# 1R-401

# 1<sup>st</sup> half Semi Annual GW Monitoring Results C-Line Pipeline Release

DATE
September 4, 2014



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

September 4, 2014

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

RE: 1st Half 2014 Semi Annual Groundwater Monitoring Results DCP C-Line Pipeline Release (1RP-401-0)
Lea County, NM (Unit O Section 31, T19S, R37E)

Dear Mr. Lowe:

DCP Midstream, LP (DCP) is pleased to submit for your review, one copy of the 1st Half 2014 Semi Annual Groundwater Monitoring Results for the DCP C-Line Pipeline Release Site located in Lea County, New Mexico (Unit O Section 31, T19S, R37E, Latitude 32° 31' 29.7" N Longitude 103° 17' 11.7 W).

If you have any questions regarding the report, please call me at 303-605-1718.

Sincerely

DCP Midstream, LP

Stephen Weathers, PG

Principal Environmental Specialist

cc: Tomas Oberding, OCD Hobbs District Office (Via Email)

**Environmental Files** 

### First Half 2014 Semi-Annual Groundwater Monitoring Summary Report

### C-Line 50602 Pipeline Release Lea County, New Mexico 1RP-401-0

Prepared for:



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

#### Prepared by:



6899 Pecos Street, Unit C Denver, CO 80221

August 13, 2014



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Accutest Job #: D55394



#### 1. Introduction

This report summarizes groundwater monitoring and remediation activities conducted during the first half 2014 at the C-Line 50602 Pipeline Release (Site) in Lea County, New Mexico (Figure 1). Tasman Geosciences, LLC (Tasman) performed these activities on behalf of DCP Midstream, LP (DCP). The field activities described herein were conducted with the purpose of monitoring groundwater flow and quality conditions in the Site subsurface. Current Site conditions were evaluated from field data and groundwater analytical laboratory results collected on February 25, 2014. The data collected were used to develop the groundwater elevation map and analytical results figure presented herein.

### 2. Site Location and Background

The Site is located in the SW ¼ of the SE ¼ of Section 31, Township 20 South, Range 37 East, approximately 6.25 miles south and 1.25 miles west of the town of Monument in Lea County, New Mexico. The approximate field coordinates are 32.5250 degrees north, 103.2867 degrees west. The surrounding area is predominantly uninhabited and used for oil and gas production and gathering and some ranching. Several underground transfer pipelines traverse the Site, two of which are owned by DCP (Figure 2).

Based on review of historical reports from previous Site investigations, a pipeline condensate release occurred in early 2002. Environmental Plus Incorporated (EPI) completed remediation activities between April and June 2002, which included excavation of impacted soil, compacted clay barrier installation, and investigative soil boring advancements. These activities were conducted at three Site locations described as C-Line 50602, C-line 52102, and C-Line 52302. Monitoring well MW-1 was installed at or near the original C-Line 50602 pipeline release location to delineate the vertical extent of hydrocarbon impacts. Additional remediation activities including downgradient monitoring well installation (MW-2 through MW-6), groundwater monitoring and sampling, and investigative remediation tests to evaluate LNAPL removal were conducted between November and December 2002. These activities are described in detail in the February 6, 2003 *Characterization Report: C-Line 50602, 52102, and 52302 Releases* submitted by Remediacon Incorporated.

During the spring of 2003, three additional monitoring wells (MW-7, MW-8, and MW-9) were installed to the southeast of the original release location to further delineate the extent of hydrocarbon migration. MW-1 was also re-drilled and converted from a two-inch diameter monitoring well to a four-inch diameter LNAPL recovery well. An LNAPL recovery system was installed in mid-November 2003 and operation was initiated on November 26, 2003. In early October 2004, a soil vapor extraction (SVE) system was added to the LNAPL recovery system at MW-1 to facilitate recovery of vapor phase hydrocarbons. Between November 2003 and December 2004, a reported 1,212 gallons of LNAPL was extracted by the recovery system. In 2005, LNAPL recovery and SVE was expanded to MW-4 to further enhance remediation at the Site. Through 2006 a significant decline in LNAPL recovery was observed in wells MW-1 and MW-4 and the remediation system was shut down on June 26, 2006. Ancillary components of the system remain in place and MW-1 and MW-4 are currently utilized as monitoring well locations.



### 3. Groundwater Monitoring

This section describes the groundwater field and laboratory activities performed during the first half 2014 semi-annual monitoring event on February 25, 2014. Monitoring activities included Site-wide groundwater gauging and sampling. 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 elevations at the Site. During the reporting period, groundwater levels were measured at eight Site monitoring well locations. LNAPL was not detected within any Site monitoring wells.

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). Measured groundwater levels are presented in Table 1. Groundwater level data were later converted to elevation (feet above mean sea level [AMSL]).

Groundwater elevations collected during the reporting period as well as historic elevations are presented in Table 1. A first half 2014 groundwater elevation map, included as Figure 3, indicates that groundwater flow at the Site trends to the east-southeast. Groundwater elevations ranges, average elevation changes from previous monitoring events, and calculated hydraulic gradients at the Site are summarized in the table below.

#### **Summary of Measured Hydraulic Parameters**

	First Half 2014 (2/25/14)
Maximum Elevation (Well ID)	3451.04 (MW-2)
Minimum Elevation (Well ID)	3449.08 (MW-9)
Average Change from Previous	0.06 foot
Monitoring Event – All Wells	
Hydraulic Gradient (ft/ft) / (Well IDs)	0.0051 (MW-2 to MW-9)

### 3.2 Groundwater Quality Monitoring

Subsequent to recording groundwater level measurements, groundwater samples were collected from eight of the nine Site monitoring wells. A minimum of three well casing volumes of groundwater were purged from the subject well prior to collection of groundwater samples. Groundwater samples were collected using dedicated polyethylene bailers, placed in clean laboratory-supplied containers for the selected analytical methods, 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.

Groundwater samples were collected from monitoring wells MW-1 through MW-5, and MW-7 through MW-9. Monitoring well MW-6 was not sampled and has been removed from the groundwater monitoring



plan due to historically exhibiting concentrations of constituents of concern below laboratory reporting limits. Water quality samples were submitted for analysis of benzene, toluene, ethylbenzene, and xylene (BTEX) by United States Environmental Protection Agency (USEPA) Method 8260B.

Table 2 summarizes BTEX concentrations in groundwater samples collected during the reporting period. Historic analytical results up to and including the February 2014 event are contained in Appendix A, and the laboratory analytical report for the First half 2014 event is included in Appendix B. Analytical results are also displayed on Figure 4.

During the first half 2014, benzene was detected in exceedance of the New Mexico Water Quality Control Commission (NMWQCC) groundwater standard (0.01 mg/L) in monitoring wells MW-1 and MW-3 at concentrations of 0.0257 mg/L and 0.0406 mg/L, respectively. Toluene, ethylbenzene, and total xylenes were also detected in MW-1 and MW-3, but concentrations did not exceed their respective NMWQCC standard.

### 3.3 Data Quality Assurance / Quality Control

Data quality assurance / quality control (QA/QC) procedures included the collection and analysis of QA/QC samples, as well as a review of laboratory analytical data for QA/QC compliance. Specifically, the following QA/QC procedures were conducted: a matrix spike / matrix spike duplicate (MS/MSD) pair was collected and submitted for analysis; a field duplicate sample from well MW-3 was collected and submitted for analysis; and laboratory data were reviewed for compliance with the analytical method(s) and the associated quality assurance/quality control (QA/QC) procedures.

An evaluation of the QA/QC procedures conducted during the first half 2014 groundwater monitoring event indicated the following:

- The MS/MSD analysis, spike recoveries, and relative percent difference (RPD) were within acceptable control limits;
- The duplicate sample collected at MW-3 was in compliance with QA/QC standards. MW-3 and the associated duplicate sample exhibited benzene concentrations of 0.0406 mg/L and 0.0417 mg/L, respectively, yielding an RPD of 2.7, which is within acceptable control limits;
- Submitted 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;
- Data were reported using the correct method number and reporting units; and
- A trip blank was neither submitted nor analyzed with the analytical samples. Tasman has coordinated with the laboratory to prevent reoccurrence.

The overall QA/QC assessment of the first half 2014 data indicates that both field precision and overall data precision and accuracy are acceptable, with the exceptions noted above.



#### 4. Remediation Activities

Light non-aqueous phase liquid (LNAPL) has not been detected at the Site since March 2007. LNAPL recovery and SVE remediation activities were discontinued on June 26, 2006, and analytical data indicate that dissolved phase petroleum hydrocarbon impacts are generally decreasing over time.

To address persistent benzene concentrations observed at MW-1, air sparge (AS) remediation activities were conducted in September and November 2013, as described in the *Second Half 2013 Semi-Annual Groundwater Monitoring Report*. AS activities were not conducted during the first half of 2014.

#### 5. Conclusions

As observed during the first half 2014, elevated benzene concentrations persist in monitoring wells MW-1 and MW-3. However, overall BTEX concentrations have exhibited significant reductions since monitoring and remediation activities were initiated. While benzene concentrations in MW-3 have decreased by three orders of magnitude from their historic highs, they continue to remain above or just below the NMWQCC standards. Similarly, elevated dissolved phase benzene concentrations persist at MW-1; however, these concentrations continue to decrease over time, indicating that ongoing degradation of petroleum hydrocarbons is occurring at that location.

