µg/L
Chrysene	ND	0.08	µg/L
Benzo (a) anthracene	ND	0.08	µg/L
Benzo (b) fluoranthene	ND	0.06	µg/L
Benzo (k) fluoranthene	ND	0.07	µg/L
Benzo (a) pyrene	ND	0.03	µg/L
Dibenzo (a,h) anthracene	ND	0.07	µg/L
Benzo (g,h,i) perylene	ND	0.1	µg/L
Indeno (1,2,3-cd) pyrene	ND	0.08	µg/L
1-Methylnaphthalene	ND	0.2	µg/L
2-Methylnaphthalene	ND	0.2	µg/L

SURROGATES	% RECOVERY
Biphenyl	91
Coronene	59

ANALYZED BY: JZL DATE/TIME: 02/15/96 22:19:43
EXTRACTED BY: JK DATE/TIME: 02/13/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Method Detection Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-05

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Enercon Services
SAMPLE ID: MW-11

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/08/96 13:15:00
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	MDL*	UNITS
Naphthalene	14	9.00	µg/L
Acenaphthylene	ND	5.00	µg/L
Acenaphthene	ND	10.0	µg/L
Fluorene	ND	20.0	µg/L
Phenanthrene	ND	20.0	µg/L
Anthracene	ND	10.0	µg/L
Fluoranthene	ND	10.0	µg/L
Pyrene	ND	10.0	µg/L
Chrysene	ND	8.00	µg/L
Benzo (a) anthracene	ND	8.00	µg/L
Benzo (b) fluoranthene	ND	6.00	µg/L
Benzo (k) fluoranthene	ND	7.00	µg/L
Benzo (a) pyrene	ND	3.00	µg/L
Dibenzo (a,h) anthracene	ND	7.00	µg/L
Benzo (g,h,i) perylene	ND	10.0	µg/L
Indeno (1,2,3-cd) pyrene	ND	8.00	µg/L
1-Methylnaphthalene	ND	20.0	µg/L
2-Methylnaphthalene	ND	20.0	µg/L

SURROGATES	% RECOVERY
Biphenyl	D
Coronene	D

ANALYZED BY: JZL DATE/TIME: 02/16/96 20:17:06
EXTRACTED BY: JK DATE/TIME: 02/13/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Method Detection Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: D - Indicates surrogate diluted out.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-05

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Enercon Services
SAMPLE ID: MW-11

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/08/96 13:15:00
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	1100	50 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	1100		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	132 «
4-Bromofluorobenzene	103

METHOD 5030/8020 ***
Analyzed by: YN
Date: 02/19/96

(P) - Practical Quantitation Limit ND - Not detected.
« - Recovery beyond control limits.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9602502-06

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 02/21/96

PROJECT: Water Analysis
SITE: Denton Station Job #EV-378
SAMPLED BY: Provided by SPL
SAMPLE ID: Trip Blank

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 02/05/96
DATE RECEIVED: 02/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	ND		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	118
4-Bromofluorobenzene	117

METHOD 5030/8020 ***
Analyzed by: JZL
Date: 02/17/96

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

QUALITY CONTROL

DOCUMENTATION

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

Matrix: Aqueous
Units: µg/L

Batch Id: HP_R960216064800

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	45	90.0	62 - 121
Toluene	ND	150	140	93.3	66 - 136
EthylBenzene	ND	50	47	94.0	70 - 136
O Xylene	ND	100	97	97.0	74 - 134
M & P Xylene	ND	200	190	95.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
BENZENE	ND	50	62	124	61	122	1.63	25	39 - 150
TOLUENE	ND	150	180	120	180	120	0	26	56 - 134
ETHYLBENZENE	ND	50	58	116	59	118	1.71	38	61 - 128
O XYLENE	ND	100	120	120	120	120	0	29	40 - 130
M & P XYLENE	ND	100	120	120	120	120	0	20	43 - 152

Analyst: JZL
Sequence Date: 02/16/96
SPL ID of sample spiked: 9602383-07A
Sample File ID: R___610.TX0
Method Blank File ID:
Blank Spike File ID: R___599.TX0
Matrix Spike File ID: R___601.TX0
Matrix Spike Duplicate File ID: R___602.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '94)

SAMPLES IN BATCH(SPL ID): 9602380-07A 9602384-03A 9602383-07A 9602383-09A 9602383-10A 9602383-05A 9602383-06A 9602534-01A 9602534-04A 9602534-05A 9602534-10A 9602502-01A 9602534-12A 9602534-09A 9602383-17A 9602439-05A 9602441-08A

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

Matrix: Aqueous
Units: µg/L

Batch Id: HP_R960219114300

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	48	96.0	62 - 121
Toluene	ND	150	150	100	66 - 136
EthylBenzene	ND	50	53	106	70 - 136
O Xylene	ND	100	110	110	74 - 134
M & P Xylene	ND	200	210	105	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
BENZENE	ND	50	54	108	52	104	3.77	25	39 - 150
TOLUENE	ND	150	180	120	180	120	0	26	56 - 134
ETHYLBENZENE	ND	50	65	130 *	61	122	6.35	38	61 - 128
O XYLENE	ND	100	130	130	120	120	8.00	29	40 - 130
M & P XYLENE	ND	100	140	140	130	130	7.41	20	43 - 152

Analyst: YN
Sequence Date: 02/19/96
SPL ID of sample spiked: 9602734-01A
Sample File ID: R___725.TX0
Method Blank File ID:
Blank Spike File ID: R___720.TX0
Matrix Spike File ID: R___722.TX0
Matrix Spike Duplicate File ID: R___723.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '94)

SAMPLES IN BATCH(SPL ID):

9602378-03A 9602502-02A 9602502-05A 9602507-02A
9602619-01A 9602619-05A 9602619-08A 9602619-11A
9602619-02A 9602619-03A 9602619-04A 9602619-06A
9602619-07A 9602619-09A 9602619-10A 9602619-12A
9602619-13A 9602734-01A 9602378-02A

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

Matrix: Aqueous
Units: µg/L

Batch Id: HP_R960216103200

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	45	90.0	62 - 121
Toluene	ND	150	140	93.3	66 - 136
EthylBenzene	ND	50	49	98.0	70 - 136
O Xylene	ND	100	98	98.0	74 - 134
M & P Xylene	ND	200	190	95.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
BENZENE	28	50	92	128	91	126	1.57	25	39 - 150
TOLUENE	33	150	194	107	192	106	0.939	26	56 - 134
ETHYLBENZENE	1	50	50	98.0	49	96.0	2.06	38	61 - 128
O XYLENE	59	100	174	115	170	111	3.54	29	40 - 130
M & P XYLENE	81	100	217	136	212	131	3.75	20	43 - 152

Analyst: JZL
Sequence Date: 02/17/96
SPL ID of sample spiked: 9602454-01A
Sample File ID: R___658.TX0
Method Blank File ID:
Blank Spike File ID: R___654.TX0
Matrix Spike File ID: R___629.TX0
Matrix Spike Duplicate File ID: R___630.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '94)

SAMPLES IN BATCH(SPL ID):

9602454-02A 9602507-04A 9602534-16A 9602263-05C
9602534-11A 9602534-06A 9602588-01A 9602534-17A
9602534-14A 9602534-13A 9602534-02A 9602454-01A
9602454-03A 9602502-06A 9602502-03A 9602502-04A

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT ** PAGE

METHOD EPA 8310

Matrix: Aqueous Batch Id: 1960214231700

Units: µg/L

BLANK SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(**) (Advisory) RPD Max.	QC Limits(**) (Advisory) Recovery Range
NAPHTHALENE	ND	0.5	0.477	95.4	0.473	94.6	0.842	30	1 - 122
ACENAPHTHYLENE	ND	0.5	0.444	88.8	0.438	87.6	1.36	30	1 - 124
ACENAPHTHENE	ND	0.5	0.461	92.2	0.457	91.4	0.871	30	1 - 124
FLUORENE	ND	0.5	0.489	97.8	0.478	95.6	2.28	30	1 - 142
PHENANTHRENE	ND	0.5	0.504	101	0.459	91.8	9.54	30	1 - 155
ANTHRACENE	ND	0.5	0.479	95.8	0.437	87.4	9.17	30	1 - 126
FLUORANTHENE	ND	0.5	0.526	105	0.470	94.0	11.1	30	14 - 123
PYRENE	ND	0.5	0.523	105	0.468	93.6	11.5	30	1 - 140
CHRYSENE	ND	0.5	0.491	98.2	0.453	90.6	8.05	30	1 - 199
BENZO (A) ANTHRACENE	ND	0.5	0.523	105	0.479	95.8	9.16	30	12 - 135
BENZO (B) FLUORANTHENE	ND	0.5	0.515	103	0.482	96.4	6.62	30	6 - 150
BENZO (K) FLUORANTHENE	ND	0.5	0.518	104	0.483	96.6	7.38	30	1 - 159
BENZO (A) PYRENE	ND	0.5	0.525	105	0.476	95.2	9.79	30	1 - 128
DIBENZO (A,H) ANTHRACENE	ND	0.5	0.527	105	0.501	100	4.88	30	1 - 110
BENZO (G,H,I) PERYLENE	ND	0.5	0.558	112	0.535	107	4.57	30	1 - 116
INDENO (1,2,3-CD) PYRENE	ND	0.5	0.497	99.4	0.505	101	1.60	30	1 - 116

Analyst: JZL

Sequence Date: 02/16/96

Method Blank File ID:

Sample File ID:

Blank Spike File ID: 960215B\014-0101

Matrix Spike File ID:

Matrix Spike Duplicate File ID:

* = Values Outside QC Range

NC = Not Calculated (Sample exceeds spike by factor of 4 or more)

ND = Not Detected/Below Detection Limit

% Recovery = [(<1> - <2>) / <3>] x 100

Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100

(**) = Source: SPL Temporary Limits

SAMPLES IN BATCH(SPL ID):

9602502-01B 9602502-03B 9602502-01B 9602502-02B
9602502-04B 9602502-03B 9602502-05B 9602520-02C
9602520-03C 9602520-03C 9602520-01C 9602520-04C

QC Officer

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

9602502 ok 2/13/96 2/13/96

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING

CHAIN OF CUSTODY RECORD NO. U 17520

Date: 2/9/96
Page 1 of 1

SITE ADDRESS: DENTON STATION
WBS# EV-378
WIC #:
CONSULTANT NAME & ADDRESS: ENRON SERVICES, INC. 1221 RIVER BEND, SUITE 259, DALLAS, TX 75247
CONSULTANT CONTACT: CHARLES HARLAN
PHONE: (214) 631-7693 FAX: (214) 631-7699
SAMPLED BY: CHARLES HARLAN

CHECK ONE BOX ONLY GT/DT

- QUARTERLY MONITORING... ☒ 5451
- SITE INVESTIGATION ☐ 5441
- SOIL FOR DISPOSAL ☐ 5442
- WATER FOR DISPOSAL ☐ 5443
- AIR SAMPLER - SYS O+M ☐ 5452
- WATER SAMPLE - SYS O+M ☐ 5453
- OTHER ☐

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	MATRIX: H2O	SOIL	AIR	SLUDGE	OTHER	METHOD PRESERVED: HCl	HNO3	H2SO4	NONE	OTHER	NO. OF CONTAINERS	CONTAINER SIZE	BTEX 602 ☐	WITH MTBE 8020 ☒	BTEX/GAS HYDROCARBONS POF'D ☐ WITH MTBE	VOL 624/PPL ☐	624/TAL ☐	NBS (+15) ☐	PNA/PAH 8310 ☒	610 ☐	8100 ☐	SEMI-VOL 625/PPL ☐	B/N/TAL ☐	NBS (+25) ☐	TPH/IR 418.1 ☐	SM503 ☐	TPH/GC 8015 Mod GAS ☐	8015 Mod DIESEL ☐	TOLP METALS ☐ VOL ☐ SEMI-VOL ☐ PEST ☐ HERB ☐	EP TOX METALS ☐ PESTICIDES ☐ HERBICIDES ☐	REACTIVITY ☐ CORROSIVITY ☐ IGNITABILITY ☐	OTHER	REMARKS
MW-9	2/8/96	10:30		✓	✓					✓					4		✓						✓			✓										
MW-6	"	11:45		✓	✓					✓					4		✓						✓			✓										
MW-2	"	12:15		✓	✓					✓					4		✓						✓			✓										
MW-12	"	12:40		✓	✓					✓					4		✓						✓			✓										
MW-11	"	13:15		✓	✓					✓					4		✓						✓			✓										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Charles N. Harlan	2/9/96	9:00			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

BILL NO.:
LABORATORY:
SHELL CONTACT: NEAL STANKAWITZ PHONE: (713) 241-2941 FAX:

TURN AROUND TIME (CHECK ONE)
7 DAYS ☐ / NORMAL
14 DAYS ☒ PER SHELL CONTRACT
48 HOURS ☐
OTHER ☐

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN OF CUSTODY WITH INVOICE AND RESULTS

DISTRIBUTION: PINK Sampling Coordinator • WHITE & YELLOW Accompanies Shipment • WHITE Returned with Report

SPL Houston Environmental Laboratory

Sample Login Checklist

Date:	Time:
2/12/96	15:00

SPL Sample ID:
9602502

			Yes	No
1	Chain-of-Custody (COC) form is present.		✓	
2	COC is properly completed.		✓	
3	If no, Non-Conformance Worksheet has been completed.			
4	Custody seals are present on the shipping container.		✓	
5	If yes, custody seals are intact.		✓	
6	All samples are tagged or labeled.		✓	
7	If no, Non-Conformance Worksheet has been completed.			
8	Sample containers arrived intact		✓	
9	Temperature of samples upon arrival:		4 C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	830971132 5	
		Other:		
11	Method of sample disposal:	SPL Disposal		
		HOLD		
		Return to Client		

Name:	Date:
Vicki Brown	2/12/96

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING

CHAIN OF CUSTODY RECORD NO. H 17519

Date: 2/9/96
Page 1 of 1

SITE ADDRESS: DENTON STATION
Job# EV-378
WIC #:
CONSULTANT NAME & ADDRESS: ENERCON SERVICES, INC.
1221 RIVERBEND, SUITE 259
CONSULTANT CONTACT: CHARLES HARLAN
PHONE: (214)631-7693 FAX: (214)631-7699
SAMPLED BY: CHARLES HARLAN

CHECK ONE BOX ONLY CT/DT

- QUARTERLY MONITORING ☐ 5461
- SITE INVESTIGATION ☐ 5441
- SOIL FOR DISPOSAL ☐ 5442
- WATER FOR DISPOSAL ☐ 5443
- AIR SAMPLER - SYS O+M ☐ 5452
- WATER SAMPLE - SYS O+M ☐ 5453
- OTHER _____ ☐

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	MATRIX: H2O	SOIL	AIR	SLUDGE	OTHER	METHOD PRESERVED: HCl	HNO3	H2SO4	NONE	OTHER	NO. OF CONTAINERS	CONTAINER SIZE	BTEX 602 ☐ 8020 ☐ WITH MTBE ☐	BTEX/GAS HYDROCARBONS PID/FID ☐ WITH MTBE	VOL 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	PNA/PAH 8310 ☐ 8100 ☐ 610 ☐	SEMI - VOL 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	TPH/IR 418.1 ☐ SM503 ☐ ☐	TPH/GC 8015 Mod.GAS ☐ 8015 Mod DIESEL ☐	TCLP METALS ☐ VOL ☐ SEMI-VOL ☐ PEST ☐ HERB ☐	EP TOX METALS ☐ PESTICIDES ☐ HERBICIDES ☐	REACTIVITY ☐ CORROSIVITY ☐ IGNITABILITY ☐	OTHER: RUSH			REMARKS
DW-COMP.	2/8/96		✓		✓					✓					3												✓			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Chas D. Harlan	2/9/96	9:00			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

BILL NO.:
LABORATORY:
SHELL CONTACT: NEAL STALLINGS PHONE (713)241-7961 FAX:

TURN AROUND TIME (CHECK ONE)
7 DAYS ☐ (NORMAL)
14 DAYS ☒ PER SHELL CONTRACT
48 HOURS ☐
OTHER ☐

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN OF CUSTODY WITH INVOICE AND RESULTS

DISTRIBUTION: PINK Sampling Coordinator - WHITE & YELLOW Accompanies Shipment - WHITE Returned with Report

WHITE & YELLOW Accompanies Shipment - WHITE Returned with Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: 96 - 04 - 316

Approved for release by:

M. Scott Sample Date: 4/17/96
M. Scott Sample, Laboratory Director

Debbie Proctor Date: 4/16/96
Debbie Proctor, Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9604316-01

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 04/15/96

PROJECT: Job #EV-378
SITE: Denton Pump Station
SAMPLED BY: Enercon Services
SAMPLE ID: MW-9

PROJECT NO: H 17659
MATRIX: WATER
DATE SAMPLED: 04/04/96 11:30:00
DATE RECEIVED: 04/06/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	ND		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	83
4-Bromofluorobenzene	107

METHOD 5030/8020 ***
Analyzed by: VHZ
Date: 04/12/96

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9604316-02

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 04/15/96

PROJECT: Job #EV-378
SITE: Denton Pump Station
SAMPLED BY: Enercon Services
SAMPLE ID: MW-6

PROJECT NO: H 17659
MATRIX: WATER
DATE SAMPLED: 04/04/96 12:00:00
DATE RECEIVED: 04/06/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	1100	5 P	µg/L
TOLUENE	ND	5 P	µg/L
ETHYLBENZENE	21	5 P	µg/L
TOTAL XYLENE	135	5 P	µg/L
TOTAL BTEX	1256		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	108
4-Bromofluorobenzene	120

METHOD 5030/8020 ***
Analyzed by: VHZ
Date: 04/12/96

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9604316-03

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 04/15/96

PROJECT: Job #EV-378
SITE: Denton Pump Station
SAMPLED BY: Enercon Services
SAMPLE ID: MW-2

PROJECT NO: H 17659
MATRIX: WATER
DATE SAMPLED: 04/04/96 12:10:00
DATE RECEIVED: 04/06/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	150	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	150		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	95
4-Bromofluorobenzene	76

METHOD 5030/8020 ***
Analyzed by: VHZ
Date: 04/12/96

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9604316-04

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 04/15/96

PROJECT: Job #EV-378
SITE: Denton Pump Station
SAMPLED BY: Enercon Services
SAMPLE ID: MW-11

PROJECT NO: H 17659
MATRIX: WATER
DATE SAMPLED: 04/04/96 12:30:00
DATE RECEIVED: 04/06/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	1300	5 P	µg/L
TOLUENE	ND	5 P	µg/L
ETHYLBENZENE	ND	5 P	µg/L
TOTAL XYLENE	ND	5 P	µg/L
TOTAL BTEX	1300		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	109
4-Bromofluorobenzene	99

METHOD 5030/8020 ***
Analyzed by: VHZ
Date: 04/12/96

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9604316-05

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 04/15/96

PROJECT: Job #EV-378
SITE: Denton Pump Station
SAMPLED BY: Enercon Services
SAMPLE ID: MW-12

PROJECT NO: H 17659
MATRIX: WATER
DATE SAMPLED: 04/04/96 12:45:00
DATE RECEIVED: 04/06/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	ND		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	79
4-Bromofluorobenzene	69

METHOD 5030/8020 ***
Analyzed by: VHZ
Date: 04/12/96

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9604316-06

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 04/15/96

PROJECT: Job #EV-378
SITE: Denton Pump Station
SAMPLED BY: Provided by SPL
SAMPLE ID: Trip Blank

PROJECT NO: H 17659
MATRIX: WATER
DATE SAMPLED: 03/29/96
DATE RECEIVED: 04/06/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	ND		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	81
4-Bromofluorobenzene	77

METHOD 5030/8020 ***
Analyzed by: VHZ
Date: 04/12/96

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc., - Project Manager

QUALITY CONTROL

DOCUMENTATION

Shell Oil Products Company

Two Shell Plaza
P. O. Box 2099
Houston, TX 77252-2099

HAND DELIVERED

RECEIVED
OCT 1 0 1996
Environmental Bureau
Oil Conservation Division

October 9, 1996

William Olson
State of New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco St.
Santa Fe, New Mexico 87504

SUBJECT: DENTON STATION SOURCE INVESTIGATION

Dear Mr. Olson,

In my April 15, 1996 letter I indicated that I was certain that the Denton Station tanks, removed from service in the 1970's, were not the source of the crude oil problem but that we would continue to try and identify the source. This letter presents the findings and conclusions as a result of those efforts. Figure 1 shows the location and ownership of pipelines and producing oil wells in the immediate area of Denton Station. Information on the pipelines was obtained from posted pipeline markers and on producers from signs posted at each well. Producing wells, designated as A1, A2, A3, A4 on Figure 1, belong to UMC Petroleum Corporation, L.R. Chamberlain Lease. Wells designated as B1, B2, B3, are posted as Cody Energy Inc. Pat McClure Lease. Both of these producers have tank batteries associated with their production. EOTT Energy Pipeline and Amoco Pipeline Company each have three "petroleum" pipelines in the area and designated on Figure 1 as EOTT #1, #2, #3, and Amoco #1, #2, #3. Devon Energy Corporation has three high pressure salt water disposal lines crossing the road designated as Devon #1, #2, #3. I have not had any contact or discussion with either of the adjacent producers.

