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REPORTS

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2001

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**ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION**

August 14, 2002

Mr. William Olsen
New Mexico Oil and Conservation Division
1220 South St. Francis Dr
Santa Fe, NM 87505

**RE: Annual 2001 Groundwater Monitoring and Sampling Event
Former Maverik Refinery Tank Farm
Kirtland, New Mexico**

Dear Mr. Olsen:

On behalf of Maverik Country Stores, Inc., R.T. Hicks Consultants, Ltd. is submitting this 2001 Groundwater Monitoring and Sampling Report for the former Maverik Refinery in Kirtland, New Mexico. This report represents the annual sampling event conducted on December 19, 2001. If you any questions or concerns, please do not hesitate to call me at (505) 266-5004.

Sincerely,
R.T. Hicks Consultants Ltd.,



Michelle Hunter
Project Manager

1 Introduction

This report presents the results for the 2001 annual groundwater monitoring and sampling event conducted at the Former Maverik Refinery Tank Farm, located in Kirtland, New Mexico. This event represents the fourth annual groundwater monitoring and sampling event completed since the semi-annual monitoring and sampling was discontinued.

Groundwater monitoring and sampling was conducted on December 19, 2001. R. T. Hicks Consultants on behalf of Maverik Country Stores, Inc coordinated this annual monitoring event.

2 Description of Field Activities

2.1 Groundwater Measurement

On December 19, 2001, the depth to groundwater and total well depth measurements were collected at the following monitoring wells:

- Located outside the slurry wall impoundment:

MW-9, MW-10, MW-14, MW-16, MW-18, MW-19, MW-20, MW-21.

- Located inside the slurry wall impoundment::

MW-17, MW-22.

Groundwater and total well depth measurements were not collected from MW-1, MW-2, and MW-15.

We measured depth to groundwater and total well depth using an electronic oil-water interface probe. The probe was properly decontaminated prior to and after each measurement at each groundwater monitoring well. However, we believe the oil indicator part of the device may not have been functioning properly. Table 1 summarizes the corrected groundwater level elevations.

2.2 Groundwater Sampling and Analysis

The additional field activities for groundwater monitoring included measurement of pH, temperature, specific conductivity, and dissolved oxygen in addition to collecting representative groundwater samples. We completed ground water sampling activities were completed in accordance with the standard United States Environmental Protection Agency (USEPA) sampling protocol.

Sampled monitoring wells were purged with a disposable bailer until three casing volumes were removed (with the exception of wells that bailed dry or had low recharge rates) and pH and specific conductivity measurements had stabilized. Field parameter measurements and water

quality observations were recorded in a field book. After purging, samples were collected from the wells using a disposable bailer.

On December 19, 2001, the monitoring wells MW-9, MW-10, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21, MW-22 were sampled and analyzed for benzene, ethylbenzene, toluene, and xylenes (BTEX) and 1,1 Dichloroethane using EPA Method 8260.

3 Summary of Monitoring and Sampling Result

3.1 Fluid Level Measurements

Historic groundwater elevation data are presented in Table 1. Because the ground water elevations did not change significantly and the potentiometric surface is the same as in previous submissions, we did not include a potentiometric surface map. Groundwater flow direction is generally to the southeast, which is typical of past observations. The ground water gradient is approximately 0.10 feet/feet.

December 2001 fluid level measurements demonstrate that water levels are approximately the same as those measured during the October 2000 annual monitoring event. Free product was reported in MW-17 and a slight sheen was reported on MW-18. However, because the oil-water interface probe malfunctioned, we do not know the exact thickness of the free product. Water table fluctuations likely contribute to the sporadic presence of product observed in monitoring wells within the slurry wall. Analytical data collected from MW-18 suggest that the reported sheen is not representative of hydrocarbons based on non-detectable levels of analyzed constituents.

3.2 Water Quality Analyses

Water quality monitoring results for the December 2001 annual sampling event are summarized in Table 2. The laboratory analytical report for the 2001 annual event is included in Appendix A.

During the 2001 annual event, no analytes were detected in any of the wells outside the slurry wall. These results are consistent with past results. Monitoring wells MW-17 and MW-22 are located within the confines of the slurry wall where elevated hydrocarbon levels have been historically encountered. Analytical results from MW-22 illustrate a continuation of a decreasing trend likely from the cumulative effect of biodegradation within the aquifer and volatilization of BTEX from the unsaturated zone. However, MW-17 reported a large increase in BTEX values. This can be accounted for by the fluctuating levels of free product within the slurry wall.

4 Conclusions and Recommendations

Data indicate that the slurry wall has maintained its integrity and is performing its planned function of containing the gasoline-affected groundwater. BTEX and DCA were not detected in monitoring wells down gradient from the slurry wall. Historical data suggest that natural attenuation of organic contaminants in the groundwater at the site is likely occurring. The annual groundwater sampling and reporting program will be continued in 2002.

Tables

Table 1

Well ID	Date	Ground Elevation	Datum Elevation	Depth to Water (feet)	Free Product Thickness (feet)	Corrected Elevation (ft)
Outside Slurry Wall						
MW-1	01/01/92	5,205.75	5,207.24	10.90	0	5,196.34
	06/01/92	5,205.75	5,207.24	8.40	0	5,198.84
	08/01/92	5,205.75	5,207.24	6.00	0	5,201.24
	12/01/92	5,205.75	5,207.24	8.00	0	5,199.24
	03/01/93	5,205.75	5,207.24	12.30	0	5,194.94
	05/01/93	5,205.75	5,207.24	NM	0	NM
	11/01/93	5,205.75	5,207.24	NM	0	NM
	05/01/94	5,205.75	5,207.24	NM	0	NM
	10/01/94	5,205.75	5,207.24	NM	0	NM
	05/01/95	5,205.75	5,207.24	NM	0	NM
	10/01/95	5,205.75	5,207.24	NM	0	NM
	05/01/96	5,205.75	5,207.24	NM	0	NM
	10/01/96	5,205.75	5,207.24	10.97	0	5,196.27
	06/24/97	5,205.75	5,207.24	13.58	0	5,193.66
	10/18/97	5,205.75	5,207.24	11.87	0	5,195.37
	05/05/98	5,205.75	5,207.24	16.17	0	5,191.07
	12/01/98	5,205.75	5,207.24	NM	NM	NM
	10/14/99	5,205.75	5,207.24	10.66	0	5,196.58
	10/01/00	5,205.75	5,207.24	NM	NM	NM
MW-2	01/01/92	5,195.25	5,196.93	3.80	0	5,193.13
	06/01/92	5,195.25	5,196.93	4.40	0	5,192.53
	08/01/92	5,195.25	5,196.93	3.80	0	5,193.13
	12/01/92	5,195.25	5,196.93	2.50	0	5,194.43
	03/01/93	5,195.25	5,196.93	4.50	0	5,192.43
	05/01/93	5,195.25	5,196.93	NM	0	NM
	11/01/93	5,195.25	5,196.93	NM	0	NM
	05/01/94	5,195.25	5,196.93	NM	0	NM
	10/01/94	5,195.25	5,196.93	NM	0	NM
	05/01/95	5,195.25	5,196.93	NM	0	NM
	10/01/95	5,195.25	5,196.93	NM	0	NM
	05/01/96	5,195.25	5,196.93	NM	0	NM
	10/01/96	5,195.25	5,196.93	5.99	0	5,190.94
	06/01/97	5,195.25	5,196.93	7.51	0	5,189.42
	10/01/97	5,195.25	5,196.93	6.66	0	5,190.27
	05/05/98	5,195.25	5,196.93	8.22	0	5,188.71
	12/01/98	5,195.25	5,196.93	NM	NM	NM
	10/14/99	5,195.25	5,196.93	6.51	0	5,190.42
	10/01/00	5,195.25	5,196.93	NM	NM	NM
MW-9	01/01/92	5,189.33	5,191.22	1.50	0	5,189.72
	06/01/92	5,189.33	5,191.22	2.30	0	5,188.92
	08/01/92	5,189.33	5,191.22	1.80	0	5,189.42
	12/01/92	5,189.33	5,191.22	0.60	0	5,190.62
	03/01/93	5,189.33	5,191.22	1.80	0	5,189.42
	05/01/93	5,189.33	5,191.22	NM	0	NM
	11/01/93	5,189.33	5,191.22	1.30	0	5,189.92
	05/01/94	5,189.33	5,191.22	NM	0	NM
	10/01/94	5,189.33	5,191.22	2.03	0	5,189.19
	05/01/95	5,189.33	5,191.22	NM	0	NM
	10/01/95	5,189.33	5,191.22	4.22	0	5,187.00
	05/01/96	5,189.33	5,191.22	NM	0	NM
	10/01/96	5,189.33	5,191.22	3.88	0	5,187.34
	06/01/97	5,189.33	5,191.22	5.59	0	5,185.63
	10/01/97	5,189.33	5,191.22	5.06	0	5,186.16
	05/05/98	5,189.33	5,191.22	5.89	0	5,185.33
	12/01/98	5,189.33	5,191.22	3.96	0	5,187.26
	10/14/99	5,189.33	5,191.22	4.82	0	5,186.40
	10/01/00	5,189.33	5,191.22	NM	NM	NM