Comparison of the first half 2014 monitoring data and historic information provides the following general observations:

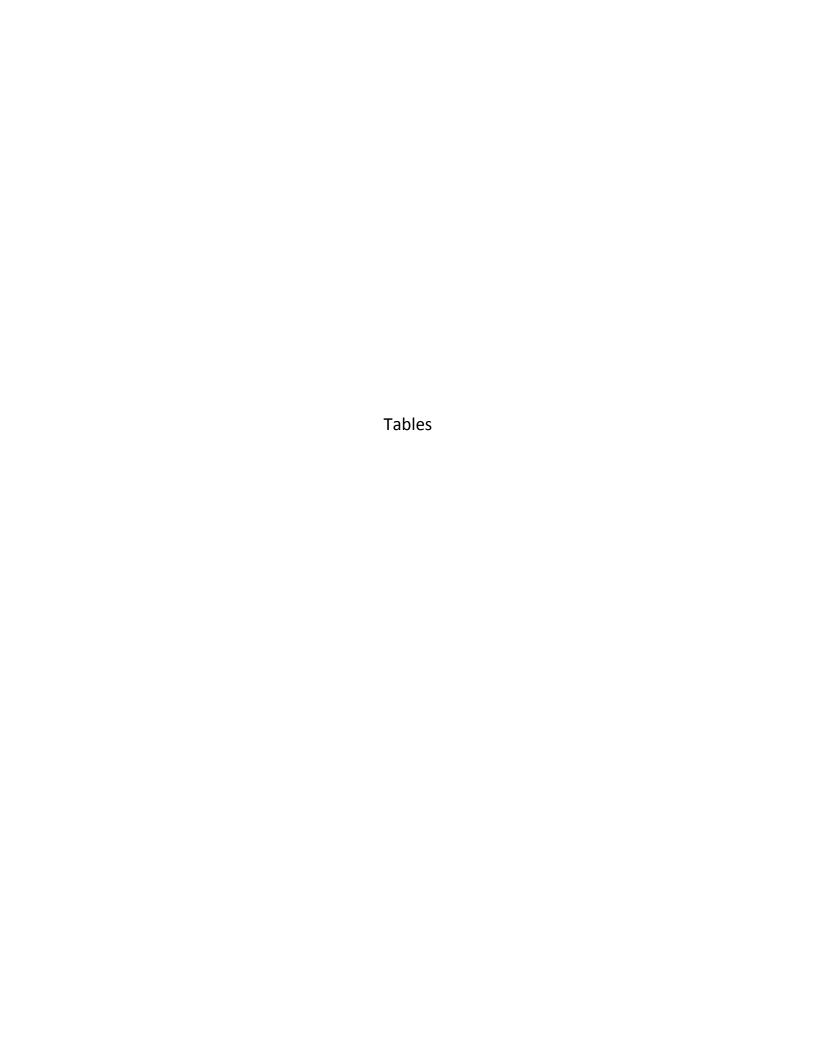
- LNAPL has not been detected in any monitoring wells on-Site following March 2007.
- Based on historic groundwater elevations, the groundwater levels beneath the Site have shown a
  generally declining trend since monitoring was initiated.
- Dissolved phase benzene concentrations remain above regulatory standards at MW-1 and MW-3. However, concentrations at both of these locations continue to generally decrease over time.
- The implementation of mobile AS efforts at MW-1 during the second half of 2013 appeared to be
  effective in addressing persisting dissolve phase petroleum hydrocarbon concentrations in the
  northern portion of the Site, and enhancing biodegradation and natural attenuation of
  hydrocarbon impacts.



#### 6. Recommendations

Based on evaluation of first half 2014 and historic Site observations and monitoring results, the following recommendations have been developed for future activities:

- Continue semi-annual groundwater monitoring and sampling at the eight monitoring well
  locations on-Site to monitor dissolved phase hydrocarbon concentrations and assess the
  effectiveness of the remedial strategy.
- Evaluation of a near-term Site closure strategy that may include implementation of a polishing technique, including further AS remediation, to decrease persistent dissolved phase benzene concentrations to below regulatory thresholds at MW-1 and MW-3.



# TABLE 1 FIRST HALF 2014 SEMI-ANNUAL SUMMARY OF GROUNDWATER ELEVATION DATA C-LINE 50602 PIPELINE RELEASE, LEA COUNTY, NEW MEXICO

Location	Date	Depth to Groundwater (feet) (1)	Depth to Product (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth (feet) (2)	TOC Elevation (feet amsl)	Groundwater Elevation (feet amsl)	Change in Groundwater Elevation Since Previous Event (feet)
MW-1	09/08/12	91.65			99.80	3541.21	3449.56	-0.02
MW-1	02/22/13	91.63			99.80	3541.21	3449.58	0.02
MW-1	09/11/13	91.85			99.80	3541.21	3449.36	-0.22
MW-1	02/25/14	90.64			NM	3541.21	3450.57	1.21
MW-2	09/08/12	89.62			99.86	3540.91	3451.29	-0.05
MW-2	02/22/13	89.60			99.86	3540.91	3451.31	0.02
MW-2	09/11/13	89.81			99.86	3540.91	3451.10	-0.21
MW-2	02/25/14	89.87			NM	3540.91	3451.04	-0.06
MW-3	09/08/12	91.03			102.40	3541.41	3450.38	-0.17
MW-3	02/22/13	90.95			102.40	3541.41	3450.46	0.08
MW-3	09/11/13	91.11			102.40	3541.41	3450.30	-0.16
MW-3	02/25/14	91.23			NM	3541.41	3450.18	-0.12
MW-4	09/08/12	91.18			99.10	3541.40	3450.22	-0.28
MW-4	02/22/13	91.00			99.10	3541.40	3450.40	0.18
MW-4	09/11/13	91.15			99.10	3541.4	3450.25	-0.15
MW-4	02/25/14	91.27			NM	3541.4	3450.13	-0.12
MW-5	09/08/12	91.31			101.35	3541.45	3450.14	-0.33
MW-5	02/22/13	91.08			101.35	3541.45	3450.37	0.23
MW-5	09/11/13	91.26			101.35	3541.45	3450.19	-0.18
MW-5	02/25/14	91.39			NM	3541.45	3450.06	-0.13
MW-6	09/08/12	NM			NM	3543.98	NM	NM
MW-6	02/22/13	NM			NM	3543.98	NM	NM
MW-6	09/11/13	NM			NM	3543.98	NM	NM
MW-6	02/25/14	NM			NM	3543.98	NM	NM
MW-7	09/08/12	92.63			100.34	3542.42	3449.79	-0.18
MW-7	02/22/13	92.55			100.34	3542.42	3449.87	0.08
MW-7	09/11/13	92.71			100.34	3542.42	3449.71	-0.16
MW-7	02/25/14	92.82			100.34	3542.42	3449.60	-0.11
MW-8	09/08/12	91.21			100.60	3540.29	3449.08	-0.45
MW-8	02/22/13	91.02			100.60	3540.19 <sup>(4)</sup>	3449.17	0.09
MW-8	09/11/13	91.02			100.60	3540.19 <sup>(4)</sup>	3449.17	0.00
MW-8	02/25/14	91.10			NM	3540.19 <sup>(4)</sup>	3449.09	-0.08

## TABLE 1 FIRST HALF 2014 SEMI-ANNUAL SUMMARY OF GROUNDWATER ELEVATION DATA C-LINE 50602 PIPELINE RELEASE, LEA COUNTY, NEW MEXICO

Location	Date	Depth to Groundwater (feet) (1)	Depth to Product (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth (feet) (2)	TOC Elevation (feet amsl)	Groundwater Elevation (feet amsl)	Change in Groundwater Elevation Since Previous Event (feet)
MW-9	09/08/12	90.53			100.52	3539.62	3449.09	-0.4
MW-9	02/22/13	90.12			100.52	3539.62	3449.50	0.41
MW-9	09/11/13	90.42			100.52	3539.62	3449.20	-0.3
MW-9	02/25/14	90.54			NM	3539.62	3449.08	-0.12
				Average of	hange in ground	water elevation (9	0/11/13 to 2/25/14)	0.06

#### Notes:

- 1- Depths measured from the north edge of the well casing.
- 2- Total depths were collected and recorded during the second half 2013 semi-annual monitoring event.
- 3- Changes in groundwater elevation are calculated by subtracting the measurement collected during the previous monitoring event from the measurement collected during the most recent monitoring event.
- 4- Following sample collection during the first half 2013 monitoring event, the top of casing elevation at MW-8 was altered to allow closure of the well stick up monument. The TOC elevation will be decreased by 0.104 feet moving forward.

Monitoring well location MW-6 has been removed from the sampling program due to non-detect concentrations. The data are not required for delineation.

Data presented for all well locations includes previous four gauging events, when available. Historic groundwater elevation data available on request.

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 FIRST HALF 2014 SEMI-ANNUAL SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER C-LINE 50602 PIPELINE RELEASE, LEA COUNTY, NEW MEXICO

Location Identification New Mexico Water Quality Control	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-1	02/25/14	0.0257	0.0106	0.0372	0.0317	
MW-2	02/25/14	< 0.001	< 0.002	< 0.002	< 0.003	
MW-3	02/25/14	0.0406	< 0.002	0.00076 J	0.0057	Duplicate sample collected
MW-3 (duplicate)	02/25/14	0.0417	< 0.002	0.00077 J	0.0056	
MW-4	02/25/14	< 0.001	< 0.002	< 0.002	< 0.003	
MW-5	02/25/14	< 0.001	< 0.002	< 0.002	< 0.003	
MW-7	02/25/14	< 0.001	< 0.002	< 0.002	< 0.003	
MW-8	02/25/14	< 0.001	< 0.002	< 0.002	< 0.003	
MW-9	02/25/14	< 0.001	< 0.002	< 0.002	< 0.003	

Notes:

The environmental cleanup standards for groundwater that are applicable to the site are the New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards. Monitoring well location MW-6 has been removed from the sampling program due to non-detect concentrations. The data are not required for delineation.

Data are presented for the current reporting period. Historic groundwater analytical data are located in Appendix A.

