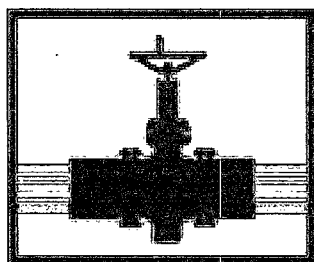


AP - 37

ANNUAL MONITORING REPORT

YEAR(S):

3/2005



PLAINS
ALL AMERICAN
PIPELINE, L.P.

ANNUAL MONITORING REPORT

LOVINGTON DEEP 6"
PLAINS REF: 2002-10312

SE¼ OF THE NE¼ OF SECTION 6, TOWNSHIP 17 SOUTH, RANGE 36 EAST
LEA COUNTY, NEW MEXICO

~5.8 MILES SOUTHWEST (195°) OF
LOVINGTON, LEA COUNTY, NEW MEXICO
LATITUDE: N32° 52' 1.13" LONGITUDE: W103° 23' 16.6"

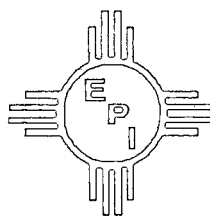
MARCH 2005

PREPARED BY:

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NMOCD - New Mexico Oil Conservation Division
 EPI - Environmental Plus, Inc.

STANDARD OF CARE

Annual Monitoring Report

Lovington Deep 6"

Ref. # 2002-10312

The information provided in this report was collected consistent with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993), the NMOCD Unlined Surface Impoundment Closure Guidelines (February 1993), and the Environmental Plus, Inc. (EPI) Standard Operating Procedures and Quality Assurance/Quality Control Plan. The conclusions are based on field observations and laboratory analytical reports as presented in the report. Recommendations follow NMOCD guidance and represent the professional opinions of EPI staff. These opinions were arrived at with currently accepted geologic, hydrogeologic and engineering practices at this time and location. The report was prepared or reviewed by a certified or registered EPI professional with a background in engineering, environmental, and/or the natural sciences.

This report was prepared by:

Iain A. Olness

Iain A. Olness, P.G.
Hydrogeologist

29 March 2005

Date

This report was reviewed by:

Pat McCasland

Pat McCasland

29 March 2005

Date

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I Background and Previous Remedial Activities

The Lovington Deep 6" release site is located approximately 5.8 miles southwest of Lovington in Lea County, New Mexico, at an elevation of approximately 3,912 feet above mean sea level (reference Figures 1 and 2). The release occurred on property owned by Darr Angell and is utilized as pasture land. The site is located in a rural area within the West Lovington oil field, with no residences or surface water within a 1,000-foot radius of the release site. The remediation area is surrounded by a barbed wire fence and is gated.

In December 2002, a release of approximately 25 barrels of crude oil, of which ten barrels were recovered, occurred at the site due to corrosion (internal and/or external) of the pipeline. Approximately 6,000 square feet (ft²) of surface area was impacted by the release. Surficial soil impacted by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment.

In an effort to delineate the extent of impacted soil at the site, six soil borings were advanced at the site to depths of approximately 75 feet below ground surface (bgs). During the advancement of the soil borings, groundwater was encountered at approximately 65 feet bgs and was found to be impacted by the release. Based on this, five of the soil borings were completed as groundwater monitoring wells in order to monitor groundwater impacts at the site.

An *Annual Monitoring Report* was submitted to the NMOCD in April 2004 documenting the results of the gauging, PSH recovery efforts and sampling of the groundwater monitoring well network during 2003.

A *Stage I and Stage II Abatement Plan* was submitted to the NMOCD in August 2004 and is currently under review.

II Field Activities

Site visits were made on February 9, March 15, March 25, April 14, May 6, June 16, July 9, July 20, September 23, October 1, October 21, November 3, November 18 and December 20, 2004 to record water and phase-separated hydrocarbon (PSH) levels in groundwater monitoring well MW-2 and recover PSH present in the well casing. In addition, the remaining groundwater monitoring wells were gauged to determine the depth to groundwater and to check for the presence of PSH.

Site visits were made on June 4, September 10 and December 13, 2004 to complete the aforementioned activities and to collect samples for laboratory analyses.

Due to elevated levels of hydrocarbon contaminants present in the samples collected from the existing groundwater monitoring well network, six additional groundwater monitoring wells were installed in November and December to further delineate the lateral extent of groundwater impacts.

III Groundwater Monitoring Well Installation

Six additional groundwater monitoring wells, MW-6 through MW-11 were installed at the site in November and December 2004. These wells were installed in an attempt to further delineate the lateral extents of groundwater impacts at the site. Groundwater monitoring well MW-6 was installed approximately 115 feet west of the excavation basin (reference *Figure 3*) to a depth of 70 feet below ground surface (bgs) and screened from 55 to 70 feet bgs (reference *Appendix C*). Groundwater monitoring well MW-7 was installed approximately 95 feet southwest of groundwater monitoring well MW-2 (reference *Figure 3*) to a depth 70 feet bgs and screened from 55 to 70 feet bgs (reference *Appendix C*). Groundwater monitoring well MW-8 was installed approximately 60 feet east-northeast of groundwater monitoring well MW-1 (reference *Figure 3*) to a depth of 70 feet bgs and screened from 55 to 70 feet bgs (reference *Appendix C*). Groundwater monitoring well MW-9 was installed approximately 140 feet east of groundwater monitoring well MW-5 (reference *Figure 3*) to a depth of 70 feet bgs and screened from 55 to 70 feet bgs (reference *Appendix C*). Groundwater monitoring well MW-10 was installed approximately 110 feet southeast of groundwater monitoring well MW-5 (reference *Figure 3*) to a depth of 73 feet bgs and screened from 58 to 73 feet bgs (reference *Appendix C*). Groundwater monitoring well MW-11 was installed approximately 90 feet southeast of groundwater monitoring well MW-4 (reference *Figure 3*) to a depth of 70 feet bgs and screened from 55 to 70 feet bgs (reference *Appendix C*).

Field and laboratory analytical results from this additional investigation are included in *Table 3*.

IV Groundwater Gradient and PSH Thickness

Monitoring wells were gauged prior to bailing to determine the depth to groundwater and the thickness of any PSH. Except for minor fluctuations, groundwater levels generally remained stable during the first two-thirds of 2004, experienced a sharp increase during the end of September, decreased through the beginning of November and increased the remainder of the year (reference Figures 12 through 15). PSH levels in the impacted groundwater monitoring well (MW-2) have generally shown a decrease during the past year, with the exception of the increase seen at the beginning of October 2004. A summary of groundwater elevations and PSH thickness is included in Table 1.

Based on data collected during the four sampling events, groundwater is flowing easterly (reference Figures 17, 19 and 21) and is consistent with historical data.

V PSH Recovery

Recovery of the PSH present on the groundwater surface in the vicinity of groundwater monitoring well MW-2 was accomplished via hand bailing during the past year. A total of 203 gallons of PSH were recovered during the past year. Although documentation pertaining to the quantity of PSH recovered during 2003 is incomplete, it is estimated that approximately 70 gallons were recovered, resulting in approximately 273 gallons recovered to date.

VI Groundwater Sampling

Groundwater monitoring wells MW-1, MW-3, MW-4 and MW-5 were sampled on June 4, September 10 and December 13, 2004, and the samples submitted for quantification of benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8260b. Newly installed groundwater monitoring wells MW-6 through MW-11 were also sampled during the December sampling event and the samples submitted for quantification of BTEX.

All wells were purged a minimum of three well volumes or dry and samples collected utilizing dedicated or disposable sample bailers. Samples were then placed on ice and shipped to an independent laboratory under chain-of-custody for analyses.

VII Groundwater Analytical Results

Analytical results for samples collected from groundwater monitoring well MW-1 indicated benzene concentrations ranging from 13.7 µg/L to 55.9 µg/L, and total BTEX concentrations ranging from 18.8 µg/L to 85.5 µg/L. Benzene, the only analyte reported above the NMWQCC groundwater standard, was reported above the NMWQCC groundwater standard for all sampling events.

Analytical results for samples collected from groundwater monitoring well MW-3 indicated benzene concentrations ranging from 4,600 µg/L to 16,100 µg/L, and total BTEX concentrations ranging from 8,512 µg/L to 19,300 µg/L. Benzene, toluene and total xylenes were reported above the NMWQCC groundwater standard for the sample collected on June 4, benzene and ethylbenzene concentrations were reported above the NMWQCC groundwater standard for the sample collected on September 10 and benzene, ethylbenzene and total xylene concentrations were reported above the NMWQCC groundwater standard on December 13, 2004. All other analytes were reported at concentrations below the NMWQCC groundwater standards for all samples.

Analytical results for samples collected from groundwater monitoring well MW-4 indicated benzene concentrations ranging from 1.01 µg/L to 26.2 µg/L, and total BTEX concentrations ranging from 1.01 µg/L to 27.4 µg/L. Benzene, the only analyte reported above the NMWQCC groundwater standard, was reported above the NMWQCC groundwater standard for the June 4, 2004 sampling event only.

Analytical results for samples collected from groundwater monitoring well MW-5 indicated benzene concentrations ranging from non-detectable (ND) at or above the method detection limit (MDL) of 1.0 µg/L to 29.5 µg/L, and total BTEX concentrations ranging from ND at or above each analytes respective MDL to 31.3 µg/L. Benzene, the only analyte reported above the NMWQCC groundwater standard, was reported above the NMWQCC groundwater standard for the June 4, 2004 sampling event only.

Analytical results for the sample collected from groundwater monitoring well MW-7 on December 13, 2004 indicated benzene concentrations of 43.5 µg/L, toluene concentrations of

21.2 µg/L, ethylbenzene concentrations of 2.2 µg/L and total xylene concentrations of 8.93 µg/L. Benzene was the only analyte reported above the NMWQCC groundwater standard of 10.0 µg/L.

Analytical results for the sample collected from groundwater monitoring well MW-10 on December 13, 2004, indicated benzene concentrations of 14,200 µg/L, toluene concentrations of 10,500 µg/L, ethylbenzene concentrations of 628 µg/L and total xylene concentrations of 1,420 µg/L. Benzene, toluene and total xylene concentrations were all reported above the NMWQCC groundwater standards of 10.0 µg/L, 750 µg/L and 620 µg/L, respectively.

Analytical results for the samples collected from groundwater monitoring wells MW-6, MW-8, MW-9 and MW-11 on December 13, 2004, were reported as ND for all analytes, at or above each analyte's respective MDL.

A summary of groundwater analytical results is included as Table 3 and copies of analytical results and chain-of-custody forms are included as Appendix A.

VIII Recommendations

Based on field monitoring and analytical results collected during the past year and analyzed in conjunction with data collected during the past two years, the following changes are recommended in the sampling protocol:

- 1) Continue to monitor the system on a semi-monthly basis to recover PSH from the groundwater monitoring well impacted with PSH.
- 2) Gauge all groundwater monitoring wells for water levels and the presence of PSH on a semi-monthly basis.
- 3) Sample the groundwater monitoring well network on a quarterly basis and submit the samples for quantification of BTEX. The samples should be analyzed annually for the presence of PAHs. Please reference Table 4 for a summary of groundwater sampling recommendations for the site. In the event PSH are not detected during a sampling event in groundwater monitoring well currently impacted with PSH, this well will be included in the quarterly sampling event.
- 4) Install three additional groundwater monitoring wells at the site to further delineate the lateral extent of groundwater impacts (reference *Figure 23*).
- 5) The excavation is scheduled to be backfilled during the second or third quarter of 2005. Upon completion of backfilling activities, three to five additional recovery wells will be installed and an automated product recovery system will be installed.

FIGURES

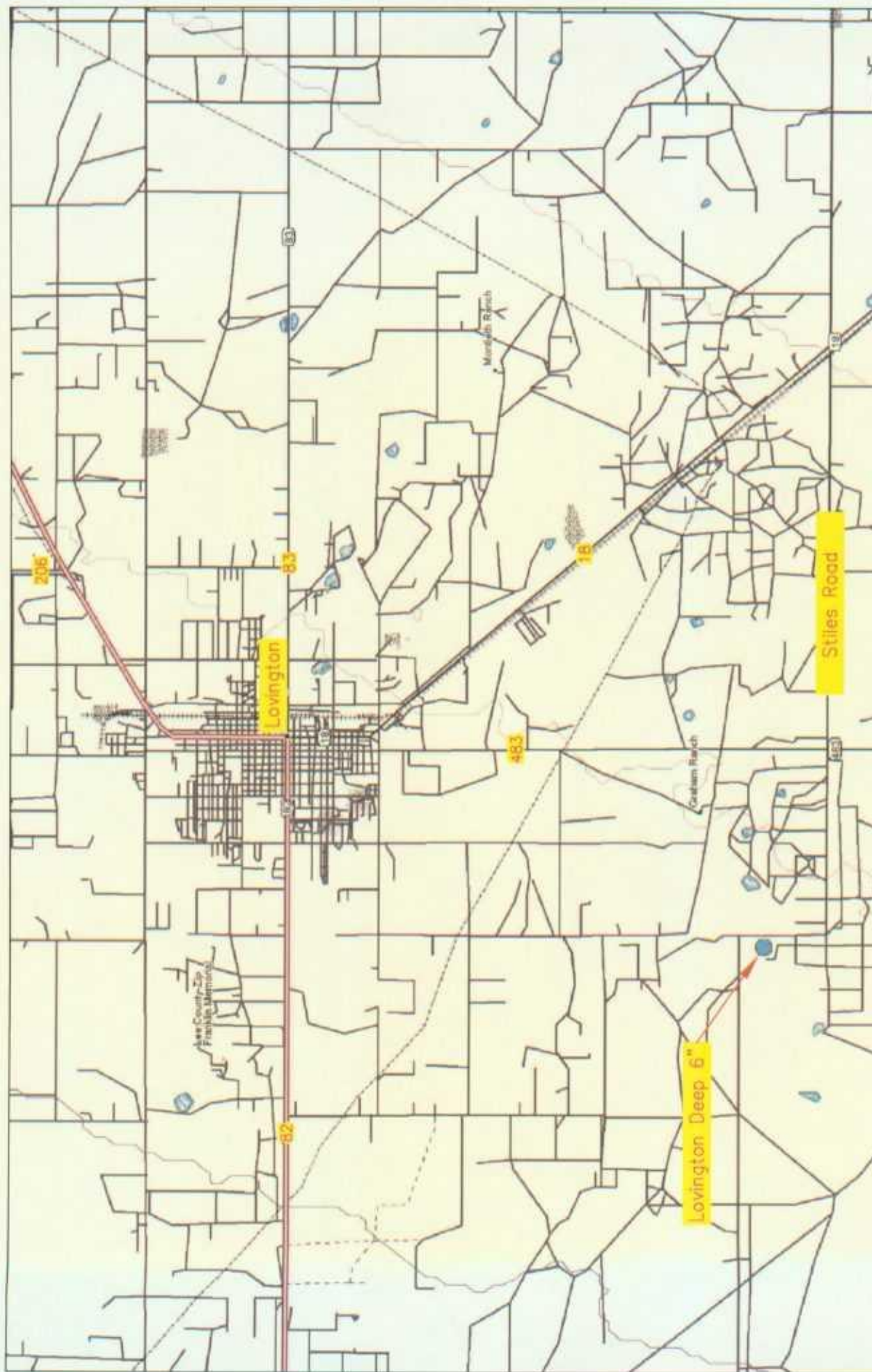


Figure 1
Area Map
Plains Pipeline, L.P.
Lovington Deep 6"

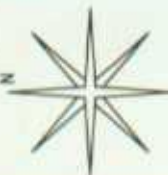
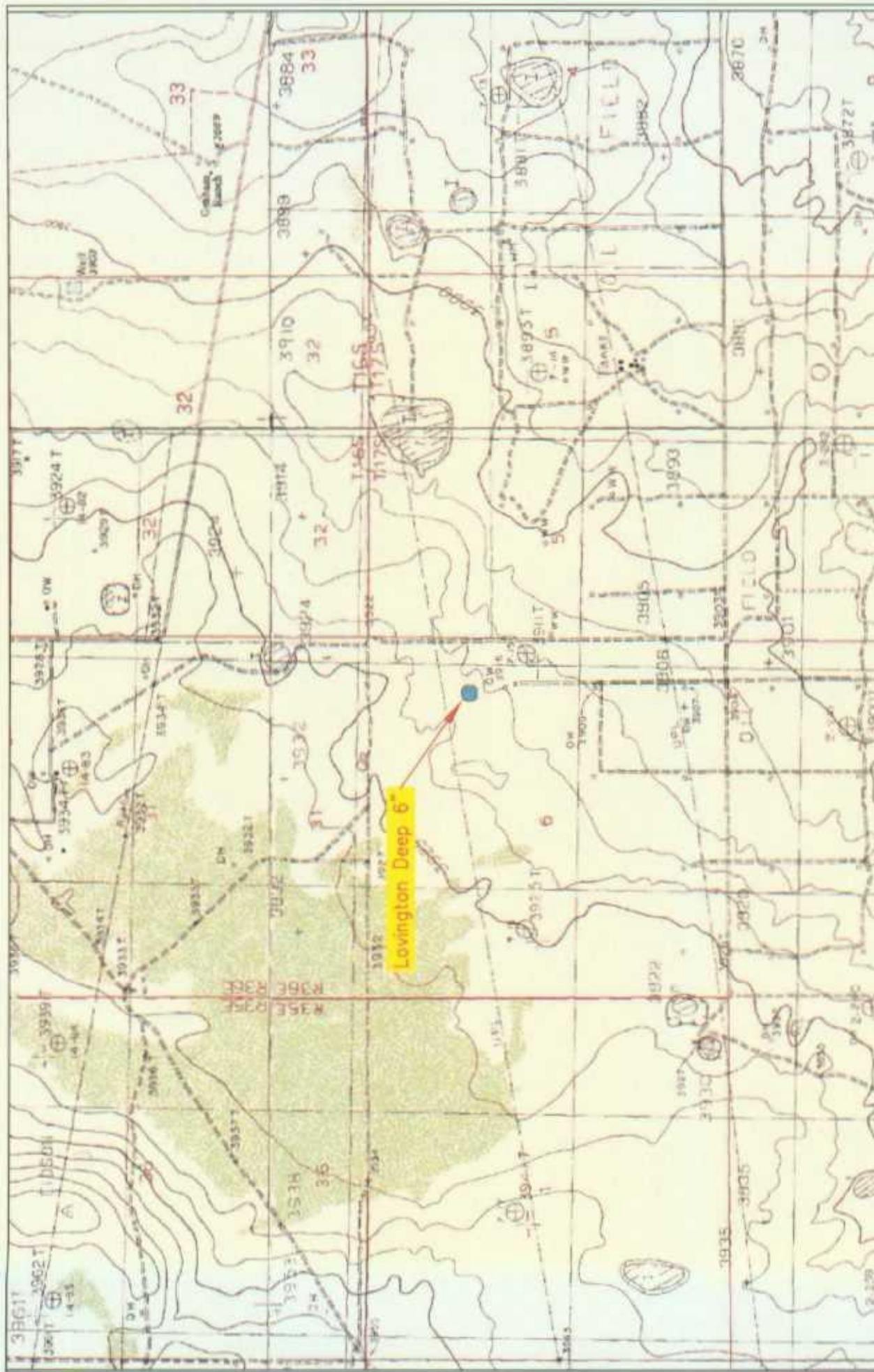
Lea County, New Mexico
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E
N 32° 52' 1.13" W 103° 23' 16.6"
Elevation: 3,912 feet amsl

DWG By: Iain Olness
March 2005

REVISED:

0 1.5 3.0 Miles
SHEET
1 of 1





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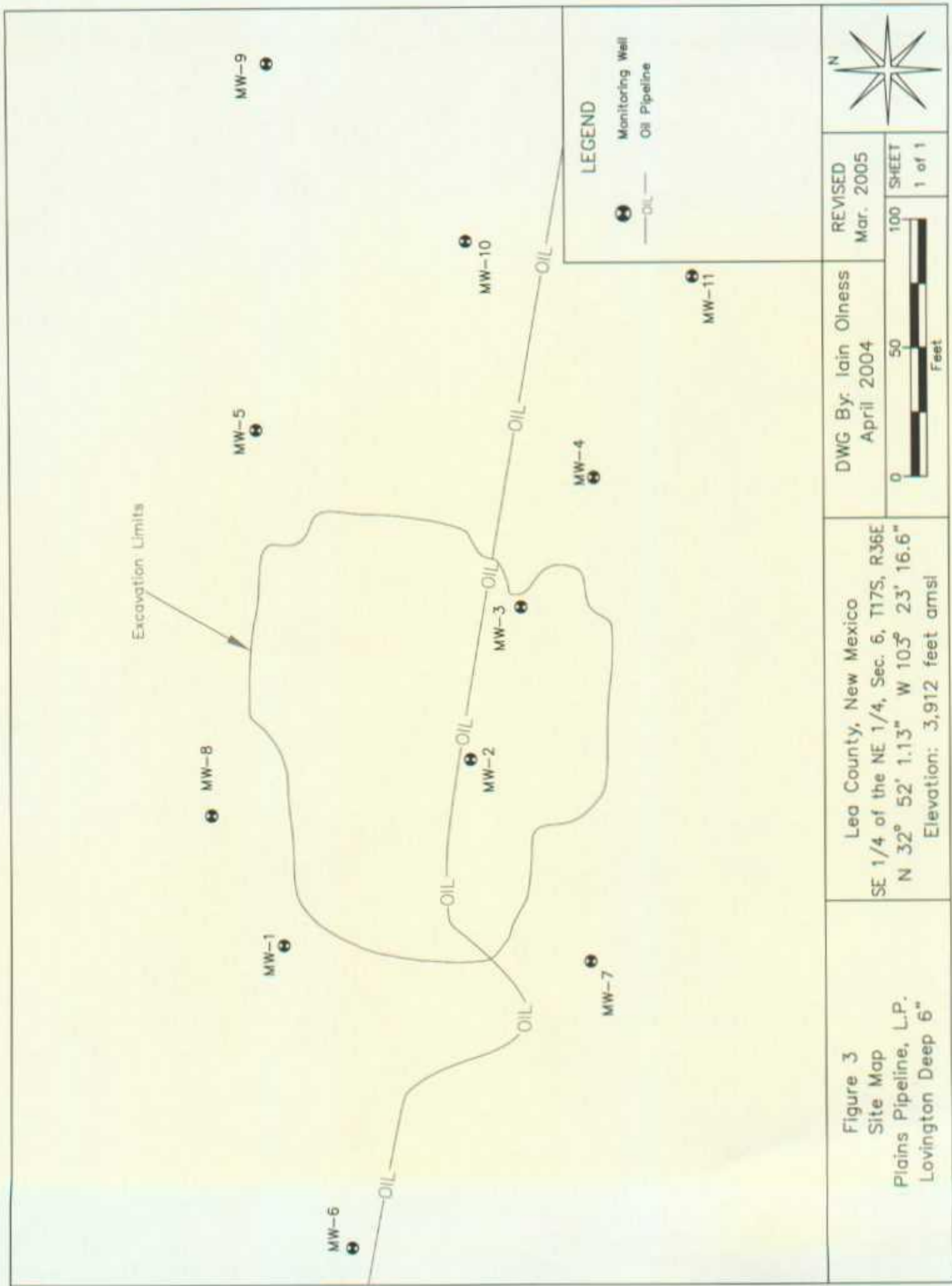
DWG By: Iain Olness
March 2005

4,000
SHEET
1 of 1

0 2,000 4,000
Feet

Lea County, New Mexico
SE 1/4 of the NE 1/4, Sec. 5, T17S, R36E
N 32° 52' 1.13" W 103° 23' 16.6"
Elevation: 3,912 feet amsl

Figure 2
Site Location Map
Plains Pipeline, L.P.
Lovington Deep 6"



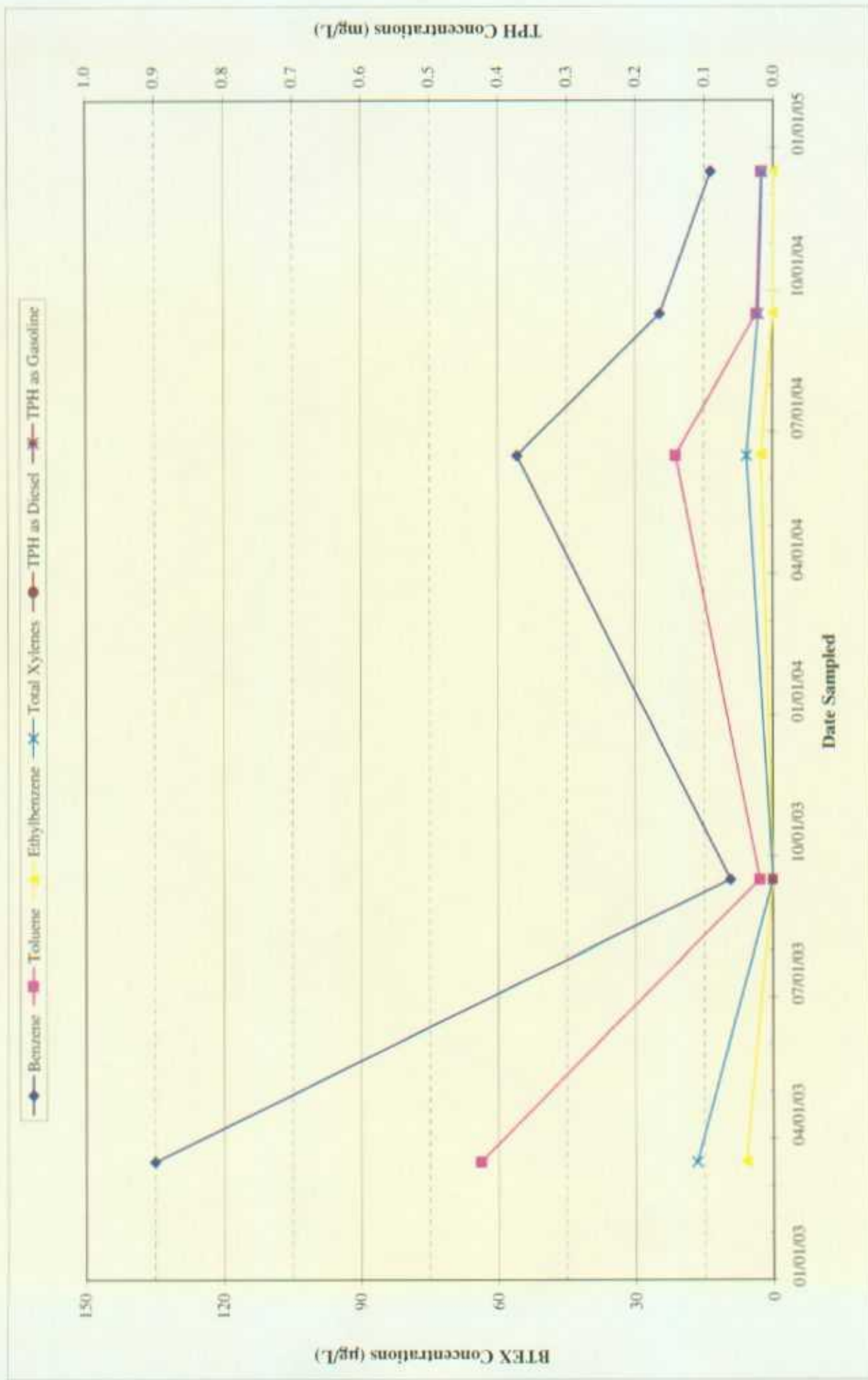


Figure 4: TPH and BTEX Concentrations in Groundwater Monitoring Well MW-1 from 03/04/03 through 12/31/04, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico.

