AP - 012

ANNUAL MONITORING REPORT

YEAR(S):

2004

2004
ANNUAL MONITORING REPORT

AP-12

TNM 98-05B

NE ¼ NW ¼ of SECTION 26, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO
PLAINS EMS: TNM-98-05B-KNOWN

PREPARED FOR:

PLAINS MARKETING L.P.
333 Clay Street, Suite 1600
Houston, Texas 77002

NOVA
safety and environmental

Prepared By:

NOVA Safety and Environmental
2057 Commerce Street
Midland, Texas 79703

April 2005

for: Craig Eschberger
Senior Project Manager

Todd K. Choban
Vice President Technical Service

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ENCLOSED ON DATA DISK

2004 Annual Report (Text)
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Laboratory Reports
Historical Groundwater Elevation Data
Historic Groundwater Analytical Results

INTRODUCTION

NOVA Safety and Environmental (NOVA) on behalf of Plains Pipeline, L.P. (Plains) has prepared this 2004 Annual Groundwater Monitoring Report in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an Annual Monitoring Report by April 1 of each year. Beginning on May 29, 2004, project management responsibilities were assumed by NOVA, having previously been managed by Environmental Technology Group, Inc. (ETGI). This report is intended to be viewed as a complete document with figures, attachments, tables, and text. The report presents the results of four quarterly groundwater monitoring/sampling events conducted at the TNM 98-05B (also known as TNM 98-05) crude oil release site, located in Lea County, New Mexico. The site, formerly the responsibility of Enron Oil Trading and Transportation (EOTT) who became Link Energy, is now the responsibility of Plains. For reference, the Site Location Map is provided as Figure 1.

Groundwater monitoring was conducted during four quarterly events in calendar year 2004 to assess the levels and extent of dissolved phase hydrocarbons. The groundwater monitoring events consisted of measuring static water levels in the monitor wells, and purging and sampling of each well exhibiting sufficient recharge. Phase separated hydrocarbons (PSH) were not detected in any of the on site monitor wells, during the reporting period.

SITE DESCRIPTION AND BACKGROUND INFORMATION

The site is located approximately two miles northeast of the town of Eunice, New Mexico in Section 26, Township 21 South, Range 37 East (Figure 1). The release occurred on February 4, 1998 while the pipeline was operated by Texas New Mexico Pipeline Company (TNM). An estimated 49 barrels of crude oil was released from the pipeline, of which approximately three barrels were recovered during the emergency response activities. The release was attributed to external corrosion of the pipeline.

In summary, investigative and remedial activities have included a shallow soil investigation utilizing a Geo-Probe® soil boring machine, a deeper soil investigation utilizing a drilling rig, excavation of crude oil affected soils and a groundwater investigation whereby 10 monitor wells were installed at the site.

FIELD ACTIVITIES

Quarterly monitoring events for the reporting period were performed according to the following sampling schedule, which was approved by the NMOCD in correspondence dated April 28, 2004. The table below illustrates the current groundwater sampling schedule approved by the NMOCD.

Sample Location	Sampling Schedule
MW-1	Quarterly
MW-2	Quarterly
MW-3	Annually
MW-4	Annually

Sample Location	Sampling Schedule
MW-5	Quarterly
MW-6	Quarterly
MW-7	Annually
MW-8	Annually
MW-9	Annually
MW-10	Annually

Quarterly sampling events for the calendar year 2004 were performed on February 4, May 4, August 23 and November 30, 2004. Each quarterly sampling event consisted of gauging all wells (MW-1 through MW-10) and purging and sampling monitor wells as per the approved sampling schedule. During each sampling event the monitor wells were purged of approximately three well volumes of water or until the wells were dry using a PVC bailer or electrical Grundfos Pump. Groundwater was allowed to recharge and samples were obtained using disposable Teflon samplers. Water samples were collected in clean glass containers provided by the laboratory and placed on ice in the field. Purge water was collected in a polystyrene tank and disposed of by either Lobo Trucking of Hobbs, New Mexico from January through June, 2004 and Key Trucking of Lovington, New Mexico from June through December, 2004, utilizing a licensed disposal facility (NMOCD AO SWD-730).

The inferred groundwater gradient, constructed from measurements collected from the on site monitor wells during each quarterly sampling event is depicted on Figures 2A through 2D. Groundwater elevation contours, generated from gauging data acquired during each quarterly sampling event of 2004, indicates a general groundwater gradient to the southeast. Groundwater elevation data for the calendar year 2004 is provided in Table 1. Historic groundwater elevation data beginning at project inception is enclosed on the attached data disk.

During the reporting period, no PSH was encountered in any of the site monitor wells.

LABORATORY RESULTS

Groundwater samples collected during the first three monitoring events in 2004 were delivered to AnalySys, Inc., Austin, Texas for determination of Benzene, Toluene, Ethylbenzene and Xylene (BTEX) constituent concentrations by EPA Method SW846-8260b. Fourth quarter sample analysis was performed by Trace Analysis, Inc. of Lubbock, Texas for determination of BTEX constituent concentrations by EPA Method SW846-8021b.

A listing of BTEX constituent concentrations for each 2004 quarterly sampling event is summarized in Table 2. Copies of the laboratory reports generated during this reporting period are enclosed on the attached data disk. Quarterly groundwater sample results reflecting benzene and BTEX constituent concentrations and inferred PSH extent maps are depicted on Figures 3A through 3D.

Review of laboratory analytical results generated from analysis of the groundwater samples obtained during the 2004 monitoring period indicate that benzene and BTEX constituent concentrations are below NMOCD regulatory standards (New Mexico Administrative Code

20.6.2.3103) in all monitor wells with the exception of MW-1 and MW-5. The benzene concentration in MW-1 was above the NMOCD regulatory standard during the first and fourth quarterly sampling events of 2004 and the benzene concentration in MW-5 was above the NMOCD regulatory standard during the fourth quarterly sampling event of 2004. All wells exhibited total BTEX concentrations below applicable NMOCD regulatory standards.

SUMMARY

This report presents the results of four groundwater monitoring and sampling events for the annual monitoring period of calendar year 2004. No detectable or measurable amounts of PSH were encountered during the monitoring events conducted during this reporting period.

Groundwater elevation contours, generated from water level measurements acquired during the quarterly sampling events of 2004, indicated a general gradient to the southeast.

Review of laboratory analytical results generated from analysis of the groundwater samples obtained during the 2004 monitoring period indicate that

- Benzene and BTEX constituent concentrations are below NMOCD regulatory standards in monitor wells MW-2, MW-3, MW-4, MW-6, MW-7, MW-8, MW-9, and MW-10.
- Benzene concentrations above regulatory guidelines were detected in MW-1 in the first and last quarter of 2004 and in MW-5 during the last quarter of 2004.
- Historical analytical results also indicate that all wells with the exception of MW-1 and MW-5 have exhibited benzene and BTEX constituent concentrations below NMOCD regulatory standards for nine to thirteen successive quarters.