Table 1

Well ID	Date	Ground Elevation	Datum Elevation	Depth to Water (feet)	Free Product Thickness (feet)	Corrected Elevation (ft)
	12/19/01	5,189.33	5,191.22	4.23	0	5,186.99
MW-10	01/01/92	5,187.47	5,189.30	1.60	0	5,187.70
	06/01/92	5,187.47	5,189.30	2.70	0	5,186.60
	08/01/92	5,187.47	5,189.30	2.90	0	5,186.40
	12/01/92	5,187.47	5,189.30	0.90	0	5,188.40
	03/01/93	5,187.47	5,189.30	1.60	0	5,187.70
	05/01/93	5,187.47	5,189.30	2.80	0	5,186.50
	11/01/93	5,187.47	5,189.30	1.80	0	5,187.50
	05/01/94	5,187.47	5,189.30	4.47	0	5,184.83
	10/01/94	5,187.47	5,189.30	2.97	0	5,186.33
	05/01/95	5,187.47	5,189.30	4.42	0	5,184.88
	10/01/95	5,187.47	5,189.30	4.60	0	5,184.70
	05/01/96	5,187.47	5,189.30	4.28	0	5,185.02
	10/01/96	5,187.47	5,189.30	4.23	0	5,185.07
	06/01/97	5,187.47	5,189.30	5.37	0	5,183.93
	10/01/97	5,187.47	5,189.30	4.90	0	5,184.40
	05/05/98	5,187.47	5,189.30	5.52	0	5,183.78
	12/01/98	5,187.47	5,189.30	3.76	0	5,185.54
	10/14/99	5,187.47	5,189.30	4.85	0	5,184.45
	10/01/00	5,187.47	5,189.30	3.93	0	5,185.37
	12/19/01	5,187.47	5,189.30	4.22	0	5,185.08
MW-13	01/01/92	5,187.56	5,187.76	NM	0	NM
	06/01/92	5,187.56	5,187.76	2.80	0	5,184.96
	08/01/92	5,187.56	5,187.76	2.70	0	5,185.06
	12/01/92	5,187.56	5,187.76	1.10	0	5,186.66
	03/01/93	5,187.56	5,187.76	1.70	0	5,186.06
	05/01/93	5,187.56	5,187.76	NM	0	NM
	11/01/93	5,187.56	5,187.76	1.40	0	5,186.36
	05/01/94	5,187.56	5,187.76	NM	0	NM
	10/01/94	5,187.56	5,187.76	2.91	0	5,184.85
	05/01/95	5,187.56	5,187.76	NM	0	NM
	10/01/95	5,187.56	5,187.76	3.23	0	5,184.53
	05/01/96	5,187.56	5,187.76	NM	0	NM
	10/01/96	5,187.56	5,187.76	2.52	0	5,185.24
	06/01/97	5,187.56	5,187.76	4.08	0	5,183.68
	10/01/97	5,187.56	5,187.76	4.12	0	5,183.64
	05/05/98	5,187.56	5,187.76	4.03	0	5,183.73
	12/01/98	5,187.56	5,187.76	2.17	0	5,185.59
Well Destroyed	10/14/99	5,187.56	5,187.76	NA	0	NA
MW-14	01/01/92	5,190.70	5,194.47	2.10	0	5,192.37
	06/01/92	5,190.70	5,194.47	4.10	0	5,190.37
	08/01/92	5,190.70	5,194.47	4.20	0	5,190.27
	12/01/92	5,190.70	5,194.47	0.70	0	5,193.77
	03/01/93	5,190.70	5,194.47	2.20	0	5,192.27
	05/01/93	5,190.70	5,194.47	NM	0	NM
	11/01/93	5,190.70	5,194.47	1.70	0	5,192.77
	05/01/94	5,190.70	5,194.47	NM	0	NM
	10/01/94	5,190.70	5,194.47	4.27	0	5,190.20
	05/01/95	5,190.70	5,194.47	NM	0	NM
	10/01/95	5,190.70	5,194.47	8.09	0	5,186.38
	05/01/96	5,190.70	5,194.47	NM	0	NM
	10/01/96	5,190.70	5,194.47	7.52	0	5,186.95
	06/01/97	5,190.70	5,194.47	8.95	0	5,185.52
	10/01/97	5,190.70	5,194.47	8.87	0	5,185.60
	05/05/98	5,190.70	5,194.47	9.02	0	5,185.45
	12/01/98	5,190.70	5,194.47	6.74	0	5,187.73
	10/14/99	5,190.70	5,194.47	8.21	0	5,186.26
	10/01/00	5,190.70	5,194.47	7.30	Slight Sheen	5,187.17

Table 1

2001 Annual Groundwater Monitoring Report

Well ID	Date	Ground Elevation	Datum Elevation	Depth to Water (feet)	Free Product Thickness (feet)	Corrected Elevation (ft)
MW-15	01/01/92	5,185.40	5,188.80	0.80	0	5,188.00
	06/01/92	5,185.40	5,188.80	2.20	0	5,186.60
	08/01/92	5,185.40	5,188.80	2.40	0	5,186.40
	12/01/92	5,185.40	5,188.80	0.10	0	5,188.70
	03/01/93	5,185.40	5,188.80	0.60	0	5,188.20
	05/01/93	5,185.40	5,188.80	NM	0	NM
	11/01/93	5,185.40	5,188.80	0.60	0	5,188.20
	05/01/94	5,185.40	5,188.80	NM	0	NM
	10/01/94	5,185.40	5,188.80	1.86	0	5,186.94
	05/01/95	5,185.40	5,188.80	NM	0	NM
	10/01/95	5,185.40	5,188.80	5.79	0	5,183.01
	05/01/96	5,185.40	5,188.80	NM	0	NM
	10/01/96	5,185.40	5,188.80	5.32	0	5,183.48
	06/01/97	5,185.40	5,188.80	6.07	0	5,182.73
	10/01/97	5,185.40	5,188.80	5.57	0	5,183.23
	05/05/98	5,185.40	5,188.80	5.53	0	5,183.27
	12/01/98	5,185.40	5,188.80	4.39	0	5,184.41
	10/14/99	5,185.40	5,188.80	5.86	0	5,182.94
	10/01/00	5,185.40	5,188.80	NM	NM	NM
MW-16	01/01/92	5,193.74	5,194.98	3.40	0	5,191.58
	06/01/92	5,193.74	5,194.98	4.50	0	5,190.48
	08/01/92	5,193.74	5,194.98	3.30	0	5,191.68
	12/01/92	5,193.74	5,194.98	1.90	0	5,193.08
	03/01/93	5,193.74	5,194.98	4.00	0	5,190.98
	05/01/93	5,193.74	5,194.98	NM	0	NM
	11/01/93	5,193.74	5,194.98	3.00	0	5,191.98
	05/01/94	5,193.74	5,194.98	NM	0	NM
	10/01/94	5,193.74	5,194.98	4.53	0	5,190.45
	05/01/95	5,193.74	5,194.98	NM	0	NM
	10/01/95	5,193.74	5,194.98	6.03	0	5,188.95
	05/01/96	5,193.74	5,194.98	NM	0	NM
	10/01/96	5,193.74	5,194.98	7.61	0	5,187.37
	06/01/97	5,193.74	5,194.98	7.72	0	5,187.26
	10/01/97	5,193.74	5,194.98	7.20	0	5,187.78
	05/05/98	5,193.74	5,194.98	8.36	0	5,186.62
	12/01/98	5,193.74	5,194.98	5.58	0	5,189.40
	10/14/99	5,193.74	5,194.98	6.72	0	5,188.26
	10/01/00	5,193.74	5,194.98	5.76	0	5,189.22
	12/19/01	5,193.74	5,194.98	5.85	0	5,189.13
MW-18	01/01/92	5,199.14	5,201.75	NM	0	NM
	06/01/92	5,199.14	5,201.75	7.10	0	5,194.65
	08/01/92	5,199.14	5,201.75	5.00	0	5,196.75
	12/01/92	5,199.14	5,201.75	4.50	0	5,197.25
	03/01/93	5,199.14	5,201.75	6.70	0	5,195.05
	05/01/93	5,199.14	5,201.75	7.10	0	5,194.65
	11/01/93	5,199.14	5,201.75	5.20	0	5,196.55
	05/01/94	5,199.14	5,201.75	9.58	0	5,192.17
	10/01/94	5,199.14	5,201.75	8.60	0	5,193.15
	05/01/95	5,199.14	5,201.75	11.82	0	5,189.93
	10/01/95	5,199.14	5,201.75	10.69	0	5,191.06
	05/01/96	5,199.14	5,201.75	11.81	0	5,189.94
	10/01/96	5,199.14	5,201.75	10.35	0	5,191.40
	06/01/97	5,199.14	5,201.75	12.46	0	5,189.29
	10/01/97	5,199.14	5,201.75	11.96	0	5,189.79
	05/05/98	5,199.14	5,201.75	13.72	0	5,188.03
	12/01/98	5,199.14	5,201.75	10.37	0	5,191.38
	10/14/99	5,199.14	5,201.75	11.51	Slight Sheen	5,190.24
	10/01/00	5,199.14	5,201.75	10.48	Slight Sheen	5,191.27
	12/19/01	5,199.14	5,201.75	10.61	Slight Sheen	5,191.14