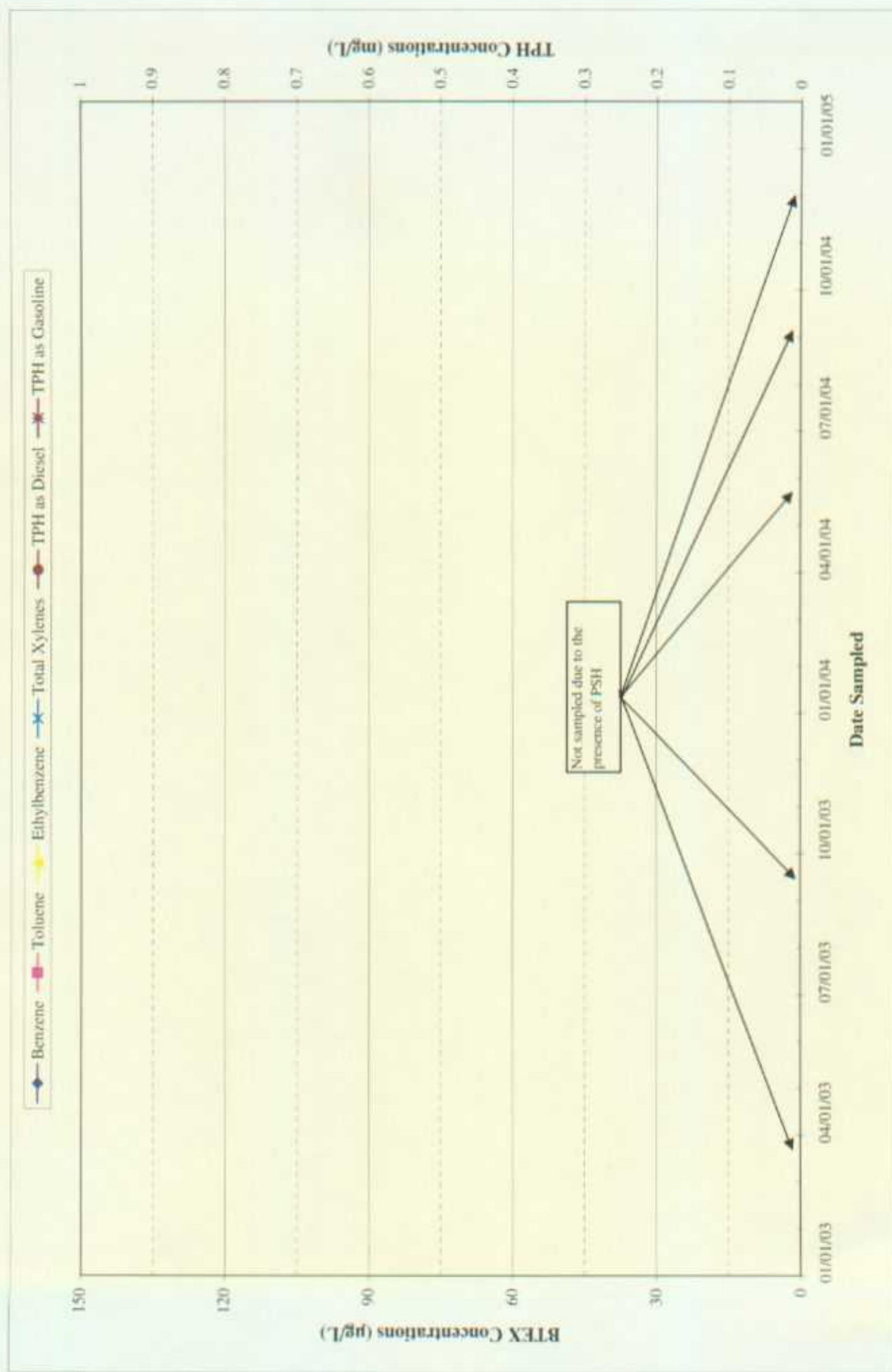


Figure 5: TPH and BTEX Concentrations in Groundwater Monitoring Well MW.2 from 03/04/03 through 12/31/04, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico.

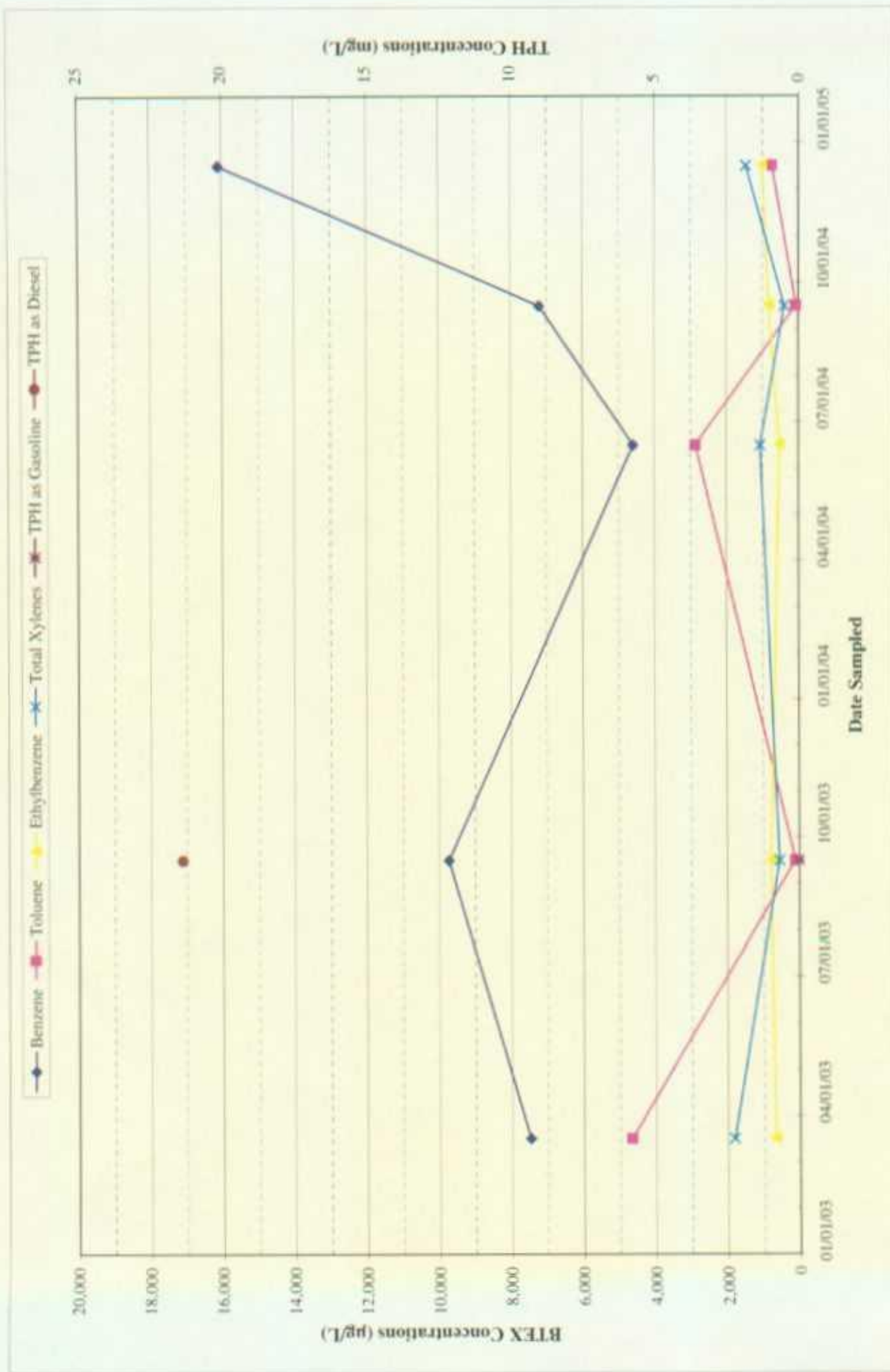


Figure 6: TPH and BTEX Concentrations in Groundwater Monitoring Well MW-3 from 03/04/03 through 12/31/04, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico.

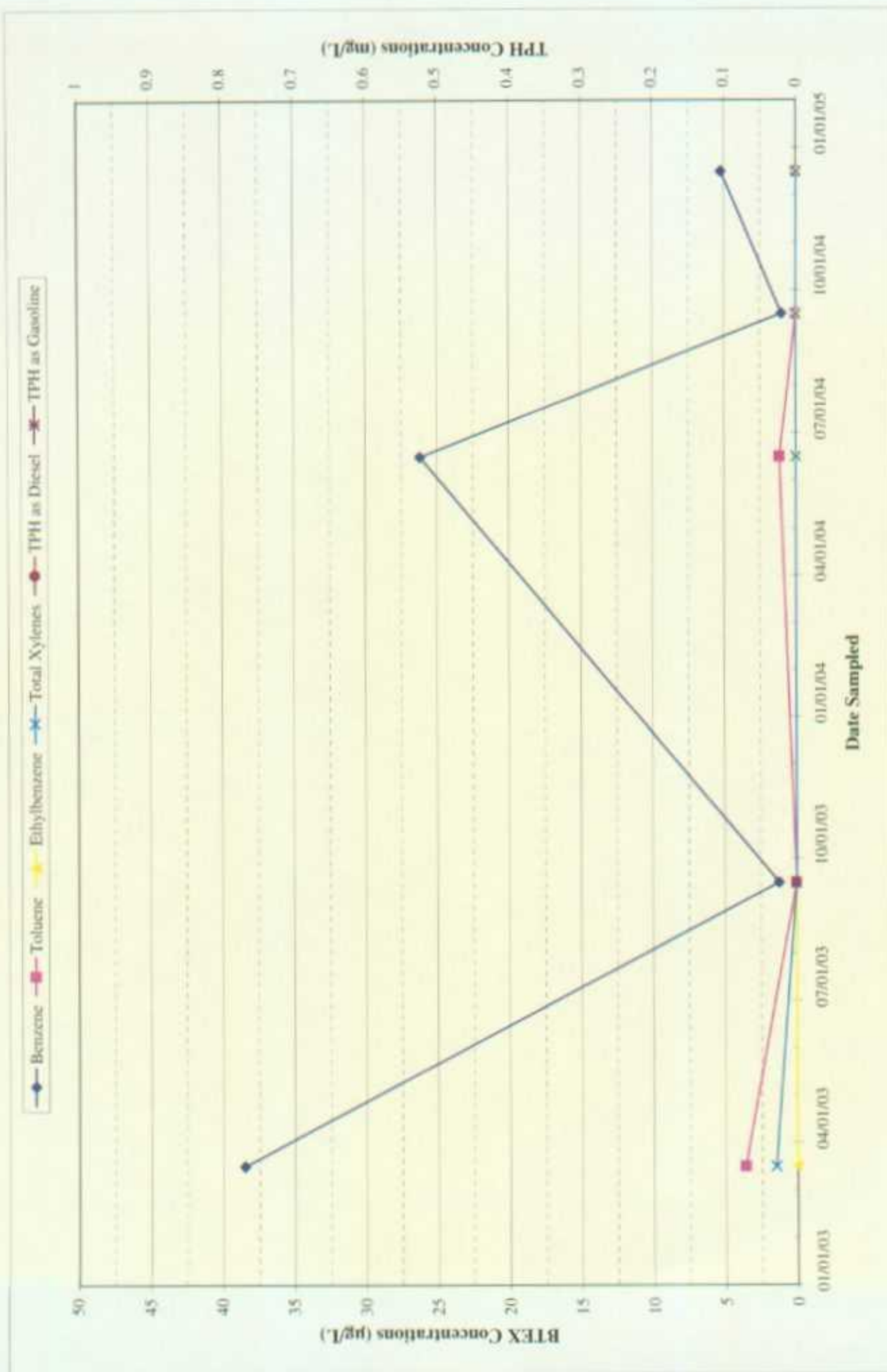


Figure 7: TPH and BTEX Concentrations in Groundwater Monitoring Well MW-4 from 03/04/03 through 12/31/04, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico.

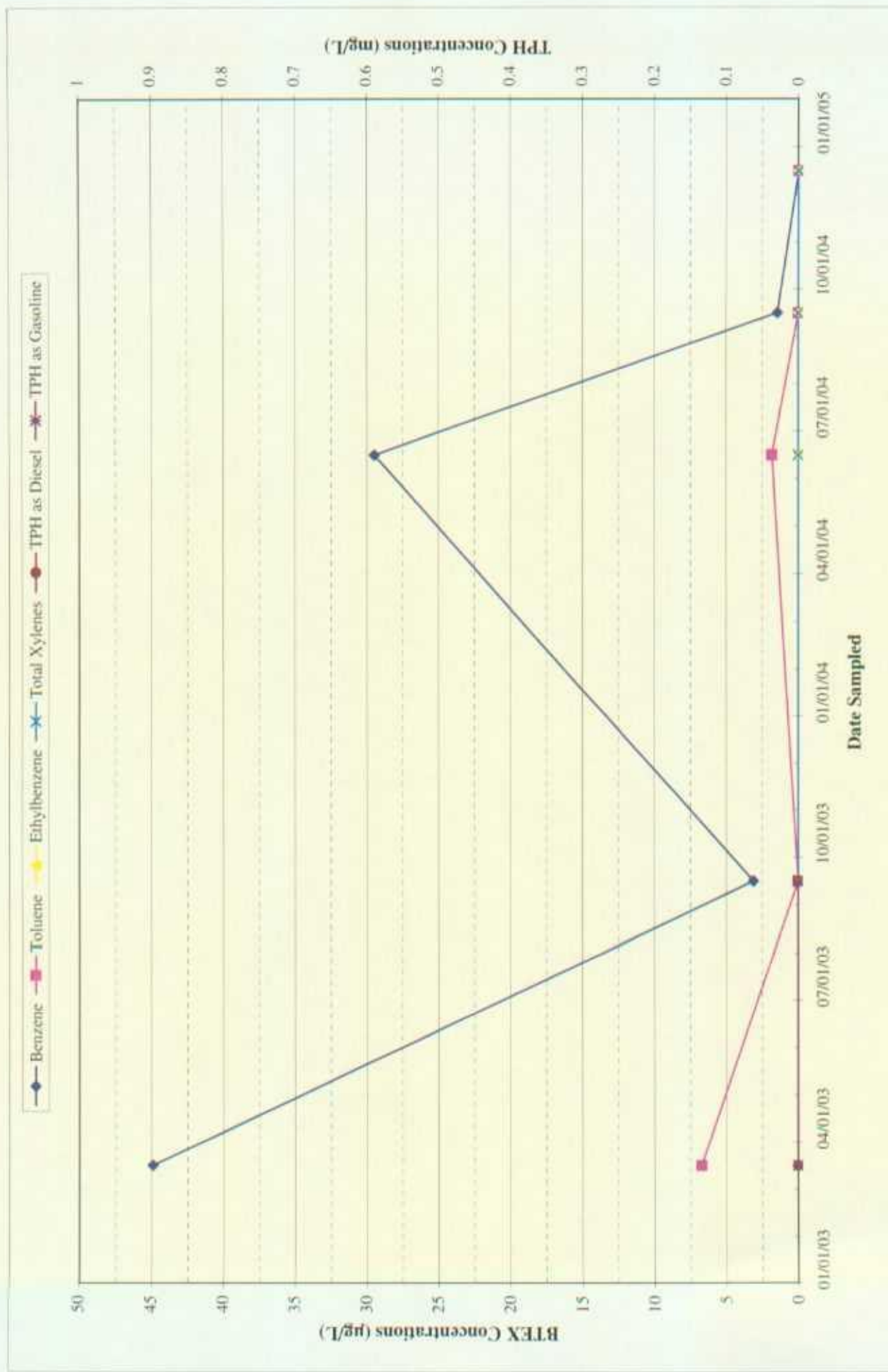


Figure 8: TPH and BTEX Concentrations in Groundwater Monitoring Well MW-5 from 03/04/03 through 12/31/04, Plains Pipeline, L.P. Lovington Deep 6", Lea County, New Mexico.

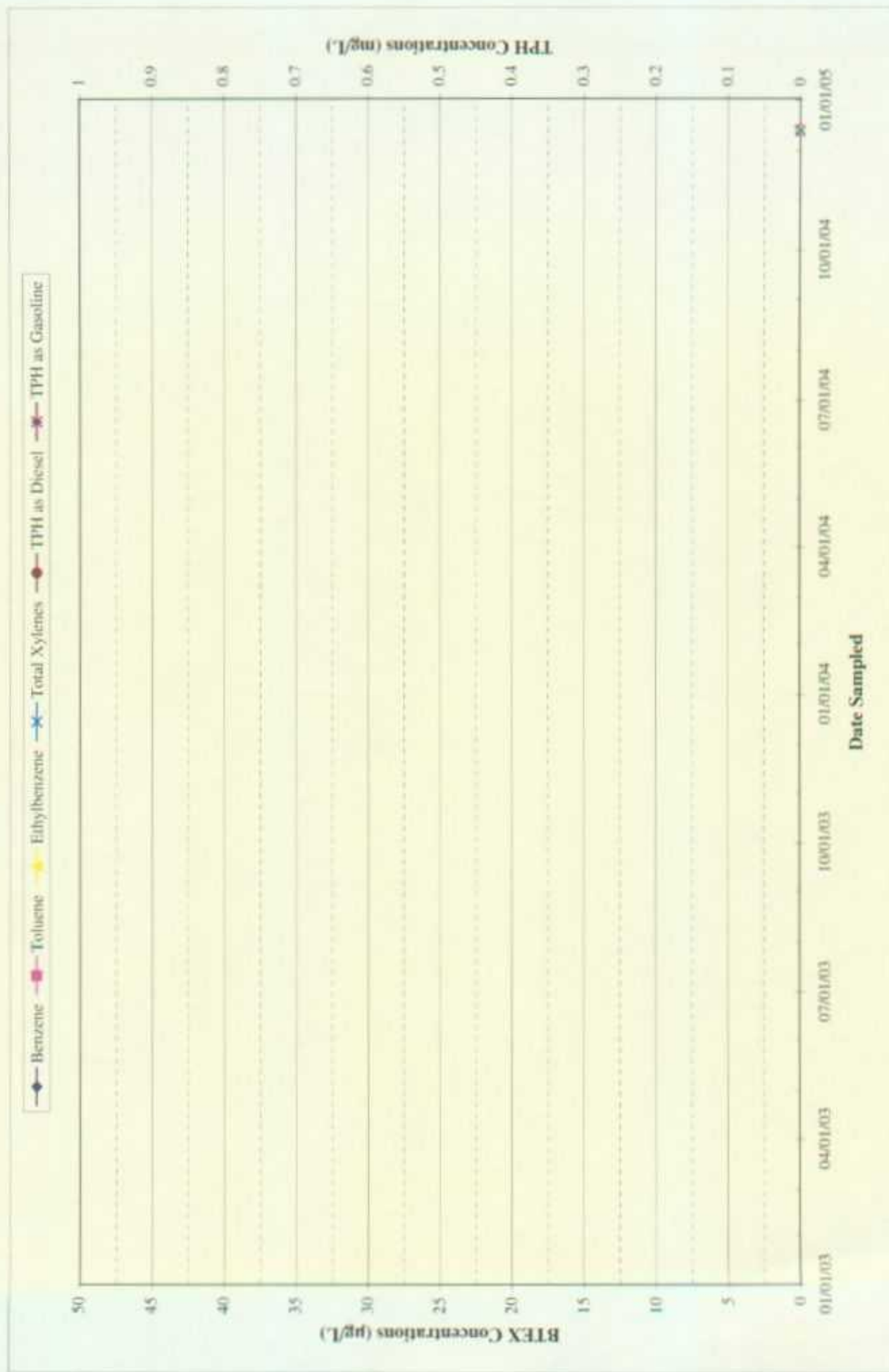


Figure 9: TPH and BTEX Concentrations in Groundwater Monitoring Well MW-6 from 12/13/04 through 12/31/04, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico.

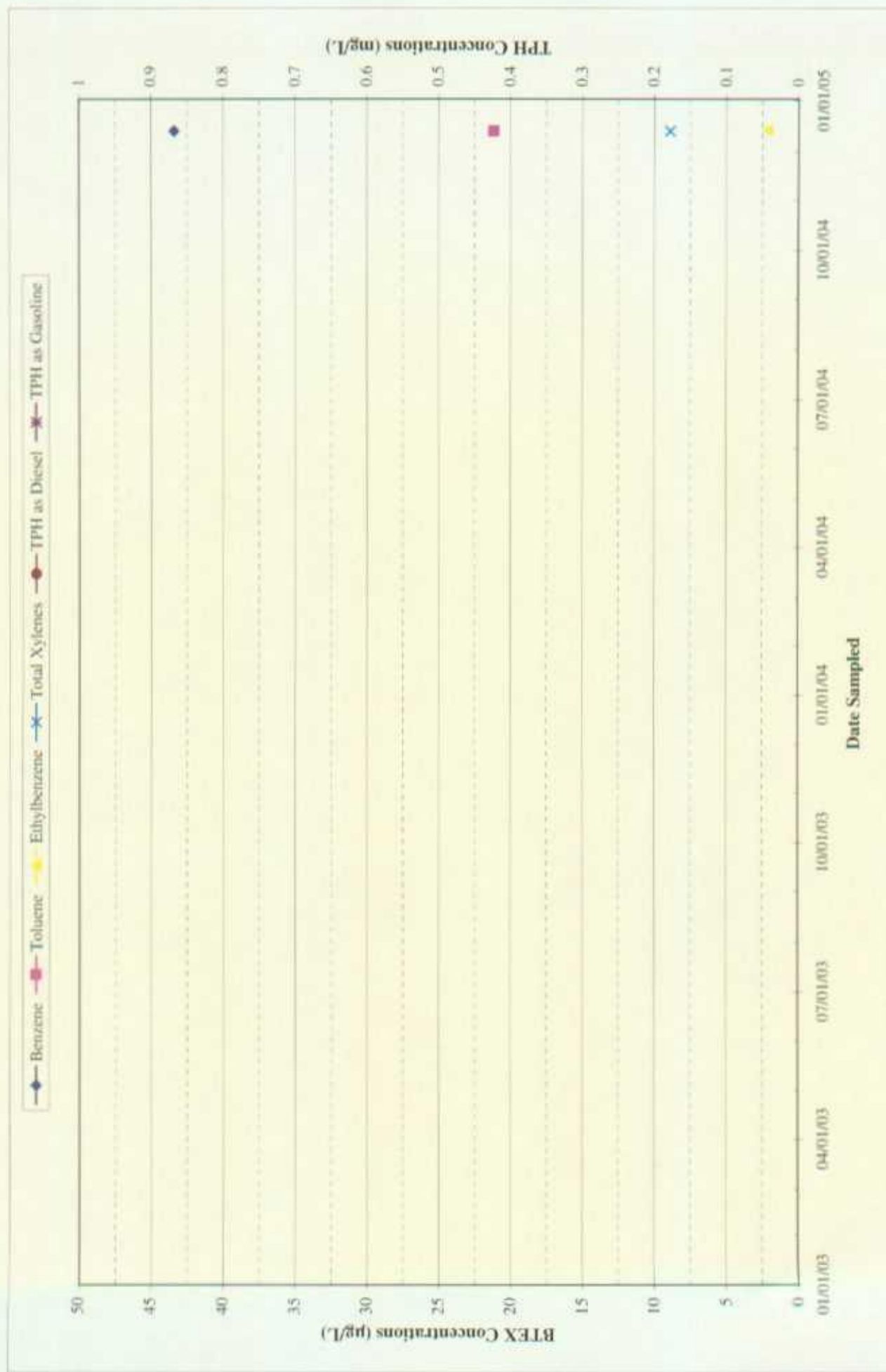


Figure 10: TPH and BTEX Concentrations in Groundwater Monitoring Well MW.7 from 12/13/04 through 12/31/04, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico.