ANTICIPATED ACTIONS

Upon NMOCD approval of the Site Restoration Work Plan and Proposed Soil Closure Strategy dated February 2005 (submitted to the NMOCD on February 8, 2005), Plains will initiate field activities to complete the remedial actions as summarized in the remedial workplan and restore surface conditions at the site.

Plains, respectfully request that monitor wells that have consistently shown non-detect hydrocarbon concentrations (MW-6 through MW-10), previously approved for annual groundwater sampling and are not needed to monitor the dissolved phase constituents, be plugged and abandoned by a licensed water well driller as pursuant to the State of New Mexico's monitor well plugging and abandonment regulations. This request is based on the analytical results of nine to thirteen successive quarterly sampling events (May 2002 to November 2004), indicating no detected concentrations of BTEX in the referenced wells. Monitor wells exhibiting sporadic benzene concentrations (MW-1, and MW-5) as well as the two down gradient monitor wells (MW-3 and MW-4) and one up gradient monitor well (MW-2) would continue to be sampled on a quarterly basis.

LIMITATIONS

NOVA has prepared this Annual Monitoring Report to the best of its ability. No other warranty, expressed or implied, is made or intended.

NOVA has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. NOVA has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. NOVA has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. NOVA also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

DISTRIBUTION

Copy 1 Ed Martin
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Copy 2: Paul Sheeley and Larry Johnson
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 1
1625 French Drive
Hobbs, NM 88240

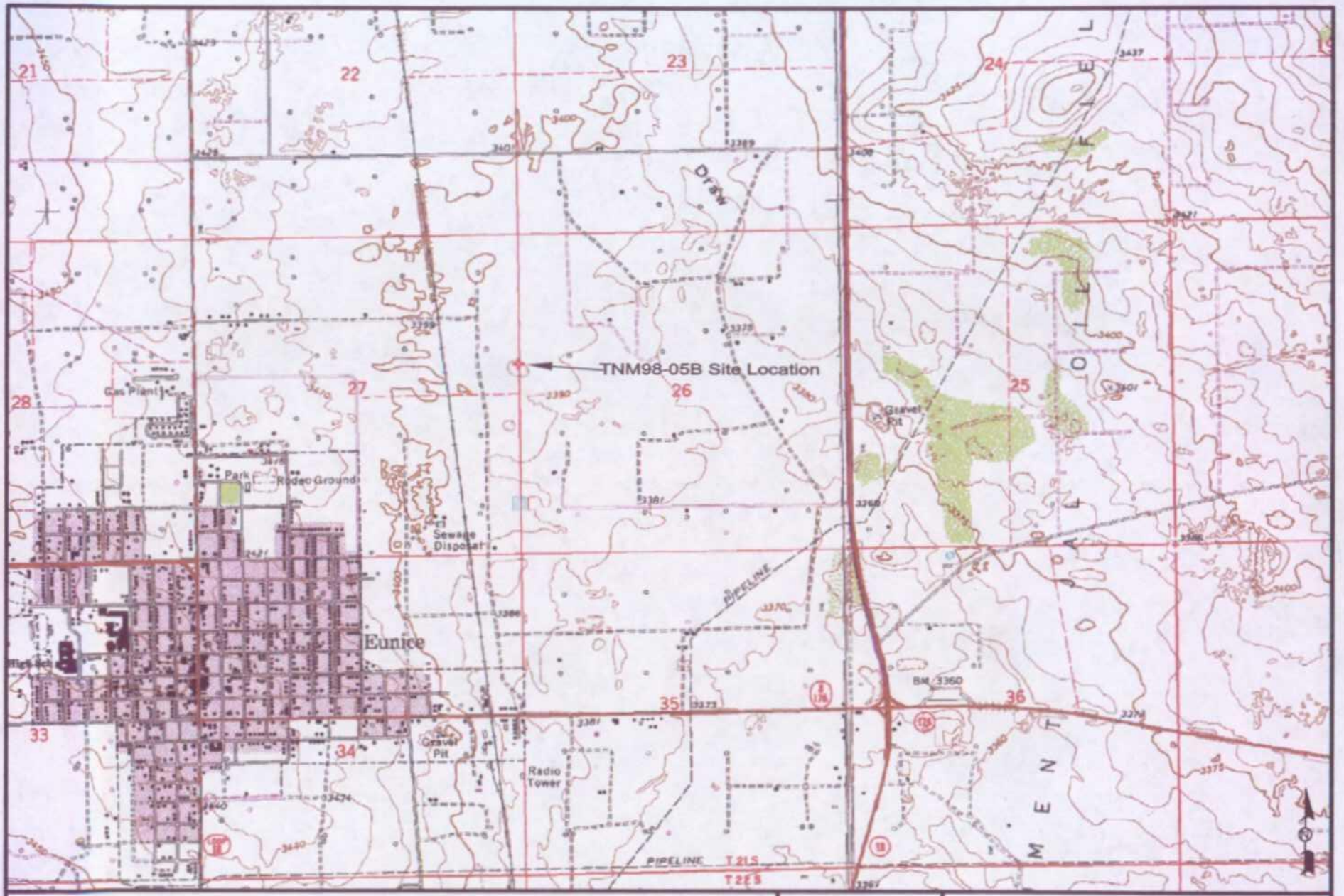
Copy 3: Camille Reynolds
Plains Marketing, L.P.
3112 Highway 82
Lovington, NM
cjreynolds@paalp.com

Copy 4: Jeff Dann
Plains Marketing, L.P.
333 Clay Street
Suite 1600
Houston, TX 77002
jpdann@paalp.com

Copy 5: NOVA Safety and Environmental
2057 Commerce Street
Midland, TX 79703
ceschberger@novatraining.cc

Copy Number:

Figures

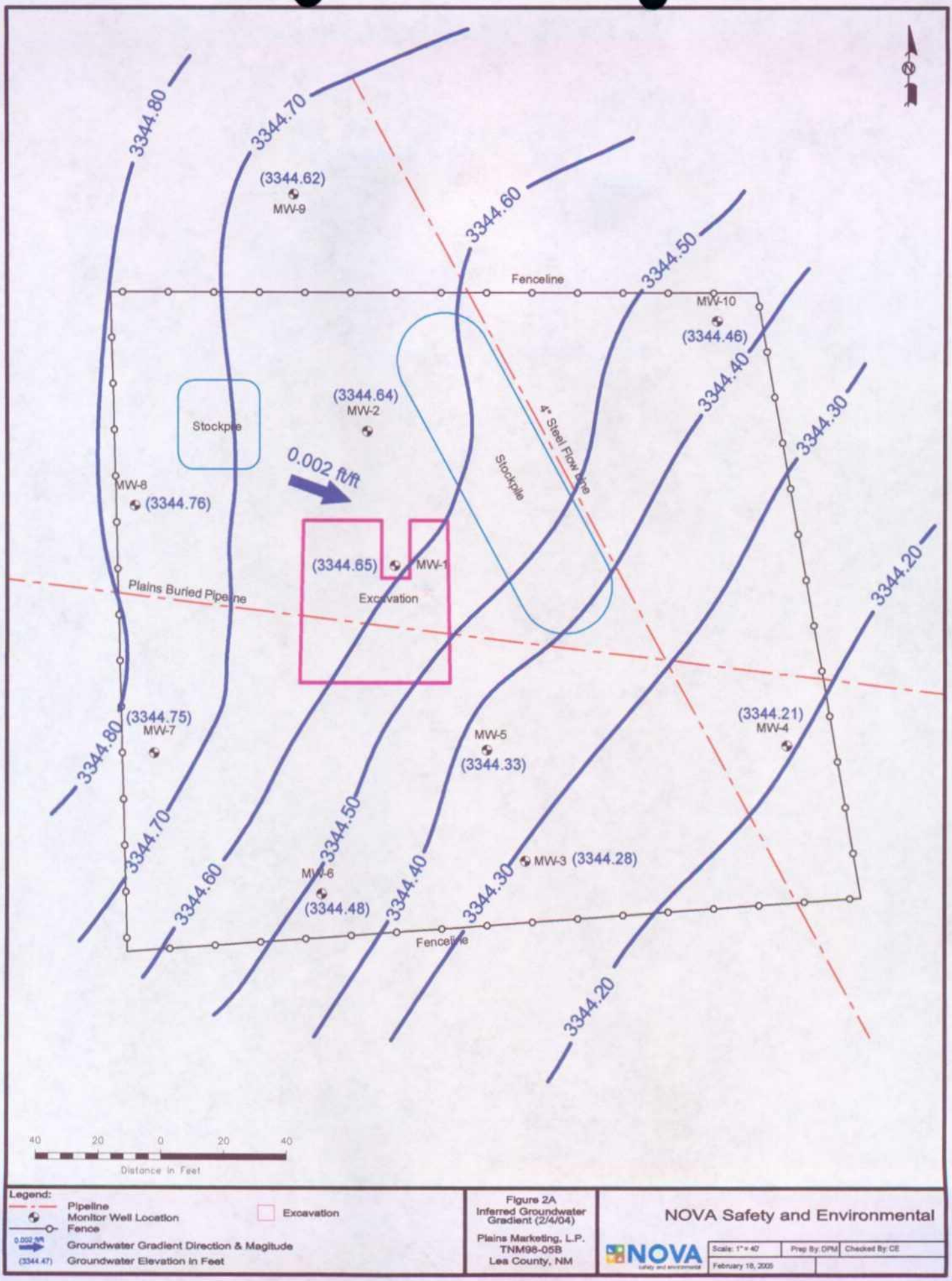


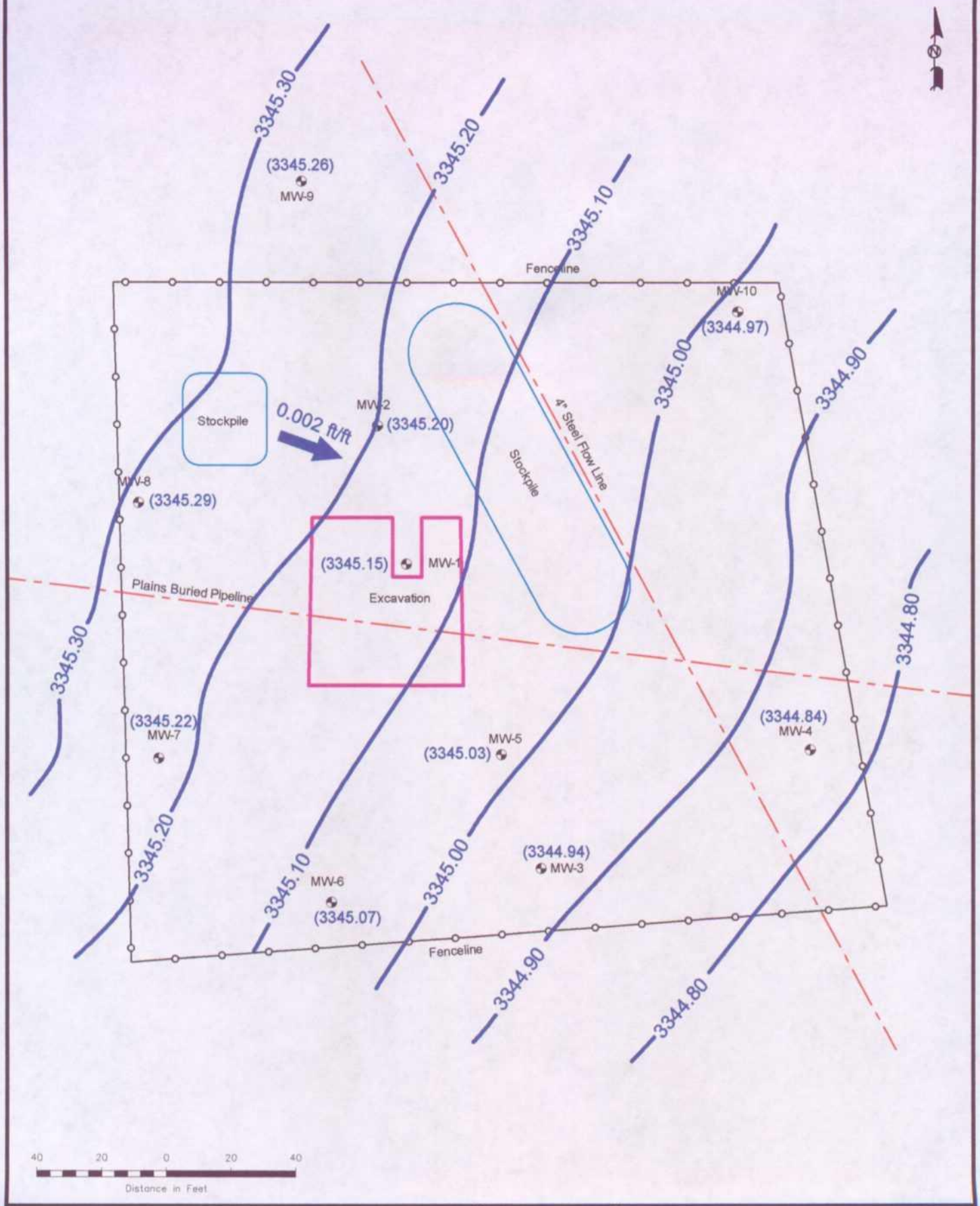
NE 1/4, NW 1/4, Sec. 26, T21S, R37E
32° 27' 03.8 N, 103°, 08', 30.3" W

