

AP - 7

**ANNUAL  
MONITORING REPORT**

**YEAR(S):  
DA2 - 2007**



**2007  
ANNUAL MONITORING REPORT**

**RECEIVED**  
2008 APR 1 PM 2 08

**DARR ANGELL 2**

SW ¼, SE ¼ SECTION 11, TOWNSHIP 15 SOUTH, RANGE 37 EAST  
NW ¼, NE ¼ SECTION 14, TOWNSHIP 15 SOUTH, RANGE 37 EAST  
LEA COUNTY, NEW MEXICO  
PLAINS EMS NUMBER: LF-1999-62  
NMOCD Reference AP-007

PREPARED FOR:

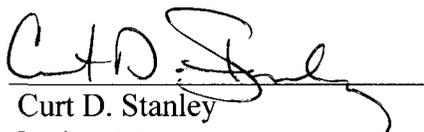
**PLAINS MARKETING, L.P.**  
333 CLAY STREET, SUITE 1600  
HOUSTON, TEXAS 77002



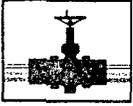
PREPARED BY:

**NOVA Safety and Environmental**  
2057 Commerce  
Midland, Texas 79703

**March 2008**

  
Curt D. Stanley  
Project Manager

  
Todd K. Choban, P.G.  
Vice-President Technical Services



RECEIVED

March 28, 2008

2008 APR 1 PM 2 07

Mr. Edward Hansen  
New Mexico Oil Conservation Division  
Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Re: Plains All American – Annual Monitoring Reports  
25 Sites in Lea County, New Mexico

Dear Mr. Hansen:

Plains All American is an operator of crude oil pipelines and terminal facilities in the state of New Mexico. Plains All American actively monitors certain historical release sites exhibiting groundwater impacts, consistent with assessments and work plans developed in consultation with the New Mexico Oil Conservation Division (NMOCD). In accordance with the rules and regulations of the NMOCD, Plains All American hereby submits our Annual Monitoring reports for the following sites:

TNM 97-17	Section 21, Township 20 South, Range 37 East, Lea County
TNM 97-18	Section 28, Township 20 South, Range 37 East, Lea County
TNM 98-05A	Section 26, Township 21 South, Range 37 East, Lea County
TNM 98-05B	Section 26, Township 21 South, Range 37 East, Lea County
TNM 97-04	Section 11, Township 16 South, Range 35 East, Lea County
Texaco Skelly "F"	Section 21, Township 20 South, Range 37 East, Lea County
Darr Angell #2	Section 14, Township 15 South, Range 37 East, Lea County
LF-59	Section 32, Township 19 South, Range 37 East, Lea County
SPS-11	Section 18, Township 18 South, Range 36 East, Lea County
Monument #10	Section 32, Township 19 South, Range 37 East, Lea County
Monument #17	Section 29, Township 19 South, Range 37 East, Lea County
Monument #18	Section 7, Township 20 South, Range 37 East, Lea County
Lea Station to Monument 6"	Section 5, Township 20 South, Range 37 East, Lea County
34 Junction South Station	Section 2, Township 17 South, Range 36 East, Lea County
Bob Durham	Section 32, Township 19 South, Range 37 East, Lea County
Darr Angell #1	Section 11, Township 15 South, Range 37 East, Lea County
Darr Angell #4	Sections 2 and 11, Township 15 South, Range 37 East, Lea County
HDO 90-23	Section 6, Township 20 South, Range 37 East, Lea County
Junction 34 to Lea	Section 21, Township 20 South, Range 37 East, Lea County
Monument #2	Section 6, Township 20 South, Range 37 East, Lea County
Monument Barber 10" Sour	Section 32, Township 19 South, Range 37 East, Lea County
Monument #11	Section 30, Township 19 South, Range 37 East, Lea County
Red Byrd #1	Section 1, Township 20 South, Range 36 East, Lea County
South Monument Gathering	Section 5, Township 20 South, Range 37 East, Lea County
Denton Station	Section 14, Township 15 South, Range 37 East, Lea County

order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Reports for the above facilities.

If you have any questions or require further information, please contact me at (505) 441-0965.

Sincerely,

A handwritten signature in cursive script that reads "Camille Reynolds". The signature is written in black ink and is positioned above the typed name.

Camille Reynolds  
Remediation Coordinator  
Plains All American

CC: Larry Johnson, NMOCD, Hobbs, NM

Enclosures

**2007**  
**ANNUAL MONITORING REPORT**

**DARR ANGELL 2**

SW ¼, SE ¼ SECTION 11, TOWNSHIP 15 SOUTH, RANGE 37 EAST  
NW ¼, NE ¼ SECTION 14, TOWNSHIP 15 SOUTH, RANGE 37 EAST  
LEA COUNTY, NEW MEXICO  
PLAINS EMS NUMBER: LF-1999-62  
NMOCD Reference AP-007

PREPARED FOR:

**PLAINS MARKETING, L.P.**  
333 CLAY STREET, SUITE 1600  
HOUSTON, TEXAS 77002

PREPARED BY:

**NOVA Safety and Environmental**  
2057 Commerce  
Midland, Texas 79703

**March 2008**

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Curt D. Stanley  
Project Manager

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Todd K. Choban, P.G.  
Vice-President Technical Services

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Figure 3A – Groundwater Concentration and Inferred PSH Extent Map - March 21, 2007

3B – Groundwater Concentration and Inferred PSH Extent Map - June 8, 2007

3C – Groundwater Concentration and Inferred PSH Extent Map – August 31, 2007

3D – Groundwater Concentration and Inferred PSH Extent Map – November 21, 2007

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### APPENDICES

Appendix A – Boring Log and Monitor Well Details

Appendix B – Release Notification and Corrective Action (Form C-141)

### ENCLOSED ON DATA DISK

2007 Annual Monitoring Report

2007 Tables 1 and 2 - Groundwater Elevation and BTEX Concentration Data

2007 Table 3 – Concentrations of BTEX and TPH in Soil

2007 Figures 1, 2A-2D, and 3A-3D

Electronic Copies of Laboratory Reports

Historic Groundwater Elevation Tables

Historic BTEX Concentration Tables

## **INTRODUCTION**

On behalf of Plains Marketing, L.P., (Plains), NOVA Safety and Environmental (NOVA) is pleased to submit this Annual 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 for the Darr Angell #2 pipeline release site (the site) were assumed by NOVA. The site, formerly the responsibility of Enron Oil Trading and Transportation (EOTT), is now the responsibility of Plains. This report is intended to be viewed as a complete document with text, figures, tables and appendices. This report presents the results of the quarterly groundwater monitoring events conducted in calendar year 2007 only. However, historic data tables as well as 2007 laboratory analytical reports are provided on the enclosed disk. For reference, the Site Location Map is provided as Figure 1.

Groundwater monitoring was conducted during each quarter of 2007 to assess the extent of dissolved phase and Phase Separated Hydrocarbon (PSH) impact at the site. Each groundwater monitoring event consisted of measuring static water levels in monitor wells, checking for the presence of PSH on the water column and purging and sampling of each well exhibiting sufficient recharge. Monitor wells containing a thickness of PSH greater than 0.01 foot were not sampled.

## **SITE DESCRIPTION AND BACKGROUND INFORMATION**

The site is located approximately 12.5 miles east of the town of Lovington, New Mexico near State Highway 82 in the SW  $\frac{1}{4}$  of the SE  $\frac{1}{4}$  Section 11, Township 15 South, Range 37 East and the NW  $\frac{1}{4}$  of the NE  $\frac{1}{4}$  Section 14, Township 15 South, Range 37 East. The site coordinates are latitude 33° 01' 47.0" North, longitude 103° 10' 10.7" West. According to Form C-141, the release was discovered by EOTT employees on July 29, 1999. The release was attributed to structural failure due to external corrosion on the 8-inch steel pipeline and resulted in the loss of approximately 60 barrels of crude oil with no recovery. The release was reported to the New Mexico Oil Conservation Division (NMOCD) on July 29, 1999. A copy of the Release Notification and Corrective Action (Form C-141) is provided in Appendix B.

Initial site characterization activities began in August 1999 and consisted of the advancement of forty soil borings within and around the area of surface staining. In April and May 2000, a previous contractor excavated the areas identified by the soil boring investigation as impacted to a depth of approximately 4.5 feet below ground surface (bgs). Impacted soil was stockpiled on site. Excavation activities resumed in April and May 2001, with the removal of approximately 3,000 cubic yards (cy) of impacted soil. This material was added to soil previously stockpiled on site. On various dates between April 2000 and December 2002, monitor wells MW-1 through MW-10 and recovery wells RW-1 through RW-7 were installed.

Partial backfilling of the open excavation occurred subsequent to NMOCD approval of a backfill request submitted on March 11, 2002. Backfill material consisted of previously excavated caliche which had been separated from other excavated material by mechanical screening. In October 2003, approximately 3,100 cy of excavated soil was placed into a treatment area two to

three feet in depth. Quarterly mechanical tilling of this stockpile occurred throughout 2004. Analytical results, detailed in the Site Restoration Work Plan and Proposed Soil Closure Strategy dated January 2006, indicate total petroleum hydrocarbon (TPH) concentrations within the soil treatment cell were below NMOCD regulatory standards.

In a letter from the NMOCD dated April 5, 2006, Plains received NMOCD approval to backfill the excavation at the Darr Angell #2 release site. In June 2006, the excavation was backfilled with remediated soil contained in the soil treatment soil and contoured to grade. A *Soil Closure Request* was submitted to the NMOCD and on February 19, 2008, Plains received an email approving the soil closure request.

Currently, there are ten monitor wells (MW-1 through MW-4 and MW-6 through MW-11) and seven recovery wells (RW-1 through RW-7) onsite. Monitor well MW-5 was plugged and abandoned with NMOCD approval on September 14, 2005. An automated product recovery system operated on site throughout the reporting period. Manual product recovery was performed on those wells with PSH not included in the recovery system.

**RECENT FIELD ACTIVITIES**

A measurable thickness of PSH was present in eight monitor or recovery wells (MW-2 and RW-1 through RW-7) during each quarter of the reporting period. The average thickness of PSH in monitor wells and recovery wells for wells exhibiting PSH is 5.01 feet. The maximum thickness of PSH in monitor and recovery wells was 9.33 feet as recorded in recovery well RW-2 on May 14, 2007. PSH data for the 2007 gauging events can be found in Table 1. Approximately 1,120 gallons (27 barrels) of PSH were recovered from the site during this reporting period. Approximately 13,568 gallons (323 barrels) of PSH have been recovered from the site utilizing manual and automated methods since project inception. Recovered PSH was reintroduced into the Plains transportation system at the 34 Junction South Station, near Lovington, New Mexico.

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 and amended by NMOCD correspondence dated June 20, 2005.

<b>NMOCD APPROVED SAMPLING SCHEDULE</b>					
<b>Location</b>	<b>Schedule</b>	<b>Location</b>	<b>Schedule</b>	<b>Location</b>	<b>Schedule</b>
MW-1	Annually	MW-7	Annually	RW-2	Quarterly
MW-2	Quarterly	MW-8	Annually	RW-3	Quarterly
MW-3	Semi-Annually	MW-9	Annually	RW-4	Quarterly
MW-4	Semi-Annually	MW-10	Annually	RW-5	Quarterly
MW-5	Plugged / Abandoned			RW-6	Quarterly
MW-6	Annually	RW-1	Quarterly	RW-7	Quarterly

The site monitor wells were gauged and sampled on March 21, June 8, August 31, and November 21, 2007. During each sampling event the monitor wells were purged of a minimum of 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 at a licensed disposal facility.

Locations of the monitor wells and the inferred groundwater gradient, which were constructed from measurements collected during each quarterly monitoring event, are depicted on Figures 2A through 2D, the Inferred Groundwater Gradient Maps. Groundwater elevation data for 2007 is provided as Table 1. Historic groundwater elevation data beginning at project inception is provided on the enclosed data disk.

The most recent Groundwater Gradient map, Figure 2D, indicates a general gradient of approximately 0.004 feet/foot to the southeast as measured between recovery well RW-2 and monitor well MW-2. This is consistent with data presented on Figures 2A through 2C from the earlier quarters. The corrected groundwater elevations ranged between 3725.66 and 3728.71 feet above mean sea level, reported in recovery well RW-2 on September 6 and June 13, 2007, respectively.

## LABORATORY RESULTS

Monitor well MW-2 and recovery wells RW-1 through RW-7 contained measureable PSH and were not sampled during the reporting period.

All groundwater samples collected during the reporting period were delivered to TraceAnalysis, Inc. of Lubbock, Texas for Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) constituent analysis utilizing EPA Method SW 846-8021b. Analytical results of BTEX constituent concentrations for 2007 are summarized on Table 2. Historical BTEX constituent concentrations and copies of the laboratory reports for 2007 are provided on the enclosed data disk. The quarterly groundwater analytical results are depicted on the Groundwater Concentration and Inferred PSH Extent Maps, Figures 3A-3D.