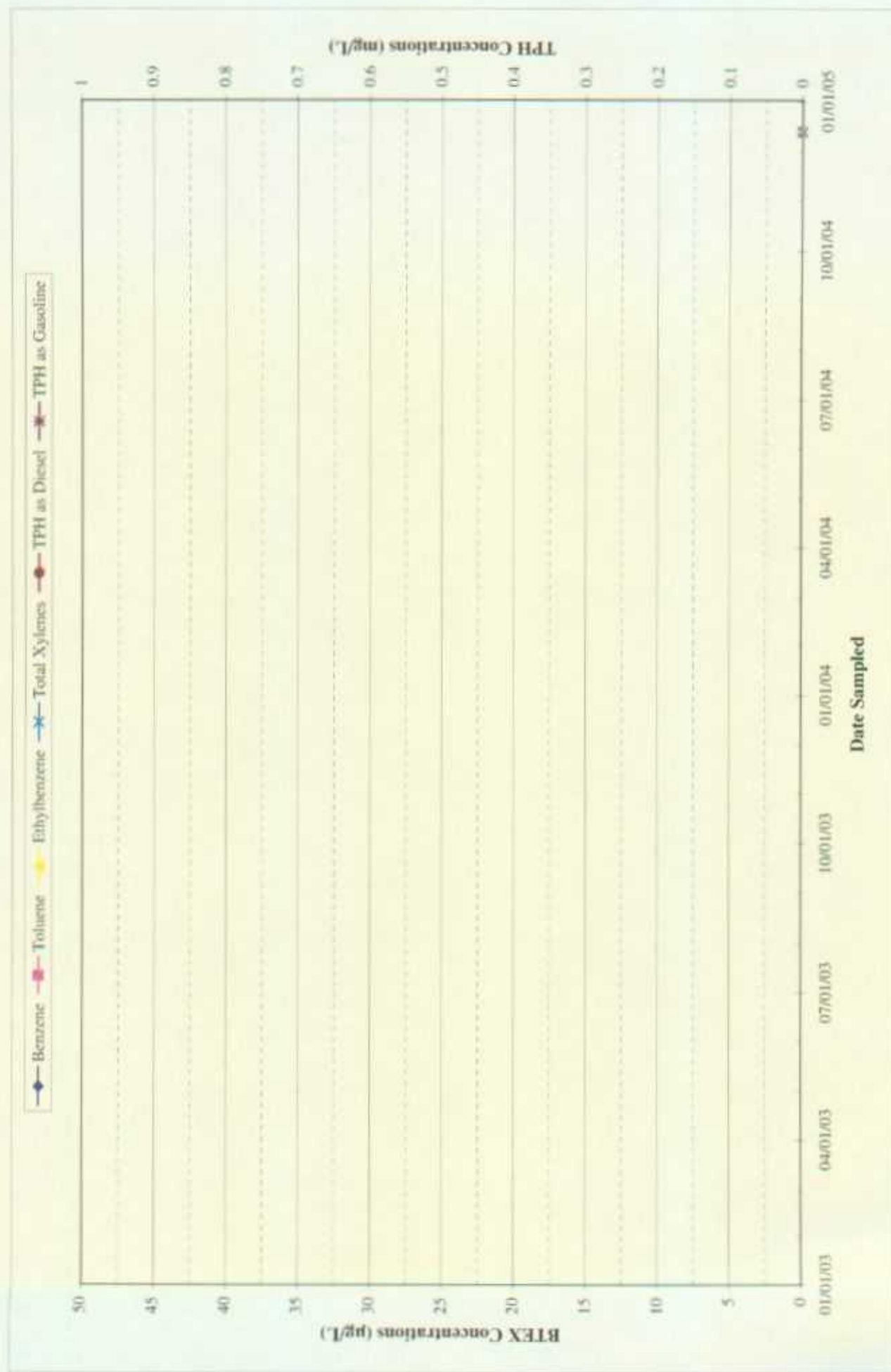


Figure 11: TPH and BTEX Concentrations in Groundwater Monitoring Well MW-8 from 12/13/04 through 12/31/04, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico.

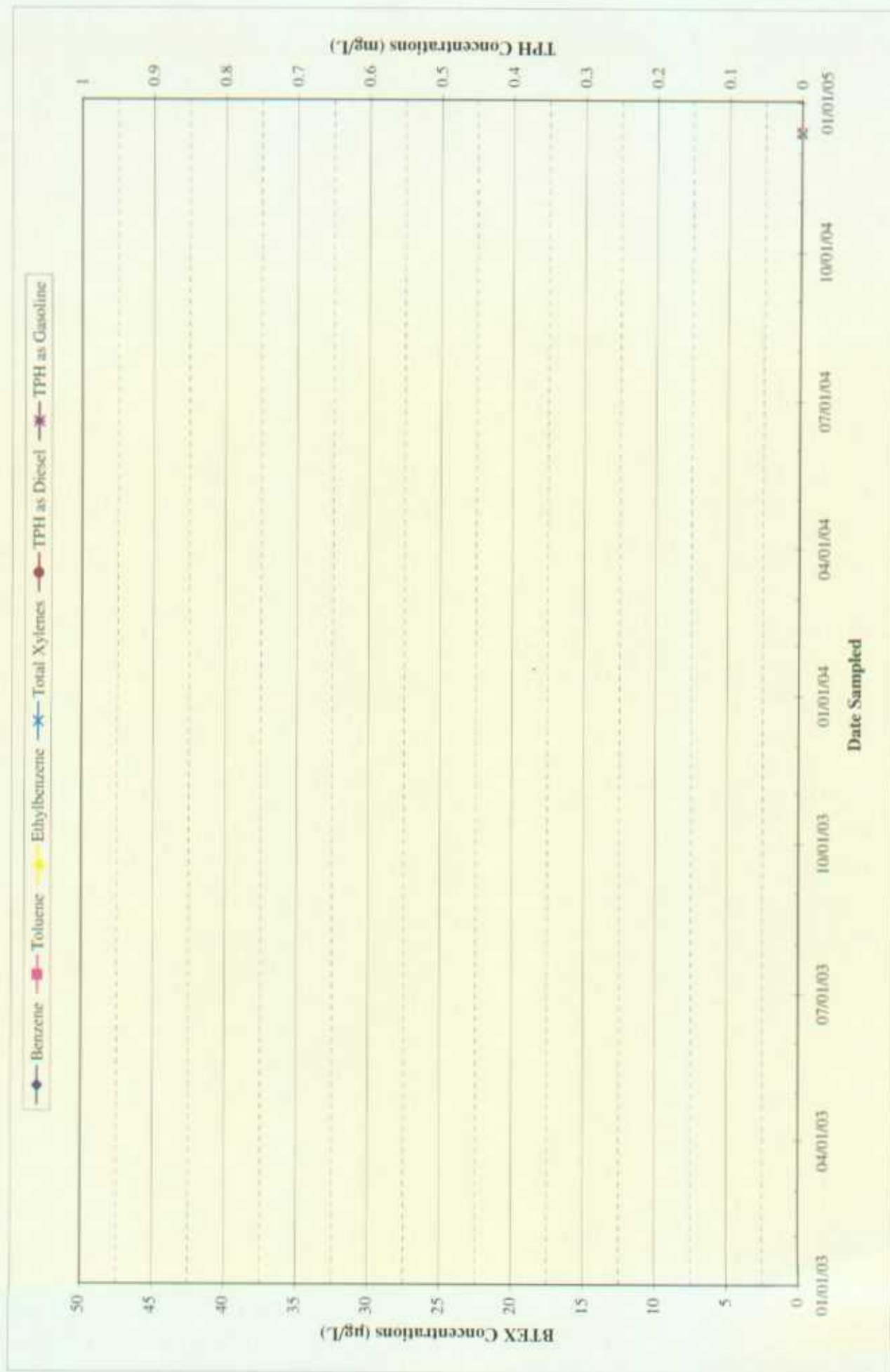


Figure 12: TPH and BTEX Concentrations in Groundwater Monitoring Well MW-9 from 12/13/04 through 12/31/04, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico.

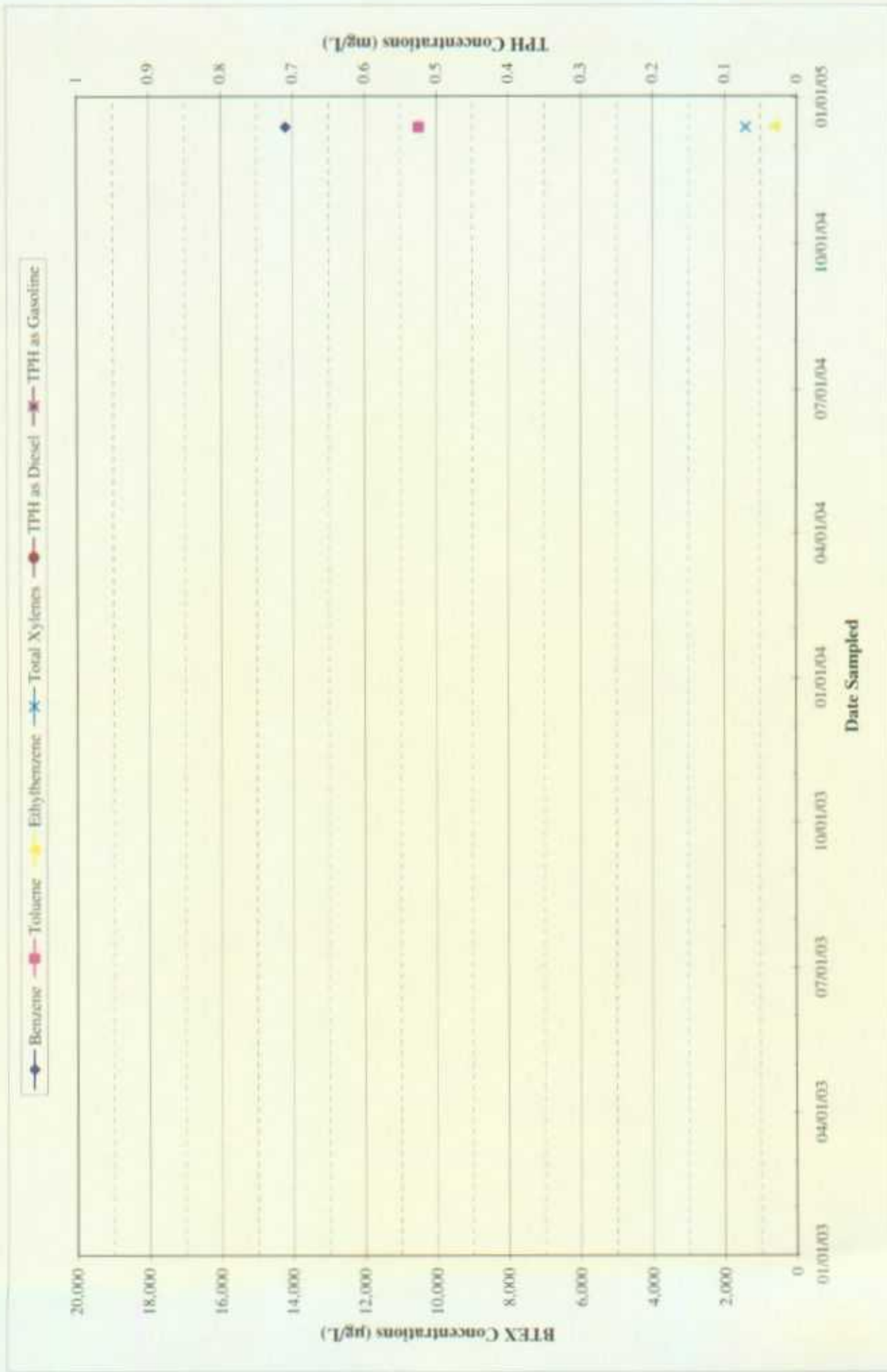


Figure 13: TPH and BTEX Concentrations in Groundwater Monitoring Well MW-10 from 12/13/04 through 12/31/04, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico.



Figure 14: TPH and BTEX Concentrations in Groundwater Monitoring Well MW-11 from 12/13/04 through 12/31/04, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico.



Figure 15: Hydrograph for the Groundwater Monitoring Wells MW-1 through MW-5, Plains Pipeline, L.P., Lovington Deep 6", Lea County, New Mexico from 06/02/04 through 12/31/04.

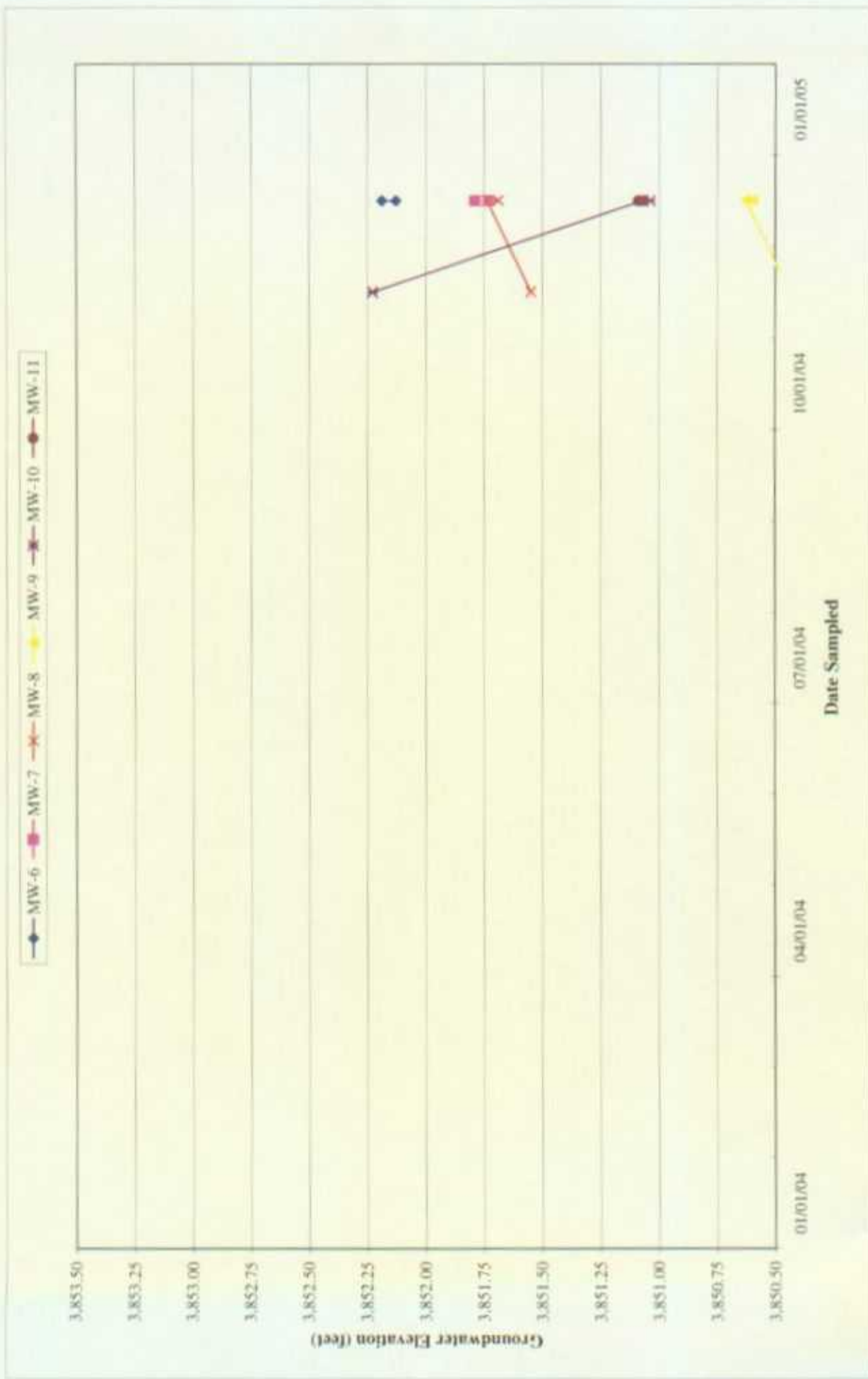


Figure 16: Hydrograph for the Groundwater Monitoring Wells MW-6 through MW-11, Plains Pipeline, L.P., Lovington Deep 6, Lea County, New Mexico from 11/18/04 through 12/31/04.

Excavation Limits

MW-8

MW-5
(3,850.80)

MW-1
(3,851.47)

MW-6

OIL

MW-2
(3,851.51)

MW-3
(3,851.01)

MW-4
(3,850.83)

MW-10

OIL

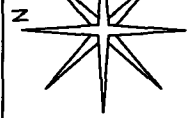
MW-7

MW-11

LEGEND

- Monitoring Well
- OIL Pipeline
- Groundwater Level (3,850.83)
- Groundwater Contour
- Approximate Direction of Groundwater Flow

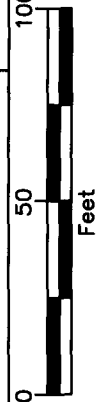
Data from groundwater monitoring well MW-2 was not utilized to construct this flow map due to the presence of PSH.



