



**DCP Midstream**  
370 17<sup>th</sup> Street, Suite 2500  
Denver, CO 80202  
303-595-3331  
303-605-2226 FAX

September 19, 2012

Mr. Leonard Lowe  
Environmental Engineer  
New Mexico Oil Conservation Division  
1220 S. St. Francis Dr.  
Santa Fe, NM 87505

**RE: 2nd Quarter 2012 Groundwater Monitoring Results  
DCP X-Line Pipeline Release (1RP-400-0)  
Unit B, Section 7, T15S, R34E (Lat 33° 02' 11", Long 103° 32' 48")**

2012 SEP 18 AM 11:03

RECEIVED  
OCD

Dear Mr. Lowe:

DCP Midstream, LP (DCP) is pleased to submit for your review, one copy of the 2nd Quarter 2012 Groundwater Monitoring Results for the DCP X-Line Pipeline Release located within the Etcheverry Ranch, Lea County, New Mexico.

If you have any questions regarding the report, please call at 303-605-1718 or e-mail me [swweathers@dcpmidstream.com](mailto:swweathers@dcpmidstream.com).

Sincerely

**DCP Midstream, LP**

Stephen Weathers, PG  
Principal Environmental Specialist

cc: Mrs. Etcheverry, Landowner - Certified Mail 91 7108 2133 3938 9761 6687  
Geoffrey Leking, OCD Hobbs District Office (Copy on CD)  
Environmental Files

# Second Quarter 2012 Groundwater Monitoring and Activities Summary Report

## X-Line Pipeline Release – Etcheverry Ranch Lea County, New Mexico

1RP-400-0

Prepared for:



370 17<sup>th</sup> St., Suite 2500  
Denver, CO 80202

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2012 SEP 18 AM 11:03

*Prepared by:*



5690 Webster Street  
Arvada, CO 80002

**August 1, 2012**

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## 1. Introduction

This report summarizes the remediation system activities and results of groundwater monitoring activities conducted during the second quarter 2012, at the X-Line Pipeline Release (Site) at the Etcheverry Ranch in Lea County, New Mexico (Figure 1). Tasman Geosciences, LLC (Tasman) conducted these activities on behalf of DCP Midstream, LP (DCP). The purpose of the field activities described herein were to; a) measure groundwater levels; b) obtain groundwater samples for chemical analysis; c) subsequently evaluate and present groundwater flow and quality conditions; and d) assess and conduct remediation system operations and maintenance (O&M) activities. Current Site conditions and remediation system operation were evaluated from field data and analytical laboratory results collected during the reporting period.

## 2. Site Location and Background

The Site is located in New Mexico Oil Conservation Division (OCD) designated Unit B, Section 7, Township 15 South, Range 34 East (Figure 1). The OCD reference for the Site is 1R-0400. The facility coordinates are 33.036389 degrees north and 103.546667 degrees west. The area is sparsely populated and land use is primarily associated with livestock grazing and oil and gas extraction and conveyance.

Historical documents indicate that a pipeline release occurred at the Site during the latter part of 2001. Soil boring activities conducted by Environmental Plus Incorporated (EPI) estimated that the contaminated soil column was approximately 40-feet in diameter at the surface, tapering to approximately 20-feet in diameter at 37-feet below ground surface (bgs) and extending at that diameter to the top of water table at approximately 75-feet bgs. EPI conducted soil excavation activities between January and March of 2002 which included the removal and disposal of approximately 6,746 cubic yards ( $yd^3$ ) of impacted material to a depth of 37 feet bgs. The material was then disposed of at the OCD approved and permitted Artesia Aeration Landfarm in Maljamar, New Mexico. Subsequent to excavation activities, the open pit was backfilled and compacted with overburden and unaffected materials. It was estimated that approximately 560  $yd^3$  of impacted material remained in place.

Seven groundwater monitoring wells (MW-1 through MW-7) were installed at the Site which are illustrated on Figure 2. Additionally, one light non-aqueous phase liquid (LNAPL) recovery well was installed and used to extract LNAPL material from the groundwater table. The well was re-drilled and used as a groundwater monitoring well (MW-8) following LNAPL recovery conducted between July 2003 and 2004.

Currently, the Site remediation components include an operational soil vapor extraction (SVE) and air sparge (AS) remediation system (System). Installation activities were completed by EPI and the system became fully functional by mid-June of 2003. Since that time, the system has had minimal downtime due, in part, to routine maintenance and minor equipment failures.

### 3. Groundwater Monitoring

This section describes the field groundwater monitoring activities as well as the laboratory analyses performed during the second quarter 2012 monitoring event. Monitoring activities included Site-wide groundwater gauging and groundwater sampling and were performed on the 8<sup>th</sup> June 2012. Figure 2 illustrates the groundwater monitoring network utilized to perform these activities at the Site.

#### 3.1 Groundwater Elevation Monitoring

Groundwater levels were measured in order to evaluate hydraulic characteristics and provide information regarding seasonal fluctuations in groundwater at the Site. In addition, wells were measured for total depth and groundwater purge volumes calculated. During the second quarter 2012 monitoring event, groundwater levels were measured at all eight of the monitoring well locations.

Groundwater levels were measured on the north side of the well casing to the nearest 0.01-foot using an oil-water interface probe (IP) and were then converted to elevations (feet above mean sea level [AMSL])

Groundwater elevations collected during the second quarter 2012 monitoring event are presented in Table 1, and a second quarter 2012 groundwater elevation contour map is illustrated on Figure 3. Groundwater elevations ranged from 4,088.60 feet AMSL at monitoring well MW-5 to 4,089.34 feet AMSL in monitoring well MW-1. Since surveyed top of casing (TOC) elevations are not available for monitoring wells MW-7 and MW-8, groundwater elevations could not be calculated for those wells. As illustrated on Figure 3, groundwater flow at the Site generally trends to the southeast with a gradient of approximately 0.0025 foot per foot between monitoring wells MW-1 and MW-5.

#### 3.2 Groundwater Quality Monitoring

Subsequent to the collection of groundwater level measurements at each monitoring well, groundwater samples were collected from all eight wells. A minimum of three well casing volumes of groundwater were purged using polyethylene bailers prior to collecting groundwater samples. Groundwater samples were collected using dedicated polyethylene bailers, placed in clean laboratory supplied containers and packed in an ice-filled cooler and maintained at approximately four degrees Celsius (°C) for transportation. Groundwater samples were then shipped under chain-of-custody procedures to Accutest Laboratories (Accutest) in Wheat Ridge, Colorado, for analysis.

Water quality samples were submitted to Accutest for benzene, toluene, ethylbenzene, and xylene (BTEX) analyses by United States Environmental Protection Agency (USEPA) Method 8260B.

Table 2 summarizes BTEX concentrations in groundwater samples collected during the reporting period in addition to concentrations for the previous 4 quarters. Laboratory analytical reports for the event are included in Appendix A and historical analytical results up to and including the June 2012

event are contained in Appendix B. Analytical results are summarized on Figure 4. During the second quarter 2012 monitoring event, BTEX concentrations did not exceed the New Mexico Water Quality Control Commission (NMWQCC) groundwater standards in any of the eight monitoring wells.