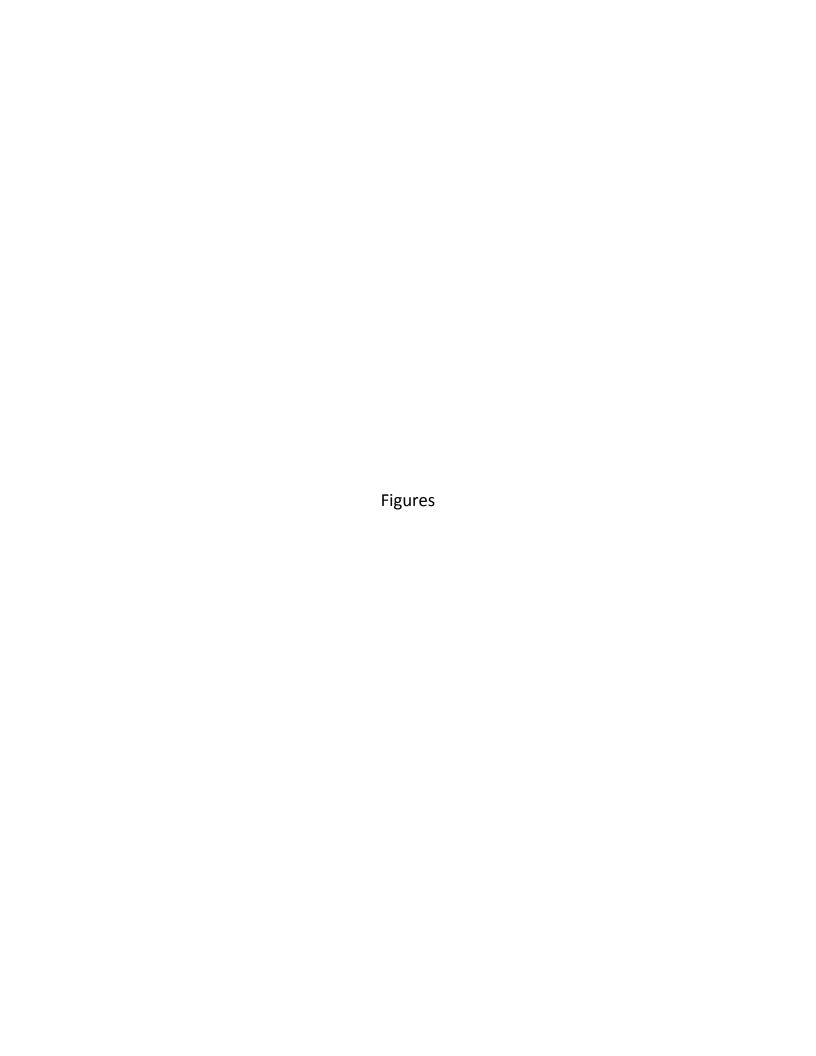
**Bold** red values indicate an exceedance of the NMWQCC groundwater standards for the Site.

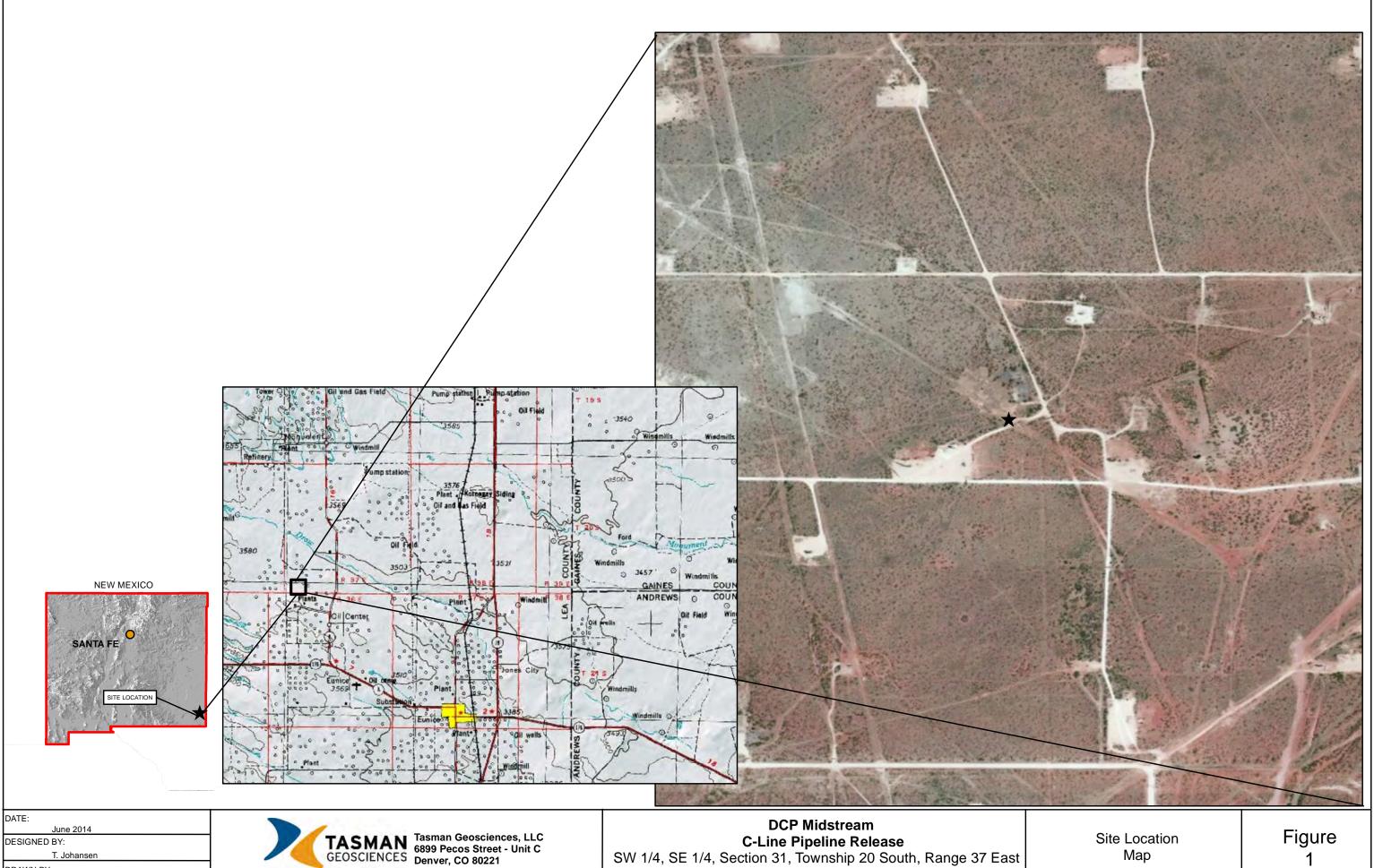
Sample locations are shown on Figure 2 and analytical results are illustrated on Figure 4.

LNAPL = Light Non-Aqueous Phase Liquid

NS = Not sampled.

mg/L = milligrams per liter.



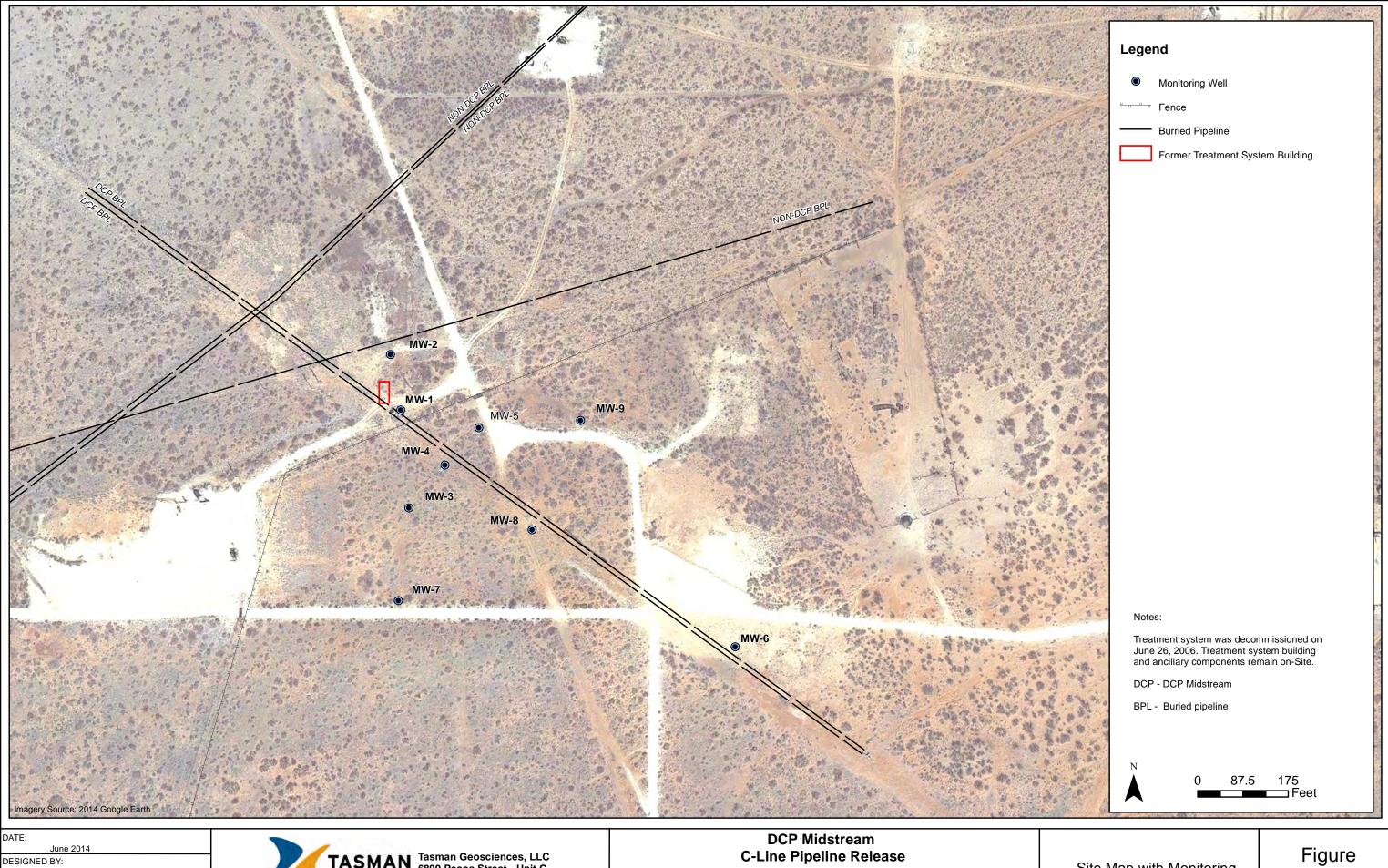


D. Arnold

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C-Line Pipeline Release
SW 1/4, SE 1/4, Section 31, Township 20 South, Range 37 East
Lea County, New Mexico

