

GW-15

1st Semi-Annual Monitoring Report DCP Hobbs Gas Plant

DATE
July 31, 2014



370 17th Street, Suite 2500
Denver, Colorado 80202
303-605-1893 – main
303-605-1957 – fax

August 11, 2014

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

**RE: First 2014 Semi Annual Groundwater Monitoring Report
DCP Linam Ranch Gas Plant (GW-015)
Unit B, Section 6, Township 19 South, Range 37 East**

Dear Mr. Lowe:

DCP Midstream, LP (DCP) is pleased to submit for your review one copy of the First 2014 Semi Annual Groundwater Monitoring Report for the DCP Linam Ranch Gas Plant located in Lea County, New Mexico (Unit B Section 6, Township 19 South, Range 37 East).

If you have any questions regarding the report, please call at 303-605-1695 or e-mail me CECole@dcpmidstream.com.

Sincerely,

DCP Midstream, LP

A handwritten signature in blue ink that reads "Chandler E. Cole".

Chandler E Cole
Senior Environmental Specialist

Enclosure

cc: Tomas Oberding – OCD District Office, Hobbs
Environmental Files

From: [Cole, Chandler E](#)
To: [Lowe, Leonard, EMNRD](#)
Cc: [Oberding, Tomas, EMNRD](#)
Subject: GW-015 - Linam Ranch Gas Plant, Lea County, NM - First Half 2014 Semiannual Groundwater Monitoring Summary Report
Date: Monday, August 11, 2014 3:00:27 PM
Attachments: [Linam_1H14_Report.pdf](#)
[Linam_1H14_Report_Cover.pdf](#)

Dear Mr. Lowe:

DCP Midstream, LP is pleased to submit for your review the First 2014 Semi Annual Groundwater Monitoring Report for the DCP Linam Ranch Gas Plant located in Lea County, New Mexico (Unit B Section 6, Township 19 South, Range 37 East).

If you have any questions regarding the report, please call me at 303-605-1695.

Sincerely,

Chandler Cole
Senior Environmental Specialist
DCP Midstream
370 17th Street, Suite 2300
Denver, Colorado 80202
Tel: (303) 605-1695
Cell: (720) 810-2591
Fax: (303) 605-1957

First Half 2014 Semi-Annual Groundwater Monitoring Summary Report

Linam Ranch Natural Gas Plant
Lea County, New Mexico
GW-015

Prepared for:



370 17th St., Suite 2500
Denver, CO 80202

Prepared by:



6899 Pecos Street, Unit C
Denver, CO 80221

July 31, 2014

Table of Contents

1.	Introduction	1
2.	Site Location and Background.....	1
3.	Groundwater Monitoring.....	1
3.1	Groundwater and LNAPL Elevation Monitoring	2
3.2	Groundwater Quality Monitoring	2
3.3	Data Quality Assurance / Quality Control.....	3
4.	Remediation Activities	4
5.	Conclusions	5
6.	Recommendations	5

Tables

- 1 First Half 2014 Semi-Annual Summary of Groundwater Elevation Data
- 2 First Half 2014 Semi-Annual Summary of BTEX Concentrations in Groundwater

Figures

- 1 Site Location Map
- 2 Site Map With Monitoring Well Locations
- 3 First Half 2014 Semi-Annual Groundwater Elevation Contour Map – February 25, 2014
- 4 First Half 2014 Semi-Annual Analytical Results Map – February 25, 2014

Appendices

- A Historic Analytical Results – BTEX Concentrations in Groundwater
- B Laboratory Analytical Report (Electronic Only)
 - ALS Environmental Job #: 14021171

1. Introduction

This report summarizes groundwater monitoring and remediation activities conducted during the first half 2014 at the Linam Ranch Natural Gas Plant (Site) in Lea County, New Mexico (Figure 1). Tasman Geosciences, LLC (Tasman) performed these activities on behalf of DCP Midstream (DCP). The field activities described herein were conducted with the purpose of monitoring groundwater flow and quality conditions and assessing the presence of light non-aqueous phase liquid (LNAPL) hydrocarbons in the Site subsurface. Current Site conditions were evaluated from field data and 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 New Mexico Oil Conservation Division (OCD) designated Unit B, Section 6, Township 19 South, Range 37 East (Figure 1). The approximate facility coordinates are -32.6965 degrees north and 103.2883 degrees west. The facility is an active natural gas processing facility and includes an office complex and storage areas in addition to the main plant.

In February 1994, hydrocarbon-impacted groundwater was detected during subsurface investigations performed at two areas within the plant. A follow-up subsurface investigation was performed in May 1994 to delineate the horizontal extent of hydrocarbon-impacted soils and groundwater. The OCD subsequently requested a work plan to completely define the extent of groundwater contamination at the plant. In October 1995, the OCD approved a quarterly sampling and monitoring program for the Site, which was reduced to semi-annual frequency in 1997 after the recommendations of a 1996 report submitted by Geoscience Consultants Ltd. (GCL).

There are currently twelve groundwater monitoring wells at the Site: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-10D and MW-11 (Figure 2); monitoring well MW-13 was destroyed during the second half of 2012 and has been removed from the sampling program. These wells were installed between 1991 and 1995.

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, LNAPL measurements, and groundwater sampling. Figure 2 illustrates the groundwater monitoring network utilized to perform these activities at the Site.

3.1 Groundwater and LNAPL Elevation Monitoring

Groundwater and LNAPL levels were measured in order to evaluate hydraulic characteristics and provide information regarding seasonal and annual fluctuations in groundwater elevations at the Site. During the reporting period, groundwater levels were measured at twelve Site monitoring well locations. LNAPL was detected in the following locations, with the measured thickness indicated in parenthesis:

- MW-4 (0.02 feet)
- MW-6 (1.99 feet)

Groundwater and LNAPL levels were measured on the north side of the well casing to the nearest 0.01-foot using an oil-water interface probe (IP). Groundwater level data were later converted to elevation (feet above mean sea level [AMSL]). Measured groundwater levels, calculated groundwater elevations, and LNAPL level data 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 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 (06/04/14)	
Maximum Elevation (Well ID)	3674.28 (MW-5)
Minimum Elevation (Well ID)	3666.18 (MW-3)
Average Change from Previous Monitoring Event (ft) – All Wells	-1.73
Hydraulic Gradient (ft/ft) / (Well IDs)	0.0038 (MW-5 to MW-3)

3.2 Groundwater Quality Monitoring

Subsequent to recording groundwater level measurements, groundwater samples were collected from ten of the twelve wells. A minimum of three well casing volumes of groundwater were purged from each monitoring 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 4 degrees Celsius ($^{\circ}\text{C}$) for transportation to the laboratory. Groundwater samples were then shipped under chain-of-custody procedures to ALS Environmental (ALS) laboratory in Houston, Texas, for analysis.

Monitoring wells with detected LNAPL (MW-4 and MW-6), were not sampled. 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 June 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.

Benzene was detected at concentrations in excess of the New Mexico Water Quality Control Commission (NMWQCC) groundwater standard of 0.01 milligrams per liter (mg/L) at the following three locations, at the concentrations listed:

- MW-5: 0.18 mg/L
- MW-10: 1.7 mg/L
- MW-10D: 0.046 mg/L

In addition, ethylbenzene was detected in excess of the NMWQCC groundwater standard of 0.75 mg/L in MW-5, at a concentration of 1.3 mg/L.

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 trip blank was collected and submitted for analysis; a matrix spike / matrix spike duplicate (MS/MSD) pair was collected and submitted for analysis; a field duplicate sample from well MW-10D 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:

- Target analytes were not detected in the trip blank;
- The MS/MSD analysis, spike recoveries, and relative percent difference (RPD) were within acceptable control limits;
- The duplicate sample collected at MW-10D was in compliance with QA/QC standards. MW-10D and the associated duplicate sample exhibited benzene concentrations of 0.046 mg/L and 0.043 mg/L, respectively, yielding an RPD of 6.7, 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; and
- Data were reported using the correct method number and reporting units.

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

4. Remediation Activities

Active LNAPL recovery activities were initiated during December of 2012. An LNAPL recovery unit (Magnum Spill Buster – manufactured by Clean Earth Technology) was installed at monitoring well MW-6 and has remained in operation through the first half 2014. As of January 24, 2014, the Spill Buster pump has operated with minimal downtime due to pump cleaning and operational checks and extracted approximately 52 gallons of LNAPL at an average extraction rate of 0.19 gallons per day (gpd) since it first became operational.

Additionally, during the first half 2014 in March 2014, a passive LNAPL recovery bailer was installed at monitoring well MW-4. Since installation, the recovery bailer has removed approximately 0.22 gallons of LNAPL which was subsequently added to the LNAPL recovery tank for the Spill Buster unit installed near MW-6.