**Monitor well MW-1** is sampled on an annual schedule and analytical results indicate benzene, toluene and ethylbenzene concentrations were below laboratory method detection limits (MDL) and **NMOCD regulatory standards of 0.01mg/L for benzene, 0.75 mg/L for toluene, 0.75 mg/L for ethylbenzene and 0.62 mg/L for xylene**, during the 4<sup>th</sup> quarter sampling event. Xylene concentrations were 0.002 mg/L during the 4<sup>th</sup> quarter of the reporting period. Xylene concentrations were below NMOCD regulatory standards during the 4<sup>th</sup> quarter of 2007. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last thirty-two consecutive quarters.

**Monitor well MW-2** is monitored on a quarterly schedule. Monitor well MW-2 was not sampled during any of four quarters of the reporting period, due to the reported presence of PSH in the monitor well. PSH thicknesses of 5.46 feet, 2.96 feet, 0.48 feet and 5.27 feet were reported during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2007, respectively.

**Monitor well MW-3** is sampled on a semi-annual (Plains voluntarily samples monitor well MW-3 quarterly due to benzene concentrations in excess of NMOCD standards) schedule and analytical results indicate benzene concentrations ranged from 0.319 mg/L during the 1<sup>st</sup> quarter

to 0.885 mg/L during the 4<sup>th</sup> quarter of the reporting period. Benzene concentrations were above the NMOCD regulatory standard during all four quarterly sampling events. Toluene and ethylbenzene concentrations were below the MDL and NMOCD regulatory standard during the all four quarterly sampling events. Xylene concentrations ranged from 0.0921 mg/L during the 1<sup>st</sup> quarter to 0.249 mg/L during the 4<sup>th</sup> quarter of the reporting period. Xylene concentrations were below NMOCD regulatory standards during all four quarters of 2007.

**Monitor well MW-4** is sampled on a semi-annual schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during the 2<sup>nd</sup> and 4<sup>th</sup> quarter sampling events. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last thirty-two consecutive quarters.

**Monitor well MW-6** is sampled on an annual schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during the 4<sup>th</sup> quarter sampling event. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last twenty-four consecutive quarters.

**Monitor well MW-7** is sampled on an annual schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during the 4<sup>th</sup> quarter sampling event. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last twenty-four consecutive quarters.

**Monitor well MW-8** is sampled on an annual schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during the 4<sup>th</sup> quarter sampling event. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last twenty-four consecutive quarters.

**Monitor well MW-9** is sampled on an annual schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during the 4<sup>th</sup> quarter sampling event. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last twenty-six consecutive quarters.

**Monitor well MW-10** is sampled on an annual schedule and analytical results indicate benzene, toluene and ethylbenzene concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during the 4<sup>th</sup> quarter sampling event. Xylene concentrations were 0.0015 mg/L during the 4<sup>th</sup> quarter of the reporting period. Xylene concentrations were below NMOCD regulatory standards during the 4<sup>th</sup> quarter of 2007. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last twenty-one consecutive quarters.

**Monitor well MW-11** was installed on December 4, 2007 and this monitor well was sampled after the 4<sup>th</sup> quarter sampling event. The monitor well will be sampled on a quarterly schedule. Following the installation, development and initial groundwater sampling of monitor well, the analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent.

**Recovery well RW-1** is monitored on a quarterly schedule. Recovery well RW-1 was not sampled during any of four quarters of the reporting period, due to the reported presence of PSH in the recovery well. PSH thicknesses of 7.56 feet, 0.28 feet, 3.15 feet and 7.56 feet were reported during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2007, respectively.

**Recovery well RW-2** is monitored on a quarterly schedule. Recovery well RW-2 was not sampled during any of four quarters of the reporting period, due to the reported presence of PSH in the recovery well. PSH thicknesses of 4.54 feet, 4.68 feet, 2.29 feet and 5.32 feet were reported during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2007, respectively.

**Recovery well RW-3** is monitored on a quarterly schedule. Recovery well RW-3 was not sampled during any of four quarters of the reporting period, due to the reported presence of PSH in the recovery well. PSH thicknesses of 6.46 feet, 5.55 feet, 1.98 feet and 7.26 feet were reported during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2007, respectively.

**Recovery well RW-4** is monitored on a quarterly schedule. Recovery well RW-4 was not sampled during any of four quarters of the reporting period, due to the reported presence of PSH in the recovery well. PSH thicknesses of 6.93 feet, 4.73 feet, 5.32 feet and 1.53 feet were reported during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2007, respectively.

**Recovery well RW-5** is monitored on a quarterly schedule. Recovery well RW-5 was not sampled during any of four quarters of the reporting period, due to the reported presence of PSH in the recovery well. PSH thicknesses of 5.15 feet, 1.48 feet, 1.22 feet and 3.00 feet were reported during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2007, respectively.

**Recovery well RW-6** is monitored on a quarterly schedule. Recovery well RW-6 was not sampled during any of four quarters of the reporting period, due to the reported presence of PSH in the recovery well. PSH thicknesses of 7.81 feet, 4.96 feet, 4.14 feet and 7.90 feet were reported during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2007, respectively.

**Recovery well RW-7** is monitored on a quarterly schedule. Recovery well RW-7 was not sampled during any of four quarters of the reporting period, due to the reported presence of PSH in the recovery well. PSH thicknesses of 7.33 feet, and 4.36 feet, were reported during the 1<sup>st</sup>, and 2<sup>nd</sup> quarters of 2007, respectively. The monitor well contained PSH and was obstructed during the 3<sup>rd</sup> and 4<sup>th</sup> quarters of the reporting period.

Laboratory analytical results were compared to NMOCD regulatory limits based on the New Mexico groundwater standards found in section 20.6.2.3103 of the New Mexico Administrative Code.

## **SUMMARY**

This report presents the results of monitoring activities for the 2007 annual monitoring period. Currently, there are ten groundwater monitor wells (MW-1 through MW-11, excluding MW-5) and seven product recovery wells (RW-1 through RW-7) on-site. A measurable thickness of PSH was present in eight monitor or recovery wells (MW-2 and RW-1 through RW-7) during each quarter of the reporting period. Approximately 1,120 gallons (27 barrels) of PSH were recovered from the site during this reporting period. Approximately 13,568 gallons (323 barrels) of PSH have been recovered from the site utilizing manual and automated methods since project inception. Groundwater elevation contours generated from water level measurements acquired during the most recent quarter indicated a general gradient of 0.004 feet/foot to the southeast as measured between recovery well RW-2 and monitor well MW-2.

As discussed above, eight monitor or recovery wells contained measurable PSH thicknesses during each sampling event of 2007 and were not sampled. Dissolved phase benzene concentrations were above NMOCD regulatory standards in one monitor well. The remaining eight monitor wells (including monitor well MW-11) returned analytical results indicating BTEX constituent concentrations below the appropriate NMOCD regulatory standard.

## **ANTICIPATED ACTIONS**

Plains will modify the groundwater sampling schedule for monitor well MW-3 from the current semi-annual groundwater sampling schedule to a quarterly sampling schedule.

Quarterly groundwater monitoring and sampling will continue in 2008. An Annual Monitoring Report will be submitted to the NMOCD by April 1, 2009. The automated recovery system will be monitored and adjusted to maximize the efficiency of product removal and gradient control.

## **LIMITATIONS**

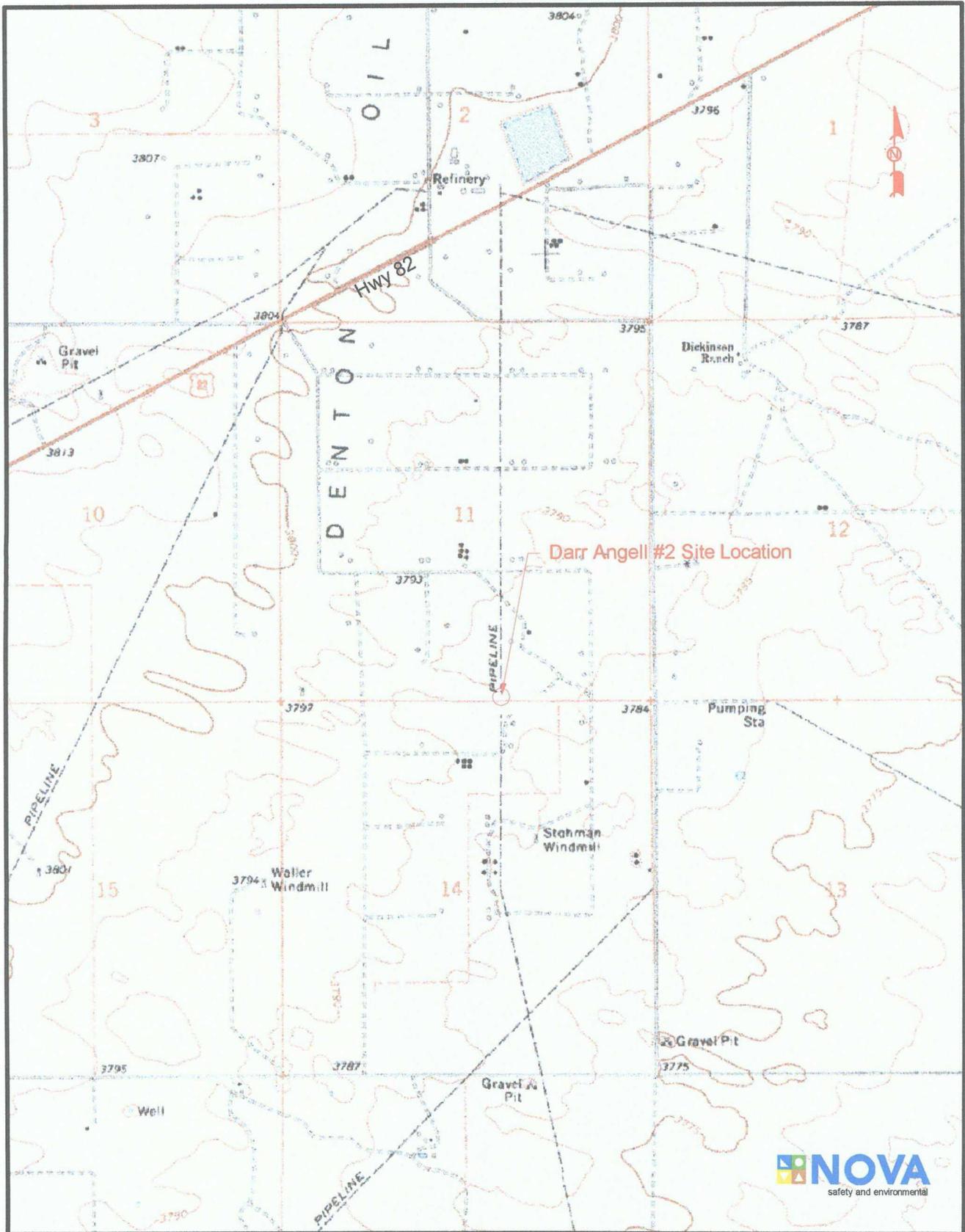
NOVA has prepared this Annual Monitoring Report to the best of its ability. No other warranty, expressed or implied, is made or intended. NOVA has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. NOVA has not conducted an independent 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.

This report has been prepared for the benefit of Plains. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of NOVA and/or Plains.