REVISED
Mar. 2005

SHEET
1 of 1

DWG By: Iain Olness
April 2004

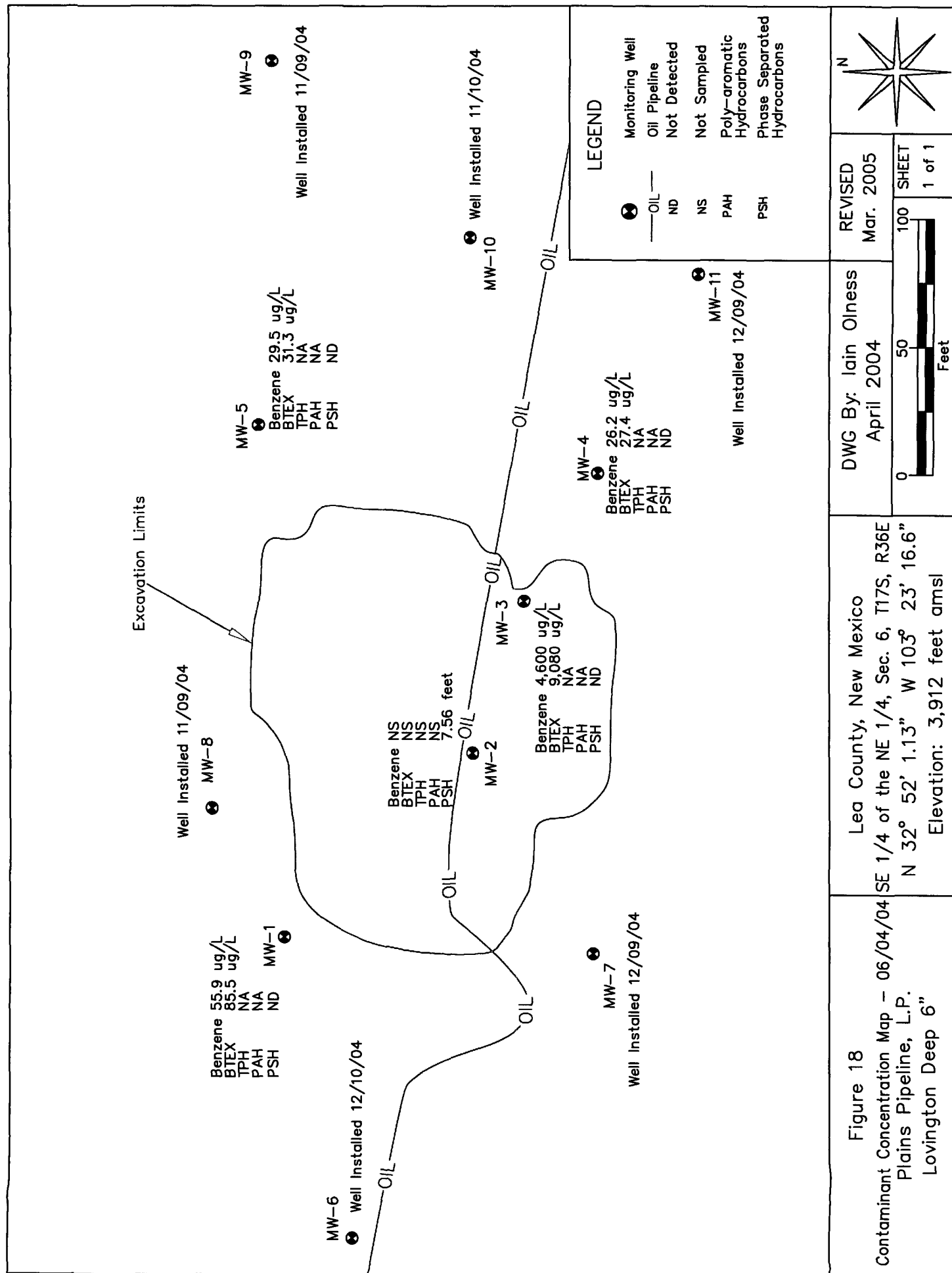


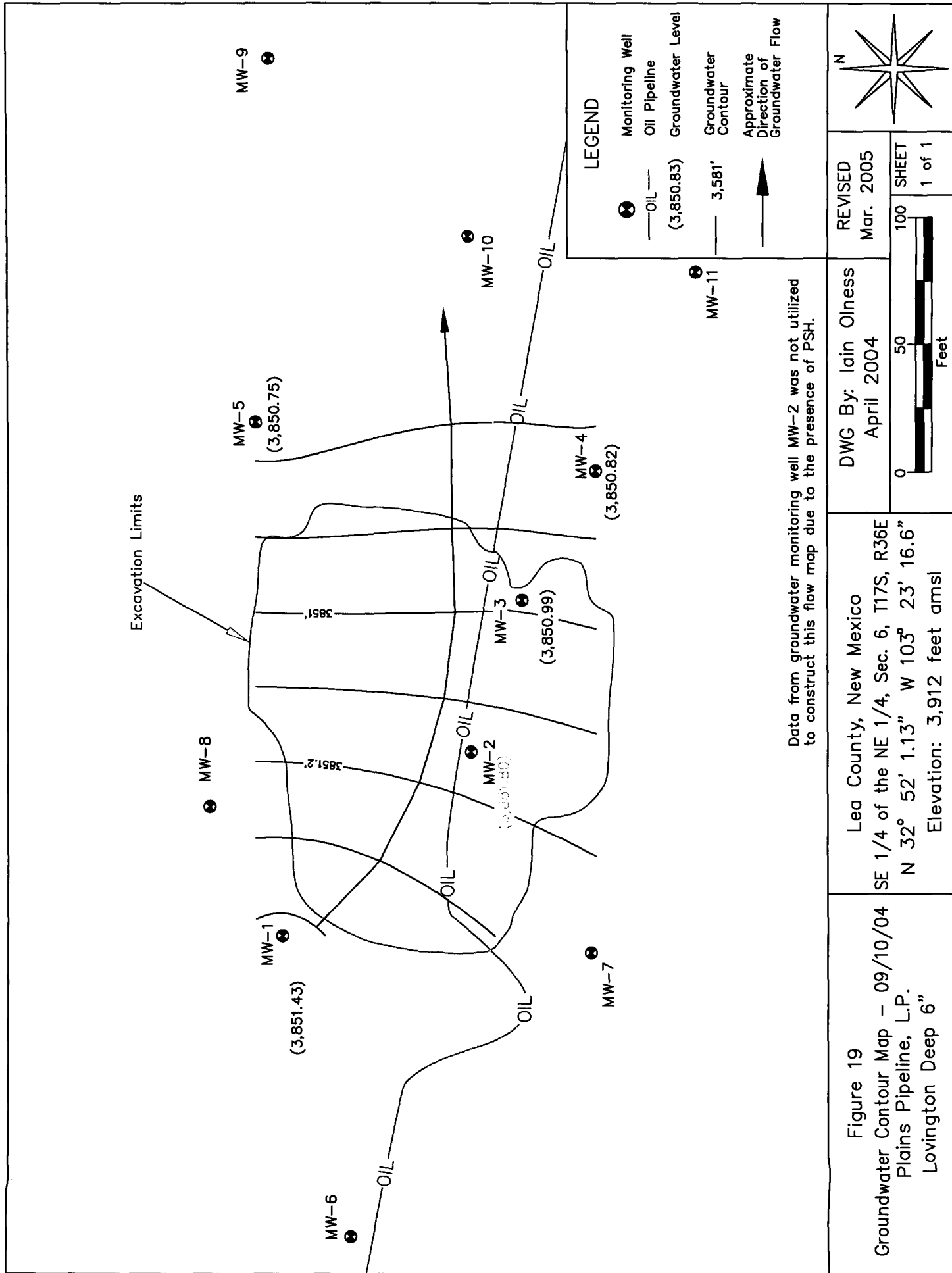
Lea County, New Mexico

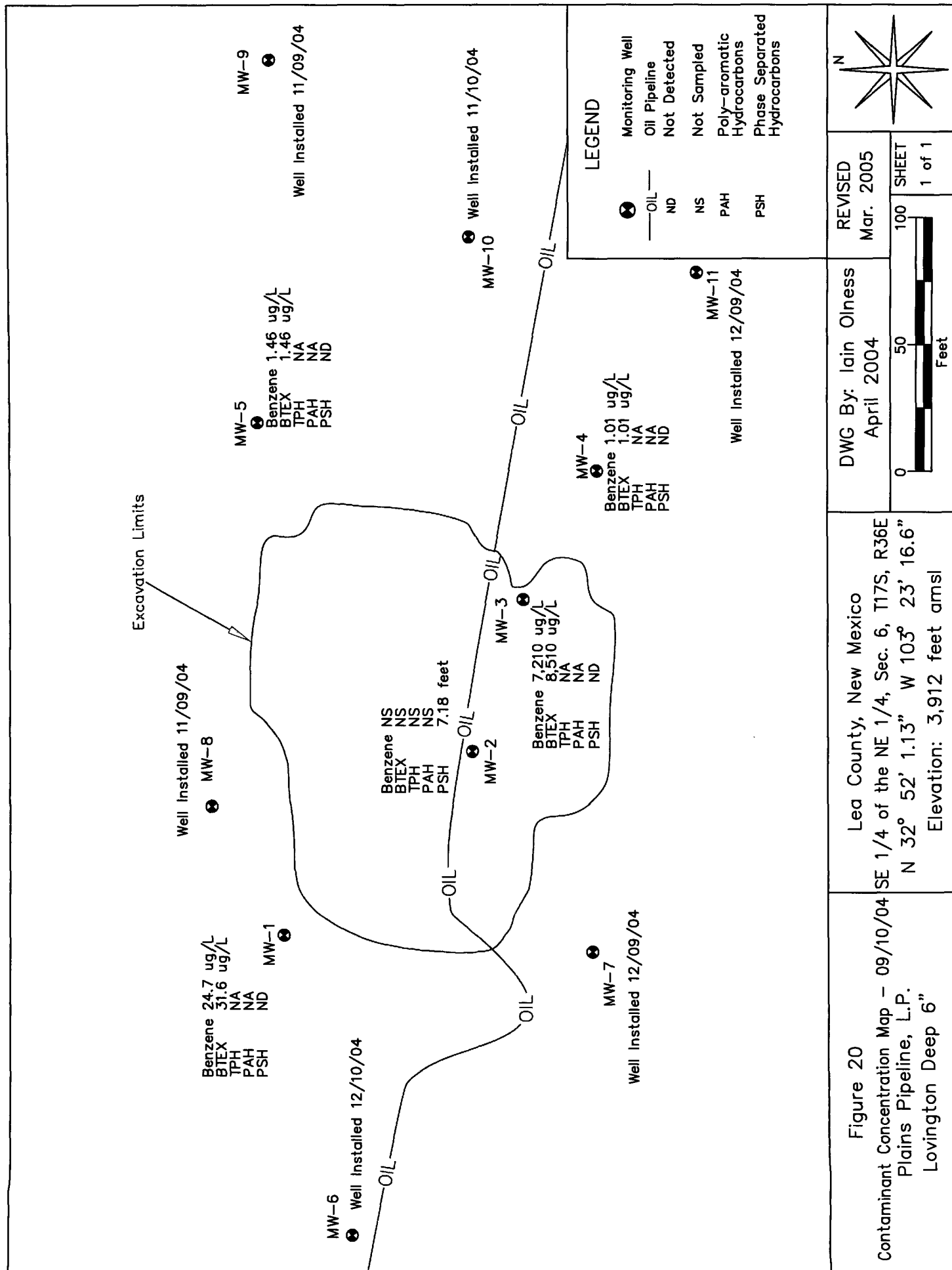
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N 32° 52' 1.13" W 103° 23' 16.6"
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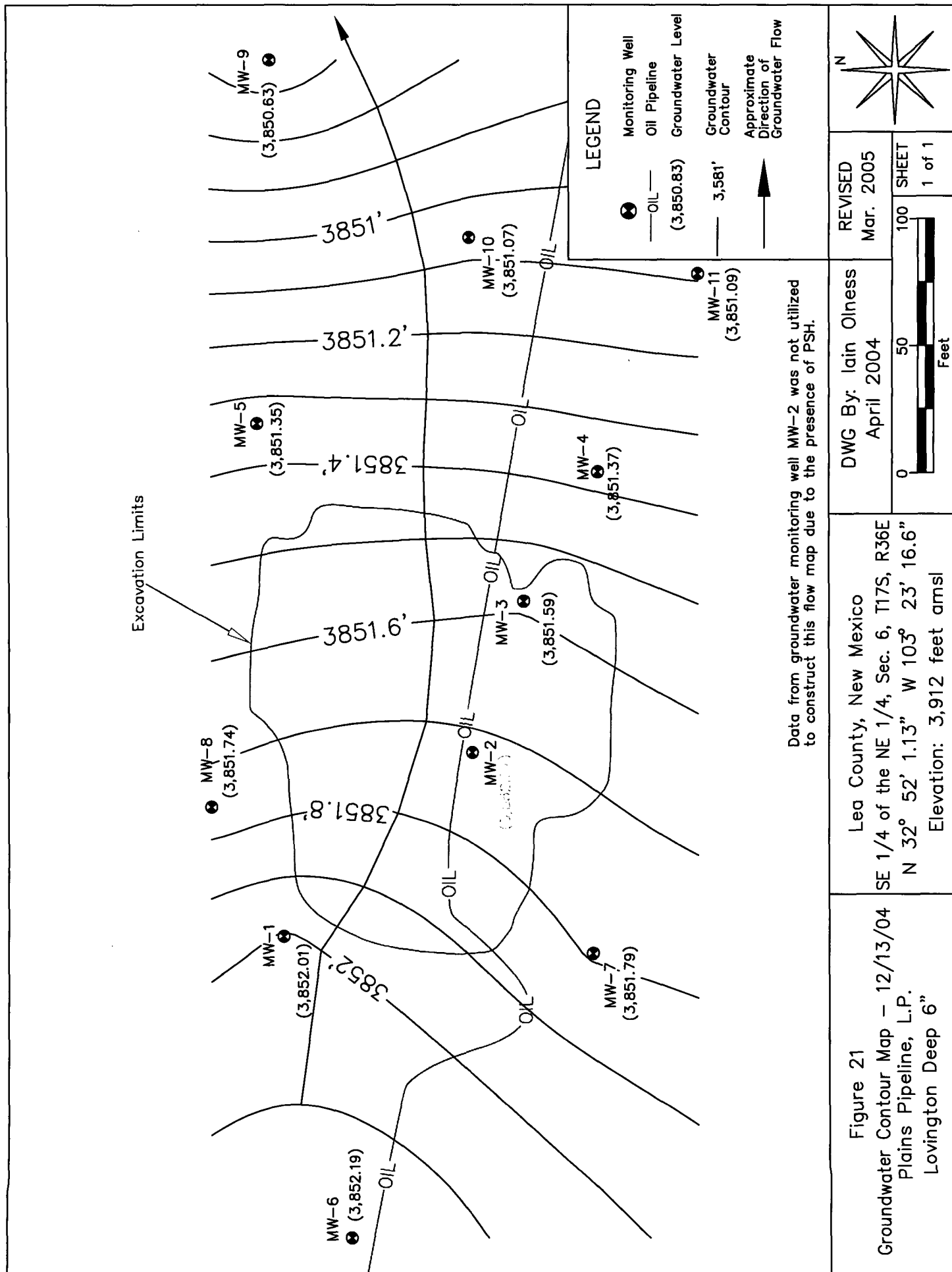
Figure 17

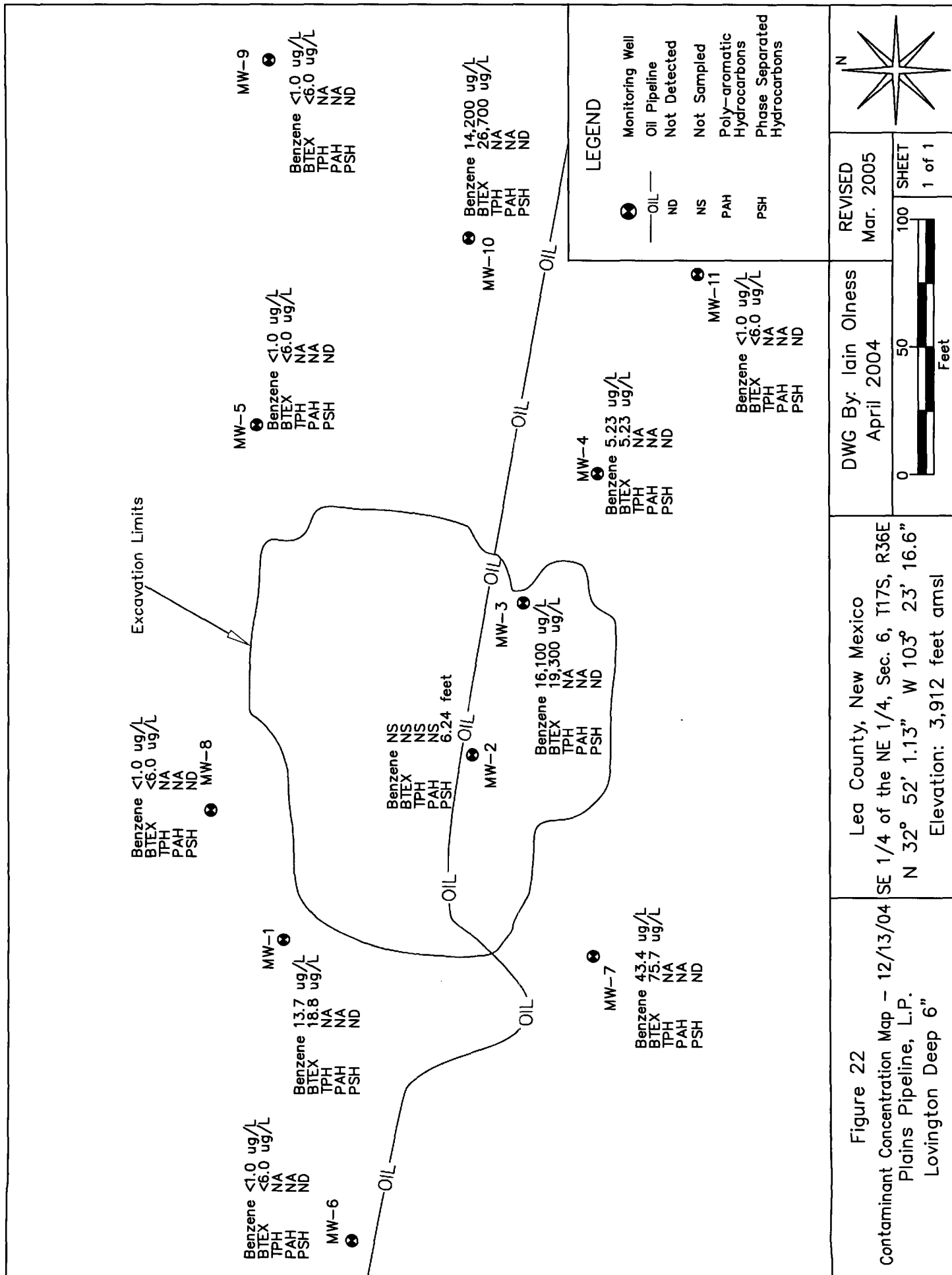
Groundwater Contour Map - 06/04/04
Plains Pipeline, L.P.
Lovington Deep 6"











TABLES

TABLE 1

Relative Groundwater Elevations and
Phase Separated Hydrocarbon Thicknesses

Lovington Deep 6" - Ref. #2002-10312

Monitor Well	Date Gauged	Relative Top of Casing Elevation (feet)	Depth to PSH Below Top of Casing (feet)	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)*	Phase Separated Hydrocarbon Thickness (feet)	PSH Recovery Volume (gallons)
MW-1	04-Mar-03	3,915.51	--	63.81	3,851.70	ND	
	17-Jun-03						
	14-Aug-03						
	28-Aug-03						
	18-Sep-03		--	63.95	3,851.56	ND	
	13-Oct-03						
	24-Oct-03						
	10-Nov-03		--	63.97	3,851.54	ND	
	17-Nov-03						
	18-Nov-03						
	04-Dec-03						
	09-Feb-04						
	15-Mar-04						
	25-Mar-04						
	14-Apr-04		--	64.04	3,851.47	ND	
	06-May-04		--	64.01	3,851.50	ND	
	04-Jun-04		--	64.04	3,851.47	ND	
	16-Jun-04		--	64.05	3,851.46	ND	
	09-Jul-04		--	64.03	3,851.48	ND	
	20-Jul-04		--	64.04	3,851.47	ND	
	10-Sep-04		--	64.08	3,851.43	ND	
	23-Sep-04		--	64.04	3,851.47	ND	
	01-Oct-04		--	63.43	3,852.08	ND	
	21-Oct-04		--	63.60	3,851.91	ND	
	03-Nov-04		--	63.70	3,851.81	ND	
	18-Nov-04		--	63.72	3,851.79	ND	
	13-Dec-04		--	63.50	3,852.01	ND	
	20-Dec-04		--	63.56	3,851.95	ND	
MW-2	04-Mar-03	3,915.04					
	17-Jun-03		62.29	70.02	3,851.98	7.73	
	14-Aug-03		62.34	70.04	3,851.93	7.70	
	28-Aug-03		62.50	69.94	3,851.80	7.44	8.97
	18-Sep-03		62.51	69.95	3,851.79	7.44	
	13-Oct-03		62.50	69.96	3,851.79	7.46	
	24-Oct-03		62.35	70.05	3,851.92	7.70	
	10-Nov-03		62.45	69.59	3,851.88	7.14	
	17-Nov-03		62.38	69.98	3,851.90	7.60	
	18-Nov-03		62.95	67.37	3,851.65	4.42	

TABLE 1

Relative Groundwater Elevations and
Phase Separated Hydrocarbon Thicknesses

Lovington Deep 6" - Ref. #2002-10312

Monitor Well	Date Gauged	Relative Top of Casing Elevation (feet)	Depth to PSH Below Top of Casing (feet)	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)*	Phase Separated Hydrocarbon Thickness (feet)	PSH Recovery Volume (gallons)
MW-2 (cont.)	04-Dec-03		62.57	69.75	3,851.75	7.18	
	09-Feb-04		62.45	69.87	3,851.85	7.42	
	15-Mar-04		62.42	69.95	3,851.87	7.53	
	25-Mar-04		62.43	69.95	3,851.86	7.52	10
	14-Apr-04		62.68	69.42	3,851.69	6.74	
	06-May-04		62.75	70.31	3,851.53	7.56	
	04-Jun-04		62.77	70.33	3,851.51	7.56	5.72
	16-Jun-04		62.73	69.51	3,851.63	6.78	20
	09-Jul-04		62.40	69.97	3,851.88	7.57	17
	20-Jul-04		63.20	68.95	3,851.27	5.75	35
	10-Sep-04		62.52	69.70	3,851.80	7.18	25
	23-Sep-04		62.49	69.69	3,851.83	7.20	11
	01-Oct-04		60.50	71.07	3,853.48	10.57	30
	21-Oct-04		61.96	68.57	3,852.42	6.61	13
	03-Nov-04		62.27	68.22	3,852.18	5.95	12
	18-Nov-04		62.43	67.81	3,852.07	5.38	8
	13-Dec-04		62.05	68.29	3,852.37	6.24	8
	20-Dec-04		62.04	68.31	3,852.37	6.27	8.5
MW-3	04-Mar-03	3,915.24	--	64.01	3,851.23	ND	
	17-Jun-03						
	14-Aug-03						
	28-Aug-03						
	18-Sep-03		--	64.14	3,851.10	ND	
	13-Oct-03						
	24-Oct-03						
	10-Nov-03		--	64.15	3,851.09	ND	
	17-Nov-03						
	18-Nov-03						
	04-Dec-03						
	09-Feb-04						
	15-Mar-04						
	25-Mar-04						
	14-Apr-04		--	64.20	3,851.04	ND	
	06-May-04		--	64.20	3,851.04	ND	
	04-Jun-04		--	64.23	3,851.01	ND	
	16-Jun-04		--	64.24	3,851.00	ND	
	09-Jul-04		--	64.23	3,851.01	ND	
	20-Jul-04		--	64.23	3,851.01	ND	

TABLE 1

Relative Groundwater Elevations and
Phase Separated Hydrocarbon Thicknesses

Lovington Deep 6" - Ref. #2002-10312

Monitor Well	Date Gauged	Relative Top of Casing Elevation (feet)	Depth to PSH Below Top of Casing (feet)	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)*	Phase Separated Hydrocarbon Thickness (feet)	PSH Recovery Volume (gallons)
MW-3 (cont.)	10-Sep-04		--	64.25	3,850.99	ND	
	23-Sep-04		--	64.25	3,850.99	ND	
	01-Oct-04		--	63.41	3,851.83	ND	
	21-Oct-04		--	63.71	3,851.53	ND	
	03-Nov-04		--	63.83	3,851.41	ND	
	18-Nov-04		--	63.84	3,851.40	ND	
	13-Dec-04		--	63.65	3,851.59	ND	
	20-Dec-04		--	63.73	3,851.51	ND	
MW-4	04-Mar-03	3,915.30	--	64.25	3,851.05	ND	
	17-Jun-03						
	14-Aug-03						
	28-Aug-03						
	18-Sep-03		--	64.35	3,850.95	ND	
	13-Oct-03						
	24-Oct-03						
	10-Nov-03		--	64.38	3,850.92	ND	
	17-Nov-03						
	18-Nov-03						
	04-Dec-03						
	09-Feb-04						
	15-Mar-04						
	25-Mar-04						
	14-Apr-04		--	64.43	3,850.87	ND	
	06-May-04		--	64.41	3,850.89	ND	
	04-Jun-04		--	64.47	3,850.83	ND	
	16-Jun-04		--	64.47	3,850.83	ND	
	09-Jul-04		--	64.47	3,850.83	ND	
	20-Jul-04		--	64.45	3,850.85	ND	
	10-Sep-04		--	64.48	3,850.82	ND	
	23-Sep-04		--	64.53	3,850.77	ND	
	01-Oct-04		--	63.95	3,851.35	ND	
	21-Oct-04		--	64.05	3,851.25	ND	
	03-Nov-04		--	64.11	3,851.19	ND	
	18-Nov-04		--	64.13	3,851.17	ND	
	13-Dec-04		--	63.93	3,851.37	ND	
	20-Dec-04		--	64.01	3,851.29	ND	
MW-5	04-Mar-03	3,915.26	--	64.21	3,851.05	ND	
	17-Jun-03						

TABLE 1

Relative Groundwater Elevations and
Phase Separated Hydrocarbon Thicknesses

Lovington Deep 6" - Ref. #2002-10312

Monitor Well	Date Gauged	Relative Top of Casing Elevation (feet)	Depth to PSH Below Top of Casing (feet)	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)*	Phase Separated Hydrocarbon Thickness (feet)	PSH Recovery Volume (gallons)
MW-5 (cont.)	14-Aug-03						
	28-Aug-03						
	18-Sep-03		--	64.39	3,850.87	ND	
	13-Oct-03						
	24-Oct-03						
	10-Nov-03		--	64.42	3,850.84	ND	
	17-Nov-03						
	18-Nov-03						
	04-Dec-03						
	09-Feb-04						
	15-Mar-04						
	25-Mar-04						
	14-Apr-04		--	64.46	3,850.80	ND	
	06-May-04		--	64.45	3,850.81	ND	
	04-Jun-04		--	64.46	3,850.80	ND	
	16-Jun-04		--	64.49	3,850.77	ND	
	09-Jul-04		--	64.45	3,850.81	ND	
	20-Jul-04		--	64.47	3,850.79	ND	
	10-Sep-04		--	64.51	3,850.75	ND	
	23-Sep-04		--	64.53	3,850.73	ND	
	01-Oct-04		--	64.02	3,851.24	ND	
	21-Oct-04		--	64.04	3,851.22	ND	
	03-Nov-04		--	64.13	3,851.13	ND	
	18-Nov-04		--	64.19	3,851.07	ND	
	13-Dec-04		--	63.91	3,851.35	ND	
	20-Dec-04		--	63.94	3,851.32	ND	
MW-6	18-Nov-04	3,915.45					
	13-Dec-04		--	63.26	3,852.19	ND	
	20-Dec-04		--	63.32	3,852.13	ND	
MW-7	18-Nov-04	3,914.73					
	13-Dec-04		--	62.94	3,851.79	ND	
	20-Dec-04		--	63.00	3,851.73	ND	
MW-8	18-Nov-04	3,915.19	--	63.64	3,851.55	ND	
	13-Dec-04		--	63.45	3,851.74	ND	
	20-Dec-04		--	63.50	3,851.69	ND	
MW-9	18-Nov-04	3,913.92	--	63.48	3,850.44	ND	
	13-Dec-04		--	63.29	3,850.63	ND	

TABLE 1

Relative Groundwater Elevations and
Phase Separated Hydrocarbon Thicknesses

Lovington Deep 6" - Ref. #2002-10312

Monitor Well	Date Gauged	Relative Top of Casing Elevation (feet)	Depth to PSH Below Top of Casing (feet)	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)*	Phase Separated Hydrocarbon Thickness (feet)	PSH Recovery Volume (gallons)
MW-9 (cont.)	20-Dec-04	3,913.92	--	63.32	3,850.60	ND	
MW-10	18-Nov-04	3,914.96	--	62.73	3,852.23	ND	
	13-Dec-04		--	63.89	3,851.07	ND	
	20-Dec-04		--	63.92	3,851.04	ND	
MW-11	18-Nov-04	3,914.40					
	13-Dec-04		--	63.31	3,851.09	ND	
	20-Dec-04		--	63.33	3,851.07	ND	

Top of casing elevations referenced to groundwater monitoring well MW-3, which was assigned an elevation of 3,760 feet and.

* Corrected Groundwater Elevation = Top of Casing Elevation - (Depth to Water Below Top of Casing - (SG)(PSH Thickness)).

-- = Not Detected

If the cell is blank, the well was not gauged.

Gray highlighted cells indicate current year's data

Yellow highlighted indicated sampling events

TABLE 2

Summary of Groundwater Analytical Results

Lovington Deep 6" - Ref. #2002-10312

Well #	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-Xylenes (µg/L)	o-Xylene (µg/L)	Total Xylenes (µg/L)	TPH	
								GRO (mg/L)	DRO (mg/L)
MW1	04-Mar-03	135	63.8	5.88	8.32	8.27	16.6		
	18-Sep-03	9.28	2.86	<1	<1	<1	<2	<0.5	<0.5
	04-Jun-04	55.9	21.2	2.62	2.21	3.52	5.73		
	10-Sep-04	24.7	3.65	<1	<2	3.21	3.21		
	13-Dec-04	11.7	2.67	<1	<2	2.45	2.45		
MW2	04-Mar-03	Not Sampled Due to the Presence of Phase Separated Hydrocarbons							
	18-Sep-03	Not Sampled Due to the Presence of Phase Separated Hydrocarbons							
	04-Jun-04	Not Sampled Due to the Presence of Phase Separated Hydrocarbons							
	10-Sep-04	Not Sampled Due to the Presence of Phase Separated Hydrocarbons							
	13-Dec-04	Not Sampled Due to the Presence of Phase Separated Hydrocarbons							
MW3	04-Mar-03	7,480	4,660	669	1,250	570	1,820		
	18-Sep-03	9,740	114	782	522	36.3	558	<0.5	21.4
	04-Jun-04	4,600	2,870	541	817	249	1,070		
	10-Sep-04	7,210	73.3	833	342	53.7	396		
	13-Dec-04	16,100	747	1,020	1,080	386	1,470		
MW4	04-Mar-03	38.5	3.62	<1	<1	1.5	1.5		
	18-Sep-03	1.24	<1	<1	<1	<1	<2	<0.5	<0.5
	04-Jun-04	26.2	1.16	<1	<2	<1	<3		
	10-Sep-04	1.01	<1	<1	<2	<1	<3		
	13-Dec-04	5.23	<1	<1	<2	<1	<3		
MW5	04-Mar-03	44.9	6.72	<5	<5	<5	<10	<5	<5

TABLE 2

Summary of Groundwater Analytical Results

Lovington Deep 6" - Ref. #2002-10312

Well #	Date	Benzene (µg/L.)	Toluene (µg/L.)	Ethylbenzene (µg/L.)	m,p-Xylenes (µg/L.)	o-Xylene (µg/L.)	Total Xylenes (µg/L.)	TPH	
								GRO (mg/L.)	DRO (mg/L.)
MW-5 (cont.)	18-Sep-03	3.12	<1	<1	<1	<1	<3	<0.5	<0.5
	04-Jun-04	29.5	1.84	<1	<2	<1	<3		
	10-Sep-04	1.46	<1	<1	<2	<1	<3		
	13-Dec-04	<1	<1	<1	<2	<1	<3		
MW-6	13-Dec-04	<1	<1	<1	<2	<1	<3		
MW-7	13-Dec-04	43.4	21.2	2.2	5.07	3.86	8.93		
MW-8	13-Dec-04	<1	<1	<1	<2	<1	<3		
MW-9	13-Dec-04	<1	<1	<1	<2	<1	<3		
MW-10	13-Dec-04	14.200	10.500	628	852	567	1,420		
MW-11	13-Dec-04	<1	<1	<1	<2	<1	<3		
NMWQCC Standards		10	750	750			620		

µg/L. - micrograms per liter

mg/L. - milligrams per liter

GRO - Gasoline Range Organics

DRO - Diesel Range Organics

Gray highlighted cells indicate current year's data.

Blank cells indicate that analyses was not performed.

Red, bolded results are above the NMWQCC Standards for drinking water

NMWQCC - New Mexico Water Quality Control Commission

TABLE 3

Summary of Groundwater Monitoring Well Results (Soil

Lovington Deep 6-Inch - Ref #2002-10312[illegible]

TABLE 3

Summary of Groundwater Monitoring Well Results (Soil)

Lovington Deep 6-Inch - Ref #2002-10312

Sample ID	Sample Date	Soil Boring	PID Readings	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	Total BTEX	TPH (as gasoline)	TPH (as diesel)	Total TPH
			(ppm)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
MW-10 (55'-60')	10-Nov-04	MW-10 (cont.)	10.9	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-11 (20'-25')	9-Dec-04	MW-11	40.6	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-11 (25'-30')			39.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-11 (30'-35')			40.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-11 (35'-40')			41.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-11 (40'-45')			44.3	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-11 (45'-50')			39.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-11 (50'-55')			40.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-11 (55'-60')			35.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-11 (60'-65')			38.8	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-11 (65'-70')			38.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
NMOCD Remedial Thresholds				10					50			100

¹ Bolded values are in excess of the NMOCD Remediation Thresholds² NA : Not Analyzed³ NS : Not Sampled⁴ Detected, but below the Reporting Limit; therefore, result is an estimated concentration (CLP-J Flag).

TABLE 4**Summary of Groundwater Sampling Recommendations****Lovington Deep 6" - Ref. #2002-10312**

Monitoring Well	Eight Quarters Below NMOCD Standards	Sampling Schedule				Notes
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
MW-1	No	X	X	X	X	Recommend Annual PAH analysis
MW-2	No	X	X	X	X	Recommend Annual PAH analysis
MW-3	No	X	X	X	X	Recommend Annual PAH analysis
MW-4	No	X	X	X	X	Recommend Annual PAH analysis
MW-5	No	X	X	X	X	Recommend Annual PAH analysis
MW-6	No	X	X	X	X	Recommend Annual PAH analysis
MW-7	No	X	X	X	X	Recommend Annual PAH analysis
MW-8	No	X	X	X	X	Recommend Annual PAH analysis
MW-9	No	X	X	X	X	Recommend Annual PAH analysis
MW-10	No	X	X	X	X	Recommend Annual PAH analysis
MW-11	No	X	X	X	X	Recommend Annual PAH analysis

APPENDICES

APPENDIX A

GROUNDWATER LABORATORY ANALYTICAL RESULTS

AND

CHAIN-OF-CUSTODY FORMS

Client: Environmental Plus, Inc.
Attn: Iain Olness
Address: 2100 Ave. O
Eunice, NM 88231
Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report# / Lab ID#: 156475 **Report Date:** 06/15/04
Project ID: 2002-10312
Sample Name: MW-1
Sample Matrix: water
Date Received: 06/09/2004 **Time:** 10:00
Date Sampled: 06/04/2004 **Time:** 08:00

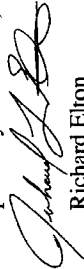
REPORT OF ANALYSIS

QUALITY ASSURANCE DATA 1

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatiles organics-8260b/BTEX	---		---		06/11/04	8260b(5030/5035)	---	---	---	---	---
Benzene	55.9	µg/L	1	<1	06/11/04	8260b	---	1.1	109.7	102.1	114.4
Ethylbenzene	2.62	µg/L	1	<1	06/11/04	8260b	---	0.5	113.3	108.3	115.1
m,p-Xylenes	2.21	µg/L	2	<2	06/11/04	8260b	---	3.1	115.4	108.9	116.2
o-Xylene	3.52	µg/L	1	<1	06/11/04	8260b	---	3.6	119	112.2	125.1
Toluene	21.2	µg/L	1	<1	06/11/04	8260b	---	5	122.9	109.2	126.6

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted,



Richard Elton

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than (" $<$ ") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B = Analyte detected in associated method blank(s). S & S1 = MS and/or MSD recovery exceed advisory limits. S2 = Post digestion spike (PDS) recovery exceeds advisory limit. S3 = MS and/or MSD and PDS recoveries exceed advisory limits. P = Precision higher than advisory limit. M = Matrix interference.