A summary of the cumulative volume of LNAPL removed and the pumping rates during the first half 2014 are summarized in the Table below.

First Half 2014 LNAPL Recovery Summary

Date	Total Tank Depth (feet)	Depth to Product (feet)	Volume of Product (gallons)	Cumulative Volume of Product (Gallons)	Pump Rate (gallons per day)	Comments
Linam Ranch - MW-6 Well						
23-Jan-14	4.1	3.63	34.97	34.97	0.00	
17-Mar-14	4.1	3.76	25.30	25.30	-0.18	Product loss is assumed to be due to evaporation. No evidence of leaks around tank or in secondary containment is apparent.
25-Apr-14	4.1	3.73	27.53	27.53	0.06	
2-Jun-14	4.1	3.70	29.76	29.76	0.06	Approximately 0.09 gallons of LNAPL added to recovery tank from product bailer at MW-04.
24-Jun-14	4.1	3.40	52.08	52.08	1.01	Approximatley 0.13 gallons of LNAPL added to recovery tank from product bailer at MW-04.
Notes:						
- One foot equals 74.39 gallons/ One tenth of a foot equals 7.44 gallons						

5. Conclusions

As observed during the first half 2014, measurable LNAPL remains within monitoring wells MW-4 and MW-6, located downgradient of the former oil-water separator. In addition, elevated benzene concentration persist in the central portion of the Site.

Comparison of the first half semi-annual 2014 monitoring data with historic information provides the following general observations:

- Based on historic groundwater level measurements, groundwater elevations at the Site typically exhibit seasonal and annual fluctuations. Measurements collected during the first half 2014 exhibited a relatively large decrease. This is following a relatively large increase that was observed during the previous (second half 2013) monitoring period. These fluctuations occur uniformly across the Site and are considered indicative of natural conditions.
- Elevated benzene concentrations persist in the central portion of the Site, represented by wells MW-5, MW-10, and MW-10D.
- Active and passive LNAPL removal at MW-6 and MW-4, respectively, continues to facilitate LNAPL extraction rates at those wells.

While separate and dissolved phase hydrocarbon impacts persist on-Site, BTEX concentrations in downgradient monitoring wells MW-7, MW-9, and MW-3 remain below laboratory detection limits. This observation, along with a historic decreasing trend in dissolved phase concentrations, appears to indicate that the plume is stable and/or shrinking.

6. Recommendations

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

- Continue semi-annual groundwater monitoring and sampling at the monitoring locations illustrated on Figure 2.
- Continue to monitor the recovery rate and Spill Buster performance at MW-6. Should LNAPL recovery continue to decrease to below the Spill Buster's capabilities, the unit may potentially be removed; followed by installation of a passive recovery bailer at that location.

Tables

TABLE 1
FIRST HALF 2014 SEMI-ANNUAL
SUMMARY OF GROUNDWATER ELEVATION DATA
LINAM RANCH
LEA COUNTY, NEW MEXICO

Location	Date	Depth to Groundwater ⁽¹⁾ (feet)	Depth to Product ⁽¹⁾ (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth ⁽²⁾ (feet)	TOC Elevation (feet amsl)	Groundwater Elevation ⁽³⁾ (feet amsl)	Change in Groundwater Elevation Since Previous Event ⁽⁴⁾ (feet)
MW-1	03/05/12	46.43			54.31	3718.29	3671.86	-0.38
MW-1	09/04/12	46.91			54.31	3718.29	3671.38	-0.48
MW-1	02/18/13	46.85			54.31	3718.29	3671.44	0.06
MW-1	09/09/13	42.86			54.31	3718.29	3675.43	3.99
MW-1	02/25/14	45.66			NM	3718.29	3672.63	-2.80
MW-2	03/05/12	45.95			50.50	3714.80	3668.85	-0.48
MW-2	09/04/12	46.35			50.50	3714.80	3668.45	-0.40
MW-2	02/18/13	46.50			50.50	3714.80	3668.30	-0.15
MW-2	09/09/13	41.21			50.50	3714.80	3673.59	5.29
MW-2	02/25/14	44.96			NM	3714.80	3669.84	-3.75
MW-3	03/05/12	48.82			55.44	3715.50	3666.68	-0.27
MW-3	09/04/12	49.17			55.44	3715.50	3666.33	-0.35
MW-3	02/18/13	49.36			55.44	3715.50	3666.14	-0.19
MW-3	09/09/13	49.01			55.44	3715.50	3666.49	0.35
MW-3	02/25/14	49.32			NM	3715.50	3666.18	-0.31
MW-4	03/05/12	47.44	47.10	0.34	NM	3720.46	3673.28	-0.11
MW-4	09/04/12	48.00	47.57	0.43	NM	3720.46	3672.78	-0.49
MW-4	02/18/13	47.94	47.47	0.47	NM	3720.46	3672.87	0.09
MW-4	09/09/13	44.43	44.37	0.06	NM	3720.46	3676.08	3.20
MW-4	02/25/14	46.81	46.79	0.02	NM	3720.46	3673.67	-2.41
MW-5	03/05/12	47.18			56.35	3721.53	3674.35	0.18
MW-5	09/04/12	47.91			56.35	3721.53	3673.62	-0.73
MW-5	02/18/13	47.64			56.35	3721.53	3673.89	0.27
MW-5	09/09/13	44.89			55.50	3721.53	3676.64	2.75
MW-5	02/25/14	47.25			NM	3721.53	3674.28	-2.36
MW-6	03/05/12	50.84	47.74	3.1	NM	3720.99	3672.48	-0.26
MW-6	09/04/12	52.06	48.08	3.98	NM	3720.99	3671.92	-0.56
MW-6	02/18/13	50.43	48.11	2.32	NM	3720.99	3672.30	0.38
MW-6	09/09/13	45.96	45.79	0.17	NM	3720.99	3675.16	2.86
MW-6	02/25/14	49.34	47.35	1.99	NM	3720.99	3673.14	-2.02
MW-7	03/05/12	DRY			62.56	3728.57	DRY	
MW-7	09/04/12	62.11			62.56	3728.57	3666.46	NM
MW-7	02/18/13	58.70			62.56	3728.57	3669.87	3.41
MW-7	09/09/13	58.26			62.56	3728.57	3670.31	0.44
MW-7	02/25/14	59.19			NM	3728.57	3669.38	-0.93
MW-8	03/05/12	45.20			58.00	3714.18	3668.98	-0.42
MW-8	09/04/12	45.71			58.00	3714.18	3668.47	-0.51
MW-8	02/18/13	45.62			58.00	3714.18	3668.56	0.09
MW-8	09/09/13	41.52			58.00	3714.18	3672.66	4.10
MW-8	02/25/14	44.61			NM	3714.18	3669.57	-3.09
MW-9	03/05/12	51.81			59.30	3720.48	3668.67	-0.35
MW-9	09/04/12	52.12			59.30	3720.48	3668.36	-0.31
MW-9	02/18/13	52.14			59.30	3720.48	3668.34	-0.02
MW-9	09/09/13	51.35			59.30	3720.48	3669.13	0.79
MW-9	02/25/14	51.72			NM	3720.48	3668.76	-0.37

TABLE 1
FIRST HALF 2014 SEMI-ANNUAL
SUMMARY OF GROUNDWATER ELEVATION DATA
LINAM RANCH
LEA COUNTY, NEW MEXICO

Location	Date	Depth to Groundwater ⁽¹⁾ (feet)	Depth to Product ⁽¹⁾ (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth ⁽²⁾ (feet)	TOC Elevation (feet amsl)	Groundwater Elevation ⁽³⁾ (feet amsl)	Change in Groundwater Elevation Since Previous Event ⁽⁴⁾ (feet)
MW-10	03/05/12	51.78			65.15	3720.76	3668.98	-0.43
MW-10	09/04/12	52.40			65.15	3720.76	3668.36	-0.62
MW-10	02/18/13	52.48			65.15	3720.76	3668.28	-0.08
MW-10	09/09/13	50.89			65.15	3720.76	3669.87	1.59
MW-10	02/25/14	51.55			NM	3720.76	3669.21	-0.66
MW-10D	03/05/12	52.85			79.00	3720.85	3668.00	-0.51
MW-10D	09/04/12	53.21			79.00	3720.85	3667.64	-0.36
MW-10D	02/18/13	53.00			79.00	3720.85	3667.85	0.21
MW-10D	09/09/13	51.82			79.00	3720.85	3669.03	1.18
MW-10D	02/25/14	52.72			NM	3720.85	3668.13	-0.90
MW-11	03/05/12	52.57			62.95	3722.02	3669.45	-0.52
MW-11	09/04/12	53.04			62.95	3722.02	3668.98	-0.47
MW-11	02/18/13	52.66			62.95	3722.02	3669.36	0.38
MW-11	09/09/13	50.99			62.95	3722.02	3671.03	1.67
MW-11	02/25/14	52.17			NM	3722.02	3669.85	-1.18
MW-13		NM - Well destroyed and removed from groundwater gauging program.						
		Average change in groundwater elevation (9/9/13 to 2/25/14)						

Notes:

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

2- Total depths were collected and recorded during the second quarter 2014 monitoring event (with the exception of wells that contained LNAPL).