Water quality parameters were collected during the second quarter 2012 monitoring event and utilized to confirm groundwater stabilization prior to sample collection. Parameter stabilization was achieved within three purge volumes. Therefore, the analytical data are considered to be representative of Site conditions.

### **3.3 Data Quality Assurance / Quality Control**

The data were reviewed for compliance with the analytical method and the associated quality assurance/quality control (QA/QC) procedures. All samples were analyzed using the correct analytical methods and within the correct holding times. Chain of custody forms were in order and properly executed and indicate that samples were received at the proper temperature with no headspace. All data were reported using the correct method number and reporting units. A trip blank, matrix spike or matrix spike duplicate (MS/MSD) and field duplicate sample from well MW-1 were collected during the sampling event.

The trip blank was fully in control, having no detections of targets.

The duplicate sample collected from MW-1 was in compliance with QA/QC standards, both samples returning results for benzene below the reporting limit of 0.0010 mg/l.

The overall QA/QC assessment of the data, based on the data review, indicate that both field precision and overall data precision and accuracy are acceptable.

### **4. Remediation System O&M Activities**

The air sparge and soil vapor extraction systems were turned off during the reporting period, on June 3<sup>rd</sup>, to monitor dissolved phase concentration trends within the targeted remediation area subsequent to system shutdown. Groundwater samples were collected on June 8<sup>th</sup>, five days after the system was turned off.

### **5. Conclusions**

All groundwater monitoring wells sampled during the reporting period returned BTEX concentrations below New Mexico Water Quality Control Commission Groundwater Standards and, with the exception of MW-2, all groundwater samples were below laboratory detection limits.

Monitoring well MW-8 was converted to an air sparge well in December 2011, was then disconnected in March 2012 in order to commence quarterly groundwater sampling. Analytical results from the second quarter 2012 event confirm that air sparging has been successful in

mitigating the dissolved phase hydrocarbon concentrations in MW-8 as benzene detections were reported below the laboratory reporting limit.

Analytical results were reported above the laboratory detection limits for total xylenes and ethylbenzene in monitoring well MW-2; however, concentrations were still below the NMWQCC Groundwater Standards.

Based on the most current and historic groundwater concentration data, the dissolved phase hydrocarbon plume has been significantly reduced as a result of successful system remediation operation. Dissolved phase hydrocarbon concentrations did not exhibit any increase subsequent to the remediation system shut down.

## 6. Recommendations

Based on evaluation of data obtained during this reporting period, historical Site observations, and the remediation system operational parameters, the following recommendations have been developed for future activities at the Site:

Continue four additional quarterly groundwater monitoring events at the eight monitoring well locations provided in Table 1 in order to demonstrate that the dissolved phase hydrocarbon plume has been successfully mitigated.

*Tables*

**TABLE 1**  
**SECOND QUARTER 2012**  
**SUMMARY OF GROUNDWATER ELEVATION DATA**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location	Date	Depth to Groundwater (1) (feet)	Total Depth (2) (feet)	TOC Elevation (3) (feet amsl)	Groundwater Elevation (feet amsl)	Change in Groundwater Elevation Since Previous Event (4) (feet)
MW-1	6/22/2011			4166.82	4089.35	-0.04
MW-1	9/18/2011	77.42	91.00	4166.82	4089.40	0.05
MW-1	12/9/2011	77.46	91.00	4166.82	4089.36	-0.04
MW-1	3/11/2012	77.43	91.00	4166.82	4089.39	0.03
MW-1	6/8/2012	77.48	91.00	4166.82	4089.34	-0.05
MW-2	6/22/2011			4167.66	4089.18	-
MW-2	9/18/2011	77.42	88.00	4166.66	4089.24	0.06
MW-2	12/9/2011	77.46	88.00	4166.66	4089.20	-0.04
MW-2	3/11/2012	77.42	88.00	4166.66	4089.24	0.04
MW-2	6/8/2012	77.47	88.00	4166.66	4089.19	-0.05
MW-3	6/22/2011			4166.17	4088.97	-
MW-3	9/18/2011	78.42	91.00	4166.17	4087.75	-1.22
MW-3	12/9/2011	77.46	91.00	4166.17	4088.71	0.96
MW-3	3/11/2012	77.45	91.00	4166.17	4088.72	0.01
MW-3	6/8/2012	77.51	91.00	4166.17	4088.66	-0.06
MW-4	6/22/2011			4166.40	4088.83	-
MW-4	9/18/2011	77.55	91.00	4166.40	4088.85	0.02
MW-4	12/9/2011	77.60	91.00	4166.40	4088.80	-0.05
MW-4	3/11/2012	77.60	91.00	4166.40	4088.80	0.00
MW-4	6/8/2012	77.62	91.00	4166.40	4088.78	-0.02
MW-5	6/22/2011			4165.90	4088.74	-
MW-5	9/18/2011	77.22	89.00	4165.90	4088.68	-0.06
MW-5	12/9/2011	77.25	89.00	4165.90	4088.65	-0.03
MW-5	3/11/2012	77.25	89.00	4165.90	4088.65	0.00
MW-5	6/8/2012	77.30	89.00	4165.90	4088.60	-0.05
MW-6	6/22/2011			4165.94	4088.82	-
MW-6	9/18/2011	77.14	90.00	4165.94	4088.80	-0.02
MW-6	12/9/2011	77.27	90.00	4165.94	4088.67	-0.13
MW-6	3/11/2012	77.17	90.00	4165.94	4088.77	0.10
MW-6	6/8/2012	77.20	90.00	4165.94	4088.74	-0.03
MW-7	6/22/2011				4088.82	-
MW-7	9/18/2011	76.69	85.00		NM	-
MW-7	12/9/2011	76.74	85.00	NM	NM	NM
MW-7	3/11/2012	76.75	85.00	NM	NM	NM
MW-7	6/8/2012	76.80	85.00	NM	NM	NM
MW-8	6/22/2011					
MW-8	9/18/2011	78.15	81.35		NM	NM
MW-8	12/9/2011	NM	81.35		NM	NM
MW-8	3/11/2012	75.85	81.35		NM	NM
MW-8	6/8/2012	77.46	81.35		NM	NM
Average Change in groundwater elevation since the previous monitoring event						-0.04

Notes:

1- Depths measured from the north edge of the well casing.

2- Total depths were collected and recorded during the second quarter 2012 monitoring event.

**TABLE 1**  
**SECOND QUARTER 2012**  
**SUMMARY OF GROUNDWATER ELEVATION DATA**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location	Date	Depth to Groundwater (1) (feet)	Total Depth (2) (feet)	TOC Elevation (3) (feet amsl)	Groundwater Elevation (feet amsl)	Change in Groundwater Elevation Since Previous Event (4) (feet)
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3-TOC elevations for monitoring wells MW-7, & MW-8 were not available at the time this report was generated. Therefore, groundwater elevations for those wells could not be calculated.

4- Changes in groundwater elevation were calculated by subtracting the measurement collected during the previous monitoring even from the measurement collected during the most recent monitoring event.

Data presented for the well locations includes previous four sampling events, when available. Historic groundwater elevation data for these locations may be found in Appendix B.

Sample locations are shown on Figure 2 and a groundwater elevation contour map is shown on Figure 3.

amsl - feet above mean sea level.