3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312
Sample Name: MW-1

Report#/Lab ID#: 156475
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limitse	Data Qualifiers
1,2-Dichloroethane-d4	8260b	99.8	74-124	---
Toluene-d8	8260b	106	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



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(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness
Address: 2100 Ave. O
Euinee, NM 88231
Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 156476 **Report Date:** 06/15/04
Project ID: 2002-10312
Sample Name: MW-3
Sample Matrix: water
Date Received: 06/09/2004 **Time:** 10:00
Date Sampled: 06/04/2004 **Time:** 10:00

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA 1

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatiles organics-8260b/BTEX	---		---		06/14/04	8260b(5030/5035)	---	---	---	---	---
Benzene	4600	µg/L	100	<100	06/14/04	8260b	---	1.1	109.7	102.1	114.4
Ethylbenzene	541	µg/L	100	<100	06/14/04	8260b	---	0.5	113.3	108.3	115.1
m,p-Xylenes	817	µg/L	200	<200	06/14/04	8260b	---	3.1	115.4	108.9	116.2
o-Xylene	249	µg/L	100	<100	06/14/04	8260b	---	3.6	119	112.2	125.1
Toluene	2870	µg/L	100	<100	06/14/04	8260b	---	5	122.9	109.2	126.6

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted,

Richard Elton

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than (" $<$ ") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B = Analyte detected in associated method blank(s). S & S1 = MS and/or MSD recovery exceed advisory limits. S2 = Post digestion spike (PDS) recovery exceeds advisory limit. S3 = MS and/or MSD and PDS recoveries exceed advisory limits. P = Precision higher than advisory limit. M = Matrix interference.



3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

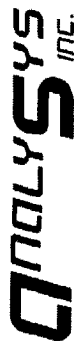
Project ID: 2002-10312
Sample Name: MW-3

Report#/Lab ID#: 156476
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limitse	Data Qualifiers
1,2-Dichloroethane-d4	8260b	104	74-124	---
Toluene-d8	8260b	103	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.

Attn: Iain Olness

Address: 2100 Ave. O
Eunice, NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 156477

Report Date: 06/15/04

Project ID: 2002-10312

Sample Name: MW-4

Sample Matrix: water

Date Received: 06/09/2004 **Time:** 10:00

Date Sampled: 06/04/2004 **Time:** 12:30

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatiles organics-8260b/BTEX	---		---		06/14/04	8260b(5030/5035)	---	---	---	---	---
Benzene	26.2	µg/L	1	<1	06/14/04	8260b	---	1.1	109.7	102.1	114.4
Ethylbenzene	<1	µg/L	1	<1	06/14/04	8260b	---	0.5	113.3	108.3	115.1
m,p-Xylenes	<2	µg/L	2	<2	06/14/04	8260b	---	3.1	115.4	108.9	116.2
o-Xylene	<1	µg/L	1	<1	06/14/04	8260b	J	3.6	119	112.2	125.1
Toluene	1.16	µg/L	1	<1	06/14/04	8260b	---	5	122.9	109.2	126.6

QUALITY ASSURANCE DATA 1

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Respectfully Submitted,

Richard Elton

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Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312
Sample Name: MW-4

Report#/Lab ID#: 156477
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limitse	Data Qualifiers
1,2-Dichloroethane-d4	8260b	105	74-124	---
Toluene-d8	8260b	106	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Exceptions Report:

Report #/Lab ID#: 156477 Matrix: water
Client: Environmental Plus, Inc. Attn: Iain Olness
Project ID: 2002-10312
Sample Name: MW-4

Sample Temperature/Condition: $\leq 6^{\circ}\text{C}$

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is $\leq 6^{\circ}\text{C}$. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

- ☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
- ☐ Sample received in appropriate container(s). State of sample preservation unknown.
- ☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

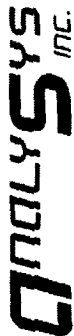
J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
o-Xylene	J	See J-flag discussion above.

Notes:



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Phone: (505) 394-3481 **FAX:** (505) 394-2601

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		06/14/04	8260b(5030/5035)	---	---	---	---	---
Benzene	29.5	µg/L	1	<1	06/11/04	8260b	---	1.1	109.7	102.1	114.4
Ethylbenzene	<1	µg/L	1	<1	06/14/04	8260b	---	0.5	113.3	108.3	115.1
m,p-Xylenes	<2	µg/L	2	<2	06/14/04	8260b	---	3.1	115.4	108.9	116.2
o-Xylene	<1	µg/L	1	<1	06/14/04	8260b	J	3.6	119	112.2	125.1
Toluene	1.84	µg/L	1	<1	06/11/04	8260b	---	5	122.9	109.2	126.6

QUALITY ASSURANCE DATA¹

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Respectfully Submitted,

Richard Elton

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Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312
Sample Name: MW-5

Report#/Lab ID#: 156478
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limitse	Data Qualifiers
1,2-Dichloroethane-d4	8260b	95.8	74-124	---
Toluene-d8	8260b	104	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Exceptions Report:

Report #/Lab ID#: 156478	Matrix: water	Attn: Iain Olness
Client: Environmental Plus, Inc.		
Project ID: 2002-10312		
Sample Name: MW-5		

Sample Temperature/Condition: $\leq 6^{\circ}\text{C}$

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is $\leq 6^{\circ}\text{C}$. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

- ☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
- ☐ Sample received in appropriate container(s). State of sample preservation unknown.
- ☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
o-Xylene	J	See J-flag discussion above.

Notes:

AnalySys Inc.

4221 Freidrich Lane, Suite 190, Austin, TX 78744
512-444-5896 FAX: 512-447-4766

Chain of Custody Form

2209 N. Padre Island Dr., Corpus Christi, TX 78408

Company Name Environmental Plus, Inc.		Bill To		ANALYSIS REQUEST																				
EPI Project Manager Iain Olness		PLAINS ALL AMERICAN PIPELINE, L.P.																						
Mailing Address P.O. BOX 1558		Attn: Jimmy Bryant																						
City, State, Zip Eunice New Mexico 88231		PO Box 1660,																						
EPI Phone#/Fax# 505-394-3481 / 505-394-2601		Midland, TX 79701																						
Client Company Plains All American																								
Facility Name Lovington Deep 6"																								
Project Reference 2002-10312																								
EPI Sampler Name Manuel Gomzales/Sergio Prieto																								
LAB I.D.	SAMPLE I.D.	(G) RAB OR (C) OMP.	# CONTAINERS	GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER	PRESERV.	MATRIX	DATE	TIME	BTEX 8021B	TPH 8015M	CHLORIDES (Cl)	SULFATES (SO ₄)	pH	TCLP	OTHER >>>	PAH
156475 1 MW-1		G 2	X							X	X				4-Jun	8:00	X							
156476 2 MW-3		G 2	X							X	X				4-Jun	10:00	X							
156477 3 MW-4		G 2	X							X	X				4-Jun	12:30	X							
156478 4 MW-5		G 2	X							X	X				4-Jun	2:00	X							
5																								
6																								
7																								
8																								
9																								
10																								
Sample Received by: <i>Tamara Olness</i>		Received By:		E-mail results to: iolness@hotmail.com and envipius1@aol.com																				
Relinquished by:		Relinquished By: (lab staff)		REMARKS:																				
Delivered by:		Sample Cool & Intact		T: 452																				



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Address: 2100 Ave. O
Eunice, NM 88231
Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 159562 **Report Date:** 09/20/04
Project ID: 2002-10312
Sample Name: MW-1
Sample Matrix: water
Date Received: 09/14/2004 **Time:** 12:30
Date Sampled: 09/10/2004 **Time:** 11:02

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatiles organics-8260b/BTEX	---		---		09/16/04	8260b(5030/5035)	---	---	---	---	---
Benzene	24.7	µg/L	1	<1	09/16/04	8260b	---	2.3	85.6	88.2	89.1
Ethylbenzene	<1	µg/L	1	<1	09/16/04	8260b	J	2.6	98.1	102.6	109
m,p-Xylenes	<2	µg/L	2	<2	09/16/04	8260b	---	0.7	97.1	101	109
o-Xylene	3.21	µg/L	1	<1	09/16/04	8260b	---	0.2	101	100.8	109.1
Toluene	3.65	µg/L	1	<1	09/16/04	8260b	---	2	100.2	98.2	105.2

QUALITY ASSURANCE DATA 1

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Respectfully Submitted,

Dale Wagner

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Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312
Sample Name: MW-1

Report#/Lab ID#: 159562
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	97	74-124	---
Toluene-d8	8260b	102	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Exceptions Report:

Report #/Lab ID#: 159562	Matrix: water	Attn: Iain Olness
Client: Environmental Plus, Inc.		
Project ID: 2002-10312		
Sample Name: MW-1		

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

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Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
Ethylbenzene	J	See J-flag discussion above.

Notes:



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Client: Environmental Plus, Inc.

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Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 159563 **Report Date:** 09/20/04

Project ID: 2002-10312

Sample Name: MW-3

Sample Matrix: water

Date Received: 09/14/2004 **Time:** 12:30

Date Sampled: 09/10/2004 **Time:** 09:15

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA 1

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		09/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	7210	µg/L	100	<100	09/17/04	8260b	---	2.3	85.6	88.2	89.1
Ethylbenzene	833	µg/L	100	<100	09/17/04	8260b	---	2.6	98.1	102.6	109
m,p-Xylenes	342	µg/L	200	<200	09/17/04	8260b	---	0.7	97.1	101	109
o-Xylene	53.7	µg/L	1	<1	09/17/04	8260b	---	0.2	101	100.8	109.1
Toluene	73.3	µg/L	1	<1	09/17/04	8260b	---	2	100.2	98.2	105.2

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Respectfully Submitted,

Dale Wagner

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Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312
Sample Name: MW-3

Report#/Lab ID#: 159563
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	102	74-124	---
Toluene-d8	8260b	101	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



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Address: 2100 Ave. O

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NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 159564 **Report Date:** 09/20/04

Project ID: 2002-10312

Sample Name: MW-4

Sample Matrix: water

Date Received: 09/14/2004 **Time:** 12:30

Date Sampled: 09/10/2004 **Time:** 08:24

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		09/16/04	8260b(5030/5035)	---	---	---	---	---
Benzene	1.01	µg/L	1	<1	09/16/04	8260b	---	2.3	85.6	88.2	89.1
Ethylbenzene	<1	µg/L	1	<1	09/16/04	8260b	---	2.6	98.1	102.6	109
m,p-Xylenes	<2	µg/L	2	<2	09/16/04	8260b	---	0.7	97.1	101	109
o-Xylene	<1	µg/L	1	<1	09/16/04	8260b	---	0.2	101	100.8	109.1
Toluene	<1	µg/L	1	<1	09/16/04	8260b	---	2	100.2	98.2	105.2

QUALITY ASSURANCE DATA 1

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Dale Wagner

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Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312
Sample Name: MW-4

Report#/Lab ID#: 159564
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	92.9	74-124	---
Toluene-d8	8260b	101	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



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Address: 2100 Ave. O
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Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 159565 **Report Date:** 09/20/04
Project ID: 2002-10312
Sample Name: MW-5
Sample Matrix: water
Date Received: 09/14/2004 **Time:** 12:30
Date Sampled: 09/10/2004 **Time:** 10:21

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA 1

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		09/16/04	8260b(5030/5035)	---	---	---	---	---
Benzene	1.46	µg/L	1	<1	09/16/04	8260b	---	2.3	85.6	88.2	89.1
Ethylbenzene	<1	µg/L	1	<1	09/16/04	8260b	---	2.6	98.1	102.6	109
m,p-Xylenes	<2	µg/L	2	<2	09/16/04	8260b	---	0.7	97.1	101	109
o-Xylene	<1	µg/L	1	<1	09/16/04	8260b	---	0.2	101	100.8	109.1
Toluene	<1	µg/L	1	<1	09/16/04	8260b	---	2	100.2	98.2	105.2

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Respectfully Submitted,

Dale Wagner

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3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312
Sample Name: MW-5

Report#/Lab ID#: 159565
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	100	74-124	---
Toluene-d8	8260b	100	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

10545

AnalySys Inc.

4221 Freidrich Lane, Suite 190, Austin, TX 78744
 512-444-5896 FAX: 512-447-4766

Chain of Custody Form

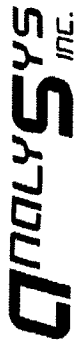
2209 N. Padre Island Dr., Corpus Christi, TX 78408

Company Name Environmental Plus, Inc.		Bill To		ANALYSIS REQUEST											
EPI Project Manager Iain Olness		PLAINS ALL-AMERICAN PIPELINE, L.P.													
Mailing Address P.O. BOX 1558		Attn: Jimmy Bryant													
City, State, Zip Eunice New Mexico 88231		PO Box 1660,													
EPI Phone# / Fax# 505-394-3481 / 505-394-2601		Midland, TX 79701													
Client Company Plains All American															
Facility Name Lovington Deep 6"															
Project Reference 2002-10312															
EPI Sampler Name Manuel Gonzales															

LAB I.D.	SAMPLE I.D.	# CONTAINERS	MATRIX						PRESERV.		SAMPLING		TPH 8015M	CHLORIDES (Cl)	SULFATES (SO ₄)	PH	TCLP	OTHER >>>	PAH	
			GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER	DATE								TIME
159562	1 MW-1	G 3	X						X	X										
159563	2 MW-3	G 3	X						X	X										
159564	3 MW-4	G 3	X						X	X										
159565	4 MW-5	G 3	X						X	X										
5																				
6																				
7																				
8																				
9																				
10																				

Sampler Relinquished by: <i>Iain Olness</i>	Received By:	Date/Time	Relinquished by: <i>Iain Olness</i>	Received By: (lab staff)	Date/Time	Delivered by:	Sample Cool & Intact Yes No	Checked By:
	<i>Iain Olness</i>	9/13/04 1630		<i>Jimmy Bryant</i>	9/14/04 1230			

E-mail results to: iolness@hotmail.com and envplus1@aol.com	
REMARKS: T.S.2.C	



3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.

Attn: Iain Olness

Address: 2100 Ave. O

Emice,

NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report# / Lab ID#: 162706 **Report Date:** 12/20/04

Project ID: 2002-10312 Lovington Deep 6"

Sample Name: LD6"121304MW-1

Sample Matrix: water

Date Received: 12/15/2004 **Time:** 10:25

Date Sampled: 12/13/2004 **Time:** 13:38

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA 1

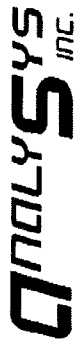
Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		12/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	13.7	µg/L	1	<1	12/17/04	8260b	---	0	99.6	102.7	99.2
Ethylbenzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	103	109.5	103.4
m,p-Xylenes	<2	µg/L	2	<2	12/17/04	8260b	---	1.3	103.2	107.6	103.3
o-Xylene	2.45	µg/L	1	<1	12/17/04	8260b	---	0	97.7	104	97.8
Toluene	2.67	µg/L	1	<1	12/17/04	8260b	---	0	106.2	118.7	112.2

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2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-1

Report#/Lab ID#: 162706
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	98.6	74-124	---
Toluene-d8	8260b	107	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



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(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.

Attn: Iain Olness

Address: 2100 Ave. O

Euinec,

NM 88231

Phone: (505) 394-3481 FAX: (505) 394-2601

Report#/Lab ID#: 162707 Report Date: 12/20/04

Project ID: 2002-10312 Lovington Deep 6"

Sample Name: LD6"121304MW-3

Sample Matrix: water

Date Received: 12/15/2004 Time: 10:25

Date Sampled: 12/13/2004 Time: 12:00

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA 1

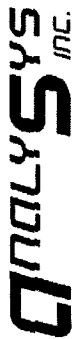
Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatiles organics-8260b/BTEX	---		---		12/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	16100	µg/L	1000	<1000	12/18/04	8260b	---	0	99.6	102.7	99.2
Ethylbenzene	1020	µg/L	10	<10	12/17/04	8260b	---	0	103	109.5	103.4
m,p-Xylenes	1080	µg/L	20	<20	12/17/04	8260b	---	1.3	103.2	107.6	103.3
o-Xylene	386	µg/L	10	<10	12/17/04	8260b	---	0	97.7	104	97.8
Toluene	747	µg/L	10	<10	12/17/04	8260b	---	0	106.2	118.7	112.2

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(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-3

Report#/Lab ID#: 162707
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	100	74-124	---
Toluene-d8	8260b	106	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Client: Environmental Plus, Inc.
Attn: Iain Olness
Address: 2100 Ave. O
Eunice, NM 88231
Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162708 **Report Date:** 12/20/04
Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-4
Sample Matrix: water
Date Received: 12/15/2004 **Time:** 10:25
Date Sampled: 12/13/2004 **Time:** 11:15

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatiles organics-8260b/BTEX	---		---		12/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	5.23	µg/L	1	<1	12/17/04	8260b	---	0	99.6	102.7	99.2
Ethylbenzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	103	109.5	103.4
m,p-Xylenes	<2	µg/L	2	<2	12/17/04	8260b	---	1.3	103.2	107.6	103.3
o-Xylene	<1	µg/L	1	<1	12/17/04	8260b	---	0	97.7	104	97.8
Toluene	<1	µg/L	1	<1	12/17/04	8260b	---	0	106.2	118.7	112.2

QUALITY ASSURANCE DATA 1

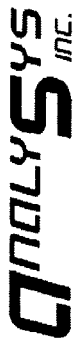
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Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-4

Report#/Lab ID#: 162708
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	100	74-124	---
Toluene-d8	8260b	105	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



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Client: Environmental Plus, Inc.

Attn: Iain Olness

Address: 2100 Ave. O

Euinec,

NM 88231

Phone: (505) 394-3481 FAX: (505) 394-2601

Report#Lab ID#: 162709 Report Date: 12/20/04

Project ID: 2002-10312 Lovington Deep 6"

Sample Name: LD6"121304MW-5

Sample Matrix: water

Date Received: 12/15/2004 Time: 10:25

Date Sampled: 12/13/2004 Time: 13:00

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA 1

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		12/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	<1	µg/L	1	<1	12/17/04	8260b	J	0	99.6	102.7	99.2
Ethylbenzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	103	109.5	103.4
m,p-Xylenes	<2	µg/L	2	<2	12/17/04	8260b	---	1.3	103.2	107.6	103.3
o-Xylene	<1	µg/L	1	<1	12/17/04	8260b	---	0	97.7	104	97.8
Toluene	<1	µg/L	1	<1	12/17/04	8260b	---	0	106.2	118.7	112.2

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(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-5

Report#/Lab ID#: 162709
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	97.7	74-124	---
Toluene-d8	8260b	105	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Exceptions Report:

Report #/Lab ID#: 162709	Matrix: water	Attn: Iain Olness
Client: Environmental Plus, Inc.		
Project ID: 2002-10312 Lovington Deep 6"		
Sample Name: LD6"121304MW-5		

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

- ☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
- ☐ Sample received in appropriate container(s). State of sample preservation unknown.
- ☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL), is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
Benzene	J	See J-flag discussion above.

Notes:



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Client: Environmental Plus, Inc.

Attn: Iain Olness

Address: 2100 Ave. O

Euinee,

NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162710 **Report Date:** 12/20/04

Project ID: 2002-10312 Lovington Deep 6"

Sample Name: LD6"121304MW-6

Sample Matrix: water

Date Received: 12/15/2004 **Time:** 10:25

Date Sampled: 12/13/2004 **Time:** 08:15

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA 1

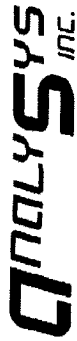
Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		12/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	99.6	102.7	99.2
Ethylbenzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	103	109.5	103.4
m,p-Xylenes	<2	µg/L	2	<2	12/17/04	8260b	---	1.3	103.2	107.6	103.3
o-Xylene	<1	µg/L	1	<1	12/17/04	8260b	---	0	97.7	104	97.8
Toluene	<1	µg/L	1	<1	12/17/04	8260b	---	0	106.2	118.7	112.2

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2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-6

Report#/Lab ID#: 162710
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	95.7	74-124	---
Toluene-d8	8260b	107	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



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(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness
Address: 2100 Ave. O
Eunice, NM 88231
Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162711 **Report Date:** 12/20/04
Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-7
Sample Matrix: water
Date Received: 12/15/2004 **Time:** 10:25
Date Sampled: 12/13/2004 **Time:** 14:28

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		12/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	43.4	µg/L	1	<1	12/17/04	8260b	---	0	99.6	102.7	99.2
Ethylbenzene	2.2	µg/L	1	<1	12/17/04	8260b	---	0	103	109.5	103.4
m,p-Xylenes	5.07	µg/L	2	<2	12/17/04	8260b	---	1.3	103.2	107.6	103.3
o-Xylene	3.86	µg/L	1	<1	12/17/04	8260b	---	0	97.7	104	97.8
Toluene	21.2	µg/L	1	<1	12/17/04	8260b	---	0	106.2	118.7	112.2

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Respectfully Submitted,

Dale Wagner

QUALITY ASSURANCE DATA 1

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than (" $<$ ") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B = Analyte detected in associated method blank(s). S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.



Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-7

Report#/Lab ID#: 162711
Sample Matrix: water

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	96.5	74-124	---
Toluene-d8	8260b	111	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness
Address: 2100 Ave. O
Euinec, NM 88231
Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162712 **Report Date:** 12/20/04
Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-8
Sample Matrix: water
Date Received: 12/15/2004 **Time:** 10:25
Date Sampled: 12/13/2004 **Time:** 08:51

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		12/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	99.6	102.7	99.2
Ethylbenzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	103	109.5	103.4
m,p-Xylenes	<2	µg/L	2	<2	12/17/04	8260b	---	1.3	103.2	107.6	103.3
o-Xylene	<1	µg/L	1	<1	12/17/04	8260b	---	0	97.7	104	97.8
Toluene	<1	µg/L	1	<1	12/17/04	8260b	---	0	106.2	118.7	112.2

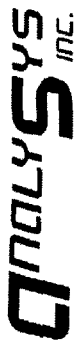
QUALITY ASSURANCE DATA 1

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Respectfully Submitted,

Dale Wagner

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3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-8

Report#/Lab ID#: 162712
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	95.4	74-124	---
Toluene-d8	8260b	110	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



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Client: Environmental Plus, Inc.

Attn: Iain Olness

Address: 2100 Ave. O

Eunice,

NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162713 **Report Date:** 12/20/04

Project ID: 2002-10312 Lovington Deep 6"

Sample Name: LD6"121304MW-9

Sample Matrix: water

Date Received: 12/15/2004 **Time:** 10:25

Date Sampled: 12/13/2004 **Time:** 10:05

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA 1

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		12/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	99.6	102.7	99.2
Ethylbenzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	103	109.5	103.4
m,p-Xylenes	<2	µg/L	2	<2	12/17/04	8260b	---	1.3	103.2	107.6	103.3
o-Xylene	<1	µg/L	1	<1	12/17/04	8260b	---	0	97.7	104	97.8
Toluene	<1	µg/L	1	<1	12/17/04	8260b	---	0	106.2	118.7	112.2

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Dale Wagner

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(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-9

Report#/Lab ID#: 162713
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	97.9	74-124	---
Toluene-d8	8260b	107	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



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Client: Environmental Plus, Inc.
Attn: Iain Olness
Address: 2100 Ave. O
Euinee, NM 88231
Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162714 **Report Date:** 12/20/04
Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-10
Sample Matrix: water
Date Received: 12/15/2004 **Time:** 10:25
Date Sampled: 12/13/2004 **Time:** 09:30

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA 1

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		12/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	14200	µg/L	1000	<1000	12/17/04	8260b	---	0	99.6	102.7	99.2
Ethylbenzene	628	µg/L	1	<1	12/17/04	8260b	---	0	103	109.5	103.4
m,p-Xylenes	852	µg/L	2	<2	12/17/04	8260b	---	1.3	103.2	107.6	103.3
o-Xylene	567	µg/L	1	<1	12/17/04	8260b	---	0	97.7	104	97.8
Toluene	10500	µg/L	1000	<1000	12/17/04	8260b	---	0	106.2	118.7	112.2

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

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Dale Wagner

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(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-10

Report#/Lab ID#: 162714
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	121	74-124	---
Toluene-d8	8260b	113	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



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Client: Environmental Plus, Inc.

Attn: Iain Olness

Address: 2100 Ave. O

Eunice,

NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162715 **Report Date:** 12/20/04

Project ID: 2002-10312 Lovington Deep 6"

Sample Name: LD6"121304MW-11

Sample Matrix: water

Date Received: 12/15/2004 **Time:** 10:25

Date Sampled: 12/13/2004 **Time:** 10:40

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual. ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		12/17/04	8260b(5030/5035)	---	---	---	---	---
Benzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	99.6	102.7	99.2
Ethylbenzene	<1	µg/L	1	<1	12/17/04	8260b	---	0	103	109.5	103.4
m,p-Xylenes	<2	µg/L	2	<2	12/17/04	8260b	---	1.3	103.2	107.6	103.3
o-Xylene	<1	µg/L	1	<1	12/17/04	8260b	---	0	97.7	104	97.8
Toluene	<1	µg/L	1	<1	12/17/04	8260b	J	0	106.2	118.7	112.2

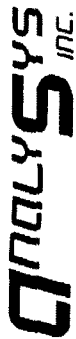
QUALITY ASSURANCE DATA¹

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3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Iain Olness

Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-11

Report#/Lab ID#: 162715
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1,2-Dichloroethane-d4	8260b	93.1	74-124	---
Toluene-d8	8260b	108	89-115	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Exceptions Report:

Report #/Lab ID#: 162715 Matrix: water
Client: Environmental Plus, Inc. Attn: Iain Olness
Project ID: 2002-10312 Lovington Deep 6"
Sample Name: LD6"121304MW-11

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

- ☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
- ☐ Sample received in appropriate container(s). State of sample preservation unknown.
- ☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
Toluene	J	See J-flag discussion above.

Notes:

Analysys Inc.