3- Groundwater elevation was corrected for product thickness (when present) using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water) + (LNAPL Thickness in Well * LNAPL Relative Density)

LNAPL relative density is assumed to be approximately 0.75

4- 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.

This table includes groundwater elevation data from the previous four monitoring events. Additional historic elevation data are 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
LINAM 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		0.01	0.75	0.75	0.62	
MW-1	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-2	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-3	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-4	02/25/14	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL Present - No Sample Collected
MW-5	02/25/14	0.18	<0.005	1.3	<0.005	
MW-6	02/25/14	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL Present - No Sample Collected
MW-7	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-8	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-9	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-10	02/25/14	1.7	0.0054	0.35	0.098	
MW-10D	02/25/14	0.046	0.021	0.005	<0.005	Duplicate Sample Collected
MW-10D (Duplicate)	02/25/14	0.043	0.019	<0.005	<0.005	
MW-11	02/25/14	<0.001	<0.001	<0.001	<0.001	
Trip Blank	02/25/14	<0.001	<0.001	<0.001	<0.001	

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. 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.

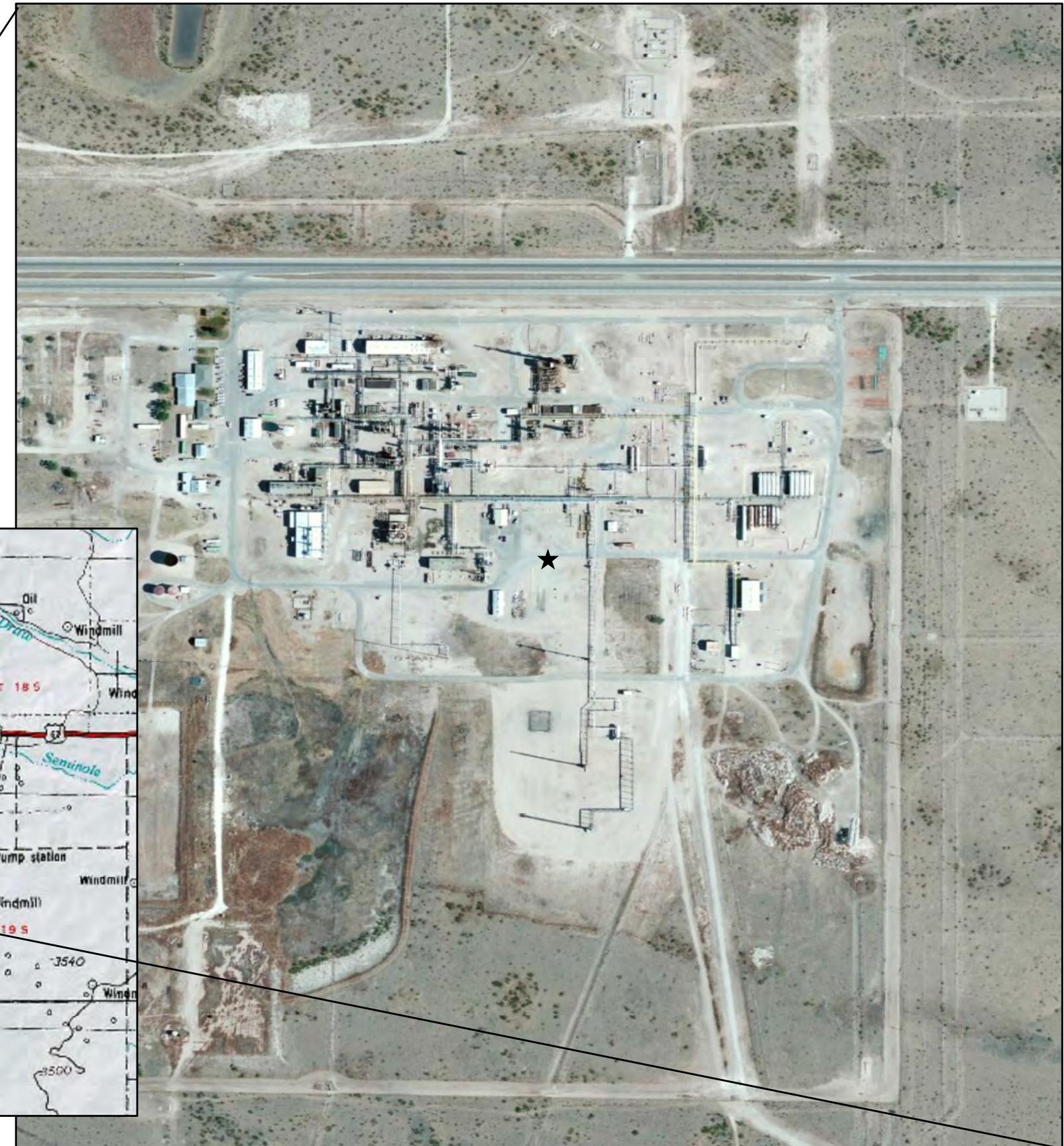
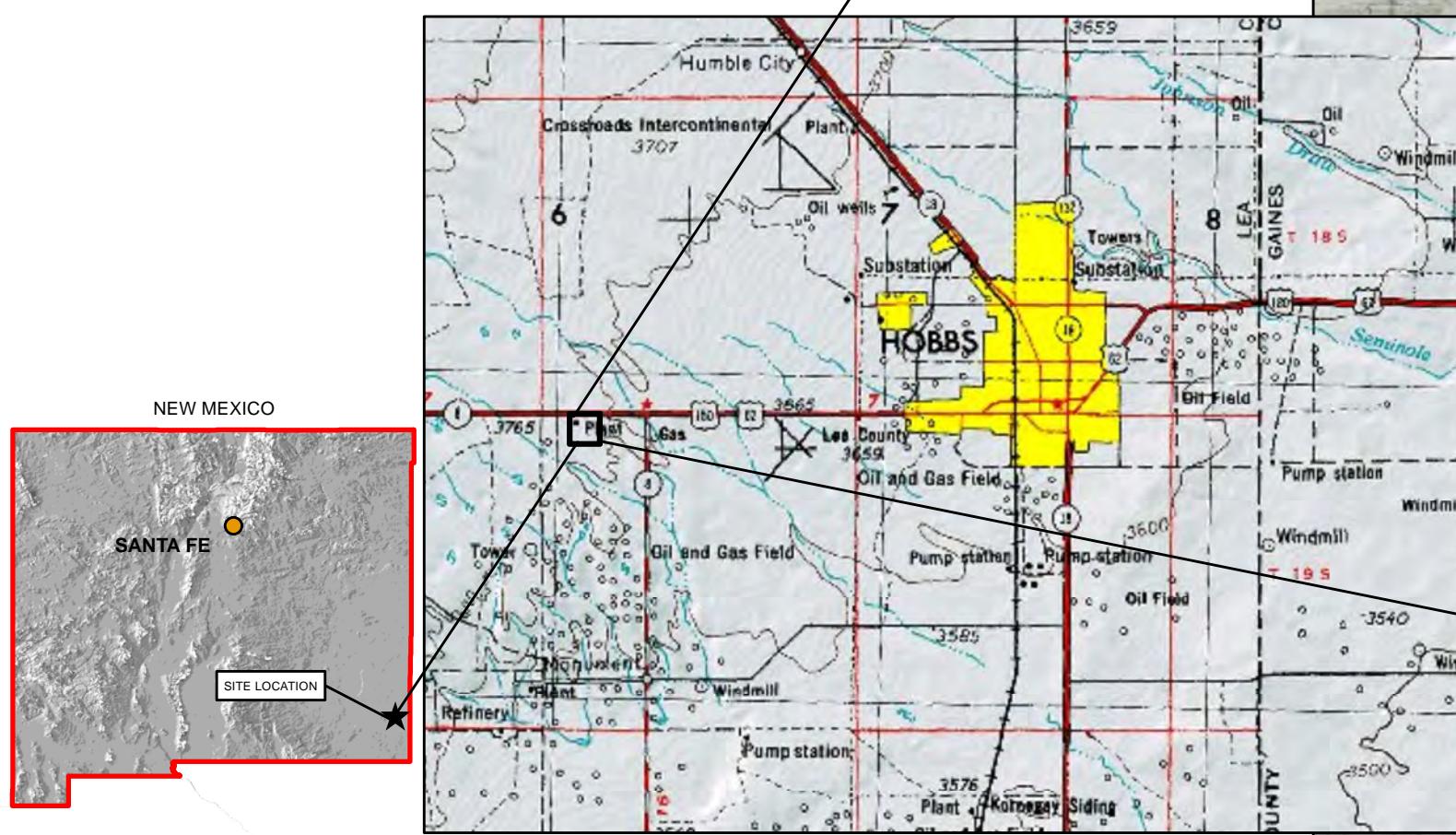
Sample locations are shown on Figure 2 and analytical results are illustrated on Figure 4.