Table 1

2001 Annual Groundwater Monitoring Report

Well ID	Date	Ground Elevation	Datum Elevation	Depth to Water (feet)	Free Product Thickness (feet)	Corrected Elevation (ft)
MW-19	01/01/92	5188.58	5189.54	1.00	0	5,188.54
	06/01/92	5188.58	5189.54	2.00	0	5,187.54
	08/01/92	5188.58	5189.54	1.90	0	5,187.64
	12/01/92	5188.58	5189.54	0.30	0	5,189.24
	03/01/93	5188.58	5189.54	1.20	0	5,188.34
	05/01/93	5188.58	5189.54	2.20	0	5,187.34
	11/01/93	5188.58	5189.54	1.00	0	5,188.54
	05/01/94	5188.58	5189.54	3.43	0	5,186.11
	10/01/94	5188.58	5189.54	2.48	0	5,187.06
	05/01/95	5188.58	5189.54	3.50	0	5,186.04
	10/01/95	5188.58	5189.54	3.44	0	5,186.10
	05/01/96	5188.58	5189.54	3.42	0	5,186.12
	10/01/96	5188.58	5189.54	2.97	0	5,186.57
	06/01/97	5188.58	5189.54	4.51	0	5,185.03
	10/01/97	5188.58	5189.54	3.99	0	5,185.55
	05/05/98	5188.58	5189.54	4.62	0	5,184.92
	12/01/98	5188.58	5189.54	2.68	0	5,186.86
	10/14/99	5188.58	5189.54	3.70	0	5,185.84
	10/01/00	5188.58	5189.54	2.84	0	5,186.70
	12/19/01	5188.58	5189.54	5.05	0	5,184.49
MW-20	01/01/92	5,190.10	5,191.05	2.60	0	5,188.45
	06/01/92	5,190.10	5,191.05	3.50	0	5,187.55
	08/01/92	5,190.10	5,191.05	3.50	0	5,187.55
	12/01/92	5,190.10	5,191.05	1.80	0	5,189.25
	03/01/93	5,190.10	5,191.05	2.70	0	5,188.35
	05/01/93	5,190.10	5,191.05	3.70	0	5,187.35
	11/01/93	5,190.10	5,191.05	2.60	0	5,188.45
	05/01/94	5,190.10	5,191.05	5.76	0	5,185.29
	10/01/94	5,190.10	5,191.05	3.83	0	5,187.22
	05/01/95	5,190.10	5,191.05	4.78	0	5,186.27
	10/01/95	5,190.10	5,191.05	4.71	0	5,186.34
	05/01/96	5,190.10	5,191.05	4.57	0	5,186.48
	10/01/96	5,190.10	5,191.05	4.35	0	5,186.70
	06/01/97	5,190.10	5,191.05	5.65	0	5,185.40
	10/01/97	5,190.10	5,191.05	5.15	0	5,185.90
	05/05/98	5,190.10	5,191.05	5.73	0	5,185.32
	12/01/98	5,190.10	5,191.05	4.05	0	5,187.00
	10/14/99	5,190.10	5,191.05	5.10	0	5,185.95
	10/01/00	5,190.10	5,191.05	4.11	Sheen	5,186.94
	12/19/01	5,190.10	5,191.05	4.45	0	5,186.60
MW-21	01/01/92	5,193.62	5,194.81	2.80	0	5,192.01
	06/01/92	5,193.62	5,194.81	4.30	0	5,190.51
	08/01/92	5,193.62	5,194.81	4.60	0	5,190.21
	12/01/92	5,193.62	5,194.81	2.20	0	5,192.61
	03/01/93	5,193.62	5,194.81	3.20	0	5,191.61
	05/01/93	5,193.62	5,194.81	4.70	0	5,190.11
	11/01/93	5,193.62	5,194.81	3.30	0	5,191.51
	05/01/94	5,193.62	5,194.81	6.00	0	5,188.81
	10/01/94	5,193.62	5,194.81	5.04	0	5,189.77
	05/01/95	5,193.62	5,194.81	6.29	0	5,188.52
	10/01/95	5,193.62	5,194.81	6.22	0	5,188.59
	05/01/96	5,193.62	5,194.81	6.22	0	5,188.59
	10/01/96	5,193.62	5,194.81	5.71	0	5,189.10
	06/01/97	5,193.62	5,194.81	6.73	0	5,188.08
	10/01/97	5,193.62	5,194.81	6.92	0	5,187.89
	05/05/98	5,193.62	5,194.81	7.45	0	5,187.36
	12/01/98	5,193.62	5,194.81	NM	NM	NM
	10/14/99	5,193.62	5,194.81	6.64	0	5,188.17
	10/01/00	5,193.62	5,194.81	4.99	0	5,189.82
	12/19/01	5,193.62	5,194.81	4.72	0	5,190.09

Table 1

2001 Annual Groundwater Monitoring Report

Well ID	Date	Ground Elevation	Datum Elevation	Depth to Water (feet)	Free Product Thickness (feet)	Corrected Elevation (ft)
Inside Slurry Wall						
MW-17	01/01/92	5,193.43	5,195.91	NM	0	NM
	06/01/92	5,193.43	5,195.91	3.70	0	5,192.21
	08/01/92	5,193.43	5,195.91	3.40	0	5,192.51
	12/01/92	5,193.43	5,195.91	2.10	0	5,193.81
	03/01/93	5,193.43	5,195.91	3.10	0	5,192.81
	05/01/93	5,193.43	5,195.91	3.90	0	5,192.01
	11/01/93	5,193.43	5,195.91	2.90	0	5,193.01
	05/01/94	5,193.43	5,195.91	5.71	0	5,190.20
	10/01/94	5,193.43	5,195.91	5.47	0	5,190.44
	05/01/95	5,193.43	5,195.91	8.30	0	5,187.61
	10/01/95	5,193.43	5,195.91	8.29	0	5,187.62
	05/01/96	5,193.43	5,195.91	8.11	0	5,187.80
	10/01/96	5,193.43	5,195.91	8.02	0	5,187.89
	06/01/97	5,193.43	5,195.91	9.32	0	5,186.59
	10/01/97	5,193.43	5,195.91	9.48	0	5,186.43
	05/05/98	5,193.43	5,195.91	9.42	0.01	5,186.49
	12/01/98	5,193.43	5,195.91	7.37	Sheen	5,188.54
	10/14/99	5,193.43	5,195.91	9.45	0.00	5,186.46
	10/01/00	5,193.43	5,195.91	8.12	Sheen	5,187.79
	12/19/01	5,193.43	5,195.91	8.10	0.00	5,187.81
MW-22	01/01/92	5,194.58	5,195.86	4.50	0	5,191.36
	06/01/92	5,194.58	5,195.86	5.30	0	5,190.56
	08/01/92	5,194.58	5,195.86	4.70	0	5,191.16
	12/01/92	5,194.58	5,195.86	3.50	0	5,192.36
	03/01/93	5,194.58	5,195.86	5.00	0	5,190.86
	05/01/93	5,194.58	5,195.86	5.70	0	5,190.16
	11/01/93	5,194.58	5,195.86	4.40	0	5,191.46
	05/01/94	5,194.58	5,195.86	7.62	0	5,188.24
	10/01/94	5,194.58	5,195.86	7.18	0	5,188.68
	05/01/95	5,194.58	5,195.86	7.64	0	5,188.22
	10/01/95	5,194.58	5,195.86	7.16	0	5,188.70
	05/01/96	5,194.58	5,195.86	7.51	0	5,188.35
	10/01/96	5,194.58	5,195.86	6.89	0	5,188.97
	06/01/97	5,194.58	5,195.86	8.16	0	5,187.70
	10/01/97	5,194.58	5,195.86	8.06	0.03	5,187.80
	05/05/98	5,194.58	5,195.86	9.02	0.01	5,186.84
	12/01/98	5,194.58	5,195.86	6.52	Sheen	5,189.34
	10/14/99	5,194.58	5,195.86	7.75	Slight Sheen	5,188.11
	10/01/00	5,194.58	5,195.86	6.90	Sheen	5,188.96
	12/19/01	5,194.58	5,195.86	7.00	0.00	5,188.86
P-1	01/01/92	5,195.74	5,197.66	NM	0	NM
	06/01/92	5,195.74	5,197.66	5.40	0	5,192.26
	08/01/92	5,195.74	5,197.66	4.20	0	5,193.46
	12/01/92	5,195.74	5,197.66	3.30	0	5,194.36
	03/01/93	5,195.74	5,197.66	5.50	0	5,192.16
	05/01/93	5,195.74	5,197.66	6.10	0	5,191.56
	11/01/93	5,195.74	5,197.66	4.40	0	5,193.26
	05/01/94	5,195.74	5,197.66	7.21	0	5,190.45
	10/01/94	5,195.74	5,197.66	7.57	0	5,190.09
	05/01/95	5,195.74	5,197.66	8.62	0	5,189.04
	10/01/95	5,195.74	5,197.66	7.82	0	5,189.84
	05/01/96	5,195.74	5,197.66	8.54	0.01	5,189.12
	10/01/96	5,195.74	5,197.66	7.43	0	5,190.23
	06/01/97	5,195.74	5,197.66	9.29	0.01	5,188.37
	10/01/97	5,195.74	5,197.66	8.91	0.01	5,188.75
	05/05/98	5,195.74	5,197.66	9.87	0.01	5,187.79
	12/01/98	5,195.74	5,197.66	NM	NM	NM
	10/01/99	5,195.74	5,197.66	NM	NM	NM
	10/01/00	5,195.74	5,197.66	NM	NM	NM