Chain of Custody Form

4221 Freidrich Lane, Suite 190, Austin, TX 78744
512-444-5896 FAX: 512-447-4766

2209 N. Padre Island Dr., Corpus Christi, TX 78408

Company Name		Environmental Plus, Inc.	
EPI Project Manager		Iain Olness	
Mailing Address		P.O. BOX 1558	
City, State, Zip		Eunice New Mexico 88231	
EPI Phone#/Fax#		505-394-3481 / 505-394-2601	
Client Company		Plains All American	
Facility Name		Lovington Deep 6"	
Project Reference		2002-10312	
EPI Sampler Name		Manuel Gonzales	
LAB I.D.	SAMPLE I.D.		
162706	1 LD6"121304MW-1	(G)RAB OR (C)OMP.	# CONTAINERS
162707	2 LD6"121304MW-3	GROUND WATER	WASTEWATER
162708	3 LD6"121304MW-4	SOIL	CRUDE OIL
162709	4 LD6"121304MW-5	SLUDGE	OTHER:
162710	5 LD6"121304MW-6	ACID/BASE	ICE/COOL
162711	6 LD6"121304MW-7	OTHER	PRESERV.
162712	7 LD6"121304MW-8	DATE	TIME
162713	8 LD6"121304MW-9		
162714	9 LD6"121304MW-10		
162715	10 LD6"121304MW-11		

PLAINS ALL AMERICAN PIPELINE, L.P.

Attn: ENV Accounts Receivable

PO Box 4648,

Houston, TX 77210-4648

ANALYSIS REQUEST

TPH 8015M

CHLORIDES (Cl)

SULFATES (SO₄)

pH

TCLP

OTHER >>>

PAH

Company Name: Environmental Plus, Inc.

EPI Project Manager: Iain Olness

Mailing Address: P.O. BOX 1558

City, State, Zip: Eunice New Mexico 88231

EPI Phone#/Fax#: 505-394-3481 / 505-394-2601

Client Company: Plains All American

Facility Name: Lovington Deep 6"

Project Reference: 2002-10312

EPI Sampler Name: Manuel Gonzales

Received By: *[Signature]*

Received By: *[Signature]*

Sample Cool & Intact: Yes

Delivered by: *[Signature]*

E-mail results to: iolness@hotmail.com and cireynolds@paalp.com

REMARKS:

11.000

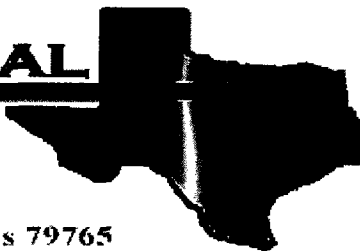
APPENDIX B

SOIL LABORATORY ANALYTICAL RESULTS

AND

CHAIN-OF-CUSTODY FORMS

ENVIRONMENTAL LAB OF



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Lovington Deep 6 inch

Project Number: 2002-10312

Location: None Given

Lab Order Number: 4K15007

Report Date: 11/22/04

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:
11/22/04 08:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-8 (30')	4K15007-01	Soil	11/09/04 08:20	11/15/04 11:18
MW-8 (60')	4K15007-02	Soil	11/09/04 09:23	11/15/04 11:18
MW-9 (35')	4K15007-03	Soil	11/09/04 13:00	11/15/04 11:18
MW-9 (60')	4K15007-04	Soil	11/09/04 13:55	11/15/04 11:18
MW-10 (35')	4K15007-05	Soil	11/10/04 08:22	11/15/04 11:18
MW-10 (60')	4K15007-06	Soil	11/10/04 09:37	11/15/04 11:18

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:
11/22/04 08:14

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-8 (30') (4K15007-01) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK41909	11/17/04	11/18/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		105 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	J [6.15]	10.0	"	1	EK41509	11/15/04	11/16/04	EPA 8015M	J
Diesel Range Organics >C12-C35	J [8.09]	10.0	"	"	"	"	"	"	J
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		97.0 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		108 %	70-130		"	"	"	"	
MW-8 (60') (4K15007-02) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK41909	11/17/04	11/18/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		84.3 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.8 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	"	1	EK41509	11/15/04	11/16/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		80.0 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		88.2 %	70-130		"	"	"	"	
MW-9 (35') (4K15007-03) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK41909	11/17/04	11/18/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		99.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.0 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	"	1	EK41509	11/15/04	11/17/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 2 of 10

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:
11/22/04 08:14

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-9 (35') (4K15007-03) Soil									
Surrogate: 1-Chlorooctane		90.7 %	70-130		EK41509	11 15 04	11 17 04	EPA 8015M	
Surrogate: 1-Chlorooctadecane		101 %	70-130		"	"	"	"	
MW-9 (60') (4K15007-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK41909	11/17/04	11/17/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		91.6 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.1 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	"	1	EK41509	11/15/04	11/17/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		94.5 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		105 %	70-130		"	"	"	"	
MW-10 (35') (4K15007-05) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK41909	11/17/04	11/17/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		92.7 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.5 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	"	1	EK41509	11/15/04	11/17/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		91.3 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		99.6 %	70-130		"	"	"	"	

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:
11/22/04 08:14

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (60") (4K15007-06) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK41909	11/17/04	11/18/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		97.9 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	"	1	EK41509	11/15/04	11/17/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		93.3 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		105 %	70-130		"	"	"	"	

Plains All American EH & S
1301 S. County Road 1150
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Project: Lovington Deep 6 inch
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Fax: (432) 687-4914

Reported:
11/22/04 08:14

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-8 (30') (4K15007-01) Soil									
% Moisture	6.0		%	1	EK41601	11/15/04	11/16/04	% calculation	
MW-8 (60') (4K15007-02) Soil									
% Moisture	5.0		%	1	EK41601	11/15/04	11/16/04	% calculation	
MW-9 (35') (4K15007-03) Soil									
% Moisture	3.0		%	1	EK41601	11/15/04	11/16/04	% calculation	
MW-9 (60') (4K15007-04) Soil									
% Moisture	8.0		%	1	EK41601	11/15/04	11/16/04	% calculation	
MW-10 (35') (4K15007-05) Soil									
% Moisture	9.0		%	1	EK41601	11/15/04	11/16/04	% calculation	
MW-10 (60') (4K15007-06) Soil									
% Moisture	2.0		%	1	EK41601	11/15/04	11/16/04	% calculation	

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914
Reported:
11/22/04 08:14

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EK41509 - Solvent Extraction (GC)

Blank (EK41509-BLK1)

Prepared: 11/15/04 Analyzed: 11/16/04

Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	37.0		"	50.0		74.0	70-130			
Surrogate: 1-Chlorooctadecane	40.6		"	50.0		81.2	70-130			

LCS (EK41509-BS1)

Prepared: 11/15/04 Analyzed: 11/16/04

Gasoline Range Organics C6-C12	536	10.0	mg/kg wet	500		107	75-125			
Diesel Range Organics >C12-C35	624	10.0	"	500		125	75-125			
Total Hydrocarbon C6-C35	1160	10.0	"	1000		116	75-125			
Surrogate: 1-Chlorooctane	54.8		"	50.0		110	70-130			
Surrogate: 1-Chlorooctadecane	52.1		"	50.0		104	70-130			

Calibration Check (EK41509-CCV1)

Prepared: 11/15/04 Analyzed: 11/17/04

Gasoline Range Organics C6-C12	465		mg/kg	500		93.0	80-120			
Diesel Range Organics >C12-C35	600		"	500		120	80-120			
Total Hydrocarbon C6-C35	1060		"	1000		106	80-120			
Surrogate: 1-Chlorooctane	53.8		mg/kg wet	50.0		108	70-130			
Surrogate: 1-Chlorooctadecane	53.9		"	50.0		108	70-130			

Matrix Spike (EK41509-MS1)

Source: 4K15003-02

Prepared: 11/15/04 Analyzed: 11/16/04

Gasoline Range Organics C6-C12	477	10.0	mg/kg dry	538	ND	88.7	75-125			
Diesel Range Organics >C12-C35	628	10.0	"	538	ND	117	75-125			
Total Hydrocarbon C6-C35	1100	10.0	"	1080	ND	102	75-125			
Surrogate: 1-Chlorooctane	53.8		"	53.8		100	70-130			
Surrogate: 1-Chlorooctadecane	50.1		"	53.8		93.1	70-130			

Matrix Spike Dup (EK41509-MSD1)

Source: 4K15003-02

Prepared: 11/15/04 Analyzed: 11/16/04

Gasoline Range Organics C6-C12	446	10.0	mg/kg dry	538	ND	82.9	75-125	6.72	20	
Diesel Range Organics >C12-C35	596	10.0	"	538	ND	111	75-125	5.23	20	
Total Hydrocarbon C6-C35	1040	10.0	"	1080	ND	96.3	75-125	5.61	20	
Surrogate: 1-Chlorooctane	51.5		"	53.8		95.7	70-130			
Surrogate: 1-Chlorooctadecane	48.3		"	53.8		89.8	70-130			

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 6 of 10

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:
11/22/04 08:14

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EK41909 - EPA 5030C (GC)

Blank (EK41909-BLK1)

Prepared & Analyzed: 11/17/04

Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	0.0946		"	0.100		94.6	80-120			
Surrogate: 4-Bromofluorobenzene	0.0873		"	0.100		87.3	80-120			

LCS (EK41909-BS1)

Prepared & Analyzed: 11/17/04

Benzene	110		ug/kg	100		110	80-120			
Toluene	111		"	100		111	80-120			
Ethylbenzene	112		"	100		112	80-120			
Xylene (p/m)	238		"	200		119	80-120			
Xylene (o)	118		"	100		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	0.120		mg kg wet	0.100		120	80-120			
Surrogate: 4-Bromofluorobenzene	0.116		"	0.100		116	80-120			

Calibration Check (EK41909-CCV1)

Prepared: 11/17/04 Analyzed: 11/18/04

Benzene	97.8		ug/kg	100		97.8	80-120			
Toluene	95.4		"	100		95.4	80-120			
Ethylbenzene	94.3		"	100		94.3	80-120			
Xylene (p/m)	206		"	200		103	80-120			
Xylene (o)	103		"	100		103	80-120			
Surrogate: a,a,a-Trifluorotoluene	0.101		mg kg wet	0.100		101	80-120			
Surrogate: 4-Bromofluorobenzene	0.110		"	0.100		110	80-120			

Matrix Spike (EK41909-MS1)

Source: 4K15007-06

Prepared & Analyzed: 11/17/04

Benzene	2710		ug/kg	2500	ND	108	80-120			
Toluene	2780		"	2500	ND	111	80-120			
Ethylbenzene	2770		"	2500	ND	111	80-120			
Xylene (p/m)	5790		"	5000	ND	116	80-120			
Xylene (o)	2780		"	2500	ND	111	80-120			
Surrogate: a,a,a-Trifluorotoluene	0.122		mg kg dry	0.102		120	80-120			
Surrogate: 4-Bromofluorobenzene	0.121		"	0.102		119	80-120			

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:
11/22/04 08:14

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EK41909 - EPA 5030C (GC)

Matrix Spike Dup (EK41909-MSD1)

Source: 4K15007-06

Prepared & Analyzed: 11/17/04

Benzene	2670		ug/kg	2500	ND	107	80-120	0.930	20	
Toluene	2740		"	2500	ND	110	80-120	0.905	20	
Ethylbenzene	2770		"	2500	ND	111	80-120	0.00	20	
Xylene (p/m)	5940		"	5000	ND	119	80-120	2.55	20	
Xylene (o)	2880		"	2500	ND	115	80-120	3.54	20	
Surrogate: a,a,a-Trifluorotoluene	0.116		mg kg dry	0.102		114	80-120			
Surrogate: 4-Bromofluorobenzene	0.121		"	0.102		119	80-120			

Environmental Lab of Texas

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Page 8 of 10

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914
Reported:
11/22/04 08:14

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EK41601 - General Preparation (Prep)

Blank (EK41601-BLK1)

Prepared: 11/15/04 Analyzed: 11/16/04

% Moisture	0.0	%
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Duplicate (EK41601-DUP1)

Source: 4K12010-01

Prepared: 11/15/04 Analyzed: 11/16/04

% Moisture	8.0	%	8.0	0.00	20
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Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914
Reported:
11/22/04 08:14

Notes and Definitions

J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:

Raland K. Tuttle

Date: 11/22/2004

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Labs of Texas

12600 West I-20 East, Odessa, TX 79763
(915) 563-1800 FAX: (915) 563-1713

Chain of Custody Form

Company Name Environmental Plus, Inc.		Bill To		ANALYSIS REQUEST											
EPI Project Manager Iain Olness		PLAINS ALL AMERICAN PIPELINE L.P.													
Mailing Address P.O. BOX 1558		Attn: ENV Accounts Payable													
City, State, Zip Eunice New Mexico 88231		PO Box 4648,													
EPI Phone#/Fax# 505-394-3481 / 505-394-2601		Houston, TX 77210-4648													
Client Company Plains All American															
Facility Name Lovington Deep 6"															
Project Reference 2002-10312															
EPI Sampler Name John Robinson															

LAB I.D.	SAMPLE I.D.	# CONTAINERS	MATRIX				PRESERV.			SAMPLING		TPH 8015M	CHLORIDES (Cl)	SULFATES (SO ₄)	PH	TCLP	OTHER >>>	PAH
			GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER							
-01	MW-8 (30')	1			X							X						
-02	MW-8 (60')	1			X							X						
-03	MW-9 (35')	1			X							X						
-04	MW-9 (60')	1			X							X						
-05	MW-10 (35')	1			X							X						
-06	MW-10 (60')	1			X							X						
7																		
8																		
9																		
10																		

Signed & Delivered by: <i>[Signature]</i>	Date 15 Nov 2002	Received By: <i>[Signature]</i>	Sample Cool & Intact Yes ☒ No ☐	Checked By: JMM
	Time 0845	Received By: (Lab staff) <i>[Signature]</i>		
Reimbursed by: <i>[Signature]</i>	Date 11-15-04	Time 1118		
Delivered by:				

E-mail results to: iolness@hotmail.com
REMARKS: 3.0°C 402 glass on ice

Environmental Lab of Texas

Variance / Corrective Action Report – Sample Log-In

Client: Plains P/L

Date/Time: 11-15-04 @ 1145

Order #: 4K15007

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	☒ Yes	☐ No	3.0 C
Shipping container/cooler in good condition?	☒ Yes	☐ No	N/A
Custody Seals intact on shipping container/cooler?	☒ Yes	☐ No	Not present N/A
Custody Seals intact on sample bottles?	☒ Yes	☐ No	Not present
Chain of custody present?	☒ Yes	☐ No	
Sample Instructions complete on Chain of Custody?	☒ Yes	☐ No	
Chain of Custody signed when relinquished and received?	☒ Yes	☐ No	
Chain of custody agrees with sample label(s)	☒ Yes	☐ No	
Container labels legible and intact?	☒ Yes	☐ No	
Sample Matrix and properties same as on chain of custody?	☒ Yes	☐ No	
Samples in proper container/bottle?	☒ Yes	☐ No	
Samples properly preserved?	☒ Yes	☐ No	
Sample bottles intact?	☒ Yes	☐ No	
Preservations documented on Chain of Custody?	☒ Yes	☐ No	
Containers documented on Chain of Custody?	☒ Yes	☐ No	
Sufficient sample amount for indicated test?	☒ Yes	☐ No	
All samples received within sufficient hold time?	☒ Yes	☐ No	
VOC samples have zero headspace?	☒ Yes	☐ No	Not Applicable

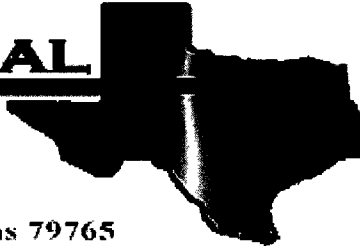
Other observations:

Variance Documentation:

Contact Person: - _____ Date/Time: _____ Contacted by: _____
Regarding: _____

Corrective Action Taken:

ENVIRONMENTAL LAB OF



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Lovington Deep 6 inch

Project Number: 2002-10312

Location: None Given

Lab Order Number: 4L13009

Report Date: 12/16/04

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914
Reported:
12/16/04 09:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-7 (30')	4L13009-01	Soil	12/09/04 09:10	12/13/04 13:20
MW-7 (50')	4L13009-02	Soil	12/09/04 10:05	12/13/04 13:20
MW-7 (70')	4L13009-03	Soil	12/09/04 10:55	12/13/04 13:20
MW-11 (25')	4L13009-04	Soil	12/09/04 14:00	12/13/04 13:20
MW-11 (45')	4L13009-05	Soil	12/09/04 14:45	12/13/04 13:20
MW-11 (65')	4L13009-06	Soil	12/09/04 15:30	12/13/04 13:20
MW-6 (30')	4L13009-07	Soil	12/10/04 10:24	12/13/04 13:20
MW-6 (45')	4L13009-08	Soil	12/10/04 10:53	12/13/04 13:20
MW-6 (60')	4L13009-09	Soil	12/10/04 11:25	12/13/04 13:20

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:
12/16/04 09:38

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-7 (30') (4L13009-01) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EL41402	12/13/04	12/14/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		112 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.1 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL41311	12/13/04	12/14/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		83.4 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		83.0 %	70-130		"	"	"	"	
MW-7 (50') (4L13009-02) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EL41402	12/13/04	12/14/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		113 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL41311	12/13/04	12/14/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		84.8 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		85.4 %	70-130		"	"	"	"	
MW-7 (70') (4L13009-03) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EL41402	12/13/04	12/14/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		92.6 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.3 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL41311	12/13/04	12/14/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	

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Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:
12/16/04 09:38

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-7 (70') (4L13009-03) Soil									
Surrogate: 1-Chlorooctane		83.6 %	70-130		EL41311	12/13/04	12/14/04	EPA 8015M	
Surrogate: 1-Chlorooctadecane		81.4 %	70-130		"	"	"	"	
MW-11 (25') (4L13009-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EL41402	12/13/04	12/14/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		106 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL41311	12/13/04	12/14/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		106 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		104 %	70-130		"	"	"	"	
MW-11 (45') (4L13009-05) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EL41402	12/13/04	12/14/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		101 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL41311	12/13/04	12/14/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		92.4 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		93.2 %	70-130		"	"	"	"	

Plains All American EH & S
1301 S. County Road 1150
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Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

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Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-11 (65') (4L13009-06) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EL41503	12/14/04	12/14/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		103 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL41311	12/13/04	12/14/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		87.6 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		87.2 %	70-130		"	"	"	"	
MW-6 (30') (4L13009-07) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EL41503	12/14/04	12/14/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		110 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL41311	12/13/04	12/14/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		88.2 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		87.6 %	70-130		"	"	"	"	
MW-6 (45') (4L13009-08) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EL41503	12/14/04	12/14/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		108 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL41311	12/13/04	12/14/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	

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Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

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Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (45') (4L13009-08) Soil									
Surrogate: 1-Chlorooctane		82.4 %	70-130		EL41311	12 13 04	12 14 04	EPA 8015M	
Surrogate: 1-Chlorooctadecane		82.2 %	70-130		"	"	"	"	
MW-6 (60') (4L13009-09) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EL41503	12/14/04	12/14/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		103 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL41311	12/13/04	12/14/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		83.4 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		81.8 %	70-130		"	"	"	"	

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General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-7 (30') (4L13009-01) Soil									
% Moisture	4.2		%	1	EL41401	12/13/04	12/14/04	% calculation	
MW-7 (50') (4L13009-02) Soil									
% Moisture	3.5		%	1	EL41401	12/13/04	12/14/04	% calculation	
MW-7 (70') (4L13009-03) Soil									
% Moisture	18.1		%	1	EL41401	12/13/04	12/14/04	% calculation	
MW-11 (25') (4L13009-04) Soil									
% Moisture	2.1		%	1	EL41401	12/13/04	12/14/04	% calculation	
MW-11 (45') (4L13009-05) Soil									
% Moisture	2.3		%	1	EL41401	12/13/04	12/14/04	% calculation	
MW-11 (65') (4L13009-06) Soil									
% Moisture	19.2		%	1	EL41401	12/13/04	12/14/04	% calculation	
MW-6 (30') (4L13009-07) Soil									
% Moisture	4.6		%	1	EL41401	12/13/04	12/14/04	% calculation	
MW-6 (45') (4L13009-08) Soil									
% Moisture	1.4		%	1	EL41401	12/13/04	12/14/04	% calculation	
MW-6 (60') (4L13009-09) Soil									
% Moisture	7.9		%	1	EL41401	12/13/04	12/14/04	% calculation	

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Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EL41311 - Solvent Extraction (GC)

Blank (EL41311-BLK1)

Prepared & Analyzed: 12/13/04

Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	37.1		mg/kg	50.0		74.2	70-130			
Surrogate: 1-Chlorooctadecane	36.5		"	50.0		73.0	70-130			

Blank (EL41311-BLK2)

Prepared: 12/13/04 Analyzed: 12/14/04

Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	39.0		mg/kg	50.0		78.0	70-130			
Surrogate: 1-Chlorooctadecane	37.6		"	50.0		75.2	70-130			

LCS (EL41311-BS1)

Prepared & Analyzed: 12/13/04

Gasoline Range Organics C6-C12	478	10.0	mg/kg wet	500		95.6	75-125			
Diesel Range Organics >C12-C35	499	10.0	"	500		99.8	75-125			
Total Hydrocarbon C6-C35	977	10.0	"	1000		97.7	75-125			
Surrogate: 1-Chlorooctane	51.3		mg/kg	50.0		103	70-130			
Surrogate: 1-Chlorooctadecane	37.6		"	50.0		75.2	70-130			

LCS (EL41311-BS2)

Prepared: 12/13/04 Analyzed: 12/14/04

Gasoline Range Organics C6-C12	492	10.0	mg/kg wet	500		98.4	75-125			
Diesel Range Organics >C12-C35	503	10.0	"	500		101	75-125			
Total Hydrocarbon C6-C35	995	10.0	"	1000		99.5	75-125			
Surrogate: 1-Chlorooctane	52.0		mg/kg	50.0		104	70-130			
Surrogate: 1-Chlorooctadecane	41.7		"	50.0		83.4	70-130			

Calibration Check (EL41311-CCV1)

Prepared & Analyzed: 12/13/04

Gasoline Range Organics C6-C12	472		mg/kg	500		94.4	80-120			
Diesel Range Organics >C12-C35	528		"	500		106	80-120			
Total Hydrocarbon C6-C35	1000		"	1000		100	80-120			
Surrogate: 1-Chlorooctane	50.1		"	50.0		100	70-130			
Surrogate: 1-Chlorooctadecane	43.8		"	50.0		87.6	70-130			

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:
12/16/04 09:38

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EL41311 - Solvent Extraction (GC)

Calibration Check (EL41311-CCV2)

Prepared: 12/13/04 Analyzed: 12/14/04

Gasoline Range Organics C6-C12	483		mg/kg	500		96.6	80-120			
Diesel Range Organics >C12-C35	522		"	500		104	80-120			
Total Hydrocarbon C6-C35	1000		"	1000		100	80-120			
Surrogate: 1-Chlorooctane	51.5		"	50.0		103	70-130			
Surrogate: 1-Chlorooctadecane	48.1		"	50.0		96.2	70-130			

Matrix Spike (EL41311-MS1)

Source: 4L13002-02

Prepared: 12/13/04 Analyzed: 12/14/04

Gasoline Range Organics C6-C12	504	10.0	mg/kg dry	553	ND	91.1	75-125			
Diesel Range Organics >C12-C35	531	10.0	"	553	ND	96.0	75-125			
Total Hydrocarbon C6-C35	1040	10.0	"	1110	ND	93.7	75-125			
Surrogate: 1-Chlorooctane	50.9		mg/kg	50.0		102	70-130			
Surrogate: 1-Chlorooctadecane	48.7		"	50.0		97.4	70-130			

Matrix Spike (EL41311-MS2)

Source: 4L13007-01

Prepared: 12/13/04 Analyzed: 12/14/04

Gasoline Range Organics C6-C12	596	10.0	mg/kg dry	575	12.3	102	75-125			
Diesel Range Organics >C12-C35	586	10.0	"	575	17.2	98.9	75-125			
Total Hydrocarbon C6-C35	1180	10.0	"	1150	29.5	100	75-125			
Surrogate: 1-Chlorooctane	57.4		mg/kg	50.0		115	70-130			
Surrogate: 1-Chlorooctadecane	52.6		"	50.0		105	70-130			

Matrix Spike Dup (EL41311-MSD1)

Source: 4L13002-02

Prepared: 12/13/04 Analyzed: 12/14/04

Gasoline Range Organics C6-C12	523	10.0	mg/kg dry	553	ND	94.6	75-125	3.70	20	
Diesel Range Organics >C12-C35	524	10.0	"	553	ND	94.8	75-125	1.33	20	
Total Hydrocarbon C6-C35	1050	10.0	"	1110	ND	94.6	75-125	0.957	20	
Surrogate: 1-Chlorooctane	51.8		mg/kg	50.0		104	70-130			
Surrogate: 1-Chlorooctadecane	49.5		"	50.0		99.0	70-130			

Matrix Spike Dup (EL41311-MSD2)

Source: 4L13007-01

Prepared: 12/13/04 Analyzed: 12/14/04

Gasoline Range Organics C6-C12	572	10.0	mg/kg dry	575	12.3	97.3	75-125	4.11	20	
Diesel Range Organics >C12-C35	581	10.0	"	575	17.2	98.1	75-125	0.857	20	
Total Hydrocarbon C6-C35	1150	10.0	"	1150	29.5	97.4	75-125	2.58	20	
Surrogate: 1-Chlorooctane	55.5		mg/kg	50.0		111	70-130			
Surrogate: 1-Chlorooctadecane	51.2		"	50.0		102	70-130			

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Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EL41402 - EPA 5030C (GC)

Blank (EL41402-BLK1)

Prepared & Analyzed: 12/13/04

Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	112		ug/kg	100		112	80-120			
Surrogate: 4-Bromofluorobenzene	100		"	100		100	80-120			

LCS (EL41402-BS1)

Prepared & Analyzed: 12/13/04

Benzene	92.3		ug/kg	100		92.3	80-120			
Toluene	95.4		"	100		95.4	80-120			
Ethylbenzene	110		"	100		110	80-120			
Xylene (p/m)	240		"	200		120	80-120			
Xylene (o)	119		"	100		119	80-120			
Surrogate: a,a,a-Trifluorotoluene	117		"	100		117	80-120			
Surrogate: 4-Bromofluorobenzene	115		"	100		115	80-120			

Calibration Check (EL41402-CCV1)

Prepared: 12/13/04 Analyzed: 12/14/04

Benzene	90.4		ug/kg	100		90.4	80-120			
Toluene	90.3		"	100		90.3	80-120			
Ethylbenzene	94.7		"	100		94.7	80-120			
Xylene (p/m)	209		"	200		104	80-120			
Xylene (o)	108		"	100		108	80-120			
Surrogate: a,a,a-Trifluorotoluene	119		"	100		119	80-120			
Surrogate: 4-Bromofluorobenzene	103		"	100		103	80-120			