LNAPL = Light Non-Aqueous Phase Liquid

mg/L = milligrams per liter.

Figures

N



DATE:	June 2014
DESIGNED BY:	T. Johansen
DRAWN BY:	D. Arnold



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

DCP Midstream
Linam Ranch Gas Plant
Unit B, Section 6, Township 19 South, Range 37 East
Lea County, New Mexico

Site Location
Map

Figure
1



DATE:	June 2014
DESIGNED BY:	T. Johansen
DRAWN BY:	D. Arnold

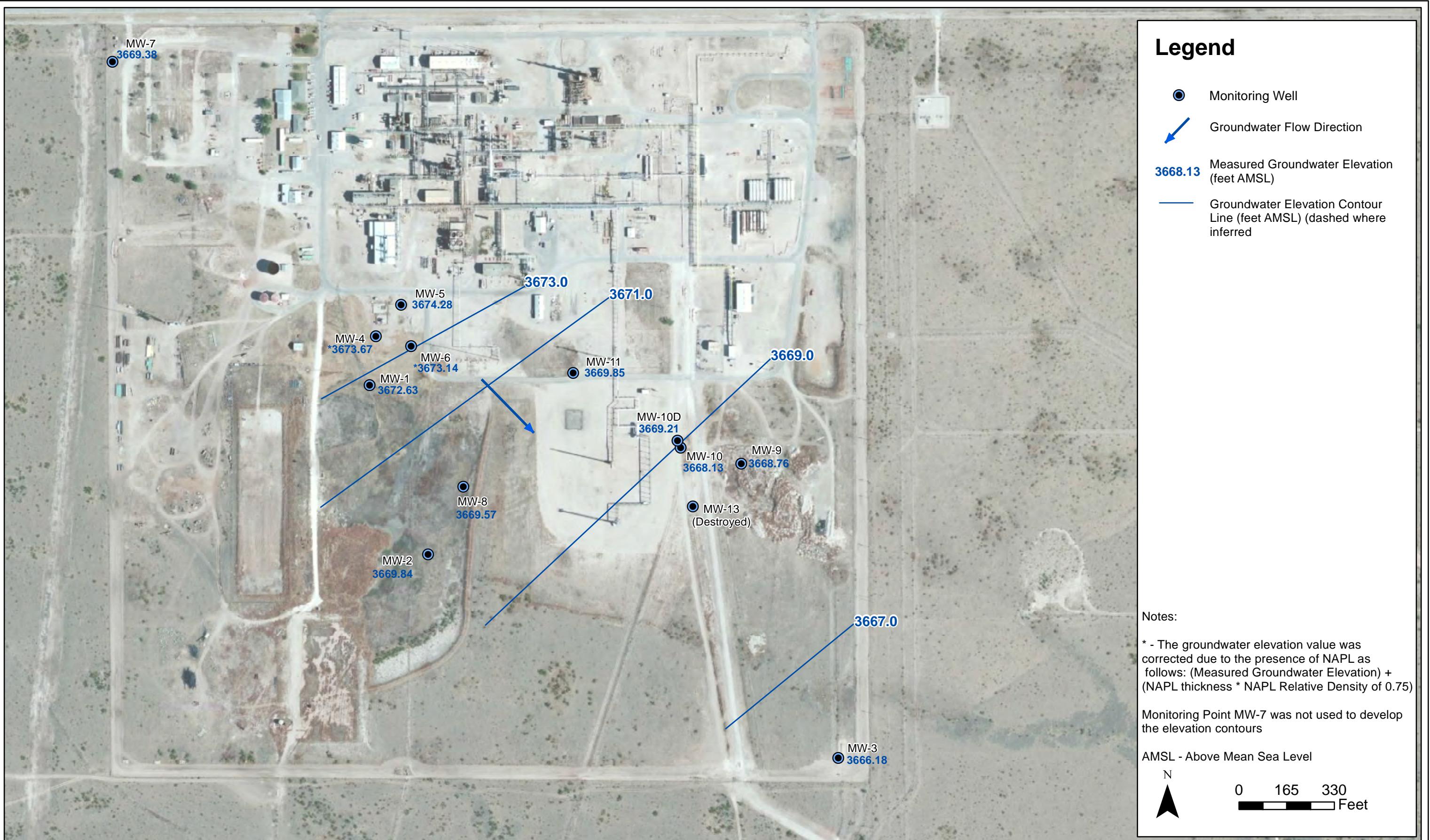


Tasman Geosciences, LLC
6899 Pecos Street - Unit C
Denver, CO 80221

DCP Midstream
Linam Gas Plant
First Half 2014 Semi-Annual Groundwater Monitoring
Summary Report

Site Map with Monitoring
Well Locations

Figure
2



DATE: June 2014
DESIGNED BY: T. Johansen
DRAWN BY: D. Arnold

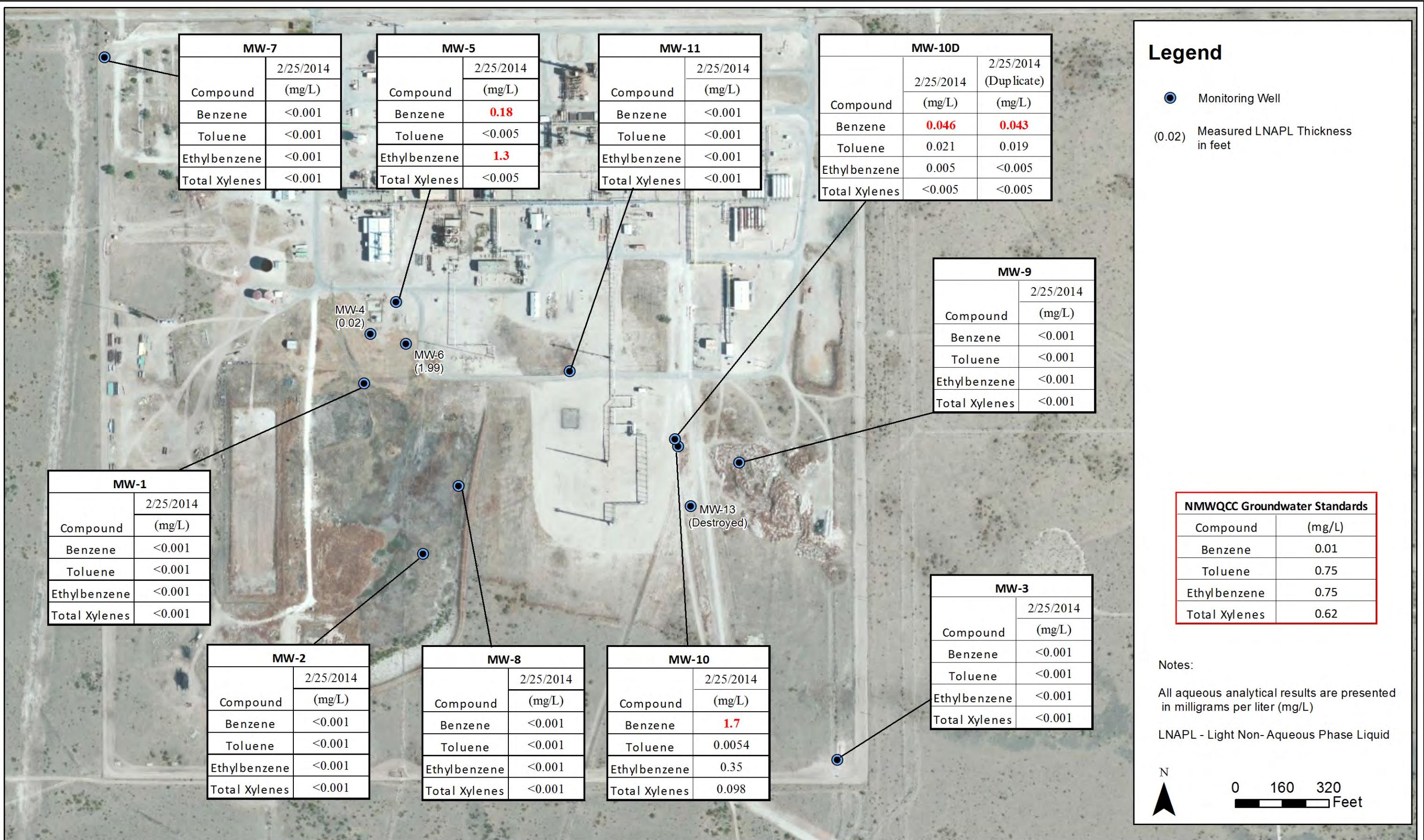


Tasman Geosciences, LLC
6899 Pecos Street - Unit C
Denver, CO 80221

DCP Midstream
Linam Ranch Gas Plant
First Half 2014 Semi-Annual Groundwater Monitoring
Summary Report

