Fourth Quarter 2016 Groundwater Monitoring Summary Report

RR Extension Pipeline Release
Lea County, New Mexico
AP #55

Prepared for:

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

Prepared by:

6899 Pecos Street, Unit C
Denver, Colorado 80221

March 1, 2017

Table of Contents

Tables

Figures

Appendices

1. Introduction

This report summarizes the groundwater monitoring and remediation activities conducted during the fourth quarter 2016 at the RR-Extension pipeline release (Site) in Lea County, New Mexico (Figure 1). Tasman Geosciences (Tasman) performed these activities on behalf of DCP Midstream, LP (DCP). The field activities were conducted with the purpose of monitoring groundwater flow and quality conditions as well as assessing the presence of light non-aqueous phase liquid (LNAPL) hydrocarbons in the Site subsurface and performing groundwater remediation. Current Site conditions were evaluated from field data and analytical laboratory results collected during the reporting period on December 19, 2016.

2. Site Location and Background

The Site is located in the northeastern quarter of the northwestern quarter (Unit C) of Section 19, Township 20 South, Range 37 East (approximate coordinates 32.562339 degrees north and 103.291739 degrees west). It is approximately 4.25 miles south of the intersection of US Highway 322 and County Road 41. The area is sparsely populated and land use is primarily associated with livestock grazing and oil and gas production and gathering.

Based on information included in historic Site investigation reports, a natural gas condensate release of approximately 30 barrels (bbl) was reported on December 13, 2006 (Assigned Site Reference #130040). Subsequent to preliminary investigation and characterization activities, an excavation was conducted at the Site (November 10, 2008 to December 7, 2008) whereby approximately 11,356 cubic yards of impacted material were removed. The excavation extended to approximately 20 feet below ground surface (bgs) over a surface area of approximately 14,800 square feet. Backfill material was placed into the excavation and surface restoration was completed on January 12, 2009. These activities are described within the document *Closure Report – RR Extension Release Site* dated February 2009 prepared by Environmental Plus, Inc.

LNAPL has historically been identified immediately above the water table at a depth of approximately 30-feet bgs within monitoring well locations to the south and east of the original release and excavation limits. However, subsequent to the first quarter 2015 monitoring event, LNAPL has not been observed within any of the Site monitoring wells. Investigation activities conducted at the Site include installation of groundwater monitoring wells and excavation during the time periods listed below:

- MW-1 through MW-5: Installed March 2008.
- MW-6 through MW-8: Installed June 2008.
- Excavation and Backfill: Initiated – November 10, 2008; Completed – January 12, 2009.
- MW-9 through MW-12: Installed June 2010.
- MW-13 through MW-16: Installed January 2011.

Ongoing monitoring and sampling of the Site wells listed above has been conducted on an approximate quarterly basis following installation.

Boring logs for the monitoring wells at the Site indicate that the subsurface geology is typical of unconsolidated fine-grained sand, silt, and clay sediments.

3. Groundwater Monitoring

This section describes the field and laboratory activities performed during the fourth quarter 2016 groundwater monitoring event. Quarterly monitoring activities were conducted on December 19, 2016, and included Site-wide groundwater gauging 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 levels were measured in order to evaluate hydraulic characteristics and provide information regarding seasonal fluctuations in groundwater elevations at the Site. During the fourth quarter 2016, groundwater levels were measured at 16 monitoring well locations. Measurable LNAPL thicknesses were not observed during this monitoring event and have not been observed at the Site since the first quarter 2015. The presence of LNAPL will continue to be monitored in future groundwater sampling events. Historic LNAPL thicknesses have been provided in previous quarterly reports.

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). Groundwater level data were later converted to elevation (feet above mean sea level [AMSL]). Measured groundwater levels and calculated groundwater elevations for this quarter and the previous three quarters are presented in Table 1.

A fourth quarter 2016 groundwater elevation contour map, included as Figure 3, indicates that groundwater flow at the Site generally trends to the south, southeast. The range of groundwater elevations, average elevation change from the previous monitoring event, and the calculated average hydraulic gradient (using elevations from MW-13 and MW-6) at the Site are summarized in the table below.

Summary of Measured Hydraulic Parameters

	Fourth Quarter 2016 (12/19/2016)
Maximum Elevation (Well ID)	3,505.95 (MW-13)
Minimum Elevation (Well ID)	3,505.24 (MW-6)
Average Change from Previous Monitoring Event – All Wells	0.14 foot
Average Hydraulic Gradient (ft/ft) / (Well IDs)	0.003 (MW-13 to MW-6)

3.2 Groundwater Quality Monitoring

Subsequent to recording groundwater level measurements at each monitoring well, groundwater samples were collected from each of the 16 monitoring using dedicated polyethylene bailers.

A minimum of three well casing volumes of groundwater were purged from each monitoring well prior to collecting groundwater samples. Groundwater samples were placed in clean laboratory supplied containers for the selected analytical methods, packed in an ice-filled cooler and maintained at approximately four degrees Celsius (^{0}C) for transportation to the laboratory. Groundwater samples were then shipped under chain-of-custody procedures to ALS Laboratories (ALS) in Houston, Texas, for analysis.

Water quality samples were submitted for analysis of benzene, toluene, ethylbenzene, and xylene (BTEX) by United States Environmental Protection Agency (USEPA) Method 8260B and chloride by USEPA Method 9056A.

Table 2 summarizes BTEX and chloride concentrations in groundwater samples collected during the reporting period. Historic analytical results up to and including the December 19, 2016, event are included in Appendix A and the laboratory analytical report for the fourth quarter 2016 is included in Appendix B. Analytical results are also displayed on Figure 4.

Analytical results/observations are summarized below:

- Benzene concentrations in groundwater samples from wells MW-1 (1.8 milligrams per liter [mg/l]), MW-2 (0.17 mg/L), MW-3 (3.7 mg/L), MW-4 (0.41 mg/L), MW-5 (0.091 mg/L, 0.15 mg/L Duplicate), MW-9 (0.32 mg/L), and MW-10 (0.11 mg/L) were in exceedance of the New Mexico Water Quality Control Commission (NMWQCC) standard of 0.01 mg/L.
- Toluene was not observed above the NMWQCC standard of 0.75 mg/L in any of the Site monitoring well locations.
- The ethylbenzene concentration in the groundwater sample from Duplicate sample collected at MW-5 (0.79 mg/L) was in exceedance of the NMWQCC standard of 0.75 mg/L.
- Total Xylenes concentrations in groundwater samples from wells MW-3 (1.1 mg/L), MW-4 (0.88 mg/L), MW-5 (1.3 mg/L, 2.2 mg/L Duplicate), and MW-10 (1.50 mg/L) were in exceedance of the NMWQCC standard of 0.62 mg/L.
- BTEX concentrations at the remaining 9 sample locations were below NMWQCC standards and/or below laboratory detection limits.
- Chloride was detected in the 16 sampled wells with concentrations ranging from 309 mg/L in MW-12 to 519 mg/L in MW-8. Chloride values in all of the wells exceeded the NMWQCC suggested guideline of 250 mg/L.

3.3 Data Quality Assurance / Quality Control

A trip blank and field duplicate sample (MW-5) were collected during the fourth quarter 2016 sampling event. The data were reviewed for compliance with the analytical method and the associated quality assurance/quality control (QA/QC) procedures. All samples were analyzed using the correct analytical methods and within the correct holding times. Chain of custody forms were in order and properly executed and indicate that samples were received at the proper temperature with no headspace.

QA/QC items of note for the fourth quarter 2016 include the following:

- Target analytes were not detected in the trip blank; and
- MW-5 and the associated duplicate sample exhibited BTEX concentrations that are not within the acceptable relative percent difference (RPD) target of 20 percent (%). However, the chlorides results for the samples had a RPD value of 2.7 %. The differences in the reported concentrations for BTEX between the parent and duplicate samples likely indicate non-homogeneity of the target analytes within the sample matrix.

The QA/QC assessment, based on the data review, indicates that overall data precision and accuracy are within target limits.

4. Remediation Activities

A mobile vacuum enhanced fluid recovery (EFR) and air sparge (AS) remediation event was conducted during the reporting period. AS remediation activities were initiated in conjunction with EFR as described in the following Section to address residual dissolved phase BTEX concentrations at the Site. Due to the continued absence of observed LNAPL at the Site, the passive LNAPL recovery bailer that was previously deployed at monitoring well MW-4 has been removed.

4.1 Vacuum Enhanced Fluid Recovery and Air Sparge Remediation

A mobile EFR/AS event was conducted at the Site on December 20, 2016, and included application of high vacuum (using a vacuum truck) and compressed air (using a portable air compressor) to individual well points through an EFR/AS manifold and downhole stinger pipe/tube assemblies. At wells where EFR was being conducted, the stinger pipe was placed slightly below the groundwater level, thereby removing impacted groundwater and vapors from the subsurface. At well locations where AS was applied, removable stinger assemblies were installed that “blind” the screened interval of the PVC well casings to approximately 1-foot above the total depth of the well. This enables sparge air to be introduced into the formation below the water table while limiting short circuiting of air to the surface through the well casing and/or borehole seal.

Prior to conducting EFR/AS activities, depth to product and depth to water measurements were collected at monitoring wells that have historically contained LNAPL and/or the highest dissolved phase benzene concentrations (MW-2, MW-3, MW-4, MW-5, MW-9, and MW-10). Had LNAPL been observed within any of the Site monitoring wells, AS activities would not have been performed in order to prevent migration of the material through the subsurface. LNAPL was not detected in any of the monitoring wells and therefore, EFR/AS activities were conducted.

The table below summarizes the wells where EFR/AS activities were conducted, the duration at each location, the recovered volume for the EFR activities, and the flow rates and back pressures of AS activities conducted during the fourth quarter 2016. The recovered groundwater was transported to and disposed of at the Cooper Disposal Facility in Hobbs, New Mexico.