Figure 1
Site Location Map
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: NTS	Prep By: CDS	Checked By: TKC
December 21, 2004		


3344.80
3344.70
3344.60
3344.50
3344.40
3344.30
3344.20
(3344.62)
MW-9
Fenceline
MW-10
(3344.46)
(3344.64)
MW-2
Stockpile
4" Steel Flow Line
Stockpile
0.002 ft/ft
MW-8
(3344.76)
(3344.65)
MW-1
Excavation
Plains Buried Pipeline
(3344.75)
MW-7
MW-5
(3344.33)
(3344.21)
MW-4
MW-6
(3344.48)
MW-3 (3344.28)
Fenceline
40
20
0
20
40
Distance in Feet
Legend:
Pipeline
Monitor Well Location
Fence
Groundwater Gradient Direction & Magitude
(3344.47) Groundwater Elevation in Feet
Excavation
Figure 2A
Inferred Groundwater Gradient (2/4/04)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM
NOVA Safety and Environmental
NOVA
Scale: 1" = 40'
Prep By: DPM
Checked By: CE
February 18, 2005



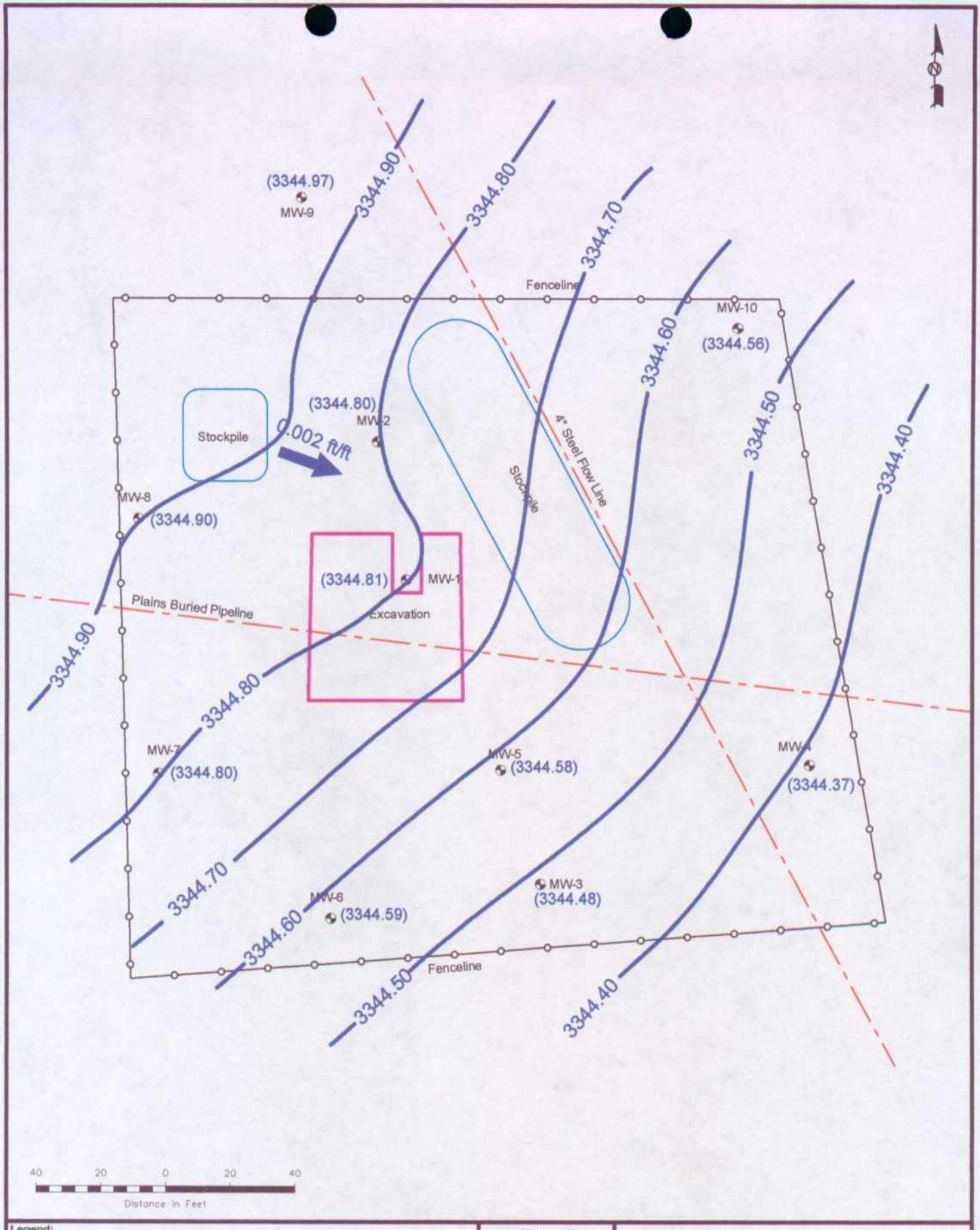
Legend:

- Pipeline
- Monitor Well Location
- Fence
- Excavation
- 0.002 ft/ft — Groundwater Gradient Direction & Magitude
- (3344.47) — Groundwater Elevation in Feet

Figure 2B
Inferred Groundwater Gradient (5/4/04)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 40'	Prep By: DPM	Checked By: CE
February 16, 2006		



Legend:

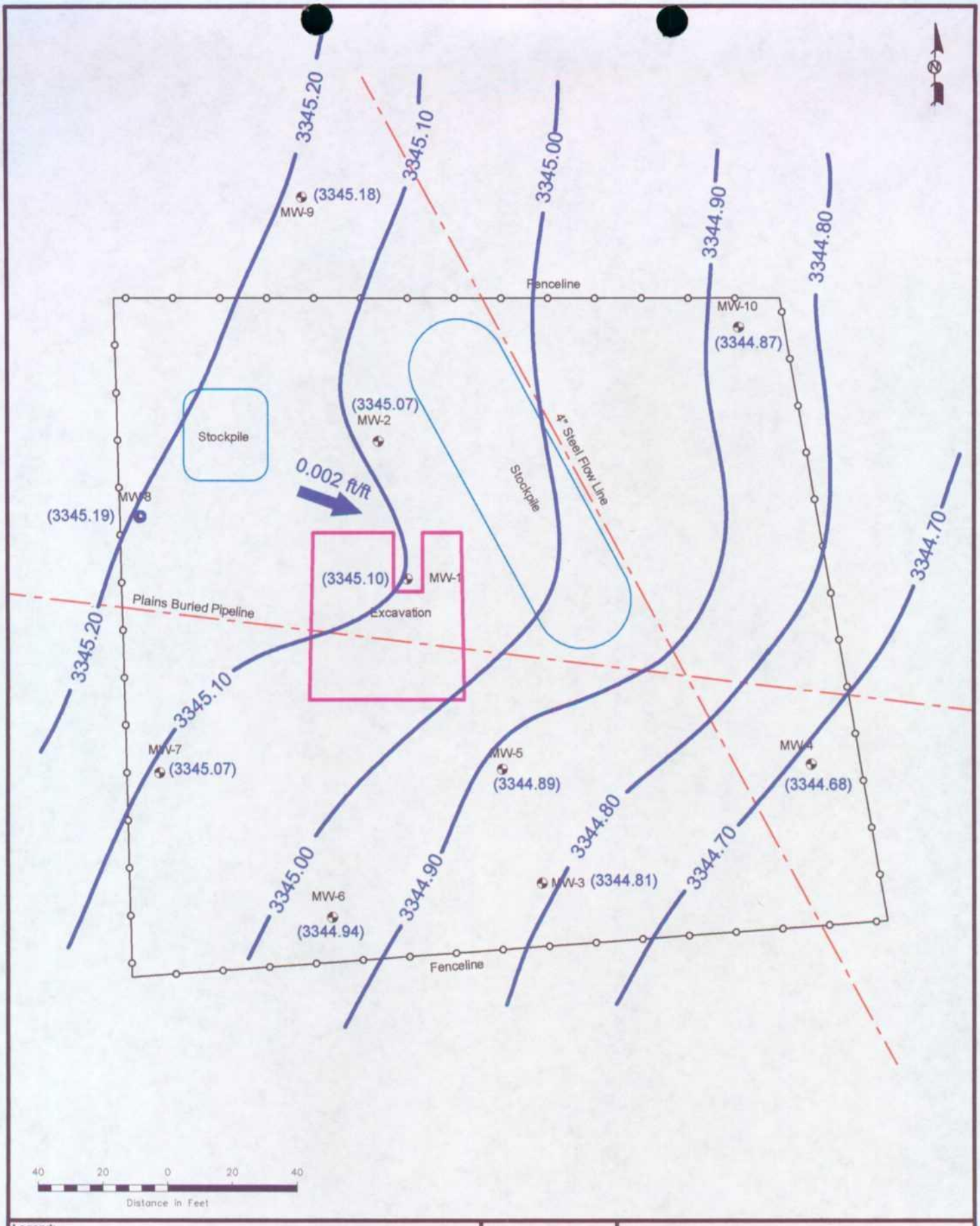
- Pipeline
- Monitor Well Location
- Fence
- Groundwater Gradient Direction & Magitude
- (3344.47) Groundwater Elevation in Feet
- Excavation

Figure 2C
Inferred Groundwater Gradient (6/23/04)

Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 40'	Prep By: DPM	Checked By: CE
February 17, 2005		



Legend:

- Pipeline
- Monitor Well Location
- Fence
- 0.002 ft/ft — Groundwater Gradient Direction & Magitude
- (3344.47) — Groundwater Elevation in Feet
- Excavation

Figure 2D
Inferred Groundwater Gradient (11/30/04)

Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 40	Prep By: DPM	Checked By: CE
March 17, 2005		