Groundwater Elevation
Contour Map
(February 25, 2014)

Figure
3



DATE:
June 2014

DESIGNED BY:
T. Johansen

DRAWN BY:
D. Arnold



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

DCP Midstream Linam Gas Plant

First Half 2014 Semi-Annual Groundwater Monitoring
Summary Report

Analytical Results
Map
(February 25, 2014)

Figure
4

Appendix A

Historic Analytical Results

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX CONCENTRATIONS IN GROUNDWATER
LINAM 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		0.01	0.75	0.75	0.62	
MW-1	09/24/09	<0.002	<0.002	<0.002	<0.006	
MW-1	03/24/10	<0.002	<0.002	<0.002	<0.006	
MW-1	09/28/10	<0.001	<0.002	<0.002	<0.004	
MW-1	04/28/11	<0.0054 J	<0.002	<0.002	<0.002	
MW-1	09/13/11	<0.001	<0.002	<0.002	<0.004	
MW-1	03/05/12	<0.005	<0.005	<0.005	<0.015	
MW-1	09/04/12	<0.005	<0.005	<0.005	<0.015	
MW-1	02/18/13	<0.001	<0.001	<0.001	<0.003	
MW-1	09/09/13	0.012	<0.001	0.0024	0.0038	
MW-1	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-2	09/24/09	<0.002	<0.002	<0.002	<0.006	
MW-2	03/24/10	<0.002	<0.002	<0.002	<0.006	
MW-2	09/28/10	<0.001	<0.002	<0.002	<0.004	
MW-2	04/28/11	<0.001	<0.002	<0.002	<0.002	
MW-2	09/12/11	<0.001	<0.002	<0.002	<0.004	
MW-2	03/05/12	<0.005	<0.005	<0.005	<0.015	
MW-2	09/04/12	<0.005	<0.005	<0.005	<0.015	
MW-2	02/18/13	<0.001	<0.001	<0.001	<0.003	
MW-2	09/09/13	<0.001	<0.001	<0.01	<0.001	
MW-2	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-3	09/24/09	<0.002	<0.002	<0.002	<0.006	
MW-3	03/24/10	<0.002	<0.002	<0.002	<0.006	
MW-3	09/28/10	<0.001	<0.002	<0.002	<0.004	
MW-3	04/28/11	<0.001	<0.002	<0.002	<0.002	
MW-3	09/12/11	<0.001	<0.002	<0.002	<0.004	
MW-3	03/05/12	<0.005	<0.005	<0.005	<0.015	
MW-3	09/04/12	<0.005	<0.005	<0.005	<0.015	
MW-3	02/18/13	<0.001	<0.001	<0.001	<0.003	
MW-3	09/09/13	<0.001	<0.001	<0.001	<0.001	
MW-3	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-4	09/24/09	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	03/24/10	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	09/28/10	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	04/28/11	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	09/13/11	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	03/05/12	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	09/04/12	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	02/18/13	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	09/09/13	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	02/25/14	LNAPL	LNAPL	LNAPL	LNAPL	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX CONCENTRATIONS IN GROUNDWATER
LINAM 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		0.01	0.75	0.75	0.62	
MW-5	09/24/09	0.0272	<0.002	0.227	<0.006	
MW-5	03/24/10	0.1300	<0.002	0.482	0.460	
MW-5	09/28/10	0.0095	<0.004	0.188	<0.008	
MW-5	04/28/11	0.1490	<0.004	0.776	<0.004	
MW-5	09/13/11	0.1300	<0.010	0.860	<0.020	
MW-5	03/05/12	0.240	<0.025	2.000	<0.075	
MW-5	09/04/12	0.170	<0.005	1.000	0.038	Duplicate Sample Collected
MW-5	02/18/13	0.210	<0.005	1.40	<0.015	Duplicate Sample Collected
MW-5	09/09/13	0.096	<0.001	0.90	<0.001	Duplicate Sample Collected
MW-5	02/25/14	0.18	<0.005	1.3	<0.005	
MW-6	09/24/09	LNAPL	LNAPL	LNAPL	LNAPL	
MW-6	03/24/10	LNAPL	LNAPL	LNAPL	LNAPL	
MW-6	09/28/10	LNAPL	LNAPL	LNAPL	LNAPL	
MW-6	04/28/11	LNAPL	LNAPL	LNAPL	LNAPL	
MW-6	09/13/11	LNAPL	LNAPL	LNAPL	LNAPL	
MW-6	03/05/12	LNAPL	LNAPL	LNAPL	LNAPL	
MW-6	09/04/12	LNAPL	LNAPL	LNAPL	LNAPL	
MW-6	02/18/13	LNAPL	LNAPL	LNAPL	LNAPL	
MW-6	09/09/13	LNAPL	LNAPL	LNAPL	LNAPL	
MW-6	02/25/14	LNAPL	LNAPL	LNAPL	LNAPL	
MW-7	09/24/09	NS	NS	NS	NS	
MW-7	03/24/10	NS	NS	NS	NS	
MW-7	09/28/10	NS	NS	NS	NS	
MW-7	04/28/11	NS	NS	NS	NS	
MW-7	09/13/11	NS	NS	NS	NS	
MW-7	03/05/12	NS	NS	NS	NS	
MW-7	09/04/12	<0.005	<0.005	<0.005	<0.015	
MW-7	02/18/13	<0.001	<0.001	<0.001	<0.003	
MW-7	09/09/13	<0.001	<0.001	<0.001	<0.001	
MW-7	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-8	09/24/09	<0.002	<0.002	<0.002	<0.006	
MW-8	03/24/10	<0.002	<0.002	<0.002	<0.006	
MW-8	09/28/10	<0.001	<0.002	<0.002	<0.004	
MW-8	04/28/11	<0.001	<0.002	<0.002	<0.002	
MW-8	09/12/11	<0.005	<0.005	<0.005	<0.015	
MW-8	03/05/12	<0.005	<0.005	<0.005	<0.015	
MW-8	09/04/12	<0.005	<0.005	<0.005	<0.015	
MW-8	02/18/13	<0.001	<0.001	<0.001	<0.003	
MW-8	09/09/13	<0.001	<0.001	<0.001	<0.001	
MW-8	02/25/14	<0.001	<0.001	<0.001	<0.001	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX CONCENTRATIONS IN GROUNDWATER
LINAM 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		0.01	0.75	0.75	0.62	
MW-9	09/24/09	<0.002	<0.002	<0.002	<0.006	
MW-9	03/24/10	<0.002	<0.002	<0.002	<0.006	
MW-9	09/28/10	<0.001	<0.002	<0.002	<0.004	
MW-9	04/28/11	<0.001	<0.002	<0.002	<0.002	
MW-9	09/12/11	<0.001	<0.002	<0.002	<0.004	
MW-9	03/05/12	<0.005	<0.005	<0.005	<0.015	
MW-9	09/04/12	<0.005	<0.005	<0.005	<0.015	
MW-9	02/18/13	<0.001	<0.001	<0.001	<0.003	
MW-9	09/09/13	<0.001	<0.001	<0.001	<0.001	
MW-9	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-10	04/30/08	0.769	0.0457	0.0851	0.05	
MW-10	04/29/09	0.883	0.23	0.0859	0.0759	
MW-10	09/24/09	1.07	0.126	0.148	0.154	
MW-10	03/24/10	1.64	0.175	0.246	0.156	
MW-10	09/28/10	1.900	0.0547 J	0.24	0.104 J	
MW-10	04/28/11	2.005	0.243	0.215	0.141	
MW-10	09/12/11	1.970	0.104	0.249	0.145	Duplicate Sample Collected
MW-10	03/05/12	2.200	0.110	0.230	0.130	
MW-10	09/04/12	2.700	0.0083	0.280	0.120	
MW-10	02/18/13	2.00	0.0190	0.300	0.130	
MW-10	09/09/13	1.60	0.022	0.26	0.11	
MW-10	02/25/14	1.70	0.0054	0.35	0.098	
MW-10D	04/30/08	0.195	0.0677	0.0144	0.0221	
MW-10D	04/29/09	0.179	0.0772	0.0203	0.0296	
MW-10D	09/24/09	0.103	0.0496	0.0127	0.0261	
MW-10D	03/24/10	0.196	0.0703	0.0129	0.0202	
MW-10D	09/28/10	0.0402	0.0358	0.006	0.0077 J	
MW-10D	04/28/11	0.0512	0.0373	0.0063	0.0113	
MW-10D	09/12/11	0.0278	0.0131	0.0032	0.0060	
MW-10D	03/05/12	0.0240	0.0081	<0.005	<0.015	Duplicate Sample Collected
MW-10D	09/04/12	0.0230	0.0057	<0.005	<0.015	
MW-10D	02/18/13	0.034	0.0140	0.0023	0.0031	
MW-10D	09/09/13	0.034	0.019	<0.005	<0.005	
MW-10D	02/25/14	0.046	0.021	0.005	<0.005	Duplicate Sample Collected
MW-10D (Duplicate)	02/25/14	0.043	0.019	<0.005	<0.005	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX CONCENTRATIONS IN GROUNDWATER
LINAM 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		0.01	0.75	0.75	0.62	
MW-11	04/29/09	<0.00046	<0.00048	<0.00045	<0.0014	
MW-11	09/24/09	<0.002	<0.002	<0.002	<0.006	
MW-11	03/24/10	<0.002	<0.002	<0.002	<0.006	
MW-11	09/28/10	0.0036	<0.002	<0.002	0.004	
MW-11	04/28/11	<0.001	<0.002	<0.002	<0.002	
MW-11	09/12/01	<0.001	<0.002	<0.002	<0.004	
MW-11	03/05/12	<0.005	<0.005	<0.005	<0.015	
MW-11	09/04/12	<0.005	<0.005	<0.005	<0.015	
MW-11	02/18/13	<0.001	<0.001	<0.001	<0.003	
MW-11	09/09/13	<0.001	<0.001	<0.001	0.0033	
MW-11	02/25/14	<0.001	<0.001	<0.001	<0.001	
MW-13	04/29/09	<0.00046	<0.00048	<0.00045	<0.0014	
MW-13	09/24/09	<0.002	<0.002	<0.002	<0.006	
MW-13	03/24/10	<0.002	<0.002	<0.002	<0.006	
MW-13	09/28/10	<0.001	<0.002	<0.002	<0.004	
MW-13	04/28/11	<0.001	<0.002	<0.002	<0.002	
MW-13	09/12/11	<0.001	<0.002	<0.002	<0.004	
MW-13	03/05/12	<0.005	<0.005	<0.005	<0.015	
MW-13	NA	NS	NS	NS	NS	Removed from sampling plan.