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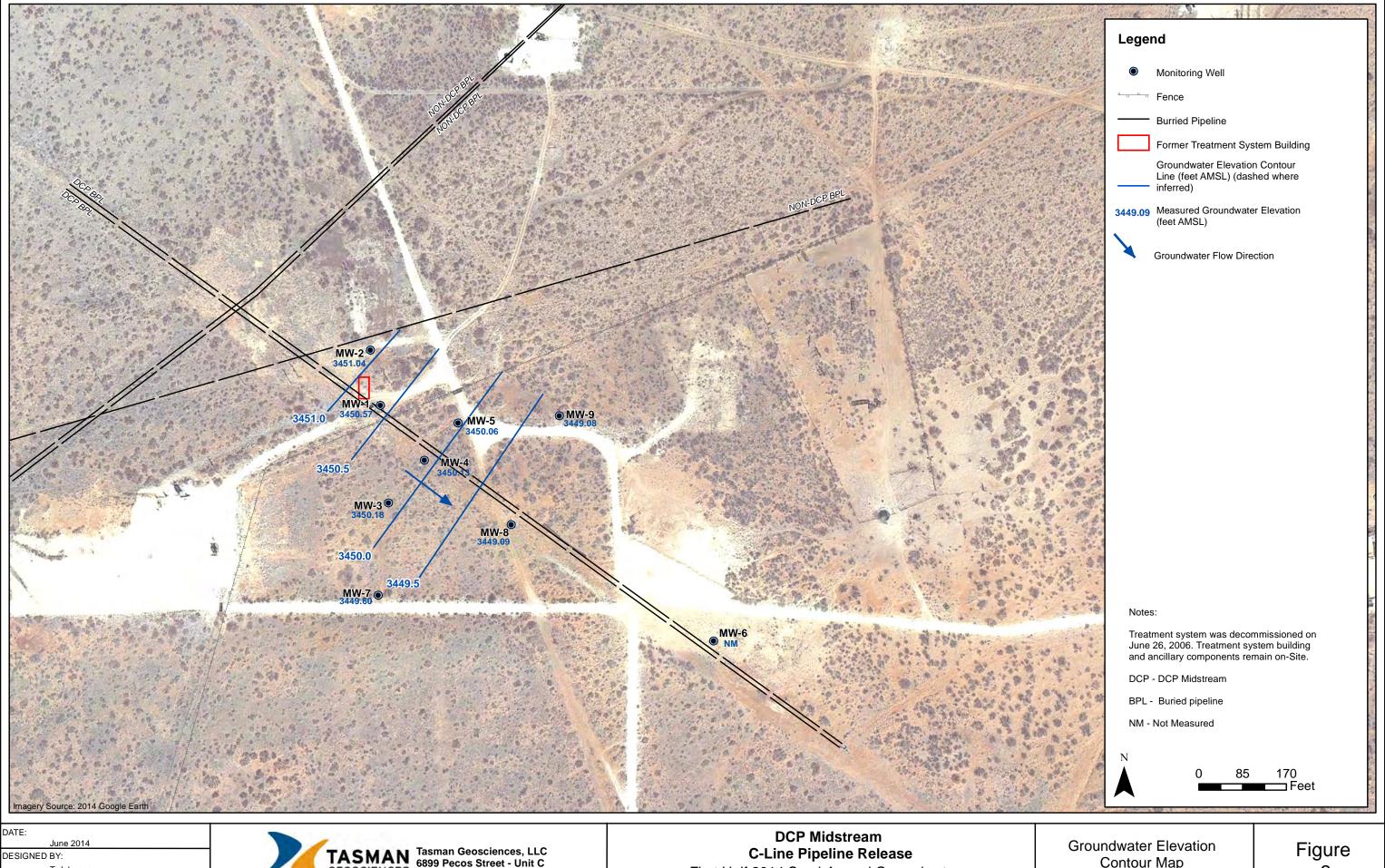


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TASMAN Tasman Geosciences, LLC 6899 Pecos Street - Unit C Denver, CO 80221

First Half 2014 Semi-Annual Groundwater Monitoring Summary Report

Site Map with Monitoring Well Locations

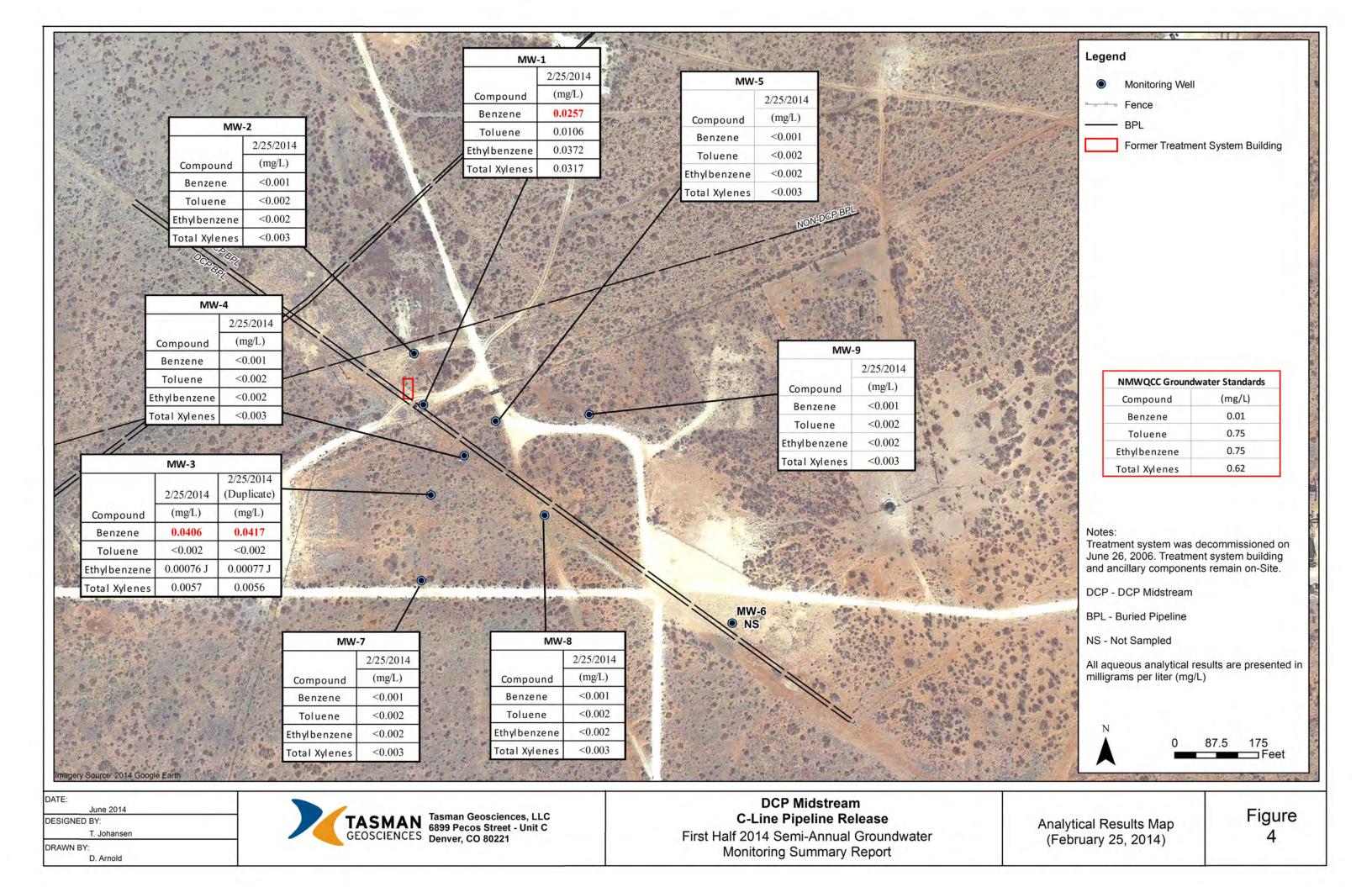


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First Half 2014 Semi-Annual Groundwater **Monitoring Summary Report** 

Contour Map (February 25, 2014)