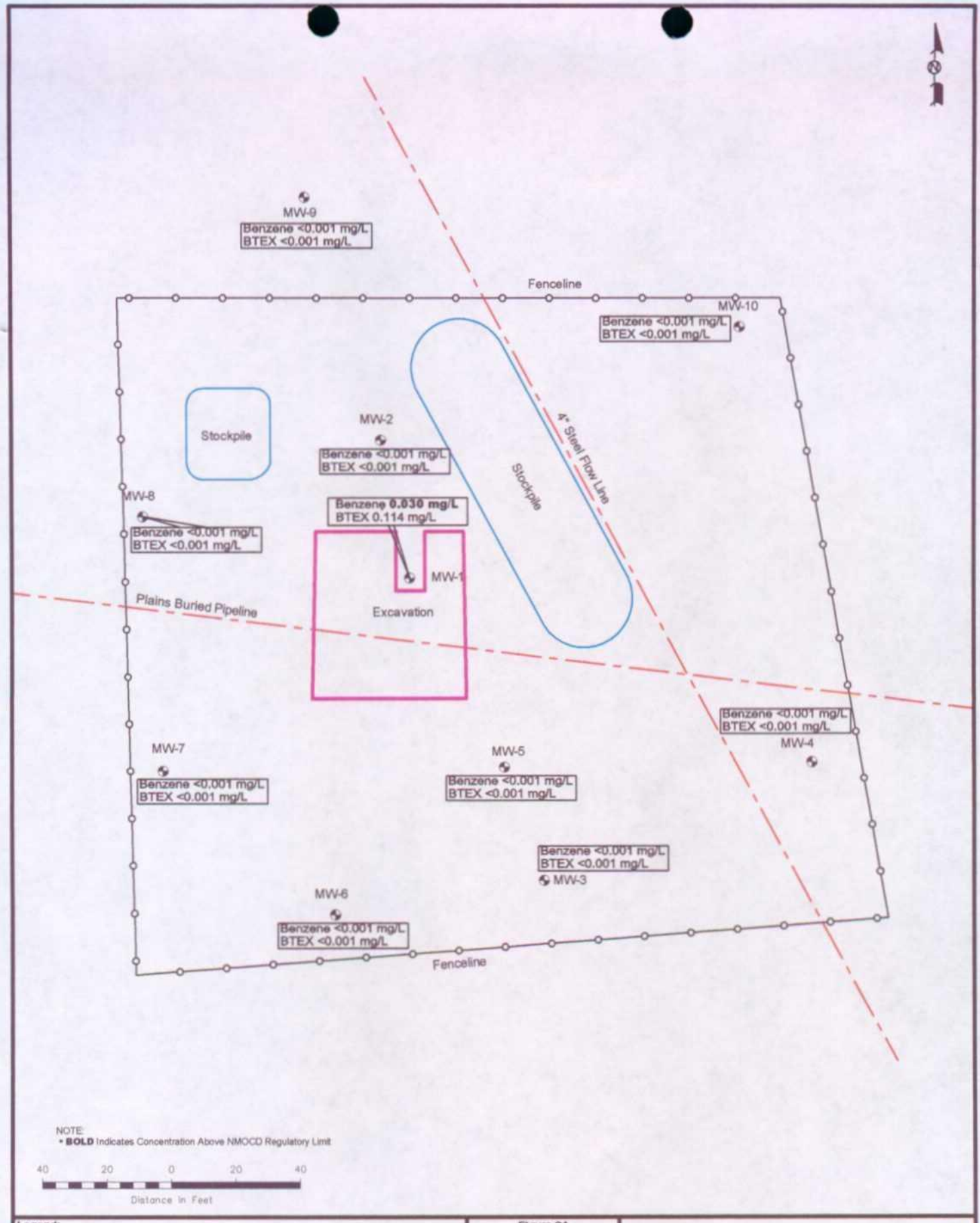
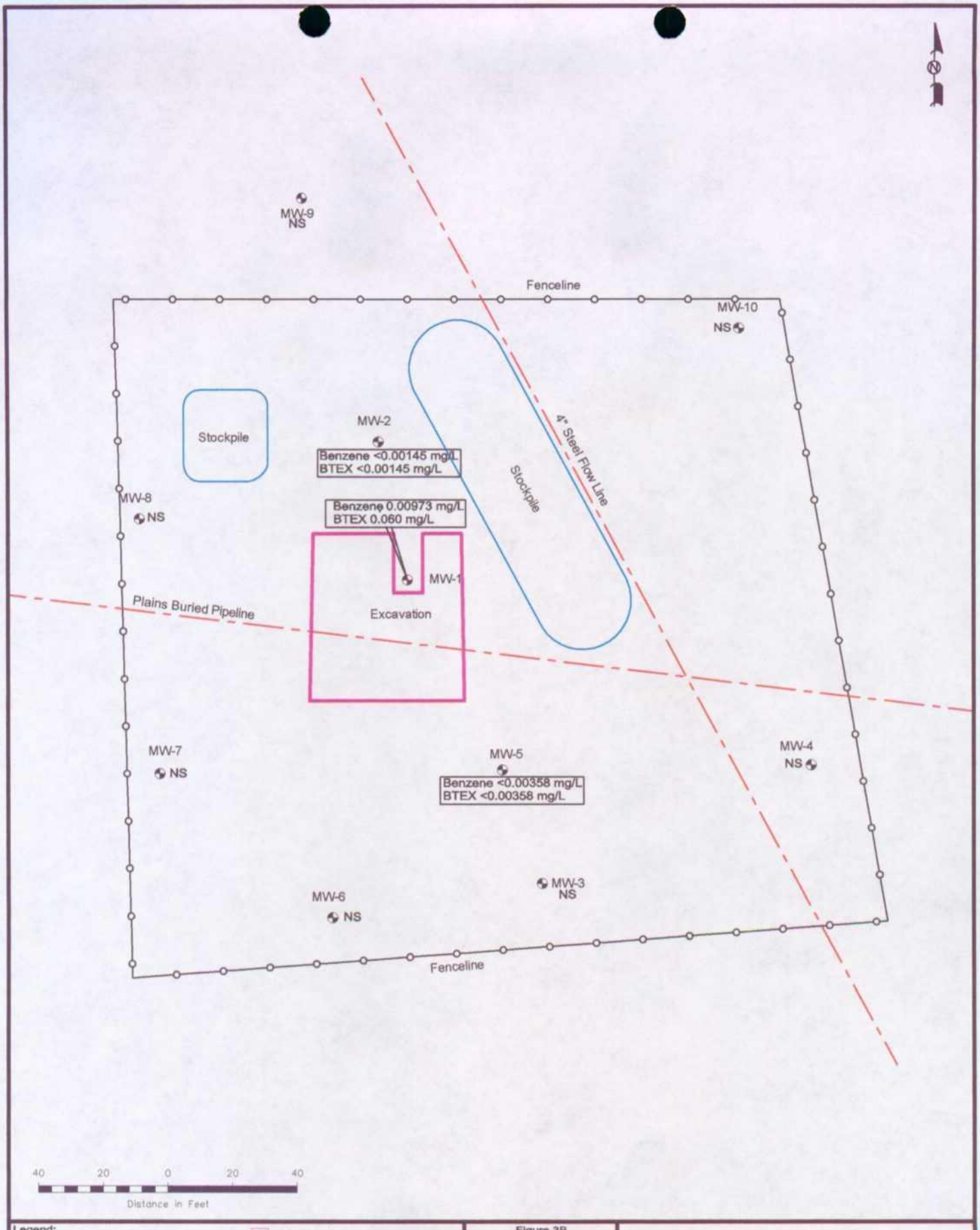


Figure 3A
Groundwater Concentration and Inferred PSH Extent Map (2/4/04)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 40'	Prep By: DPM	Checked By: CE
March 17, 2006		