Table 1

Well ID	Date	Ground Elevation	Datum Elevation	Depth to Water (feet)	Free Product Thickness (feet)	Corrected Elevation (ft)
P-2	01/01/92	5,190.50	5,192.32	NM	0	NM
	06/01/92	5,190.50	5,192.32	3.10	0	5,189.22
	08/01/92	5,190.50	5,192.32	2.30	0	5,190.02
	12/01/92	5,190.50	5,192.32	1.00	0	5,191.32
	03/01/93	5,190.50	5,192.32	2.20	0	5,190.12
	05/01/93	5,190.50	5,192.32	3.10	0	5,189.22
	11/01/93	5,190.50	5,192.32	1.90	0	5,190.42
	05/01/94	5,190.50	5,192.32	4.20	0	5,188.12
	10/01/94	5,190.50	5,192.32	4.81	0	5,187.51
	05/01/95	5,190.50	5,192.32	5.30	0	5,187.02
	10/01/95	5,190.50	5,192.32	4.86	0	5,187.46
	05/01/96	5,190.50	5,192.32	5.04	0	5,187.28
	10/01/96	5,190.50	5,192.32	4.53	0	5,187.79
	06/01/97	5,190.50	5,192.32	6.04	0	5,186.28
	10/01/97	5,190.50	5,192.32	5.69	0	5,186.63
	05/05/98	5,190.50	5,192.32	9.96	0.01	5,182.36
	12/01/98	5,190.50	5,192.32	NM	NM	NM
	10/14/99	5,190.50	5,192.32	NM	NM	NM
	10/01/00	5,190.50	5,192.32	NM	NM	NM
P-3	01/01/92	5,191.44	5,193.21	NM	0	NM
	06/01/92	5,191.44	5,193.21	3.40	0	5,189.81
	08/01/92	5,191.44	5,193.21	3.60	0	5,189.61
	12/01/92	5,191.44	5,193.21	1.60	0	5,191.61
	03/01/93	5,191.44	5,193.21	2.60	0	5,190.61
	05/01/93	5,191.44	5,193.21	3.60	0	5,189.61
	11/01/93	5,191.44	5,193.21	2.60	0	5,190.61
	05/01/94	5,191.44	5,193.21	4.86	0	5,188.35
	10/01/94	5,191.44	5,193.21	5.77	0	5,187.44
	05/01/95	5,191.44	5,193.21	5.94	0	5,187.27
	10/01/95	5,191.44	5,193.21	5.88	0	5,187.33
	05/01/96	5,191.44	5,193.21	5.66	0	5,187.55
	10/01/96	5,191.44	5,193.21	5.62	0	5,187.59
	06/01/97	5,191.44	5,193.21	7.17	0	5,186.04
	10/01/97	5,191.44	5,193.21	6.67	0	5,186.54
	05/05/98	5,191.44	5,193.21	6.94	0	5,186.27
	12/01/98	5,191.44	5,193.21	NM	NM	NM
	10/14/99	5,191.44	5,193.21	NM	NM	NM
	10/01/00	5,191.44	5,193.21	NM	NM	NM
P-4	01/01/92	5,197.06	5,198.82	NM	0	NM
	06/01/92	5,197.06	5,198.82	7.00	0	5,191.82
	08/01/92	5,197.06	5,198.82	6.20	0	5,192.62
	12/01/92	5,197.06	5,198.82	5.10	0	5,193.72
	03/01/93	5,197.06	5,198.82	7.10	0	5,191.72
	05/01/93	5,197.06	5,198.82	7.60	0	5,191.22
	11/01/93	5,197.06	5,198.82	6.10	0	5,192.72
	05/01/94	5,197.06	5,198.82	8.09	0	5,190.73
	10/01/94	5,197.06	5,198.82	8.93	0.28	5,189.89
	05/01/95	5,197.06	5,198.82	9.85	0	5,188.97
	10/01/95	5,197.06	5,198.82	9.13	0	5,189.69
	05/01/96	5,197.06	5,198.82	9.73	0	5,189.09
	10/01/96	5,197.06	5,198.82	8.79	0	5,190.03
	06/01/97	5,197.06	5,198.82	9.88	0	5,188.94
	10/01/97	5,197.06	5,198.82	9.90	0	5,188.92
	05/05/98	5,197.06	5,198.82	6.46	0	5,192.36
	12/01/98	5,197.06	5,198.82	NM	NM	NM
	10/14/99	5,197.06	5,198.82	NM	NM	NM
	10/01/00	5,197.06	5,198.82	NM	NM	NM

Notes: NM = Not Measured
NA = Not Applicable, Well Destroyed

Table 2

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Location		DCA	B	E	X	T	BTEX	pH	SC
Within Slurry Wall									
MW-17	Sep 13-14, 1990	360	11,000	1,160	13,000	15,000	40,160	7.01	2,500
	Mar 18-19, 1991	400	11,000	1,900	15,000	10,000	37,900	7.04	2,700
	Jun 13, 1991	420	9,800	1,800	16,000	6,300	33,900	7.04	2,650
	Jan 20-21, 1992	MSG	MSG	MSG	MSG	MSG	0	MSG	MSG
	Jun 9 & 12, 1992	45	9,240	1,150	7,190	7,580	25,160	7.26	2,730
	Aug 19-20-1992	27	7,710	669	5,130	1,920	15,429	7.23	2,810
	Dec 16, 1992	17.3	7,990	638	4,600	4,740	17,968	7.54	2,970
	Mar 30, 1993	16.8	13,800	1,110	6,930	6,830	28,670	7.37	2,610
	May 23, 1993	12.5	13,700	993	10,530	6,360	31,583	7.33	2,470
	Nov 29-30, 1993	30.9	8,590	636	4,880	2,820	16,926	7.39	2,360
	May 25, 1994	8.3	10,900	823	5,660	4,340	21,723	7.30	2,830
	Oct 2-3, 1994	4.9	5,130	409	2,818	1,160	9,517	7.04	2,470
Duplicate	Oct 2-3, 1994	< 1	2,070	350	2,013	807	5,240	7.04	2,470
	May 17, 1995	< 10	9,320	694	3,782	2,510	16,306	7.49	2,480
Duplicate	May 17, 1995	< 10	12,800	944	5,710	4,460	23,914	7.49	2,480
**	Oct 18-19, 1995	2.3	3,000	244	1,079	464	4,787	7.09	2,430
	May 1-2, 1996	2.2	7,700	530	1,800	1,200	11,230	7.20	2,280
Duplicate	May 1-2, 1996	< 5	7,300	490	1,800	1,200	10,790	7.20	2,280
	Oct 20, 1996	< 5	3,600	290	1,500	880	6,270	7.50	2,290
	June 24, 1997	<0.5	5,500	23	180	51	5,754	7.52	2,550
	Oct. 28, 1997	<5	590	140	1,300	920	2,950	7.42	2,310
Duplicate	Oct. 28, 1997	<5	490	95	930	680	2,195	7.42	2,310
	May 5, 1998	NS	NS	NS	NS	NS	0	NS	NS
Duplicate	Dec. 9, 1998	180	4,000	870	4,500	970	10,340	7.57	1,160
	Dec. 9, 1998	<10	2,300	370	1,300	44	4,014	7.57	1,160
	Oct. 14, 1999	<5	440	110	930	140	1,620	7.64	2,030
	Oct. 27, 2000	<5	500	180	1,600	57	2,337	7.50	1,920
	Dec. 19, 2001	ND	6,200	1,900	17,200	6,000	31,300	7.61	1,713
MW-22	Sep 13-14, 1990	7,200	21,000	1,100	8,300	20,000	50,400	7.00	1,500
	Mar 18-19, 1991	2,200	17,000	910	6,600	9,500	34,010	6.87	1,900
	Jun 13, 1991	3,600	15,000	760	3,000	3,200	21,960	7.06	1,700
	Jan 20-21, 1992	5,400	36,000	1,900	13,500	27,000	78,400	6.86	1,600
	Jun 9 & 12, 1992	3,170	21,200	1,040	5,730	7,540	35,510	7.13	1,690
	Aug 19-20-1992	568	20,500	588	3,280	4,610	28,978	7.28	1,545
	Dec 16, 1992	908	12,100	514	3,254	4,220	20,088	7.43	1,508
	Mar 30, 1993	1,930	29,800	1,170	7,030	14,100	52,100	7.26	1,408
	May 23, 1993	28	17,000	1,100	6,150	6,520	30,770	7.61	6,550
	Nov 29-30, 1993	2,780	18,400	1,150	7,300	8,480	35,330	8.01	1,610
	May 25, 1994	379	9,340	845	3,725	2,250	16,160	7.15	1,505
	Oct 2-3, 1994	566	10,500	1,390	8,350	5,890	26,130	7.24	1,710
	May 17, 1995	62	7,510	1,000	6,520	1,750	16,780	7.15	1,517
Duplicate	May 17, 1995	67	9,020	1,230	7,310	2,620	20,180	7.15	1,517
Duplicate **	Oct 18-19, 1995	42	5,700	1,580	9,000	2,430	18,710	7.25	1,820
**	Oct 18-19, 1995	< 1	5,120	1,540	8,320	2,130	17,110	7.25	1,820
	May 1-2, 1996	37	4,600	1,300	10,000	410	16,310	7.30	1,325
	Oct 20, 1996	38	880	710	4,100	250	5,940	7.49	1,505
	June 24, 1997	24	4,300	510	5,500	580	10,890	7.31	1,280
Duplicate	June 24, 1997	21	5,800	750	7,300	930	14,780	7.31	1,280
	October 18, 1997	NS	NS	NS	NS	NS	0	NS	NS
	May 5, 1998	12	3,300	610	3,400	300	7,610	7.61	1,290
Duplicate	May 5, 1998	14	3,500	630	3,600	310	8,040	7.61	1,290
	Dec. 9, 1998	190	3,700	720	4,000	910	9,330	7.40	1,500
	Oct. 14, 1999	<5	580	150	820	210	1,760	7.72	1,840
Duplicate	Oct. 14, 1999	<5	730	180	1000	270	2,180	7.72	1,840
	Oct. 27, 2000	<10	210	220	830	120	1,380	7.70	1,610
	Dec. 19, 2001	ND	410	120	470	19	1,019	7.50	1,620