## **DISTRIBUTION**

- Copy 1      Ed Hansen  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505
- Copy 2:      Larry Johnson  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division, District 1  
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jpdann@paalp.com
- Copy 5:      NOVA Safety and Environmental  
2057 Commerce Street  
Midland, TX 79703  
cstanley@novatraining.cc

# Figures



**Site Location**

USGS Prairievew (NM) Topo  
 33° 01' 47.0" N 103° 10' 10.5" W  
 SW 1/4 of SE1/4 of Sec 11 T15S R37E  
 NW 1/4 of NE 1/4 of Sec 14 T15S R37E

NMOCOD Ref# AP-007

**Figure 1  
 Site Location Map**

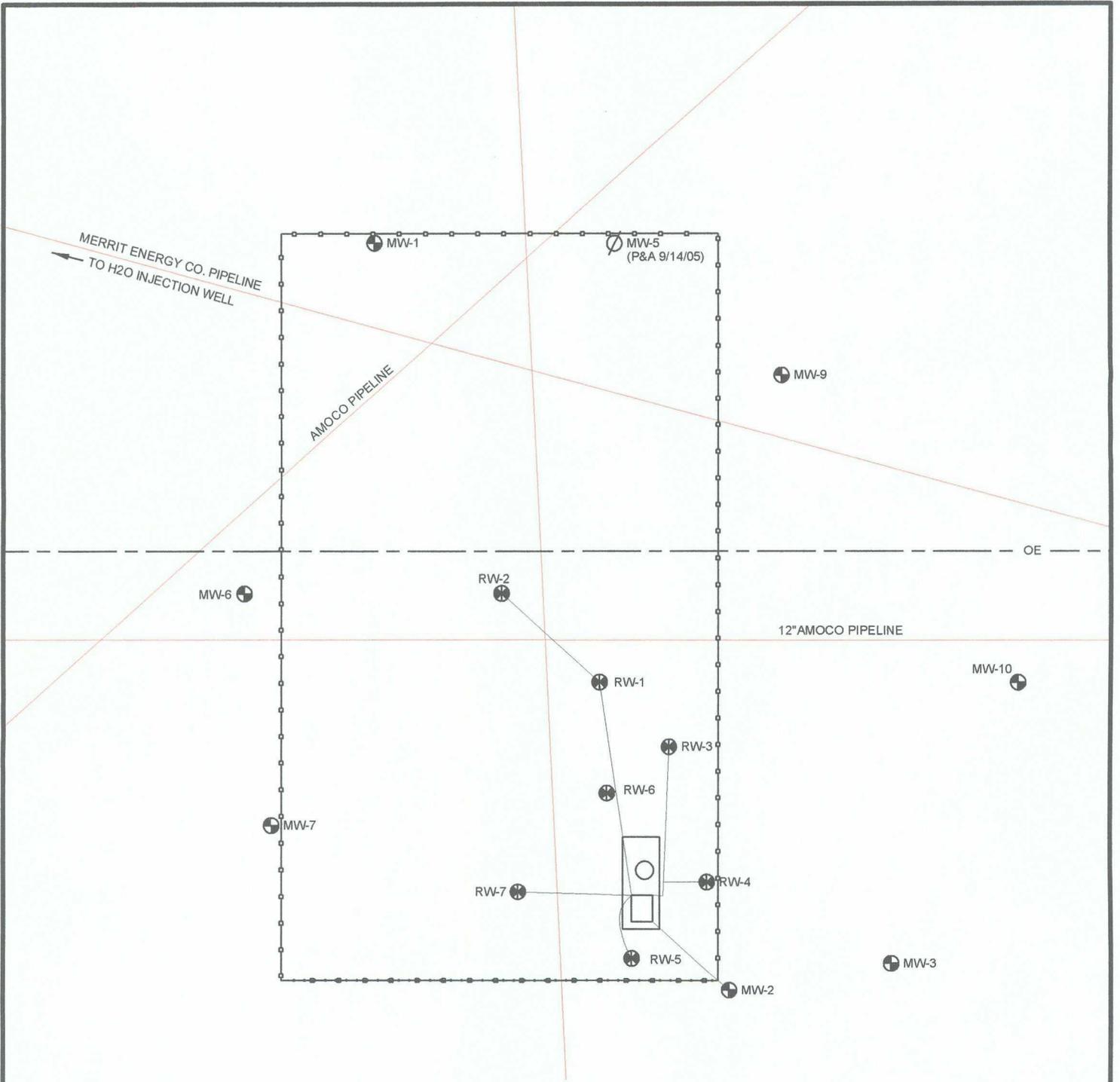
Plains Marketing, L.P  
 Darr Angell # 2  
 Lea County, NM

**NOVA Safety and Environmental**

Scale: 1"=2000'    Prep By: CDS    Checked By: TKC

February 20, 2005





**NOTE:**

MW-5 Was Plugged and Abandoned September 2005 Per NMOCD Approval



SW 1/4 SE 1/4 SEC. 11, T15S, R37E  
 NW 1/4 NE 1/4 SEC. 14, T15S, R37E



**LEGEND:**

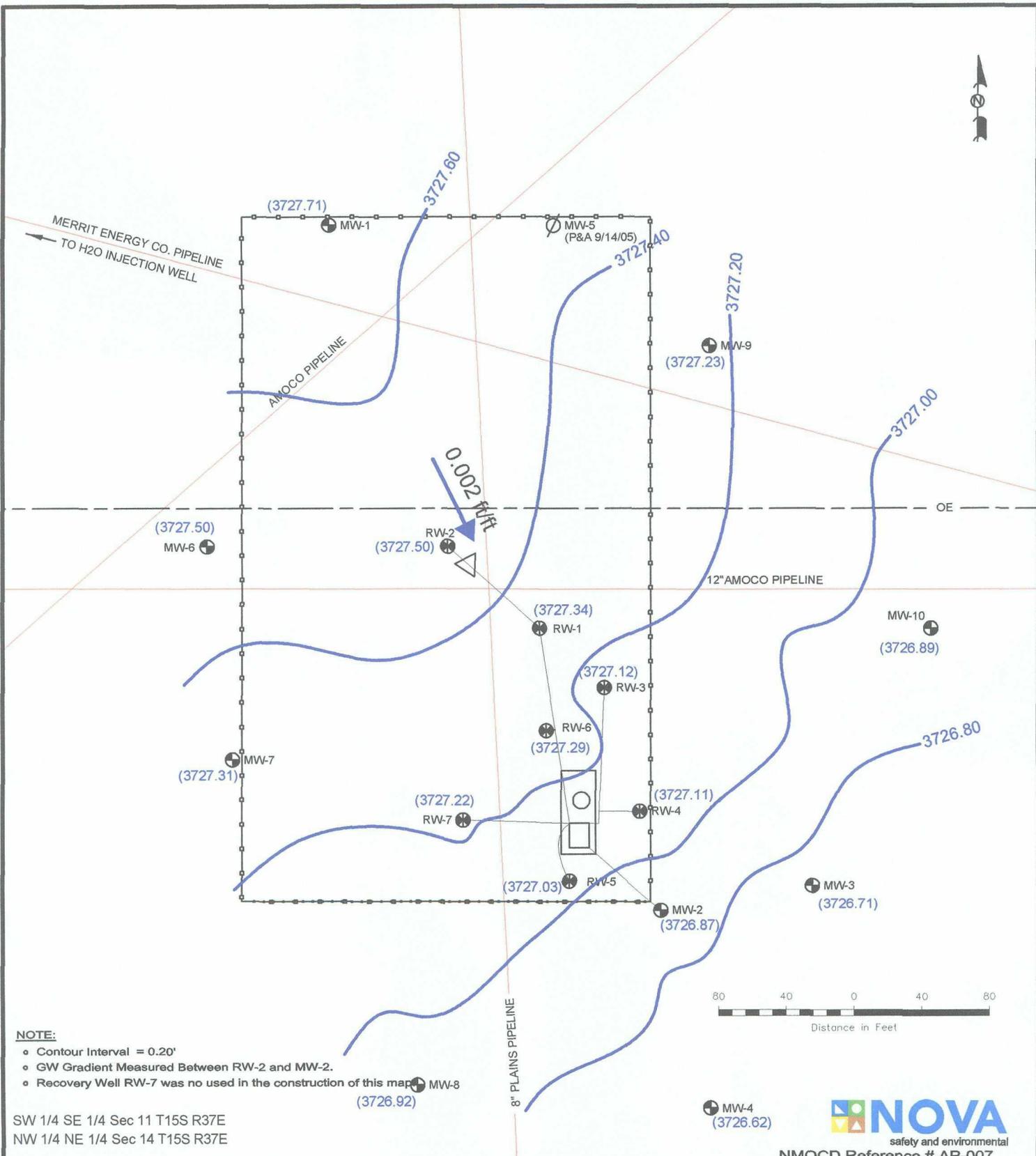
- ⊕ Monitor Well Locations
- ⊗ Recovery Well Locations
- Product Recovery / Airline
- ⋯ Soil Treatment Cell
- Barbed Wire Fence
- ⋯ Backfilled Excavation
- Berm Containment Area
- OE Overhead Powerline
- Pipeline

NMOCD Ref# AP-007

**Figure 2**  
**Site Map**  
 Plains Marketing, L.P.  
 Darr Angell # 2  
 Lea County, NM

**NOVA Safety and Environmental**

Scale: 1"=80'	Prep By: DPM	Checked By: CDS
July 9, 2007	Lat33° 01' 47.0"N Lon. 103° 10' 10.5"W	

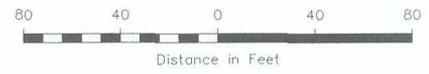


**NOTE:**

- Contour Interval = 0.20'
- GW Gradient Measured Between RW-2 and MW-2.
- Recovery Well RW-7 was no used in the construction of this map

MW-8 (3726.92)

SW 1/4 SE 1/4 Sec 11 T15S R37E  
 NW 1/4 NE 1/4 Sec 14 T15S R37E



**LEGEND:**

- Monitor Well Location
- Recovery Well Location
- (3728.84) Groundwater Elevation (In Feet)
- Groundwater Gradient Contour Line
- 0.001 ft/ft Groundwater Gradient and Magnitude