Appendix A
Historic Analytical Results

					Total	1
Location		Dannana	Toluene	Ethylbenzene		
	Cample Date	Benzene			Xylenes	G
Identification	Sample Date	(mg/l)	(mg/l)	(mg/l)	(mg/l)	Comments
New Mexico Water Quality Control		0.01	0.75	0.75	0.62	
Commission Groundwater Standards (mg/L)						
MW-1	11/15/02	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	02/18/03	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	04/17/03	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	10/28/03	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	01/29/04	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	06/29/04	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	09/28/04	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/06/04	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	03/16/05	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	06/06/05	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	09/20/05	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/15/05	2.14	1.37	0.313	1.334	
MW-1	03/21/06	1.32	0.931	0.419	1.379	
MW-1	06/26/06	2.17	1.42	0.534	1.722	
MW-1	09/16/06	4.27	0.508	0.153	0.323	
MW-1	12/11/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-1	03/14/07	5.59	0.232	0.453	0.27	
MW-1	06/20/07	3.82	0.43	0.4	0.79	
MW-1	09/26/07	1.75	0.097	0.37	0.47	
MW-1	12/27/07	1.92	0.0372	0.278	0.0736	
MW-1	03/06/08	0.31	0.07	0.94	1.58	
MW-1	09/17/08	1.06	0.0555	0.239	0.0751	
MW-1	03/10/09	0.942	0.0178	0.224	0.0926	
MW-1	09/23/09	0.658	0.0197	0.112	0.103	
MW-1	03/22/10	0.276	0.016	0.0147	0.0557	
MW-1	09/16/10	0.127	0.0319	0.0334	0.0399	
MW-1	04/25/11	0.125	0.0416	0.0315	0.171	
MW-1	09/18/11	0.0638	< 0.002	0.0105	0.0093	
MW-1	03/12/12	0.089	0.0024	0.0333	0.0246	
MW-1	09/08/12	0.0463	<0.002	0.0066	0.0049	
MW-1	02/22/13	0.0384	0.0047	0.0154	0.0126	
MW-1	09/11/13	0.0255	0.0063	0.0102	0.0082	
MW-1	02/25/14	0.0257	0.0106	0.0372	0.0317	
112 11 1	02,20,11	0.0207	0.0100	0.0372	0.0517	

					Total	
Location		Benzene	Toluene	Ethylbenzene	Xvlenes	
Identification	Sample Date	(mg/l)	(mg/l)	(mg/l)	(mg/l)	Comments
	Sample Date	(IIIg/I)	(IIIg/I)	(IIIg/I)	(IIIg/I)	Comments
New Mexico Water Quality Control		0.01	0.75	0.75	0.62	
Commission Groundwater Standards (mg/L)						
MW-2	11/15/02	< 0.001	< 0.001	< 0.001	< 0.001	
MW-2	02/18/03	0.29	0.014	0.001	0.001	
MW-2	04/17/03	0.175	0.007	< 0.001	< 0.001	
MW-2	10/28/03	0.018	0.001	< 0.001	< 0.001	
MW-2	01/29/04	0.0848	0.035	0.00292	0.00474	
MW-2	06/29/04	0.0582	0.000219	0.00534	0.001	
MW-2	09/28/04	0.329	0.0174	< 0.001	< 0.001	
MW-2	12/06/04	0.0355	0.0017	< 0.001	< 0.001	
MW-2	03/16/05	0.00523	< 0.001	< 0.001	< 0.001	
MW-2	06/06/05	0.0017	< 0.001	< 0.001	< 0.001	
MW-2	09/20/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-2	12/15.05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-2	03/21/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-2	06/26/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-2	09/16/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-2	12/11/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-2	03/14/07	< 0.001	< 0.001	< 0.001	< 0.001	
MW-2	06/20/07	< 0.001	< 0.001	< 0.001	< 0.002	
MW-2	09/26/07	< 0.001	< 0.001	< 0.001	< 0.002	
MW-2	12/27/07	< 0.002	< 0.002	< 0.002	< 0.006	
MW-2	03/06/08	< 0.002	< 0.002	< 0.002	< 0.006	
MW-2	09/17/08	< 0.002	< 0.002	< 0.002	< 0.006	
MW-2	03/10/09	< 0.002	< 0.002	< 0.002	< 0.006	
MW-2	09/23/09	< 0.002	< 0.002	< 0.002	< 0.006	
MW-2	03/22/10	< 0.002	< 0.002	< 0.002	< 0.006	
MW-2	09/16/10	< 0.001	< 0.002	< 0.002	< 0.004	
MW-2	04/25/11	< 0.001	< 0.002	< 0.002	< 0.002	
MW-2	09/18/11	< 0.001	< 0.002	< 0.002	< 0.004	
MW-2	03/12/12	< 0.001	< 0.002	< 0.002	< 0.004	
MW-2	09/08/12	< 0.001	< 0.002	< 0.002	< 0.003	
MW-2	02/22/13	< 0.001	< 0.002	< 0.002	< 0.003	
MW-2	09/11/13	< 0.001	< 0.002	< 0.002	< 0.003	
MW-2	02/25/14	< 0.001	< 0.002	< 0.002	< 0.003	
111 (1 -7	0 <i>L</i>   <i>LJ</i>   17	·0.001	₹0.002	·0.002	~0.00 <i>3</i>	

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	11/15/02	0.017	0.005	< 0.001	< 0.001	
MW-3	02/18/03	2.52	0.634	0.021	0.064	
MW-3	04/17/03	3.18	0.513	0.028	0.1	
MW-3	10/28/03	5.01	0.275	0.031	0.083	
MW-3	01/29/04	6.06	0.506	0.0679	0.0849	
MW-3	06/29/04	9.84	0.0917	0.0873	0.02404	
MW-3	09/28/04	11.2	0.0218	0.105	0.0213	
MW-3	12/06/04	12	0.0438	0.154	0.0237	
MW-3	03/16/05	10.9	0.013	0.15	0.02842	
MW-3	06/06/05	8.83	0.056	0.1535	0.0502	
MW-3	09/20/05	10.75	0.1355	0.288	0.221	
MW-3	12/15/05	9.57	0.414	0.173	0.177	
MW-3	03/21/06	6.55	1.575	0.4085	0.9015	
MW-3	06/26/06	9.67	2.93	0.0333	0.414	
MW-3	09/16/06	10.55	3.48	0.288	0.384	
MW-3	12/11/06	7.49	3.35	0.391	0.557	
MW-3	03/14/07	6.41	2.75	0.3185	0.501	
MW-3	06/20/07	6.41	3.49	0.52	0.78	
MW-3	09/26/07	5.54	2.555	0.35	0.515	
MW-3	12/27/07	5.89	2.81	0.316	0.4615	
MW-3	03/06/08	8.36	4.36	0.57	0.99	
MW-3	09/17/08	6.14	3.3	0.386	0.674	
MW-3	03/10/09	5.03	2.5	0.3945	0.913	
MW-3	09/23/09	5.68	4.32	0.549	1.36	
MW-3	03/22/10	2.615	1.475	0.218	0.5415	
MW-3	09/16/10	0.9555	0.1785	0.0916	0.1197	
MW-3	04/25/11	0.0798	< 0.02	0.0111	0.0249	
MW-3	09/18/11	0.0219	< 0.002	< 0.002	< 0.004	Duplicate sample collected
MW-3	03/12/12	0.0071	< 0.002	< 0.002	< 0.004	Duplicate sample collected
MW-3	09/08/12	0.012	< 0.002	< 0.002	< 0.003	Duplicate sample collected
MW-3	02/22/13	0.0065	< 0.002	< 0.002	< 0.003	Duplicate sample collected
MW-3	09/11/13	0.0632	< 0.002	0.0026	0.0091	Duplicate sample collected
MW-3	02/25/14	0.0406	< 0.002	0.00076 J	0.0057	Duplicate sample collected
MW-3 (duplicate)	02/25/14	0.0417	< 0.002	0.00077 J	0.0056	

					Total	
Location		Benzene	Toluene	Ethylbenzene	Xvlenes	
Identification	Sample Date	(mg/l)	(mg/l)	(mg/l)	(mg/l)	Comments
New Mexico Water Quality Control	Sumpre Bute	(111g/1)	(·g/1)	(111g/1)	(g/-)	Comments
Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
( 8 )	11/15/02	0.114	0.020	0.002	0.003	
MW-4		0.114 1.12	0.039	0.002		
MW-4 MW-4	02/18/03		0.436	0.022	0.032	
	04/17/03	0.782	0.45	0.029	0.055	
MW-4	10/28/03	0.077	0.029	0.002	0.008	
MW-4	01/29/04	0.32	0.169	0.0203	0.053	
MW-4	06/29/04	0.461	0.0202	0.352	0.074	
MW-4	09/28/04	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	12/06/04	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	03/16/05	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	06/06/05	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	09/20/05	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	12/15.05	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	03/21/06	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	06/26/06	9.08	5.73	1.03	5.69	
MW-4	09/16/06	0.51	0.0415	0.21	1.028	
MW-4	12/11/06	0.17	0.139	0.111	0.466	
MW-4	03/14/07	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	06/20/07	1.8	0.98	0.61	2.65	
MW-4	09/26/07	0.43	0.35	0.19	0.93	
MW-4	12/27/07	0.11	0.145	0.0837	0.425	
MW-4	03/06/08	< 0.002	< 0.002	< 0.002	< 0.006	
MW-4	09/17/08	0.0146	0.0068	0.0703	0.081	
MW-4	03/10/09	0.0141	0.0178	0.0618	0.0863	
MW-4	09/23/09	0.0022	< 0.002	0.0243	0.0186	
MW-4	03/22/10	0.0129	0.0255	0.0107	0.0574	
MW-4	09/16/10	< 0.001	< 0.002	< 0.002	0.0921	
MW-4	04/25/11	0.00925	0.02905	0.00365	0.102	
MW-4	09/18/11	0.0024	< 0.004	< 0.004	< 0.008	
MW-4	03/12/12	0.00041	< 0.002	< 0.002	< 0.004	
MW-4	09/08/12	< 0.001	< 0.002	< 0.002	< 0.003	
MW-4	02/22/13	0.00031	< 0.002	< 0.002	< 0.003	
MW-4	09/11/13	< 0.001	< 0.002	< 0.002	< 0.003	
MW-4	02/25/14	< 0.001	<0.002	< 0.002	< 0.003	
111.11	02/25/11	-0.001	-0.002	-0.002	-0.005	