EOTT #1 begins on the south side of the station and takes oil from Denton Station and was not pressure tested. EOTT #2 is a low pressure 8" gathering line bringing oil from the Chamberlain lease to Denton and was pressure tested last May. EOTT #3 is a 4" line capable of delivering oil to Amoco's pump station northeast of Denton and was pressure tested in August. Denton Station piping was also tested in conjunction with the EOTT #3 testing. EOTT Energy's results and conclusions of the EOTT #2 and #3 pressure tests are enclosed. I contacted Amoco concerning any pressure testing or releases on Amoco #1, #2, #3 and their pumping station. Amoco responded that upon review of their records and facilities they have not contributed to the subsurface problem (Amoco letter of June 6 enclosed). Amoco did not provide any pressure testing information on Amoco #1, #2, or #3. I contacted Devon Energy concerning the same information and was informed that salt water comes into the disposal facility at 150 psi and leaves for injection wells at 800 psi. Devon personnel stated that at these pressures any leak would readily surface.

Table 1 presents groundwater elevations and product thickness data for 1996. Beginning in February, we conducted a intensive study to determine product recovery rates on monthly, weekly and biweekly intervals. The product thickness in MW-4 ranged from 0.14' to 0.61' and varied in MW-1 between 0.55' and 0.63'. This demonstrates that product inflow is insufficient to warrant pumps in these wells but rather absorbent boom is sufficient to control inflow. MW-3, MW-7, and WW-1 show weekly product accumulations of 5.0', 5.0' and 2.1' respectively and minimum product volumes of 5.0, 5.0 and 3 gallons. The amount of product accumulating in MW-5 is marginally sufficient for a pump. Based upon these findings, the product recovery system was reactivated in August with product pumps in MW-3, MW-5, MW-7 and WW-1. As of October 1, approximately 1200 gallons of product had been recovery from these wells. The product in these wells maintains a consistent inflow. This material is not from the station's old tanks or station piping but is from a continuing source.

Product samples were collected from MW-1, MW-3, MW-4, MW-5, MW-7 and WW-1 and submitted to Shell's Westhollow Technology Center(SWTC) for "typing" and boiling point distribution determination. These analyses will not only characterize the product but will identify differences as well as identifying both evaporative and bio-genic degradation. The results from SWTC show that the product from each well is identical, there are no olefins (refined product) present, and with the exception of MW-4, no evaporative or bio-genic weathering has occurred. MW-4 shows some minimal evaporative loss of volatiles. Chromatograms for each sample are included in the attached July 17, 1996 report. The product in these wells is fresh, from the same source, and neither weathered nor biologically degraded.

Product specific gravity has also been determined at various times over the years. The specific gravity results are; WW-1 (5/93) 41.2 @68 F.; WW-1 (3/94) 43.5 @72 F., the Station line (3/94) 44.9 @74 F.; WW-1 (6/96) 41.8 @60 F. and Chamberlain lease tanks (6/96) 41.2 @60 F. These consistent gravities indicate a continuing source of essentially the same quality.

In 1994, EOTT #2, EOTT #3 (within the original station), the station piping and the station sump were excavated in order to try and find the source of the crude oil. No possible source was found ("Phase III Addendum-Subsurface Investigation" September 7, 1994). EOTT #2 was again excavated this past spring and once again no evidence of a leak or crude oil was found. Piping within the station is visibly sound and there is no abandoned pipe to be a potential source.

I believe that the source of crude oil accumulating in the wells at Denton Station is from an off-site source, either another pipeline or a producing oil well. Furthermore I believe that preferential pathways in the caliche provide a conduit for product migration. I do not believe that these pathways are large or extensive. I feel the information developed in the past three years and described above demonstrates that the source is not from either past or current operations at Denton Station. After you have had an opportunity to review this information, I would like to discuss the future of our remediation activities at Denton Station.

If you have any additional questions concerning the information presented in this report, or otherwise, please do not hesitate to call me at 713-241-2961.

Sincerely,

Neal Stidham
Staff Engineer
Shell Oil Products Company
Representing Shell Pipe Line Corporation

cc: Paul Newman-EOTT Energy Corp.
Jerry Sexton-OCD Hobbs

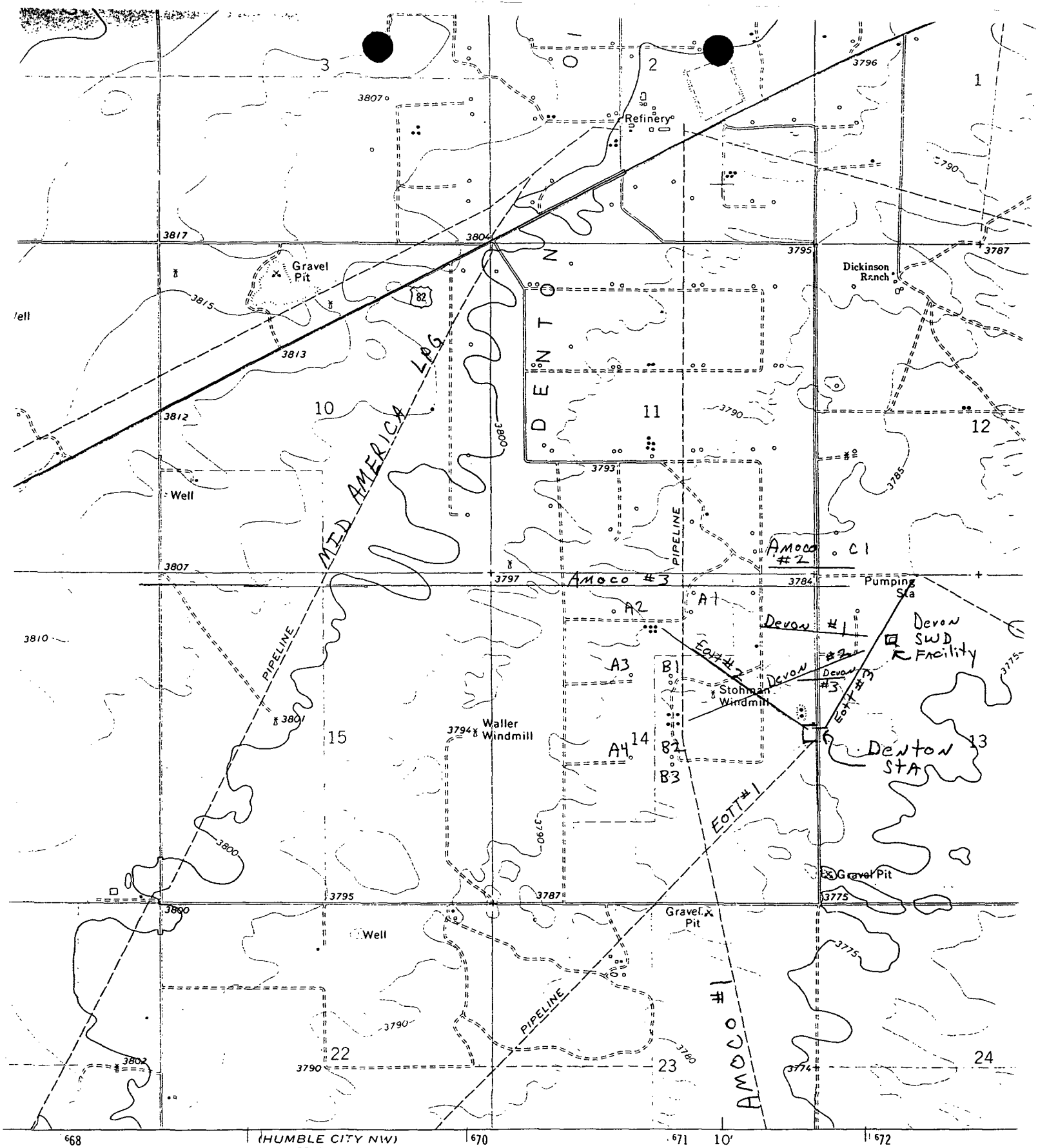
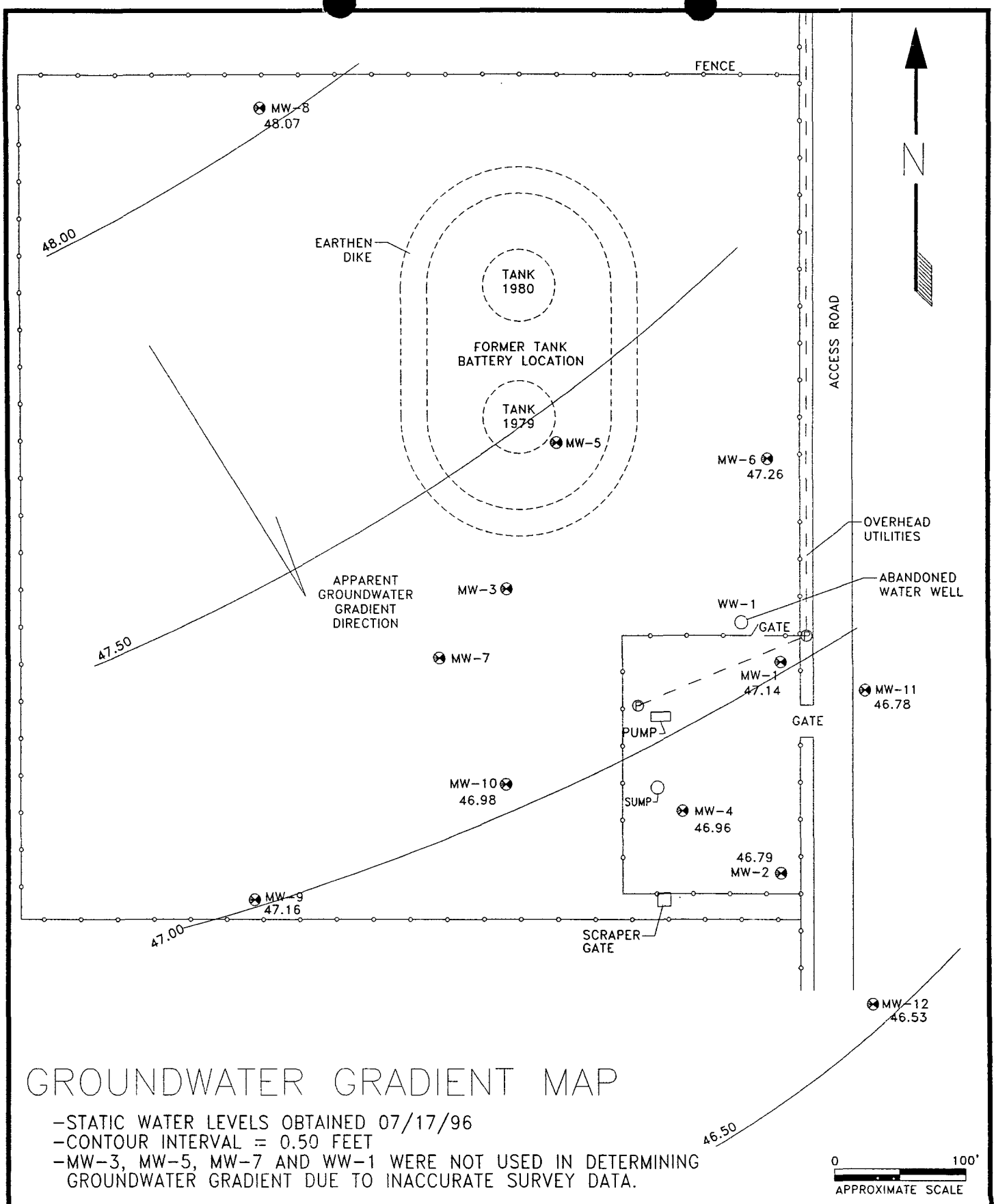

Refinery
Gravel Pit
Dickinson Ranch
MID AMERICA LPG PIPELINE
DENTON
Well
Amoco #2
Amoco #3
Pumping Sta
Devon #1
Devon #2
Devon #3
Devon SWD Facility
Eott #2
Eott #3
Stohman Windmill
Waller Windmill
Denton Sta
Eott #1
Amoco #1
Gravel Pit
Well
Gravel Pit
PIPELINE
A1
A2
A3
A4
B1
B2
B3
10
11
12
13
14
15
22
23
24
(HUMBLE CITY NW)
5349 I NW
SCALE 1:24000
1 MILE
7000 FEET
1 KILOMETER
CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL
NEW MEXICO
QUADRANGLE LOCATION

Figure 1



GROUNDWATER GRADIENT MAP

- STATIC WATER LEVELS OBTAINED 07/17/96
- CONTOUR INTERVAL = 0.50 FEET
- MW-3, MW-5, MW-7 AND WW-1 WERE NOT USED IN DETERMINING GROUNDWATER GRADIENT DUE TO INACCURATE SURVEY DATA.

ENERCON SERVICES, INC. 1221 RIVER BEND, SUITE 259 DALLAS, TEXAS 75247	DENTON STATION SHELL PIPE LINE CORPORATION LEA COUNTY, NEW MEXICO	DATE: JULY 1996	SCALE: SEE ABOVE
		PROJECT NO. EV-378	FIGURE NO. 2

EOTT ENERGY PIPELINE LIMITED PARTNERSHIP

3307 West County Road
Hobbs, New Mexico 88241
Telephone: (505) 392-1992

August 30,1996

Mr. Neil Stidam
P O BOX 2648
Houston, Texas

RE: Denton Station, North Gathering and AMOCO lateral Pipeline Hydro-Test
SEC. 13,14, T-15 S, R-37-E
Lea County, New Mexico

Dear Mr. Stidam:

EOTT Energy Pipeline Limited Partnership ("***EOTT***") purchased (ZONE III New Mexico Sweet and Sour Systems) pipeline and gatherings systems from Shell on November 1, 1993. Included in this acquisition is the North Denton gathering system.
During the negotiations of the purchased pipelines it was revealed that test wells for water contamination at the old Denton station site were to be drilled by Shell Pipeline.

After the wells were drilled traces of oil showed up in the test wells. After several attempts to pin point the origin of the oil it was agreed upon that ***EOTT*** would hydrostatic test the N. Gathering system from the Chamberlain lease(approx. 1 mile) to Denton station and the Amoco lateral and station piping

After successfully hydrostatic testing both segments, ***EOTT*** is satisfied that the oil is not from our pipeline system.

Pressure chart records and log sheets enclosed with this memo.

Very truly yours,

Bobby Garduño

Bobby Garduño
Asst. Pipeline Manager

cc. J.P. Davis

PL-318A (REV 3-92)

Hydrostatic Test Report

ATTACHMENT TO PL-318

SHELL JOB NO.	ES NO.
DATE PREPARED: 05-02-96	PAGE: OF

TEST SECTION: 8" Deaton Station to Chamber-1, 2 | CONTRACTOR: Ext #2

EQUIPMENT

TYPE	MAKE	MODEL	SERIAL NO.
DEAD-WEIGHT TESTER	AMetek	10-3525	49712
AMBIENT TEMP RECORDER			
TEST MEDIUM TEMP RECORDER			

RECORD OF TEST DATA

TIME	PRESSURE	AMBIENT TEMP.	TEST MEDIUM TEMP.	REMARKS
11:30	100	87		
11:45	100	~~88~~		
12:00	98	87		
12:15	~~97~~	87		
12:30	96	~~88~~ 88		
12:45	96	87		
~~1:00~~				
1:00	96	87		
1:15	96	86		
1:30	96	88		
1:45	96	88		
2:00	96	88		
2:15	96	86		
2:30	96	86		
3:00	96	84		
3:15	96	89		
3:30	96	89		

CONTRACTOR REPRESENTATIVE	COMPANY REPRESENTATIVE
	Terry Bird

FRIDAY
THURSDAY
WEDNESDAY
GRAPHIC CONTROLS CORPORATION
CHART NO. MC M-1000-SH-150F
CHAMBERLIN
LATERAL
Denton-Slaton
8" Field line
05-02-96

FERGUSON
CONSTRUCTION COMPANY

PRESSURE TEST LOG

E.O.T

Report #_____

Sheet #_____ of _____ Sheets

Proj. or Sch. #_____ W.O._____

LOCATION: DENTON STATION TO: _____ _____ _____ _____ DATE: 8-19-96
LINE No | MILE No. | MILE No. | RECHAIN Sta | RECHAIN Sta. | STATE.

PUMP: _____ (Mfr.), _____ (MODEL), _____ (Co. No.) X _____ (BORE) X _____ (STROKE) X _____ (No. Cyl.) X _____ (Gal. PER STROKE)

PIPE: _____ (Mfr.), _____ (O.D.) X _____ (W.T.), _____ (5LX), _____ (MILL TEST) P.S.I._____ P.S.I. (S.M.Y.)

Length Test Section: _____ (MILES), Elevation: _____ (LOW) Ft., _____ (HIGH) Ft., _____ (DEADWEIGHT) Ft., Pressure: _____ (LOW) Max P.S.I._____ (HIGH) Min P.S.I._____ (DEADWEIGHT) Max P.S.I.

Gallons This Section_____ Strokes Per P.S.I._____ Gallons Per P.S.I._____

Filling Time: From_____ to_____ Pressure Time: From_____ to_____

Time of Line Failure_____ Pressure at Failure_____

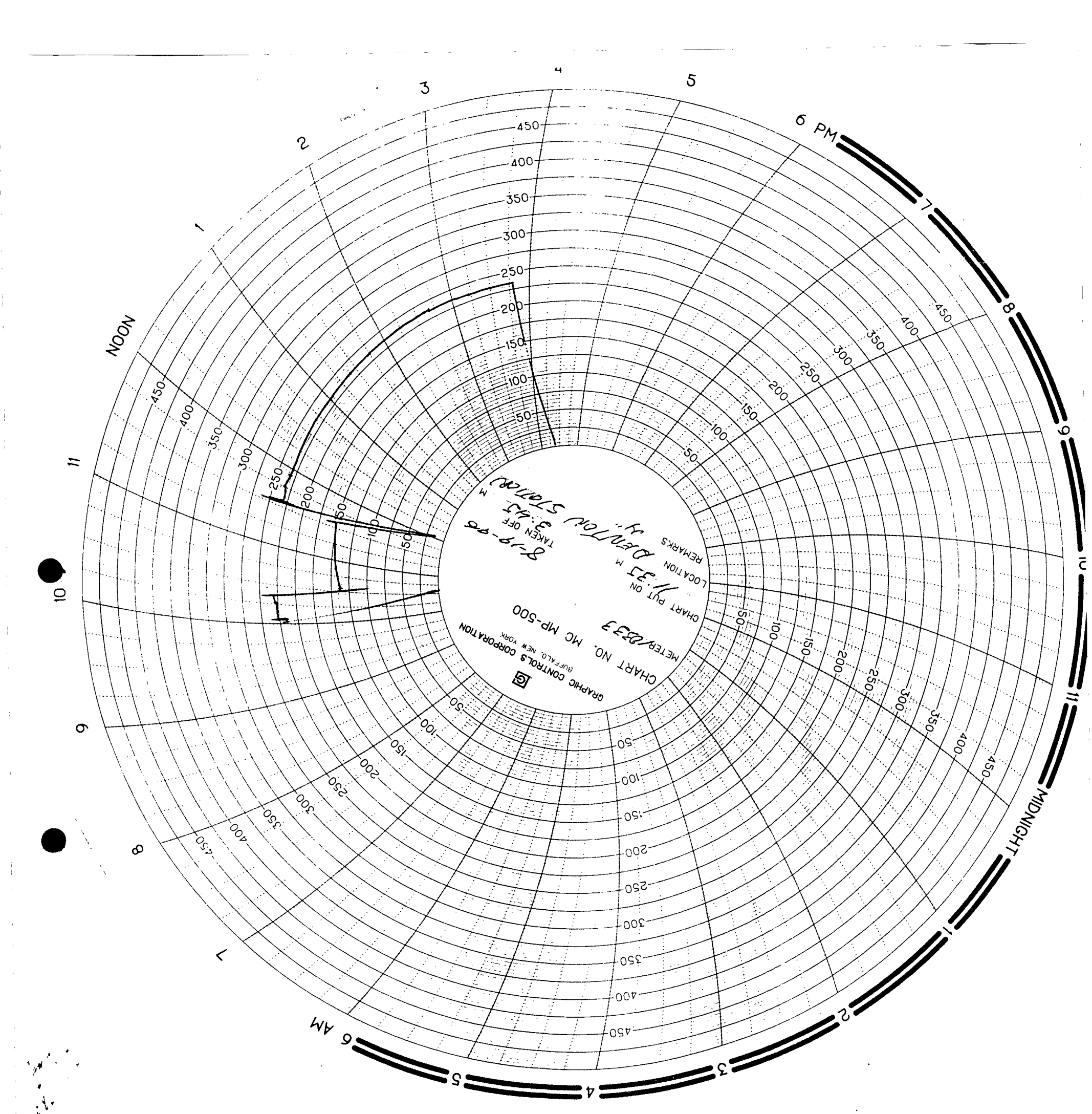
Temperature Observation at 11:35 ☐ AM ☐ PM