- Bermed Containment Area
- Plugged and Abandoned Well

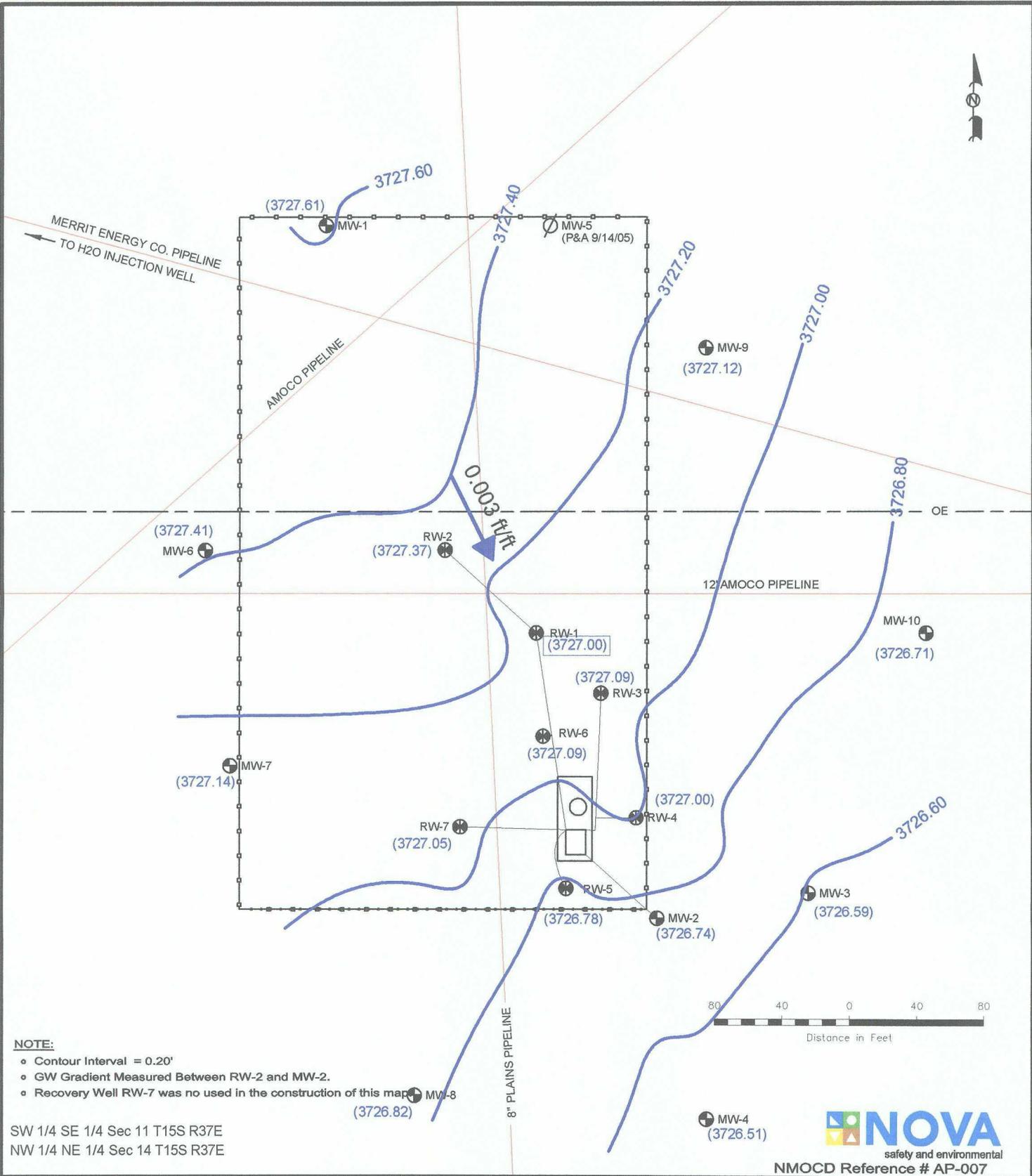
NMOCD Ref# AP-007

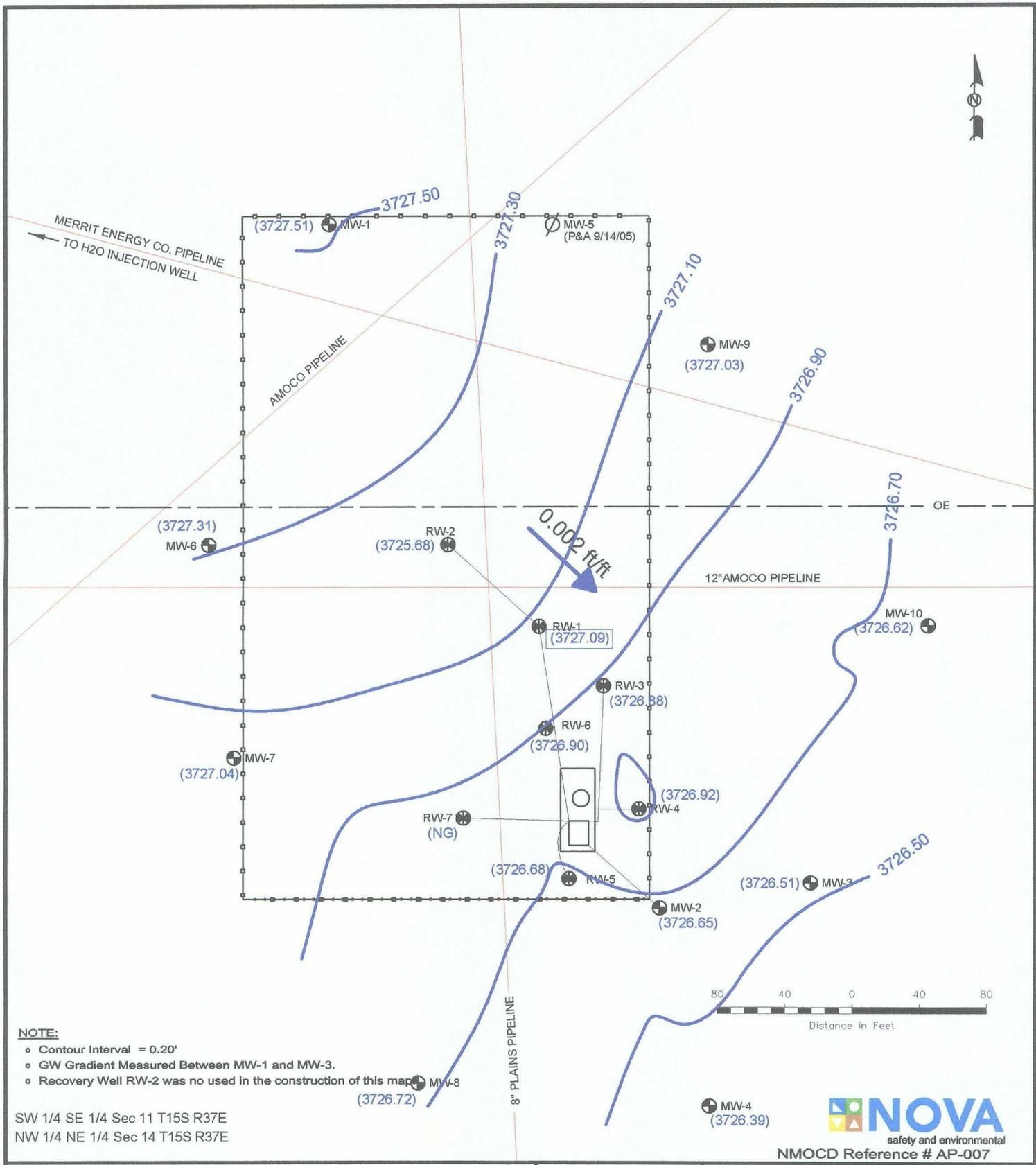
**Figure 2A**  
**Inferred Groundwater**  
**Gradient Map**  
 (03/21/07)

**Plains Marketing, L.P.**  
**Darr Angell # 2**  
**Lea County, NM**

**NOVA Safety and Environmental**

Scale: 1"=80'	CAD By: DGC	Checked By: CDS
February 6, 2008	Lat33° 01' 47.0"N Lon. 103° 10' 10.5"W	





**LEGEND:**

- ⊕ Monitor Well Location
- ⊗ Recovery Well Location
- (3728.84) Groundwater Elevation (In Feet)
- Groundwater Gradient Contour Line
- 0.001 ft/ft Groundwater Gradient and Magnitude

- ◻ Bermed Containment Area
- (NG) Not Gauged
- ⊘ Plugged and Abandoned Well

NMOC Reference # AP-007

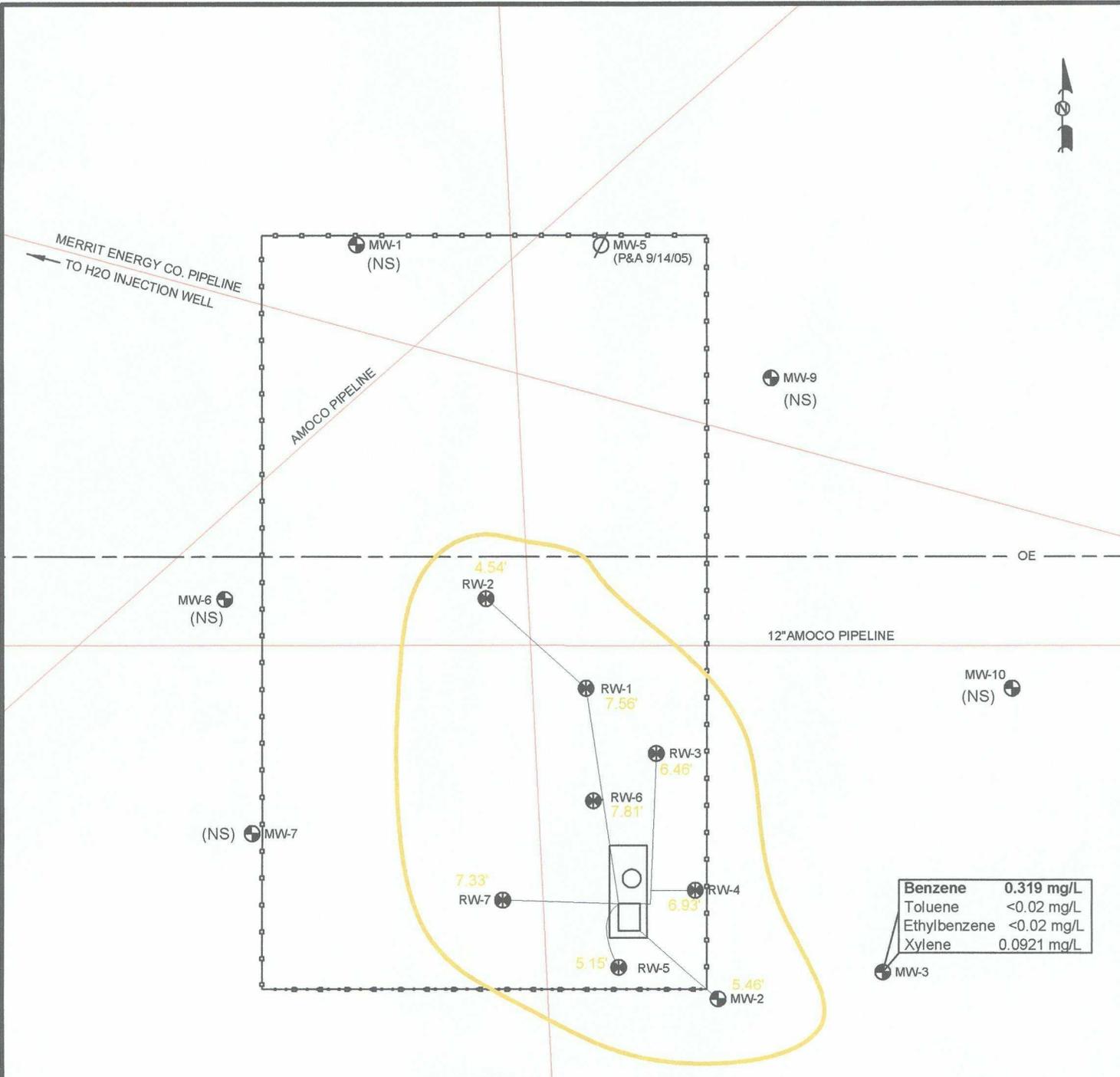
**Figure 2C**  
**Inferred Groundwater**  
**Gradient Map**  
 (08/31/07)

**Plains Marketing, L.P.**  
**Darr Angell # 2**  
**Lea County, NM**

**NOVA**  
 safety and environmental  
 NMOC Reference # AP-007

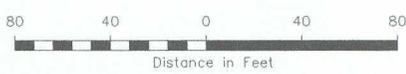
Scale: 1"=80'	CAD By: DGC	Checked By: CDS
January 28, 2008	Lat33° 01' 47.0"N Lon. 103° 10' 10.5"W	





Benzene	0.319 mg/L
Toluene	<0.02 mg/L
Ethylbenzene	<0.02 mg/L
Xylene	0.0921 mg/L

**NOTE:**  
 Bold Indicates Constituent Above NMOCD Regulatory Standards



SW 1/4 SE 1/4 Sec 11 T15S R37E  
 NW 1/4 NE 1/4 Sec 14 T15S R37E

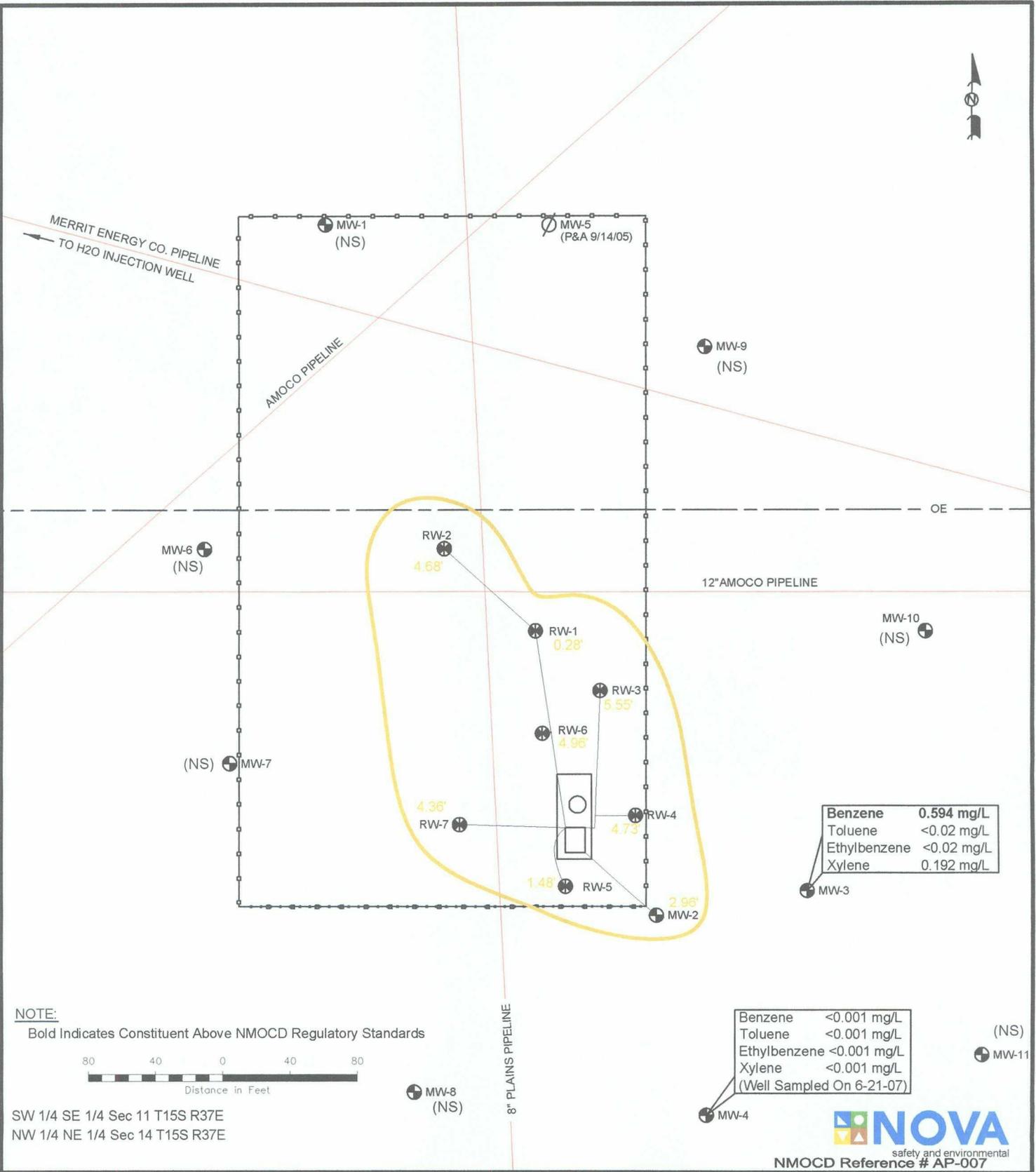
**NOVA**  
 safety and environmental  
 NMOCD Reference # AP-007