Matrix Spike (EL41402-MS1)

Source: 4L10005-01

Prepared & Analyzed: 12/13/04

Benzene	87.7		ug/kg	100	ND	87.7	80-120			
Toluene	84.5		"	100	ND	84.5	80-120			
Ethylbenzene	89.1		"	100	ND	89.1	80-120			
Xylene (p/m)	203		"	200	ND	102	80-120			
Xylene (o)	93.4		"	100	ND	93.4	80-120			
Surrogate: a,a,a-Trifluorotoluene	111		"	100		111	80-120			
Surrogate: 4-Bromofluorobenzene	103		"	100		103	80-120			

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12/16/04 09:38

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EL41402 - EPA 5030C (GC)

Matrix Spike Dup (EL41402-MSD1)

Source: 4L10005-01

Prepared & Analyzed: 12/13/04

Benzene	99.1		ug/kg	100	ND	99.1	80-120	12.2	20	
Toluene	102		"	100	ND	102	80-120	18.8	20	
Ethylbenzene	108		"	100	ND	108	80-120	19.2	20	
Xylene (p/m)	235		"	200	ND	118	80-120	14.5	20	
Xylene (o)	114		"	100	ND	114	80-120	19.9	20	
Surrogate: a,a,a-Trifluorotoluene	115		"	100		115	80-120			
Surrogate: 4-Bromofluorobenzene	107		"	100		107	80-120			

Batch EL41503 - EPA 5030C (GC)

Blank (EL41503-BLK1)

Prepared & Analyzed: 12/14/04

Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	104		ug/kg	100		104	80-120			
Surrogate: 4-Bromofluorobenzene	104		"	100		104	80-120			

LCS (EL41503-BS1)

Prepared & Analyzed: 12/14/04

Benzene	89.3		ug/kg	100		89.3	80-120			
Toluene	92.7		"	100		92.7	80-120			
Ethylbenzene	106		"	100		106	80-120			
Xylene (p/m)	236		"	200		118	80-120			
Xylene (o)	119		"	100		119	80-120			
Surrogate: a,a,a-Trifluorotoluene	117		"	100		117	80-120			
Surrogate: 4-Bromofluorobenzene	116		"	100		116	80-120			

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Fax: (432) 687-4914
Reported:
12/16/04 09:38

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EL41503 - EPA 5030C (GC)

Calibration Check (EL41503-CCV1)

Prepared & Analyzed: 12/14/04

Benzene	95.9		ug/kg	100		95.9	80-120			
Toluene	98.3		"	100		98.3	80-120			
Ethylbenzene	102		"	100		102	80-120			
Xylene (p/m)	226		"	200		113	80-120			
Xylene (o)	111		"	100		111	80-120			
Surrogate: a,a,a-Trifluorotoluene	114		"	100		114	80-120			
Surrogate: 4-Bromofluorobenzene	112		"	100		112	80-120			

Matrix Spike (EL41503-MS1)

Source: 4L13013-02

Prepared & Analyzed: 12/14/04

Benzene	91.2		ug/kg	100	ND	91.2	80-120			
Toluene	96.5		"	100	ND	96.5	80-120			
Ethylbenzene	108		"	100	ND	108	80-120			
Xylene (p/m)	238		"	200	ND	119	80-120			
Xylene (o)	116		"	100	ND	116	80-120			
Surrogate: a,a,a-Trifluorotoluene	117		"	100		117	80-120			
Surrogate: 4-Bromofluorobenzene	119		"	100		119	80-120			

Matrix Spike Dup (EL41503-MSD1)

Source: 4L13013-02

Prepared & Analyzed: 12/14/04

Benzene	92.3		ug/kg	100	ND	92.3	80-120	1.20	20	
Toluene	97.4		"	100	ND	97.4	80-120	0.928	20	
Ethylbenzene	109		"	100	ND	109	80-120	0.922	20	
Xylene (p/m)	239		"	200	ND	120	80-120	0.837	20	
Xylene (o)	117		"	100	ND	117	80-120	0.858	20	
Surrogate: a,a,a-Trifluorotoluene	116		"	100		116	80-120			
Surrogate: 4-Bromofluorobenzene	120		"	100		120	80-120			

Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:
12/16/04 09:38

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EL41401 - General Preparation (Prep)

Blank (EL41401-BLK1)

Prepared: 12/13/04 Analyzed: 12/14/04

% Moisture	0.001	%
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Duplicate (EL41401-DUP1)

Source: 4L10023-01

Prepared: 12/13/04 Analyzed: 12/14/04

% Moisture	3.0	%	3.2	6.45	20
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Plains All American EH & S
1301 S. County Road 1150
Midland TX, 79706-4476

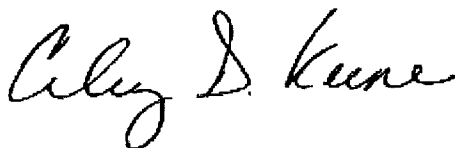
Project: Lovington Deep 6 inch
Project Number: 2002-10312
Project Manager: Camille Reynolds

Fax: (432) 687-4914
Reported:
12/16/04 09:38

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By: _____



Date: 12/16/2004

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Chain of Custody Form

Company Name	Environmental Plus, Inc.
--------------	--------------------------

REMARKS: 1.5' E-mail results to: lolness@hotmail.com & cireynolds@paalp.com SEALS

4oz glass canister

Environmental Lab of Texas

Variance / Corrective Action Report – Sample Log-In

Client: Plains P/L

Date/Time: 12-13-04 @ 1320

Order #: 4L13009

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	☒ Yes	☐ No	I.S.	C
Shipping container/cooler in good condition?	☒ Yes	☐ No		
Custody Seals intact on shipping container/cooler?	☒ Yes	☐ No	Not present	
Custody Seals intact on sample bottles?	☒ Yes	☐ No	Not present	
Chain of custody present?	☒ Yes	☐ No		
Sample Instructions complete on Chain of Custody?	☒ Yes	☐ No		
Chain of Custody signed when relinquished and received?	☒ Yes	☐ No		
Chain of custody agrees with sample label(s)	☒ Yes	☐ No		
Container labels legible and intact?	☒ Yes	☐ No		
Sample Matrix and properties same as on chain of custody?	☒ Yes	☐ No		
Samples in proper container/bottle?	☒ Yes	☐ No		
Samples properly preserved?	☒ Yes	☐ No		
Sample bottles intact?	☒ Yes	☐ No		
Preservations documented on Chain of Custody?	☒ Yes	☐ No		
Containers documented on Chain of Custody?	☒ Yes	☐ No		
Sufficient sample amount for indicated test?	☒ Yes	☐ No		
All samples received within sufficient hold time?	☒ Yes	☐ No		
VOC samples have zero headspace?	☒ Yes	☐ No	Not Applicable	

Other observations:

Variance Documentation:

Contact Person: - _____ Date/Time: _____ Contacted by: _____

Regarding:

Corrective Action Taken:

user

Analysis Inc Chain of Custody.xls
12/16/04 03:46 PM



AnalySys Inc.

4221 Freidrich Lane, Suite 190, Austin, TX 78744
512-444-5896 FAX: 512-447-4766

Chain of Custody Form

2209 N. Padre Island Dr., Corpus Christi, TX 78408

Company Name Environmental Plus, Inc.		EPI TO		ANALYSIS REQUEST	
EPI Project Manager Iain Olness					
Mailing Address P.O. BOX 1558					
City, State, Zip Eunice New Mexico 88231					
EPI Phone#/Fax# 505-394-3481 / 505-394-2601					
Client Company Plains All American					
Facility Name Kimbrough Sweet					
Project Reference 2000-10757					
EPI Sampler Name Cody Fisher					

 PLAINS ALL-AMERICAN PIPELINE L.P. Attn: ENV Accounts Receivable P.O. Box 4648 Houston, TX 77210-4648		MATRIX GROUND WATER ☐ WASTEWATER ☐ SOIL ☐ CRUDE OIL ☐ SLUDGE ☐ OTHER: ☐ ACID/BASE ☐ ICE/COOL ☐ OTHER ☐		PRESERV. DATE 15-Dec TIME 12:00		SAMPLING TPH 8015M ☐ CHLORIDES (Cl) ☐ SULFATES (SO₄) ☐ pH ☐ TCLP ☐ OTHER >> ☐ PAH ☐	
--	--	--	--	---	--	--	--

LAB I.D.	SAMPLE I.D.	(G)RAB OR (COMP.	# CONTAINERS	GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER	DATE	TIME	BTEX 8021B	TPH 8015M	CHLORIDES (Cl)	SULFATES (SO ₄)	pH	TCLP	OTHER >>	PAH
1	MW-10	G	3	X						X	X		15-Dec	12:00	X							
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Sampler Relinquished:	Date	Received By:
	Time	
Relinquished by:	Date	Received By: (lab staff)
	Time	
Delivered by:	Sample Cool & Intact Yes ☐ No ☐	Checked By:

E-mail results to: iolness@hotmail.com and cireynolds@paalp.com	
REMARKS:	

APPENDIX C

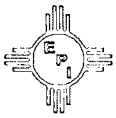
SOIL BORING LOGS

AND

WELL CONSTRUCTION DIAGRAMS

Log Of Test Borings

(NOTE - Page 1 of 3)



ENVIRONMENTAL PLUS, INC.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 EUNICE, NM
 505-394-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-6

Surface Elevation: 3,915.45'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>12/10/04</u> Time: <u>0800</u> Completion Date: <u>12/10/04</u> Time: <u>1300</u> Description
						0.5'	Sandy Loam Topsoil
						5	CALICHE, White to Tan, Soft to Indurated
						10	
						15	
						20	
						25	
1024	CS	50	Dry	13.6	SP	30	Intermix of CALICHE and underlying SAND
1034	CS	48	Dry/ Damp	14.3	SP	35	Tan to Red Brown, Soft, Fine to Medium-Grained SAND with some trace SILT, CLAY and ROCK

Log Of Test Borings

(NOTE - Page 2 of 3)



ENVIRONMENTAL PLUS, INC.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 ELUNICE, NM
 505-384-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-6

Surface Elevation: 3,915.45'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>12/10/04</u> Time: <u>0800</u> Completion Date: <u>12/10/04</u> Time: <u>1300</u> Description
1041	CS	48	Dry/ Damp	18.2	SP	40	
1053	CS	60	Dry/ Damp	17.3	SP	45	
1103	CS	60	Dry/ Damp	14.7	SP	50	
1113	CS	48	Dry/ Damp	16.7	SP	55	
1125	CS	60	Damp/ Wet	11.7	SP	60	
						65	
						70	End of Boring at 70'

Log Of Test Borings

(NOTE - Page 3 of 3)



ENVIRONMENTAL PLUS, INC.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 EUNICE, NM
 505-384-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-6

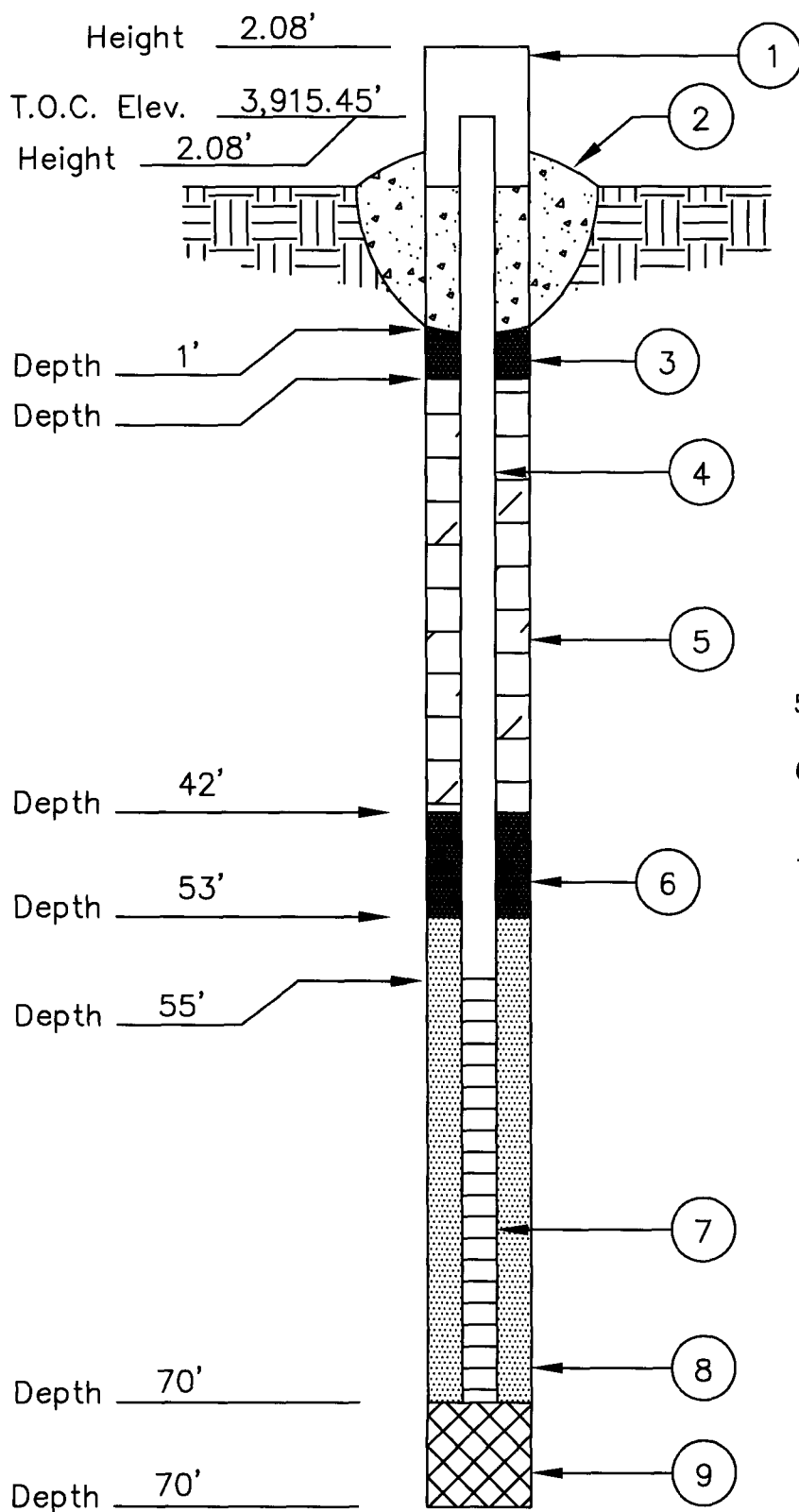
Surface Elevation: 3,915.45'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>12/10/04</u> Time: <u>0800</u> Completion Date: <u>12/10/04</u> Time: <u>1300</u> Description
						75	
						80	
						85	
						90	
						95	
						100	

Water Level Measurements (feet)						Drilling Method: Air Rotary 8.25" OD
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method: MW-6 Installed
12/10/04	-	-	-	-	-	
12/13/04	-	-	-	-	63.26	Field Representative: JR

Monitoring Well Construction Information Standard Well

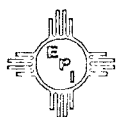
Job No.: 2002-10312 Job Name: Lovington Deep 6-Inch Boring / Well No. MW-6
Date: 12/10/04 Field Representative: JR State Unique Well No. NA



- 1) Protective Casing ☒ Yes ☐ No
Locking ☒ Yes ☐ No
Protective Posts ☒ Yes ☐ No
Concrete Pyramid ☒ Yes ☐ No
- 2) Concrete Seal ☒ Yes ☐ No
- 3) Type of Surface Seal if Installed Bentonite Plug
- 4) Solid Pipe Type PVC
Solid Pipe Length 58 ft.
Joint Type Slip/Glued or
Threaded
- 5) Type of Backfill Bentonite Plug
- 6) Type of Lower Seal if Installed Sluffed Off Sand
- 7) Screen Type P.V.C.
Screen Length 15 ft.
Slot Size .020"
Length 15 ft.
Screen Diameter 2 in.
- 8) Type of Backfill around Screen 12/20 sand
- 9) Type of Backfill
- 10) Drilling Method 6.25" I.D. H.S.A.
- 11) Additives Used if any Water
- 12) Borehole Diameter 8.25" O.D. in.

Log Of Test Borings

(NOTE - Page 1 of 3)



ENVIRONMENTAL PLUS, INC.

STATE APPROVED LAND FARM AND
ENVIRONMENTAL SERVICES
ELUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-7

Surface Elevation: 3,914.73'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: 12/09/04 Time: 0800 Completion Date: 12/09/04 Time: 1100 Description
							0.5' Sandy Loam Topsoil
0805	Cuttings	NA	Dry			5	CALICHE, White to Tan, Soft to Indurated
0820	Cuttings	NA	Dry			10	
0825	Cuttings	NA	Dry			15	
0830	Cuttings	NA	Dry			20	
0840	Cuttings	NA	Dry			25	
0910	CS	36	Dry	16.3	SP	30	Intermix of CALICHE and underlying SAND
0915	CS	36	Dry	8.8	SP	35	Tan to Red Brown, Soft, Fine to Medium-Grained SAND with some trace SILT, CLAY and ROCK

Log Of Test Borings

(NOTE - Page 2 of 3)



ENVIRONMENTAL PLUS, INC.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 EUNICE, NM
 505-394-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-7

Surface Elevation: 3,914.73'

Sample # and Time	Sample Type	Recovery (Inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>12/09/04</u> Time: <u>0800</u> Completion Date: <u>12/09/04</u> Time: <u>1100</u> Description
0925	CS	36	Dry	18.2	SP	38	
0935	CS	36	Dry	36.8	SP	43	
1005	CS	36	Dry	49.5	SP	49	
1010	CS	36	Dry	42.1	SP	54	
1025	CS	36	Moist	50.0	SP	59	
1040	CS	36	Moist	51.2	SP	64	
1055	CS	36	Moist	41.8	SP	69	
						70	End of Boring at 70'

Log Of Test Borings

(NOTE - Page 3 of 3)



ENVIRONMENTAL PLUS, INC.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 ELUNICE, NM
 505-384-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-7

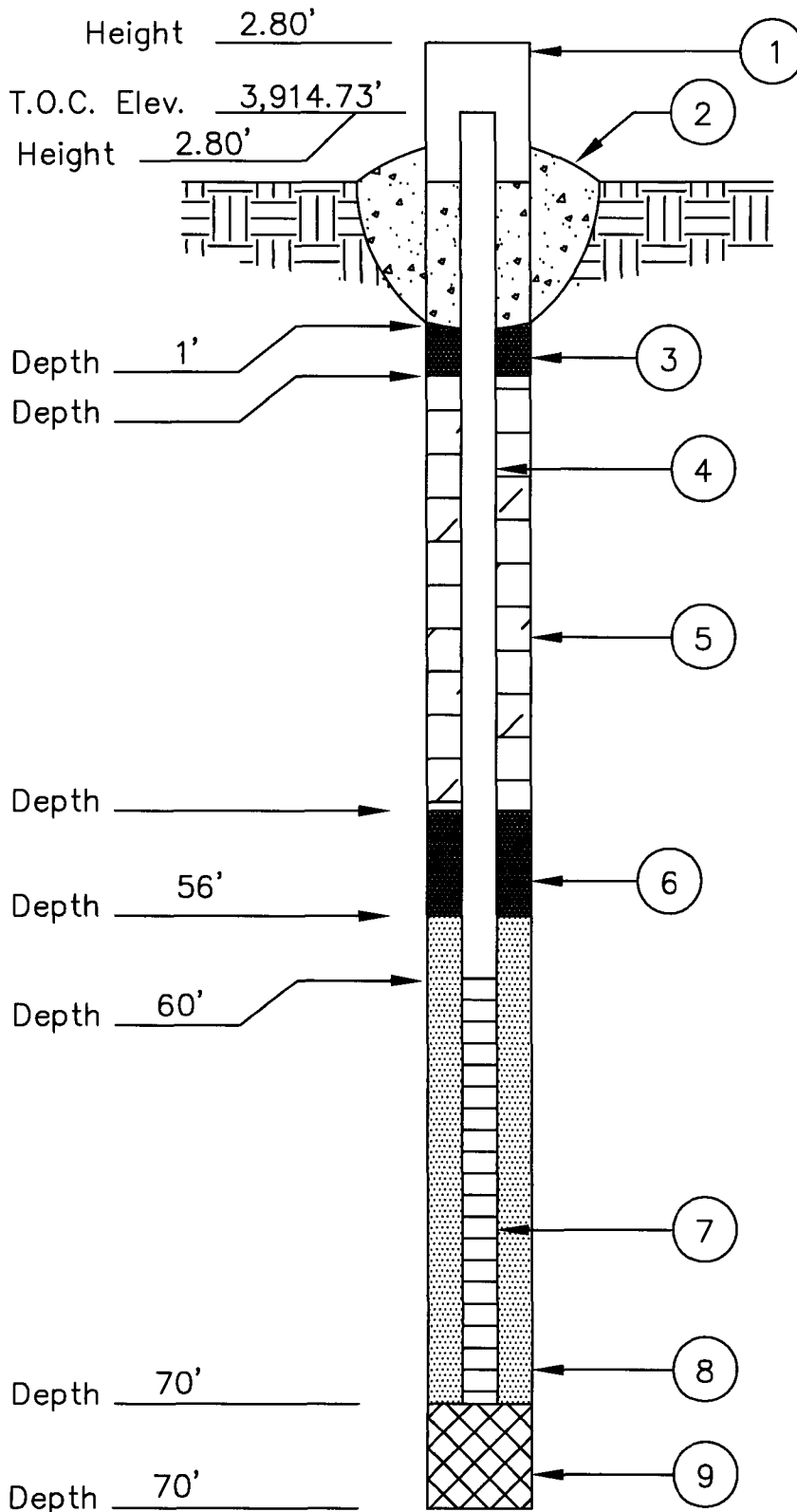
Surface Elevation: 3,914.73'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>12/09/04</u> Time: <u>0800</u> Completion Date: <u>12/09/04</u> Time: <u>1100</u> Description
						75	
						80	
						85	
						90	
						95	
						100	

Water Level Measurements (feet)						Drilling Method: Air Rotary 6.25" OD
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method: MW-7 Installed
12/09/04	-	-	-	-	-	
12/13/04	-	-	-	-	62.94	Field Representative: CF

Monitoring Well Construction Information Standard Well

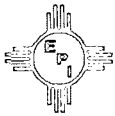
Job No.: 2002-10312 Job Name: Lovington Deep 6-Inch Boring / Well No. MW-7
Date: 12/09/04 Field Representative: CF State Unique Well No. NA



- 1) Protective Casing ☒ Yes ☐ No
Locking ☒ Yes ☐ No
Protective Posts ☒ Yes ☐ No
Concrete Pyramid ☒ Yes ☐ No
- 2) Concrete Seal ☒ Yes ☐ No
- 3) Type of Surface Seal if Installed 21 bags of Bentonite Plug
- 4) Solid Pipe Type PVC
Solid Pipe Length 58 ft.
Joint Type Slip/Glued or Threaded
- 5) Type of Backfill Bentonite Plug
- 6) Type of Lower Seal if Installed Bentonite Plug
- 7) Screen Type P.V.C.
Screen Length 15 ft.
Slot Size .020"
Length 15 ft.
Screen Diameter 2 in.
- 8) Type of Backfill around Screen 9 bags of 12/20 sand
- 9) Type of Backfill _____
- 10) Drilling Method 4.25" I.D. H.S.A.
- 11) Additives Used if any _____
- 12) Borehole Diameter 6.25" O.D. in.