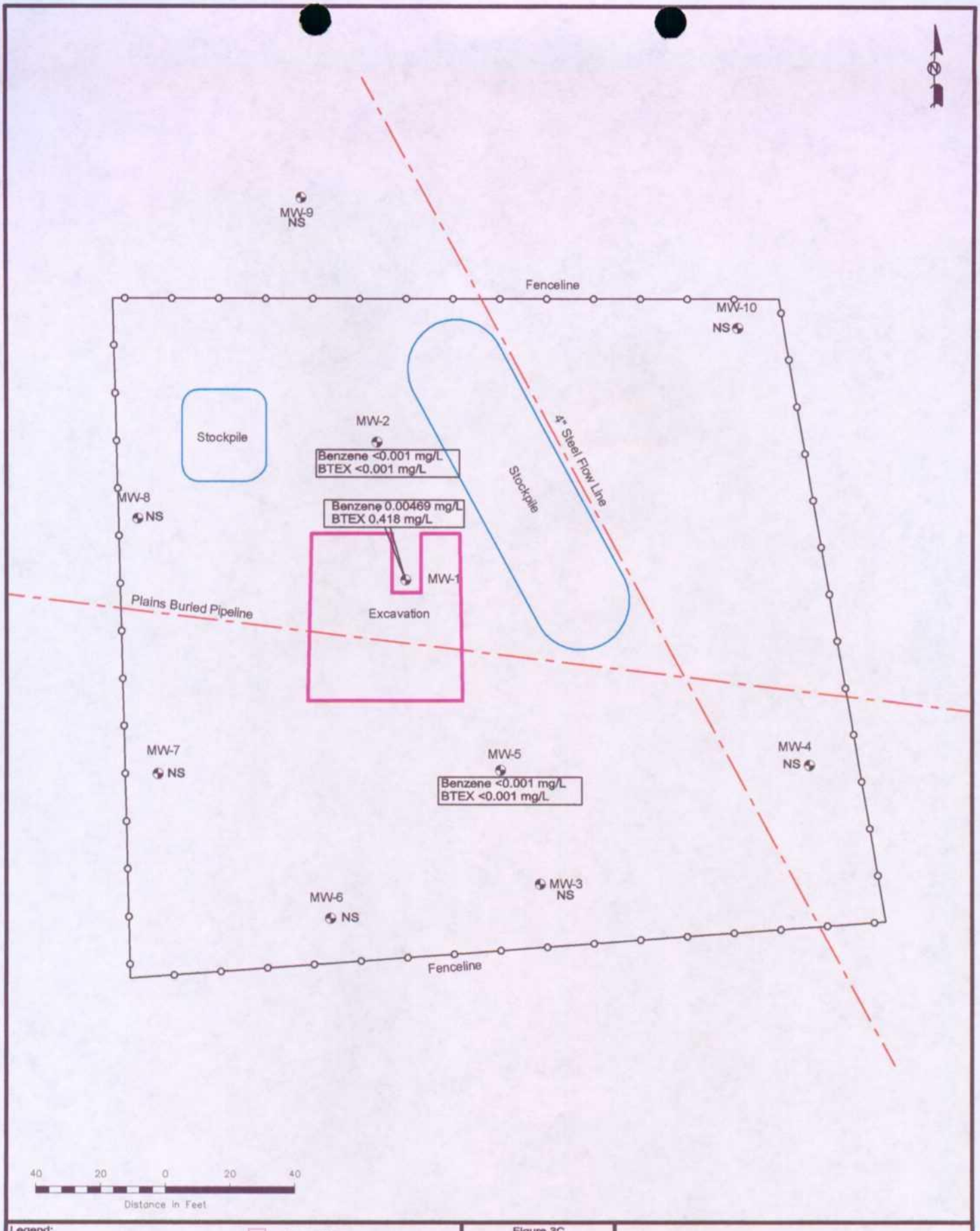


Legend:
- Pipeline
- Monitor Well Location
- Fence
- PSH Extent
- Excavation
- Stockpile
- NS Not Sampled

Figure 3B
Groundwater Concentration and Inferred PSH Extent Map (5/4/04)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 40	Prep By: DPM	Checked By: CE
February 17, 2005		



Legend:
- Pipeline
- Monitor Well Location
- Fence
- PSH Extent
- Excavation
- Stockpile
- NS Not Sampled

Figure 3C
Groundwater Concentration and Inferred PSH Extent Map (8/23/04)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 40'	Prep By: DPM	Checked By: CE
February 17, 2005		

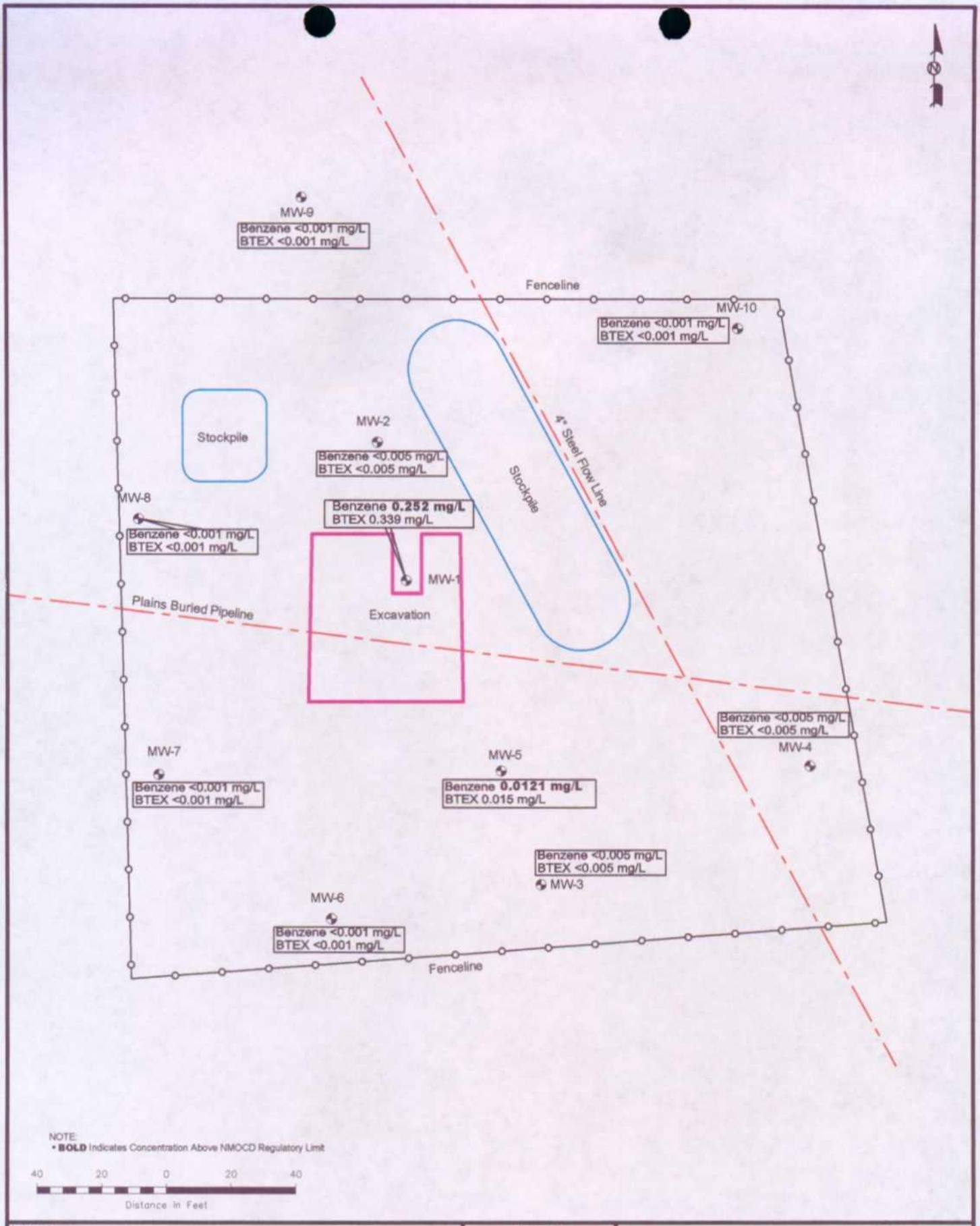


Figure 3D
Groundwater Concentration and Inferred PSH Extent Map (11/30/04)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 40'	Prep By: DPM	Checked By: CE
March 17, 2005		