	Monitor Well Location		Berm Containment Area
	Recovery Well Location	(NS)	Not Sampled
	Inferred PSH Extent		Plugged and Abandoned Well
<0.001	Constituent Concentration (mg/L)		
Note: PSH Thickness in Feet			

**Figure 3A**  
 Groundwater Concentration  
 and Inferred PSH Extent  
 Map (03/21/07)  
 Plains Marketing, L.P.  
 Darr Angell # 2  
 Lea County, NM

**NOVA Safety and Environmental**

Scale: 1"=80'	CAD By: DGC	Checked By: CDS
January 25, 2008	Lat33° 01' 47.0"N Lon. 103° 10' 10.5"W	



Benzene	0.594 mg/L
Toluene	<0.02 mg/L
Ethylbenzene	<0.02 mg/L
Xylene	0.192 mg/L

Benzene	<0.001 mg/L
Toluene	<0.001 mg/L
Ethylbenzene	<0.001 mg/L
Xylene	<0.001 mg/L
(Well Sampled On 6-21-07)	

**NOTE:**  
Bold Indicates Constituent Above NMOCD Regulatory Standards



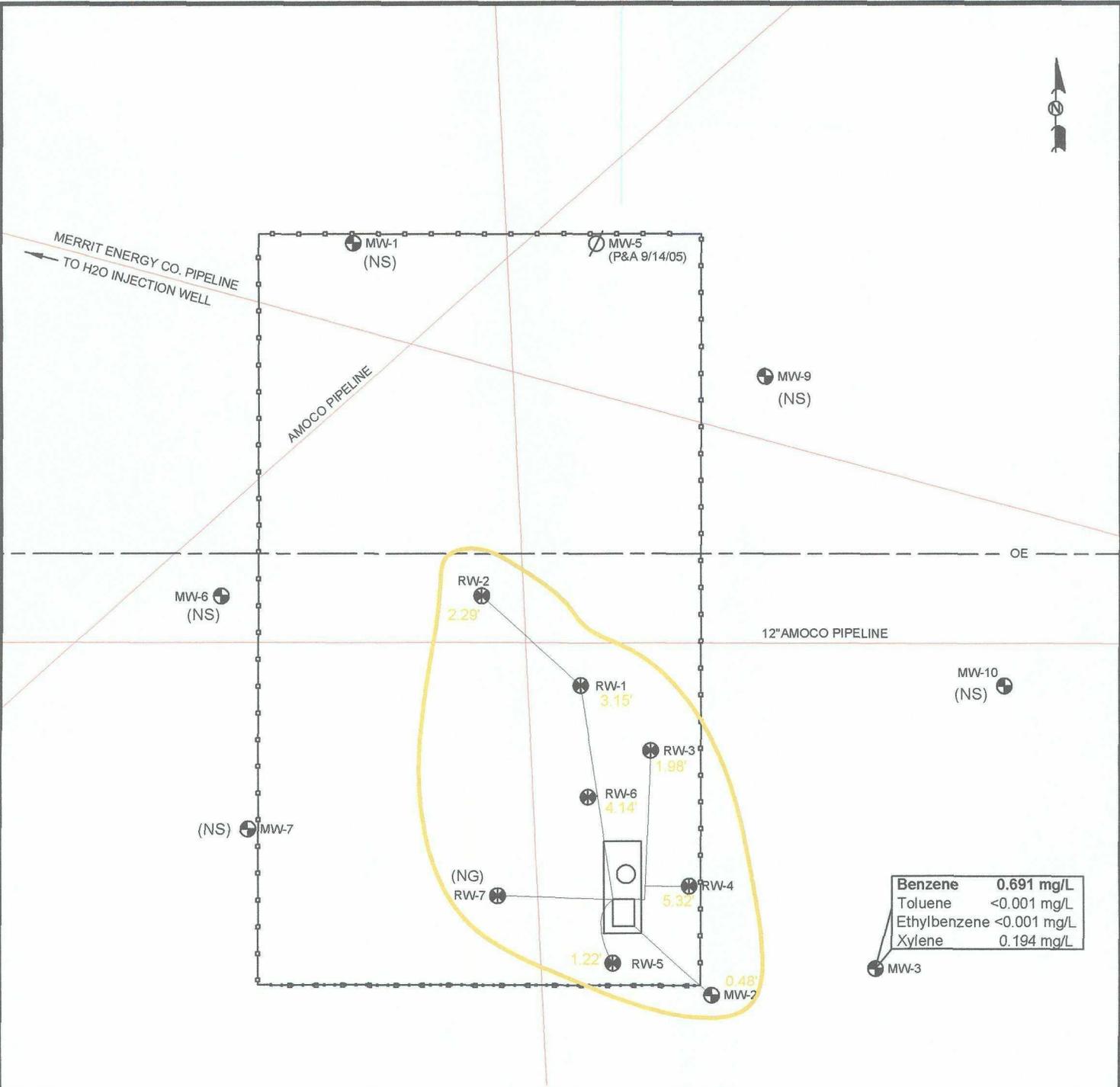
SW 1/4 SE 1/4 Sec 11 T15S R37E  
NW 1/4 NE 1/4 Sec 14 T15S R37E



	Monitor Well Location		Bermed Containment Area
	Recovery Well Location	(NS)	Not Sampled
	Inferred PSH Extent		Plugged and Abandoned Well
<0.001	Constituent Concentration (mg/L)	<b>NMOCD Ref# AP-007</b>	
Note: PSH Thickness in Feet			

**Figure 3B**  
**Groundwater Concentration and Inferred PSH Extent Map (06/08/07)**  
**Plains Marketing, L.P.**  
**Darr Angell # 2**  
**Lea County, NM**

<b>NOVA Safety and Environmental</b>		
Scale: 1"=80'	CAD By: DGC	Checked By: CDS
February 27, 2008	Lat33° 01' 47.0"N Lon. 103° 10' 10.5"W	



Benzene	0.691 mg/L
Toluene	<0.001 mg/L
Ethylbenzene	<0.001 mg/L
Xylene	0.194 mg/L

**NOTE:**  
 Bold Indicates Constituent Above NMOCD Regulatory Standards



SW 1/4 SE 1/4 Sec 11 T15S R37E  
 NW 1/4 NE 1/4 Sec 14 T15S R37E

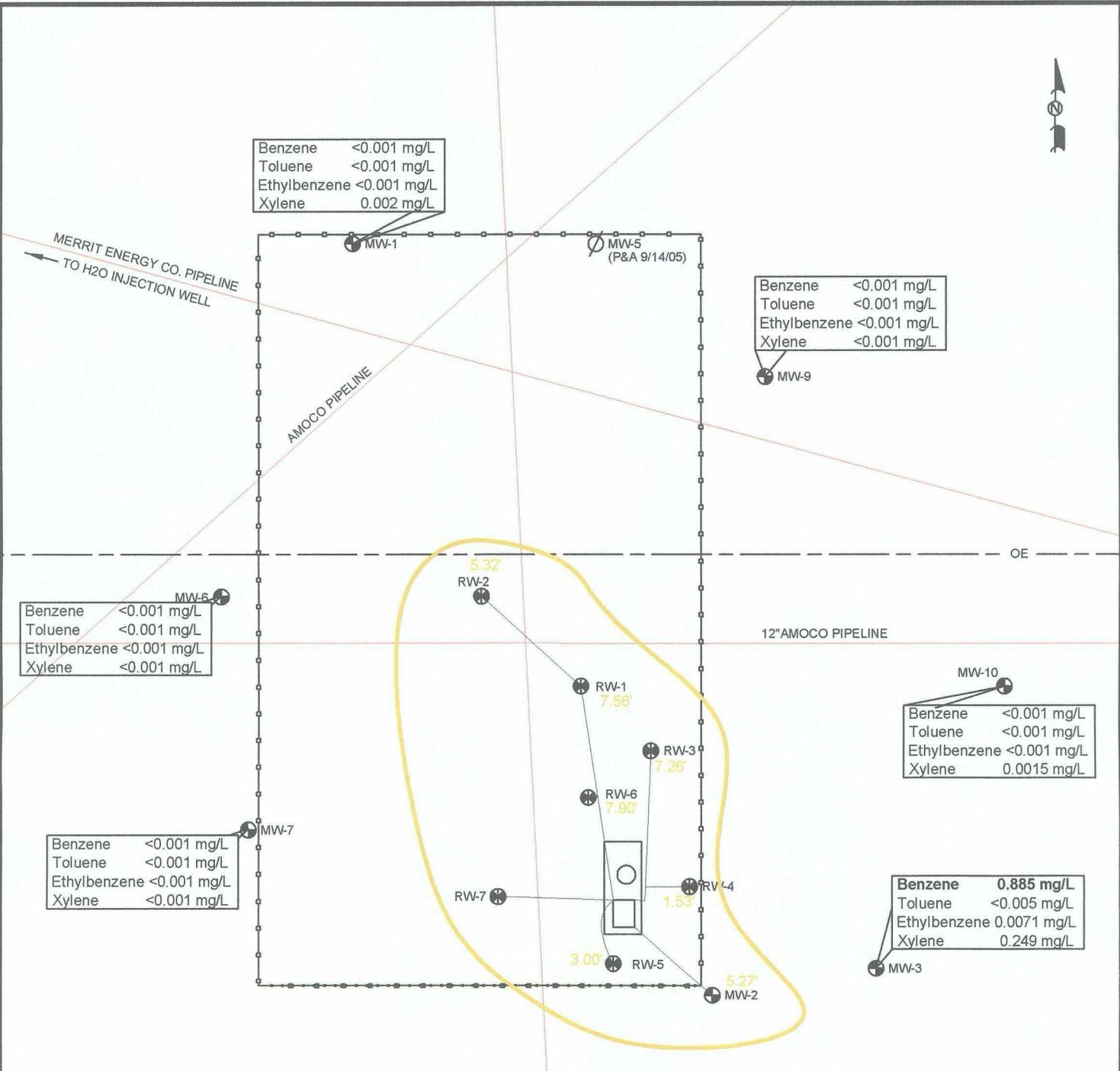


NMOCD Reference # AP-007

	Monitor Well Location		Bermed Containment Area
	Recovery Well Location	(NS)	Not Sampled
	Inferred PSH Extent	(NG)	Not Gauged
<0.001	Constituent Concentration (mg/L)		Plugged and Abandoned Well
Note: PSH Thickness in Feet		<b>NMOCD Ref# AP-007</b>	

**Figure 3C**  
**Groundwater Concentration and Inferred PSH Extent Map (08/31/07)**  
 Plains Marketing, L.P.  
 Darr Angell # 2  
 Lea County, NM

<b>NOVA Safety and Environmental</b>		
Scale: 1"=80'	CAD By: DGC	Checked By: CDS
February 11, 2008	Lat33° 01' 47.0"N Lon. 103° 10' 10.5"W	



Benzene <0.001 mg/L  
 Toluene <0.001 mg/L  
 Ethylbenzene <0.001 mg/L  
 Xylene 0.002 mg/L

Benzene <0.001 mg/L  
 Toluene <0.001 mg/L  
 Ethylbenzene <0.001 mg/L  
 Xylene <0.001 mg/L

Benzene <0.001 mg/L  
 Toluene <0.001 mg/L  
 Ethylbenzene <0.001 mg/L  
 Xylene <0.001 mg/L

Benzene <0.001 mg/L  
 Toluene <0.001 mg/L  
 Ethylbenzene <0.001 mg/L  
 Xylene 0.0015 mg/L

Benzene <0.001 mg/L  
 Toluene <0.001 mg/L  
 Ethylbenzene <0.001 mg/L  
 Xylene <0.001 mg/L

Benzene 0.885 mg/L  
 Toluene <0.005 mg/L  
 Ethylbenzene 0.0071 mg/L  
 Xylene 0.249 mg/L

Benzene <0.001 mg/L  
 Toluene <0.001 mg/L  
 Ethylbenzene <0.001 mg/L  
 Xylene <0.001 mg/L

Benzene <0.001 mg/L  
 Toluene <0.001 mg/L  
 Ethylbenzene <0.001 mg/L  
 Xylene <0.001 mg/L