TOC - top of casing

NM - not measured

**TABLE 2**  
**SECOND QUARTER 2012**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-1	3/28/2011	<0.001	<0.002	<0.002	<0.004	
MW-1	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-1	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-1	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-1	3/11/2012	<0.001	<0.002	<0.002	<0.004	Duplicate sample collected
MW-1	6/8/2012	<0.001	<0.002	<0.002	<0.003	Duplicate sample collected
MW-2	3/28/2011	<0.001	0.005	<0.002	0.0455	
MW-2	6/22/2011	<0.002	1.002	<0.0164	1.185	
MW-2	9/18/2011	<0.001	<0.002	0.0123	0.14	
MW-2	12/9/2011	<0.0005	<0.001	0.0143	0.128	Duplicate sample collected
MW-2	3/11/2012	<0.001	<0.002	0.0036	0.0372	
MW-2	6/8/2012	<0.001	<0.002	0.00067	0.0056	
MW-3	3/28/2011	<0.001	<0.002	<0.002	<0.004	
MW-3	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-3	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-3	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-3	3/11/2012	<0.001	<0.002	<0.002	<0.004	
MW-3	6/8/2012	<0.001	<0.002	<0.002	<0.003	
MW-4	3/28/2011	<0.001	<0.002	<0.002	<0.004	
MW-4	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-4	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-4	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-4	3/11/2012	<0.001	<0.002	<0.002	<0.004	
MW-4	6/8/2012	<0.001	<0.002	<0.002	<0.003	
MW-5	3/28/2011	<0.001	<0.002	<0.002	0.012	
MW-5	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-5	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-5	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-5	3/11/2012	<0.001	<0.002	<0.002	<0.004	
MW-5	6/8/2012	<0.001	<0.002	<0.002	<0.003	
MW-6	3/28/2011	<0.001	<0.002	<0.002	<0.004	
MW-6	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-6	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-6	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-6	3/11/2012	<0.001	<0.002	<0.002	<0.004	
MW-6	6/8/2012	<0.001	<0.002	<0.002	<0.003	
MW-7	3/28/2011	<0.001	<0.002	<0.002	<0.004	
MW-7	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-7	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-7	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-7	3/11/2012	<0.001	<0.002	<0.002	<0.004	
MW-7	6/8/2012	<0.001	<0.002	<0.002	<0.003	

**TABLE 2**  
**SECOND QUARTER 2012**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
<b>New Mexico Water Quality Control Commission Groundwater Standards (mg/L)</b>		<b>0.01</b>	<b>0.75</b>	<b>0.75</b>	<b>0.62</b>	
MW-8	3/28/2011	<b>0.443</b>	0.0817	0.717	<b>2.34</b>	
MW-8	6/22/2011	<b>0.204</b>	0.444	0.0822	<b>2.72</b>	
MW-8	9/18/2011	<b>0.682</b>	0.699	0.112	<b>3.03</b>	
MW-8*	12/9/2011	NS	NS	NS	NS	
MW-8	3/11/2012	<b>0.0112</b>	0.0227	<0.02	0.0333	
MW-8	6/8/2012	<0.001	<0.002	<0.002	<0.003	

Notes:

The environmental cleanup standards for water that are applicable to this Site are the New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards.

Data presented for the well locations includes previous four sampling events, when available. Historic groundwater analytical results for these locations may be found in Appendix B.

**Bold red values** indicate an exceedance of the NMWQCC groundwater standards for the Site.

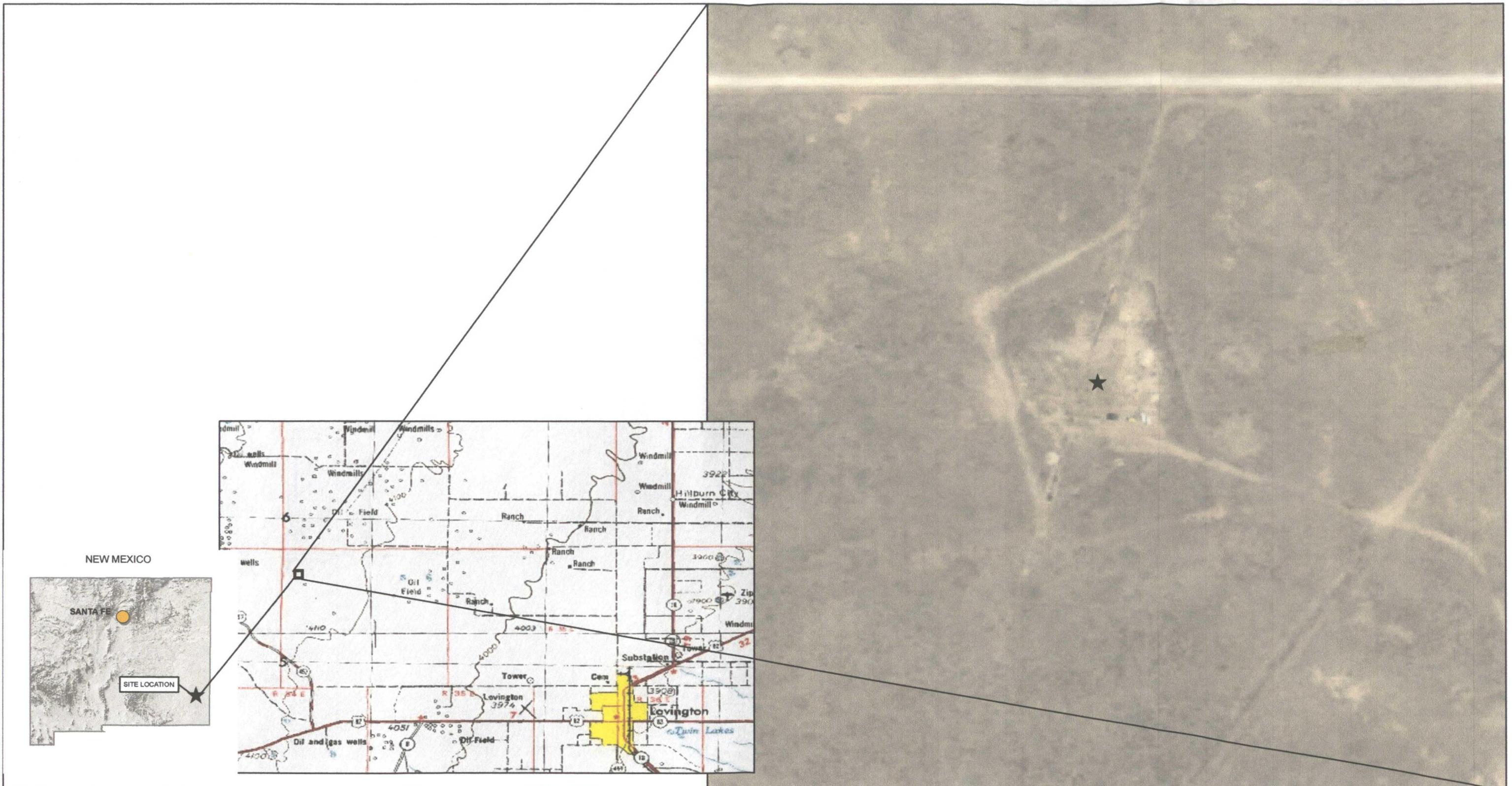
Sample locations are shown on Figure 2 and analytical results are illustrated on Figure 4.