					T ( )	I
·			<b></b>	70.1 N	Total	
Location		Benzene	Toluene	Ethylbenzene	Xylenes	
Identification	Sample Date	(mg/l)	(mg/l)	(mg/l)	(mg/l)	Comments
New Mexico Water Quality Control		0.01	0.75	0.75	0.62	
Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.02	
MW-5	11/15/02	< 0.001	< 0.001	< 0.001	< 0.001	
MW-5	02/18/03	0.328	0.056	0.004	0.004	
MW-5	04/17/03	0.128	0.007	< 0.001	< 0.001	
MW-5	10/28/03	0.164	0.048	0.002	0.004	
MW-5	01/29/04	0.226	0.064	0.00404	0.0074	
MW-5	06/29/04	0.249	0.00172	0.0603	0.004	
MW-5	09/28/04	0.0336	0.00281	< 0.001	< 0.001	
MW-5	12/06/04	0.0137	0.00318	< 0.001	< 0.001	
MW-5	03/16/05	0.00371	0.00038	< 0.001	< 0.001	
MW-5	06/06/05	0.00169	< 0.001	< 0.001	< 0.001	
MW-5	09/20/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-5	12/15/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-5	03/21/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-5	06/26/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-5	09/16/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-5	12/11/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-5	03/14/07	< 0.001	< 0.001	< 0.001	< 0.001	
MW-5	06/20/07	< 0.001	< 0.001	< 0.001	< 0.002	
MW-5	09/26/07	< 0.001	< 0.001	< 0.001	< 0.002	
MW-5	12/27/07	< 0.002	< 0.002	< 0.002	< 0.006	
MW-5	03/06/08	< 0.002	< 0.002	< 0.002	< 0.006	
MW-5	09/17/08	0.00073	0.0007	< 0.002	< 0.006	
MW-5	03/10/09	.0005J	<0.002	< 0.002	< 0.006	
MW-5	09/23/09	< 0.002	< 0.002	< 0.002	< 0.006	
MW-5	03/22/10	< 0.002	0.0037	< 0.002	0.0076	
MW-5	09/16/10	< 0.002	< 0.002	< 0.002	<0.004	
MW-5	04/25/11	0.0017	0.0028	0.00043	0.0109	
MW-5	09/18/11	<0.0017	<0.0028	< 0.002	<0.004	
MW-5	03/12/12	< 0.001	< 0.002	< 0.002	<0.004	
MW-5	09/08/12	<0.001	<0.002	<0.002	< 0.003	
MW-5	02/22/13	<0.001	<0.002	<0.002	<0.003	
MW-5	09/11/13	<0.001	<0.002	<0.002	<0.003	
MW-5	02/25/14	<0.001	<0.002	<0.002	<0.003	
- V1 IVI	02/23/14	<u>\0.001</u>	<u> \0.002</u>	<u> ~0.002</u>	<u> </u>	

		_			Total	
Location		Benzene	Toluene	Ethylbenzene	Xylenes	
Identification	Sample Date	(mg/l)	(mg/l)	(mg/l)	(mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
\ 0 /	11/15/02	0.001	0.001	0.001	0.001	
MW-6	11/15/02	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	02/18/03	0.001	< 0.001	< 0.001	< 0.001	
MW-6	04/17/03	0.002	< 0.001	< 0.001	< 0.001	
MW-6	10/28/03	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	01/29/04	0.00382	0.0014	0.00133	0.00194	
MW-6	06/29/04	< 0.00019	< 0.00014	< 0.00013	< 0.0002	
MW-6	09/28/04	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	12/06/04	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	03/16/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	06/06/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	09/20/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	12/15/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	03/21/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	06/26/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	09/16/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	12/11/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	03/14/07	< 0.001	< 0.001	< 0.001	< 0.001	
MW-6	06/20/07	NS	NS	NS	NS	
MW-6	09/26/07	NS	NS	NS	NS	
MW-6	12/27/07	NS	NS	NS	NS	
MW-6	03/06/08	NS	NS	NS	NS	
MW-6	09/17/08	NS	NS	NS	NS	
MW-6	03/10/09	NS	NS	NS	NS	
MW-6	09/23/09	NS	NS	NS	NS	
MW-6	03/22/10	NS	NS	NS	NS	
MW-6	09/16/10	NS	NS	NS	NS	
MW-6	04/25/11	NS	NS	NS	NS	
MW-6	09/18/11	NS	NS	NS	NS	
MW-6	03/12/12	NS	NS	NS	NS	
MW-6	09/08/12	NS	NS	NS NS	NS	
MW-6	02/22/13	NS NS	NS	NS NS	NS	
MW-6	09/11/13	NS NS	NS NS	NS NS	NS NS	
MW-6			- 1.2	Required for Delia	- 1.2	
IVI W -0	Kemov	eu rioin sam	Jillig Plati - Not l	Required for Delli	ication	

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	10/28/03	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	01/29/04	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	06/29/04	0.000456	< 0.00014	< 0.00013	< 0.0002	
MW-7	09/28/04	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	12/06/04	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	03/16/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	06/06/05	0.000695	< 0.001	< 0.001	< 0.001	
MW-7	09/20/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	12/15/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	03/21/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	06/26/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	09/16/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	12/11/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	03/14/07	< 0.001	< 0.001	< 0.001	< 0.001	
MW-7	06/20/07	< 0.001	< 0.001	< 0.001	< 0.002	
MW-7	09/26/07	< 0.001	< 0.001	< 0.001	< 0.002	
MW-7	12/27/07	< 0.002	< 0.002	< 0.002	< 0.006	
MW-7	03/06/08	< 0.002	< 0.002	< 0.002	< 0.006	
MW-7	09/17/08	< 0.002	< 0.002	< 0.002	< 0.006	
MW-7	03/10/09	< 0.002	< 0.002	< 0.002	< 0.006	
MW-7	09/23/09	< 0.002	< 0.002	< 0.002	< 0.006	
MW-7	03/22/10	< 0.002	< 0.002	< 0.002	< 0.006	
MW-7	09/16/10	< 0.001	< 0.002	< 0.002	< 0.004	
MW-7	04/25/11	< 0.001	< 0.002	< 0.002	< 0.002	
MW-7	09/18/11	< 0.001	< 0.002	< 0.002	< 0.004	
MW-7	03/12/12	< 0.001	< 0.002	< 0.002	< 0.004	
MW-7	09/08/12	< 0.001	< 0.002	< 0.002	< 0.003	
MW-7	02/22/13	0.00027	< 0.002	< 0.002	< 0.003	
MW-7	09/11/13	< 0.001	< 0.002	< 0.002	< 0.003	
MW-7	02/25/14	< 0.001	< 0.002	< 0.002	< 0.003	

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	10/28/03	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	01/29/04	0.00139	0.00109	0.00112	0.00217	
MW-8	06/29/04	0.00248	< 0.00014	0.000633	< 0.0002	
MW-8	09/28/04	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	12/06/04	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	03/16/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	06/06/05	0.000955	< 0.001	< 0.001	< 0.001	
MW-8	09/20/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	12/15/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	03/21/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	06/26/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	09/16/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	12/11/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	03/14/07	< 0.001	< 0.001	< 0.001	< 0.001	
MW-8	06/20/07	< 0.001	< 0.001	< 0.001	< 0.002	
MW-8	09/26/07	< 0.001	< 0.001	< 0.001	< 0.002	
MW-8	12/27/07	< 0.002	< 0.002	< 0.002	< 0.006	
MW-8	03/06/08	< 0.002	< 0.002	< 0.002	< 0.006	
MW-8	09/17/08	< 0.002	< 0.002	< 0.002	< 0.006	
MW-8	03/10/09	< 0.002	< 0.002	< 0.002	< 0.006	
MW-8	09/23/09	< 0.002	< 0.002	< 0.002	< 0.006	
MW-8	03/22/10	< 0.002	< 0.002	< 0.002	< 0.006	
MW-8	09/16/10	< 0.001	< 0.002	< 0.002	< 0.004	_
MW-8	04/25/11	< 0.001	< 0.002	< 0.002	< 0.002	
MW-8	09/18/11	< 0.001	< 0.002	< 0.002	< 0.004	
MW-8	03/12/12	< 0.001	< 0.002	< 0.002	< 0.004	
MW-8	09/08/12	< 0.001	< 0.002	< 0.002	< 0.003	
MW-8	02/22/13	< 0.001	< 0.002	< 0.002	< 0.003	
MW-8	09/11/13	< 0.001	< 0.002	< 0.002	< 0.003	
MW-8	02/25/14	< 0.001	< 0.002	< 0.002	< 0.003	

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-9	10/28/03	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	01/29/04	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	06/29/04	< 0.00019	< 0.00014	< 0.00013	< 0.0002	
MW-9	09/28/04	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	12/06/04	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	03/16/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	06/06/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	09/20/05	< 0.001	< 0.001	< 0.001	0.00105	
MW-9	12/15/05	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	03/21/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	06/26/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	09/16/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	12/11/06	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	03/14/07	< 0.001	< 0.001	< 0.001	< 0.001	
MW-9	06/20/07	< 0.001	< 0.001	< 0.001	< 0.002	
MW-9	09/26/07	< 0.001	< 0.001	< 0.001	< 0.002	
MW-9	12/27/07	< 0.002	< 0.002	< 0.002	< 0.006	
MW-9	03/06/08	< 0.002	< 0.002	< 0.002	< 0.006	
MW-9	09/17/08	< 0.002	< 0.002	< 0.002	< 0.006	
MW-9	03/10/09	< 0.002	< 0.002	< 0.002	< 0.006	
MW-9	09/23/09	< 0.002	< 0.002	< 0.002	< 0.006	
MW-9	03/22/10	< 0.002	< 0.002	< 0.002	< 0.006	
MW-9	09/16/10	< 0.001	< 0.002	< 0.002	< 0.004	
MW-9	04/25/11	< 0.001	< 0.002	< 0.002	< 0.002	
MW-9	09/18/11	< 0.001	< 0.002	< 0.002	< 0.004	
MW-9	03/12/12	< 0.001	< 0.002	< 0.002	< 0.004	
MW-9	09/08/12	< 0.001	< 0.002	< 0.002	< 0.003	
MW-9	02/22/13	< 0.001	< 0.002	< 0.002	< 0.003	
MW-9	09/11/13	< 0.001	< 0.002	< 0.002	< 0.003	
MW-9	02/25/14	< 0.001	< 0.002	< 0.002	< 0.003	

Notes:

The environmental cleanup standards for groundwater that are applicable to this site are the New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards. Monitoring well location MW-6 has been removed from the sampling program due to non-detect concentrations. The data are not required for delineation.