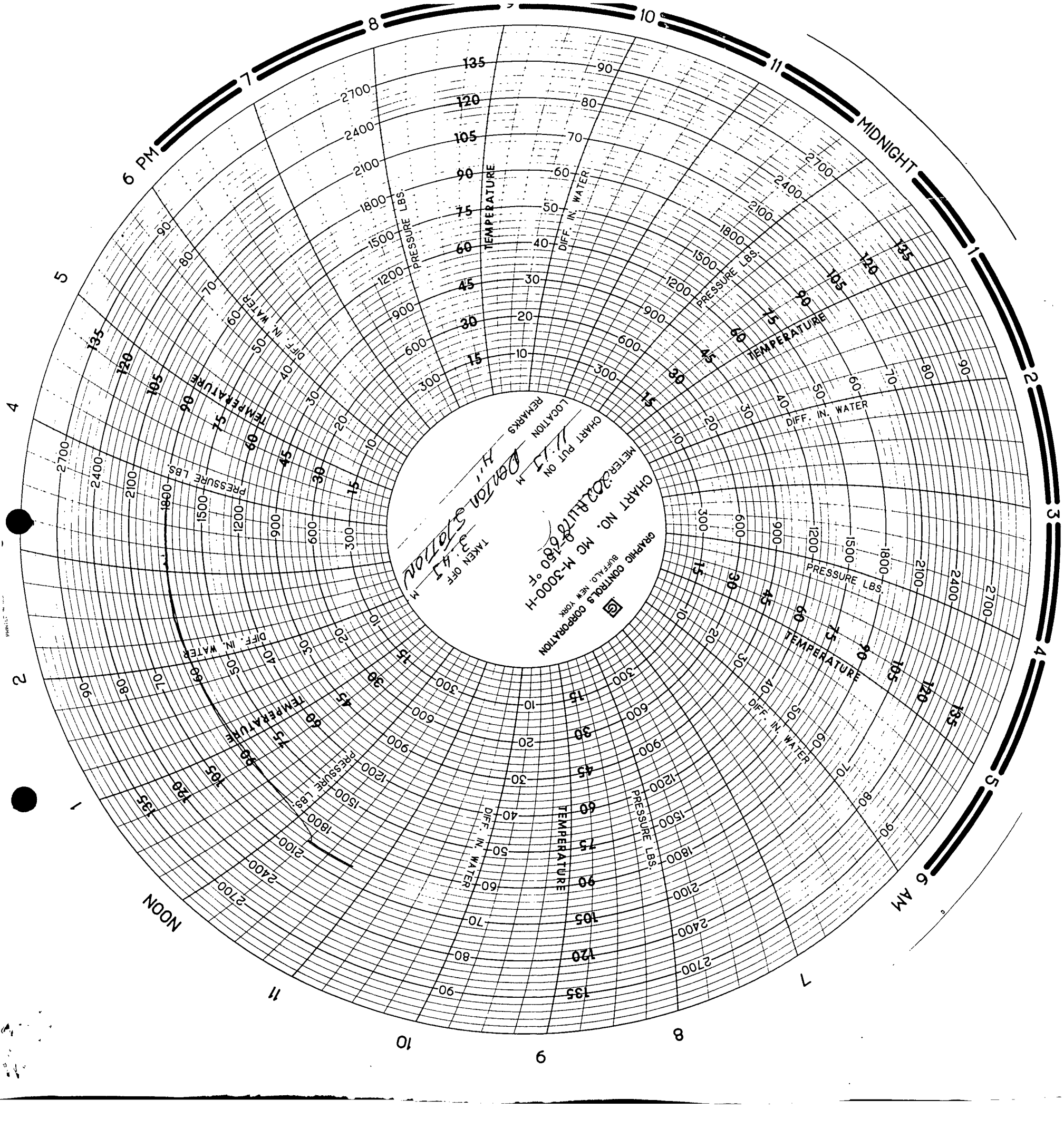
Water_____ °F Soil at Pipe Level_____ °F FERGUSON Rep._____

Atmosphere 89° °F CUSTOMER Rep. _____

DEAD WT.	TIME		AMB. TEMP.	SOIL TEMP.	DEAD WT.	TIME		AMB. TEMP.	SOIL TEMP.
230	11:35		89°						
233	11:45		90°						
231	12:00		91°						
231	12:15		92°						
232	12:30		93°						
233	12:45		93°						
233	1:00		92°						
233	1:15		92°						
234	1:30		93°						
234	1:45		94°						
235	2:00		95°						
235	2:15		96°						
235	2:30		98°						
236	2:45	Cloudy	96°						
235	3:00		95°						
233	3:15		93°						
231	3:30		91°				D.W.: 14301		
230	3:45		89°				Chart Pres # 10333		
							Chart Temp: 202A 117860		

PIPE SIZE 4" Company Representative_____


NOON
1
2
3
4
5
6 PM
7
8
9
10
11
MIDNIGHT
1
2
3
4
5
6 AM
7
8
9
10
11
50
100
150
200
250
300
350
400
450
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
CHART NO. MC MP-500
METER/DB33
CHART PUT ON
11:37 M
LOCATION
REMARKS
TAKEN OFF
3:45
8-19-96
DENTON STATION
M


6 PM
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NOON
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5
PRESSURE LBS.
TEMPERATURE
DIFF. IN. WATER
LOCATION
REMARKS
CHART PUT ON
TAKEN OFF
METER
CHART NO. MC M-3000-H
150 °F
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK

Amoco Pipeline Company
302 East Avenue A
Lovington, New Mexico 88260
505-396-2817

June 6, 1996

Neal Stidham
Shell Oil Production
P.O. Box 2099
Houston, TX 77252-2099

RE: Amoco Pipeline Co. - Denton Station & Denton Gathering System

Dear Neal:

After researching Amoco Pipeline's records and checking our facilities physically, we find that Amoco Pipeline has not contributed to the situation that Shell is experiencing at their old station in the Denton Field.

Sincerely,

Jimmy Humble
Core Team Leader

JH:cb

ENERCON SERVICES, INC.
An Employee Owned Company

1221 River Bend, Suite 259
Dallas, TX 75247
(214) 631-7693
FAX (214) 631-7699

October 4, 1996

Mr. Neal D. Stidham
Shell Oil Products Company
Two Shell Plaza, Room 1452
777 Walker Street
P.O. Box 2099
Houston, TX 77252-2099

Re: PRODUCT RECOVERY
DENTON STATION
LEA COUNTY, NEW MEXICO

Mr. Stidham:

Please find attached the gauging (Table 1) and cumulative product recovery data (Table 2) for the above referenced site. The product recovery system (for wells MW-3, MW-5, MW-7 and WW-1) was checked on September 5, 18 and October 1, 1996. As referenced in our September 3, 1996 letter, Enercon Services, Inc. (ENERCON) replaced the flow meter on September 18, 1996. As of October 1, 1996, a total of 245.46 gallons of PSH has been recovered by the automated recovery system. The pumps were not operating upon arrival on October 1, due to an apparent electrical surge, which shut down the control panels. This resulted in the increased product thickness reflected in Table 1. However, the system was reset and is currently functioning properly.

Enercon appreciates the opportunity to provide you with our professional consulting services. If there are any questions regarding this matter, please contact us at (214) 631-7693.

Sincerely,
Enercon Services, Inc.

Charles D. Harlan
Project Manager

TABLE 1
DENTON STATION
SUMMARY OF RELATIVE GROUNDWATER LEVEL ELEVATIONS AND PHASE-SEPARATED HYDROCARBON THICKNESSES

Monitor Well	Date Gauged	Relative Ground Surface Elevation (feet)	Relative Top of Casing Elevation (feet)*	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)**	Phase-Separated Hydrocarbon Thickness (feet)
MW-1	10/12/95	101.07	103.47	55.24	48.83	0.73
	2/8/96	101.07	103.47	60.52	47.51	5.07
	3/7/96	101.07	103.47	57.32	47.22	1.19
	3/14/96	101.07	103.47	56.78	47.19	0.55
	3/21/96	101.07	103.47	56.74	47.15	0.47
	4/4/96	101.07	103.47	56.95	47.09	0.63
	7/17/96	101.07	103.47	58.99	47.14	2.96
	8/14/96	101.07	103.47	---	---	---
	8/21/96	101.07	103.47	---	---	---
	8/26/96	101.07	103.47	---	---	---
	9/5/96	101.07	103.47	---	---	---
	10/1/96	**101.07**	**103.47**	**58.23**	**45.41**	**3.05**
MW-2	10/12/95	99.17	101.35	53.82	47.53	0.00
	2/8/96	99.17	101.35	54.39	46.96	0.00
	3/7/96	99.17	101.35	54.37	46.98	0.00
	3/14/96	99.17	101.35	54.39	46.96	0.00
	3/21/96	99.17	101.35	---	---	---
	4/4/96	99.17	101.35	54.43	46.92	0.00
	7/17/96	99.17	101.35	54.56	46.79	0.00
	8/14/96	99.17	101.35	---	---	---
	8/21/96	99.17	101.35	---	---	---
	8/26/96	99.17	101.35	---	---	---
	9/5/96	99.17	101.35	---	---	---
	10/1/96	**99.17**	**101.35**	**54.65**	**45.51**	**0.00**
MW-3	10/12/95	101.01	101.00	60.17	45.66	5.82
	2/8/96	101.01	101.00	59.64	47.42	6.74
	3/7/96	101.01	101.00	59.08	47.94	6.69
	3/14/96	101.01	101.00	57.73	47.48	5.02
	3/21/96	101.01	101.00	57.28	47.37	4.06
	4/4/96	101.01	101.00	58.68	47.29	5.52
	7/17/96	101.01	101.00	59.69	47.31	6.67
	8/14/96	101.01	101.00	59.20	47.67	6.52
	8/21/96	101.01	101.00	57.42	47.29	4.12
	8/26/96	101.01	101.00	56.34	46.96	2.55
	9/5/96	101.01	101.00	59.18	47.27	6.05
	9/18/96	101.01	101.00	55.21	45.90	1.18
	10/1/96	**101.01**	**101.00**	**58.60**	**42.87**	**5.22**

TABLE 1
DENTON STATION
SUMMARY OF RELATIVE GROUNDWATER LEVEL ELEVATIONS AND PHASE-SEPARATED HYDROCARBON THICKNESSES

Monitor Well	Date Gauged	Relative Ground Surface Elevation (feet)	Relative Top of Casing Elevation (feet)*	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)**	Phase-Separated Hydrocarbon Thickness (feet)
MW-4	10/12/95	99.98	101.46	53.97	47.49	0.00
	2/8/96	99.98	101.46	54.64	47.14	0.36
	3/7/96	99.98	101.46	54.74	47.16	0.49
	3/14/96	99.98	101.46	54.57	47.10	0.23
	3/21/96	99.98	101.46	54.48	47.11	0.14
	4/4/96	99.98	101.46	54.55	47.05	0.16
	7/17/96	99.98	101.46	55.05	46.96	0.61
	8/14/96	99.98	101.46	---	---	---
	8/21/96	99.98	101.46	---	---	---
	8/26/96	99.98	101.46	---	---	---
	9/5/96	99.98	101.46	---	---	---
	10/1/96	**99.98**	**101.46**	**55.12**	**46.36**	**0.22**
MW-5	10/12/95	101.71	101.86	58.74	47.20	4.92
	2/8/96	101.71	101.86	60.78	47.73	7.39
	3/7/96	101.71	101.86	56.15	47.77	2.29
	3/14/96	101.71	101.86	55.27	47.65	1.18
	3/21/96	101.71	101.86	54.88	47.53	0.61
	4/4/96	101.71	101.86	55.32	47.22	0.75
	7/17/96	101.71	101.86	57.75	47.20	3.43
	8/14/96	101.71	101.86	55.91	47.48	1.70
	8/21/96	101.71	101.86	54.84	47.26	0.27
	8/26/96	101.71	101.86	55.37	46.80	0.34
	9/5/96	101.71	101.86	54.87	47.21	0.24
	9/18/96	101.71	101.86	55.15	46.76	0.55
	9/5/96	**101.71**	**101.86**	**59.18**	**42.75**	**0.80**
MW-6	10/12/95	101.52	103.41	54.77	48.64	0.00
	2/8/96	101.52	103.41	55.96	47.45	0.00
	3/7/96	101.52	103.41	---	---	---
	3/14/96	101.52	103.41	55.97	47.44	0.00
	3/21/96	101.52	103.41	---	---	---
	4/4/96	101.52	103.41	56.02	47.39	0.00
	7/17/96	101.52	103.41	56.15	47.26	0.00
	8/14/96	101.52	103.41	---	---	---
	8/21/96	101.52	103.41	---	---	---
	8/26/96	101.52	103.41	---	---	---
	9/5/96	101.52	103.41	---	---	---
	10/1/96	**101.52**	**103.41**	**56.24**	**47.17**	**0.00**

TABLE 1
DENTON STATION
SUMMARY OF RELATIVE GROUNDWATER LEVEL ELEVATIONS AND PHASE-SEPARATED HYDROCARBON THICKNESSES

Monitor Well	Date Gauged	Relative Ground Surface Elevation (feet)	Relative Top of Casing Elevation (feet)*	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)**	Phase-Separated Hydrocarbon Thickness (feet)
MW-7	10/12/95	100.82	100.69	59.14	46.92	6.47
	2/8/96	100.82	100.69	60.54	48.15	8.89
	3/7/96	100.82	100.69	59.03	48.01	7.06
	3/14/96	100.82	100.69	57.18	47.80	4.77
	3/21/96	100.82	100.69	56.47	48.16	4.38
	4/4/96	100.82	100.69	58.31	47.51	5.70
	7/17/96	100.82	100.69	60.68	47.62	8.28
	8/14/96	100.82	100.69	59.90	47.84	7.83
	8/21/96	100.82	100.69	58.98	46.74	6.61
	8/26/96	100.82	100.69	55.89	43.42	2.92
	9/5/96	100.82	100.69	56.72	47.37	3.78
	9/18/96	100.82	100.69	55.60	45.29	2.25
	10/1/96	**100.82**	**100.69**	**58.39**	**42.82**	**5.82**
MW-8	10/12/95	101.56	103.49	54.43	49.06	0.00
	2/8/96	101.56	103.49	55.23	48.26	0.00
	3/7/96	101.56	103.49	---	---	---
	3/14/96	101.56	103.49	---	---	---
	3/21/96	101.56	103.49	---	---	---
	4/4/96	101.56	103.49	55.29	48.20	0.00
	7/17/96	101.56	103.49	55.42	48.07	0.00
	8/14/96	101.56	103.49	---	---	---
	8/21/96	101.56	103.49	---	---	---
	8/26/96	101.56	103.49	---	---	---
	9/5/96	101.56	103.49	---	---	---
	10/1/96	**101.56**	**103.49**	**55.43**	**48.06**	**0.00**
MW-9	10/12/95	99.66	101.71	53.76	47.95	0.00
	2/8/96	99.66	101.71	54.34	47.37	0.00
	3/7/96	99.66	101.71	---	---	---
	3/14/96	99.66	101.71	---	---	---
	3/21/96	99.66	101.71	---	---	---
	4/4/96	99.66	101.71	54.41	47.30	0.00
	7/17/96	99.66	101.71	54.55	47.16	0.00
	8/14/96	99.66	101.71	---	---	---
	8/21/96	99.66	101.71	---	---	---
	8/26/96	99.66	101.71	---	---	---
	9/5/96	99.66	101.71	---	---	---
	10/1/96	**99.66**	**101.71**	**54.60**	**47.11**	**0.00**

TABLE 1
DENTON STATION
SUMMARY OF RELATIVE GROUNDWATER LEVEL ELEVATIONS AND PHASE-SEPARATED HYDROCARBON THICKNESSES

Monitor Well	Date Gauged	Relative Ground Surface Elevation (feet)	Relative Top of Casing Elevation (feet)*	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)**	Phase-Separated Hydrocarbon Thickness (feet)
MW-10	10/12/95	99.66	99.79	52.04	47.75	0.00
	2/8/96	99.66	99.79	52.50	47.29	0.00
	3/7/96	99.66	99.79	---	---	---
	3/14/96	99.66	99.79	---	---	---
	3/21/96	99.66	99.79	---	---	---
	4/4/96	99.66	99.79	52.56	47.23	0.00
	7/17/96	99.66	99.79	52.81	46.98	0.00
	8/14/96	99.66	99.79	---	---	---
	8/21/96	99.66	99.79	---	---	---
	8/26/96	99.66	99.79	---	---	---
	9/5/96	99.66	99.79	---	---	---
	10/1/96	**99.66**	**99.79**	**53.76**	**46.03**	**0.00**
MW-11	10/12/95	100.98	100.97	53.40	47.57	0.00
	2/8/96	100.98	100.97	54.02	46.95	0.00
	3/7/96	100.98	100.97	---	---	---
	3/14/96	100.98	100.97	---	---	---
	3/21/96	100.98	100.97	---	---	---
	4/4/96	100.98	100.97	54.08	46.89	0.00
	7/17/96	100.98	100.97	54.21	46.76	0.00
	8/14/96	100.98	100.97	---	---	---
	8/21/96	100.98	100.97	---	---	---
	8/26/96	100.98	100.97	---	---	---
	9/5/96	100.98	100.97	---	---	---
	10/1/96	**100.98**	**100.97**	**54.29**	**46.68**	**0.00**
MW-12	10/12/95	98.50	98.39	52.15	46.24	0.00
	2/8/96	98.50	98.39	51.68	46.71	0.00
	3/7/96	98.50	98.39	---	---	---
	3/14/96	98.50	98.39	---	---	---
	3/21/96	98.50	98.39	---	---	---
	4/4/96	98.50	98.39	51.74	46.65	0.00
	7/17/96	98.50	98.39	51.86	46.53	0.00
	8/14/96	98.50	98.39	---	---	---
	8/21/96	98.50	98.39	---	---	---
	8/26/96	98.50	98.39	---	---	---
	9/5/96	98.50	98.39	---	---	---
	10/1/96	**98.50**	**98.93**	**51.91**	**47.02**	**0.00**

TABLE 1
DENTON STATION
SUMMARY OF RELATIVE GROUNDWATER LEVEL ELEVATIONS AND PHASE-SEPARATED HYDROCARBON THICKNESSES

Monitor Well	Date Gauged	Relative Ground Surface Elevation (feet)	Relative Top of Casing Elevation (feet)*	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)**	Phase-Separated Hydrocarbon Thickness (feet)
WW-1	10/12/95	100.55	102.21	---	---	---
	2/8/96	100.55	102.21	61.99	46.65	7.14
	3/7/96	100.55	102.21	61.78	46.72	6.99
	3/14/96	100.55	102.21	58.32	46.36	2.74
	3/21/96	100.55	102.21	57.26	46.91	2.18
	4/4/96	100.55	102.21	57.83	46.19	2.01
	7/17/96	100.55	102.21	61.52	46.42	6.37
	8/14/96	100.55	102.21	59.12	46.22	3.48
	8/21/96	100.55	102.21	58.36	46.15	2.55
	8/26/96	100.55	102.21	57.66	46.54	2.21
	9/5/96	100.55	102.21	57.50	46.02	1.46
	9/18/96	100.55	102.21	57.83	44.53	1.66
	10/1/96	**100.55**	**102.21**	**55.93**	**46.53**	**2.73**

* Measured from a relative datum (benchmark = 100.00 feet) located at the northeast corner of the concrete sump pad.
** Correction Equation for Phase-Separated Hydrocarbons: Corrected Groundwater Elevation = Top of Casing Elevation - (Depth to Water Below Top of Casing - [SG] [PSH Thickness])
Specific Gravity (SG) = 0.9 for crude oil.

TABLE 2
DENTON STATION
CUMULATIVE PHASE-SEPARATED HYDROCARBON RECOVERY
ORS REMEDIATION SYSTEM

Date	Meter Reading (gallons)	PSH Thickness (inches)	PSH Recovery (gallons)	PSH Cumulative Recovery (gallons)	Remarks
8/14/96	---	---	92.75	92.75	Started System
8/26/96	---	---	40.50	133.25	Manually drained - est. volume
9/5/96	---	14	84.16	217.41	
9/18/96	---	17	21.04	238.44	New flow meter installed. Cumulative PSH thickness from 9/5/96
10/1/96 *	---	18	7.01	245.46	Cumulative PSH thickness from 9/5/96

Remarks: System began operation on 8-14-96, pumping from wells WW-1, MW-3, MW-5 and MW-7.

Product recovery is calculated from product thickness in tank (dimensions 60" x 44" x 27"), subtracting out 2" for non-recoverable product below the outlet.

Calculated initial product volume in tank was 92.75 gallons (recovery prior to 8-14-96).

PSH Recovery in gallons = ((PSH Thickness in inches - 2") x 60" x 27") / 231 in^3 /gal)

* System shut down due to electrical surge, restarted 10/1/96.

~ 970 gallon recovered prior to 8/14 start-up.