NS = Not Sampled.

mg/L = milligrams per liter.

\* Monitoring well MW-8 was converted to an Air Sparge Injection point prior to the fourth quarter 2011 groundwater monitoring event. Therefore, groundwater samples were not collected from that well.

## **Figures**



DESIGNED BY: C. Wasko  
 DRAWN BY: J. Clonts  
 SHEET CHK'D BY: \_\_\_\_\_  
 CROSS CHK'D BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_



Tasman Geosciences, LLC  
 5690 Webster St.  
 Arvada, CO 80002  
 720-988-2024

## X-LINE PIPELINE RELEASE

Second Quarter 2012  
*Groundwater Monitoring  
 Summary Report*

SITE LOCATION

FIGURE  
 1



DESIGNED BY: C. Wasko  
 DRAWN BY: J. Clonts  
 SHEET CHK'D BY: \_\_\_\_\_  
 CROSS CHK'D BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_



Tasman Geosciences, LLC  
 5690 Webster St.  
 Arvada, CO 80002  
 720-988-2024

## X-LINE PIPELINE RELEASE

Second Quarter 2012  
*Groundwater Monitoring  
 Summary Report*

SITE MAP

FIGURE  
 2



DESIGNED BY: C. Wasko  
 DRAWN BY: J. Clonts  
 SHEET CHK'D BY: \_\_\_\_\_  
 CROSS CHK'D BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_



Tasman Geosciences, LLC  
 5690 Webster St.  
 Arvada, CO 8002  
 720-988-2024

## X-LINE PIPELINE RELEASE

Second Quarter 2012  
 Groundwater Monitoring  
 Summary Report

GROUNDWATER ELEVATION  
 CONTOUR MAP  
 (JUNE 8, 2012)

FIGURE  
 3

MW-1		
Compound	3/11/2012	6/8/2012
	(mg/L)	(mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.003

MW-2		
Compound	3/11/2012	6/8/2012
	(mg/L)	(mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	0.0036	0.00067
Total Xylenes	0.0372	0.0056

MW-7		
Compound	3/11/2012	6/8/2012
	(mg/L)	(mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.003

MW-8		
Compound	3/11/2012	6/8/2012
	(mg/L)	(mg/L)
Benzene	0.0112	<0.001
Toluene	0.0227	<0.002
Ethylbenzene	<0.02	<0.002
Total Xylenes	0.0333	<0.003

MW-3		
Compound	3/11/2012	6/8/2012
	(mg/L)	(mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.003

MW-4		
Compound	3/11/2012	6/8/2012
	(mg/L)	(mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.003

MW-6		
Compound	3/11/2012	6/8/2012
	(mg/L)	(mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.003

MW-5		
Compound	3/11/2012	6/8/2012
	(mg/L)	(mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.003

**Legend**

- Monitoring Well
- SVE & AS System Treatment Building
- Treatment System Generator
- Approximate Site Boundary

Notes:

All aqueous analytical results are presented in milligrams per liter (mg/L)



DESIGNED BY: C.Wasko  
DRAWN BY: J. Clonts  
SHEET CHK'D BY: \_\_\_\_\_  
CROSS CHK'D BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_



Tasman Geosciences, LLC  
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Arvada, CO 80024  
720-988-2024

## X-LINE PIPELINE RELEASE

Second Quarter 2012  
Groundwater Monitoring  
Summary Report

### ANALYTICAL RESULTS MAP

FIGURE  
4

**Appendix A**  
**Laboratory Analytical Report**

**Appendix B**

**Historical Groundwater Analytical Results**

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-1	4/24/2002	<0.002	<0.002	<0.002	<0.006	
MW-1	5/21/2002	0.002	<0.002	0.003	<0.006	
MW-1	4/28/2003	<0.001	<0.001	<0.001	<0.001	
MW-1	6/19/2003	<0.001	<0.001	<0.001	<0.001	
MW-1	7/17/2003	<0.001	<0.001	<0.001	<0.001	
MW-1	8/20/2003	<0.001	<0.001	<0.001	<0.001	
MW-1	9/22/2003	<0.001	<0.001	<0.001	<0.001	
MW-1	10/29/2003	<0.001	<0.001	<0.001	<0.001	
MW-1	11/20/2003	<0.001	<0.001	<0.001	<0.001	
MW-1	2/18/2004	<0.001	<0.001	<0.001	0.0514	
MW-1	6/25/2004	<0.001	<0.001	<0.001	<0.001	
MW-1	10/18/2004	<0.001	<0.001	<0.001	<0.001	
MW-1	12/9/2004	<0.001	<0.001	<0.001	<0.001	
MW-1	3/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-1	6/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-1	9/28/2005	<0.001	<0.001	<0.001	<0.001	
MW-1	12/12/2005	<0.001	<0.001	<0.001	<0.001	
MW-1	3/1/2006	<0.001	<0.001	<0.001	<0.001	
MW-1	6/26/2006	<0.001	<0.001	<0.001	<0.001	
MW-1	9/28/2006	<0.001	<0.001	<0.001	<0.001	
MW-1	12/21/2006	<0.001	<0.001	<0.001	<0.001	
MW-1	3/13/2007	<0.001	<0.001	<0.001	<0.001	
MW-1	6/26/2007	<0.001	<0.001	<0.001	<0.002	
MW-1	9/5/2007	<0.002	<0.002	<0.002	<0.004	
MW-1	12/27/2007	0.00093	<0.002	0.002	0.0028	
MW-1	12/29/2007	0.00093	0.002	<0.00045	0.0028	
MW-1	3/20/2008	<0.002	<0.002	<0.002	<0.006	
MW-1	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-1	6/27/2008	<0.002	<0.002	<0.002	<0.002	
MW-1	9/15/2008	<0.002	<0.002	<0.002	<0.006	
MW-1	12/1/2008	<0.002	<0.002	<0.002	<0.006	
MW-1	12/1/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-1	3/11/2009	<0.002	<0.002	<0.002	<0.006	
MW-1	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-1	5/27/2009	<0.002	<0.002	<0.002	<0.006	
MW-1	5/27/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-1	9/24/2009	<0.002	<0.002	<0.002	<0.006	
MW-1	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-1	12/18/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-1	12/18/2009	<0.002	<0.002	<0.002	<0.006	
MW-1	3/25/2010	<0.001	<0.002	<0.002	<0.004	
MW-1	6/30/2010	<0.0003	<0.0003	<0.001	<0.0006	
MW-1	9/13/2010	<0.00030	<0.0010	<0.00030	-	
MW-1	3/25/2010	<0.40	<1.0	<1.0	-	
MW-1	6/30/2010	<0.30	<1.0	<0.30	-	
MW-1	9/16/2010	<0.001	<0.002	<0.002	<0.004	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-1	12/9/2010	<0.001	<0.002	<0.002	<0.004	
MW-1	12/9/2010	<0.00030	<0.0010	<0.00030	-	
MW-1	3/28/2011	<0.00030	<0.0010	<0.00030	0.00099	
MW-1	3/28/2011	<0.001	<0.002	<0.002	<0.004	
MW-1	6/22/2011	<0.00025	<0.0010	<0.00050	<0.0020	
MW-1	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-1	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-1	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-1	3/11/2012	<0.001	<0.002	<0.002	<0.004	Duplicate sample collected
MW-1	6/8/2012	<0.001	<0.002	<0.002	<0.003	Duplicate sample collected