Table 2

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Location		DCA	B	E	X	T	BTEX 0	pH	SC
P-1	May 23, 1993	< 1	4,110	361	2,522	18.8	7,012	7.04	2,290
	Nov 29-30, 1993	< 1	3,580	506	3,215	10.2	7,311	7.22	1,460
	May 25, 1994	NS	NS	NS	NS	NS	0	NS	NS
	Oct 2-3, 1994	< 1	8.9	1.9	11.8	< 1	23	7.04	2,210
	May 17, 1995	NS	NS	NS	NS	NS	0	NS	NS
	Oct 18-19, 1995	NS	NS	NS	NS	NS	0	NS	NS
	May 1-2, 1996	NS	NS	NS	NS	NS	0	NS	NS
	Oct 20, 1996	NS	NS	NS	NS	NS	0	NS	NS
	June 24, 1997	NS	NS	NS	NS	NS	0	NS	NS
	October 18, 1997	NS	NS	NS	NS	NS	0	NS	NS
	May 5, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Dec. 9, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Oct. 14, 1999	NS	NS	NS	NS	NS	0	NS	NS
	Oct. 27, 2000	NS	NS	NS	NS	NS	0	NS	NS
P-2	May 23, 1993	3.2	5.2	< 1	< 1	< 1	5	7.36	3,910
	Nov 29-30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.92	3,540
	May 25, 1994	1.3	< 1	< 1	< 1	< 1	0	7.41	3,980
	Oct 2-3, 1994	3.6	< 1	< 1	< 1	< 1	0	7.12	3,480
	May 17, 1995	NS	NS	NS	NS	NS	0	NS	NS
	Oct 18-19, 1995	NS	NS	NS	NS	NS	0	NS	NS
	May 1-2, 1996	0.8	< 0.5	< 0.5	< 0.5	< 0.5	0	7.40	2,980
	Oct 20, 1996	NS	NS	NS	NS	NS	0	NS	NS
	June 24, 1997	NS	NS	NS	NS	NS	0	NS	NS
	October 18, 1997	NS	NS	NS	NS	NS	0	NS	NS
	May 5, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Dec. 9, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Oct. 14, 1999	NS	NS	NS	NS	NS	0	NS	NS
	Oct. 27, 2000	NS	NS	NS	NS	NS	0	NS	NS
P-3	May 23, 1993	10.6	< 1	< 1	< 1	< 1	0	7.24	11,160
	Nov 29-30, 1993	11.5	< 1	< 1	< 1	< 1	0	7.31	9,140
	May 25, 1994	12.1	< 1	< 1	< 1	< 1	0	7.28	8,070
	Oct 2-3, 1994	12.6	< 1	< 1	< 1	< 1	0	7.06	5,550
	May 17, 1995	NS	NS	NS	NS	NS	0	NS	NS
	Oct 18-19, 1995	NS	NS	NS	NS	NS	0	NS	NS
	May 1-2, 1996	3.4	< 0.5	< 0.5	< 0.5	< 0.5	0	7.40	4,280
	Oct 20, 1996	NS	NS	NS	NS	NS	0	NS	NS
	June 24, 1997	NS	NS	NS	NS	NS	0	NS	NS
	October 18, 1997	NS	NS	NS	NS	NS	0	NS	NS
	May 5, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Dec. 9, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Oct. 14, 1999	NS	NS	NS	NS	NS	0	NS	NS
	Oct. 27, 2000	NS	NS	NS	NS	NS	0	NS	NS
P-4	May 23, 1993	8.3	6,690	559	6,260	4,090	17,599	NA	NA
	Nov 29-30, 1993	2.1	6,400	900	7,700	4,420	19,420	NA	NA
	May 25, 1994	NS	NS	NS	NS	NS	0	NS	NS
	Oct 2-3, 1994	NS	NS	NS	NS	NS	0	NS	NS
	May 17, 1995	NS	NS	NS	NS	NS	0	NS	NS
	Oct 18-19, 1995	NS	NS	NS	NS	NS	0	NS	NS
	May 1-2, 1996	NA	NA	NA	NA	NA	0	6.60	1,621
	Oct 20, 1996	NS	NS	NS	NS	NS	0	NS	NS
	June 24, 1997	NS	NS	NS	NS	NS	0	NS	NS
	October 18, 1997	NS	NS	NS	NS	NS	0	NS	NS
	May 5, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Dec. 9, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Oct. 14, 1999	NS	NS	NS	NS	NS	0	NS	NS
	Oct. 27, 2000	NS	NS	NS	NS	NS	0	NS	NS