Well ID	EFR/AS	Duration (hours)	Fluid Removal (bbls)	AS Flow Rate (cfm)	AS Back Pressure (psi)
MW-2	AS	4	NA	10	17
MW-3	AS	4	NA	10	17
MW-4	EFR	4	20	NA	NA
MW-5	EFR			NA	NA
MW-9	EFR/AS	4 (EFR) & 4 (AS)	20	10	17
MW-10	EFR/AS	4 (EFR) & 4 (AS)		10	17

Notes:

bbl = barrel (42 gallons)
cfm = cubic feet per minute
psi – pounds per square inch
NA = Not applicable
EFR was applied concurrently at locations where duration and/or fluid removal is combined

5. Conclusions

Comparison of the fourth quarter 2016 monitoring data and historic information provides the following general observations:

- The groundwater elevation beneath the Site has remained relatively stable with minor seasonal and annual fluctuations since monitoring was initiated in 2008.
- Measurable amounts of LNAPL were not observed in any of the Site monitoring wells during the fourth quarter 2016. This is the seventh consecutive quarter that LNAPL has not been present in monitoring wells MW-3, MW-4, MW-5, MW-9, and MW-10. Up to the second quarter 2015, LNAPL had consistently been detected at those monitor wells, with the exception of MW-3 in fourth quarter 2014.
- Benzene concentrations in exceedance of the NMWQCC standard persist in MW-2, MW-3, MW-4, MW-5, MW-9, and MW-10. Additionally, the benzene concentration at monitoring well MW-1 was above the NMWQCC standard for the second consecutive quarter. Prior to the September 2016 sampling event, benzene had not been observed above the standard at that location since June 2015. The remaining 9 sampled locations exhibited benzene concentrations below NMWQCC
- Ethylbenzene was observed above the NMWQCC standard within the duplicate sample at MW-5. The remaining 15 well locations were below the standard and or laboratory detection limits.
- Total xylenes were above the NMWQCC standards at monitoring wells MW-3, MW-4, MW-5, and MW-10. The remaining sampled locations were below the standard and/or laboratory detection limits.
- Chloride concentrations in Site monitoring wells have remained relatively stable at levels above the NMWQCC guideline of 250 mg/L.

6. Recommendations

Based on evaluation of data from the fourth quarter 2016 and historic Site observations and monitoring results, recommendations for future activities include:

- Continue quarterly groundwater monitoring and sampling at the monitoring well locations illustrated on Figure 2.
- Continue quarterly EFR/AS remediation activities at monitoring wells that have historically had high BTEX concentrations (MW-2, MW-3, MW-4, MW-5, MW-9, and MW-10). Discontinue AS activities in the event that LNAPL is observed at the Site during future quarterly monitoring and/or remediation events.
- On December 1, 2015, DCP submitted a *Request to Remove Chlorides from Groundwater Sampling Suite* letter to the New Mexico Oil Conservation Division (NMOCD). To date, DCP has not received notification from the NMOCD guiding the sampling requirement for chlorides at the Site. Upon approval and/or comment from the NMOCD, DCP will update the sampling program for the Site accordingly.

Tables

TABLE 1
FOURTH QUARTER 2016
SUMMARY OF GROUNDWATER ELEVATION DATA
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location	Date	Depth to Groundwater (feet)	Depth to Product (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth (feet)	TOC Elevation (feet amsl)	Groundwater Elevation (*) (feet amsl)	Change in Groundwater Elevation Since Previous Event (1) (feet)
MW-1	03/21/2016	28.96			NM	3534.57	3505.61	0.13
MW-1	06/20/2016	28.93			38.60	3534.57	3505.64	0.03
MW-1	09/26/2016	28.75			38.98	3534.57	3505.82	0.18
MW-1	12/19/2016	28.77			38.61	3534.57	3505.80	-0.02
MW-2	03/21/2016	29.96			NM	3535.18	3505.22	-0.04
MW-2	06/20/2016	29.70			39.23	3535.18	3505.48	0.26
MW-2	09/26/2016	29.61			39.36	3535.18	3505.57	0.09
MW-2	12/19/2016	29.55			39.38	3535.18	3505.63	0.06
MW-3	03/21/2016	30.98			NM	3536.57	3505.59	0.12
MW-3	06/20/2016	30.95			39.65	3536.57	3505.62	0.03
MW-3	09/26/2016	30.83			39.67	3536.57	3505.74	0.12
MW-3	12/19/2016	30.81			39.67	3536.57	3505.76	0.02
MW-4	03/21/2016	29.99			NM	3535.20	3505.21	0.12
MW-4	06/20/2016	29.95			39.70	3535.20	3505.25	0.04
MW-4	09/26/2016	29.97			39.76	3535.20	3505.23	-0.02
MW-4	12/19/2016	29.82			39.65	3535.20	3505.38	0.15
MW-5	03/21/2016	30.70			NM	3535.92	3505.22	0.11
MW-5	06/20/2016	30.65			39.95	3535.92	3505.27	0.05
MW-5	09/26/2016	30.67			39.95	3535.92	3505.25	-0.02
MW-5	12/19/2016	30.51			40.29	3535.92	3505.41	0.16
MW-6	03/21/2016	31.08			NM	3536.16	3505.08	0.11
MW-6	06/20/2016	30.99			40.03	3536.16	3505.17	0.09
MW-6	09/26/2016	31.09			40.20	3536.16	3505.07	-0.10
MW-6	12/19/2016	30.92			40.05	3536.16	3505.24	0.17
MW-7	03/21/2016	31.81			NM	3537.09	3505.28	-0.39
MW-7	06/20/2016	31.78			39.71	3537.09	3505.31	0.03
MW-7	09/26/2016	31.80			39.78	3537.09	3505.29	-0.02
MW-7	12/19/2016	31.64			39.79	3537.09	3505.45	0.16
MW-8	03/21/2016	30.71			NM	3536.41	3505.70	0.13
MW-8	06/20/2016	30.66			38.66	3536.41	3505.75	0.05
MW-8	09/26/2016	30.61			39.12	3536.41	3505.80	0.05
MW-8	12/19/2016	30.52			38.68	3536.41	3505.89	0.09
MW-9	03/21/2016	28.59			NM	3534.20	3505.61	0.13
MW-9	06/20/2016	28.58			38.10	3534.20	3505.62	0.01
MW-9	09/26/2016	28.46			37.88	3534.20	3505.74	0.12
MW-9	12/19/2016	28.36			38.05	3534.20	3505.84	0.10
MW-10	03/21/2016	28.83			NM	3534.21	3505.38	0.38
MW-10	06/20/2016	28.92			37.40	3534.21	3505.29	-0.09
MW-10	09/26/2016	28.88			37.43	3534.21	3505.33	0.04
MW-10	12/19/2016	28.70			37.30	3534.21	3505.51	0.18

TABLE 1
FOURTH QUARTER 2016
SUMMARY OF GROUNDWATER ELEVATION DATA
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location	Date	Depth to Groundwater (feet)	Depth to Product (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth (feet)	TOC Elevation (feet amsl)	Groundwater Elevation (*) (feet amsl)	Change in Groundwater Elevation Since Previous Event (1) (feet)
MW-11	03/21/2016	30.95			NM	3536.19	3505.24	0.14
MW-11	06/20/2016	30.89			38.95	3536.19	3505.30	0.06
MW-11	09/26/2016	30.99			38.98	3536.19	3505.20	-0.10
MW-11	12/19/2016	30.78			38.02	3536.19	3505.41	0.21
MW-12	03/21/2016	29.20			38.21	3534.47	3505.27	0.09
MW-12	06/20/2016	29.13			33.76	3534.47	3505.34	0.07
MW-12	09/26/2016	29.22			34.33	3534.47	3505.25	-0.09
MW-12	12/19/2016	29.00			33.85	3534.47	3505.47	0.22
MW-13	03/21/2016	30.31			38.61	3536.08	3505.77	0.12
MW-13	06/20/2016	30.25			38.52	3536.08	3505.83	0.06
MW-13	09/26/2016	30.25			38.50	3536.08	3505.83	0.00
MW-13	12/19/2016	30.13			38.50	3536.08	3505.95	0.12
MW-14	03/21/2016	29.37			41.20	3534.96	3505.59	0.15
MW-14	06/20/2016	29.31			41.00	3534.96	3505.65	0.06
MW-14	09/26/2016	29.35			41.05	3534.96	3505.61	-0.04
MW-14	12/19/2016	29.19			40.92	3534.96	3505.77	0.16
MW-15	03/21/2016	29.58			36.31	3534.90	3505.32	0.16
MW-15	06/20/2016	29.52			36.22	3534.90	3505.38	0.06
MW-15	09/26/2016	29.60			36.72	3534.90	3505.30	-0.08
MW-15	12/19/2016	29.35			38.21	3534.90	3505.55	0.25
MW-16	03/21/2016	28.42			42.42	3533.68	3505.26	0.13
MW-16	06/20/2016	28.40			42.20	3533.68	3505.28	0.02
MW-16	09/26/2016	28.47			42.81	3533.68	3505.21	-0.07
MW-16	12/19/2016	28.25			42.20	3533.68	3505.43	0.22
							Average change in groundwater elevation (9/26/16 to 12/19/2016)	0.14

Notes:

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

amsl = feet above mean sea level

TOC = top of casing

Groundwater elevation = (TOC Elevation - Measured Depth to Water)

* Groundwater elevation was corrected for product thickness using the following calculation, when applicable:

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

NM = Not Measured

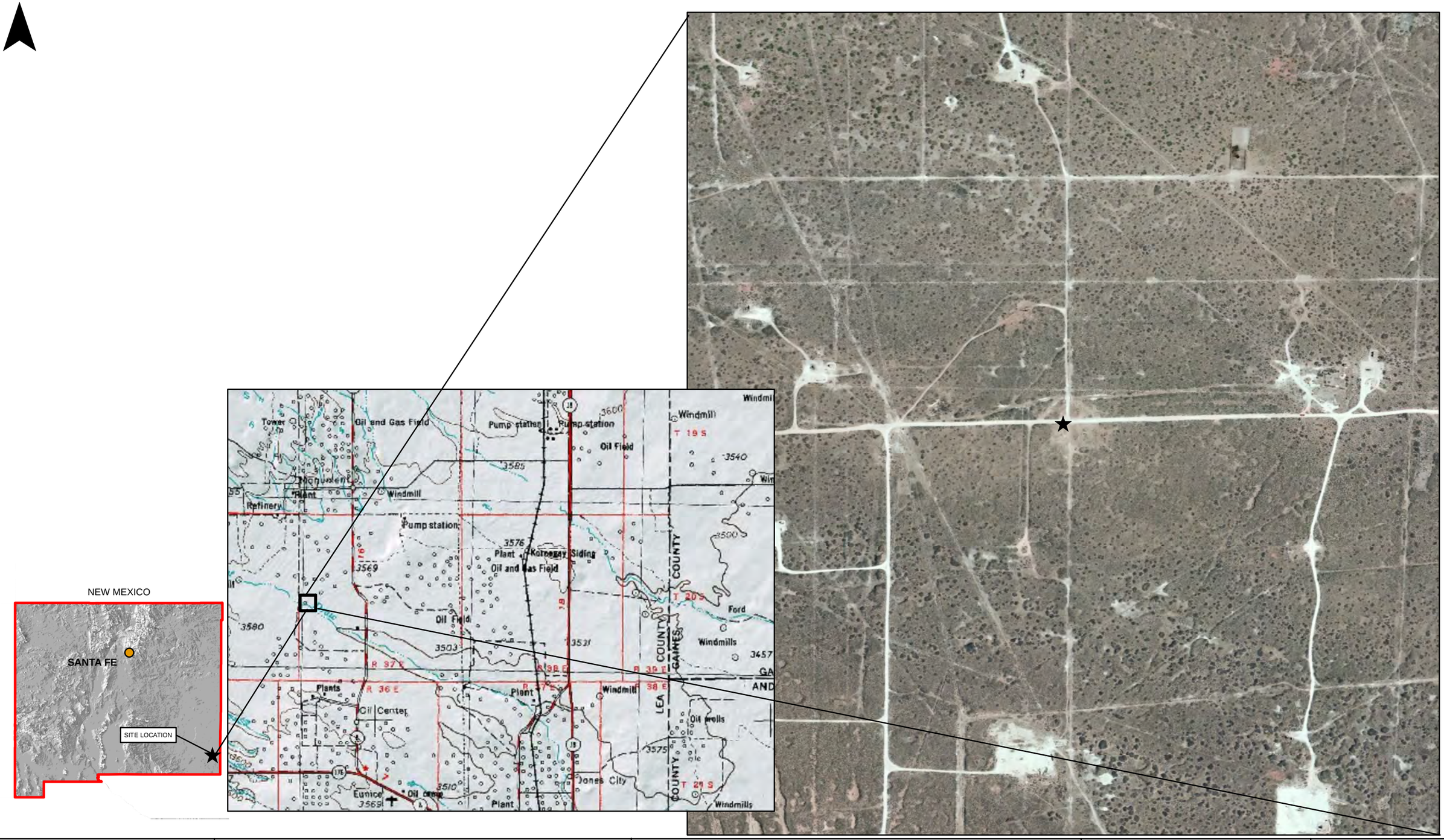
TABLE 2
FOURTH QUARTER 2016
SUMMARY OF BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-1	12/19/2016	**1.8**	0.026	0.5	0.21	**312**	
MW-2	12/19/2016	**0.17**	0.033	0.035	0.020	**396**	
MW-3	12/19/2016	**3.7**	0.56	0.60	**1.1**	**434**	
MW-4	12/19/2016	**0.41**	0.023	0.38	**0.88**	**310**	
MW-5	12/19/2016	**0.091**	0.040	0.46	**1.3**	**427**	Duplicate Sample Collected
MW-5 (Duplicate)	12/19/2016	**0.15**	0.072	**0.79**	**2.2**	**447**	
MW-6	12/19/2016	<0.0010	<0.0010	<0.0010	0.0024	**405**	
MW-7	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**358**	
MW-8	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**519**	
MW-9	12/19/2016	**0.32**	0.0015	0.051	0.071	**405**	
MW-10	12/19/2016	**0.11**	0.0033	0.60	**1.5**	**510**	
MW-11	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**431**	
MW-12	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**309**	
MW-13	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**333**	
MW-14	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**432**	
MW-15	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**418**	
MW-16	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**445**	
Trip Blank	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	NA	

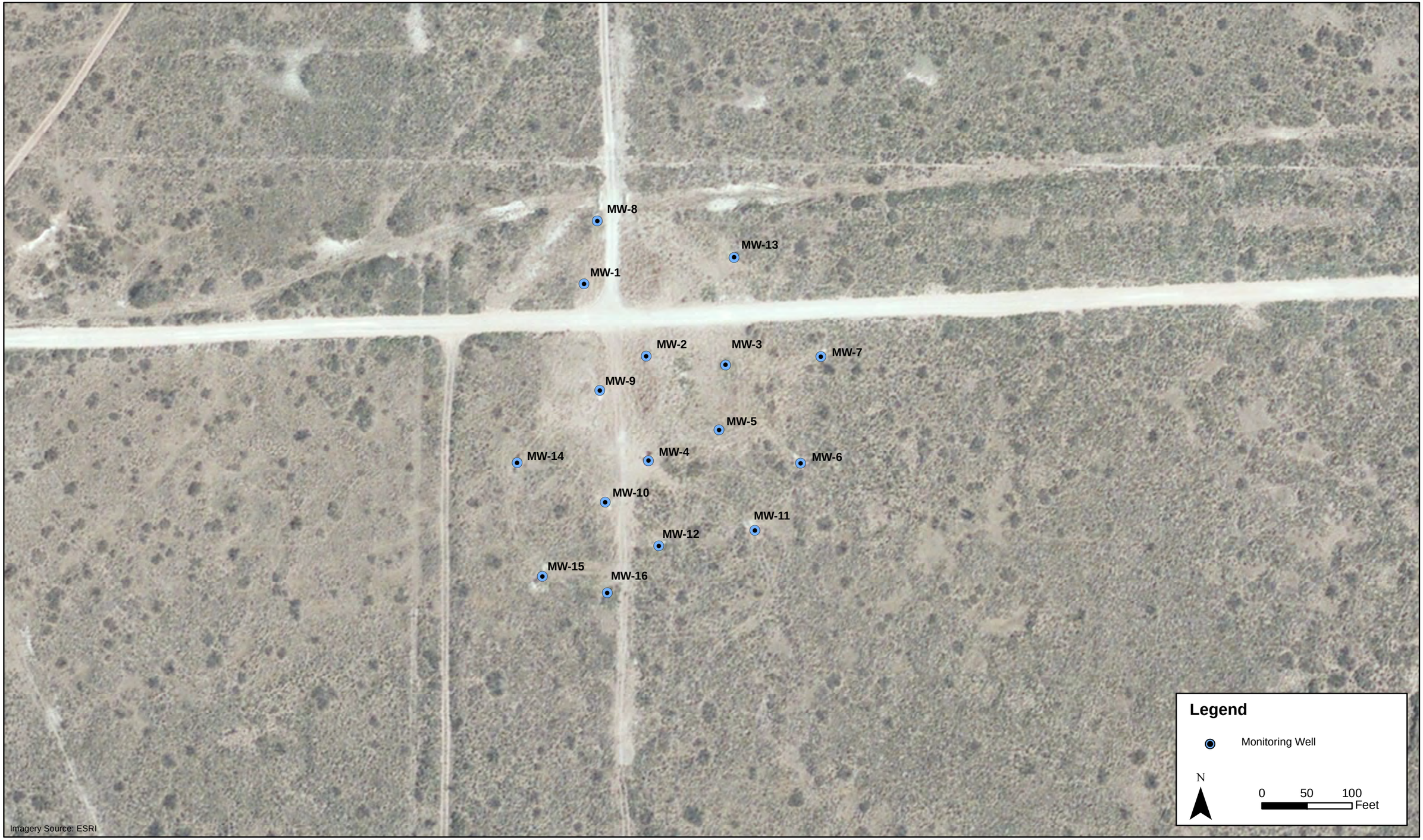
Notes:
Bold red values indicate an exceedance of the NMWQCC groundwater standards for the Site.
NMWQCC = New Mexico Water Quality Control Commission
J = Estimated Value
NA = Not Analyzed
mg/L = milligrams per liter