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-2	4/24/2002	0.0255	0.013	0.107	0.38	
MW-2	5/21/2002	0.145	0.062	0.833	1.27	
MW-2	4/28/2003	0.182	0.121	0.092	0.133	
MW-2	6/19/2003	0.074	0.069	0.066	0.103	
MW-2	7/17/2003	0.155	0.112	0.15	0.186	
MW-2	8/20/2003	0.024	0.012	0.092	0.179	
MW-2	9/22/2003	0.022	0.012	0.051	0.079	
MW-2	10/29/2003	0.001	0.002	0.004	0.017	
MW-2	11/20/2003	0.013	0.005	0.017	0.034	
MW-2	2/18/2004	<0.001	0.00301	0.00652	0.00067	
MW-2	6/25/2004	0.00156	0.0005	0.00108	0.00106	
MW-2	10/18/2004	0.0103	0.00336	0.00648	0.0052	
MW-2	12/9/2004	0.00342	0.00122	0.00206	<0.001	
MW-2	3/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-2	6/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-2	9/28/2005	<0.001	<0.001	<0.001	<0.001	
MW-2	12/12/2005	<0.001	<0.001	<0.001	<0.001	
MW-2	3/1/2006	<0.001	<0.001	<0.001	<0.001	
MW-2	6/26/2006	0.0006	<0.001	0.00114	0.00125	
MW-2	9/28/2006	0.0007	0.0003	0.00137	0.0014	
MW-2	12/21/2006	<0.001	<0.001	<0.001	<0.001	
MW-2	3/13/2007	0.000674	0.0012	0.00512	0.0077	
MW-2	6/26/2007	<0.001	0.0024	0.0102	0.013	
MW-2	9/5/2007	<0.002	<0.002	0.0075	0.0078	
MW-2	12/27/2007	0.00057	0.00076J	0.0039	0.0051	
MW-2	12/29/2007	0.00057	0.0039	0.00076	0.0051	
MW-2	3/20/2008	<0.002	0.01	0.03	0.06	
MW-2	3/20/2008	<0.00046	0.0318	0.0064	0.0568	
MW-2	6/27/2008	0.00096	0.0229	0.0073	0.0229	
MW-2	9/15/2008	0.00096	0.02	0.03	0.12	
MW-2	12/1/2008	<0.002	0.0147	0.0135	0.143	
MW-2	12/1/2008	<0.00046	0.0135	0.0147	0.143	
MW-2	3/11/2009	<0.002	0.0123	0.0048	0.12	
MW-2	3/11/2009	<0.00046	0.0048	0.0123	0.12	
MW-2	5/27/2009	<0.002	0.01	0.01	0.16	
MW-2	5/27/2009	<0.00046	0.0055	0.0125	0.159	
MW-2	9/24/2009	<0.002	0.0096	<0.002	0.103	
MW-2	9/24/2009	<0.00050	<0.00043	0.0079	0.0837	
MW-2	12/18/2009	<0.002	0.0086	<0.002	0.0916	
MW-2	12/18/2009	<0.00050	<0.00043	0.0086	0.0916	
MW-2	3/25/2010	<0.001	0.0087	<0.002	0.0923	
MW-2	3/25/2010	<0.40	<1.0	0.0087	-	
MW-2	6/30/2010	<0.0003	0.0062	<0.001	0.0417	
MW-2	6/30/2010	<0.30	<1.0	0.0062	-	
MW-2	9/13/2010	<0.00030	<0.0010	0.007	-	
MW-2	9/16/2010	<0.001	0.007	<0.002	0.0786	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-2	12/9/2010	0.00049	<0.0010	0.0147	-	
MW-2	12/9/2010	0.00049	0.0147	<0.002	0.1317	
MW-2	3/28/2011	<0.001	0.005	<0.002	0.0455	
MW-2	3/28/2011	<0.00030	<0.0010	0.005	0.0455	
MW-2	6/22/2011	<0.002	1.002	<0.0164	1.185	
MW-2	6/22/2011	<0.00025	<0.0010	0.0164	0.185	
MW-2	9/18/2011	<0.001	<0.002	0.0123	0.14	
MW-2	12/9/2011	<0.0005	<0.001	0.0143	0.128	Duplicate sample collected
MW-2	3/11/2012	<0.001	<0.002	0.0036	0.0372	
MW-2	6/8/2012	<0.001	<0.002	0.00067	0.0056	

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**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-3	4/24/2002	0.061	0.023	<0.002	0.189	
MW-3	5/21/2002	0.176	0.023	0.004	0.451	
MW-3	4/28/2003	0.099	0.03	0.005	0.039	
MW-3	6/19/2003	0.047	0.02	<0.001	0.006	
MW-3	7/17/2003	0.063	0.023	0.002	0.007	
MW-3	8/20/2003	0.017	0.006	<0.001	0.001	
MW-3	9/22/2003	0.049	0.02	<0.001	0.001	
MW-3	10/29/2003	0.044	0.018	<0.001	0.001	
MW-3	11/20/2003	0.048	0.017	0.003	0.004	
MW-3	2/18/2004	0.028	0.0138	<0.001	<0.001	
MW-3	6/25/2004	0.0173	0.0136	0.0000158	0.0000118	
MW-3	10/18/2004	0.00584	0.00692	<0.001	0.0015	
MW-3	12/9/2004	0.006137	0.00884	<0.001	<0.001	
MW-3	3/3/2005	0.00167	0.00167	<0.001	0.00044	
MW-3	6/3/2005	0.00332	0.00574	<0.001	0.00173	
MW-3	9/28/2005	<0.001	0.00101	0.000482	0.000997	
MW-3	12/12/2005	<0.001	<0.001	<0.001	<0.001	
MW-3	3/1/2006	<0.001	<0.001	<0.001	<0.001	
MW-3	6/26/2006	<0.001	<0.001	<0.001	<0.001	
MW-3	9/28/2006	<0.001	<0.001	<0.001	<0.001	
MW-3	12/21/2006	<0.001	<0.001	<0.001	<0.001	
MW-3	3/13/2007	<0.001	<0.001	<0.001	<0.001	
MW-3	6/26/2007	<0.001	<0.0011	<0.001	<0.002	
MW-3	9/5/2007	<0.002	<0.002	<0.002	<0.004	
MW-3	12/27/2007	<0.002	<0.002	0.0012	<0.006	
MW-3	12/29/2007	<0.00046	0.0012	<0.00045	<0.0014	
MW-3	3/20/2008	<0.002	<0.002	<0.002	<0.006	
MW-3	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-3	6/27/2008	<0.002	<0.002	<0.002	<0.002	
MW-3	9/15/2008	<0.002	<0.002	<0.002	<0.006	
MW-3	12/1/2008	<0.002	<0.002	<0.002	<0.006	
MW-3	12/1/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-3	5/27/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-3	3/11/2009	<0.002	<0.002	<0.002	<0.006	
MW-3	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-3	5/27/2009	<0.002	<0.002	<0.002	<0.006	
MW-3	9/24/2009	<0.002	<0.002	<0.002	<0.006	
MW-3	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-3	12/18/2009	<0.002	<0.002	<0.002	<0.006	
MW-3	12/18/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-3	3/25/2010	<0.001	<0.002	<0.002	<0.004	
MW-3	6/30/2010	<0.0003	<0.0003	<0.001	<0.0006	
MW-3	9/16/2010	<0.001	<0.002	<0.002	<0.004	
MW-3	9/13/2010	<0.00030	<0.0010	<0.00030	-	
MW-3	12/9/2010	<0.00030	<0.0010	<0.00030	-	
MW-3	12/9/2010	<0.001	<0.002	<0.002	<0.004	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-3	3/25/2010	<0.40	<1.0	<1.0	-	
MW-3	6/30/2010	<0.30	<1.0	<0.30	-	
MW-3	3/28/2011	<0.001	<0.002	<0.002	<0.004	
MW-3	3/28/2011	<0.00030	<0.0010	<0.00030	0.0011	
MW-3	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-3	6/22/2011	<0.00025	<0.0010	<0.00050	<0.0020	
MW-3	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-3	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-3	3/11/2012	<0.001	<0.002	<0.002	<0.004	
MW-3	6/8/2012	<0.001	<0.002	<0.002	<0.003	