Shell Development Company
A Division of Shell Oil Company
Interoffice Memorandum

JULY 17, 1996

FROM: ILEANA RHODES

TO: NEAL STIDHAM

SUBJECT: ANALYSIS OF CRUDE OIL SAMPLES FROM DENTON STATION

Six samples of crude oil were analyzed to determine if the samples were the same type of crude oil and assess the relative weathering, if any. The samples were analyzed using gas chromatography with a flame ionization detector (GC-FID) at Shell's Westhollow Technology Center to obtain the chromatograms or "fingerprints" and approximate boiling point/carbon number distribution up to carbon number 26, and at Triton Analytics using ASTM D2887 to obtain the boiling point/carbon number distribution extending beyond carbon number 26. Additional information is obtained from the analysis at Shell on selected individual components in crude oil that are often used to determine if crudes are potentially from the same source and the degree of weathering. Review of all the data obtained clearly indicates that all six samples are the same type of crude oil with no indication of significant weathering except sample MW-4 which shows some losses of light components. There is no evidence of weathering due to bacterial degradation in any of the samples.

Fingerprint Analysis and Approximate Boiling Point/Carbon Number Distribution

Figures 1-6 show the chromatograms of all six samples. It is clear that all samples have the same characteristic fingerprints which indicates that all samples are similar and most likely from the same source. Figures 7-8 and Table 1-2 also show the similar distribution of groups of hydrocarbons for all six samples.

There are two primary types of weathering of crude oils: evaporation (loss of the more volatile components) and bacterial degradation (preferential loss of n-alkanes over branched alkanes). These chromatograms clearly show similar proportion (~40%) of the more volatile hydrocarbons (<C12) in all samples except MW-4 (~34%). All samples show abundance of n-alkanes which indicates that none of the samples have undergone significant biodegradation.

Source and Biodegradation Assessment Using Selected Components

The analysis performed at Shell allows the determination of selected individual hydrocarbons which can be used to assess if the samples are potentially of the same source and to evaluate if biodegradation has taken place to the same extent in a set of samples.

- Source

  The isoprenoids farnesane, norpristane, pristane and phytane are commonly used to determine if samples are potentially of the same source. These compounds are branched alkanes that are relative resistant to biodegradation with respect to n-alkanes. Samples of the same crude source must have the same ratios. Table 3 includes the ratios of farnesane to norpristane and of pristane to phytane. It is clear that all six samples have the same corresponding ratios

- Biodegradation

  The n-alkanes are biodegraded preferentially over branched alkanes such as the isoprenoids described above. The n-alkanes are more abundant in crude oil than the branched alkanes and the ratios of n-alkanes to branched alkanes are typically greater than 1 when biodegradation has not yet occurred in a sample. The ratios of n-alkanes to selected isoprenoids of similar boiling points are typically used to determine extent of biodegradation. Table 4 summarizes four sets of such ratios. All are significantly greater than one and equally important, the ratios are essentially the same. All six samples do not show evidence of biodegradation, and if any, it is the same for all samples.

Summary

All six samples of crude oil appear to be from the same source with no indication of weathering with the exception of MW-4 which shows some evidence of loss of volatiles up to the C8 range with respect to the other five samples.

No further work is planned for these samples. Please contact Ileana Rhodes at 713-544-8215, Profs IAR, E-Mail iarhodes@shellus.com if you have any questions.

cc: E.M. Hinojosa
G.E. Spinnler
J.H. Miller
L.P. Brzuzy
M. Huot

Table 1: GC-FID Analysis up to C26

Approximate Carbon Number Range	DENTON STATION CRUDE OIL SAMPLES					
	Area % WW-1	Area % MW-1	Area % MW-3	Area % MW-4	Area % MW-5	Area % MW-7
<=C6	3.29	2.57	3.36	0.76	3.12	3.07
>C6<=C7	7.70	7.32	7.81	4.24	7.65	7.52
>C7<=C8	10.40	10.46	10.44	8.35	10.42	10.31
>C8<=C9	7.98	8.18	7.96	7.42	7.91	7.91
>C9<=C10	8.00	8.35	7.78	8.29	7.71	7.66
>C10<=C11	6.35	6.65	6.27	6.73	6.15	6.18
>C11<=C12	5.69	5.96	5.55	6.13	5.45	5.46
>C12<=C13	5.65	5.91	5.60	6.15	5.46	5.49
>C13<=C14	5.44	5.67	5.45	5.98	5.28	5.33
>C14<=C15	4.80	4.98	4.77	5.28	4.63	4.68
>C15<=C16	4.26	4.37	4.22	4.99	4.34	4.37
>C16<=C17	3.70	3.80	3.59	4.48	3.90	3.93
>C17<=C18	4.05	4.07	3.80	4.57	4.03	3.97
>C18<=C19	3.69	3.66	3.95	4.42	3.91	3.97
>C19< =20	3.39	3.30	3.24	3.90	3.28	3.52
>C20<=C21	3.31	3.12	3.42	3.86	2.86	3.50
>C21<=C22	2.86	2.71	2.94	3.33	2.99	3.05
>C22<=C23	2.74	2.50	2.72	2.97	2.99	2.81
>C23<=C24	2.40	2.37	2.72	2.86	2.84	2.21
>C24<=C25	2.42	2.02	2.27	2.98	2.50	2.46
>C25<=C26	1.90	2.03	2.13	2.30	2.56	2.62
Normalized Wt %	100.02	100	99.99	99.99	99.98	100.02

NOTE: The method used for these samples is for analysis of materials with a carbon range of C6 to C26. Any materials beyond C26 cannot be detected.

ASTM D2887 (SIM DIS) Results:						
>C26	20	20	20	20	20	20

Table 2: **GC-FID Analysis Renormalized with Simulated Distillation Data to Include C26+ Hydrocarbons (ASTM D2887)**

Approximate Carbon Number Range	DENTON STATION CRUDE OIL SAMPLES					
	Area % WW-1	Area % MW-1	Area % MW-3	Area % MW-4	Area % MW-5	Area % MW-7
<=C6	2.63	2.06	2.69	0.61	2.50	2.46
>C6<=C7	6.16	5.86	6.25	3.39	6.12	6.02
>C7<=C8	8.32	8.37	8.35	6.68	8.34	8.25
>C8<=C9	6.38	6.54	6.37	5.94	6.33	6.33
>C9<=C10	6.40	6.68	6.22	6.63	6.17	6.13
>C10<=C11	5.08	5.32	5.02	5.38	4.92	4.94
>C11<=C12	4.55	4.77	4.44	4.90	4.36	4.37
>C12<=C13	4.52	4.73	4.48	4.92	4.37	4.39
>C13<=C14	4.35	4.54	4.36	4.78	4.22	4.26
>C14<=C15	3.84	3.98	3.82	4.22	3.70	3.74
>C15<=C16	3.41	3.50	3.38	3.99	3.47	3.50
>C16<=C17	2.96	3.04	2.87	3.58	3.12	3.14
>C17<=C18	3.24	3.26	3.04	3.66	3.22	3.18
>C18<=C19	2.95	2.93	3.16	3.54	3.13	3.18
>C19< =20	2.71	2.64	2.59	3.12	2.62	2.82
>C20<=C21	2.65	2.50	2.74	3.09	2.29	2.80
>C21<=C22	2.29	2.17	2.35	2.66	2.39	2.44
>C22<=C23	2.19	2.00	2.18	2.38	2.39	2.25
>C23<=C24	1.92	1.90	2.18	2.29	2.27	1.77
>C24<=C25	1.94	1.62	1.82	2.38	2.00	1.97
>C25<=C26	1.52	1.62	1.70	1.84	2.05	2.10
>C26(from D-2887)	20	20	20	20	20	20
Normalized Wt%	100.02	100.00	99.99	99.99	99.98	100.02

Table 3: Selected Ratios of Branched Alkanes Relatively Resistant to Biodegradation used for Source Correlation

	Farnesane/ Norpristane	Pristane/ Phytane
MW-1	1.6	1.2
WW-1	1.6	1.2
MW-3	1.5	1.2
MW-4	1.6	1.2
MW-5	1.6	1.2
MW-7	1.6	1.2

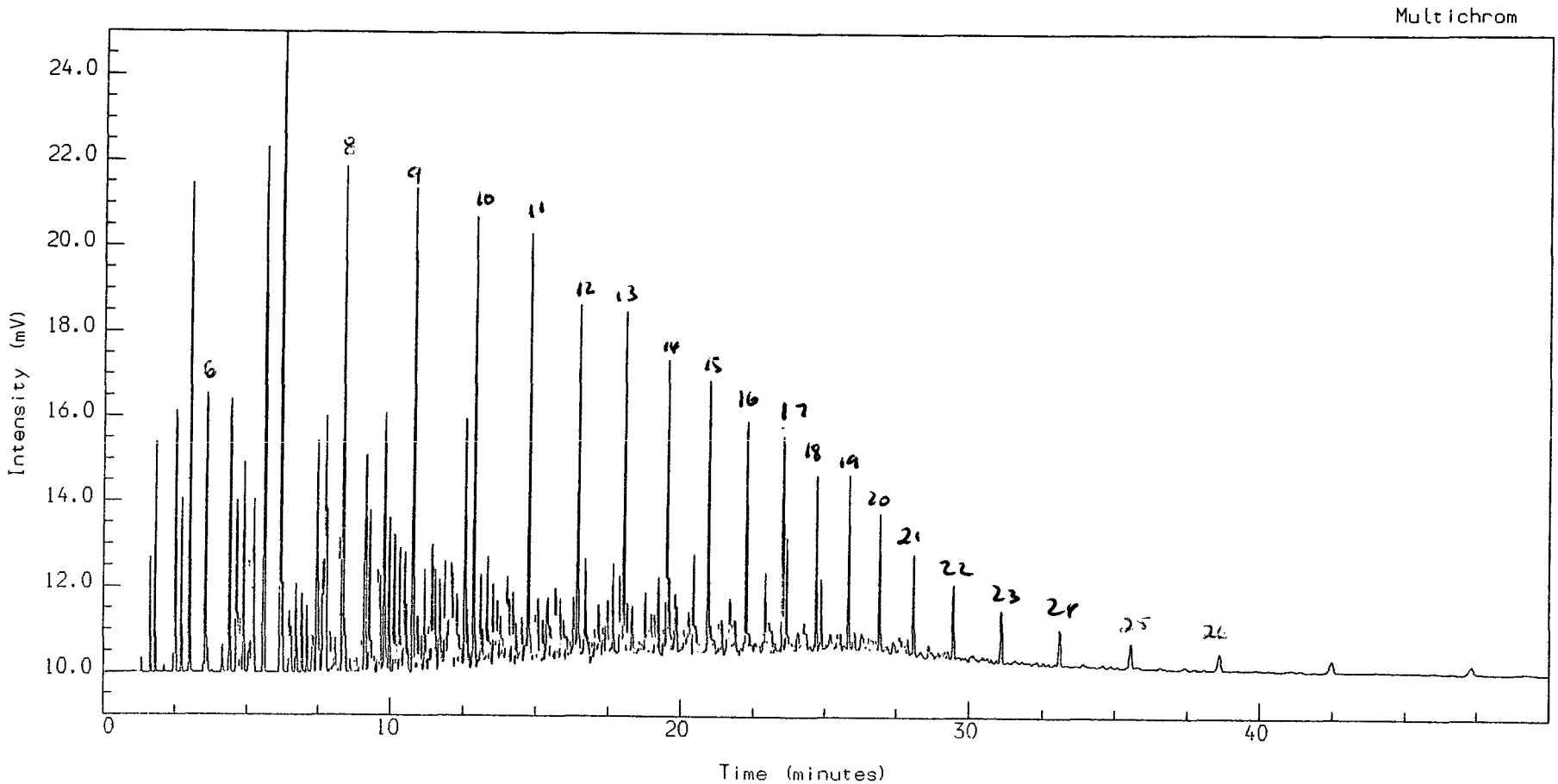
Table 4: Selected Ratios of n-Alkanes to Branched Alkanes of Similar Boiling Point used for Assessment of Biodegradation. Ratios >1 indicate no significant biodegradation

	nC14/ Farnesane	nC16/ Norpristane	nC17/ Pristane	nC18/ Phytane
MW-1	2.4	2.4	1.5	1.9
WW-1	2.4	2.5	1.6	2.0
MW-3	2.5	2.5	1.6	2.0
MW-4	2.5	2.6	1.6	2.1
MW-5	2.6	2.6	1.6	2.1
MW-7	2.5	2.5	1.6	2.0

WR410A Westhollow Technology Center Multichrom System

Analysis Name : [GW-HW] 105 OI070296,2,1.

MW-1 4/4/96 Amount : 1.000



Instrument :

Channel Title : Channel #105

Lims ID :

Acquired on 2-JUL-1996 at 11:43

Reported on 2-JUL-1996 at 12:55

Method : OI070296

Calibration :

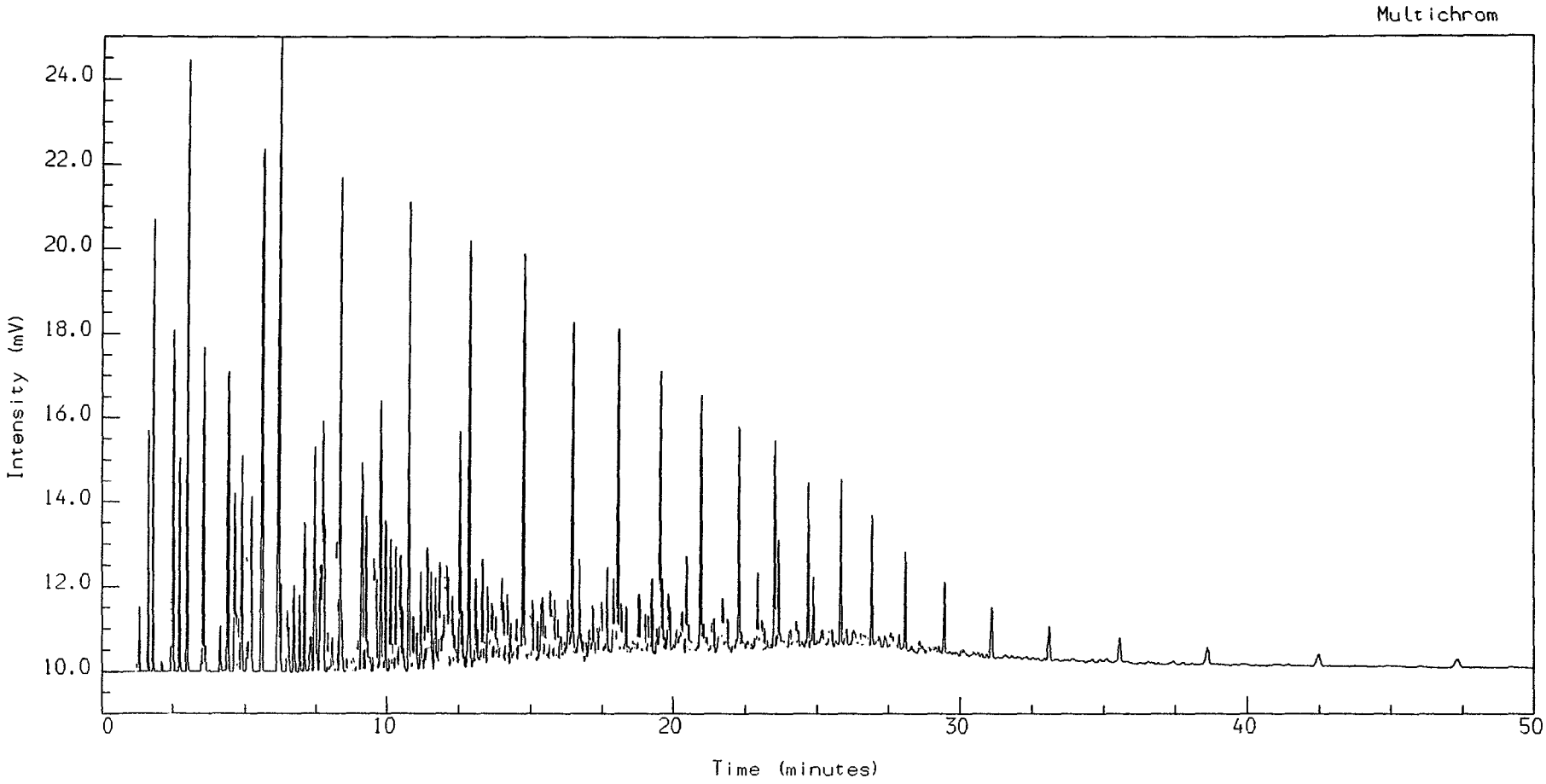
Run Sequence : TPH

Figure 1

WR410A Westhollow Technology Center Multichrom System

Analysis Name : [GW-HW] 105 OI070296,3,1.

WW-1 4/4/96 Amount : 1.000



Instrument :
Channel Title : Channel #105
Lims ID :
Acquired on 2-JUL-1996 at 12:41
Reported on 2-JUL-1996 at 14:48

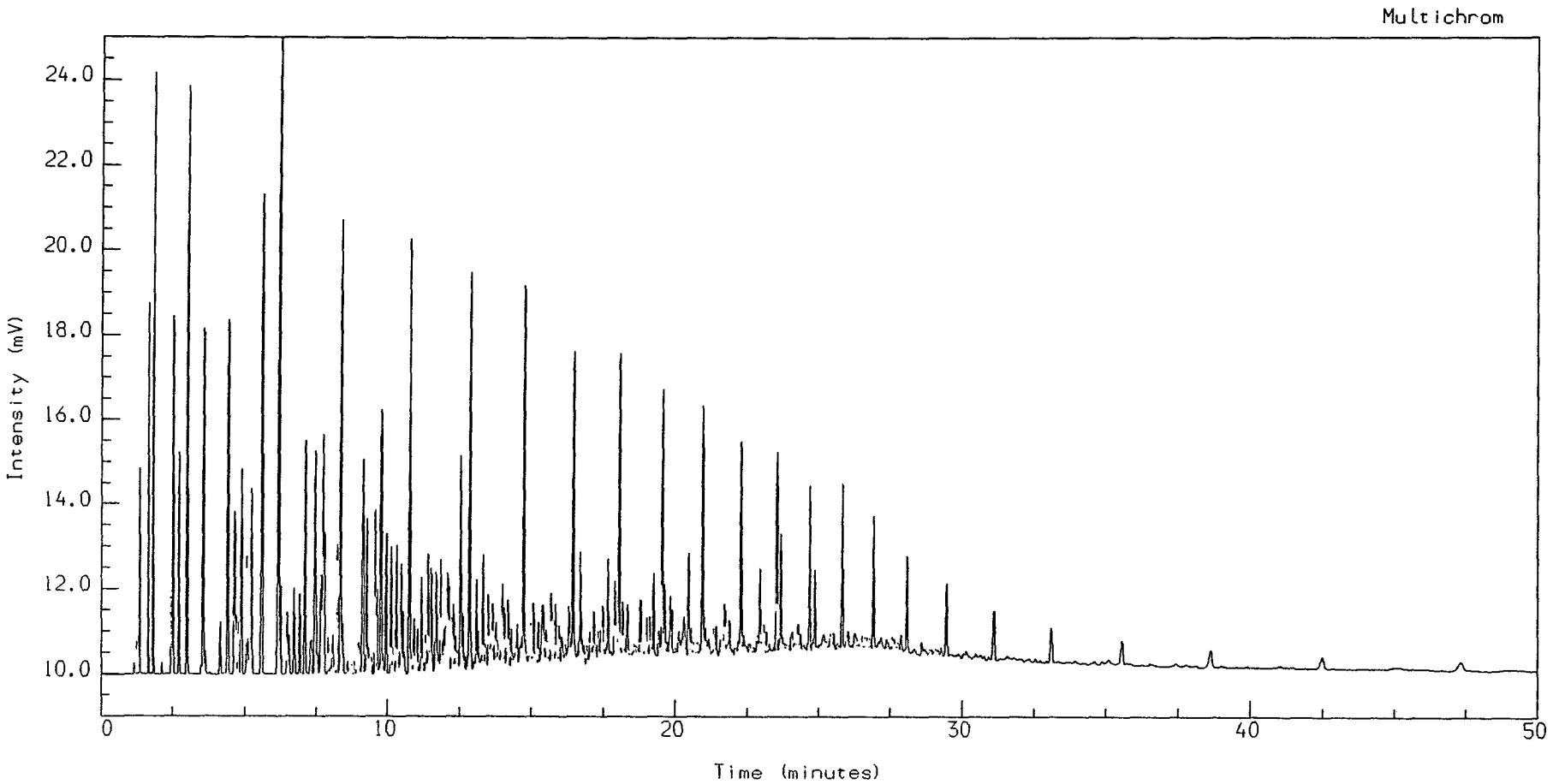
Method : OI070296
Calibration :
Run Sequence : TPH

Figure 2

WR410A Westhollow Technology Center Multichrom System

Analysis Name : [GW-HW] 105 OI070296,4,1.