Tables

TABLE 1

2004 GROUNDWATER ELEVATION DATA

Plains Marketing, LP
TNM 98-05B
LEA COUNTY, NEW MEXICO

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
MW-1	02/04/04	3,393.95	-	49.30	0.00	3,344.65
	05/04/04	3,393.95	-	58.80	0.00	3,335.15
	08/23/04	3,393.95		49.14	0.00	3,344.81
	11/30/04	3,393.95		48.85	0.00	3,345.10
MW-2	02/04/04	3,394.75	-	50.11	0.00	3,344.64
	05/04/04	3,394.75	-	49.55	0.00	3,345.20
	08/23/04	3,394.75		49.95	0.00	3,344.80
	11/30/04	3,394.75		49.68	0.00	3,345.07
MW-3	02/04/04	3,393.58	-	49.30	0.00	3,344.28
	05/04/04	3,393.58	-	48.64	0.00	3,344.94
	08/23/04	3,393.58	-	49.10	0.00	3,344.48
	11/30/04	3,393.58		48.77	0.00	3,344.81
MW-4	02/04/04	3,394.98	-	50.77	0.00	3,344.21
	05/04/04	3,394.98	-	50.14	0.00	3,344.84
	08/23/04	3,394.98	-	50.61	0.00	3,344.37
	11/30/04	3,394.98		50.30	0.00	3,344.68
MW-5	02/04/04	3,393.47	-	49.14	0.00	3,344.33
	05/04/04	3,393.47	-	48.44	0.00	3,345.03
	08/23/04	3,393.47	-	48.89	0.00	3,344.58
	11/30/04	3,393.47		48.58	0.00	3,344.89
MW-6	02/04/04	3,393.41	-	48.93	0.00	3,344.48
	05/04/04	3,393.41	-	48.34	0.00	3,345.07
	08/23/04	3,393.41	-	48.82	0.00	3,344.59
	11/30/04	3,393.41		48.47	0.00	3,344.94
MW-7	02/04/04	3,392.96	-	48.21	0.00	3,344.75
	05/04/04	3,392.96	-	47.74	0.00	3,345.22
	08/23/04	3,392.96	-	48.16	0.00	3,344.80
	11/30/04	3,392.96		47.89	0.00	3,345.07
MW-8	02/04/04	3,394.03	-	49.27	0.00	3,344.76
	05/04/04	3,394.03	-	48.74	0.00	3,345.29
	08/23/04	3,394.03	-	49.13	0.00	3,344.90
	11/30/04	3,394.03		48.84	0.00	3,345.19
MW-9	02/04/04	3,396.20	-	51.58	0.00	3,344.62
	05/04/04	3,396.20	-	50.94	0.00	3,345.26
	08/23/04	3,396.20	-	51.29	0.00	3,344.91
	11/30/04	3,396.20		51.02	0.00	3,345.18
MW-10	02/04/04	3,396.23	-	51.77	0.00	3,344.46
	05/04/04	3,396.23	-	51.26	0.00	3,344.97
	08/23/04	3,396.23		51.67	0.00	3,344.56
	11/30/04	3,396.23		51.36	0.00	3,344.87

Elevations based on the North American Vertical Datum of 1929.

TABLE 2

2004 CONCENTRATIONS OF BTEX IN GROUNDWATER

Plains Marketing, L.P.
TNM 98-05B
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DATE	SW 846-8021B, 5030					TOTAL BTEX
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE	
New Mexico BTEX Clean up Standards for Groundwater		**0.01 mg/L**	**0.75 mg/L**	**0.75 mg/L**	**Total Xylenes 0.62 mg/L**		**NA**
MW-1	02/04/04	**0.030**	0.008	0.010	0.019	0.007	0.114
	05/04/04	0.00973	0.00428	0.00821	0.0142	0.00391	0.060
	08/23/04	0.00469	<0.001	0.00572	0.00689	0.00219	0.418
	11/30/04	**0.252**	<0.001	0.121	0.026		0.399
MW-2	02/04/04	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
	05/04/04	0.00145	<0.001	<0.001	<0.002	<0.001	0.001
	08/23/04	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
	11/30/04	<0.005	<0.005	<0.005	<0.005		<0.005
MW-3	02/04/04	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
	11/30/04	<0.005	<0.005	<0.005	<0.005		<0.005
MW-4	02/04/04	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
	11/30/04	<0.005	<0.005	<0.005	<0.005		<0.005
MW-5	02/04/04	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
	05/04/04	0.00358	<0.001	<0.001	<0.002	<0.001	0.004
	08/23/04	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
	11/30/04	**0.0121**	<0.001	<0.001	0.0029		0.015
MW-6	02/04/04	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
	11/30/04	<0.001	<0.001	<0.001	<0.001		<0.001
MW-7	02/04/04	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
	11/30/04	<0.001	<0.001	<0.001	<0.001		<0.001
MW-8	02/04/04	0.001	<0.001	<0.001	<0.002	<0.001	0.001
	11/30/04	0.001	<0.001	<0.001	<0.001		0.001
MW-9	02/04/04	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
	11/30/04	<0.001	<0.001	<0.001	<0.001		<0.001
MW-10	02/04/04	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
	11/30/04	<0.005	<0.005	<0.005	<0.005		<0.001

Note: m, p and o Xylenes combined when analyzed by Trace Laboratories, Inc. only.

Note: EB denotes equipment blank collected during sampling event.

Bold indicates concentrations above regulatory guidelines

Appendices

Appendix A
Notification of Release and Corrective Action

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 October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

x Initial Report ☐ Final Report

Name of Company Plains Marketing, LP	Contact Camille Reynolds
Address 5805 East Hwy. 80, Midland, TX 79706	Telephone No. 505-441-0965
Facility Name TNM 98-05B	Facility Type 6" Steel Pipeline

Surface Owner Delrose Scott	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	26	21S	37E					Lea

Latitude 32° 27' 03.8" Longitude 103°08' 30.3"

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 49 barrels	Volume Recovered 3 barrels
Source of Release 6" Steel Pipeline	Date and Hour of Occurrence 02-05-1998	Date and Hour of Discovery 02-05-1998
Was Immediate Notice Given? x Yes ☐ No ☐ Not Required	If YES, To Whom? Linda Williams	
By Whom? Johnny Chapman	Date and Hour 02-05-1998 @15:00	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* External corrosion of 6 inch pipeline.

Describe Area Affected and Cleanup Action Taken.* Aerial extent of surface impact was approximately 100 x 30 feet.
NOTE: This information was obtained from historical EOTT/Link files, Plains acquired EOTT/Link on April 1, 2004 and Plains assumes this information to be correct. The release occurred during the time the pipeline was owned and operated by Texas-New Mexico Pipeline Company.

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: Camille Reynolds	Approved by District Supervisor:	
Title: Remediation Coordinator	Approval Date:	Expiration Date:
E-mail Address: cjreynolds@paalp.com	Conditions of Approval:	Attached ☐
Date: 02/03/2005 Phone:505-441-0965		

Attach Additional Sheets If Necessary