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**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-4	4/24/2002	<0.002	<0.002	<0.002	<0.006	
MW-4	5/21/2002	<0.002	<0.002	<0.002	<0.006	
MW-4	4/28/2003	<0.001	<0.001	<0.001	<0.001	
MW-4	6/19/2003	<0.001	<0.001	<0.001	<0.001	
MW-4	7/17/2003	<0.001	<0.001	<0.001	<0.001	
MW-4	8/20/2003	<0.001	<0.001	<0.001	<0.001	
MW-4	9/22/2003	<0.001	<0.001	<0.001	<0.001	
MW-4	10/29/2003	<0.001	<0.001	<0.001	<0.001	
MW-4	11/20/2003	<0.001	<0.001	<0.001	<0.001	
MW-4	2/18/2004	<0.001	<0.001	<0.001	<0.001	
MW-4	6/25/2004	<0.001	<0.001	<0.001	<0.001	
MW-4	10/18/2004	<0.001	<0.001	<0.001	<0.001	
MW-4	12/9/2004	<0.001	<0.001	<0.001	<0.001	
MW-4	3/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-4	6/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-4	9/28/2005	<0.001	<0.001	<0.001	<0.001	
MW-4	12/12/2005	<0.001	<0.001	<0.001	<0.001	
MW-4	3/1/2006	<0.001	<0.001	<0.001	<0.001	
MW-4	6/26/2006	<0.001	<0.001	<0.001	<0.001	
MW-4	9/28/2006	<0.001	<0.001	<0.001	<0.001	
MW-4	12/21/2006	<0.001	<0.001	<0.001	<0.001	
MW-4	3/13/2007	<0.001	<0.001	<0.001	<0.001	
MW-4	6/26/2007	<0.001	<0.001	<0.001	<0.002	
MW-4	9/5/2007	<0.002	<0.002	<0.002	<0.004	
MW-4	12/27/2007	0.00053	<0.002	0.001	0.0016	
MW-4	12/29/2007	0.00053	0.001	<0.00045	0.0016	
MW-4	3/20/2008	<0.002	<0.002	<0.002	<0.006	
MW-4	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-4	6/27/2008	<0.002	<0.002	<0.002	<0.002	
MW-4	9/15/2008	<0.002	<0.002	<0.002	<0.006	
MW-4	12/1/2008	<0.002	<0.002	<0.002	<0.006	
MW-4	12/1/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-4	3/11/2009	<0.002	<0.002	<0.002	<0.006	
MW-4	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-4	5/27/2009	<0.002	<0.002	<0.002	<0.006	
MW-4	5/27/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-4	9/24/2009	<0.002	<0.002	<0.002	<0.006	
MW-4	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-4	12/18/2009	<0.002	<0.002	<0.002	<0.006	
MW-4	12/18/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-4	3/25/2010	<0.001	<0.002	<0.002	<0.004	
MW-4	6/30/2010	<0.0003	<0.0003	<0.001	<0.0006	
MW-4	9/13/2010	<0.00030	<0.0010	<0.00030	-	
MW-4	3/25/2010	<0.40	<1.0	<1.0	-	
MW-4	6/30/2010	<0.30	<1.0	<0.30	-	
MW-4	9/16/2010	<0.001	<0.002	<0.002	<0.004	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-4	12/9/2010	<0.001	<0.002	<0.002	<0.004	
MW-4	12/9/2010	<0.00030	<0.0010	<0.00030	-	
MW-4	3/28/2011	<0.001	<0.002	<0.002	<0.004	
MW-4	3/28/2011	<0.00030	<0.0010	<0.00030	0.00078	
MW-4	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-4	6/22/2011	<0.00025	<0.0010	<0.00050	<0.0020	
MW-4	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-4	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-4	3/11/2012	<0.001	<0.002	<0.002	<0.004	
MW-4	6/8/2012	<0.001	<0.002	<0.002	<0.003	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-5	4/24/2002	<0.002	<0.002	<0.002	0.011	
MW-5	5/21/2002	<0.002	<0.002	<0.002	<0.006	
MW-5	4/28/2003	0.005	<0.001	<0.001	0.003	
MW-5	6/19/2003	<0.001	<0.001	<0.001	0.003	
MW-5	7/17/2003	<0.001	<0.001	<0.001	0.002	
MW-5	8/20/2003	<0.001	<0.001	<0.001	<0.001	
MW-5	9/22/2003	<0.001	<0.001	<0.001	<0.001	
MW-5	10/29/2003	<0.001	<0.001	<0.001	<0.001	
MW-5	11/20/2003	<0.001	<0.001	<0.001	<0.001	
MW-5	2/18/2004	<0.001	<0.001	<0.001	<0.001	
MW-5	6/25/2004	<0.001	<0.001	<0.001	<0.001	
MW-5	10/18/2004	<0.001	<0.001	<0.001	<0.001	
MW-5	12/9/2004	<0.001	<0.001	<0.001	<0.001	
MW-5	3/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-5	6/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-5	9/28/2005	<0.001	<0.001	<0.001	<0.001	
MW-5	12/12/2005	<0.001	<0.001	<0.001	<0.001	
MW-5	3/1/2006	<0.001	<0.001	<0.001	<0.001	
MW-5	6/26/2006	<0.001	<0.001	<0.001	<0.001	
MW-5	9/28/2006	<0.001	<0.001	<0.001	<0.001	
MW-5	12/21/2006	<0.001	<0.001	<0.001	<0.001	
MW-5	3/13/2007	<0.001	<0.001	<0.001	<0.001	
MW-5	6/26/2007	<0.001	<0.001	<0.001	<0.002	
MW-5	9/5/2007	<0.002	<0.002	<0.002	<0.004	
MW-5	12/27/2007	<0.002	<0.002	0.00098	<0.006	
MW-5	12/29/2007	<0.00046	0.00098	<0.00045	<0.0014	
MW-5	3/20/2008	<0.002	<0.002	<0.002	<0.006	
MW-5	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-5	6/27/2008	<0.002	<0.002	<0.002	<0.002	
MW-5	9/15/2008	<0.002	<0.002	<0.002	<0.006	
MW-5	12/1/2008	<0.002	<0.002	<0.002	<0.006	
MW-5	12/1/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-5	3/11/2009	<0.002	<0.002	<0.002	<0.006	
MW-5	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-5	5/27/2009	<0.002	<0.002	<0.002	<0.006	
MW-5	5/27/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-5	9/24/2009	<0.002	<0.002	<0.002	<0.006	
MW-5	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-5	12/18/2009	<0.002	<0.002	<0.002	<0.006	
MW-5	12/18/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-5	3/25/2010	<0.001	<0.002	<0.002	<0.004	
MW-5	6/30/2010	<0.0003	<0.0003	<0.001	<0.0006	
MW-5	9/13/2010	<0.00030	<0.0010	<0.00030	-	
MW-5	3/25/2010	<0.40	<1.0	<1.0	-	
MW-5	6/30/2010	<0.30	<1.0	<0.30	-	
MW-5	9/16/2010	<0.001	<0.002	<0.002	<0.004	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-5	12/9/2010	<0.00030	<0.0010	<0.00030	-	
MW-5	3/28/2011	<0.00030	<0.0010	<0.00030	0.0012	
MW-5	6/22/2011	<0.00025	<0.0010	<0.00050	<0.0020	
MW-5	12/9/2010	<0.001	<0.002	<0.002	<0.004	
MW-5	3/28/2011	<0.001	<0.002	<0.002	0.012	
MW-5	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-5	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-5	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-5	3/11/2012	<0.001	<0.002	<0.002	<0.004	
MW-5	6/8/2012	<0.001	<0.002	<0.002	<0.003	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-6	4/24/2002	<0.002	0.004	<0.002	0.123	
MW-6	5/21/2002	0.002	0.002	<0.002	0.047	
MW-6	4/28/2003	0.003	0.002	<0.001	0.01	
MW-6	6/19/2003	<0.001	<0.001	<0.001	<0.001	
MW-6	7/17/2003	<0.001	0.004	<0.001	0.004	
MW-6	8/20/2003	<0.001	<0.001	<0.001	<0.001	
MW-6	9/22/2003	<0.001	<0.001	<0.001	<0.001	
MW-6	10/29/2003	<0.001	<0.001	<0.001	0.003	
MW-6	11/20/2003	<0.001	<0.001	<0.001	<0.001	
MW-6	2/18/2004	<0.001	<0.001	<0.001	<0.001	
MW-6	6/25/2004	<0.001	<0.001	<0.001	<0.001	
MW-6	10/18/2004	<0.001	<0.001	<0.001	<0.001	
MW-6	12/9/2004	<0.001	<0.001	<0.001	<0.001	
MW-6	3/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-6	6/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-6	9/28/2005	<0.001	<0.001	<0.001	<0.001	