Figures

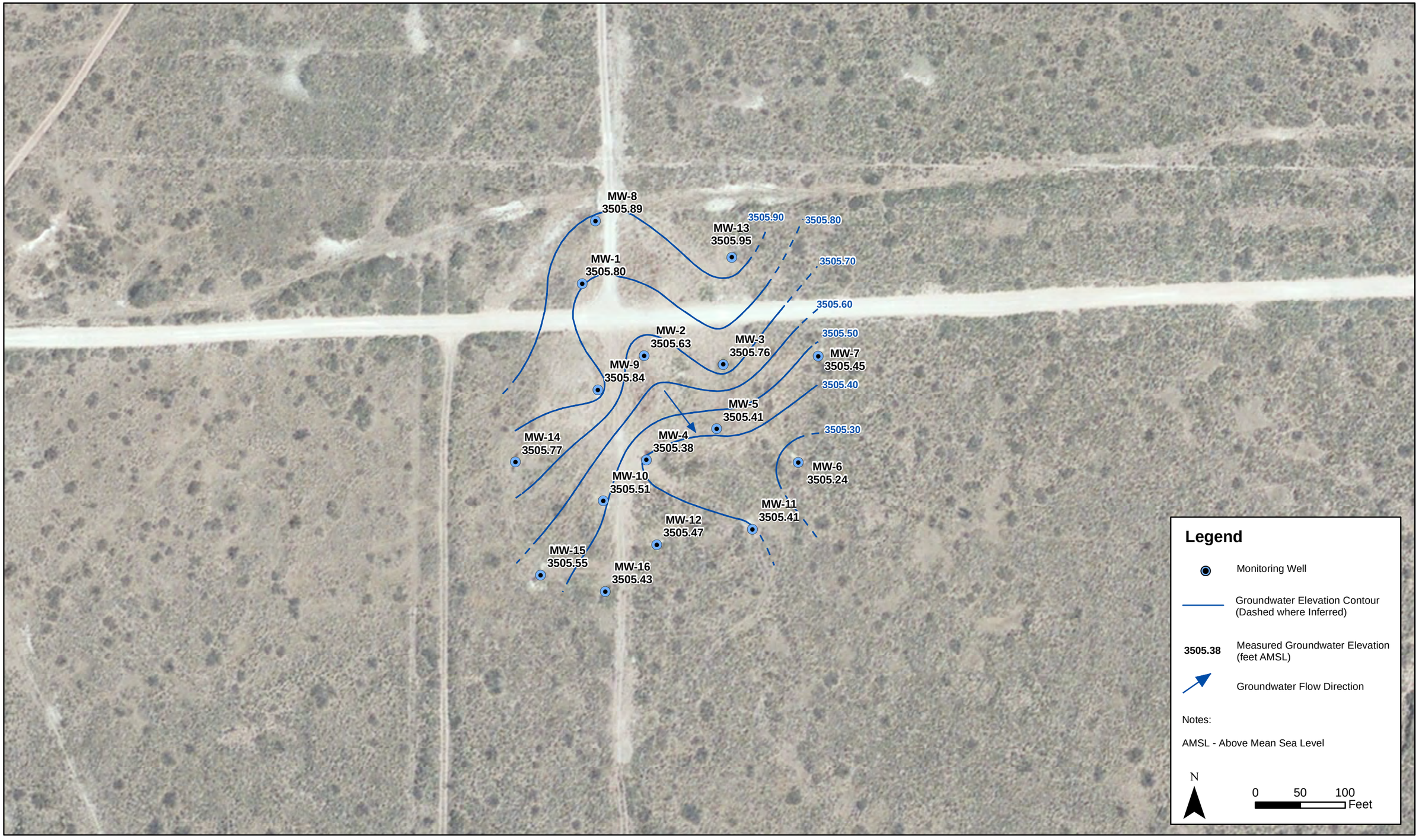
N



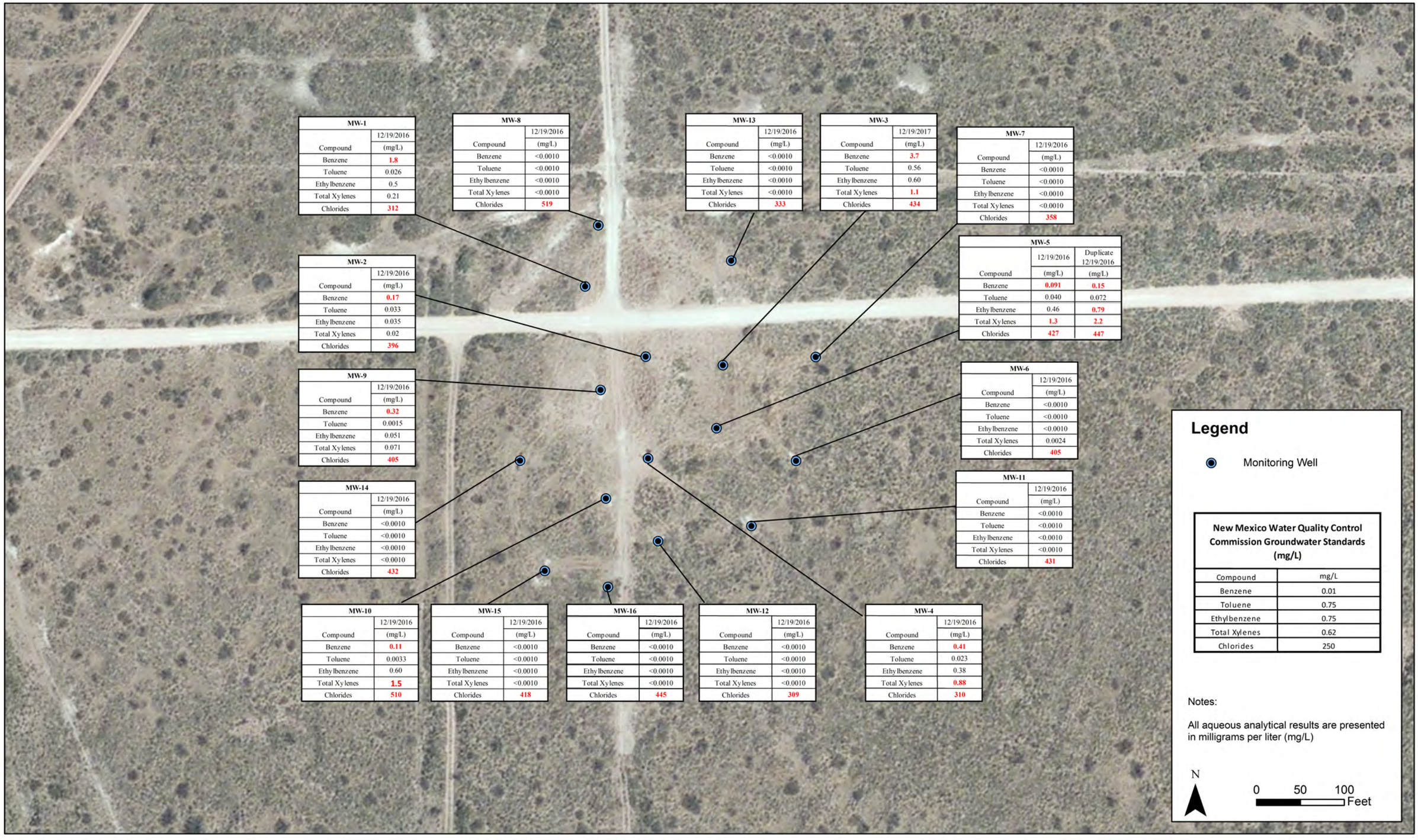
DATE: July 2015 DESIGNED BY: T. Johansen DRAWN BY: D. Arnold	TASMAN GEOSCIENCES **Tasman Geosciences, Inc.** **6899 Pecos Street - Unit C** **Denver, CO 80221**	**DCP Midstream** **RR-Extension Pipeline Release** NE 1/4, NW 1/4, Section 19, Township 20 South, Range 37 East Lea County, New Mexico	Site Location Map	Figure 1



DATE: November 2016 DESIGNED BY: B. Humphrey DRAWN BY: D. Arnold	TASMAN GEOSCIENCES **Tasman Geosciences, Inc.** **6899 Pecos Street - Unit C** **Denver, CO 80221**	**DCP Midstream** **RR-Extension Pipeline Release** Fourth Quarter 2016 Groundwater Monitoring Summary Report	Site Map with Monitoring Well Locations	Figure 2



DATE: February 2017 DESIGNED BY: B. Humphrey DRAWN BY: D. Arnold	TASMAN GEOSCIENCES **Tasman Geosciences, LLC** **6899 Pecos Street - Unit C** **Denver, CO 80221**	**DCP Midstream** **RR-Extension Pipeline Release** Fourth Quarter 2016 Groundwater Monitoring Summary Report	Groundwater Elevation Contour Map (December 19, 2016)	Figure 3



MW-1	
	12/19/2016
Compound	(mg/L)
Benzene	**1.8**
Toluene	0.026
Ethylbenzene	0.5
Total Xylenes	0.21
Chlorides	**312**

MW-8	
	12/19/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0010
Chlorides	**519**

MW-13	
	12/19/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0010
Chlorides	**333**

MW-3	
	12/19/2017
Compound	(mg/L)
Benzene	**3.7**
Toluene	0.56
Ethylbenzene	0.60
Total Xylenes	**1.1**
Chlorides	**434**

MW-7	
	12/19/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0010
Chlorides	**358**

MW-2	
	12/19/2016
Compound	(mg/L)
Benzene	**0.17**
Toluene	0.033
Ethylbenzene	0.035
Total Xylenes	0.02
Chlorides	**396**

MW-5		
	12/19/2016	Duplicate 12/19/2016
Compound	(mg/L)	(mg/L)
Benzene	**0.091**	**0.15**
Toluene	0.040	0.072
Ethylbenzene	0.46	**0.79**
Total Xylenes	**1.3**	**2.2**
Chlorides	**427**	**447**

MW-9	
	12/19/2016
Compound	(mg/L)
Benzene	**0.32**
Toluene	0.0015
Ethylbenzene	0.051
Total Xylenes	0.071
Chlorides	**405**

MW-6	
	12/19/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	0.0024
Chlorides	**405**

MW-14	
	12/19/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0010
Chlorides	**432**

MW-11	
	12/19/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0010
Chlorides	**431**

MW-10	
	12/19/2016
Compound	(mg/L)
Benzene	**0.11**
Toluene	0.0033
Ethylbenzene	0.60
Total Xylenes	**1.5**
Chlorides	**510**

MW-15	
	12/19/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0010
Chlorides	**418**

MW-16	
	12/19/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0010
Chlorides	**445**

MW-12	
	12/19/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0010
Chlorides	**309**

MW-4	
	12/19/2016
Compound	(mg/L)
Benzene	**0.41**
Toluene	0.023
Ethylbenzene	0.38
Total Xylenes	**0.88**
Chlorides	**310**

Legend

Monitoring Well

New Mexico Water Quality Control Commission Groundwater Standards (mg/L)	
Compound	mg/L
Benzene	0.01
Toluene	0.75
Ethylbenzene	0.75
Total Xylenes	0.62
Chlorides	250

Notes:

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

N

0 50 100 Feet

DATE: February 2017

DESIGNED BY: B. Humphrey

DRAWN BY: D. Arnold

TASMAN GEOSCIENCES
Tasman Geosciences, Inc.
6899 Pecos Street - Unit C
Denver, CO 80221

DCP Midstream
RR-Extension Pipeline Release
Fourth Quarter 2016 Groundwater Monitoring Summary Report

Analytical Results Map (December 19, 2016)