**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.

LNAPL = Light Non-Aqueous Phase Liquid

NS = Not sampled.

mg/L = milligrams per liter.

### Appendix B

Laboratory Analytical Report (Electronic Only)
- Accutest Job #: D55394



03/05/14



### **Technical Report for**

DCP Midstream, LP

**TASMCOA:C** Line

**Pipeline Release** 

Accutest Job Number: D55394

Sampling Date: 02/25/14

#### Report to:

Tasman Geosciencec LLC 6899 Pecos Street Unit C Denver, CO 80221

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**ATTN: Don Baggus** 

Total number of pages in report: 24



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman Laboratory Director

Sepol wall

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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### **Sample Summary**

Job No:

D55394

DCP Midstream, LP

TASMCOA:C Line Project No: Pipeline Release

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
D55394-1	02/25/14	13:35 CW	02/26/14	AQ	Ground Water	MW-1
D55394-2	02/25/14	12:50 CW	02/26/14	AQ	Ground Water	MW-2
D55394-3	02/25/14	10:35 CW	02/26/14	AQ	Ground Water	MW-3
D55394-4	02/25/14	10:50 CW	02/26/14	AQ	Ground Water	MW-4
D55394-5	02/25/14	12:20 CW	02/26/14	AQ	Ground Water	MW-5
D55394-6	02/25/14	10:10 CW	02/26/14	AQ	Ground Water	MW-7
D55394-6D	02/25/14	10:10 CW	02/26/14	AQ	Water Dup/MSD	MW-7
D55394-6M	02/25/14	10:10 CW	02/26/14	AQ	Water Matrix Spike	MW-7
D55394-7	02/25/14	11:30 CW	02/26/14	AQ	Ground Water	MW-8
D55394-8	02/25/14	11:50 CW	02/26/14	AQ	Ground Water	MW-9
D55394-9	02/25/14	00:00 CW	02/26/14	AQ	Ground Water	DUP





#### CASE NARRATIVE / CONFORMANCE SUMMARY

Client: DCP Midstream, LP Job No D55394

Site: TASMCOA:C Line Report Date 3/5/2014 11:10:43 AM

On 02/26/2014, 9 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 1.3 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D55394 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

#### Volatiles by GCMS By Method SW846 8260B

Matrix AQ Batch ID: V6V1326

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- D55207-24MS, -24MSD: The pH of the sample aliquot for VOA analysis was >2 at time of analysis.

Sample(s) D55207-24MS, D55207-24MSD were used as the QC samples indicated.

Matrix AQ Batch ID: V6V1327

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D55394-6MS, D55394-6MSD were used as the QC samples indicated.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

**Summary of Hits Job Number:** D55394

Account: DCP Midstream, LP Project: TASMCOA:C Line

**Collected:** 02/25/14

_	Client Sample ID	Result/				
Analyte		Qual	RL	MDL	Units	Method
D55394-1	MW-1					
Benzene Toluene		0.0257 0.0106	0.0010 0.0020	0.00025 0.0010	mg/l mg/l	SW846 8260B SW846 8260B
Ethylbenzene Xylene (total)		0.0372 0.0317	0.0020 0.0020 0.0030	0.00025 0.0020	mg/l mg/l	SW846 8260B SW846 8260B SW846 8260B
D55394-2	MW-2				C	
No hits reported	in this sample.					
D55394-3	MW-3					
Benzene Ethylbenzene Xylene (total)		0.0406 0.00076 J 0.0057	0.0010 0.0020 0.0030	0.00025 0.00025 0.0020	mg/l mg/l mg/l	SW846 8260B SW846 8260B SW846 8260B

D55394-4 MW-4

No hits reported in this sample.

D55394-5 MW-5

No hits reported in this sample.

D55394-6 MW-7

No hits reported in this sample.

D55394-7 MW-8

No hits reported in this sample.

D55394-8 MW-9

No hits reported in this sample.

D55394-9 DUP

Benzene	0.0417	0.0010	0.00025	mg/l	SW846 8260B
Ethylbenzene	0.00077 J	0.0020	0.00025	mg/l	SW846 8260B
Xylene (total)	0.0056	0.0030	0.0020	mg/l	SW846 8260B





Sample Results	
Report of Analysis	



Page 1 of 1

### **Report of Analysis**

Client Sample ID: MW-1 Lab Sample ID: D55394

 Lab Sample ID:
 D55394-1
 Date Sampled:
 02/25/14

 Matrix:
 AQ - Ground Water
 Date Received:
 02/26/14

 Method:
 SW846 8260B
 Percent Solids:
 n/a

**Project:** TASMCOA:C Line

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 6V23549.D 1 02/26/14 BR n/a n/a V6V1326

Run #2

**Purge Volume** 

Run #1 5.0 ml

Run #2

#### **Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylene (total)	0.0257 0.0106 0.0372 0.0317	0.0010 0.0020 0.0020 0.0030	0.00025 0.0010 0.00025 0.0020	mg/l mg/l mg/l mg/l	
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Limit	s	
17060-07-0 2037-26-5 460-00-4	1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	96% 103% 100%		62-13 70-13 69-13	0%	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound



## 4

## **Report of Analysis**

Client Sample ID: MW-2 Lab Sample ID: D55394

 Lab Sample ID:
 D55394-2
 Date Sampled:
 02/25/14

 Matrix:
 AQ - Ground Water
 Date Received:
 02/26/14

 Method:
 SW846 8260B
 Percent Solids:
 n/a

**Project:** TASMCOA:C Line

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 6V23550.D 1 02/26/14 BR n/a n/a V6V1326

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

## **Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylene (total)	ND ND ND ND	0.0010 0.0020 0.0020 0.0030	0.00025	mg/l	
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Limit	s	
17060-07-0 2037-26-5 460-00-4	1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	97% 103% 97%		62-130 70-130 69-130	0%	

ND = Not detected MDL - Method Detection Limit J = Indicate MDL - Method Detection Limit <math>MDL - Method Detection Limit MDL - Method Detection Limit MDL - Method Detection Limit <math>MDL - Method Detection Limit MDL -

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



## **Report of Analysis**

Client Sample ID: MW-3 Lab Sample ID: D55394

 Lab Sample ID:
 D55394-3
 Date Sampled:
 02/25/14

 Matrix:
 AQ - Ground Water
 Date Received:
 02/26/14

 Method:
 SW846 8260B
 Percent Solids:
 n/a

**Project:** TASMCOA:C Line

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** V6V1326 Run #1 6V23551.D 1 02/26/14 BR n/a n/aRun #2

Purge Volume Run #1 5.0 ml

Run #1 5 Run #2

## **Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylene (total)	0.0406 ND 0.00076 0.0057	0.0010 0.0020 0.0020 0.0030	0.00025 0.0010 0.00025 0.0020	mg/l	J
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Limi	ts	
17060-07-0 2037-26-5 460-00-4	1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	96% 102% 98%		62-13 70-13 69-13	30%	

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated the second se

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



## 4

## **Report of Analysis**

Client Sample ID: MW-4 Lab Sample ID: D55394

 Lab Sample ID:
 D55394-4
 Date Sampled:
 02/25/14

 Matrix:
 AQ - Ground Water
 Date Received:
 02/26/14

 Method:
 SW846 8260B
 Percent Solids:
 n/a

**Project:** TASMCOA:C Line

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #16V23552.D102/26/14BRn/an/aV6V1326

Run #2

**Purge Volume** 

Run #1 5.0 ml

Run #2

## **Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylene (total)	ND ND ND ND	0.0010 0.0020 0.0020 0.0030	0.00025 0.0010 0.00025 0.0020	mg/l	
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Limit	s	
17060-07-0 2037-26-5 460-00-4	1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	95% 101% 96%		62-13 70-13 69-13	0%	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



## **Report of Analysis**

Client Sample ID: MW-5

 Lab Sample ID:
 D55394-5
 Date Sampled:
 02/25/14

 Matrix:
 AQ - Ground Water
 Date Received:
 02/26/14

 Method:
 SW846 8260B
 Percent Solids:
 n/a

**Project:** TASMCOA:C Line

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 6V23553.D 1 02/26/14 BR n/a n/a V6V1326

Run #2

**Purge Volume** 

Run #1 5.0 ml

Run #2

## **Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylene (total)	ND ND ND ND	0.0010 0.0020 0.0020 0.0030	0.00025 0.0010 0.00025 0.0020	mg/l	
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Limit	ts	
17060-07-0 2037-26-5 460-00-4	1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	100% 101% 95%		62-13 70-13 69-13	0%	

ND = Not detected

MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



## 4

## **Report of Analysis**

Client Sample ID: MW-7

 Lab Sample ID:
 D55394-6
 Date Sampled:
 02/25/14

 Matrix:
 AQ - Ground Water
 Date Received:
 02/26/14

 Method:
 SW846 8260B
 Percent Solids:
 n/a

**Project:** TASMCOA:C Line

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 6V23568.D 1 02/27/14 BR n/a n/a V6V1327