MW-6	12/12/2005	<0.001	<0.001	<0.001	<0.001	
MW-6	3/1/2006	<0.001	<0.001	<0.001	<0.001	
MW-6	6/26/2006	<0.001	<0.001	<0.001	<0.001	
MW-6	9/28/2006	<0.001	0.001	<0.001	<0.001	
MW-6	12/21/2006	<0.001	<0.001	<0.001	<0.001	
MW-6	3/13/2007	<0.001	<0.001	<0.001	<0.001	
MW-6	6/26/2007	<0.001	<0.001	<0.001	<0.002	
MW-6	9/5/2007	<0.002	<0.002	<0.002	<0.004	
MW-6	12/27/2007	0.00074	0.0033	0.0013J	<0.006	
MW-6	12/29/2007	0.00074	0.0013	0.0033	<0.0014	
MW-6	3/20/2008	<0.002	<0.002	<0.002	<0.006	
MW-6	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-6	6/27/2008	<0.002	<0.002	0.00098	<0.002	
MW-6	9/15/2008	<0.002	0.0031	<0.002	<0.006	
MW-6	12/1/2008	<0.002	<0.002	<0.002	<0.006	
MW-6	12/1/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-6	3/11/2009	<0.002	<0.002	<0.002	<0.006	
MW-6	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-6	5/27/2009	<0.002	<0.002	<0.002	<0.006	
MW-6	5/27/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-6	9/24/2009	<0.002	<0.002	<0.002	<0.006	
MW-6	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-6	12/18/2009	<0.002	<0.002	<0.002	<0.006	
MW-6	12/18/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-6	3/25/2010	<0.001	<0.002	<0.002	<0.004	
MW-6	6/30/2010	<0.0003	<0.0003	<0.001	<0.0006	
MW-6	9/13/2010	<0.00030	<0.0010	<0.00030	-	
MW-6	3/25/2010	<0.40	<1.0	<1.0	-	
MW-6	6/30/2010	<0.30	<1.0	<0.30	-	
MW-6	9/16/2010	<0.001	<0.002	<0.002	<0.004	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-6	12/9/2010	<0.001	<0.002	<0.002	<0.004	
MW-6	12/9/2010	<0.00030	<0.0010	<0.00030	-	
MW-6	3/28/2011	<0.001	<0.002	<0.002	<0.004	
MW-6	3/28/2011	<0.00030	<0.0010	<0.00030	0.00077	
MW-6	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-6	6/22/2011	<0.00025	<0.0010	<0.00050	<0.0020	
MW-6	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-6	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-6	3/11/2012	<0.001	<0.002	<0.002	<0.004	
MW-6	6/8/2012	<0.001	<0.002	<0.002	<0.003	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-7	4/24/2002	NI	NI	NI	NI	
MW-7	5/21/2002	NI	NI	NI	NI	
MW-7	4/28/2003	<0.001	<0.001	<0.001	<0.001	
MW-7	6/19/2003	<0.001	<0.001	<0.001	<0.001	
MW-7	7/17/2003	<0.001	<0.001	<0.001	<0.001	
MW-7	8/20/2003	<0.001	<0.001	<0.001	<0.001	
MW-7	9/22/2003	<0.001	<0.001	<0.001	<0.001	
MW-7	10/29/2003	0.001	0.001	0.001	0.006	
MW-7	11/20/2003	0.001	<0.001	<0.001	0.001	
MW-7	2/18/2004	<0.001	<0.001	<0.001	<0.001	
MW-7	6/25/2004	<0.001	<0.001	<0.001	<0.001	
MW-7	10/18/2004	<0.001	<0.001	<0.001	<0.001	
MW-7	12/9/2004	<0.001	<0.001	<0.001	<0.001	
MW-7	3/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-7	6/3/2005	<0.001	<0.001	<0.001	<0.001	
MW-7	9/28/2005	<0.001	<0.001	<0.001	<0.001	
MW-7	12/12/2005	<0.001	<0.001	<0.001	<0.001	
MW-7	3/1/2006	<0.001	<0.001	<0.001	<0.001	
MW-7	6/26/2006	<0.001	<0.001	<0.001	<0.001	
MW-7	9/28/2006	<0.001	<0.001	<0.001	<0.001	
MW-7	12/21/2006	<0.001	<0.001	<0.001	<0.001	
MW-7	3/13/2007	<0.001	<0.001	<0.001	<0.001	
MW-7	6/26/2007	<0.001	<0.001	<0.001	<0.002	
MW-7	9/5/2007	<0.002	<0.002	<0.002	<0.004	
MW-7	12/27/2007	<0.002	<0.002	<0.002	<0.006	
MW-7	12/29/2007	<0.00046	<0.00048	<0.00045	<0.0014	
MW-7	3/20/2008	<0.002	<0.002	<0.002	<0.006	
MW-7	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-7	6/27/2008	<0.002	<0.002	<0.002	<0.002	
MW-7	9/15/2008	<0.002	<0.002	<0.002	<0.006	
MW-7	12/1/2008	<0.002	<0.002	<0.002	<0.006	
MW-7	12/1/2008	<0.00046	<0.00048	<0.00045	<0.0014	
MW-7	3/11/2009	<0.002	<0.002	<0.002	<0.006	
MW-7	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-7	5/27/2009	<0.002	<0.002	<0.002	<0.006	
MW-7	5/27/2009	<0.00046	<0.00048	<0.00045	<0.0014	
MW-7	9/24/2009	<0.002	<0.002	<0.002	<0.006	
MW-7	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-7	12/18/2009	<0.002	<0.002	<0.002	<0.006	
MW-7	12/18/2009	<0.00050	<0.00043	<0.00055	<0.0017	
MW-7	3/25/2010	<0.001	<0.002	<0.002	<0.004	
MW-7	3/25/2010	<0.40	<1.0	<1.0	-	
MW-7	6/30/2010	<0.0003	<0.002	<0.001	<0.0006	
MW-7	6/30/2010	<0.30	<1.0	<0.30	-	
MW-7	9/13/2010	<0.00030	<0.0010	<0.00030	<0.00060	
MW-7	9/16/2010	<0.001	<0.002	<0.002	<0.004	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene. (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-7	12/9/2010	<0.001	<0.003	<0.002	<0.004	
MW-7	12/9/2010	<0.00030	<0.0010	0.00056	-	
MW-7	3/28/2011	<0.001	<0.002	<0.002	<0.004	
MW-7	3/28/2011	<0.00030	<0.0010	<0.00030	0.00065	
MW-7	6/22/2011	<0.001	<0.002	<0.002	<0.004	
MW-7	6/22/2011	<0.00025	<0.0010	<0.00050	<0.0020	
MW-7	9/18/2011	<0.001	<0.002	<0.002	<0.004	
MW-7	12/9/2011	<0.0005	<0.001	<0.001	<0.001	
MW-7	3/11/2012	<0.001	<0.002	<0.002	<0.004	
MW-7	6/8/2012	<0.001	<0.002	<0.002	<0.003	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-8	4/24/2002	NI	NI	NI	NI	
MW-8	5/21/2002	NI	NI	NI	NI	
MW-8	4/28/2003	FPH	FPH	FPH	FPH	
MW-8	6/19/2003	FPH	FPH	FPH	FPH	
MW-8	7/17/2003	FPH	FPH	FPH	FPH	
MW-8	8/20/2003	FPH	FPH	FPH	FPH	
MW-8	9/22/2003	FPH	FPH	FPH	FPH	
MW-8	10/29/2003	FPH	FPH	FPH	FPH	
MW-8	11/20/2003	FPH	FPH	FPH	FPH	
MW-8	2/18/2004	FPH	FPH	FPH	FPH	
MW-8	6/25/2004	FPH	FPH	FPH	FPH	
MW-8	10/18/2004	FPH	FPH	FPH	FPH	
MW-8	12/9/2004	FPH	FPH	FPH	FPH	
MW-8	3/3/2005	NS	NS	NS	NS	
MW-8	6/3/2005	FPH	FPH	FPH	FPH	
MW-8	9/28/2005	FPH	FPH	FPH	FPH	
MW-8	12/12/2005	0.561	0.928	2.98	9.89	
MW-8	3/1/2006	FPH	FPH	FPH	FPH	
MW-8	6/26/2006	FPH	FPH	FPH	FPH	
MW-8	9/28/2006	0.24	0.239	0.791	2.27	
MW-8	12/21/2006	FPH	FPH	FPH	FPH	
MW-8	3/13/2007	0.42	0.437	0.977	3.35	
MW-8	6/26/2007	FPH	FPH	FPH	FPH	
MW-8	9/5/2007	FPH	FPH	FPH	FPH	
MW-8	12/27/2007	FPH	FPH	FPH	FPH	
MW-8	3/20/2008	0.28	0.15	0.35	2.8	
MW-8	3/20/2008	0.249	0.338	0.144	2.83	
MW-8	6/27/2008	0.18	0.0971	0.388	0.388	
MW-8	9/15/2008	0.14	0.17	0.25	2.42	
MW-8	12/1/2008	FPH	FPH	FPH	FPH	
MW-8	3/11/2009	0.219	0.133	0.257	3.76	
MW-8	3/11/2009	0.219	0.257	0.133	3.76	
MW-8	5/27/2009	0.719*	0.233*	2.00*	4.72*	
MW-8	8/7/2009	0.719	2.00	0.233	4.72	
MW-8	9/24/2009	0.775	0.238	2.52	5.1	
MW-8	9/24/2009	0.775	2.52	0.238	5.1	
MW-8	12/18/2009	0.409	0.114	1.11	5.24	
MW-8	12/18/2009	0.436	1.12	0.141	5.17	
MW-8	3/25/2010	0.691	45.6	63.4	2220	
MW-8	3/25/2010	0.69	63.4	45.6	-	
MW-8	6/30/2010	0.549	0.145	1.48	3.49	
MW-8	6/30/2010	0.59	1.5	0.15	-	
MW-8	9/13/2010	0.653	1.07	0.165	-	
MW-8	9/16/2010	0.653	0.165	1.07	6.37	
MW-8	12/9/2010	NS	NS	NS	NS	
MW-8	3/28/2011	0.443	0.0817	0.717	2.34	