Figure 4

Appendix A

Historic Analytical Results

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-1	3/2008	**1.4**	0.0395	**0.948**	0.128		
MW-1	6/2008	**2.75**	0.054	**2.17**	0.232		
MW-1	9/2008	**1.1**	0.0375	**0.845**	0.131	**507**	
MW-1	12/2008	**0.869**	0.0385	0.581	0.0709	**447**	
MW-1	3/2009	**0.288**	0.0149	0.107	0.0395	**432**	
MW-1	5/2009	**1.38**	0.0705	0.175	0.065	**462**	
MW-1	9/2009	**0.267**	0.024	0.0332	0.0078	**422**	
MW-1	12/2009	**0.819**	0.088	0.0267	0.012	**363**	
MW-1	3/2010	**0.726**	0.0879	0.107	0.0278	**800**	
MW-1	6/2010	**0.339**	0.0539	0.0329	0.0079	**510**	
MW-1	9/2010	**1.99**	0.0951	0.084	0.0219	**442**	
MW-1	12/2010	**0.708**	0.0796	0.0099	0.0047	**448**	
MW-1	03/30/2011	**0.0241**	<0.001	0.0136	0.0055	**457**	
MW-1	06/22/2011	**0.0735**	<0.01	0.0293	<0.02	**467**	
MW-1	09/17/2011	**0.144**	0.038	0.0069	0.0087	**472**	Duplicate sample collected
MW-1	12/08/2011	**0.076**	0.002	0.0227	0.0024	**462**	Duplicate sample collected
MW-1	03/10/2012	**0.029**	<0.002	0.0072	<0.004	**497**	Duplicate sample collected
MW-1	06/05/2012	**0.069**	0.0014	0.0112	<0.003	**470**	Duplicate sample collected
MW-1	09/09/2012	**0.0216**	<0.002	0.0029	<0.003	**465**	Duplicate sample collected
MW-1	12/04/2012	**0.0194**	<0.002	0.0024	<0.003	**445**	Duplicate sample collected
MW-1	02/22/2013	0.0063	<0.002	0.00066	<0.003	**474**	Duplicate sample collected
MW-1	06/02/2013	**0.0313**	<0.002	0.0028	<0.003	**451**	Duplicate sample collected
MW-1	09/10/2013	0.0092	<0.002	0.0016	<0.003	**400**	Duplicate sample collected
MW-1	12/03/2013	0.0067	<0.002	0.00075	<0.003	**458**	Duplicate Sample Collected
MW-1	02/27/2014	**0.0449**	<0.002	0.0044	<0.003	**474**	Duplicate Sample Collected
MW-1 (duplicate)	02/27/2014	**0.0331**	<0.002	0.0037	<0.003	**489**	
MW-1	06/03/2014	**0.0157**	<0.002	0.0018 J	<0.003	**466**	Duplicate Sample Collected
MW-1 (duplicate)	06/03/2014	**0.0157**	<0.002	0.0017 J	<0.003	**488**	
MW-1	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-1	12/01/2014	**4.94**	0.330	0.332	0.2710	**361**	Duplicate Sample Collected
MW-1 (duplicate)	12/01/2014	**5.58**	0.455	0.384	0.3435	**350**	
MW-1	02/25/2015	**0.68**	0.0013	0.065	0.0048	**458**	Duplicate Sample Collected
MW-1 (duplicate)	02/25/2015	**0.56**	0.0013	0.062	0.0043	**452**	
MW-1	06/01/2015	**0.015**	<0.001	0.0067	<0.003	**488**	Duplicate sample collected
MW-1 (duplicate)	06/01/2015	**0.015**	0.0096	0.012	0.022	**502**	
MW-1	08/31/2015	0.0019	<0.001	<0.001	<0.003	**461**	Duplicate sample collected
MW-1 (duplicate)	08/31/2015	0.0013	<0.001	<0.001	<0.003	**460**	
MW-1	12/14/2015	<0.001	<0.001	<0.001	<0.003	**455**	Duplicate sample collected
MW-1 (duplicate)	12/14/2015	<0.001	<0.001	<0.001	<0.003	**457**	
MW-1	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	**453**	Duplicate sample collected
MW-1 (duplicate)	03/21/2016	0.0031	<0.0010	0.0013	<0.0030	**473**	
MW-1	06/20/2016	0.0036	<0.0010	<0.0010	<0.0030	**454**	
MW-1	09/29/2016	**1.4**	**4.8**	**1.1**	**2.4**	122	
MW-1	12/19/2016	**1.8**	0.026	0.5	0.21	**312**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-2	3/2008	**8.98**	0.135	**6.58**	**0.765**		
MW-2	6/2008	**24.3**	0.319	**18.5**	**2.58**		
MW-2	9/2008	**21.7**	0.443	**9.79**	**4.25**	109	
MW-2	12/2008	Not Sampled: Remediation Activities					
MW-2	3/2009	**23.7**	0.538	**2.34**	**1.25**	114	
MW-2	5/2009	**32.7**	**0.791**	**1.31**	**1.69**	109	
MW-2	9/2009	**29.3**	0.491	**0.771**	0.371	139	
MW-2	12/2009	**28.5**	0.57	0.347	0.177	199	
MW-2	3/2010	**23.8**	0.529	0.71	<1.2	**700**	
MW-2	6/2010	**22.9**	0.485	0.39	0.128	233	
MW-2	9/2010	**17**	0.329	0.257	<0.8	**263**	
MW-2	12/2010	**16.9**	0.458	0.399	0.0926	**278**	
MW-2	03/30/2011	**16.6**	0.165	0.403	0.116	**320**	
MW-2	06/22/2011	**9.21**	0.0231	0.377	<0.4	**370**	
MW-2	09/17/2011	**4.07**	0.415	0.329	0.203	**375**	
MW-2	12/08/2011	**1.5**	0.0436	0.33	0.0254	**392**	
MW-2	03/10/2012	**1.04**	<0.04	0.134	<0.08	**444**	
MW-2	06/05/2012	**1.25**	0.106	0.158	0.0885	**346**	
MW-2	09/09/2012	**1.53**	0.203	0.138	0.14	**393**	
MW-2	12/04/2012	**1.26**	0.115	0.0854	0.116	**385**	
MW-2	02/22/2013	**4.53** [3]	0.474	0.298	0.482	**386**	
MW-2	06/02/2013	**1.25**	0.0582	0.0644	0.103	**406**	
MW-2	09/10/2013	**4.47**	0.374	0.226	0.375	**339**	
MW-2	12/03/2013	**0.9**	0.0569	0.0442	0.0671	**414**	
MW-2	02/27/2014	**4.41** [3]	0.599	0.312	0.493	**411**	
MW-2	06/03/2014	**0.842** [3]	0.0500	0.0609	0.101	**440**	
MW-2	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-2	12/01/2014	**0.164**	0.0132	0.007	0.0106	**440**	
MW-2	02/25/2015	**4.3**	0.64	0.28	0.55	**370**	
MW-2	06/01/2015	**3.4**	0.48	0.28	0.37	**364**	
MW-2	08/31/2015	**1.4**	0.29	0.064	0.12	**347**	
MW-2	12/14/2015	**0.51**	0.079	0.033	0.059	**371**	
MW-2	03/21/2016	**1.5**	0.31	0.11	0.24	**355**	
MW-2	06/20/2016	**3.4**	0.70	0.16	0.30	**367**	
MW-2	09/26/2016	**1.1**	0.37	0.099	0.081	**382**	
MW-2	12/19/2016	**0.17**	0.033	0.035	0.020	**396**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-3	3/2008	**0.759**	0.0355	**0.849**	0.0786		
MW-3	6/2008	**6.18**	0.287	**9.46**	**1.23**		
MW-3	9/2008	**2.45**	0.145	**3.62**	**114**	**363**	
MW-3	12/2008	**0.761**	0.0492	**0.938**	0.158	**301**	
MW-3	3/2009	**4.03**	0.18	**2.83**	0.61	**273**	
MW-3	5/2009	**14.7**	**0.808**	**12.6**	**1.64**	**313**	
MW-3	9/2009	**5.5**	0.271	**1.09**	<0.006	**363**	
MW-3	12/2009	**13.1**	**1.2**	**9.08**	**2.87**	**398**	
MW-3	3/2010	**8.43**	**1.01**	**9.14**	**2.71**	**440**	
MW-3	6/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	9/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	12/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	03/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	06/22/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	09/17/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	12/08/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	03/10/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	06/05/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	09/09/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	12/04/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	02/22/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	06/02/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	09/10/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	12/03/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	02/27/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	06/03/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-3	12/01/2014	**4.47**	**0.844**	0.529	**1.308**	NS	
MW-3	02/25/2015	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	06/01/2015	**3.2**	**0.95**	0.72	**2.9**	**391**	
MW-3	08/31/2015	**3.0**	0.31	0.30	0.50	**382**	
MW-3	12/14/2015	**4.7**	**2.0**	**0.90**	**2.7**	**381**	
MW-3	03/21/2016	**2.8**	**0.81**	0.54	**1.4**	**387**	
MW-3	06/20/2016	**2.2**	0.34	0.36	0.35	**386**	
MW-3	09/26/2016	**2.2**	0.62	0.72	**1.2**	**412**	
MW-3	12/19/2016	**3.7**	0.56	0.60	**1.1**	**434**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-4	3/2008	**0.0102**	<0.002	0.0093	0.0023		
MW-4	6/2008	**0.0439**	0.0068	0.0256	0.0147		
MW-4	9/2008	**0.514**	0.0203	0.443	0.125	**318**	
MW-4	12/2008	**1.32**	0.0812	**1.35**	0.239	**281**	
MW-4	3/2009	**3.61**	0.164	**3.4**	**0.831**	**229**	
MW-4	5/2009	**4.7**	0.428	**2.94**	**1.03**	**226**	
MW-4	9/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	12/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	3/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	6/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	9/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	12/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	03/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	06/22/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	09/17/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	12/08/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	03/10/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	06/05/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	09/09/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	12/04/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	02/22/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	06/02/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	09/10/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	12/03/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	02/27/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	06/03/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-4	12/01/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	02/25/2015	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	06/01/2015	**0.59**	**1.3**	0.71	**2.2**	**289**	
MW-4	08/31/2015	**0.089**	0.031	0.036	0.12	**287**	
MW-4	12/14/2015	**0.43**	0.38	0.63	**1.8**	**280**	
MW-4	03/21/2016	**0.44**	0.30	**0.82**	**2.3**	**286**	
MW-4	06/20/2016	**0.036**	0.0016	0.029	0.052	**314**	
MW-4	09/26/2016	**0.038**	<0.0010	0.0068	0.020	**305**	
MW-4	12/19/2016	**0.41**	0.0230	0.38	**0.88**	**310**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-5	3/2008	0.0019	<0.002	0.0012	<0.006		
MW-5	6/2008	0.0037	<0.002	0.0037	<0.006		
MW-5	9/2008	0.0038	<0.002	0.0037	<0.006	**373**	
MW-5	12/2008	0.0031	<0.002	0.004	<0.006	**318**	
MW-5	3/2009	0.0067	<0.002	0.0074	<0.006	**288**	
MW-5	5/2009	0.0064	<0.002	0.0089	<0.006	**363**	
MW-5	9/2009	0.0082	0.00066	0.0132	<0.006	**358**	
MW-5	12/2009	0.0096	0.0013	0.0155	0.0021	**313**	