Benzene <0.001 mg/L  
 Toluene <0.001 mg/L  
 Ethylbenzene <0.001 mg/L  
 Xylene <0.001 mg/L

**NOTE:**  
 Bold Indicates Constituent Above NMOCD Regulatory Standards



SW 1/4 SE 1/4 Sec 11 T15S R37E  
 NW 1/4 NE 1/4 Sec 14 T15S R37E



	Monitor Well Location		Bermed Containment Area
	Recovery Well Location		Plugged and Abandoned Well
	Inferred PSH Extent		
<0.001	Constituent Concentration (mg/L)		
	Note: PSH Thickness in Feet		

**Figure 3D**  
**Groundwater Concentration and Inferred PSH Extent Map (11/21/07)**  
 Plains Marketing, L.P.  
 Darr Angell # 2  
 Lea County, NM

<b>NOVA Safety and Environmental</b>		
Scale: 1"=80'	CAD By: DGC	Checked By: CDS
January 25, 2008	Lat33° 01' 47.0"N Lon. 103° 10' 10.5"W	

# Tables

TABLE 1

## 2007 GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
DARR ANGELL 2  
LEA COUNTY, NEW MEXICO  
NMOCD REFERENCE NUMBER AP-007

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
MW-1	03/21/07	3788.04	-	60.33	0.00	3727.71
	06/08/07	3788.04	-	60.43	0.00	3727.61
	08/31/07	3788.04	-	60.53	0.00	3727.51
	11/21/07	3788.04	-	60.64	0.00	3727.40
MW-2	01/02/07	3788.41	60.37	66.67	6.30	3727.10
	01/05/07	3788.41	60.34	66.82	6.48	3727.10
	01/08/07	3788.41	60.75	65.00	4.25	3727.02
	01/12/07	3788.41	60.69	65.26	4.57	3727.03
	01/16/07	3788.41	60.64	66.02	5.38	3726.96
	01/30/07	3788.41	59.60	66.49	6.89	3727.78
	02/07/07	3788.41	60.58	65.21	4.63	3727.14
	02/09/07	3788.41	60.86	61.10	0.24	3727.51
	02/22/07	3788.41	61.46	62.25	0.79	3726.83
	03/21/07	3788.41	60.72	66.18	5.46	3726.87
	04/04/07	3788.41	60.58	66.29	5.71	3726.97
	04/11/07	3788.41	60.79	65.83	5.04	3726.86
	04/13/07	3788.41	61.18	63.79	2.61	3726.84
	04/20/07	3788.41	60.72	65.71	4.99	3726.94
	04/27/07	3788.41	60.65	66.45	5.80	3726.89
	05/14/07	3788.41	59.75	66.65	6.90	3727.63
	05/18/07	3788.41	61.00	65.17	4.17	3726.78
	05/24/07	3788.41	60.86	65.71	4.85	3726.82
	06/06/07	3788.41	61.83	66.03	4.20	3725.95
	06/08/07	3788.41	61.23	64.19	2.96	3726.74
	06/13/07	3788.41	61.99	65.03	3.04	3725.96
	06/18/07	3788.41	60.66	66.39	5.73	3726.89
	06/28/07	3788.41	60.68	66.52	5.84	3726.85
	07/17/07	3788.41	60.69	66.90	6.21	3726.79
	07/24/07	3788.41	60.71	66.91	6.20	3726.77
	07/27/07	3788.41	60.73	66.87	6.14	3726.76
	08/07/07	3788.41	61.70	66.88	5.18	3725.93
	08/14/07	3788.41	60.73	66.96	6.23	3726.75
08/24/07	3788.41	60.74	64.97	4.23	3727.04	
08/31/07	3788.41	61.69	62.17	0.48	3726.65	
09/06/07	3788.41	61.78	62.28	0.50	3726.56	
09/18/07	3788.41	61.83	62.44	0.61	3726.49	
09/25/07	3788.41	61.85	62.37	0.52	3726.48	
09/27/07	3788.41	61.89	62.34	0.45	3726.45	
10/02/07	3788.41	61.86	62.34	0.48	3726.48	
10/05/07	3788.41	61.83	62.31	0.48	3726.51	
10/09/07	3788.41	61.87	62.52	0.65	3726.44	
10/16/07	3788.41	61.89	62.54	0.65	3726.42	
11/21/07	3788.41	61.19	66.46	5.27	3726.43	
MW-3	03/21/07	3787.94	-	61.23	0.00	3726.71
	04/04/07	3787.94	-	61.25	0.00	3726.69
	04/11/07	3787.94	-	61.45	0.00	3726.49
	04/13/07	3787.94	-	61.33	0.00	3726.61
	06/08/07	3787.94	-	61.35	0.00	3726.59
	11/21/07	3787.94	-	61.53	0.00	3726.41

TABLE 1

## 2007 GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
DARR ANGELL 2  
LEA COUNTY, NEW MEXICO  
NMOC D REFERENCE NUMBER AP-007

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
MW-4	03/21/07	3787.76	-	61.14	0.00	3726.62
	06/08/07	3787.76	-	61.25	0.00	3726.51
	06/21/07	3787.76	-	61.25	0.00	3726.51
	08/31/07	3787.76	-	61.37	0.00	3726.39
	11/21/07	3787.76	-	61.46	0.00	3726.30
MW-6	03/21/07	3788.31	-	60.81	0.00	3727.50
	06/08/07	3788.31	-	60.90	0.00	3727.41
	08/31/07	3788.31	-	61.00	0.00	3727.31
	11/21/07	3788.31	-	61.11	0.00	3727.20
MW-7	03/21/07	3788.65	-	61.34	0.00	3727.31
	06/08/07	3788.65	-	61.51	0.00	3727.14
	08/31/07	3788.65	-	61.61	0.00	3727.04
	11/21/07	3788.65	-	61.71	0.00	3726.94
MW-8	03/21/07	3787.60	-	60.68	0.00	3726.92
	06/08/07	3787.60	-	60.78	0.00	3726.82
	08/31/07	3787.60	-	60.88	0.00	3726.72
	11/21/07	3787.60	-	60.98	0.00	3726.62
MW-9	03/21/07	3787.27	-	60.04	0.00	3727.23
	06/08/07	3787.27	-	60.15	0.00	3727.12
	08/31/07	3787.27	-	60.24	0.00	3727.03
	11/21/07	3787.27	-	60.34	0.00	3726.93
MW-10	03/21/07	3787.50	-	60.61	0.00	3726.89
	06/08/07	3787.50	-	60.79	0.00	3726.71
	08/31/07	3787.50	-	60.88	0.00	3726.62
	11/21/07	3787.50	-	60.99	0.00	3726.51
MW - 11	12/04/07	-	-	62.14	0.00	
RW-1	01/02/07	3787.45	58.71	66.85	8.14	3727.52
	01/05/07	3787.45	58.77	66.62	7.85	3727.50
	01/08/07	3787.45	58.77	66.61	7.84	3727.50
	01/12/07	3787.45	58.77	66.66	7.89	3727.50
	01/16/07	3787.45	58.78	66.68	7.90	3727.49
	01/30/07	3787.45	58.75	66.88	8.13	3727.48
	02/07/07	3787.45	59.70	66.75	7.05	3726.69
	02/09/07	3787.45	58.78	66.92	8.14	3727.45
	02/12/07	3787.45	58.82	66.67	7.85	3727.45
	02/22/07	3787.45	58.75	66.93	8.18	3727.47
	03/21/07	3787.45	58.98	66.54	7.56	3727.34
	04/04/07	3787.45	58.89	66.87	7.98	3727.36
	04/11/07	3787.45	58.74	66.85	8.11	3727.49
	04/13/07	3787.45	59.17	66.45	7.28	3727.19
	04/20/07	3787.45	59.23	66.45	7.22	3727.14
	04/27/07	3787.45	59.66	63.98	4.32	3727.14
	05/14/07	3787.45	59.09	66.55	7.46	3727.24
	05/24/07	3787.45	59.89	67.41	7.52	3726.43
	06/06/07	3787.45	59.95	62.64	2.69	3727.10
06/08/07	3787.45	60.41	60.69	0.28	3727.00	

TABLE 1

2007 GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
 DARR ANGELL 2  
 LEA COUNTY, NEW MEXICO  
 NMOCD REFERENCE NUMBER AP-007

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
RW-1	06/13/07	3787.45	59.89	62.70	2.81	3727.14
	06/18/07	3787.45	59.65	65.36	5.71	3726.94
	06/28/07	3787.45	60.25	60.86	0.61	3727.11
	07/17/07	3787.45	59.07	66.83	7.76	3727.22
	07/24/07	3787.45	60.03	62.59	2.56	3727.04
	07/27/07	3787.45	60.44	60.93	0.49	3726.94
	08/07/07	3787.45	59.14	66.77	7.63	3727.17
	08/14/07	3787.45	59.15	66.92	7.77	3727.13
	08/23/07	3787.45	60.50	61.01	0.51	3726.87
	08/28/07	3787.45	60.41	61.10	0.69	3726.94
	08/31/07	3787.45	59.89	63.04	3.15	3727.09
	09/06/07	3787.45	59.47	65.49	6.02	3727.08
	09/18/07	3787.45	59.22	66.99	7.77	3727.06
	09/25/07	3787.45	59.22	66.85	7.63	3727.09
	09/27/07	3787.45	60.56	61.28	0.72	3726.78
	10/02/07	3787.45	60.47	61.29	0.82	3726.86
	10/05/07	3787.45	60.50	61.31	0.81	3726.83
	10/09/07	3787.45	60.50	61.03	0.53	3726.87
	10/16/07	3787.45	60.48	61.32	0.84	3726.84
	10/30/07	3787.45	59.42	65.76	6.34	3727.08
	11/21/07	3787.45	59.27	66.83	7.56	3727.05
RW-2	01/02/07	3787.83	58.95	67.15	8.20	3727.65
	01/05/07	3787.83	58.93	67.21	8.28	3727.66
	01/08/07	3787.83	59.29	65.66	6.37	3727.58
	01/12/07	3787.83	59.31	65.78	6.47	3727.55
	01/16/07	3787.83	59.20	66.78	7.58	3727.49
	01/30/07	3787.83	59.19	67.08	7.89	3727.46
	02/07/07	3787.83	59.06	66.92	7.86	3727.59
	02/09/07	3787.83	59.30	65.10	5.80	3727.66
	02/22/07	3787.83	59.15	67.17	8.02	3727.48
	03/21/07	3787.83	59.65	64.19	4.54	3727.50
	04/04/07	3787.83	59.27	67.30	8.03	3727.36
	04/11/07	3787.83	59.85	66.73	6.88	3726.95
	04/13/07	3787.83	59.64	64.70	5.06	3727.43
	04/20/07	3787.83	59.19	66.82	7.63	3727.50
	04/27/07	3787.83	59.21	67.31	8.10	3727.41
	05/14/07	3787.83	58.11	67.44	9.33	3728.32
	05/24/07	3787.83	59.16	-	-	-
	06/06/07	3787.83	59.13	67.38	8.25	3727.46
	06/08/07	3787.83	59.76	64.44	4.68	3727.37
	06/13/07	3787.83	59.10	59.23	0.13	3728.71
	06/18/07	3787.83	59.15	67.30	8.15	3727.46
	06/28/07	3787.83	59.17	67.24	8.07	3727.45
	07/02/07	3787.83	59.44	66.12	6.68	3727.39
	07/17/07	3787.83	59.16	67.29	8.13	3727.45
	07/24/07	3787.83	60.09	66.67	6.58	3726.75
	07/27/07	3787.83	60.80	60.82	0.02	3727.03
	08/07/07	3787.83	61.02	61.88	0.86	3726.68
	08/28/07	3787.83	60.98	61.79	0.81	3726.73
	08/31/07	3787.83	61.81	64.10	2.29	3725.68
	09/06/07	3787.83	61.84	64.02	2.18	3725.66
	09/18/07	3787.83	61.23	62.37	1.14	3726.43

TABLE 1

## 2007 GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
DARR ANGELL 2  
LEA COUNTY, NEW MEXICO  
NMOCD REFERENCE NUMBER AP-007