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.

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

Additional historic data, prior to September 2009, are provided in the report titled "Report on the First 2011 Semiannual Groundwater Monitoring Event" dated June 22, 2011 and prepared by AEC, LLC

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

LNAPL = Light Non-Aqueous Phase Liquid

NS = Not sampled

NA = Not applicable

mg/L = milligrams per liter

J = Indicates an estimated value

Appendix B

Laboratory Analytical Report (Electronic Only)

- ALS Environmental Job #: 14021171



03-Mar-2014

Don Baggus
Tasman Geosciences
5690 Webster Street
Arvada, CO 80002

Tel: (303) 487-1228

Fax:

Re: DCP-Linam Ranch Gas Plant

Work Order: **14021171**

Dear Don,

ALS Environmental received 12 samples on 26-Feb-2014 04:00 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 24.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink that reads "Sonia West".

Electronically approved by: Dayna.Fisher

Sonia West
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Work Order: **14021171**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
14021171-01	MW-1	Water		2/25/2014 10:30	2/26/2014 16:00	<input type="checkbox"/>
14021171-02	MW-2	Water		2/25/2014 11:15	2/26/2014 16:00	<input type="checkbox"/>
14021171-03	MW-3	Water		2/25/2014 12:05	2/26/2014 16:00	<input type="checkbox"/>
14021171-04	MW-5	Water		2/25/2014 09:45	2/26/2014 16:00	<input type="checkbox"/>
14021171-05	MW-7	Water		2/25/2014 09:00	2/26/2014 16:00	<input type="checkbox"/>
14021171-06	MW-8	Water		2/25/2014 11:00	2/26/2014 16:00	<input type="checkbox"/>
14021171-07	MW-9	Water		2/25/2014 12:45	2/26/2014 16:00	<input type="checkbox"/>
14021171-08	MW-10	Water		2/25/2014 13:15	2/26/2014 16:00	<input type="checkbox"/>
14021171-09	MW-10D	Water		2/25/2014 13:30	2/26/2014 16:00	<input type="checkbox"/>
14021171-10	MW-11	Water		2/25/2014 14:00	2/26/2014 16:00	<input type="checkbox"/>
14021171-11	Duplicate	Water		2/25/2014	2/26/2014 16:00	<input type="checkbox"/>
14021171-12	Trip Blank	Trip Blank		2/25/2014	2/26/2014 16:00	<input type="checkbox"/>

Client: Tasman Geosciences**Project:** DCP-Linam Ranch Gas Plant**Work Order:** 14021171**Case Narrative**

Batch R162196, Low Level Volatiles - SW8260C, Sample 14021171-09A: Lowest practical dilutions for WO#14021171-09A &-11A due high concentrations of non-target analytes.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: MW-1
Collection Date: 2/25/2014 10:30 AM

Work Order: 14021171
Lab ID: 14021171-01
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	ND		0.0010	mg/L	1	3/2/2014 02:39 PM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2014 02:39 PM
Toluene	ND		0.0010	mg/L	1	3/2/2014 02:39 PM
Xylenes, Total	ND		0.0010	mg/L	1	3/2/2014 02:39 PM
<i>Surr: 1,2-Dichloroethane-d4</i>	98.4		71-125	%REC	1	3/2/2014 02:39 PM
<i>Surr: 4-Bromofluorobenzene</i>	94.8		70-125	%REC	1	3/2/2014 02:39 PM
<i>Surr: Dibromofluoromethane</i>	96.4		74-125	%REC	1	3/2/2014 02:39 PM
<i>Surr: Toluene-d8</i>	96.6		75-125	%REC	1	3/2/2014 02:39 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: MW-2
Collection Date: 2/25/2014 11:15 AM

Work Order: 14021171
Lab ID: 14021171-02
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	ND		0.0010	mg/L	1	3/2/2014 03:02 PM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2014 03:02 PM
Toluene	ND		0.0010	mg/L	1	3/2/2014 03:02 PM
Xylenes, Total	ND		0.0010	mg/L	1	3/2/2014 03:02 PM
<i>Surr: 1,2-Dichloroethane-d4</i>	98.9		71-125	%REC	1	3/2/2014 03:02 PM
<i>Surr: 4-Bromofluorobenzene</i>	94.2		70-125	%REC	1	3/2/2014 03:02 PM
<i>Surr: Dibromofluoromethane</i>	103		74-125	%REC	1	3/2/2014 03:02 PM
<i>Surr: Toluene-d8</i>	99.3		75-125	%REC	1	3/2/2014 03:02 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: MW-3
Collection Date: 2/25/2014 12:05 PM

Work Order: 14021171
Lab ID: 14021171-03
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	ND		0.0010	mg/L	1	3/2/2014 03:26 PM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2014 03:26 PM
Toluene	ND		0.0010	mg/L	1	3/2/2014 03:26 PM
Xylenes, Total	ND		0.0010	mg/L	1	3/2/2014 03:26 PM
<i>Surr: 1,2-Dichloroethane-d4</i>	98.1		71-125	%REC	1	3/2/2014 03:26 PM
<i>Surr: 4-Bromofluorobenzene</i>	95.8		70-125	%REC	1	3/2/2014 03:26 PM
<i>Surr: Dibromofluoromethane</i>	102		74-125	%REC	1	3/2/2014 03:26 PM
<i>Surr: Toluene-d8</i>	99.6		75-125	%REC	1	3/2/2014 03:26 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: MW-5
Collection Date: 2/25/2014 09:45 AM

Work Order: 14021171
Lab ID: 14021171-04
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	0.18		0.0050	mg/L	5	3/2/2014 04:59 PM
Ethylbenzene	1.3		0.025	mg/L	25	3/2/2014 05:22 PM
Toluene	ND		0.0050	mg/L	5	3/2/2014 04:59 PM
Xylenes, Total	ND		0.0050	mg/L	5	3/2/2014 04:59 PM
Surr: 1,2-Dichloroethane-d4	98.6		71-125	%REC	25	3/2/2014 05:22 PM
Surr: 1,2-Dichloroethane-d4	98.1		71-125	%REC	5	3/2/2014 04:59 PM
Surr: 4-Bromofluorobenzene	96.1		70-125	%REC	25	3/2/2014 05:22 PM
Surr: 4-Bromofluorobenzene	99.8		70-125	%REC	5	3/2/2014 04:59 PM
Surr: Dibromofluoromethane	95.5		74-125	%REC	25	3/2/2014 05:22 PM
Surr: Dibromofluoromethane	98.2		74-125	%REC	5	3/2/2014 04:59 PM
Surr: Toluene-d8	96.1		75-125	%REC	25	3/2/2014 05:22 PM
Surr: Toluene-d8	97.4		75-125	%REC	5	3/2/2014 04:59 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: MW-7
Collection Date: 2/25/2014 09:00 AM