**APPENDIX B**  
**HISTORICAL DATA**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**X-LINE PIPELINE RELEASE - ETCHEVERRY RANCH**  
**LEA COUNTY, NEW MEXICO**

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/l)		<b>0.01</b>	<b>0.75</b>	<b>0.75</b>	<b>0.62</b>	
MW-8	3/28/2011	<b>0.448</b>	0.712	0.0829	<b>2.38</b>	
MW-8	6/22/2011	<b>0.204</b>	0.444	0.0822	<b>2.72</b>	
MW-8	6/22/2011	<b>0.204</b>	0.444	0.0822	<b>2.72</b>	
MW-8	9/18/2011	<b>0.682</b>	0.699	0.112	<b>3.03</b>	
MW-8*	12/9/2011	NS	NS	NS	NS	
MW-8	3/11/2012	<b>0.0112</b>	0.0227	<0.02	0.0333	
MW-8	6/8/2012	<0.001	<0.002	<0.002	<0.003	

Notes:

- 1.) The environmental cleanup standards for water that are applicable to this Site are the New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards.
- 2.) Data presented for the well locations includes previous four sampling events, when available. Historic groundwater analytical results for these locations may be found in Appendix B.

**Bold** red values indicate an exceedance of the NMWQCC groundwater standards for the Site.

Sample locations are shown on Figure 2 and analytical results are illustrated on Figure 4.

NS = Not Sampled.

mg/L = milligrams per liter.

\* Monitoring well MW-8 was converted to an Air Sparge injection point prior to the fourth quarter 2011 groundwater monitoring event. Therefore, groundwater samples were not collected from that well.