Log Of Test Borings

(NOTE - Page 1 of 3)



ENVIRONMENTAL PLUS, INC.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 EUNICE, NM
 505-394-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

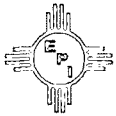
Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-8

Surface Elevation: 3,915.19'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/09/04</u> Time: <u>0730</u> Completion Date: <u>11/09/04</u> Time: <u>1130</u> Description
0751	CS	24	Dry	3.5		5	0.5' Sandy Loam Topsoil
0755	CS	36	Dry	4.3		10	CALICHE, White to Tan, Soft to Indurated
0759	CS	36	Dry	6.3		15	
0804	CS	60	Dry	4.4		20	
0812	CS	36	Dry	5.1		25	
0820	CS	60	Dry	6.0	SP	30	Intermix of CALICHE and underlying SAND
0827	CS	48	Dry	9.6	SP	35	Tan to Red Brown, Soft, Fine to Medium-Grained SAND with some trace SILT, CLAY and ROCK

(NOTE - Page 2 of 3)



ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND
ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

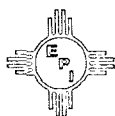
Surface Elevation: 3,915.19'

Completion Date: 11/09/04 Time: 1130

Description

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/09/04</u> Time: <u>0730</u> Completion Date: <u>11/09/04</u> Time: <u>1130</u> Description
0837	CS	48	Dry	7.3	SP	40	
0846	CS	60	Dry	6.8	SP	45	
0859	CS	60	Dry	11.7	SP	50	
0906	CS	36	Moist	36.3	SP	55	
0923	CS	60	Moist	35.5	SP	60	
						65	
						70	End of Boring at 70'

(NOTE - Page 3 of 3)



STATE APPROVED LAND FARM AND
ENVIRONMENTAL SERVICES
EUNICE, NM
505-384-3481

Surface Elevation: 3,915.19'

Completion Date: 11/09/04 Time: 1130

Description

Sample # and Time

Sample Type

Recovery
(inches)

Moisture

PID
Readings
(ppm)

U.S.C.S.
SymbolDepth
(feet)

75

80

85

_ 90

95

_100

Field Representative: JR

Date _____

Time

Sample
Depth

Casing Depth

Cave-in Depth

Water
Level

Drilling

11/09/04

—

Bo

12/13/04

1

62

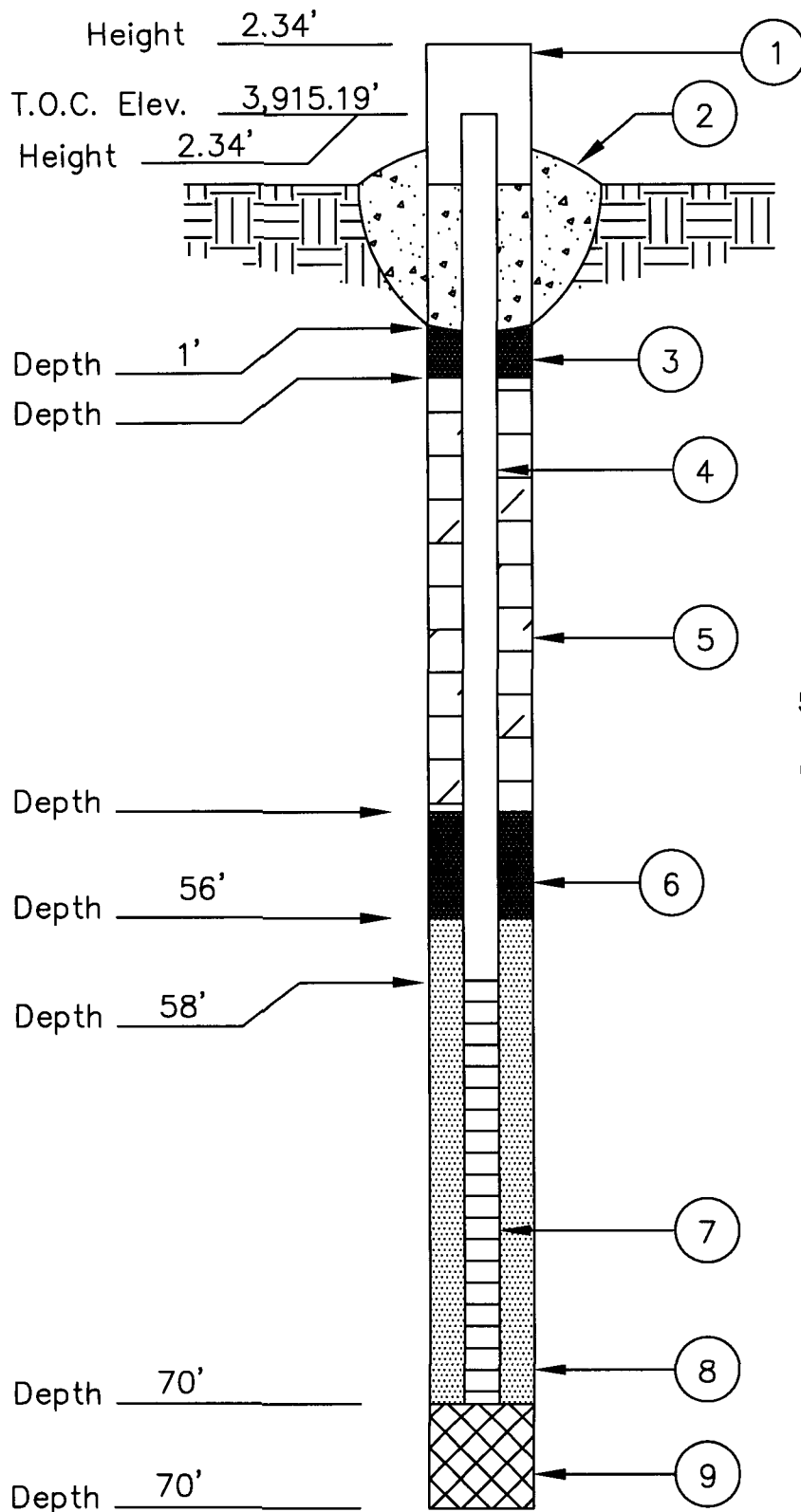
21

1

Monitoring Well Construction Information

Standard Well

Job No.: 2002-10312 Job Name: Lovington Deep 6-Inch Boring / Well No. MW-8
Date: 11/09/04 Field Representative: CF State Unique Well No. NA



- 1) Protective Casing ☒ Yes ☐ No
Locking ☒ Yes ☐ No
Protective Posts ☐ Yes ☒ No
Concrete Pyramid ☐ Yes ☒ No
- 2) Concrete Seal ☒ Yes ☐ No
- 3) Type of Surface Seal if Installed 21 bags of Bentonite Plug
- 4) Solid Pipe Type PVC
Solid Pipe Length 58 ft.
Joint Type Slip/Glued or Threaded
- 5) Type of Backfill Bentonite Plug
- 6) Type of Lower Seal if Installed Bentonite Plug
- 7) Screen Type P.V.C.
Screen Length 15 ft.
Slot Size .020"
Length 15 ft.
Screen Diameter 2 in.
- 8) Type of Backfill around Screen 9 bags of 12/20 sand
- 9) Type of Backfill _____
- 10) Drilling Method 4.25" I.D. H.S.A.
- 11) Additives Used if any _____
- 12) Borehole Diameter 6.25" O.D. in.

Log Of Test Borings

(NOTE - Page 1 of 3)



ENVIRONMENTAL PLUS, INC.

STATE APPROVED LAND FARM AND
ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-9

Surface Elevation: 3,913.92'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: 11/09/04 Time: 1200 Completion Date: 11/09/04 Time: 1600 Description
							0.5' Sandy Loam Topsoil
						5	CALICHE, White to Tan, Soft to Indurated
						10	
						15	
						20	
						25	
						30	Tan to Red Brown, Soft, Fine to Medium-Grained SAND with some trace SILT, CLAY and ROCK
1300	CS	60	Dry	8.6	SP	35	

Log Of Test Borings

(NOTE - Page 2 of 3)



ENVIRONMENTAL PLUS, Inc.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 EUNICE, NM
 505-384-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-9

Surface Elevation: 3,913.92'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/09/04</u> Time: <u>1200</u> Completion Date: <u>11/09/04</u> Time: <u>1600</u> Description
1320	CS	48	Dry	5.7	SP	40	
1327	CS	60	Moist	9.3	SP	45	
1341	CS	48	Moist	6.6	SP	50	
1346	CS	48	Moist	9.0	SP	55	
1355	CS	60	Moist/ Wet	8.8	SP	60	
						65	
						70	End of Boring at 70'

Log Of Test Borings

(NOTE - Page 3 of 3)



ENVIRONMENTAL PLUS, Inc.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 EUNICE, NM
 505-384-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-9

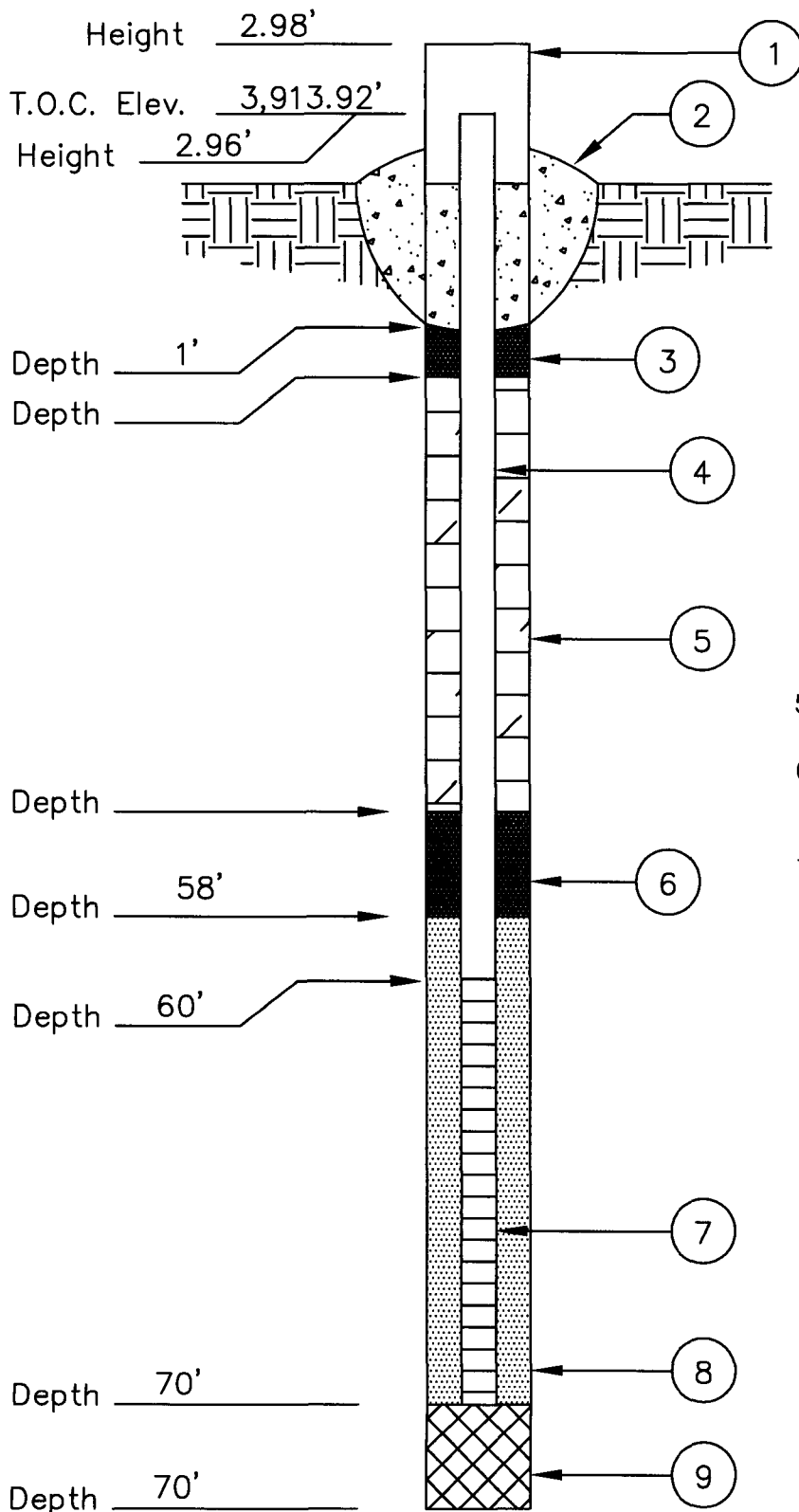
Surface Elevation: 3,913.92'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/09/04</u> Time: <u>1200</u> Completion Date: <u>11/09/04</u> Time: <u>1600</u> Description
						75	
						80	
						85	
						90	
						95	
						100	

Water Level Measurements (feet)						Drilling Method: Air Rotary 6.25" OD
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method: MW-9 Installed
11/09/04	-	-	-	-	-	
12/13/04	-	-	-	-	63.29	Field Representative: JR

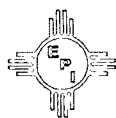
Monitoring Well Construction Information Standard Well

Job No.: 2002-10312 Job Name: Lovington Deep 6-Inch Boring / Well No. MW-9
Date: 11/09/04 Field Representative: CF State Unique Well No. NA



- 1) Protective Casing ☒ Yes ☐ No
Locking ☒ Yes ☐ No
Protective Posts ☐ Yes ☒ No
Concrete Pyramid ☐ Yes ☒ No
- 2) Concrete Seal ☒ Yes ☐ No
- 3) Type of Surface Seal if Installed 24 bags of Bentonite Plug
- 4) Solid Pipe Type PVC
Solid Pipe Length 58 ft.
Joint Type Slip/Glued or Threaded
- 5) Type of Backfill Bentonite Plug
- 6) Type of Lower Seal if Installed Bentonite Plug
- 7) Screen Type P.V.C.
Screen Length 15 ft.
Slot Size .020"
Length 15 ft.
Screen Diameter 2 in.
- 8) Type of Backfill around Screen 12 bags of 12/20 sand
- 9) Type of Backfill
- 10) Drilling Method 4.25" I.D. H.S.A.
- 11) Additives Used if any
- 12) Borehole Diameter 6.25" O.D. in.

(NOTE - Page 1 of 3)



STATE APPROVED LAND FARM AND
ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Surface Elevation: 3,914.96'

Completion Date: 11/10/04 Time: 1130

Description

0.5' Sandy Loam Topsoil

CALICHE, White to Tan, Soft to Indurated

5

10

15

20

25

- 30

0822

CS

52

Dry

2.3

SP

Tan to Red Brown, Soft, Fine to Medium-Grained SAND
with some trace SILT, CLAY and ROCK

35

Log Of Test Borings

(NOTE - Page 2 of 3)



ENVIRONMENTAL PLUS, INC.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 ELUNICE, NM
 505-384-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

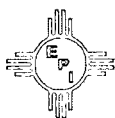
Boring Number: MW-10

Surface Elevation: 3,914.96'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/10/04</u> Time: <u>0730</u> Completion Date: <u>11/10/04</u> Time: <u>1130</u> Description
0831	CS	48	Dry	3.2	SP	40	Top 24" were moist, bottom 12" wet
0836	CS	60	Dry	2.6	SP	45	
0847	CS	60	Dry	3.1	SP	50	
0855	CS	60	Moist	3.3	SP	55	
0937	CS	36	Moist/ Wet	10.9	SP	60	
						65	
						70	

Log Of Test Borings

(NOTE - Page 3 of 3)



ENVIRONMENTAL PLUS, INC.

STATE APPROVED LAND FARM AND
ENVIRONMENTAL SERVICESEUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-10

Surface Elevation: 3,914.96'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/10/04</u> Time: <u>0730</u> Completion Date: <u>11/10/04</u> Time: <u>1130</u> Description
							End of Boring at 73'
						75	
						80	
						85	
						90	
						95	
						100	

Water Level Measurements (feet)						Drilling Method: Air Rotary 6.25" OD
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method: MW-10 Installed
11/10/04	-	-	-	-	-	
12/13/04	-	-	-	-	63.89	Field Representative: JR

Monitoring Well Construction Information

- 1) Protective Casing ☒ Yes No
 Locking ☒ Yes No
 Protective Posts Yes ☐ No ☐
 Concrete Pyramid Yes ☐ No ☐
- 2) Concrete Seal ☒ Yes No
- 3) Type of Surface Seal if
 Installed 22 bags of Bentonite Plug
- 4) Solid Pipe Type PVC
 Solid Pipe Length 60 ft.
 Joint Type Slip/Glued or
Threaded Threaded
- 5) Type of Backfill Bentonite Plug
- 6) Type of Lower Seal if
 Installed Bentonite Plug
- 7) Screen Type P.V.C.
 Screen Length 15 ft.
 Slot Size .020"
 Length 15 ft.
 Screen Diameter 2 in.
- 8) Type of Backfill around
 Screen 11 bags of 12/20 sand
- 9) Type of Backfill _____
- 10) Drilling Method 4.25" I.D. H.S.A.
- 11) Additives Used if any _____
- 12) Borehole Diameter 6.25" O.D. in.

Log Of Test Borings

(NOTE - Page 1 of 3)



ENVIRONMENTAL PLUS, INC.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 EUNICE, NM
 505-384-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-11

Surface Elevation: 3,914.40'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>12/09/04</u> Time: <u>1245</u> Completion Date: <u>12/09/04</u> Time: <u>1630</u> Description
1300	Cuttings	NA	Dry			5	0.5' Sandy Loam Topsoil
1310	Cuttings	NA	Dry			10	CALICHE, White to Tan, Soft to Indurated
1335	Cuttings	NA	Dry			15	
1345	Cuttings	NA	Dry			20	
1400	CS	12	Dry	40.6	SP	25	
1410	CS	36	Dry	39.2	SP	30	Tan to Red Brown, Soft, Fine to Medium-Grained SAND with some trace SILT, CLAY and ROCK
1440	CS	36	Dry	40.6	SP	35	

(NOTE - Page 2 of 3)

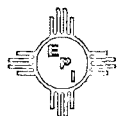


Surface Elevation: 3,914.40'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
1425	CS	29	Dry	41.1	SP	40	
1445	CS	24	Dry	44.3	SP	45	
1450	CS	46	Dry	39.5	SP	50	
1505	CS	36	Dry	40.8	SP	55	
1515	CS	36	Moist	35.1	SP	60	
1530	CS	36	Moist	38.8	SP	65	
1545	CS	36	Moist	38.6	SP	70	
							End of Boring at 70'

Log Of Test Borings

(NOTE - Page 3 of 3)



ENVIRONMENTAL PLUS, INC.
 STATE APPROVED LAND FARM AND
 ENVIRONMENTAL SERVICES
 EUNICE, NM
 505-384-3481

Project Number: Plains All American Pipeline - 2002-10312

Project Name: Lovington Deep 6-Inch

Location: UL-H of Section 6, Township 17 South, Range 36 East

Boring Number: MW-11

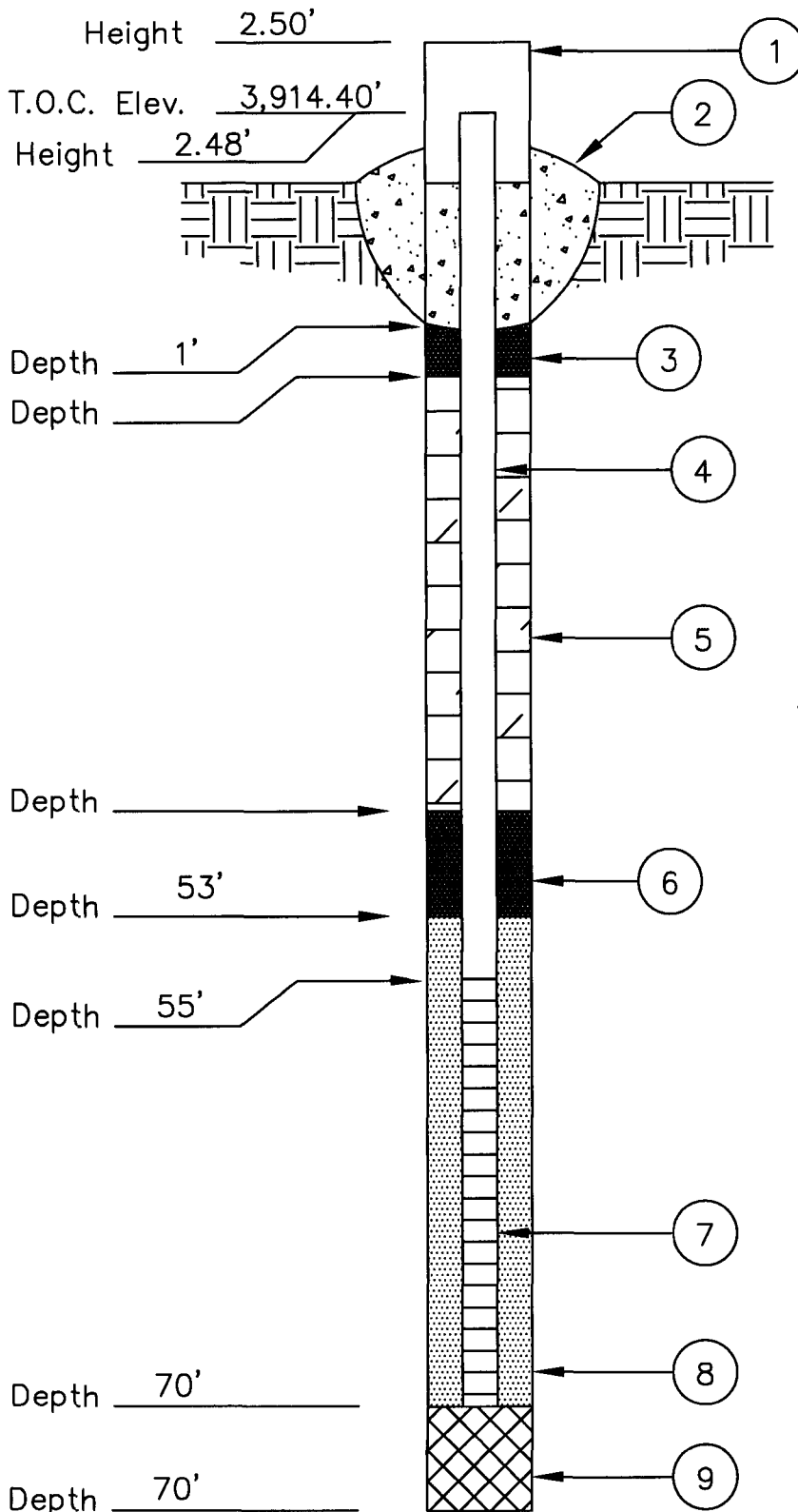
Surface Elevation: 3,914.40'

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>12/09/04</u> Time: <u>1245</u> Completion Date: <u>12/09/04</u> Time: <u>1630</u> Description
						75	
						80	
						85	
						90	
						95	
						100	

Water Level Measurements (feet)						Drilling Method: Air Rotary 6.25" OD
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method: MW-11 Installed
12/09/04	-	-	-	-	-	
12/13/04	-	-	-	-	63.31	Field Representative: CF

Monitoring Well Construction Information Standard Well

Job No.: 2002-10312 Job Name: Lovington Deep 6-Inch Boring / Well No. MW-11
Date: 12/09/04 Field Representative: CF State Unique Well No. NA



- 1) Protective Casing

☒ Yes	☐ No
☒ Locking	☐ No
☐ Protective Posts	☒ No
☐ Concrete Pyramid	☒ No
- 2) Concrete Seal

☒ Yes	☐ No
---	-----------------------------
- 3) Type of Surface Seal if Installed 21 bags of Bentonite Plug
- 4) Solid Pipe Type PVC
Solid Pipe Length 57 ft.
Joint Type Slip/Glued or
Threaded
- 5) Type of Backfill Bentonite Plug
- 6) Type of Lower Seal if Installed Bentonite Plug
- 7) Screen Type P.V.C.
Screen Length 15 ft.
Slot Size .020"
Length 15 ft.
Screen Diameter 2 in.
- 8) Type of Backfill around Screen 9 bags of 12/20 sand
- 9) Type of Backfill _____
- 10) Drilling Method 4.25" I.D. H.S.A.
- 11) Additives Used if any _____
- 12) Borehole Diameter 6.25" O.D. in.

APPENDIX D

INFORMATIONAL COPIES OF

SITE INFORMATION AND METRICS FORM

AND

INITIAL C-141

EOTT Energy Pipeline
Site Information and Metrics

Incident Date and NMOCD Notified?:

Discovered 12-12-02 NMOCD verbally notified on 12-12-02

SITE: Lovington Deep 6"		Assigned Site Reference #: 2002-10312	
Company: EOTT Energy Pipeline			
Street Address: 5805 East Highway 80			
Mailing Address: P.O. Box 1660			
City, State, Zip: Midland, Texas 79703			
Representative: Frank Hernandez, District Environmental Supervisor			
Representative Telephone: 915.638.3799			
Telephone:			
Fluid volume released (bbls): 25 bbls		Recovered (bbls): 10	
>25 bbls : Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)			
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)			
Leak, Spill, or Pit (LSP) Name: Lovington Deep 6"			
Source of contamination: 6" Steel Crude Oil Pipeline			
Land Owner, i.e., BLM, ST, Fee, Other: Darr Angell			
LSP Dimensions: 140' X 75'			
LSP Area: Spill Area ~6,000 ft ²			
Location of Reference Point (RP):			
Location distance and direction from RP:			
Latitude: 32° 52' 1.132"N			
Longitude: 103° 23' 16.570"W			
Elevation above mean sea level: ~3,918 'amsl			
Feet from South Section Line:			
Feet from West Section Line:			
Location- Unit or ¼¼: UL-H SE ¼ of the NE ¼			
Location- Section: 6			
Location- Township: 17S			
Location- Range: 36E			
Surface water body within 1000' radius of site: None			
Domestic water wells within 1000' radius of site: None			
Agricultural water wells within 1000' radius of site: None			
Public water supply wells within 1000' radius of site: None			
Depth from land surface to ground water (DG): ~50.0 feet			
Depth of contamination (DC): ?			
Depth to ground water (DG - DC = DtGW): <50 feet			
1. Ground Water		2. Wellhead Protection Area	
If Depth to GW <50 feet: <i>20 points</i>		If <1000' from water source, or; <200' from private domestic water source: <i>20 points</i>	
If Depth to GW 50 to 99 feet: <i>10 points</i>		If >1000' from water source, or; >200' from private domestic water source: <i>0 points</i>	
If Depth to GW >100 feet: <i>0 points</i>			
Ground water Score = 20		Wellhead Protection Area Score = 0	
Site Rank (1+2+3) = 20		3. Distance to Surface Water Body	
		<200 horizontal feet: <i>20 points</i>	
		200-100 horizontal feet: <i>10 points</i>	
		>1000 horizontal feet: <i>0 points</i>	
		Surface Water Score = 0	
Total Site Ranking Score and Acceptable Concentrations			
Parameter	>19 (Surface to 50.0' bgs)	10-19	0-9
Benzene ¹	10 ppm	10 ppm	10 ppm
BTEX ¹	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1000 ppm	5000 ppm

¹100 ppm field VOC headspace measurement may be substituted for lab analysis

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action ☒ Initial Report ☐ Final Report

Name of Company: EOTT Energy Pipeline	Contact: Frank Hernandez
Address: P.O. Box 1660, Midland, TX 79703	Telephone No.: 915.638.3799
Facility Name: Lovington Deep 6"	Facility Type: Crude Oil Pipeline

Surface Owner: Darr Angell	Mineral Owner:	Lease No.:
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LOCATION OF RELEASE

Unit Letter H	Section 6	Township 17S	Range 36E	Feet from the	North/South Line	Feet from the	East/West Line	County: Lea Lat.: 32°52'1.132"N Lon: 103°23'16.570"W
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NATURE OF RELEASE

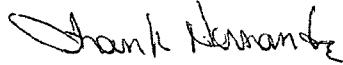
Type of Release: Crude Oil	Volume of Release: 25 bbls	Volume Recovered: 10 bbls
Source of Release: 6" steel pipeline	Date and Hour of Occurrence: 12-12-02 8:00 AM	Date and Hour of Discovery: 12-12-02 10:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Paul Sheeley and Sylvia Dickie, Hobbs NMOCD (left messages) Confirmed with Sylvia Dickie at 11:45 AM 12-12-02	
By Whom? Pat McCasland (Environmental Plus, Inc.)	Date and Hour: NMOCD notified on 12-12-02 10:30 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. NA	

If a Watercourse was Impacted, Describe Fully.* NA

Describe Cause of Problem and Remedial Action Taken.* The cause of the leak was internal/external corrosion. The contaminated soil was stockpiled on a plastic barrier. Disposing at South Monument SWF

Describe Area Affected and Cleanup Action Taken.* Spill Area = ~6,000 ft² Near surface soil will be characterized in accordance with 40 CFR 261 and with NMOCD approval, disposed of in a NMOCD approved facility. The site will be delineated and remediated.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Frank Hernandez	Approved by District Supervisor:	
Title: District Environmental Supervisor	Approval Date:	Expiration Date:
Date: December 12, 2002 Phone: 915.638.3799	Conditions of Approval:	Attached ☐

* Attach Additional Sheets If Necessary