Run #2

**Purge Volume** 

Run #1 5.0 ml

Run #2

## **Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylene (total)	ND ND ND ND	0.0010 0.0020 0.0020 0.0030	0.00025	mg/l mg/l mg/l mg/l	
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Limit	s	
17060-07-0 2037-26-5 460-00-4	1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	100% 102% 93%		62-130 70-130 69-130	0%	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



## **Report of Analysis**

Client Sample ID: MW-8 Lab Sample ID: D55394-7

 Lab Sample ID:
 D55394-7
 Date Sampled:
 02/25/14

 Matrix:
 AQ - Ground Water
 Date Received:
 02/26/14

 Method:
 SW846 8260B
 Percent Solids:
 n/a

**Project:** TASMCOA:C Line

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** V6V1326 Run #1 6V23554.D 1 02/26/14 BR n/a n/aRun #2

Run #1 5.0 ml Run #2

## **Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylene (total)	ND ND ND ND	0.0010 0.0020 0.0020 0.0030	0.00025 0.0010 0.00025 0.0020	mg/l	
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Limi	ts	
17060-07-0 2037-26-5 460-00-4	1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	99% 100% 94%		62-13 70-13 69-13	80%	

ND = Not detected MDL - Method Detection Limit J = Indicates Indicates

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



## **Report of Analysis**

Client Sample ID: MW-9 Lab Sample ID: D55394-8

 Lab Sample ID:
 D55394-8
 Date Sampled:
 02/25/14

 Matrix:
 AQ - Ground Water
 Date Received:
 02/26/14

 Method:
 SW846 8260B
 Percent Solids:
 n/a

**Project:** TASMCOA:C Line

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** V6V1326 Run #1 6V23555.D 1 02/26/14 BR n/a n/aRun #2

Purge Volume Run #1 5.0 ml

Run #2

## **Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylene (total)	ND ND ND ND	0.0010 0.0020 0.0020 0.0030	0.00025 0.0010 0.00025 0.0020	mg/l	
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Limi	ts	
17060-07-0 2037-26-5 460-00-4	1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	99% 101% 95%		62-13 70-13 69-13	80%	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



## **Report of Analysis**

Client Sample ID: DUP Lab Sample ID: D5539

 Lab Sample ID:
 D55394-9
 Date Sampled:
 02/25/14

 Matrix:
 AQ - Ground Water
 Date Received:
 02/26/14

 Method:
 SW846 8260B
 Percent Solids:
 n/a

**Project:** TASMCOA:C Line

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** V6V1326 Run #1 6V23556.D 1 02/26/14 BR n/an/aRun #2

Purge Volume Run #1 5.0 ml

Run #2

## **Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylene (total)	0.0417 ND 0.00077 0.0056	0.0010 0.0020 0.0020 0.0030	0.00025	mg/l mg/l mg/l mg/l	J
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Limits	S	
17060-07-0 2037-26-5 460-00-4	1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	97% 100% 97%		62-130 70-130 69-130	)%	

ND = Not detected MDL - Method Detection Limit J =

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value





Misc. Forms
Custody Documents and Other Forms
Includes the following where applicable:

• Chain of Custody



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## CHAIN OF CUSTODY

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Don Baggus dbaggus@tasman-geo.com														-1	ğ l					- 1	i				AIR - Air SOL - Other Solid
Phone #	Client Purchase	Order#			City										8		- 1			- 1	- 1	- 1		- 1	WP - Wipe FB-Field Blank
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**D55394: Chain of Custody** Page 1 of 1





## GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



**Method:** SW846 8260B

# Method Blank Summary Job Number: D55394

**Account:** DCPMCODN DCP Midstream, LP

TASMCOA:C Line **Project:** 

Sample V6V1326-MB	<b>File ID</b> 6V23539.D	<b>DF</b> 1	<b>Analyzed</b> 02/26/14	<b>By</b> BR	<b>Prep Date</b> n/a	Prep Batch n/a	Analytical Batch V6V1326

## The QC reported here applies to the following samples:

D55394-1, D55394-2, D55394-3, D55394-4, D55394-5, D55394-7, D55394-8, D55394-9

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2	Benzene	ND	1.0	0.25	ug/l
100-41-4	Ethylbenzene	ND	2.0	0.25	ug/l
108-88-3	Toluene	ND	2.0	1.0	ug/l
1330-20-7	Xylene (total)	ND	3.0	2.0	ug/l

CAS No.	<b>Surrogate Recoveries</b>		Limits
2037-26-5	1,2-Dichloroethane-D4	96%	62-130%
	Toluene-D8	103%	70-130%
	4-Bromofluorobenzene	97%	69-130%



**Method:** SW846 8260B

## **Method Blank Summary**

Job Number: D55394

Account: DCPMCODN DCP Midstream, LP

**Project:** TASMCOA:C Line

Sample V6V1327-MB	<b>File ID</b> 6V23560.D	<b>DF</b> 1	<b>Analyzed</b> 02/27/14	By BR	Prep Date n/a	Prep Batch n/a	Analytical Batch V6V1327

The QC reported here applies to the following samples:

D55394-6

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2	Benzene	ND	1.0	0.25	ug/l
100-41-4	Ethylbenzene	ND	2.0	0.25	ug/l
108-88-3	Toluene	ND	2.0	1.0	ug/l
1330-20-7	Xylene (total)	ND	3.0	2.0	ug/l

# CAS No. Surrogate Recoveries Limits 17060-07-0 1,2-Dichloroethane-D4 96% 62-130% 2037-26-5 Toluene-D8 102% 70-130% 460-00-4 4-Bromofluorobenzene 96% 69-130%



**Method:** SW846 8260B

## Blank Spike Summary Job Number: D55394

DCPMCODN DCP Midstream, LP Account:

**Project:** TASMCOA:C Line

Sample V6V1326-BS	<b>File ID</b> 6V23538.D	<b>DF</b> 1	<b>Analyzed</b> 02/26/14	<b>By</b> BR	Prep Date n/a	Prep Batch n/a	Analytical Batch V6V1326

## The QC reported here applies to the following samples:

D55394-1, D55394-2, D55394-3, D55394-4, D55394-5, D55394-7, D55394-8, D55394-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	50.2	100	70-130
100-41-4	Ethylbenzene	50	53.1	106	70-130
108-88-3	Toluene	50	52.0	104	70-130
1330-20-7	Xylene (total)	150	148	99	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	62-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	100%	69-130%



<sup>\* =</sup> Outside of Control Limits.

**Method:** SW846 8260B

# Blank Spike Summary Job Number: D55394

DCPMCODN DCP Midstream, LP Account:

TASMCOA:C Line **Project:** 

Sample V6V1327-BS	<b>File ID</b> 6V23559.D	<b>DF</b> 1	<b>Analyzed</b> 02/27/14	By BR	Prep Date n/a	Prep Batch n/a	Analytical Batch V6V1327

The QC reported here applies to the following samples:

D55394-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	48.5	97	70-130
100-41-4	Ethylbenzene	50	50.9	102	70-130
108-88-3	Toluene	50	50.2	100	70-130
1330-20-7	Xylene (total)	150	142	95	70-130

CAS No.	<b>Surrogate Recoveries</b>	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	97%	62-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	100%	69-130%



<sup>\* =</sup> Outside of Control Limits.

**Method:** SW846 8260B

## Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D55394

DCPMCODN DCP Midstream, LP Account:

Project: TASMCOA:C Line

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D55207-24MS <sup>a</sup>	6V23543.D	50	02/26/14	BR	n/a	n/a	V6V1326
D55207-24MSD a	6V23544.D	50	02/26/14	BR	n/a	n/a	V6V1326
D55207-24 a	6V23542.D	50	02/26/14	BR	n/a	n/a	V6V1326

## The QC reported here applies to the following samples:

D55394-1, D55394-2, D55394-3, D55394-4, D55394-5, D55394-7, D55394-8, D55394-9

CAS No.	Compound	D55207-24 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	2500	2550	102	2640	106	3	62-130/30
100-41-4	Ethylbenzene	ND	2500	2610	104	2710	108	4	63-130/30
108-88-3	Toluene	ND	2500	2570	103	2690	108	5	60-130/30
1330-20-7	Xylene (total)	ND	7500	7310	97	7570	101	3	67-130/30

CAS No.	<b>Surrogate Recoveries</b>	MS	MSD	D55207-24	Limits
17060-07-0	1,2-Dichloroethane-D4	97%	100%	98%	62-130%
2037-26-5	Toluene-D8	99%	98%	102%	70-130%
460-00-4	4-Bromofluorobenzene	101%	101%	95%	69-130%

<sup>(</sup>a) The pH of the sample aliquot for VOA analysis was > 2 at time of analysis.



<sup>\* =</sup> Outside of Control Limits.

**Method:** SW846 8260B

## Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D55394

Account: DCPMCODN DCP Midstream, LP

**Project:** TASMCOA:C Line

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D55394-6MS	6V23569.D	1	02/27/14	BR	n/a	n/a	V6V1327
D55394-6MSD	6V23570.D	1	02/27/14	BR	n/a	n/a	V6V1327
D55394-6	6V23568.D	1	02/27/14	BR	n/a	n/a	V6V1327

The QC reported here applies to the following samples:

4-Bromofluorobenzene

D55394-6

460-00-4

CAS No.	Compound	D55394-6 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	50	51.8	104	50.2	100	3	62-130/30
100-41-4	Ethylbenzene	ND	50	52.4	105	51.4	103	2	63-130/30
108-88-3	Toluene	ND	50	52.5	105	51.2	102	3	60-130/30
1330-20-7	Xylene (total)	ND	150	148	99	144	96	3	67-130/30
CAS No.	Surrogate Recoveries	MS	MSD	D55394-6		Limits			
17060-07-0 2037-26-5	1,2-Dichloroethane-D4 Toluene-D8	100% 98%	100% 98%	1009		62-130% 70-130%			

99%

99%

93%

69-130%

\* = Outside of Control Limits.