MW-3 4/4/96 Amount : 1.000



Instrument :
Channel Title : Channel #105
Lims ID :
Acquired on 2-JUL-1996 at 13:39
Reported on 2-JUL-1996 at 14:48

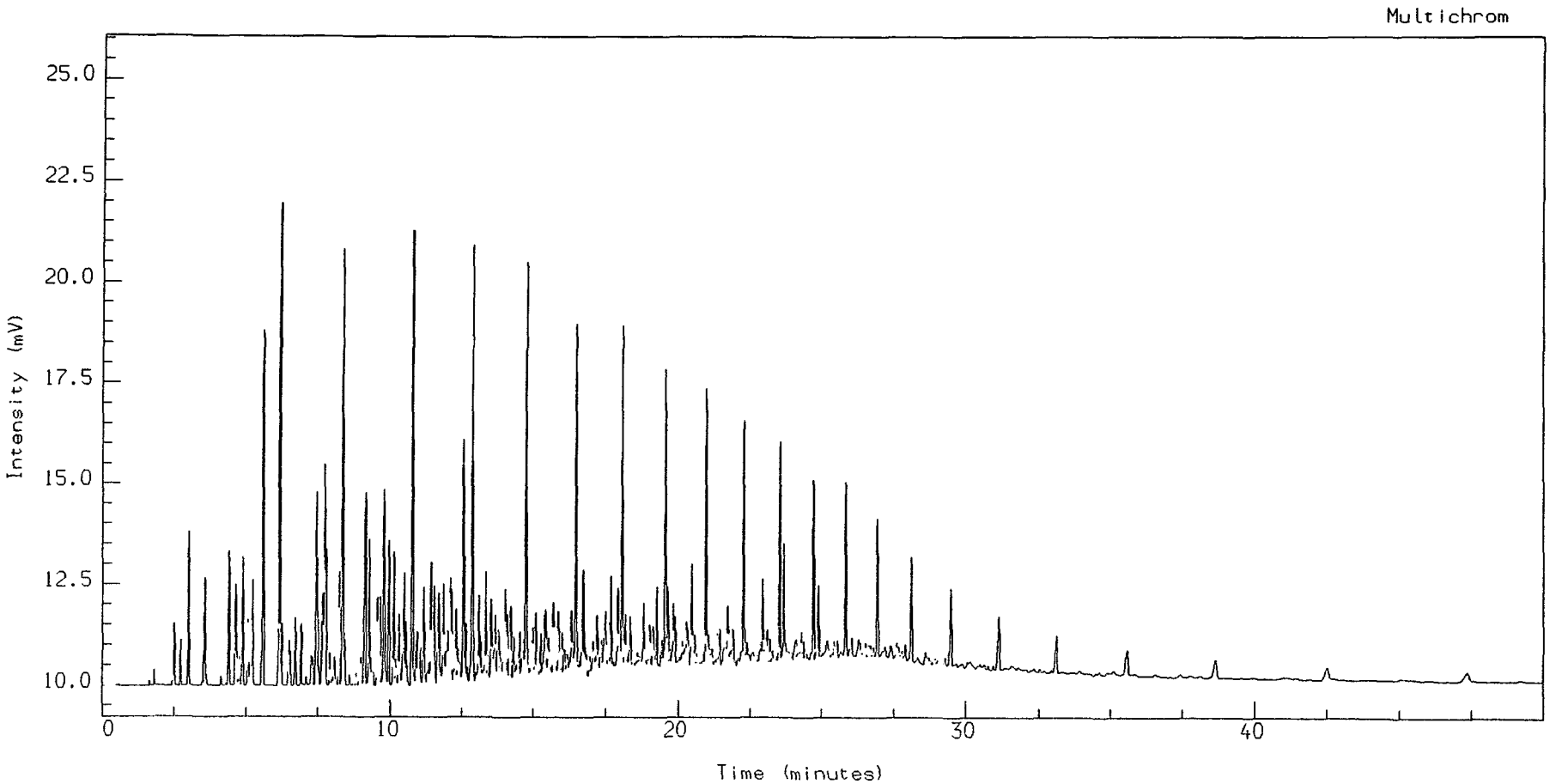
Method : OI070296
Calibration :
Run Sequence : TPH

Figure 3

WR410A Westhollow Technology Center Multichrom System

Analysis Name : [GW-HW] 105 OI070296,5,1.

MW-4 4/4/96 Amount : 1.000



Instrument :
Channel Title : Channel #105
Lims ID :
Acquired on 2-JUL-1996 at 14:38
Reported on 3-JUL-1996 at 06:54

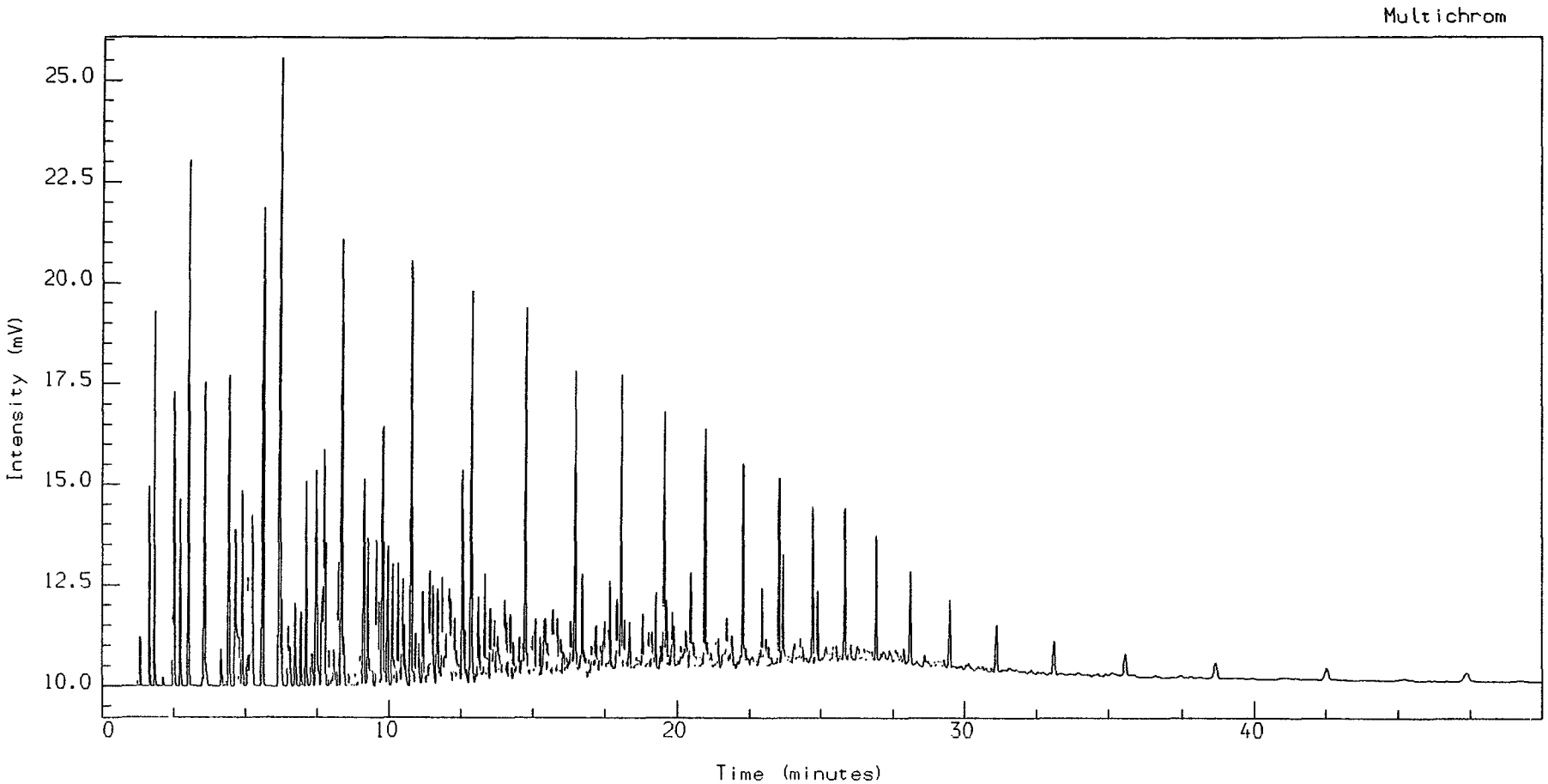
Method : OI070296
Calibration :
Run Sequence : TPH

Figure 4

WR410A Westhollow Technology Center Multichrom System

Analysis Name : [GW-HW] 105 OI070296,6,1.

MW-5 4/4/96 Amount : 1.000



Instrument :

Channel Title : Channel #105

Lims ID :

Acquired on 2-JUL-1996 at 15:36

Reported on 3-JUL-1996 at 06:54

Method : OI070296

Calibration :

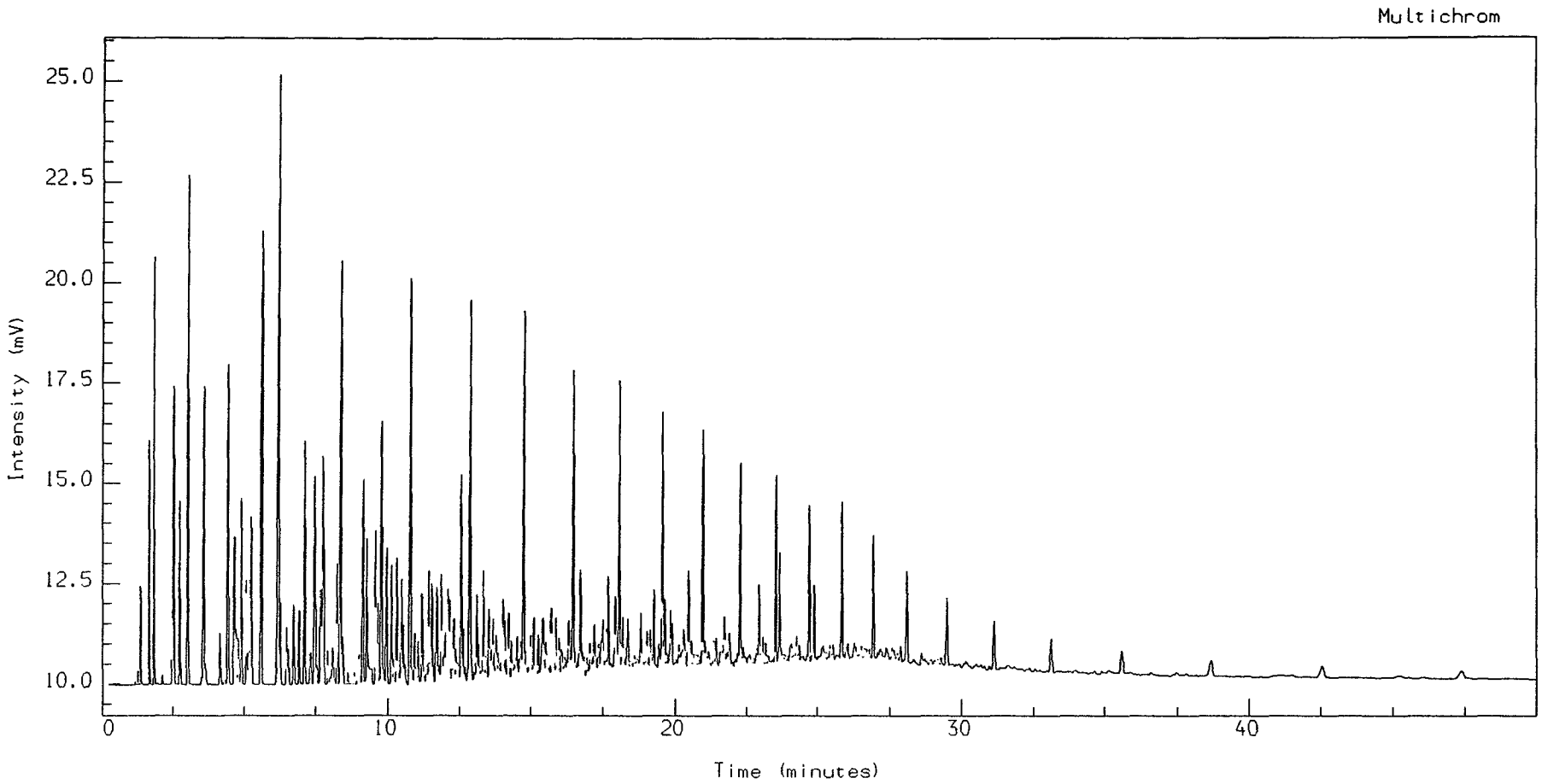
Run Sequence : TPH

Figure 5

WR410A Westhollow Technology Center Multichrom System

Analysis Name : [GW-HW] 105 OI070296,7,1.

MW-7 4/4/96 Amount : 1.000



Instrument :
Channel Title : Channel #105
Lims ID :
Acquired on 2-JUL-1996 at 16:35
Reported on 3-JUL-1996 at 06:55

Method : OI070296
Calibration :
Run Sequence : TPH

Figure 6

Figure 7: APPROXIMATE % BOILING POINT/CARBON NUMBER DISTRIBUTION (BELOW C26)

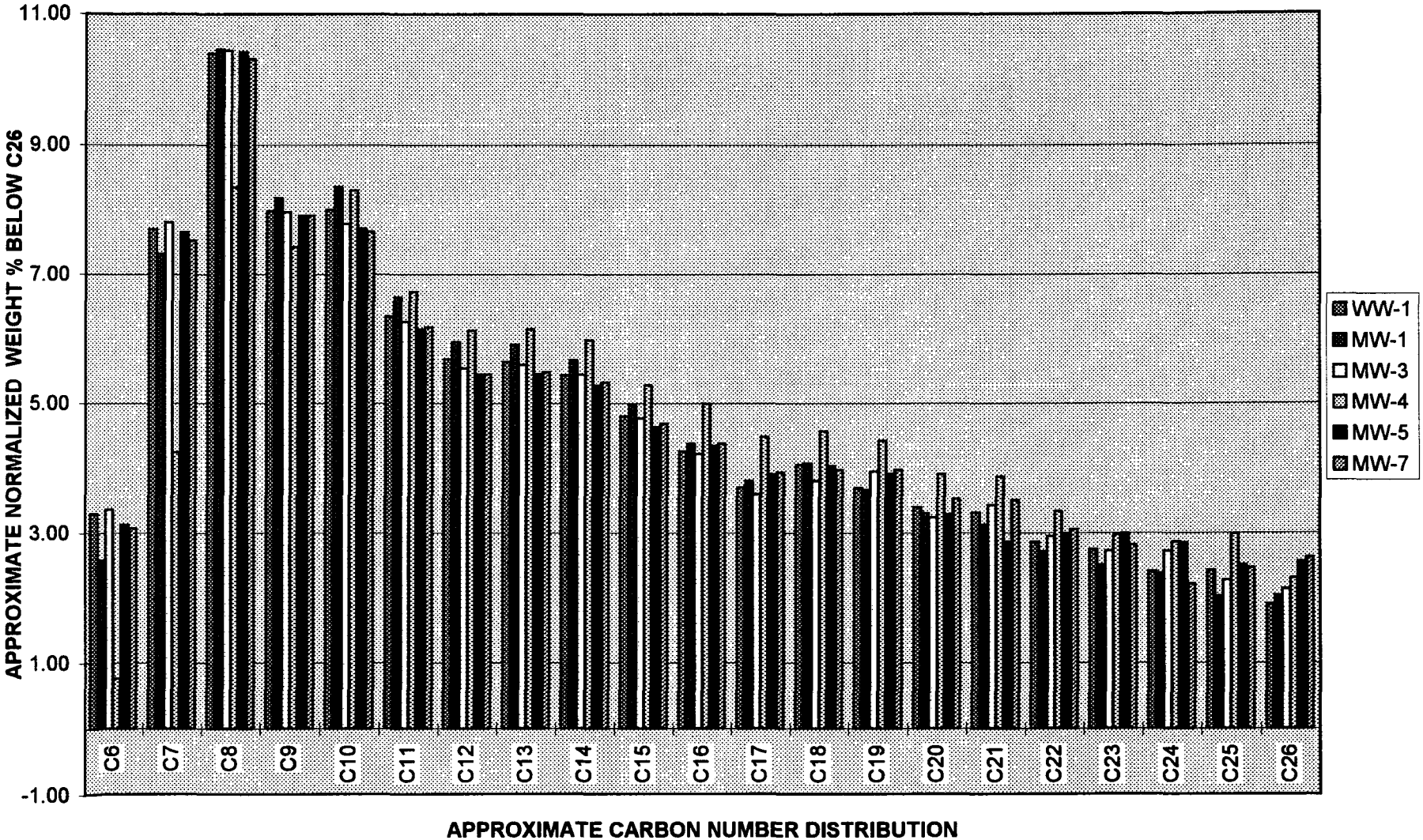
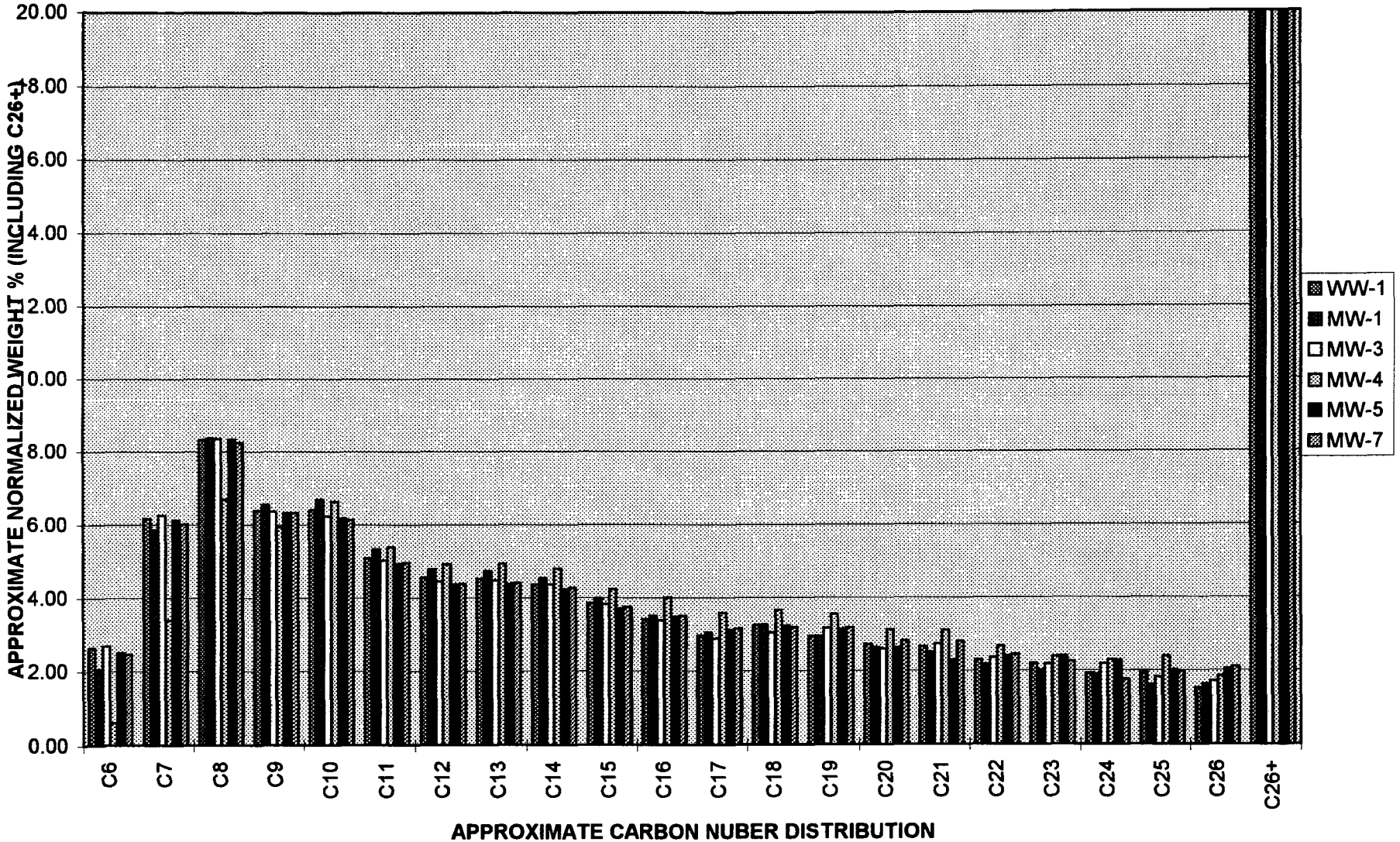


Figure 8: APPROXIMATE % BOILING POINT/CARBON NUMBER DISTRIBUTION (INCLUDING C26+)



SwL SOUTHWESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

1703 West Industrial Avenue • P.O. Box 2150 • Midland, Texas 79702

Report of tests on	Petroleum	File No.	6165100
Client	Cura, Inc.	Report No.	80889
Delivered by	Bill Smith	Report Date	05-27-93
		Date Received	05-24-93

Identification: Denton Station

REPORT OF PETROLEUM ANALYSIS

Parameters	Results	Date Performed	Analyst	Method
Gravity, °API @ 60°F	41.2	05-24-93	C.B.	ASTM D-287

Copies: Cura, Inc.
Attn: Bill Smith

Reviewed by

SOUTHWESTERN LABORATORIES

SWL SOUTHWESTERN LABORATORIES

1703 West Industrial Avenue • P.O. Box 2150, Midland, Texas 79702 • 915/683-3349

Client Cura Incorporated
3001 N. Big Spring Suite 101
Midland, Tx. 79705

Attn: Wes Root

Client No. 26165100
Report No. M3-05-045
Report Date 06/01/93 20:20

Project Denton Station

Date Sampled _____ Sampled By _____

Sample Type Petroleum Transported by Bill Smith

P.O. # _____ Date Received 06/29/93

Lab No.	Sample Identification
M3-05-045-01	Denton Station

SOUTHWESTERN LABORATORIES

CB
Reviewed By

ALLAN B JOHNSTON

Order # M3-05-045
06/01/93 21:02
Client: Cura Incorporated

TEST RESULTS BY SAMPLE

Sample Description: Denton Station Lab No: 01A
Test Description: VISCOSITY Method: ASTM D-445 Test Code: VIS

Parameter	Method	Temperature	Results	Units	Date Rlz	Analyst
VISCOSITY	ASTM D-445	70	36.8	S.U.S.	06/01/93	SAB

Shell Oil Products Company

Two Shell Plaza
P. O. Box 2099
Houston, TX 77252-2099

July 2, 1996

William Olson
State of New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco St.
Santa Fe, New Mexico 87504

SUBJECT: DEVELOPMENT WATER, DENTON AND LEA STATIONS

Dear Mr. Olson,

Enclosed are copies of the laboratory results from sampling the development water at the subject stations. All samples were non-detect for benzene. Unless I hear otherwise from you, I plan to surface discharge this water at the time we are on site. If you have any questions please call me at 713-241-2961.