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
RW-2	09/25/07	3787.83	60.33	66.98	6.65	3726.50
	09/27/07	3787.83	60.31	66.94	6.63	3726.53
	10/02/07	3787.83	60.28	66.91	6.63	3726.56
	10/30/07	3787.83	59.64	66.05	6.41	3727.23
	11/21/07	3787.83	59.49	64.81	5.32	3727.54
RW-3	01/02/07	3787.81	58.71	66.85	8.14	3727.88
	01/05/07	3787.81	59.32	67.00	7.68	3727.34
	01/08/07	3787.81	59.56	65.84	6.28	3727.31
	01/12/07	3787.81	59.52	66.15	6.63	3727.30
	01/16/07	3787.81	59.52	66.10	6.58	3727.30
	01/30/07	3787.81	59.35	67.01	7.66	3727.31
	02/07/07	3787.81	59.75	66.80	7.05	3727.00
	02/09/07	3787.81	59.62	65.98	6.36	3727.24
	02/22/07	3787.81	59.40	67.50	8.10	3727.20
	03/21/07	3787.81	59.72	66.18	6.46	3727.12
	04/04/07	3787.81	59.59	67.04	7.45	3727.10
	04/11/07	3787.81	59.61	66.59	6.98	3727.15
	04/13/07	3787.81	59.82	65.53	5.71	3727.13
	04/20/07	3787.81	60.41	62.85	2.44	3727.03
	04/27/07	3787.81	59.31	66.81	7.50	3727.38
	05/14/07	3787.81	59.61	67.10	7.49	3727.08
	05/24/07	3787.81	59.50	66.91	7.41	3727.20
	06/06/07	3787.81	59.61	62.12	2.51	3727.82
	06/08/07	3787.81	59.89	65.44	5.55	3727.09
	06/13/07	3787.81	58.99	66.23	7.24	3727.73
	06/18/07	3787.81	59.62	67.12	7.50	3727.07
	06/28/07	3787.81	59.63	67.10	7.47	3727.06
	07/17/07	3787.81	59.59	67.04	7.45	3727.10
	07/24/07	3787.81	59.75	67.10	7.35	3726.96
	07/27/07	3787.81	59.70	67.11	7.41	3727.00
	08/07/07	3787.81	59.55	67.05	7.50	3727.14
	08/14/07	3787.81	59.71	67.18	7.47	3726.98
	08/23/07	3787.81	60.98	61.65	0.67	3726.73
	08/28/07	3787.81	61.24	62.07	0.83	3726.45
08/31/07	3787.81	60.63	62.61	1.98	3726.88	
09/06/07	3787.81	61.09	61.20	0.11	3726.70	
09/18/07	3787.81	61.09	61.15	0.06	3726.71	
09/25/07	3787.81	61.14	61.23	0.09	3726.66	
09/27/07	3787.81	61.12	61.14	0.02	3726.69	
10/02/07	3787.81	61.11	61.12	0.01	3726.70	
10/05/07	3787.81	61.11	61.13	0.02	3726.70	
10/09/07	3787.81	61.10	61.14	0.04	3726.70	
10/16/07	3787.81	60.16	60.81	0.65	3727.55	
10/30/07	3787.81	59.68	63.21	3.53	3727.60	
11/21/07	3787.81	59.86	67.12	7.26	3726.86	
RW-4	01/02/07	3787.74	59.45	66.50	7.05	3727.23
	01/05/07	3787.74	59.78	65.08	5.30	3727.17
	01/08/07	3787.74	59.79	64.89	5.10	3727.19
	01/12/07	3787.74	59.80	65.08	5.28	3727.15
	01/16/07	3787.74	59.60	66.14	6.54	3727.16
01/30/07	3787.74	59.54	66.45	6.91	3727.16	

TABLE 1

2007 GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
 DARR ANGELL 2  
 LEA COUNTY, NEW MEXICO  
 NMOCD REFERENCE NUMBER AP-007

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
RW-4	02/07/07	3787.74	60.62	65.11	4.49	3726.45
	02/09/07	3787.74	60.10	61.31	1.21	3727.46
	02/22/07	3787.74	59.55	66.60	7.05	3727.13
	03/21/07	3787.74	59.59	66.52	6.93	3727.11
	04/04/07	3787.74	59.61	65.61	6.00	3727.23
	04/11/07	3787.74	59.62	66.51	6.89	3727.09
	04/13/07	3787.74	60.05	64.50	4.45	3727.02
	04/20/07	3787.74	59.19	64.81	5.62	3727.71
	04/27/07	3787.74	59.61	64.59	4.98	3727.38
	05/14/07	3787.74	59.67	66.71	7.04	3727.01
	05/24/07	3787.74	59.65	66.67	7.02	3727.04
	06/06/07	3787.74	59.60	66.80	7.20	3727.06
	06/08/07	3787.74	60.03	64.76	4.73	3727.00
	06/13/07	3787.74	59.61	66.67	7.06	3727.07
	06/18/07	3787.74	59.65	66.73	7.08	3727.03
	06/28/07	3787.74	59.67	66.73	7.06	3727.01
	07/17/07	3787.74	59.68	66.73	7.05	3727.00
	07/24/07	3787.74	59.68	66.75	7.07	3727.00
	07/27/07	3787.74	59.75	66.77	7.02	3726.94
	08/07/07	3787.74	59.73	66.73	7.00	3726.96
	08/14/07	3787.74	59.76	66.81	7.05	3726.92
	08/24/07	3787.74	59.79	66.76	6.97	3726.90
	08/28/07	3787.74	59.91	66.14	6.23	3726.90
	08/31/07	3787.74	60.02	65.34	5.32	3726.92
	09/06/07	3787.74	60.11	65.40	5.29	3726.84
	09/18/07	3787.74	59.97	66.21	6.24	3726.83
	09/25/07	3787.74	60.84	61.88	1.04	3726.74
	09/27/07	3787.74	60.80	61.67	0.87	3726.81
	10/02/07	3787.74	60.80	61.71	0.91	3726.80
	10/16/07	3787.74	60.89	64.28	3.39	3726.34
10/30/07	3787.74	60.68	63.04	2.36	3726.71	
11/20/07	3787.74	60.68	63.04	2.36	3726.71	
11/21/07	3787.74	59.86	61.39	1.53	3727.65	
RW-5	01/02/07	3787.38	59.44	64.81	5.37	3727.13
	01/05/07	3787.38	59.89	62.73	2.84	3727.06
	01/08/07	3787.38	59.95	62.48	2.53	3727.05
	01/12/07	3787.38	59.96	62.33	2.37	3727.06
	01/16/07	3787.38	59.77	63.49	3.72	3727.05
	01/30/07	3787.38	59.56	64.57	5.01	3727.07
	02/07/07	3787.38	60.42	60.76	0.34	3726.91
	02/09/07	3787.38	60.50	60.62	0.12	3726.86
	02/22/07	3787.38	59.53	65.55	6.02	3726.95
	03/21/07	3787.38	59.58	64.73	5.15	3727.03
	04/04/07	3787.38	59.39	65.52	6.13	3727.07
	04/11/07	3787.38	59.75	63.39	3.64	3727.08
	04/13/07	3787.38	60.19	62.19	2.00	3726.89
	04/20/07	3787.38	60.41	62.41	2.00	3726.67
	04/27/07	3787.38	60.22	62.56	2.34	3726.81
	05/14/07	3787.38	59.66	64.92	5.26	3726.93
	05/24/07	3787.38	60.17	62.82	2.65	3726.81
	06/06/07	3787.38	60.04	63.16	3.12	3726.87
	06/08/07	3787.38	60.38	61.86	1.48	3726.78

TABLE 1

## 2007 GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
DARR ANGELL 2  
LEA COUNTY, NEW MEXICO  
NMCD REFERENCE NUMBER AP-007

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
RW-5	06/13/07	3787.38	60.10	62.99	2.89	3726.85
	06/18/07	3787.38	59.90	65.23	5.33	3726.68
	06/28/07	3787.38	59.53	65.40	5.87	3726.97
	07/17/07	3787.38	59.55	65.88	6.33	3726.88
	07/24/07	3787.38	60.75	60.80	0.05	3726.62
	07/27/07	3787.38	60.69	60.71	0.02	3726.69
	08/07/07	3787.38	59.90	64.61	4.71	3726.77
	08/14/07	3787.38	60.75	60.76	0.01	3726.63
	08/23/07	3787.38	60.67	61.36	0.69	3726.61
	08/28/07	3787.38	60.76	61.06	0.30	3726.58
	08/31/07	3787.38	60.52	61.74	1.22	3726.68
	09/06/07	3787.38	60.74	61.39	0.65	3726.54
	09/18/07	3787.38	60.91	60.92	0.01	3726.47
	09/25/07	3787.38	sheen	60.93	0.00	3726.45
	09/27/07	3787.38	60.86	60.87	0.01	3726.52
	10/02/07	3787.38	60.85	60.87	0.02	3726.53
	10/05/07	3787.38	60.86	60.87	0.01	3726.52
	10/09/07	3787.38	sheen	60.93	0.00	3726.45
	10/16/07	3787.38	60.39	62.82	2.43	3726.63
	10/23/07	3787.38	60.24	63.57	3.33	3726.64
10/30/07	3787.38	60.14	63.57	3.43	3726.73	
11/14/07	3787.38	60.21	63.77	3.56	3726.64	
11/21/07	3787.38	60.30	63.30	3.00	3726.63	
11/29/07	3787.38	59.58	64.67	5.09	3727.04	
12/13/07	3787.38	60.25	63.65	3.40	3726.62	
RW-6	01/02/07	3787.22	58.63	66.67	8.04	3727.38
	01/05/07	3787.22	58.64	66.70	8.06	3727.37
	01/08/07	3787.22	58.65	66.59	7.94	3727.38
	01/12/07	3787.22	58.66	66.58	7.92	3727.37
	01/16/07	3787.22	58.66	66.63	7.97	3727.36
	01/30/07	3787.22	58.66	66.71	8.05	3727.35
	02/07/07	3787.22	58.80	66.34	7.54	3727.29
	02/09/07	3787.22	59.50	63.70	4.20	3727.09
	02/22/07	3787.22	58.69	66.74	8.05	3727.32
	03/21/07	3787.22	58.76	66.57	7.81	3727.29
	04/04/07	3787.22	58.80	66.64	7.84	3727.24
	04/11/07	3787.22	58.83	66.78	7.95	3727.20
	04/13/07	3787.22	58.90	66.49	7.59	3727.18
	04/20/07	3787.22	58.91	66.34	7.43	3727.20
	04/27/07	3787.22	59.12	65.76	6.64	3727.10
	05/14/07	3787.22	58.93	66.70	7.77	3727.12
	05/24/07	3787.22	59.37	64.19	4.82	3727.13
	06/06/07	3787.22	59.34	64.64	5.30	3727.09
	06/08/07	3787.22	59.39	64.35	4.96	3727.09
	06/13/07	3787.22	59.20	63.31	4.11	3727.40
06/18/07	3787.22	59.12	64.01	4.89	3727.37	
06/28/07	3787.22	59.25	64.95	5.70	3727.12	
07/17/07	3787.22	58.92	66.68	7.76	3727.14	
07/24/07	3787.22	59.26	65.72	6.46	3726.99	
07/27/07	3787.22	60.04	61.93	1.89	3726.90	
08/07/07	3787.22	59.67	64.03	4.36	3726.90	
08/14/07	3787.22	60.09	62.41	2.32	3726.78	

TABLE 1

2007 GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
 DARR ANGELL 2  
 LEA COUNTY, NEW MEXICO  
 NMOCD REFERENCE NUMBER AP-007