Table 2

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Location		DCA	B	E	X	T	BTEX	pH	SC
On Site									
MW-10	Sep 13-14, 1990	1.4	< 0.5	< 0.5	< 1	< 0.5	0	6.95	1,550
	Mar 18-19, 1991	< 1	< 0.5	< 0.5	< 0.5	< 0.5	0	7.29	1,700
	Jun 13, 1991	NA	NA	NA	NA	NA	0	NA	NA
	Jan 20-21, 1992	< 5	< 5	< 5	< 5	< 5	0	7.31	1,840
	Jun 9 & 12, 1992	1.6	< 1	< 1	< 1	< 1	0	7.65	1,400
	Aug 19-20-1992	< 1	< 1	< 1	< 1	< 1	0	7.85	1,160
	Dec 16, 1992	< 1	< 1	< 1	< 1	< 1	0	7.64	6,110
	Mar 30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.22	9,060
	May 23, 1993	< 1	< 1	< 1	< 1	< 1	0	7.93	2,320
	Nov 29-30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.73	1,320
	May 25, 1994	< 1	< 1	< 1	< 1	< 1	0	7.75	1,335
	Oct 2-3, 1994	< 1	< 1	< 1	< 1	< 1	0	7.56	1,159
	May 17, 1995	< 1	< 1	< 1	< 1	< 1	0	7.64	1,695
	Oct 18-19, 1995	< 1	< 1	< 1	< 1	< 1	0	7.41	1,453
	May 1-2, 1996	1.0	< 0.5	< 0.5	< 0.5	< 0.5	0	7.70	1,288
	Oct 20, 1996	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.69	1,310
	June 24, 1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.63	2,520
	October 20, 1997	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.61	1,585
	May 5, 1998	1.0	< 0.5	< 0.5	< 0.5	< 0.5	0	7.60	1,608
	Dec. 9, 1998	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.64	1,290
	Oct. 14, 1999	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.68	1,650
	Oct. 27, 2000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.50	1,470
	12/19/01 ND	ND	ND	ND	ND	ND	0	7.28	1409
							0		
							0		
MW-18	Sep 13-14, 1990	< 1	17	84.0	880	< 12	981	7.00	1,500
	Mar 18-19, 1991	< 1	26	85.0	770	< 12	881	7.24	1,200
	Jun 13, 1991	< 1	< 25	78.0	930	< 25	1,008	6.77	1,200
	Jan 20-21, 1992	MSG	MSG	MSG	MSG	MSG	0	MSG	MSG
	Jun 9 & 12, 1992	< 1	313	200	1,710	1.1	2,224	7.07	1,480
	Aug 19-20-1992	< 1	527	258	2,075	10.8	2,871	7.26	2,100
	Dec 16, 1992	< 25	294	224	1,460	< 25	1,978	7.31	1,930
	Mar 30, 1993	< 1	117	96.0	226	8.0	447	7.07	2,780
	May 23, 1993	< 1	73	31.2	259	< 1	363	7.15	2,220
	Nov 29-30, 1993	< 1	337	261	1,352	4.9	1,955	7.00	1,870
	May 25, 1994	< 1	51	7.0	99	10.0	167	7.00	1,510
	Oct 2-3, 1994	< 1	210	46.0	483	10.9	750	7.10	1,530
	May 17, 1995	< 1	128	10.4	274	< 1	412	6.84	1,370
	Oct 18-19, 1995	< 1	118	20.0	296	12.2	447	7.03	1,299
	May 1-2, 1996	< 0.5	48	3.4	150	0.5	202	7.00	1,270
	Oct 20, 1996	< 0.5	37	14.0	110	11.0	172	7.50	1,314
Duplicate	Oct 20, 1996	< 0.5	33	12.0	120	0.8	166	7.50	1,314
	June 24, 1997	< 0.5	130	15.0	200	< 0.5	345	6.98	1,399
	October 20, 1997	< 0.5	55	19.0	150	0.5	225	6.99	1,280
	May 5, 1998	< 0.5	16	< 0.5	2.1	< 0.5	18	6.84	1,374
	Dec. 9, 1998	< 2.5	44	21	< 2.5	< 2.5	65	7.04	1,438
	Oct. 14, 1999	0.50	33	11	60	4	108	7.13	1,550
	Oct. 27, 2000	0.90	9.5	< 0.5	6.9	< 0.5	7	6.90	3,400
	Dec. 19, 2001	ND	4	ND	ND	ND	4	6.89	3,300
MW-19	Sep 13-14, 1990	45	< 0.5	1.1	1.9	< 0.5	3	6.95	3,000
	Mar 18-19, 1991	35	< 0.5	< 0.5	< 0.5	< 0.5	0	7.22	2,500
	Jun 13, 1991	44	< 0.5	5.9	< 0.5	< 0.5	6	7.10	2,400
	Jan 20-21, 1992	14	< 5	< 5	< 5	< 5	0	7.66	460
	Jun 9 & 12, 1992	11.4	< 1	< 1	< 1	< 1	0	7.76	1,970
	Aug 19-20-1992	9.0	< 1	< 1	< 1	< 1	0	7.72	1,320
	Dec 16, 1992	6.6	< 1	< 1	< 1	< 1	0	7.70	1,620
	Mar 30, 1993	2.4	< 1	< 1	< 1	< 1	0	7.74	1,750
	May 23, 1993	7.9	< 1	< 1	< 1	< 1	0	7.73	1,630
	Nov 29-30, 1993	6.6	< 1	< 1	< 1	< 1	0	7.78	1,380
	May 25, 1994	8.0	< 1	< 1	< 1	< 1	0	7.65	1,762
	Oct 2-3, 1994	7.9	< 1	< 1	< 1	< 1	0	7.44	1,258
	May 17, 1995	8.6	< 1	< 1	< 1	< 1	0	7.52	1,624
	Oct 18-19, 1995	8.8	< 1	< 1	< 1	< 1	0	7.31	1,411
	May 1-2, 1996	8.6	< 0.5	< 0.5	< 0.5	< 0.5	0	7.50	1,361
	Oct 20, 1996	4.0	< 0.5	< 0.5	< 0.5	< 0.5	0	7.62	1,340
	June 24, 1997	3.0	< 0.5	< 0.5	< 0.5	< 0.5	0	7.52	1,573
	October 20, 1997	2.2	< 0.5	< 0.5	< 0.5	< 0.5	0	7.53	1,346
	May 5, 1998	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.40	1,672
	Dec. 9, 1998	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.58	1,381
	Oct 14, 1999	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.62	2,000
	Oct 27, 2000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.40	1,490
	12/19/01 ND	ND	ND	ND	ND	ND	0	7.41	1420
							0		

Table 2

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Location		DCA	B	E	X	T	BTEX	pH	SC
MW-20	Sep 13-14, 1990	< 1	< 0.5	< 0.5	< 1	< 0.5	0	7.01	1,350
	Mar 18-19, 1991	2.0	< 0.5	< 0.5	0.7	< 0.5	1	7.39	3,000
	Jun 13, 1991	NA	NA	NA	NA	NA	0	NA	NA
	Jan 20-21, 1992	< 5	< 5	< 5	< 5	< 5	0	7.54	3,750
	Jun 9 & 12, 1992	< 1	< 1	< 1	< 1	< 1	0	7.62	1,600
	Aug 19-20-1992	< 1	< 1	< 1	< 1	< 1	0	6.97	1,310
	Dec 16, 1992	< 1	< 1	< 1	< 1	< 1	0	7.87	1,340
	Mar 30, 1993	2.1	< 1	< 1	< 1	< 1	0	7.10	6,740
	May 23, 1993	< 1	< 1	< 1	< 1	< 1	0	7.86	1,430
	Nov 29-30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.69	1,230
	May 25, 1994	< 1	< 1	< 1	< 1	< 1	0	7.38	1,292
	Oct 2-3, 1994	< 1	< 1	< 1	< 1	< 1	0	7.57	1,308
	May 17, 1995	< 1	< 1	< 1	< 1	< 1	0	7.65	1,434
	Oct 18-19, 1995	< 1	< 1	< 1	< 1	< 1	0	7.35	1,525
	May 1-2, 1996	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.50	1,417
	Oct 20, 1996	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.18	1,545
	June 24, 1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.48	1,540
	October 20, 1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.01	1,452
	May 5, 1998	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.44	1,890
	Dec. 9, 1998	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.65	1,153
	Oct. 14, 1999	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	8.01	1,600
	Oct. 27, 2000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.60	14,840
	Dec. 19, 2001	ND	ND	ND	ND	ND	0	7.51	1,695
							0		
MW-21	Sep 13-14, 1990	67	< 0.5	1.1	5.0	1.5	8	7.01	1,500
	Mar 18-19, 1991	44	< 0.5	< 0.5	< 0.5	< 0.5	0	7.62	1,700
	Jun 13, 1991	40	< 0.5	< 0.5	< 0.5	< 0.5	0	7.44	1,700
	Jan 20-21, 1992	8.8	< 5	< 5	< 5	< 5	0	8.31	5,110
	Jun 9 & 12, 1992	21.9	< 1	< 1	< 1	< 1	0	7.37	2,400
	Aug 19-20-1992	8.3	< 1	< 1	< 1	< 1	0	6.96	1,730
	Dec 16, 1992	1.7	< 1	< 1	< 1	< 1	0	7.69	2,030
	Mar 30, 1993	5.9	< 1	< 1	< 1	< 1	0	7.58	1,590
	May 23, 1993	14.8	< 1	< 1	< 1	< 1	0	7.63	2,530
	Nov 29-30, 1993	3.7	< 1	< 1	< 1	< 1	0	7.58	1,580
	May 25, 1994	8.3	< 1	< 1	< 1	< 1	0	7.66	1,592
	Oct 2-3, 1994	5.5	< 1	< 1	< 1	< 1	0	7.55	1,760
	May 17, 1995	< 1	< 1	< 1	< 1	< 1	0	7.59	1,819
	May 17, 1995	5.4	< 1	< 1	< 1	< 1	0	7.59	1,819
	Oct 18-19, 1995	2.1	< 1	< 1	< 1	< 1	0	7.52	2,060
	May 1-2, 1996	1.0	< 0.5	< 0.5	< 0.5	< 0.5	0	7.60	1,824
	Oct 20, 1996	3.6	< 0.5	< 0.5	< 0.5	< 0.5	0	7.68	2,100
	June 24, 1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	6.98	1,642
	October 20, 1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	6.97	1,653
	May 5, 1998	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	6.67	1,760
Duplicate	Dec. 9, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Oct. 14, 1999	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	6.97	2,180
	Oct. 27, 2000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	6.30	47,500
	Oct. 27, 2000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	6.30	47,500
	Dec. 19, 2001	ND	ND	ND	ND	ND	0	6.51	3,280
							0		
							0		