Sincerely,

Neal Stidham
Staff Engineer
Shell Oil Company
Representing Shell Pipe Line Corporation

cc: Paul Newman-EOTT Energy Corp.
Jerry Sexton-OCD Hobbs

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 96-06-754

Approved for Release by:

Debbie Proctor, Project Manager Date: 10/25/96

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9606754-01

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 06/24/96

PROJECT: Benzene Analysis
SITE: Denton Station EV-373
SAMPLED BY: Enercon Services
SAMPLE ID: D.W.

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 06/12/96 13:30:00
DATE RECEIVED: 06/15/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene	ND	1 M	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	104		
4-Bromofluorobenzene	99		

METHOD 8020***
Analyzed by: RL
Date: 06/21/96

ND - Not detected. (M) - Method Detection Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

QUALITY CONTROL

DOCUMENTATION

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

Matrix: Aqueous
Units: µg/L

Batch Id: HP_U960620050500

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	45	90.0	62 - 121
Toluene	ND	50	42	84.0	66 - 136
EthylBenzene	ND	50	43	86.0	70 - 136
O Xylene	ND	50	43	86.0	74 - 134
M & P Xylene	ND	100	86	86.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
BENZENE	ND	20	19	95.0	20	100	5.13	25	39 - 150
TOLUENE	ND	20	19	95.0	19	95.0	0	26	56 - 134
ETHYLBENZENE	ND	20	18	90.0	19	95.0	5.41	38	61 - 128
O XYLENE	ND	20	19	95.0	19	95.0	0	29	40 - 130
M & P XYLENE	ND	40	38	95.0	39	97.5	2.60	20	43 - 152

Analyst: RL
Sequence Date: 06/20/96
SPL ID of sample spiked: 9606722-03A
Sample File ID: U___443.TX0
Method Blank File ID:
Blank Spike File ID: U___437.TX0
Matrix Spike File ID: U___440.TX0
Matrix Spike Duplicate File ID: U___441.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '94)

SAMPLES IN BATCH(SPL ID):

9606722-03A 9606722-01A 9606722-02A 9606722-04A
9606753-01A 9606754-01A 9606783-01A 9606783-02A
9606783-03A 9606783-04A 9606752-01A 9606752-02A
9606752-03A 9606752-04A 9606752-05A 9606760-18A
9606760-19A 9606672-01A 9606470-01A 9606470-03A

QC Officer

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

TU 8260 6/15/96 pp 6/17/96

96067754

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING

CHAIN OF CUSTODY RECORD NO. H 17860

Date: 6-14-96
Page 1 of 1

SITE ADDRESS: Denton Station
EV-373

WIC #:

CONSULTANT NAME & ADDRESS: Enercon Service Inc
1221 River Bend, Ste 259
Dallas TX

CONSULTANT CONTACT: Charles Harbin

PHONE: (214) 631-7693 FAX: (214) 631-7699

SAMPLED BY: Bill D. Smith

CHECK ONE BOX ONLY CT/DT

- QUARTERLY MONITORING ☐ 5461
- SITE INVESTIGATION ☐ 5441
- SOIL FOR DISPOSAL ☐ 5442
- WATER FOR DISPOSAL ☐ 5443
- AIR SAMPLER - SYS O+M ☐ 5452
- WATER SAMPLE - SYS O+M ☐ 5453
- OTHER ☐

ANALYSIS REQUEST: (CHECK APPROPRIATE BOX)

- BTEX 602 ☐ 8020 ☐ WITH MTBE ☐
- BTEX/GAS HYDROCARBONS PID/FID ☐ WITH MTBE
- VOL 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐
- PNA/PAH 8310 ☐ 8100 ☐ 610 ☐
- SEMI - VOL 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐
- TPH/IR 418.1 ☐ SM503 ☐ ☐ ☐
- TPH/GC 8015 Mod. GAS ☐ 8015 Mod DIESEL ☐
- TCLP METALS ☐ VOL ☐ SEMI-VOL ☐ PEST ☐ HERB ☐
- EP TOX METALS ☐ PESTICIDES ☐ HERBICIDES ☐
- REACTIVITY ☐ CORROSIVITY ☐ IGNITABILITY ☐

OTHER: ✓ BENZENE

REMARKS

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	MATRIX: H2O	SOIL	AIR	SLUDGE	OTHER	METHOD PRESERVED: HCl	HNO3	H2SO4	NONE	OTHER: ICE	NO. OF CONTAINERS	CONTAINER SIZE
D.W.	6/12/96	1330	✓		✓					✓				✓	3	40 ml

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Bill D. Smith	6-14-96	1400	[illegible]	6/5/96	1000
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

2°C Intact

BILL NO.:

LABORATORY:

SHELL CONTACT: Hal Stidham PHONE: 241-2961 FAX:

TURN AROUND TIME (CHECK ONE)

7 DAYS ☐ (NORMAL) 14 DAYS ☐ Normal

48 HOURS ☐ OTHER ☐

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN OF CUSTODY WITH INVOICE AND RESULTS

DISTRIBUTION: PINK Sampling Coordinator - WHITE & YELLOW Accompanies Shipment - WHITE Returned with Report

SPL Houston Environmental Laboratory

Sample Login Checklist

Date:	Time:
6/14/96	1000

SPL Sample ID:
9606754

			Yes	No
1	Chain-of-Custody (COC) form is present.		✓	
2	COC is properly completed.		✓	
3	If no, Non-Conformance Worksheet has been completed.			
4	Custody seals are present on the shipping container.		✓	
5	If yes, custody seals are intact.		✓	
6	All samples are tagged or labeled.		✓	
7	If no, Non-Conformance Worksheet has been completed.			
8	Sample containers arrived intact		✓	
9	Temperature of samples upon arrival:		2° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	118847119 6	
		Other:		
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name:	Date:
S West	6/14/96

Shell Oil Products Company

Two Shell Plaza
P. O. Box 2099
Houston, TX 77252-2099

April 15, 1996

William Olson
State of New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco St.
Santa Fe, New Mexico 87504

SUBJECT: DENTON STATION WELL INSTALLATION

Dear Mr. Olson,

Previously I had requested and you had approved our installation of 1-2 off-site wells at Denton Station this year. Your approval letter of March 5, 1996 requested a final report to your office by July 1, 1996. Since my letter of January 5, we have manually bailed the product from these wells, monitored product recovery, and tested the product over a 6 week period as well as conducted our April groundwater sampling. Based upon the results of the testing and product recovery it is clear that the station tanks were not the source of this material. We are taking steps, this month, to identify the source of this product including excavation and pressure testing. Furthermore the dissolved oxygen content in MW-11 is sufficient to degrade the dissolved benzene in the water sample, unless there is an on-going source. I believe that due to this D.O. concentration, once a source is eliminated, it should soon be observable in this well. In order to maximize the value of our wells, I am requesting a delay in the installation of additional wells until we are able to either locate this source or possibly identify a more appropriate well location. I would expect to have our assessment complete and well(s) installed no later than the fourth quarter of this year. If I do not here from you by May 1 I will presume concurrence with this request. If you have any questions please call me at 713-241-2961.

Sincerely,

Neal Stidham
Staff Engineer
Shell Oil Company
Representing Shell Pipe Line Corporation

cc: Paul Newman-EOTT Energy Corp.
Jerry Sexton-OCD Hobbs

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 14, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. Z-765-962-556

Mr. Neal Stidham
Shell Pipe Line Corporation
Two Shell Plaza
P.O. Box 2099
Houston, Texas 77252-2099

RE: GROUND WATER MONITORING REPORTS
DENTON AND LEA CRUDE PUMP STATION
LEA COUNTY, NEW MEXICO

Dear Mr. Stidham:

The New Mexico Oil Conservation Division (OCD) has reviewed Shell Oil Products Company's (SOPC) January 18, 1996 "QUARTERLY GROUNDWATER MONITORING REPORTING, DENTON AND LEA STATIONS, LEA COUNTY, NEW MEXICO". This document contains SOPC's request to submit the results of quarterly ground water monitoring for the Denton and Lea Crude Stations on an annual basis.

The above referenced request is approved on the condition that the annual reports be submitted to the OCD by April 1 of each respective year.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: Jerry Sexton, OCD Hobbs District Supervisor
Wayne Price , OCD Hobbs Office

Z 765 962 556

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

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Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, March 1993

Fold at line over top of envelope to the right of the return address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 5, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. Z-765-962-548

Mr. Neal Stidham
Shell Pipe Line Corporation
Two Shell Plaza
P.O. Box 2099
Houston, Texas 77252-2099

RE: GROUND WATER INVESTIGATION
DENTON CRUDE PUMP STATION
LEA COUNTY, NEW MEXICO

Dear Mr. Stidham:

The New Mexico Oil Conservation Division (OCD) has completed a review of Shell Oil Products Company's (SOPC) January 8, 1996 "ADDITIONAL SUBSURFACE DELINEATION, DENTON STATION, LEA COUNTY, NEW MEXICO". This document contains SOPC's work plan for further investigation of the extent of ground water contamination related to SOPC's Denton Crude Station in Lea County, New Mexico.

The above work plan is approved with the following conditions:

1. All monitor wells will be constructed as set out below:

   a. A minimum of 15 feet of well screen will be installed with at least 10 feet of well screen below the water table and 5 feet of well screen above the water table.

   b. An appropriately sized gravel pack will be set around the well screen from the bottom of the hole to 2-3 feet above the top of the well screen.

   c. A 2-3 foot bentonite plug will be placed above the gravel pack.

   d. The remainder of the hole will be sealed with cement containing 3-5 % bentonite.

2. SOPC will develop each well upon completion using EPA approved procedures.

3. SOPC will sample ground water from all monitor wells. Ground water from these monitor wells will be sampled and analyzed for concentrations of benzene, toluene, ethylbenzene, xylene (BTEX), major cations and anions, heavy metals and polynuclear aromatic hydrocarbons using EPA approved methods.

4. SOPC will submit a report on the investigation to the OCD by July 1, 1996. The report will contain:

   a. A description of all activities which occurred during the investigation, conclusions and recommendations.

   b. A summary of the laboratory analytic results of water quality sampling of the monitor wells.

   c. A water table elevation map using the water table elevation of the ground water in all monitor wells.

   d. A geologic log and as built well completion diagram for each well.

5. SOPC will notify the OCD at least one week in advance of all scheduled activities such that the OCD has the opportunity to witness the events and or split samples.

6. All original documents submitted for approval will be submitted to the OCD Santa Fe Office with copies provided to the OCD Hobbs District Office.

Please be advised that OCD approval does not relieve SOPC of liability should the investigation activities determine that contamination exists which is beyond the scope of the work plan, or, if the activities fail to adequately determine the extent of contamination related to SOPC's activities. In addition, OCD approval does not relieve SOPC of responsibility for compliance with any other federal, state or local laws and/or regulations.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: Jerry Sexton, OCD Hobbs District Supervisor
Wayne Price , OCD Hobbs Office

Z 765 962 548

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, March 1993

Fold at line over top of envelope to the right of the return address

Shell Oil Products Company

Two Shell Plaza
P. O. Box 2099
Houston, TX 77252-2099

January 18, 1996

William Olson
State of New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco St.
Santa Fe, New Mexico 87504

SUBJECT: QUARTERLY GROUNDWATER MONITORING REPORTING, DENTON AND LEA STATIONS, LEA COUNTY NEW MEXICO

Dear Mr. Olson,

By way of this letter I am requesting approval to modify our quarterly reporting requirement to annual reporting for Lea and Denton Stations. This request will affect neither the number nor frequency of wells currently monitored or sampled at either station. After three years of monitoring, we have seen very little intra-well variation. However should significant change be detected, such as the development of Phase Separated Hydrocarbon were none had been detected earlier, I will notify you within 7 days of receipt of the report.

This request will not affect the reporting of the additional delineation we have proposed at Denton nor any future work of this nature. Furthermore I realize that based upon the Denton work the number of wells in the monitoring program is subject to change.

I feel approval of this request will save the State of New Mexico and myself time and money while fully protecting both the environment and public. Thank you for your consideration of this request. If you have any questions please call me at 713-241-2961.

Sincerely,

Neal Stidham
Staff Engineer
Shell Oil Company
Representing Shell Pipe Line Corporation

cc: Paul Newman-EOTT Energy Corp.
Jerry Sexton-OCD Hobbs

Shell Oil Products Company

Two Shell Plaza
P. O. Box 2099
Houston, TX 77252-2099

January 8, 1996

William Olson
State of New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco St.
Santa Fe, New Mexico 87504

SUBJECT: ADDITIONAL SUBSURFACE DELINEATION, DENTON STATION, LEA COUNTY, NEW MEXICO

Dear Mr. Olson,

Enclosed is a map showing the proposed locations of wells MW-13 and MW-14 at Denton Station. The purpose of the delineation is to establish a monitoring well down gradient of the contamination plume. MW-13 will be located approximately 100 feet east/southeast of MW-11 and will be installed and sampled first, if the groundwater is not affected than MW-14 will not be installed. If MW-14 is needed, it will be installed approximately 100 feet further down gradient. A conceptual schematic of the well construction is attached. Groundwater at Denton is approximately 52 feet below land surface. Wells will be screened a minimum of fifteen feet below and five feet above the water table. Upon installation, wells will be developed and sampled. Groundwater will be analyzed for benzene, toluene, ethylebenzene, xylene, major cations and anions, heavy metals and polynuclear aromatic hydrocarbons. Shell Pipe Line Corporation will submit a final report containing the activities and findings during the field activity, laboratory analyses, a site groundwater elevation map, and geologic logs and as-built well construction diagrams for each well. The Oil Conservation Division will be notified at least one week prior to initiating well installation. I plan to have the well(s) installed by May 1, 1996.

If you have any questions please call me at 713-241-2961.

Sincerely,

Neal Stidham
Staff Engineer
Shell Oil Products Company
Representing Shell Pipe Line Corporation

cc: w/copy
Paul Newman-EOTT Energy Corp.
Jerry Sexton-OCD Hobbs

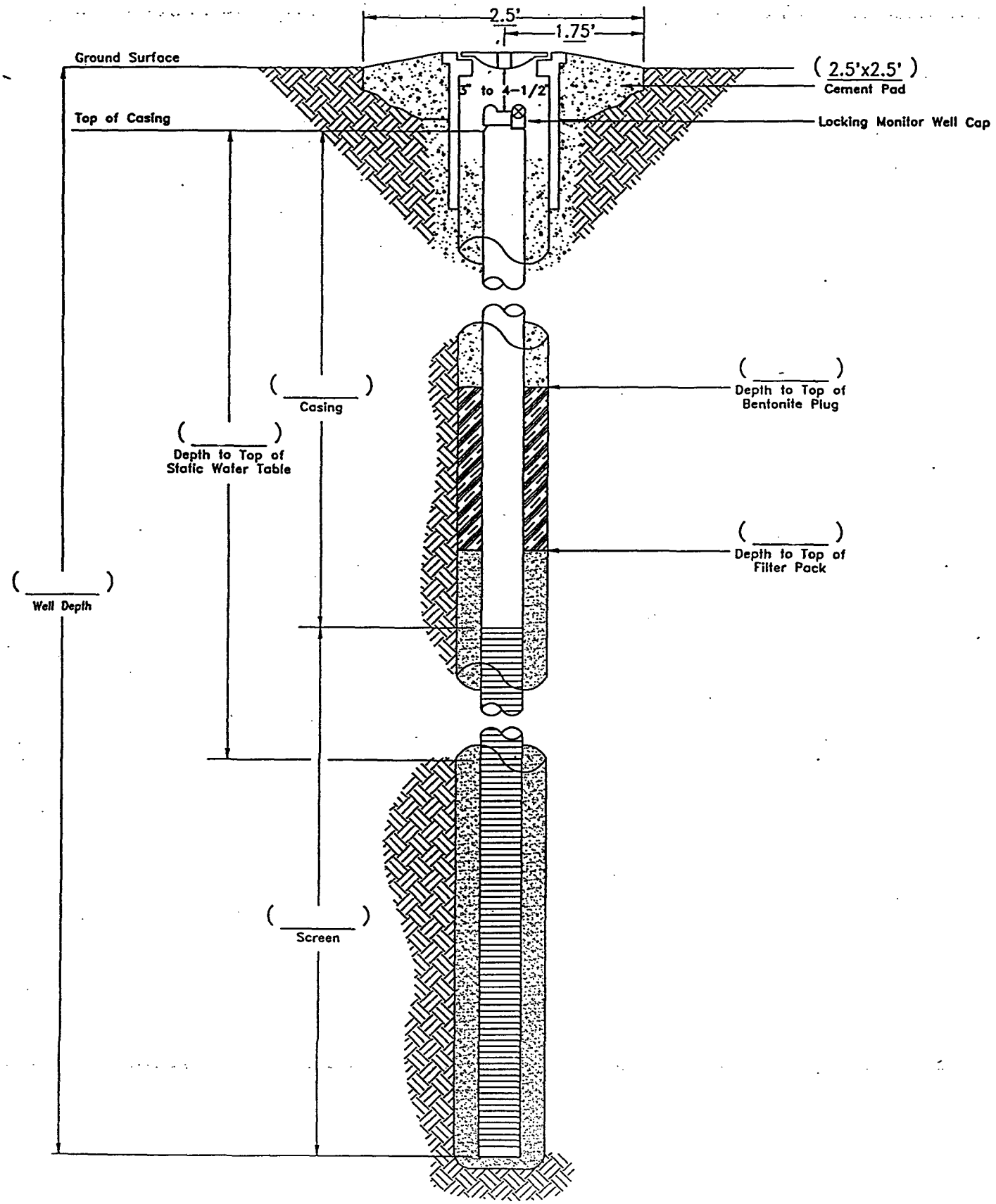
Company Drilled for: Shell Pipeline Corporation