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
RW-6	08/23/07	3787.22	59.98	62.95	2.97	3726.79
	08/28/07	3787.22	60.73	63.13	2.40	3726.13
	08/31/07	3787.22	59.70	63.84	4.14	3726.90
	09/06/07	3787.22	60.30	61.63	1.33	3726.72
	09/18/07	3787.22	60.89	61.73	0.84	3726.20
	09/25/07	3787.22	59.17	66.55	7.38	3726.94
	09/27/07	3787.22	59.20	66.40	7.20	3726.94
	10/02/07	3787.22	59.11	67.17	8.06	3726.90
	10/05/07	3787.22	59.15	67.17	8.02	3726.87
	10/09/07	3787.22	59.20	66.69	7.49	3726.90
	10/16/07	3787.22	59.12	66.96	7.84	3726.92
	10/23/07	3787.22	59.11	66.98	7.87	3726.93
	10/30/07	3787.22	59.16	67.04	7.88	3726.88
	11/14/07	3787.22	59.11	66.98	7.87	3726.93
	11/21/07	3787.22	59.12	67.02	7.90	3726.92
11/29/07	3787.22	59.08	67.02	7.94	3726.95	
12/13/07	3787.22	59.19	67.15	7.96	3726.84	
RW-7	01/02/07	3787.40	58.89	66.41	7.52	3727.38
	01/05/07	3787.40	59.24	64.87	5.63	3727.32
	01/08/07	3787.40	59.24	64.80	5.56	3727.33
	01/12/07	3787.40	59.31	64.94	5.63	3727.25
	01/16/07	3787.40	59.09	65.91	6.82	3727.29
	01/30/07	3787.40	59.07	66.21	7.14	3727.26
	02/07/07	3787.40	59.25	65.30	6.05	3727.24
	02/09/07	3787.40	59.70	60.90	1.20	3727.52
	02/22/07	3787.40	59.13	66.10	6.97	3727.22
	03/21/07	3787.40	59.08	66.41	7.33	3727.22
	04/04/07	3787.40	58.99	66.38	7.39	3727.30
	04/11/07	3787.40	59.10	66.09	6.99	3727.25
	04/13/07	3787.40	59.59	63.88	4.29	3727.17
	04/20/07	3787.40	59.19	66.02	6.83	3727.19
	04/27/07	3787.40	59.10	66.55	7.45	3727.18
	05/14/07	3787.40	59.10	66.77	7.67	3727.15
	05/24/07	3787.40	59.15	66.50	7.35	3727.15
	06/06/07	3787.40	59.11	66.75	7.64	3727.14
	06/08/07	3787.40	59.70	64.06	4.36	3727.05
	06/13/07	3787.40	59.15	66.70	7.55	3727.12
	06/18/07	3787.40	59.18	65.17	5.99	3727.32
	06/28/07	3787.40	59.16	66.75	7.59	3727.10
	07/17/07	3787.40	59.10	66.65	7.55	3727.17
	07/24/07	3787.40	59.26	66.30	7.04	3727.08
	07/27/07	3787.40	59.07	66.80	7.73	3727.17
08/28/07	3787.40				Well Obstructed	
08/31/07	3787.40				Well Obstructed	
09/06/07	3787.40				Well Obstructed	
10/16/07	3787.40	59.12			Well Obstructed	
10/30/07	3787.40	59.39	60.15	0.76	3727.90	
11/14/07	3787.40	59.49	60.2	0.71	3727.80	
11/21/07	3787.40	59.21	-	-	-	
11/29/07	3787.40	59.45	60.35	0.90	3727.82	
12/13/07	3787.40	59.44	60.23	0.79	3727.84	

TABLE 2

2007 CONCENTRATIONS OF BTEX IN GROUNDWATER

PLAINS MARKETING, L.P.  
 DARR ANGELL 2  
 LEA COUNTY, NEW MEXICO  
 NMOCD REFERENCE NUMBER AP-007

Results are reported in mg/L.

SAMPLE LOCATION	SAMPLE DATE	SW 846-8021B, 5030,8260b BTEX			
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES o - XYLENE
<b>NMOCD Regulatory Limit</b>		<b>0.01</b>	<b>0.75</b>	<b>0.75</b>	<b>0.62</b>
MW-1	03/21/07	Not Sampled on Current Sample Schedule			
	06/08/07	Not Sampled on Current Sample Schedule			
	08/31/07	Not Sampled on Current Sample Schedule			
	11/21/07	<0.001	<0.001	<0.001	0.002
MW-2	03/21/07	Not Sampled Due to PSH in Well			
	06/08/07	Not Sampled Due to PSH in Well			
	08/31/07	Not Sampled Due to PSH in Well			
	11/21/07	Not Sampled Due to PSH in Well			
MW-3	03/21/07	0.319	<0.0200	<0.0200	0.0921
	06/08/07	0.594	<0.02	<0.02	0.192
	08/31/07	0.691	<0.001	<0.001	0.194
	11/21/07	0.885	<0.005	0.0071	0.249
MW-4	03/21/07	Not Sampled on Current Sample Schedule			
	06/21/07	<0.001	<0.001	<0.001	<0.001
	08/31/07	Not Sampled on Current Sample Schedule			
	11/21/07	<0.001	<0.001	<0.001	<0.001
MW-6	03/21/07	Not Sampled on Current Sample Schedule			
	06/21/07	Not Sampled on Current Sample Schedule			
	08/31/07	Not Sampled on Current Sample Schedule			
	11/21/07	<0.001	<0.001	<0.001	<0.001
MW-7	03/21/07	Not Sampled on Current Sample Schedule			
	06/21/07	Not Sampled on Current Sample Schedule			
	08/31/07	Not Sampled on Current Sample Schedule			
	11/21/07	<0.001	<0.001	<0.001	<0.001
MW-8	03/21/07	Not Sampled on Current Sample Schedule			
	06/21/07	Not Sampled on Current Sample Schedule			
	08/31/07	Not Sampled on Current Sample Schedule			
	11/21/07	<0.001	<0.001	<0.001	<0.001
MW-9	03/21/07	Not Sampled on Current Sample Schedule			
	06/21/07	Not Sampled on Current Sample Schedule			
	08/31/07	Not Sampled on Current Sample Schedule			
	11/21/07	<0.001	<0.001	<0.001	<0.001
MW-10	03/21/07	Not Sampled on Current Sample Schedule			
	06/21/07	Not Sampled on Current Sample Schedule			
	08/31/07	Not Sampled on Current Sample Schedule			
	11/21/07	<0.001	<0.001	<0.001	0.0015
MW-11	12/04/07	<0.001	<0.001	<0.001	<0.001
RW-1	03/21/07	Not Sampled Due to PSH in Well			
	06/21/07	Not Sampled Due to PSH in Well			
	08/31/07	Not Sampled Due to PSH in Well			
	11/21/07	Not Sampled Due to PSH in Well			

TABLE 2

2007 CONCENTRATIONS OF BTEX IN GROUNDWATER

PLAINS MARKETING, L.P.  
 DARR ANGELL 2  
 LEA COUNTY, NEW MEXICO  
 NMOCD REFERENCE NUMBER AP-007

Results are reported in mg/L.

SAMPLE LOCATION	SAMPLE DATE	SW 846-8021B, 5030,8260b BTEX				
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE
<b>NMOCD Regulatory Limit</b>		0.01	0.75	0.75	0.62	
RW-2	03/21/07	Not Sampled Due to PSH in Well				
	06/21/07	Not Sampled Due to PSH in Well				
	08/31/07	Not Sampled Due to PSH in Well				
	11/21/07	Not Sampled Due to PSH in Well				
RW-3	03/21/07	Not Sampled Due to PSH in Well				
	06/21/07	Not Sampled Due to PSH in Well				
	08/31/07	Not Sampled Due to PSH in Well				
	11/21/07	Not Sampled Due to PSH in Well				
RW-4	03/21/07	Not Sampled Due to PSH in Well				
	06/21/07	Not Sampled Due to PSH in Well				
	08/31/07	Not Sampled Due to PSH in Well				
	11/21/07	Not Sampled Due to PSH in Well				
RW-5	03/21/07	Not Sampled Due to PSH in Well				
	06/21/07	Not Sampled Due to PSH in Well				
	08/31/07	Not Sampled Due to PSH in Well				
	11/21/07	Not Sampled Due to PSH in Well				
RW-6	03/21/07	Not Sampled Due to PSH in Well				
	06/21/07	Not Sampled Due to PSH in Well				
	08/31/07	Not Sampled Due to PSH in Well				
	11/21/07	Not Sampled Due to PSH in Well				
RW-7	03/21/07	Not Sampled Due to PSH in Well				
	06/21/07	Not Sampled Due to PSH in Well				
	08/31/07	Not Sampled Due to PSH in Well and Well Obstruction				
	11/21/07	Not Sampled Due to PSH in Well and Well Obstruction				
as not sampled due to landowner denying access.						

TABLE 3

2007 CONCENTRATIONS OF BTEX AND TPH IN SOIL

PLAINS MARKETING, L.P.  
 DARR ANGELL 2  
 LEA COUNTY, NEW MEXICO  
 NMOCD Reference # AP-007

*All concentrations are reported in mg/kg*

SAMPLE LOCATION	SAMPLE DATE	EPA SW 8746-8021B, 5030					EPA SW 846-8015M			
		BENZENE	TOLUENE	ETHYL-BENZENE	m,p-XYLENE	o-XYLENE	TOTAL BTEX	GRO (C <sub>6</sub> -C <sub>10</sub> )	DRO (>C <sub>10</sub> -C <sub>25</sub> )	TOTAL TPH
NMOCD REGULATORY LIMIT		10					50			100
MW-11 @ 20'	11/29/2007	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	2.48	<50.0	<50.0
MW-11 @ 30'	11/29/2007	-	-	-	-	-	-	1.67	<50.0	<50.0
MW-11 @ 40'	11/29/2007	-	-	-	-	-	-	1.48	<50.0	<50.0
MW-11 @ 50'	11/29/2007	-	-	-	-	-	-	1.24	<50.0	<50.0



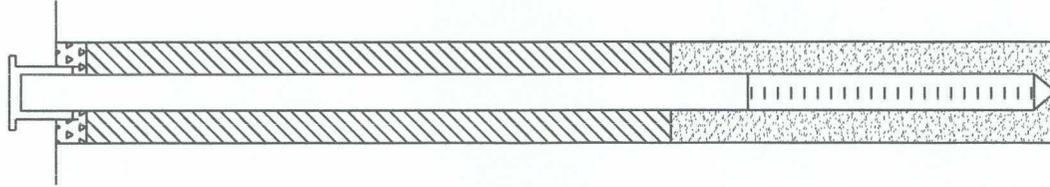
## Appendices



Appendix A  
Monitor Well Logs

# Monitoring Well MW - 11

Depth (feet)	Soil Columns	PID Reading	Notes	Soil Description
0				
5		0.5	None	0' - 5' Sand and clay, tan with some caliche fragments.
10		0.3	None	5' - 21' Sand, tan, fine grained, moist.
15		0.2	None	
20		0.2	None	21' - 25' Limestone, grey, hard, dry.
25		0.1	None	25' - 30' Sand, tan, fine grained with caliche fragments.
30		0.2	None	30' - 34' Limestone, grey, hard, dry.
35		0.1	None	
40		0.1	None	34' - 45' Sand, tan, very fine grained, soft with some limestone nodules.
45		0.3	None	
50		0.1	None	
55		0.3	None	45' - 65' Sand, tan, very fine grained.
60		0.3	None	
65		0.2	None	



## Monitoring Well Details

Date Drilled 12-04-07  
 Thickness of Bentonite Seal 38 ft.  
 Length of PVC Well Screen 20 ft.  
 Depth of PVC Well 65 ft.  
 Depth of Exploratory Well 65 ft.  
 Depth to Ground Water 55 ft.

- Grout Surface Seal
- Bentonite Pellet Seal
- Sand Pack
- Screen
- Indicates samples selected for laboratory analysis.

Indicates the ground water level measured on date.

PID Head-space reading in ppm obtained with a photo-ionization detector.

## Completion Notes

1. The monitoring well was installed on date using air rotary drilling techniques.
2. The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
3. The well is protected with a locked stick up steel cover and a compression cap.
4. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5. The depths indicated are referenced from the ground surface.

NMOCID Ref# AP-007

## Boring Log And Monitoring Well

### Monitoring Well - 11

Plains Pipeline, L.P. Darr Angell #2 Lea County, NM

NOVA Safety and Environmental



Scale: use scale CAD By: DGC Checked By: CDS  
 March 19, 2008

Appendix B  
Release Notification and Corrective Action  
(Form C-141)

Darr Angell #2

Release Notification and Corrective Action

OPERATOR

Initial Report  Final Report

Location East Energy Pipeline PO Box 9660 Midland Tx 79702	Operator Lennah Frost
Facility Name Devon Gathering	Telephone No 915/6843467
Mineral Owner Darr Angell	Lease No.

LOCATION OF RELEASE

Section 14	Township 15-S	Range 37-E	Feet from the North/South Line	Feet from the East-West Line	County Lea
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NATURE OF RELEASE

Type of Release Crude oil	Volume of Release 60001	Volume Recovered 0
Location of Release Pipeline Leak	Date and Time of Occurrence unknown	Date and Time of Discovery 7/29/99 4pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, to Whom? Linda - Hobbs (C)	
Who? Lennah Frost Jim Henry	Date and Time 8/30/99 2:30 pm	
Was a Professional Assessed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If Yes, Release Impacting the Hydrocarbon?	

Describe fully (Attach Addressed Sheets if Necessary)

Corrective Action of Problem and Remedial Action Taken (Attach Additional Sheets if Necessary)  
 External Corrosion - pipe will be replaced

What has been and cleanup action taken (Attach Additional Sheets if Necessary)  
 Will evaluate once the pipe has been replaced -  
 Probable treat on site

I hereby certify that the information given above is true and complete to the best of my knowledge and understanding and understand that pursuant to NMOCED rules and regulations all operations required in order to insure the proper release, manufacture and control, collection, storage for release which may endanger public health or the environment. The acceptance of this report by the NMOCED described as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate the cause of the release, or ground water, surface water, human health or the environment. In addition, NMOCED 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.

Operator Lennah Frost	Oil Conservation Division
Approved Name Lennah Frost	Approved by District Supervisor
Date 8-3-99	Approval Date 8/15/99
Phone 915/6843467	Expiration Date
Condition of Approval	Accepted <input type="checkbox"/>