Table 2

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Location		DCA	B	E	X	T	BTEX	pH	SC
Off Site							0		
MW-9	Sep 13-14, 1990	2.1	< 0.5	< 0.5	< 0.5	< 0.5	0	6.97	1,550
	Mar 18-19, 1991	1.8	< 0.5	< 0.5	< 0.5	< 0.5	0	7.57	2,000
	Jun 13, 1991	NA	NA	NA	NA	NA	0	NA	NA
	Jan 20-21, 1992	< 5	< 5	< 5	< 5	< 5	0	7.31	4,360
	Jun 9 & 12, 1992	1.5	< 1	< 1	< 1	< 1	0	7.58	1,680
	Aug 19-20-1992	< 1	< 1	< 1	< 1	< 1	0	7.81	1,325
	Dec 16, 1992	< 1	< 1	< 1	< 1	< 1	0	7.33	1,827
	Mar 30, 1993	1.5	< 1	< 1	< 1	< 1	0	7.63	1,640
	May 23, 1993	NA	NA	NA	NA	NA	0	NA	NA
	Nov 29-30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.62	1,460
	May 25, 1994	NS	NS	NS	NS	NS	0	NS	NS
	Oct 2-3, 1994	1.2	< 1	< 1	< 1	< 1	0	7.80	1,610
	May 17, 1995	NS	NS	NS	NS	NS	0	NS	NS
	Oct 18-19, 1995	< 1	< 1	< 1	< 1	< 1	0	7.38	1,523
	May 1-2, 1996	NS	NS	NS	NS	NS	0	NS	NS
	Oct 20, 1996	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.85	1,645
	June 24, 1997	NS	NS	NS	NS	NS	0	NS	NS
	October 20, 1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	NV	NV
	May 5, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Dec. 9, 1998	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.51	1,588
	Oct. 14, 1999	NS	NS	NS	NS	NS	0	NS	NS
	Dec. 19, 2001	ND	ND	ND	ND	ND	0	7.42	1,610
							0		
MW-13	Sep 13-14, 1990	< 1	< 0.5	< 0.5	< 1	1.5	2	7.02	2,950
	Mar 18-19, 1991	< 1	< 0.5	< 0.5	< 0.5	< 0.5	0	7.84	3,250
	Jun 13, 1991	NA	NA	NA	NA	NA	0	NA	NA
	Jan 20-21, 1992	NA	NA	NA	NA	NA	0	NA	NA
	Jun 9 & 12, 1992	< 1	< 1	< 1	< 1	< 1	0	7.11	4,260
	Aug 19-20-1992	< 1	< 1	< 1	< 1	< 1	0	7.06	2,910
	Dec 16, 1992	NA	NA	NA	NA	NA	0	NA	NA
	Mar 30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.72	3,410
	May 23, 1993	NA	NA	NA	NA	NA	0	NA	NA
	Nov 29-30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.45	4,150
	May 25, 1994	NS	NS	NS	NS	NS	0	NS	NS
	Oct 2-3, 1994	< 1	< 1	< 1	< 1	< 1	0	7.38	3,160
	May 17, 1995	NS	NS	NS	NS	NS	0	NS	NS
	Oct 18-19, 1995	< 1	< 1	< 1	< 1	< 1	0	7.41	3,600
	May 1-2, 1996	NS	NS	NS	NS	NS	0	NS	NS
	Oct 20, 1996	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.54	3,200
	June 24, 1997	NS	NS	NS	NS	NS	0	NS	NS
	October 20, 1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	NV	NV
	May 5, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Dec. 9, 1998	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.81	4,100
Destroyed	Oct. 14, 1999	NS	NS	NS	NS	NS	0	NS	NS
MW-14	Sep 13-14, 1990	2.0	< 0.5	< 0.5	< 1	< 0.5	0	6.97	5,450
	Mar 18-19, 1991	< 1	< 0.5	< 0.5	1.7	< 0.5	2	7.51	8,400
	Jun 13, 1991	NA	NA	NA	NA	NA	0	NA	NA
	Jan 20-21, 1992	< 5	< 5	< 5	< 5	< 5	0	7.20	19,380
	Jun 9 & 12, 1992	2.3	< 1	< 1	< 1	< 1	0	7.62	4,520
	Aug 19-20-1992	< 1	< 1	< 1	< 1	< 1	0	7.38	5,760
	Dec 16, 1992	< 1	< 1	< 1	< 1	< 1	0	7.40	9,090
	Mar 30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.02	15,280
	May 23, 1993	NA	NA	NA	NA	NA	0	NA	NA
	Nov 29-30, 1993	1.2	< 1	< 1	< 1	< 1	0	7.61	6,030
	May 25, 1994	NS	NS	NS	NS	NS	0	NS	NS
	Oct 2-3, 1994	1.9	< 1	< 1	< 1	< 1	0	7.34	4,560
	May 17, 1995	NS	NS	NS	NS	NS	0	NS	NS
	Oct 18-19, 1995	< 1	< 1	< 1	< 1	< 1	0	7.15	6,760
	May 1-2, 1996	NS	NS	NS	NS	NS	0	NS	NS
	Oct 20, 1996	0.7	< 0.5	< 0.5	< 0.5	< 0.5	0	7.15	6,120
	June 24, 1997	NS	NS	NS	NS	NS	0	NS	NS
	October 20, 1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	NV	NV
	May 5, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Dec. 9, 1998	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.68	14,100
	Oct. 14, 1999	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.26	7,830
	Oct. 27, 2000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.70	10,500

Table 2

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Location		DCA	B	E	X	T	BTEX	pH	SC
MW-15	Sep 13-14, 1990	< 1	< 0.5	< 0.5	< 1	< 0.5	0	7.00	3,250
	Mar 18-19, 1991	< 1	< 0.5	< 0.5	< 0.5	< 0.5	0	7.02	8,500
	Jun 13, 1991	NA	NA	NA	NA	NA	0	NA	NA
	Jan 20-21, 1992	< 5	< 5	< 5	< 5	< 5	0	7.15	12,120
	Jun 9 & 12, 1992	< 1	< 1	< 1	< 1	< 1	0	7.27	3,430
	Aug 19-20-1992	< 1	< 1	< 1	< 1	< 1	0	7.39	2,450
	Dec 16, 1992	NA	NA	NA	NA	NA	0	NA	NA
	Mar 30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.42	9,810
	May 23, 1993	NA	NA	NA	NA	NA	0	NA	NA
	Nov 29-30, 1993	< 1	< 1	< 1	< 1	< 1	0	8.01	1,630
	May 25, 1994	NS	NS	NS	NS	NS	0	NS	NS
	Oct 2-3, 1994	< 1	< 1	< 1	< 1	< 1	0	7.54	2,500
	May 17, 1995	NS	NS	NS	NS	NS	0	NS	NS
	Oct 18-19, 1995	< 1	< 1	< 1	< 1	< 1	0	7.48	2,260
	May 1-2, 1996	NS	NS	NS	NS	NS	0	NS	NS
	Oct 20, 1996	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	8.21	1,939
	June 24, 1997	NS	NS	NS	NS	NS	0	NS	NS
	October 20, 1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	6.97	3,250
	May 5, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Dec. 9, 1998	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.30	1,980
	Oct. 14, 1999	NS	NS	NS	NS	NS	0	NS	NS
MW-16	Sep 13-14, 1990	< 1	< 0.5	< 0.5	< 1	< 0.5	0	6.97	1,370
	Mar 18-19, 1991	< 1	< 0.5	< 0.5	< 0.5	< 0.5	0	7.57	1,200
	Jun 13, 1991	NA	NA	NA	NA	NA	0	NA	NA
	Jan 20-21, 1992	< 5	< 5	< 5	< 5	< 5	0	7.30	2,050
	Jun 9 & 12, 1992	< 1	< 1	< 1	< 1	< 1	0	7.50	1,430
	Aug 19-20-1992	< 1	< 1	< 1	< 1	< 1	0	7.76	1,230
	Dec 16, 1992	< 1	< 1	< 1	< 1	< 1	0	7.12	1,735
	Mar 30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.23	2,400
	May 23, 1993	NA	NA	NA	NA	NA	0	NA	NA
	Nov 29-30, 1993	< 1	< 1	< 1	< 1	< 1	0	7.31	1,760
	May 25, 1994	NS	NS	NS	NS	NS	0	NS	NS
	Oct 2-3, 1994	< 1	< 1	< 1	< 1	< 1	0	7.44	1,253
	May 17, 1995	NS	NS	NS	NS	NS	0	NS	NS
	Oct 18-19, 1995	< 1	< 1	< 1	< 1	< 1	0	7.26	1,421
	May 1-2, 1996	NS	NS	NS	NS	NS	0	NS	NS
	Oct 20, 1996	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	6.78	1,665
	June 24, 1997	NS	NS	NS	NS	NS	0	NS	NS
	October 20, 1997	< 0.5	0.5	< 0.5	< 0.5	< 0.5	1	NV	NV
	May 5, 1998	NS	NS	NS	NS	NS	0	NS	NS
	Dec. 9, 1998	< 0.5	0.5	< 0.5	< 0.5	< 0.5	1	7.26	3,930
	Oct. 14, 1999	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.30	1,890
	Oct. 27, 2000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0	7.30	1,970
	Dec. 19, 2001	ND	ND	ND	ND	ND	0	7.30	2,320

Water Quality Standards

New Mexico	10	10	750	620	750		6.90	---
EPA MCL	5	5	700	10,000	1,000		---	---

NOTES:

1,2-dichloroethane
Benzene
Toluene
Ethylbenzene
Total Xylenes

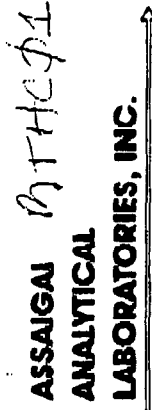
SC =
TDS =
MSG =
NA =
NS =

Specific Conc Organic values in ug/l
Total Dissolve pH in standard units
Well Missing SC in umhos/cm
Not Analyzed NV=no value recorded
Not Sampled

Values in bold exceed New Mexico MCL for drinking water

** = Laboratory exceeded holding time before completing sample analyses.

Appendix A



7300 JEFFERSON N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

Lab Job No.: 0119307 Date 12/19/01

Client AT Tack Cos.

Client PT Hick Cons.
Address Indian School Rd

City / State / Zip Alb. AL 317

Project Name / Number	Moved to Refinery Highland

Contract / Purchase Order / Quote

Project Manager/Contact Michelle Hunter

Telephone No. 266-5001

Fax No.