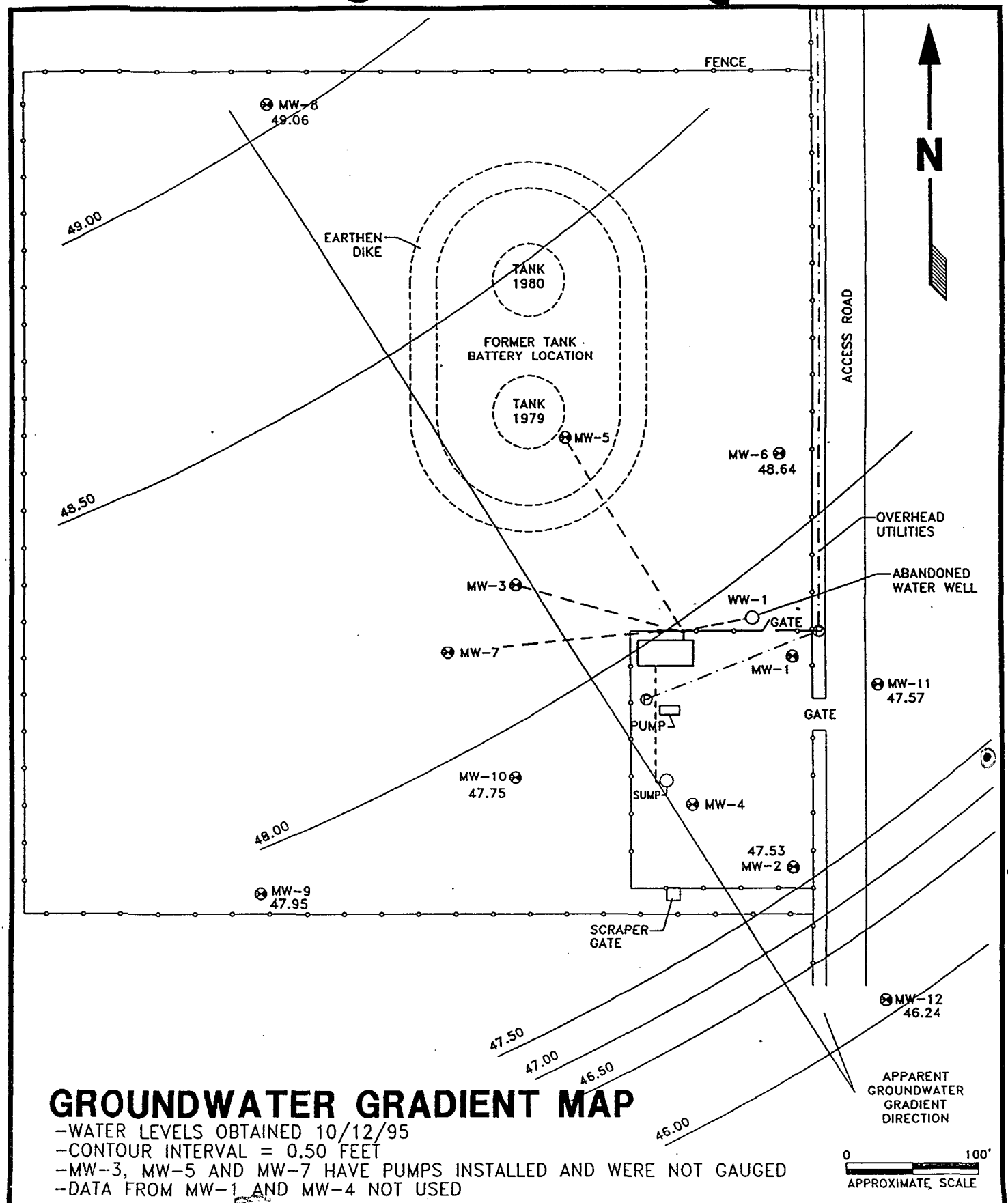
Location: Denton Station
SW4 Sec 15, T19S, R37E
Lea Co., New Mexico

Flush Mount Monitor Well Diagram

Job Number:	Installation Date:	Monitor Well Number:
		MW-

Depth:	Bore Size:	Casing Size:	Casing Elevation:	Screen Size:	Top of Water Elevation:
Feet	6 Inch	2 Inch	Feet	0.02 Inch	Feet





GROUNDWATER GRADIENT MAP

- WATER LEVELS OBTAINED 10/12/95
- CONTOUR INTERVAL = 0.50 FEET
- MW-3, MW-5 AND MW-7 HAVE PUMPS INSTALLED AND WERE NOT GAUGED
- DATA FROM MW-1 AND MW-4 NOT USED

CURA INC.
2735 VILLA CREEK DRIVE - TWO METRO SQUARE
BLDG. C - SUITE 250 - DALLAS, TX 75234
620-7117 FAX - 620-8219

DENTON STATION
SHELL PIPE LINE CORPORATION
LEA COUNTY, NEW MEXICO

DATE:	SCALE:
OCT 1995	SEE ABOVE
PROJECT NO.	FIGURE NO.
24-93678	1

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

Matrix: Aqueous
Units: µg/L

Batch Id: HP_R960411220500

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	45	90.0	62 - 121
Toluene	ND	50	45	90.0	66 - 136
EthylBenzene	ND	50	44	88.0	70 - 136
O Xylene	ND	50	47	94.0	74 - 134
M & P Xylene	ND	100	94	94.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
BENZENE	2	50	38	72.0	43	82.0	13.0	25	39 - 150
TOLUENE	ND	150	100	66.7	110	73.3	9.43	26	56 - 134
ETHYLBENZENE	ND	50	34	68.0	39	78.0	13.7	38	61 - 128
O XYLENE	ND	100	70	70.0	79	79.0	12.1	29	40 - 130
M & P XYLENE	ND	100	75	75.0	85	85.0	12.5	20	43 - 152

Analyst: VHZ
Sequence Date: 04/11/96
SPL ID of sample spiked: 9604230-01A
Sample File ID: R___834.TX0
Method Blank File ID: .
Blank Spike File ID: R___828.TX0
Matrix Spike File ID: R___829.TX0
Matrix Spike Duplicate File ID: R___830.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '94)

SAMPLES IN BATCH(SPL ID):

9604209-01A 9604316-02A 9604316-04A 9604316-03A
9604316-06A 9604316-05A 9604192-01A 9604192-02A
9604192-03A 9604299-01A 9604316-01A 9604397-01A
9604397-02A 9604397-03A 9604317-14A 9604227-03A
9604230-01A 9604230-02A 9604317-15A

QC Officer

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

TC 66 4/6 41'1'VY   1604316

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING

CHAIN OF CUSTODY RECORD NO. H 17659

Date: 4/4/96
Page 1 of 1

SITE ADDRESS: Denton Pump Station
JOB # EY-378

WIC #:

CONSULTANT NAME & ADDRESS: Enercon Services, Inc.
1221 River Bend Suite 259 Dallas, Tx 75247

CONSULTANT CONTACT: Charles Harlan

PHONE: (214) 631-7693   FAX: 631-7699

SAMPLED BY: CDH

CHECK ONE BOX ONLY CT/DT

- QUARTERLY MONITORING ☒ 5461
- SITE INVESTIGATION ☐ 5441
- SOIL FOR DISPOSAL ☐ 5442
- WATER FOR DISPOSAL ☐ 5443
- AIR SAMPLER - SYS O+M ☐ 5452
- WATER SAMPLE - SYS O+M ☐ 5453
- OTHER ______ ☐

ANALYSIS REQUEST: (CHECK APPROPRIATE BOX)

- BTEX 602 ☐ 8020 ☒ WITH MTBE ☐
- BTEX/GAS HYDROCARBONS PID/FID ☐ WITH MTBE
- VOL 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐
- PNA/PAH 8310 ☐ 8100 ☐ 610 ☐
- SEMI - VOL 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐
- TPH/IR 418.1 ☐ SM503 ____ ☐ ____ ☐ ____ ☐
- TPH/GC 8015 Mod. GAS ☐ 8015 Mod DIESEL ☐
- TCLP METALS ☐ VOL ☐ SEMI-VOL ☐ PEST ☐ HERB ☐
- EP TOX METALS ☐ PESTICIDES ☐ HERBICIDES ☐
- REACTIVITY ☐ CORROSIVITY ☐ IGNITABILITY ☐

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	MATRIX H2O	SOIL	AIR	SLUDGE	OTHER	METHOD PRESERVED HCl	HNO3	H2SO4	NONE	OTHER	NO. OF CONTAINERS	CONTAINER SIZE	BTEX 8020	OTHER	REMARKS
MW-9	4/4/96	11:30		X	X					X					3		✓		
MW-6	11	12:00		X	X					X					3		✓		
MW-2	11	12:10		X	X					X					3		✓		
MW-11	11	12:30		X	X					X					3		✓		
MW-12	11	12:45		X	X					X					3		✓		

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Charles D. Harlan	4/5/96	8:30	[signature] Salas	4/6/96	0945

BILL NO.:

LABORATORY:

SHELL CONTACT: Neal Stanley   PHONE (713) 241-2961   FAX:

TURN AROUND TIME (CHECK ONE)   Normal Turn

- 7 DAYS ☐ ([redacted])
- 14 DAYS ☐
- 48 HOURS ☐
- OTHER ☐

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN OF CUSTODY WITH INVOICE AND RESULTS

DISTRIBUTION: PINK Sampling Coordinator - WHITE & YELLOW Accompanies Shipment - WHITE Returned with Report

intact 3C

SPL Houston Environmental Laboratory

Sample Login Checklist

Date:	Time:
4/6/96	0945

SPL Sample ID:
9604316

			Yes	No
1	Chain-of-Custody (COC) form is present.		✓	
2	COC is properly completed.		✓	
3	If no, Non-Conformance Worksheet has been completed.			
4	Custody seals are present on the shipping container.		✓	
5	If yes, custody seals are intact.		✓	
6	All samples are tagged or labeled.		✓	
7	If no, Non-Conformance Worksheet has been completed.			
8	Sample containers arrived intact		✓	
9	Temperature of samples upon arrival:		3° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	827763543	
		Other:	✓	
11	Method of sample disposal:	SPL Disposal		
		HOLD		
		Return to Client		

Name:	Date:
Elicia Brown	4/6/96

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 96-07-944

Approved for Release by:

Debbie Proctor, Project Manager

Date: 7/30/96

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9607944-01

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 07/30/96

PROJECT: Water Samples
SITE: Denton Station
SAMPLED BY: Enercon Service Inc.
SAMPLE ID: MW-3

PROJECT NO: EV-378
MATRIX: WATER
DATE SAMPLED: 07/18/96 10:55:00
DATE RECEIVED: 07/20/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Chloride METHOD 325.3 * Analyzed by: CA Date: 07/26/96	22	1	mg/L

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9607944-02

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

P.O.# MESA-CAO-B-131201-PX-4204-NS
DATE: 07/30/96

PROJECT: Water Samples
SITE: Denton Station
SAMPLED BY: Enercon Service Inc.
SAMPLE ID: WW-1

PROJECT NO: EV-378
MATRIX: WATER
DATE SAMPLED: 07/18/96 17:30:00
DATE RECEIVED: 07/20/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Chloride METHOD 325.3 * Analyzed by: CA Date: 07/26/96	12	1	mg/L

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

QUALITY CONTROL

DOCUMENTATION

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 07/29/96
Analyzed on: 07/26/96
Analyst: CA

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Chloride
METHOD 325.3 *

SPL Sample ID Number	Blank Value mg/L	Amt Added mg/L	Matrix Spike Recovery %	Matrix Spike Duplicate Recovery %	Relative Percent Difference %	QC Limits Recovery	RPD Max.
9607679-24H	ND	50.00	100	100	0	93. - 109	2.7

-9607915

Samples in batch:

9607678-21H 9607679-22H 9607679-23H 9607679-24H
9607944-01A 9607944-02A

COMMENTS:

SPL, Incorporated

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 07/29/96
Analyzed on: 07/26/96
Analyst: CA

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Chloride
METHOD 325.3 *

SPL Sample ID Number	Blank Value mg/L	LCS Concentration mg/L	Measured Concentration mg/L	% Recovery	QC Limits Recovery
LCS	ND	51.60	50.48	97.8	90 - 110

-9607916

Samples in batch:

9607678-21H 9607679-22H 9607679-23H 9607679-24H
9607944-01A 9607944-02A

COMMENTS:

SPL LCS ID# 9553536-16

SPL Incorporated

QC Officer

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

T960177 [illegible] 120

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING

CHAIN OF CUSTODY RECORD NO. H 19184

Date: 7-19-96
Page 1 of 1

SITE ADDRESS: Denton Station
EV-378

WIC #:

CONSULTANT NAME & ADDRESS: ENERCON SERVICES, INC.
1221 River Bend, Ste 259, Dallas TX 75247

CONSULTANT CONTACT: Charles Harbin

PHONE: (214) 631-7693 FAX: (214) 631-7699

SAMPLED BY: STEVE Hallmark

CHECK ONE BOX ONLY CT/DT

- QUARTERLY MONITORING ☐ 5461
- SITE INVESTIGATION ☐ 5441
- SOIL FOR DISPOSAL ☐ 5442
- WATER FOR DISPOSAL ☐ 5443
- AIR SAMPLER - SYS O+M ☐ 5452
- WATER SAMPLE - SYS O+M ☐ 5453
- OTHER _____ ☐

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	MATRIX: H2O	SOIL	AIR	SLUDGE	OTHER	METHOD PRESERVED: HCl	HNO3	H2SO4	NONE	OTHER	NO. OF CONTAINERS	CONTAINER SIZE	BTEX 602 ☐ 8020 ☐ WITH MTBE ☐	BTEX/GAS HYDROCARBONS PID/FID ☐ WITH MTBE	VOL 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	PNA/PAH 8310 ☐ 8100 ☐ 610 ☐	SEMI - VOL 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	TPH/IR 418.1 ☐ SM503 ☐ ____ ☐ ____ ☐	TPH/GC 8015 Mod. GAS ☐ 8015 Mod DIESEL ☐	TCLP METALS ☐ VOL ☐ SEMI-VOL ☐ PEST ☐ HERB ☐	EP TOX METALS ☐ PESTICIDES ☐ HERBICIDES ☐	REACTIVITY ☐ CORROSIVITY ☐ IGNITABILITY ☐	OTHER: Chlorides			REMARKS
MW-3	7-18-96	1055		✓	✓								✓	✓	1	1L											✓			20c Rel
~~MW-8~~	~~7-18-96~~																													
WW-1	7-18-96	1730		✓	✓								✓	✓	1	1L											✓			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	7-19-96	1030	[signature]	7-20-96	1000
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

BILL NO.:
LABORATORY:
SHELL CONTACT: Val Stidham PHONE: 241-2961 FAX:

TURN AROUND TIME (CHECK ONE)
7 DAYS ☐ (~~RESIDUAL~~) 14 DAYS ☐
48 HOURS ☐ OTHER ☐ Normal

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN OF CUSTODY WITH INVOICE AND RESULTS

DISTRIBUTION: PINK Sampling Coordinator - WHITE & YELLOW Accompanies Shipment - WHITE Returned with Report

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: 7/20/96	Time: 1200

SPL Sample ID: 9607944

		Yes	No
1	Chain-of-Custody (COC) form is present.	✓	
2	COC is properly completed.	✓	
3	If no, Non-Conformance Worksheet has been completed.		
4	Custody seals are present on the shipping container.	✓	
5	If yes, custody seals are intact.	✓	
6	All samples are tagged or labeled.	✓	
7	If no, Non-Conformance Worksheet has been completed.		
8	Sample containers arrived intact	✓	
9	Temperature of samples upon arrival:	2° C	
10	Method of sample delivery to SPL:	SPL Delivery	
		Client Delivery	
		FedEx Delivery (airbill #)	828666606 5
		Other:	
11	Method of sample disposal:	SPL Disposal	
		HOLD	
		Return to Client	

Name: Ruben Estrada	Date: 7/20/96

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 96-07-941

Approved for Release by:

Debbie Proctor, Project Manager

Date: 7/31/96

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

CASE NARRATIVE

WORKORDER NO.: 9607941

Sample Receipt

Southern Petroleum Laboratories (SPL) is pleased to present the results of laboratory analysis to Shell. Six water samples and one trip blank were received at our laboratory on 7/20/96 at a temperature of 2 degrees Celsius. The following is a brief narrative of the laboratory analysis.

Methodology

Samples were analyzed for BTEX by EPA SW846 Method 8020. Additionally, sample 9607941-03 (MW-8), was analyzed for TPH by EPA Method 418.1 and Chloride by EPA Method 325.3. There were no deviations from the methods.

QA/QC

All of the quality control data associated with this work order was in control with the following exceptions:

Surrogates

Due to matrix interferences the recovery of the surrogate 1,4-Difluorobenzene for the BTEX analysis was outside of the QC limits for samples 9607941-01, 9604941-02, 9607941-03, and 9607941-05.

Please refer to this project by **9607941** to expedite any further discussions. I will be happy to address any questions or concerns you may have.

SOUTHERN PETROLEUM LABORATORIES

Debbie Proctor
Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9607941-01

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

DATE: 07/30/96

PROJECT: Water Samples
SITE: Denton Station
SAMPLED BY: Enercon Services, Inc.
SAMPLE ID: MW-2

PROJECT NO: EV-378
MATRIX: WATER
DATE SAMPLED: 07/18/96 13:00:00
DATE RECEIVED: 07/20/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	430	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	430		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	200 «
4-Bromofluorobenzene	97

METHOD 5030/8020 ***
Analyzed by: AA
Date: 07/22/96

(P) - Practical Quantitation Limit ND - Not detected.
« - Recovery beyond control limits.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9607941-02

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

DATE: 07/30/96

PROJECT: Water Samples
SITE: Denton Station
SAMPLED BY: Enercon Services, Inc.
SAMPLE ID: MW-6

PROJECT NO: EV-378
MATRIX: WATER
DATE SAMPLED: 07/18/96 12:30:00
DATE RECEIVED: 07/20/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	1100	5 P	µg/L
TOLUENE	ND	5 P	µg/L
ETHYLBENZENE	21	5 P	µg/L
TOTAL XYLENE	85	5 P	µg/L
TOTAL BTEX	1206		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	140 «
4-Bromofluorobenzene	80

METHOD 5030/8020 ***
Analyzed by: RL
Date: 07/23/96

(P) - Practical Quantitation Limit ND - Not detected.
« - Recovery beyond control limits.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
6880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9607941-03

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

DATE: 07/30/96

PROJECT: Water Samples
SITE: Denton Station
SAMPLED BY: Enercon Services, Inc.
SAMPLE ID: MW-8

PROJECT NO: EV-378
MATRIX: WATER
DATE SAMPLED: 07/18/96 12:00:00
DATE RECEIVED: 07/20/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	110	1 P	µg/L
TOLUENE	5.1	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	100	1 P	µg/L
TOTAL BTEX	215.1		µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	123 «		
4-Bromofluorobenzene	107		
METHOD 5030/8020 ***			
Analyzed by: RL			
Date: 07/23/96			
Total Recoverable Petroleum Hydrocarbons	12	0.5	mg/L
Method 418.1*			
Analyzed by: JN			
Date: 07/26/96 09:00:00			
Chloride	17	1	mg/L
METHOD 325.3 *			
Analyzed by: CA			
Date: 07/29/96			

(P) - Practical Quantitation Limit ND - Not detected.
« - Recovery beyond control limits.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9607941-04

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

DATE: 07/30/96

PROJECT: Water Samples
SITE: Denton Station
SAMPLED BY: Enercon Services, Inc.
SAMPLE ID: MW-9

PROJECT NO: EV-378
MATRIX: WATER
DATE SAMPLED: 07/18/96 11:00:00
DATE RECEIVED: 07/20/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	ND		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	107
4-Bromofluorobenzene	103

METHOD 5030/8020 ***
Analyzed by: RL
Date: 07/23/96

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9607941-05

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

DATE: 07/30/96

PROJECT: Water Samples
SITE: Denton Station
SAMPLED BY: Enercon Services, Inc.
SAMPLE ID: MW-11

PROJECT NO: EV-378
MATRIX: WATER
DATE SAMPLED: 07/18/96 13:45:00
DATE RECEIVED: 07/20/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	1800	10 P	µg/L
TOLUENE	ND	10 P	µg/L
ETHYLBENZENE	ND	10 P	µg/L
TOTAL XYLENE	ND	10 P	µg/L
TOTAL BTEX	1800		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	143 «
4-Bromofluorobenzene	100

METHOD 5030/8020 ***
Analyzed by: RL
Date: 07/25/96

(P) - Practical Quantitation Limit ND - Not detected.
« - Recovery beyond control limits.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9607941-06

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

DATE: 07/30/96

PROJECT: Water Samples
SITE: Denton Station
SAMPLED BY: Enercon Services, Inc.
SAMPLE ID: MW-12

PROJECT NO: EV-378
MATRIX: WATER
DATE SAMPLED: 07/18/96 14:20:00
DATE RECEIVED: 07/20/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	ND		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	110
4-Bromofluorobenzene	107

METHOD 5030/8020 ***
Analyzed by: RL
Date: 07/24/96

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9607941-07

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

DATE: 07/30/96

PROJECT: Water Samples
SITE: Denton Station
SAMPLED BY: Provided by SPL
SAMPLE ID: Trip Blank

PROJECT NO: EV-378
MATRIX: WATER
DATE SAMPLED: 07/18/96
DATE RECEIVED: 07/20/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	1 P	µg/L
TOLUENE	ND	1 P	µg/L
ETHYLBENZENE	ND	1 P	µg/L
TOTAL XYLENE	ND	1 P	µg/L
TOTAL BTEX	ND		µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	107
4-Bromofluorobenzene	97

METHOD 5030/8020 ***
Analyzed by: RL
Date: 07/23/96

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

QUALITY CONTROL

DOCUMENTATION

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

Batch Id: HP_U960721110700

Units: µg/L

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	52	104	62 - 121
Toluene	ND	50	48	96.0	66 - 136
EthylBenzene	ND	50	44	88.0	70 - 136
O Xylene	ND	50	52	104	74 - 134
M & P Xylene	ND	100	97	97.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
BENZENE	ND	20	22	110	23	115	4.44	25	39 - 150
TOLUENE	ND	20	20	100	21	105	4.88	26	56 - 134
ETHYLBENZENE	ND	20	18	90.0	18	90.0	0	38	61 - 128
O XYLENE	ND	20	22	110	21	105	4.65	29	40 - 130
M & P XYLENE	ND	40	44	110	37	92.5	17.3	20	43 - 152

Analyst: AA
Sequence Date: 07/21/96
SPL ID of sample spiked: 9607925-01A
Sample File ID: U___392.TX0
Method Blank File ID:
Blank Spike File ID: U___384.TX0
Matrix Spike File ID: U___387.TX0
Matrix Spike Duplicate File ID: U___388.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '94)