MW-5	3/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	6/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	9/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	12/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	03/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	06/22/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	09/17/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	12/08/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	03/10/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	06/05/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	09/09/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	12/04/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	02/22/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	06/02/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	09/10/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	12/03/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	02/27/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	06/03/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-5	12/01/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	02/25/2015	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	06/01/2015	**0.50**	**1.9**	**1.4**	**4.0**	**424**	
MW-5	08/31/2015	**0.024**	0.027	0.061	0.091	**741**	
MW-5	12/14/2015	**0.36**	**0.83**	**0.83**	**2.2**	**407**	
MW-5	03/21/2016	**0.19**	0.56	0.72	**2.3**	**413**	
MW-5	06/20/2016	**0.19**	0.49	0.69	**2.0**	**410**	Duplicate Sample Collected
MW-5 (Duplicate)	06/20/2016	**0.054**	0.14	0.23	**0.66**	**410**	
MW-5	09/26/2016	**0.093**	0.29	0.29	**0.88**	**432**	Duplicate Sample Collected
MW-5 (Duplicate)	09/26/2016	**0.160**	0.47	0.49	**1.50**	**444**	
MW-5	12/19/2016	**0.091**	0.040	0.46	**1.30**	**427**	Duplicate Sample Collected
MW-5 (Duplicate)	12/19/2016	**0.15**	0.072	**0.79**	**2.2**	**447**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-6	6/2008	<0.002	<0.002	<0.002	<0.006		
MW-6	9/2008	<0.002	<0.002	<0.002	<0.006	**363**	
MW-6	12/2008	<0.002	<0.002	<0.002	<0.006	**325**	
MW-6	3/2009	<0.002	<0.002	<0.002	<0.006	**298**	
MW-6	5/2009	<0.002	<0.002	<0.002	<0.006	**308**	
MW-6	9/2009	<0.002	<0.002	<0.002	<0.006	**296**	
MW-6	12/2009	<0.002	<0.002	<0.002	<0.006	**393**	
MW-6	3/2010	<0.002	<0.002	<0.002	<0.006	**700**	
MW-6	6/2010	<0.001	<0.002	<0.002	<0.002	**402**	
MW-6	9/2010	<0.001	<0.002	<0.002	<0.004	**337**	
MW-6	12/2010	<0.001	<0.002	<0.002	<0.004	**359**	
MW-6	03/30/2011	<0.001	<0.002	<0.002	<0.002	**386**	
MW-6	06/22/2011	<0.001	<0.002	<0.002	<0.004	**376**	
MW-6	09/17/2011	<0.001	<0.002	<0.002	<0.004	**383**	
MW-6	12/08/2011	<0.0005	<0.001	<0.001	<0.001	**372**	
MW-6	03/10/2012	<0.001	<0.002	<0.002	<0.004	**406**	
MW-6	06/05/2012	<0.001	<0.002	<0.002	<0.003	**381**	
MW-6	09/09/2012	<0.001	<0.002	<0.002	<0.003	**377**	
MW-6	12/04/2012	<0.001	<0.002	<0.002	<0.003	**358**	
MW-6	02/22/2013	<0.001	<0.002	<0.002	<0.003	**385**	
MW-6	06/02/2013	<0.001	<0.002	<0.002	<0.003	**372**	
MW-6	09/10/2013	<0.001	<0.002	<0.002	<0.003	**367**	
MW-6	12/03/2013	<0.001	<0.002	<0.002	<0.003	**373**	
MW-6	02/27/2014	<0.001	<0.002	<0.002	<0.003	**395**	
MW-6	06/03/2014	<0.001	<0.002	<0.002	<0.003	**390**	
MW-6	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-6	12/01/2014	<0.001	<0.001	<0.001	<0.003	**358**	
MW-6	02/25/2015	<0.001	<0.001	<0.001	<0.003	**389**	
MW-6	06/01/2015	<0.001	<0.001	<0.001	<0.003	**417**	
MW-6	08/31/2015	<0.001	<0.001	<0.001	<0.003	**400**	
MW-6	12/14/2015	<0.001	<0.001	<0.001	<0.003	**391**	
MW-6	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	**385**	
MW-6	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**412**	
MW-6	09/26/2016	<0.0010	<0.0010	<0.0010	<0.0030	**392**	
MW-6	12/19/2016	<0.0010	<0.0010	<0.0010	0.0024	**405**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-7	6/2008	<0.002	<0.002	<0.002	<0.006		
MW-7	9/2008	<0.002	<0.002	<0.002	<0.006	**378**	
MW-7	12/2008	<0.002	<0.002	<0.002	<0.006	**348**	
MW-7	3/2009	<0.002	<0.002	<0.002	<0.006	**283**	
MW-7	5/2009	<0.002	<0.002	<0.002	<0.006	**298**	
MW-7	9/2009	<0.002	<0.002	<0.002	<0.006	**273**	
MW-7	12/2009	<0.002	<0.002	<0.002	<0.006	**328**	
MW-7	3/2010	<0.002	<0.002	<0.002	<0.006	**750**	
MW-7	6/2010	0.0005	<0.002	<0.002	<0.006	**385**	
MW-7	9/2010	0.00042	<0.002	<0.002	<0.004	**326**	
MW-7	12/2010	<0.002	<0.002	<0.002	<0.006	**345**	
MW-7	03/30/2011	<0.001	<0.002	<0.002	<0.002	**382**	
MW-7	06/22/2011	<0.001	<0.002	<0.002	<0.004	**390**	
MW-7	09/17/2011	<0.001	<0.002	<0.002	<0.004	**374**	
MW-7	12/08/2011	<0.0005	<0.001	<0.001	<0.001	**376**	
MW-7	03/10/2012	<0.001	<0.002	<0.002	<0.004	**392**	
MW-7	06/05/2012	<0.001	<0.002	<0.002	<0.003	**381**	
MW-7	09/09/2012	<0.001	<0.002	<0.002	<0.003	**362**	
MW-7	12/04/2012	<0.001	<0.002	<0.002	<0.003	**334**	
MW-7	02/22/2013	0.00059	<0.002	<0.002	<0.003	**363**	
MW-7	06/02/2013	<0.001	<0.002	<0.002	<0.003	**361**	
MW-7	09/10/2013	<0.001	<0.002	<0.002	<0.003	**332**	
MW-7	12/03/2013	<0.001	<0.002	<0.002	<0.003	**350**	
MW-7	02/27/2014	<0.001	<0.002	<0.002	<0.003	**358**	
MW-7	06/03/2014	<0.001	<0.002	<0.002	<0.003	**359**	
MW-7	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-7	12/01/2014	<0.001	<0.001	<0.001	<0.003	**332**	
MW-7	02/25/2015	<0.001	<0.001	<0.001	<0.003	**393**	
MW-7	06/01/2015	<0.001	<0.001	<0.001	<0.003	**371**	
MW-7	08/31/2015	<0.001	<0.001	<0.001	<0.003	**359**	
MW-7	12/14/2015	<0.001	<0.001	<0.001	<0.003	**338**	
MW-7	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	**355**	
MW-7	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**379**	
MW-7	09/26/2016	<0.0010	<0.0010	<0.0010	<0.0030	**365**	
MW-7	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**358**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-8	6/2008	**0.0384**	0.00049	0.0255	0.0016		
MW-8	9/2008	**0.0301**	<0.002	0.0161	0.002	**512**	
MW-8	12/2008	0.00233	<0.002	0.011	<0.006	**393**	
MW-8	3/2009	**0.0218**	<0.002	0.0066	<0.006	**472**	
MW-8	5/2009	0.0098	<0.002	0.0049	<0.006	**450**	
MW-8	9/2009	<0.002	<0.002	<0.002	<0.006	**477**	
MW-8	12/2009	<0.002	<0.002	<0.002	<0.006	**472**	
MW-8	3/2010	<0.002	<0.002	<0.002	<0.006	**800**	
MW-8	6/2010	<0.001	<0.002	<0.002	<0.002	**553**	
MW-8	9/2010	<0.001	<0.002	<0.002	<0.004	**486**	
MW-8	12/2010	<0.001	<0.002	<0.002	<0.004	**533**	
MW-8	03/30/2011	<0.001	<0.002	<0.002	<0.002	**529**	
MW-8	06/22/2011	<0.001	<0.002	<0.002	<0.004	**524**	
MW-8	09/17/2011	<0.001	<0.002	<0.002	<0.004	**507**	
MW-8	12/08/2011	<0.0005	<0.001	<0.001	<0.001	**521**	
MW-8	03/10/2012	<0.001	<0.002	<0.002	<0.004	**528**	
MW-8	06/05/2012	<0.001	<0.002	<0.002	<0.003	**527**	
MW-8	09/09/2012	<0.001	<0.002	<0.002	<0.003	**509**	
MW-8	12/04/2012	<0.001	<0.002	<0.002	<0.003	**500**	
MW-8	02/22/2013	0.00048	<0.002	<0.002	<0.003	**530**	
MW-8	06/02/2013	<0.001	<0.002	<0.002	<0.003	**524**	
MW-8	09/10/2013	<0.001	<0.002	<0.002	<0.003	**489**	
MW-8	12/03/2013	<0.001	<0.002	<0.002	<0.003	**508**	
MW-8	02/27/2014	<0.001	<0.002	<0.002	<0.003	**521**	
MW-8	06/03/2014	<0.001	<0.002	<0.002	<0.003	**521**	
MW-8	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-8	12/01/2014	<0.001	<0.001	<0.001	<0.003	**498**	
MW-8	02/25/2015	<0.001	<0.001	<0.001	<0.003	**523**	
MW-8	06/01/2015	<0.001	<0.001	<0.001	<0.003	**539**	
MW-8	08/31/2015	<0.001	<0.001	<0.001	<0.003	**517**	
MW-8	12/14/2015	<0.001	<0.001	<0.001	<0.003	**520**	
MW-8	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	**494**	
MW-8	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**492**	
MW-8	09/26/2016	<0.0010	<0.0010	<0.0010	<0.0030	**508**	
MW-8	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**519**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-9	6/2010	LNAPL	LNAPL	LNAPL	LNAPL	**532**	
MW-9	9/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	12/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	03/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	06/22/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	09/17/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	12/08/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	03/10/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	06/05/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	09/09/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	12/04/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	02/22/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	06/02/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	09/10/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	12/03/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	02/27/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	06/03/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-9	12/01/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	02/25/2015	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	06/01/2015	**3.9**	**5.6**	**1.8**	**5.2**	**408**	
MW-9	08/31/2015	**3.5**	**3.1**	0.73	**1.7**	**403**	
MW-9	12/14/2015	**4.6**	**4.6**	**0.77**	**1.8**	**389**	
MW-9	03/21/2016	**3.5**	**4.1**	**1.1**	**2.9**	**418**	
MW-9	06/20/2016	**4.4**	**5.4**	**1.1**	**3.2**	**417**	
MW-9	09/26/2016	**0.22**	0.044	0.094	0.19	**431**	
MW-9	12/19/2016	**0.32**	0.0015	0.051	0.071	**405**	
MW-10	6-2010	LNAPL	LNAPL	LNAPL	LNAPL	**656**	
MW-10	9-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	12-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	03/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	06/22/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	09/17/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	12/08/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	03/10/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	06/05/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	09/09/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	12/04/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	02/22/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	06/02/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	09/10/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	12/03/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	02/27/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	06/03/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-10	12/01/2014	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	02/25/2015	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	06/01/2015	**0.75**	**1.7**	**1.6**	**3.0**	**563**	