Samplers : (signature)

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

[illegible]

AIL Fracture Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Corrosion	Preservation	
						Temp	Chemical
01A	MW-16	12/19/01	1040	EW	20 ml. VDA	4°C	1K2
02A	MW-9		1050				
02A	MW-20		1120				
04A	MW-10		1150				
05A	MW-19		1210				
06A	MW-21		1315				
07A	MW-22		1412				
08A	MW-17		1435				
09A	MW-18		1455				

Relinquished by: _____
Signature: Edwin J. Clark
Printed: Edwin J. Clark
Company: _____
Reason: _____

Date	12/20/11
Time	810

Received by: Adrian
Signature _____
Printed A. BLAZI
Company 1800
Reason 1800

Relinquished by: _____
Signature _____
Printed _____
Company _____
Reason _____

[illegible]

Received by: _____
Signature _____
Printed _____
Company _____
Reason _____

Method of Shipment: _____
 Shipment No. _____
 Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE



ASSAIGAI ANALYTICAL LABORATORIES, INC.

7300 Jefferson, NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

3332 Wedgewood Dr., Suite N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820

127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2555

RT HICKS CONSULTING, LTD
attn: **RANDY HICKS**
4665 INDIAN SCHOOL NE 106
ALBUQUERQUE NM 87110

Explanation of codes	
B	analyte detected in Method Blank
E	result is estimated
H	analyzed out of hold time
N	tentatively identified compound
S	subcontracted
1-8	see footnote

Assaigai Analytical Laboratories, Inc. Certificate of Analysis

STANDARD

Client: **RT HICKS CONSULTING, LTD**
Project: **MAVERIK REFINERY KIRTLAND**
Order: **0112367 RTHC01** Receipt: **12-20-01**

William P. Biava
for
William P. Biava, President of Assaigai Analytical Laboratories, Inc.

Sample: **MW-16**
Matrix: **GW**

Collected: 12-19-01 10:40:00 By: **EC**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-01A		SW846 8260B Purgeable VOCs by GC/MS				By: JDR				
X01539	XG.2001.1874.3	75-34-3	1,1 Dichloroethane	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.3	71-43-2	Benzene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.3	100-41-4	Ethylbenzene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.3	95-47-6	o-Xylene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.3	108-38-3/108-42	p/m Xylenes	ND	ug / L	1	2		12-28-01	12-28-01
X01539	XG.2001.1874.3	108-88-3	Toluene	ND	ug / L	1	1		12-28-01	12-28-01

Sample: **MW-9**
Matrix: **GW**

Collected: 12-19-01 10:50:00 By: **EC**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-02A		SW846 8260B Purgeable VOCs by GC/MS				By: JDR				
X01539	XG.2001.1874.4	75-34-3	1,1 Dichloroethane	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.4	71-43-2	Benzene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.4	100-41-4	Ethylbenzene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.4	95-47-6	o-Xylene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.4	108-38-3/108-42	p/m Xylenes	ND	ug / L	1	2		12-28-01	12-28-01
X01539	XG.2001.1874.4	108-88-3	Toluene	ND	ug / L	1	1		12-28-01	12-28-01



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Certificate of Analysis

Client: RT HICKS CONSULTING, LTD
 Project: MAVERIK REFINERY KIRTLAND
 Order: 0112367 RTHC01 Receipt: 12-20-01

Sample: MW-21
 Matrix: GW

Collected: 12-19-01 13:35:00 By: EC

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-06A		SW846 8260B Purgeable VOCs by GC/MS						By: JDR		
X01539	XG.2002.1.3	71-43-2	Benzene	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.3	100-41-4	Ethylbenzene	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.3	95-47-6	o-Xylene	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.3	108-38-3/108-42	p/m Xylenes	ND	ug / L	1	2		12-31-01	12-31-01
X01539	XG.2002.1.3	108-88-3	Toluene	ND	ug / L	1	1		12-31-01	12-31-01

Sample: MW-22
 Matrix: GW

Collected: 12-19-01 14:22:00 By: EC

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-07A		SW846 8260B Purgeable VOCs by GC/MS						By: JDR		
X01539	XG.2002.1.4	75-34-3	1,1 Dichloroethane	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.7	71-43-2	Benzene	410	ug / L	10	1		12-31-01	12-31-01
X01539	XG.2002.1.4	100-41-4	Ethylbenzene	120	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.4	95-47-6	o-Xylene	110	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.4	108-38-3/108-42	p/m Xylenes	360	ug / L	1	2		12-31-01	12-31-01
X01539	XG.2002.1.4	108-88-3	Toluene	19	ug / L	1	1		12-31-01	12-31-01

Sample: MW-17
 Matrix: GW

Collected: 12-19-01 14:35:00 By: EC

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-08A		SW846 8260B Purgeable VOCs by GC/MS						By: JDR		
X01539	XG.2002.1.8	75-34-3	1,1 Dichloroethane	ND	ug / L	100	1		12-31-01	12-31-01
X01539	XG.2002.1.8	71-43-2	Benzene	8200	ug / L	100	1		12-31-01	12-31-01
X01539	XG.2002.1.8	100-41-4	Ethylbenzene	1900	ug / L	100	1		12-31-01	12-31-01
X01539	XG.2002.1.8	95-47-6	o-Xylene	4200	ug / L	100	1		12-31-01	12-31-01
X01539	XG.2002.1.8	108-38-3/108-42	p/m Xylenes	13000	ug / L	100	2		12-31-01	12-31-01
X01539	XG.2002.1.8	108-88-3	Toluene	6000	ug / L	100	1		12-31-01	12-31-01

Sample: MW-18
 Matrix: GW

Collected: 12-19-01 14:36:00 By: EC

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-09A		SW846 8260B Purgeable VOCs by GC/MS						By: JDR		
X01539	XG.2002.1.5	75-34-3	1,1 Dichloroethane	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.6	71-43-2	Benzene	4.2	ug / L	1	1		12-31-01	12-31-01

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Certificate of Analysis

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 Project: **MAVERIK REFINERY KIRTLAND**
 Order: **0112367 RTHC01** Receipt: **12-20-01**

Sample: **MW-20**Collected: **12-19-01 11:30:00** By: **EC**Matrix: **GW**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-03A		SW846 8260B Purgeable VOCs by GC/MS						By: JDR		
X01539	XG.2001.1874.5	75-34-3	1,1 Dichloroethane	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.5	71-43-2	Benzene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.6	100-41-4	Ethylbenzene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.5	95-47-6	o-Xylene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.5	108-38-3/106-42	p/m Xylenes	ND	ug / L	1	2		12-28-01	12-28-01
X01539	XG.2001.1874.5	108-88-3	Toluene	ND	ug / L	1	1		12-28-01	12-28-01

Sample: **MW-10**Collected: **12-19-01 11:50:00** By: **EC**Matrix: **GW**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-04A		SW846 8260B Purgeable VOCs by GC/MS						By: JDR		
X01539	XG.2001.1874.6	75-34-3	1,1 Dichloroethane	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.6	71-43-2	Benzene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.6	100-41-4	Ethylbenzene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.6	95-47-6	o-Xylene	ND	ug / L	1	1		12-28-01	12-28-01
X01539	XG.2001.1874.6	108-38-3/106-42	p/m Xylenes	ND	ug / L	1	2		12-28-01	12-28-01
X01539	XG.2001.1874.6	108-88-3	Toluene	ND	ug / L	1	1		12-28-01	12-28-01

Sample: **MW-19**Collected: **12-19-01 13:10:00** By: **EC**Matrix: **GW**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-05A		SW846 8260B Purgeable VOCs by GC/MS						By: JDR		
X01539	XG.2002.1.2	75-34-3	1,1 Dichloroethane	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.2	71-43-2	Benzene	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.2	100-41-4	Ethylbenzene	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.2	95-47-6	o-Xylene	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.2	108-38-3/106-42	p/m Xylenes	ND	ug / L	1	2		12-31-01	12-31-01
X01539	XG.2002.1.2	108-88-3	Toluene	ND	ug / L	1	1		12-31-01	12-31-01

Sample: **MW-21**Collected: **12-19-01 13:35:00** By: **EC**Matrix: **GW**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-06A		SW846 8260B Purgeable VOCs by GC/MS						By: JDR		
X01539	XG.2002.1.3	75-34-3	1,1 Dichloroethane	ND	ug / L	1	1		12-31-01	12-31-01

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

Client: RT HICKS CONSULTING, LTD
Project: MAVERIK REFINERY KIRTLAND
Order: 0112367 RTHC01 Receipt: 12-20-01

Sample: MW-18

Collected: 12-19-01 14:35:00 By: EC

Matrix: GW

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0112367-09A		8W846 8260B Purgeable VOCs by GC/MS							By: JDR	
X01539	XG.2002.1.5	100-41-4	Ethylbenzene	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.5	85-47-6	o-Xylene	ND	ug / L	1	1		12-31-01	12-31-01
X01539	XG.2002.1.5	106-38-3/106-42	p/m Xylenes	ND	ug / L	1	2		12-31-01	12-31-01
X01539	XG.2002.1.5	108-88-3	Toluene	ND	ug / L	1	1		12-31-01	12-31-01

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or footnotes will appear below.