SAMPLES IN BATCH(SPL ID): 9607925-01A 9607936-01A 9607936-03A 9607941-01A 9607935-10A 9607936-04A 9607936-02A 9607808-03A 9607808-04A 9607935-07A 9607925-03A 9607936-06A

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

Batch Id: HP_U960722070800

Units: µg/L

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	56	112	62 - 121
Toluene	ND	50	54	108	66 - 136
EthylBenzene	ND	50	47	94.0	70 - 136
O Xylene	ND	50	56	112	74 - 134
M & P Xylene	ND	100	110	110	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
BENZENE	ND	20	20	100	22	110	9.52	25	39 - 150
TOLUENE	ND	20	18	90.0	21	105	15.4	26	56 - 134
ETHYLBENZENE	ND	20	17	85.0	18	90.0	5.71	38	61 - 128
O XYLENE	ND	20	21	105	22	110	4.65	29	40 - 130
M & P XYLENE	ND	40	40	100	39	97.5	2.53	20	43 - 152

Analyst: RL
Sequence Date: 07/22/96
SPL ID of sample spiked: 9607941-04A
Sample File ID: U___426.TX0
Method Blank File ID:
Blank Spike File ID: U___414.TX0
Matrix Spike File ID: U___446.TX0
Matrix Spike Duplicate File ID: U___447.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '94)

SAMPLES IN BATCH(SPL ID):

9607893-05A 9607893-06A 9607941-04A 9607941-07A
9607893-01A 9607941-03A 9607893-02A 9607941-02A
9607883-01A 9607883-02A 9607924-06A 9607924-07A

QC Officer

SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Matrix: Aqueous

Batch Id: HP_U960723125900

Units: µg/L

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	51	102	62 - 121
Toluene	ND	50	50	100	66 - 136
EthylBenzene	ND	50	43	86.0	70 - 136
O Xylene	ND	50	51	102	74 - 134
M & P Xylene	ND	100	100	100	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
BENZENE	21	20	43	110	43	110	0	25	39 - 150
TOLUENE	112	20	130	NC	130	NC	NC	26	56 - 134
ETHYLBENZENE	22	20	41	95.0	40	90.0	5.41	38	61 - 128
O XYLENE	81	20	100	NC	94	NC	NC	29	40 - 130
M & P XYLENE	123	40	150	67.5	160	92.5	31.2 *	20	43 - 152

Analyst: RL
Sequence Date: 07/23/96
SPL ID of sample spiked: 9607984-06A
Sample File ID: U___480.TX0
Method Blank File ID:
Blank Spike File ID: U___448.TX0
Matrix Spike File ID: U___452.TX0
Matrix Spike Duplicate File ID: U___453.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '94)

SAMPLES IN BATCH(SPL ID): 9607893-04A 9607924-02A 9607924-03A 9607924-04A 9607984-08A 9607973-02A 9607973-01A 9607984-06A 9607941-06A 9607893-03A

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

Batch Id: HP_U960724041800

Units: µg/L

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	48	96.0	62 - 121
Toluene	ND	50	47	94.0	66 - 136
EthylBenzene	ND	50	42	84.0	70 - 136
O Xylene	ND	50	50	100	74 - 134
M & P Xylene	ND	100	99	99.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
BENZENE	1.6	20	27	127	27	127	0	25	39 - 150
TOLUENE	ND	20	25	125	23	115	8.33	26	56 - 134
ETHYLBENZENE	ND	20	21	105	21	105	0	38	61 - 128
O XYLENE	ND	20	26	130	25	125	3.92	29	40 - 130
M & P XYLENE	ND	40	51	128	50	125	2.37	20	43 - 152

Analyst: RL
Sequence Date: 07/24/96
SPL ID of sample spiked: 9607984-05A
Sample File ID: U___492.TX0
Method Blank File ID:
Blank Spike File ID: U___484.TX0
Matrix Spike File ID: U___513.TX0
Matrix Spike Duplicate File ID: U___514.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '94)

SAMPLES IN BATCH(SPL ID): 9607984-05A 9607984-04A 9607984-07A 9607A37-01A 9607B00-01A 9607984-03A 9607984-02A 9607984-01A 9607941-05A 9607A58-01A 9607A37-02A 9607A58-05A 9607A46-03A 9607A46-01A 9607936-05A

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 07/26/96
Analyzed on: 07/26/96
Analyst: JN

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Total Recoverable Petroleum Hydrocarbons
Method 418.1*

SPL Sample ID Number	Blank Value mg/L	Amt Added mg/L	Matrix Spike Recovery %	Matrix Spike Duplicate Recovery %	Relative Percent Difference %	QC Limits Recovery	RPD Max.
BLANK	ND	4.0	105	102	2.9	82. - 112	9.8

960726JN -9607886

Samples in batch:

9607809-03B	9607809-04B	9607809-05B	9607809-06B
9607839-01B	9607872-01H	9607872-02H	9607925-01B
9607935-01B	9607935-02B	9607935-03B	9607935-04B
9607935-05B	9607935-06B	9607935-07B	9607935-08B
9607935-09B	9607935-10B	9607941-03B	9607B63-01D

COMMENTS:

SPL, Incorporated

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 07/29/96
Analyzed on: 07/29/96
Analyst: CA

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Chloride
METHOD 325.3 *

SPL Sample ID Number	Blank Value mg/L	LCS Concentration mg/L	Measured Concentration mg/L	% Recovery	QC Limits Recovery
LCS	ND	51.60	50.48	97.8	90 - 110

-9607966

Samples in batch:

9607238-01D 9607941-03C

COMMENTS:

SPL LCS ID# 9553548-3

SPL, Incorporated

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 07/29/96
Analyzed on: 07/29/96
Analyst: CA

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Chloride
METHOD 325.3 *

SPL Sample ID Number	Blank Value mg/L	Amt Added mg/L	Matrix Spike Recovery %	Matrix Spike Duplicate Recovery %	Relative Percent Difference %	QC Limits Recovery	RPD Max.
9607941-03C	ND	50.00	100	100	0	93. - 109	2.7

-9607965

Samples in batch:

9607238-01D 9607941-03C

COMMENTS:

SPL, Incorporated

QC Officer

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

Job No 96-07-941 Hollmark

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING

CHAIN OF CUSTODY RECORD NO. H 19183

Date: 7-19-96
Page 1 of 1

SITE ADDRESS: Denton Station
EV-378

WIC #:

CONSULTANT NAME & ADDRESS: Enercon Services, Inc.
1221 River Bend, Ste. 259, Dallas TX 75247

CONSULTANT CONTACT: Charles Harlan

PHONE (214) 631-7693 FAX: (214) 631-7699

SAMPLED BY Steve Hollmark

CHECK ONE BOX ONLY CT/DT

- QUARTERLY MONITORING ☐ 5461
- SITE INVESTIGATION ☐ 5441
- SOIL FOR DISPOSAL ☐ 5442
- WATER FOR DISPOSAL ☐ 5443
- AIR SAMPLER - SYS O+M ☐ 5452
- WATER SAMPLE - SYS O+M ☐ 5453
- OTHER ☐

SAMPLE ID	DATE	TIME	COMP	GRAB	MATRIX: H2O	SOIL	AIR	SLUDGE	OTHER	METHOD PRESERVED: HCl	HNO3	H2SO4	NONE	OTHER: ICE	NO. OF CONTAINERS	CONTAINER SIZE	BTEX 602 ☐ 8020 ☒ WITH MTBE ☐	BTEX/GAS HYDROCARBONS PID/FID ☐ WITH MTBE	VOL 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	PNA/PAH 8310 ☐ 8100 ☐ 610 ☐	SEMI - VOL 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	TPH/IR 418.1 ☒ SM503 ☐ ☐ ☐	TPHGC 8015 Mod. GAS ☐ 8015 Mod DIESEL ☐	TCLP METALS ☐ VOL ☐ SEMI-VOL ☐ PEST ☐ HERB ☐	EP TOX METALS ☐ PESTICIDES ☐ HERBICIDES ☐	REACTIVITY ☐ CORROSIVITY ☐ IGNITABILITY ☐	OTHER: Chlorides		REMARKS
MW-2	11-18-96	1300		✓	✓					✓				✓	3	40 ml	✓												-	pH
MW-6	11-18-96	1230		✓	✓					✓				✓	3	40 ml	✓												-	
MW-8	11-18-96	1200		✓	✓					✓				✓	4	40 ml / 1 l	✓					✓							-	
MW-8	11-18-96	1200		✓	✓					~~✓~~			✓	✓	1	1 l											✓		-	
MW-9	11-18-96	1100		✓	✓					✓				✓	3	40 ml	✓												-	
MW-11	11-18-96	1345		✓	✓					✓				✓	3	40 ml	✓												-	
MW-12	11-18-96	1420		✓	✓					✓				✓	3	40 ml	✓												-	
																														2°C ROI

MPS 914 5886 014

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Kelly D. Smith	7-19-96	1030	Alan Cortes	7-20-96	1000
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

BILL NO.:
LABORATORY:
SHELL CONTACT: Neal Stidham PHONE: 241-7961 FAX:

TURN AROUND TIME (CHECK ONE)
7 DAYS ☐ ~~(NORMAL)~~ 14 DAYS ☐
48 HOURS ☐ OTHER ☐ Normal

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN OF CUSTODY WITH INVOICE AND RESULTS

WHITE & YELLOW Accompanies Shipment WHITE Returned with Report

SPL Houston Environmental Laboratory

Sample Login Checklist

Date:	Time:
7-20-96	1000

SPL Sample ID:
96-07-941

			Yes	No
1	Chain-of-Custody (COC) form is present.		✓	
2	COC is properly completed.		✓	
3	If no, Non-Conformance Worksheet has been completed.			
4	Custody seals are present on the shipping container.		✓	
5	If yes, custody seals are intact.		✓	
6	All samples are tagged or labeled.		✓	
7	If no, Non-Conformance Worksheet has been completed.			
8	Sample containers arrived intact		✓	
9	Temperature of samples upon arrival:		2° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	914588 6014	
		Other:		
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name:	Date:
[signature]	7-20-96

Southern Petroleum Laboratories

****SUMMARY REPORT*****

07/30/96

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Company: Shell Pipe Line Corporation
Site: Denton Station
Project No: EV-378
Project: Water Samples

ANALYTICAL DATA
NOTE: ND - Not Detected

SPL ID MATRIX	CLIENT ID DATE SAMPLED	BENZENE PQL	TOLUENE PQL	ETHYLBENZ. PQL	XYLENE PQL	TPH-IR	TPH-GC	LEAD	MTBE
9607941-01 WATER	MW-2 07/18/96 13:00:00	430 1µg/L	ND 1µg/L	ND 1µg/L	ND 1µg/L				
9607941-02 WATER	MW-6 07/18/96 12:30:00	1100 5µg/L	ND 5µg/L	21 5µg/L	85 5µg/L				
9607941-03 WATER	MW-8 07/18/96 12:00:00	110 1µg/L	5.1 1µg/L	ND 1µg/L	100 1µg/L	12 0.5mg/L			
9607941-04 WATER	MW-9 07/18/96 11:00:00	ND 1µg/L	ND 1µg/L	ND 1µg/L	ND 1µg/L				
9607941-05 WATER	MW-11 07/18/96 13:45:00	1800 10µg/L	ND 10µg/L	ND 10µg/L	ND 10µg/L				
9607941-06 WATER	MW-12 07/18/96 14:20:00	ND 1µg/L	ND 1µg/L	ND 1µg/L	ND 1µg/L				
9607941-07 WATER	Trip Blank 07/18/96	ND 1µg/L	ND 1µg/L	ND 1µg/L	ND 1µg/L				

BTEX - METHOD 5030/8020 ***
TPH-IR - Method 418.1*

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9607941-03

Shell Pipe Line Corporation
P.O. Box 2648
Houston, TX 77252
ATTN: Neal Stidham

DATE: 07/30/96

PROJECT: Water Samples
SITE: Denton Station
SAMPLED BY: Enercon Services, Inc.
SAMPLE ID: MW-8

PROJECT NO: EV-378
MATRIX: WATER
DATE SAMPLED: 07/18/96 12:00:00
DATE RECEIVED: 07/20/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Chloride METHOD 325.3 * Analyzed by: CA Date: 07/29/96	17	1	mg/L

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Report
Prepared
for

ENERCON SERVICES, INC.
1221 River Bend, Suite 259
Dallas, Texas 75247

Attention: Charles Harlan

by

RECRA LabNet-Houston
8300 Westpark Drive
Houston, Texas 77063
(713)266-6800

CERTIFIED BY: _____

J .Gerardo Uria
Project Manager

PROJECT ID : Shell Pipeline Corp Denton Station (EV-378)
P.O. Number : NA

Work Order : H96-2752
Date Received : 04-Oct-1996

SHELL PIPELINE CORPORATION
SHELL PIPELINE CORPORATION
ANALYTICAL RESULTS

SDG: EV-378	Client Sample ID:	MW-11	MW-12	MW-2	MW-6	MW-9
	Job Number & Lab Sample ID:	H96-2752 H6275204	H96-2752 H6275205	H96-2752 H6275201	H96-2752 H6275202	H96-2752 H6275203
	Sample Date:	10/01/96	10/01/96	10/01/96	10/01/96	10/01/96
Analyte (UG/L)		Result	Result	Result	Result	Result
METHOD 8020 - BTEX						
Benzene		1400	23	560	990	2.0 U
Toluene		3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Ethylbenzene		3.0 U	3.0 U	3.0 U	20 U	3.0 U
Total Xylenes		3.0 U	3.0 U	3.0 U	120	3.0 U

U = Undetected at the Listed Detection Limit
* Indicates Result is Outside QC Limits
NA = Not Applicable

SDG: EV-378	Client Sample ID:	BLANK SPIKE	MW-2 MS	MW-2 MSD	METHOD BLANK	
	Job Number & Lab Sample ID:	H96-2752 H6275206	H96-2752 H6275201MS	H96-2752 H6275201SD	H96-2752 H6275207	
	Sample Date:	10/01/96	10/01/96	10/01/96	10/01/96	
Analyte (UG/L)		Result	Result	Result	Result	
METHOD 8020 - BTEX						
Benzene		35	2500	2500	2.0 U	
Toluene		30	2000	2000	3.0 U	
Ethylbenzene		33	2000	1800	3.0 U	
Total Xylenes		110	5800	5400	3.0 U	

U = Undetected at the Listed Detection Limit
* Indicates Result is Outside QC Limits
NA = Not Applicable

LABORATORY QA/QC DATA

SHELL PIPELINE CORPORATION
SHELL PIPELINE CORPORATION
METHOD 8020 - BTEX
WATER SURROGATE RECOVERY

Laboratory: Recra LabNet - RECTX
Lab Job No: H96-2752
SDG No: EV-378

Client Sample ID	Lab Sample ID	S1 TFT #
BLANK SPIKE	H6275206	94
METHOD BLANK	H6275207	130
MW-11	H6275204	92
MW-12	H6275205	130
MW-2	H6275201	110
MW-2 MS	H6275201MS	95
MW-2 MSD	H6275201SD	97
MW-6	H6275202	130
MW-9	H6275203	127

QC Limits

S1 TFT = a,a,a-Trifluorotoluene (66 - 131)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

Rept: AN0364

Date : 10/25/96 12:29
Job No: H96-2752

SHELL PIPELINE CORPORATION
SHELL PIPELINE CORPORATION
SAMPLE DATE 10/01/96

SDG: EV-378
Client Sample ID: MW-2 | MW-2 MS | MW-2 MSD
Lab Sample ID: H6275201 | H6275201MS | H6275201SD

Analyte	Units of Measure	Concentration			Spike Amount		% Recovery			% RPD	QC LIMITS	
		Sample	Matrix Spike	Spike Duplicate	MS	MSD	MS	MSD	Avg		RPD	REC.
METHOD 8020 - BTEX												
Benzene	UG/L	560	2500	2500	2000	2000	97	97	97	0	20.0	80-123
Ethylbenzene	UG/L	0	2000	1800	2000	2000	100	90	95	10	19.0	72-124
Toluene	UG/L	0	2000	2000	2000	2000	100	100	100	0	21.0	69-127
Total Xylenes	UG/L	0	5800	5400	6000	6000	97	90	94	7	26.0	70-130

* Indicates Result is outside QC Limits
NC = Not Calculated ND = Not Calculated

Recra LabNet

Date : 10/25/96 12:51
Job No: H96-2752

SHELL PIPELINE CORPORATION
SHELL PIPELINE CORPORATION
SAMPLE DATE 10/01/96

Rept: AN0364

SDG: EV-378
Client Sample ID: METHOD BLANK — BLANK SPIKE
Lab Sample ID: H6275207 — H6275206

Analyte	Units of Measure	Concentration Blank Spike	Concentration Spike Amount	% Recovery Blank Spike	QC LIMITS
METHOD 8020 - BTEX					
Benzene	UG/L	35	40	88	80-123
Ethylbenzene	UG/L	33	40	82	72-124
Toluene	UG/L	30	40	75	69-127
Total Xylenes	UG/L	110	120	92	70-130

* Indicates Result is outside QC Limits
NC = Not Calculated ND = Not Calculated

Recra LabNet

RECRA LabNet

☐ Amherst
☐ Houston
☐ Monroeville

CHAIN-OF-CUSTODY RECORD

Project Manager Charles Harlan
Project Name Denton Station (EV-378)
Purchase Order No.
Sampler(s) Steph S[illegible]

Company ENERCON SERVICES INC.
Address 12N RIVER BEND, Ste. 259
Dallas, TX, 75247
Phone # (214)631-7693 Fax (214)631-7699
Mail Report To:

Requested
Turn Around Time:

[illegible] Houston
Lab ID # H96-2752
Iced Yes
pH —
Temperature 4°C
Date 10/4/96
Initials [illegible]

COMMENTS:

Preservative: 1. HNO3 2. H2SO4 3. H3PO4 4. HCl 5. NaOH 6. Na2SO3 7. None 8. Other(s)

SAMPLE IDENTITY:	Date Sample	Time Sampled	Soil	Water	Air	Other	Preservative	Volatile Organics	Semi-Volatile Organics	Pesticides	PCB's	Herbicides	Btex (8020)	Metals	TPH	Other Analyses				No. of Containers	REMARKS:
MW-2	10-2-96	2:30		✓			4						✓							3	
MW-6	10-2-96	2:00		✓			4						✓							3	
MW-9	10-1-96	1:00		✓			4						✓							3	
MW-11	10-1-96	2:30		✓			4						✓							3	
MW-12	10-1-96	3:30		✓			4						✓							3	

Relinquished By: (Signature)	Date	Time	Received By: (Signature)	Date	Time
Steph S[illegible]	10/3/96	11:00a	D. [illegible]	10/4/96	10:30

Delivery Method:
Airbill #

☐ In Person
☐ Common Carrier ________ specify
☐ Lab Courier
☐ Other

APPENDIX D

QUALITY ASSURANCE/QUALITY CONTROL

SAFETY PLAN AND LIMITATIONS

QUALITY ASSURANCE/QUALITY CONTROL

A strict Quality Assurance Plan was incorporated throughout all phases of the on-site operations and sampling procedures. Soil or solid material samples were collected using new disposable or properly decontaminated reusable stainless steel equipment. Water or liquid samples were collected with new disposable bailers. All non-reusable equipment was disposed of and reusable equipment was decontaminated between sampling stations to eliminate the potential of cross-contamination. The water samples were transferred from the bailers into airtight septum-sealed 40-ml glass VOA vials, one-liter amber glass jars with Teflon lids, or other sample containers appropriate for the required analyses.

The samples were sealed with QA/QC seals, preserved with acid (if required) and maintained at 4°C in accordance with Environmental Protection Agency (EPA) requirements (EPA 600/4-82-029) for shipment to the laboratory. A chain-of-custody (COC) which documents sample collection times and delivery times to the laboratory was completed for each set of samples. The COC is included with the analytical results in the Appendix.

ENERCON utilizes laboratories that maintain strict quality controls, i.e. equipment calibration and standardization, appropriate analytical methods, preparation of quality control samples, and complete chain-of-custody. Analyses were performed on all samples using the EPA, State, or local agency-directed methods. The maximum recommended holding times were not exceeded unless noted in the text.

SAFETY PLAN

The sampling operations were performed at level D personal protection. ENERCON personnel involved in the on-site activities have completed the Occupational Safety and Health for Hazardous Waste Field Operation training course (OSHA 29 CFR 1910.120). Applicable safety equipment was on site and available to ENERCON personnel.

LIMITATIONS

It should be noted that all subsurface investigations are inherently limited in the sense that conclusions are drawn and recommendations are developed from samples which depict subsurface conditions at representative locations over relatively short periods of time. Subsurface conditions elsewhere may differ from those at the sampling locations. In addition, subsurface conditions at sampling locations may vary over longer periods of time than can be observed in a study of this type. The passage of time, manifestation of latent conditions, or occurrence of future events may require further site exploration, data collection and analysis, and reevaluation of the findings, observations, conclusions, and recommendation expressed in this report. A strict Quality Assurance Plan was incorporated throughout all phases of the on-site operations