MW-10	08/31/2015	**0.40**	0.046	0.60	**0.6**	**529**	
MW-10	12/14/2015	**1.0**	0.57	**0.98**	**2.6**	**521**	
MW-10	03/21/2016	<0.50 J	<0.50	0.51	**1.6**	**531**	
MW-10	06/20/2016	**0.93**	0.024	0.65	**2.0**	**520**	
MW-10	09/26/2016	**0.25**	0.0015	0.26	0.42	**531**	
MW-10	12/19/2016	**0.11**	0.0033	0.60	**1.5**	**510**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-11	6-2010	<0.001	<0.002	<0.002	<0.004	**407**	
MW-11	9-2010	<0.001	<0.002	<0.002	<0.004	**365**	
MW-11	12-2010	<0.001	<0.002	<0.002	<0.004	**383**	
MW-11	03/30/2011	<0.001	<0.002	<0.002	<0.002	**406**	
MW-11	06/22/2011	<0.001	<0.002	<0.002	<0.004	**405**	
MW-11	09/17/2011	<0.001	<0.002	<0.002	<0.004	**390**	
MW-11	12/08/2011	<0.0005	<0.001	<0.001	<0.001	**399**	
MW-11	03/10/2012	<0.001	<0.002	<0.002	<0.004	**403**	
MW-11	06/05/2012	<0.001	<0.002	<0.002	<0.003	**417**	
MW-11	09/09/2012	<0.001	<0.002	<0.002	<0.003	**399**	
MW-11	12/04/2012	<0.001	<0.002	<0.002	<0.003	**382**	
MW-11	02/22/2013	0.0004	<0.002	<0.002	<0.003	**419**	
MW-11	06/02/2013	<0.001	<0.002	<0.002	<0.003	**424**	
MW-11	09/10/2013	<0.001	<0.002	<0.002	<0.003	**394**	
MW-11	12/03/2013	<0.001	<0.002	<0.002	<0.003	**416**	
MW-11	02/27/2014	<0.001	<0.002	<0.002	<0.003	**433**	
MW-11	06/03/2014	<0.001	<0.002	<0.002	<0.003	**434**	
MW-11	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-11	12/01/2014	<0.001	<0.001	<0.001	<0.003	**391**	
MW-11	02/25/2015	<0.001	<0.001	<0.001	<0.003	**414**	
MW-11	06/01/2015	<0.001	<0.001	<0.001	<0.003	**468**	
MW-11	08/31/2015	<0.001	<0.001	<0.001	<0.003	**429**	
MW-11	12/14/2015	<0.001	<0.001	<0.001	<0.003	**416**	
MW-11	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	**434**	
MW-11	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**471**	
MW-11	09/26/2016	<0.0010	<0.0010	<0.0010	<0.0030	**444**	
MW-11	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**431**	
MW-12	6-2010	<0.001	<0.002	<0.002	<0.004	**514**	
MW-12	9-2010	<0.001	<0.002	<0.002	<0.004	**464**	
MW-12	12-2010	<0.001	<0.002	<0.002	<0.004	**501**	
MW-12	03/30/2011	<0.001	<0.002	<0.002	<0.002	**498**	
MW-12	06/22/2011	<0.001	<0.002	<0.002	<0.004	**497**	
MW-12	09/17/2011	<0.001	<0.002	<0.002	<0.004	**493**	
MW-12	12/08/2011	<0.0005	<0.001	<0.001	<0.001	**493**	
MW-12	03/10/2012	<0.001	<0.002	<0.002	<0.004	**513**	
MW-12	06/05/2012	<0.001	<0.002	<0.002	<0.003	**507**	
MW-12	09/09/2012	<0.001	<0.002	<0.002	<0.003	**487**	
MW-12	12/04/2012	<0.001	<0.002	<0.002	<0.003	**469**	
MW-12	02/22/2013	0.00041	<0.002	<0.002	<0.003	**484**	
MW-12	06/02/2013	<0.001	<0.002	<0.002	<0.003	**461**	
MW-12	09/10/2013	<0.001	<0.002	<0.002	<0.003	**428**	
MW-12	12/03/2013	<0.001	<0.002	<0.002	0.0031	**412**	
MW-12	02/27/2014	<0.001	<0.002	<0.002	0.0024 J	**414**	
MW-12	06/03/2014	<0.001	<0.002	<0.002	<0.003	**377**	
MW-12	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-12	12/01/2014	<0.001	<0.001	<0.001	<0.003	**300**	
MW-12	02/25/2015	<0.001	<0.001	<0.001	<0.003	**322**	
MW-12	06/01/2015	<0.001	<0.001	<0.001	<0.003	**351**	
MW-12	08/31/2015	<0.001	<0.001	<0.001	<0.003	**310**	
MW-12	12/14/2015	<0.001	<0.001	<0.001	<0.003	**295**	
MW-12	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	**301**	
MW-12	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**309**	
MW-12	09/26/2016	<0.0010	<0.0010	<0.0010	<0.0030	**316**	
MW-12	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**309**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-13	03/30/2011	<0.001	<0.002	<0.002	<0.002	**326**	
MW-13	06/22/2011	<0.001	<0.002	<0.002	<0.004	**340**	
MW-13	09/17/2011	<0.001	<0.002	<0.002	<0.004	**317**	
MW-13	12/08/2011	<0.0005	<0.001	<0.001	<0.001	**328**	
MW-13	03/10/2012	<0.001	<0.002	<0.002	<0.004	**331**	
MW-13	06/05/2012	<0.001	<0.002	<0.002	<0.003	**335**	
MW-13	09/09/2012	<0.001	<0.002	<0.002	<0.003	**321**	
MW-13	12/04/2012	<0.001	<0.002	<0.002	<0.003	**317**	
MW-13	02/22/2013	0.00073	<0.002	<0.002	<0.003	**337**	
MW-13	06/02/2013	<0.001	<0.002	<0.002	<0.003	**333**	
MW-13	09/10/2013	<0.001	<0.002	<0.002	<0.003	**311**	
MW-13	12/03/2013	<0.001	<0.002	<0.002	<0.003	**330**	
MW-13	02/27/2014	<0.001	<0.002	<0.002	<0.003	**344**	
MW-13	06/03/2014	<0.001	<0.002	<0.002	<0.003	**354**	MS/MSD Sample Collected
MW-13	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-13	12/01/2014	<0.001	<0.001	<0.001	<0.003	**310**	
MW-13	02/25/2015	<0.001	<0.001	<0.001	<0.003	**326**	
MW-13	06/01/2015	<0.001	<0.001	<0.001	<0.003	**362**	
MW-13	08/31/2015	<0.001	<0.001	<0.001	<0.003	**332**	
MW-13	12/14/2015	<0.001	<0.001	<0.001	<0.003	**315**	
MW-13	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	**330**	
MW-13	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**328**	
MW-13	09/26/2016	<0.0010	<0.0010	<0.0010	<0.0030	**339**	
MW-13	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**333**	
MW-14	03/30/2011	<0.001	<0.002	<0.002	<0.002	**520**	
MW-14	06/22/2011	<0.001	<0.002	<0.002	<0.004	**494**	
MW-14	09/17/2011	<0.001	<0.002	<0.002	<0.004	**478**	
MW-14	12/08/2011	<0.0005	<0.001	<0.001	<0.001	**521**	
MW-14	03/10/2012	<0.001	<0.002	<0.002	<0.004	**528**	
MW-14	06/05/2012	<0.001	<0.002	<0.002	<0.003	**513**	
MW-14	09/09/2012	<0.001	<0.002	<0.002	<0.003	**536**	
MW-14	12/04/2012	<0.001	<0.002	<0.002	<0.003	**544**	
MW-14	02/22/2013	0.00034	<0.002	<0.002	<0.003	**553**	
MW-14	06/02/2013	<0.001	<0.002	<0.002	<0.003	**538**	
MW-14	09/10/2013	<0.001	<0.002	<0.002	<0.003	**486**	
MW-14	12/03/2013	<0.001	<0.002	<0.002	<0.003	**519**	
MW-14	02/27/2014	<0.001	<0.002	<0.002	<0.003	**516**	
MW-14	06/03/2014	<0.001	<0.002	<0.002	<0.003	**547**	
MW-14	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-14	12/01/2014	<0.001	<0.001	<0.001	<0.003	**482**	
MW-14	02/25/2015	<0.001	<0.001	<0.001	<0.003	**477**	
MW-14	06/01/2015	<0.001	<0.001	<0.001	<0.003	**502**	
MW-14	08/31/2015	<0.001	<0.001	<0.001	<0.003	**472**	
MW-14	12/14/2015	<0.001	<0.001	<0.001	<0.003	**430**	
MW-14	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	**445**	
MW-14	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**451**	
MW-14	09/26/2016	<0.0010	0.0011	<0.0010	<0.0030	**455**	
MW-14	12/19/2016	<0.0010	0.0011	<0.0010	<0.0010	**432**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-15	03/30/2011	<0.001	<0.002	<0.002	<0.002	**303**	
MW-15	06/22/2011	<0.001	<0.002	<0.002	<0.004	**297**	
MW-15	09/17/2011	<0.001	<0.002	<0.002	<0.004	**294**	
MW-15	12/08/2011	<0.0005	<0.001	<0.001	<0.001	**288**	
MW-15	03/10/2012	<0.001	<0.002	<0.002	<0.004	**308**	
MW-15	06/05/2012	<0.001	<0.002	<0.002	<0.003	**276**	
MW-15	09/09/2012	<0.001	<0.002	<0.002	<0.003	**318**	
MW-15	12/04/2012	<0.001	<0.002	<0.002	<0.003	**313**	
MW-15	02/22/2013	0.00034	<0.002	<0.002	<0.003	**333**	
MW-15	06/02/2013	<0.001	<0.002	<0.002	<0.003	**324**	
MW-15	09/10/2013	<0.001	<0.002	<0.002	<0.003	**331**	
MW-15	12/03/2013	<0.001	<0.002	<0.002	<0.003	**365**	
MW-15	02/27/2014	<0.001	<0.002	<0.002	<0.003	**378**	
MW-15	06/03/2014	<0.001	<0.002	<0.002	<0.003	**374**	
MW-15	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-15	12/01/2014	<0.001	<0.001	<0.001	<0.003	**334**	
MW-15	02/25/2015	<0.001	<0.001	<0.001	<0.003	**362**	
MW-15	06/01/2015	<0.001	<0.001	<0.001	<0.003	**407**	
MW-15	08/31/2015	<0.001	<0.001	<0.001	<0.003	**405**	
MW-15	12/14/2015	<0.001	<0.001	<0.001	<0.003	**390**	
MW-15	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	**409**	
MW-15	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**405**	
MW-15	09/26/2016	<0.0010	<0.0010	<0.0010	<0.0030	**430**	
MW-15	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**418**	
MW-16	03/30/2011	<0.001	<0.002	<0.002	<0.002	**295**	
MW-16	06/22/2011	<0.001	<0.002	<0.002	<0.004	**292**	
MW-16	09/17/2011	<0.001	<0.002	<0.002	<0.004	**295**	
MW-16	12/08/2011	<0.0005	<0.001	<0.001	<0.001	**313**	
MW-16	03/10/2012	<0.001	<0.002	<0.002	<0.004	**322**	
MW-16	06/05/2012	<0.001	<0.002	<0.002	<0.003	**334**	
MW-16	09/09/2012	<0.001	<0.002	<0.002	<0.003	**334**	
MW-16	12/04/2012	<0.001	<0.002	<0.002	<0.003	**339**	
MW-16	02/22/2013	<0.001	<0.002	<0.002	<0.003	**358**	
MW-16	06/02/2013	<0.001	<0.002	<0.002	<0.003	**364**	
MW-16	09/10/2013	<0.001	<0.002	<0.002	<0.003	**359**	
MW-16	12/03/2013	<0.001	<0.002	<0.002	<0.003	**394**	
MW-16	02/27/2014	<0.001	<0.002	<0.002	<0.003	**424**	
MW-16	06/03/2014	<0.001	<0.002	<0.002	<0.003	**333**	
MW-16	Third Quarter 2014 Sampling Suspended Due to Site Inaccessibility						
MW-16	12/01/2014	<0.001	<0.001	<0.001	<0.003	**418**	
MW-16	02/25/2015	<0.001	<0.001	<0.001	<0.003	**435**	
MW-16	06/01/2015	<0.001	<0.001	<0.001	<0.003	**458**	
MW-16	08/31/2015	<0.001	<0.001	<0.001	<0.003	**425**	
MW-16	12/14/2015	<0.001	<0.001	<0.001	<0.003	**469**	
MW-16	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	**437**	
MW-16	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**423**	
MW-16	09/26/2016	<0.0010	<0.0010	<0.0010	<0.0030	**463**	
MW-16	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	**445**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
Trip Blank	06/03/2014	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	12/01/2014	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	02/25/2015	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	06/01/2015	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	08/31/2015	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	12/14/2015	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	03/21/2016	<0.0010	<0.0010	<0.0010	<0.0030	NA	
Trip Blank	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	NA	
Trip Blank	09/26/2016	<0.0010	<0.0010	<0.0010	<0.0030	NA	
Trip Blank	12/19/2016	<0.0010	<0.0010	<0.0010	<0.0010	NA	