Work Order: 14021171
Lab ID: 14021171-05
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	ND		0.0010	mg/L	1	3/2/2014 03:49 PM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2014 03:49 PM
Toluene	ND		0.0010	mg/L	1	3/2/2014 03:49 PM
Xylenes, Total	ND		0.0010	mg/L	1	3/2/2014 03:49 PM
<i>Surr: 1,2-Dichloroethane-d4</i>	94.6		71-125	%REC	1	3/2/2014 03:49 PM
<i>Surr: 4-Bromofluorobenzene</i>	94.3		70-125	%REC	1	3/2/2014 03:49 PM
<i>Surr: Dibromofluoromethane</i>	98.9		74-125	%REC	1	3/2/2014 03:49 PM
<i>Surr: Toluene-d8</i>	100		75-125	%REC	1	3/2/2014 03:49 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: MW-8
Collection Date: 2/25/2014 11:00 AM

Work Order: 14021171
Lab ID: 14021171-06
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	ND		0.0010	mg/L	1	3/2/2014 01:06 PM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2014 01:06 PM
Toluene	ND		0.0010	mg/L	1	3/2/2014 01:06 PM
Xylenes, Total	ND		0.0010	mg/L	1	3/2/2014 01:06 PM
<i>Surr: 1,2-Dichloroethane-d4</i>	96.5		71-125	%REC	1	3/2/2014 01:06 PM
<i>Surr: 4-Bromofluorobenzene</i>	91.0		70-125	%REC	1	3/2/2014 01:06 PM
<i>Surr: Dibromofluoromethane</i>	98.7		74-125	%REC	1	3/2/2014 01:06 PM
<i>Surr: Toluene-d8</i>	99.3		75-125	%REC	1	3/2/2014 01:06 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: MW-9
Collection Date: 2/25/2014 12:45 PM

Work Order: 14021171
Lab ID: 14021171-07
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	ND		0.0010	mg/L	1	3/2/2014 04:12 PM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2014 04:12 PM
Toluene	ND		0.0010	mg/L	1	3/2/2014 04:12 PM
Xylenes, Total	ND		0.0010	mg/L	1	3/2/2014 04:12 PM
<i>Surr: 1,2-Dichloroethane-d4</i>	97.7		71-125	%REC	1	3/2/2014 04:12 PM
<i>Surr: 4-Bromofluorobenzene</i>	100		70-125	%REC	1	3/2/2014 04:12 PM
<i>Surr: Dibromofluoromethane</i>	99.2		74-125	%REC	1	3/2/2014 04:12 PM
<i>Surr: Toluene-d8</i>	101		75-125	%REC	1	3/2/2014 04:12 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: MW-10
Collection Date: 2/25/2014 01:15 PM

Work Order: 14021171
Lab ID: 14021171-08
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	1.7		0.050	mg/L	50	3/2/2014 06:08 PM
Ethylbenzene	0.35		0.0050	mg/L	5	3/2/2014 05:45 PM
Toluene	0.0054		0.0050	mg/L	5	3/2/2014 05:45 PM
Xylenes, Total	0.098		0.0050	mg/L	5	3/2/2014 05:45 PM
Surr: 1,2-Dichloroethane-d4	97.7		71-125	%REC	50	3/2/2014 06:08 PM
Surr: 1,2-Dichloroethane-d4	96.3		71-125	%REC	5	3/2/2014 05:45 PM
Surr: 4-Bromofluorobenzene	95.6		70-125	%REC	50	3/2/2014 06:08 PM
Surr: 4-Bromofluorobenzene	99.2		70-125	%REC	5	3/2/2014 05:45 PM
Surr: Dibromofluoromethane	96.5		74-125	%REC	50	3/2/2014 06:08 PM
Surr: Dibromofluoromethane	97.1		74-125	%REC	5	3/2/2014 05:45 PM
Surr: Toluene-d8	98.8		75-125	%REC	50	3/2/2014 06:08 PM
Surr: Toluene-d8	99.3		75-125	%REC	5	3/2/2014 05:45 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: MW-10D
Collection Date: 2/25/2014 01:30 PM

Work Order: 14021171
Lab ID: 14021171-09
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	0.046		0.0050	mg/L	5	3/2/2014 06:32 PM
Ethylbenzene	0.0050		0.0050	mg/L	5	3/2/2014 06:32 PM
Toluene	0.021		0.0050	mg/L	5	3/2/2014 06:32 PM
Xylenes, Total	ND		0.0050	mg/L	5	3/2/2014 06:32 PM
Surr: 1,2-Dichloroethane-d4	94.5		71-125	%REC	5	3/2/2014 06:32 PM
Surr: 4-Bromofluorobenzene	103		70-125	%REC	5	3/2/2014 06:32 PM
Surr: Dibromofluoromethane	99.8		74-125	%REC	5	3/2/2014 06:32 PM
Surr: Toluene-d8	96.8		75-125	%REC	5	3/2/2014 06:32 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: MW-11
Collection Date: 2/25/2014 02:00 PM

Work Order: 14021171
Lab ID: 14021171-10
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	ND		0.0010	mg/L	1	3/2/2014 04:35 PM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2014 04:35 PM
Toluene	ND		0.0010	mg/L	1	3/2/2014 04:35 PM
Xylenes, Total	ND		0.0010	mg/L	1	3/2/2014 04:35 PM
<i>Surr: 1,2-Dichloroethane-d4</i>	97.7		71-125	%REC	1	3/2/2014 04:35 PM
<i>Surr: 4-Bromofluorobenzene</i>	94.2		70-125	%REC	1	3/2/2014 04:35 PM
<i>Surr: Dibromofluoromethane</i>	97.5		74-125	%REC	1	3/2/2014 04:35 PM
<i>Surr: Toluene-d8</i>	97.0		75-125	%REC	1	3/2/2014 04:35 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: Duplicate
Collection Date: 2/25/2014

Work Order: 14021171
Lab ID: 14021171-11
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	0.043		0.0050	mg/L	5	3/2/2014 06:55 PM
Ethylbenzene	ND		0.0050	mg/L	5	3/2/2014 06:55 PM
Toluene	0.019		0.0050	mg/L	5	3/2/2014 06:55 PM
Xylenes, Total	ND		0.0050	mg/L	5	3/2/2014 06:55 PM
Surr: 1,2-Dichloroethane-d4	92.6		71-125	%REC	5	3/2/2014 06:55 PM
Surr: 4-Bromofluorobenzene	101		70-125	%REC	5	3/2/2014 06:55 PM
Surr: Dibromofluoromethane	99.2		74-125	%REC	5	3/2/2014 06:55 PM
Surr: Toluene-d8	98.8		75-125	%REC	5	3/2/2014 06:55 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 03-Mar-14

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
Sample ID: Trip Blank
Collection Date: 2/25/2014

Work Order: 14021171
Lab ID: 14021171-12
Matrix: TRIP BLANK

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C						
Benzene	ND		0.0010	mg/L	1	3/2/2014 12:43 PM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2014 12:43 PM
Toluene	ND		0.0010	mg/L	1	3/2/2014 12:43 PM
Xylenes, Total	ND		0.0010	mg/L	1	3/2/2014 12:43 PM
<i>Surr: 1,2-Dichloroethane-d4</i>	95.2		71-125	%REC	1	3/2/2014 12:43 PM
<i>Surr: 4-Bromofluorobenzene</i>	92.3		70-125	%REC	1	3/2/2014 12:43 PM
<i>Surr: Dibromofluoromethane</i>	102		74-125	%REC	1	3/2/2014 12:43 PM
<i>Surr: Toluene-d8</i>	98.6		75-125	%REC	1	3/2/2014 12:43 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 14021171
Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
<u>Batch ID: R162196 Test Name: Low Level Volatiles - SW8260C</u>						
14021171-01A	MW-1	Water	2/25/2014 10:30:00 AM			3/2/2014 02:39 PM
14021171-02A	MW-2		2/25/2014 11:15:00 AM			3/2/2014 03:02 PM
14021171-03A	MW-3		2/25/2014 12:05:00 PM			3/2/2014 03:26 PM
14021171-04A	MW-5		2/25/2014 9:45:00 AM			3/2/2014 04:59 PM
						3/2/2014 05:22 PM
14021171-05A	MW-7		2/25/2014 9:00:00 AM			3/2/2014 03:49 PM
14021171-06A	MW-8		2/25/2014 11:00:00 AM			3/2/2014 01:06 PM
14021171-07A	MW-9		2/25/2014 12:45:00 PM			3/2/2014 04:12 PM
14021171-08A	MW-10		2/25/2014 1:15:00 PM			3/2/2014 05:45 PM
						3/2/2014 06:08 PM
14021171-09A	MW-10D		2/25/2014 1:30:00 PM			3/2/2014 06:32 PM
14021171-10A	MW-11		2/25/2014 2:00:00 PM			3/2/2014 04:35 PM
14021171-11A	Duplicate		2/25/2014			3/2/2014 06:55 PM
14021171-12A	Trip Blank	Trip Blank				3/2/2014 12:43 PM

ALS Environmental

Date: 03-Mar-14

Client: Tasman Geosciences
Work Order: 14021171
Project: DCP-Linam Ranch Gas Plant

QC BATCH REPORT

Batch ID: R162196		Instrument ID VOA2		Method: SW8260						
Mblk	Sample ID: VBLKW-140302-R162196					Units: µg/L		Analysis Date: 3/2/2014 12:20 PM		
Client ID:	Run ID: VOA2_140302A					SeqNo: 3550170	Prep Date:	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 1,2-Dichloroethane-d4	45.15	1.0	50	0	90.3	71-125		0		
Surr: 4-Bromofluorobenzene	45.8	1.0	50	0	91.6	70-125		0		
Surr: Dibromofluoromethane	47.14	1.0	50	0	94.3	74-125		0		
Surr: Toluene-d8	49.62	1.0	50	0	99.2	75-125		0		
LCS	Sample ID: VLCSW-140302-R162196					Units: µg/L		Analysis Date: 3/2/2014 10:46 AM		
Client ID:	Run ID: VOA2_140302A					SeqNo: 3550166	Prep Date:	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	46.89	1.0	50	0	93.8	80-120				
Ethylbenzene	46.99	1.0	50	0	94	80-120				
Toluene	46.25	1.0	50	0	92.5	80-121				
Xylenes, Total	145.2	3.0	150	0	96.8	80-124				
Surr: 1,2-Dichloroethane-d4	45.48	1.0	50	0	91	71-125		0		
Surr: 4-Bromofluorobenzene	50.84	1.0	50	0	102	70-125		0		
Surr: Dibromofluoromethane	46.96	1.0	50	0	93.9	74-125		0		
Surr: Toluene-d8	49.98	1.0	50	0	100	75-125		0		
MS	Sample ID: 14021171-06AMS					Units: µg/L		Analysis Date: 3/2/2014 01:30 PM		
Client ID: MW-8	Run ID: VOA2_140302A					SeqNo: 3550179	Prep Date:	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	49	1.0	50	0	98	80-120				
Ethylbenzene	49.74	1.0	50	0	99.5	80-120				
Toluene	49.06	1.0	50	0.9387	96.2	80-121				
Xylenes, Total	152	3.0	150	0	101	80-124				
Surr: 1,2-Dichloroethane-d4	47.01	1.0	50	0	94	71-125		0		
Surr: 4-Bromofluorobenzene	51.18	1.0	50	0	102	70-125		0		
Surr: Dibromofluoromethane	48.67	1.0	50	0	97.3	74-125		0		
Surr: Toluene-d8	49.13	1.0	50	0	98.3	75-125		0		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 2

Client: Tasman Geosciences
Work Order: 14021171
Project: DCP-Linam Ranch Gas Plant

QC BATCH REPORT

Batch ID: **R162196** Instrument ID **VOA2** Method: **SW8260**

MSD	Sample ID: 14021171-06AMSD				Units: µg/L		Analysis Date: 3/2/2014 01:53 PM			
Client ID:	MW-8	Run ID: VOA2_140302A			SeqNo: 3550182		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	47.01	1.0	50	0	94	80-120	49	4.14	20	
Ethylbenzene	48.16	1.0	50	0	96.3	80-120	49.74	3.24	20	
Toluene	47.69	1.0	50	0.9387	93.5	80-121	49.06	2.84	20	
Xylenes, Total	146.4	3.0	150	0	97.6	80-124	152	3.76	20	
<i>Surr: 1,2-Dichloroethane-d4</i>	45.4	1.0	50	0	90.8	71-125	47.01	3.48	20	
<i>Surr: 4-Bromofluorobenzene</i>	50.64	1.0	50	0	101	70-125	51.18	1.07	20	
<i>Surr: Dibromofluoromethane</i>	48.24	1.0	50	0	96.5	74-125	48.67	0.892	20	
<i>Surr: Toluene-d8</i>	50.2	1.0	50	0	100	75-125	49.13	2.14	20	

The following samples were analyzed in this batch:

14021171-01A	14021171-02A	14021171-03A	14021171-04A
14021171-05A	14021171-06A	14021171-07A	14021171-08A
14021171-09A	14021171-10A	14021171-11A	14021171-12A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 2 of 2

Client: Tasman Geosciences
Project: DCP-Linam Ranch Gas Plant
WorkOrder: 14021171

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
mg/L	Milligrams per Liter

ALS Environmental

Sample Receipt Checklist

Client Name: TASMAN GEOSCIENCES

Date/Time Received: 26-Feb-14 16:00

Work Order: 14021171

Received by: BA11

Checklist completed by Bethany McDaniel

eSignature

26-Feb-14

Date

Reviewed by: Sonia West

eSignature

27-Feb-14

Date

Matrices: water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Temperature(s)/Thermometer(s):

2.0C/2.0C c/u

IR1

Cooler(s)/Kit(s):

4818

Date/Time sample(s) sent to storage:

Water - VOA vials have zero headspace?

Yes No No VOA vials submitted

Water - pH acceptable upon receipt?

Yes No N/A

pH adjusted?

Yes No N/A

pH adjusted by:

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

<u></u>

CorrectiveAction:

<u></u>



Environmental

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070

Chain of Custody Form

South Charleston, WV
+1 304 356 3168

Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903

Middleton, PA +1 717 544 5541
Salt Lake City, UT +1 801 266 7700

York, PA +1 717 505 5280

Page 2 of 2

COC ID: 101640

Customer Information		Project Information		Parameter/Method Request for Analysis													
Purchase Order		Project Name	DCP-Linam Ranch Gas Plant	A	BTEX 8280												
Work Order		Project Number	400128006 RC#F228	B													
Company Name	Tasman Geosciences	Bill To Company	DCP Midstream, LP	C													
Send Report To	Don Baggus	Invoice Attn	Chandler Cole	D													
Address	5690 Webster Street	Address	370 17th Street, Suite 2500	E													
City/State/Zip	Arvada, CO 80002	City/State/Zip	Denver, Colorado 80102	F													
Phone	(720) 988-2024	Phone	(303) 605-1695	G													
Fax		Fax		H													
e-Mail Address	dbaggus@tasman-geo.com	e-Mail Address	cecole@dcpmidstream.com	I													
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-11	2/25/14	1400	Water	HCL	3	X										<input type="checkbox"/>
2	MA-13	2/25/14	1400	Water	HCL	3	X										<input checked="" type="checkbox"/>
3	Duplicate	2/25/14	—	Water	HCL	3	X										<input type="checkbox"/>
4	Trip Blank			Water	HCL	2	X										<input type="checkbox"/>
5																	
6																	
7																	
8																	
9																	
10																	
Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time (Check Box)		Results Due Date:											
<i>Keon Clinton</i>		<i>FedEx</i>		<input checked="" type="checkbox"/> Std 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> Other													
Relinquished by:		Received by:		Notes:													
<i>Keon Clinton</i>		<i>John Dohm</i>		Received by Laboratory: <i>John Dohm</i>													
Relinquished by:		Time:		Cooler ID: _____ Cooler Temp: _____ QC Package: (Check One Box Below)													
				<input checked="" type="checkbox"/> Level II Std QC <input type="checkbox"/> TFRP Checklist <input type="checkbox"/> Level III Std QC/Raw Data <input type="checkbox"/> TFRP Data <input type="checkbox"/> Level IV SW846/C1P <input type="checkbox"/> TFRP Level IV <input type="checkbox"/> Other / EDD													
Logged by (Laboratory):		Date:															
Preservative Key:		Date:															
1-HCl		2-HNO ₃															
2-HNO ₃		3-H ₂ SO ₄															
4-NaOH		5-Na ₂ SO ₄															
6-NaHSO ₄		7-Other															
9-5035		8-4°C															

- Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

fedex.com 1800.GoFedEx 1800.463.3339

**WED - 26 FEB 10:30A
PRIORITY OVERNIGHT**

TX-US IAH
77099

66022
IAH

REGEX
Express

8964870 02/25 522G1/S62F/F2

LS ENVIRONMENTAL

150 Starchill Rd., Suite 210

Wilson, Texas 77099

Tel. +1 281 530 5656

Fax. +1 281 530 5887