Notes:
Bold red values indicate an exceedance of the NMWQCC groundwater standards for the Site.
NMWQCC = New Mexico Water Quality Control Commission
LNAPL = Light Non-Aqueous Phase Liquid
J = Estimated Value
NS = Not Sampled
NA = Not Analyzed
mg/L = milligrams per liter

Appendix B

Laboratory Analytical Report

- ALS Job #: HS16121136

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

December 30, 2016

Brian Humphrey
Tasman Geosciences
6899 Pecos St
Unit C
Denver, CO 80221

Work Order: **HS16121136**

Laboratory Results for: **DCP RR Extension**

Dear Brian,

ALS Environmental received 19 sample(s) on Dec 22, 2016 for the analysis 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.

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

Sincerely,

Sonia West

Generated By: Dayna.Fisher
Sonia West
Project Manager

Client: Tasman Geosciences
Project: DCP RR Extension
Work Order: HS16121136

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS16121136-01	MW-1	Water		19-Dec-2016 15:54	22-Dec-2016 10:10	☐
HS16121136-02	MW-2	Water		19-Dec-2016 16:23	22-Dec-2016 10:10	☐
HS16121136-03	MW-3	Water		19-Dec-2016 16:30	22-Dec-2016 10:10	☐
HS16121136-04	MW-4	Water		19-Dec-2016 16:10	22-Dec-2016 10:10	☐
HS16121136-05	MW-5	Water		19-Dec-2016 16:30	22-Dec-2016 10:10	☐
HS16121136-06	MW-6	Water		19-Dec-2016 16:28	22-Dec-2016 10:10	☐
HS16121136-07	MW-7	Water		19-Dec-2016 16:20	22-Dec-2016 10:10	☐
HS16121136-08	MW-8	Water		19-Dec-2016 15:45	22-Dec-2016 10:10	☐
HS16121136-09	MW-9	Water		19-Dec-2016 15:13	22-Dec-2016 10:10	☐
HS16121136-10	MW-10	Water		19-Dec-2016 15:24	22-Dec-2016 10:10	☐
HS16121136-11	MW-11	Water		19-Dec-2016 15:44	22-Dec-2016 10:10	☐
HS16121136-12	MW-12	Water		19-Dec-2016 15:50	22-Dec-2016 10:10	☐
HS16121136-13	MW-13	Water		19-Dec-2016 16:00	22-Dec-2016 10:10	☐
HS16121136-14	MW-14	Water		19-Dec-2016 15:10	22-Dec-2016 10:10	☐
HS16121136-15	MW-15	Water		19-Dec-2016 15:32	22-Dec-2016 10:10	☐
HS16121136-16	MW-16	Water		19-Dec-2016 15:02	22-Dec-2016 10:10	☐
HS16121136-17	DUPLICATE	Water		19-Dec-2016 00:00	22-Dec-2016 10:10	☐
HS16121136-18	TRIP BLANK 121216-28	Water		19-Dec-2016 00:00	22-Dec-2016 10:10	☐
HS16121136-19	TRIP BLANK 121216-44	Water		19-Dec-2016 00:00	22-Dec-2016 10:10	☐

Client: Tasman Geosciences **CASE NARRATIVE**
Project: DCP RR Extension
Work Order: HS16121136

GCMS Volatiles by Method SW8260

Batch ID: R287098,R287116,R287152,R287253

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Batch ID: R287350

Sample ID: **HS16120973-12**
• MSD is for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R287481

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Batch ID: R287458

Sample ID: **HS16121339-01**
• MS and MSD are for an unrelated sample

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-1
Collection Date: 19-Dec-2016 15:54

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-01
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	**1.8**		**0.010**	**mg/L**	10	27-Dec-2016 20:15
Toluene	**0.026**		**0.010**	**mg/L**	10	27-Dec-2016 20:15
Ethylbenzene	**0.50**		**0.010**	**mg/L**	10	27-Dec-2016 20:15
Xylenes, Total	**0.21**		**0.010**	**mg/L**	10	27-Dec-2016 20:15
Surr: 1,2-Dichloroethane-d4	*84.0*		*71-125*	*%REC*	*10*	*27-Dec-2016 20:15*
Surr: 4-Bromofluorobenzene	*96.4*		*70-125*	*%REC*	*10*	*27-Dec-2016 20:15*
Surr: Dibromofluoromethane	*91.4*		*74-125*	*%REC*	*10*	*27-Dec-2016 20:15*
Surr: Toluene-d8	*102*		*75-125*	*%REC*	*10*	*27-Dec-2016 20:15*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**312**		**10.0**	**mg/L**	20	29-Dec-2016 20:49

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-2
Collection Date: 19-Dec-2016 16:23

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-02
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	**0.17**		**0.0010**	**mg/L**	1	27-Dec-2016 13:54
Toluene	**0.033**		**0.0010**	**mg/L**	1	27-Dec-2016 13:54
Ethylbenzene	**0.035**		**0.0010**	**mg/L**	1	27-Dec-2016 13:54
Xylenes, Total	**0.020**		**0.0010**	**mg/L**	1	27-Dec-2016 13:54
Surr: 1,2-Dichloroethane-d4	*85.6*		*71-125*	*%REC*	*1*	*27-Dec-2016 13:54*
Surr: 4-Bromofluorobenzene	*96.3*		*70-125*	*%REC*	*1*	*27-Dec-2016 13:54*
Surr: Dibromofluoromethane	*92.9*		*74-125*	*%REC*	*1*	*27-Dec-2016 13:54*
Surr: Toluene-d8	*101*		*75-125*	*%REC*	*1*	*27-Dec-2016 13:54*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**396**		**10.0**	**mg/L**	20	29-Dec-2016 21:32

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-3
Collection Date: 19-Dec-2016 16:30

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-03
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	**3.7**		**0.025**	**mg/L**	25	28-Dec-2016 16:02
Toluene	**0.56**		**0.010**	**mg/L**	10	27-Dec-2016 19:27
Ethylbenzene	**0.60**		**0.010**	**mg/L**	10	27-Dec-2016 19:27
Xylenes, Total	**1.1**		**0.010**	**mg/L**	10	27-Dec-2016 19:27
Surr: 1,2-Dichloroethane-d4	*88.6*		*71-125*	*%REC*	*10*	*27-Dec-2016 19:27*
Surr: 1,2-Dichloroethane-d4	*85.6*		*71-125*	*%REC*	*25*	*28-Dec-2016 16:02*
Surr: 4-Bromofluorobenzene	*101*		*70-125*	*%REC*	*10*	*27-Dec-2016 19:27*
Surr: 4-Bromofluorobenzene	*96.0*		*70-125*	*%REC*	*25*	*28-Dec-2016 16:02*
Surr: Dibromofluoromethane	*97.1*		*74-125*	*%REC*	*10*	*27-Dec-2016 19:27*
Surr: Dibromofluoromethane	*93.6*		*74-125*	*%REC*	*25*	*28-Dec-2016 16:02*
Surr: Toluene-d8	*106*		*75-125*	*%REC*	*10*	*27-Dec-2016 19:27*
Surr: Toluene-d8	*101*		*75-125*	*%REC*	*25*	*28-Dec-2016 16:02*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**434**		**10.0**	**mg/L**	20	29-Dec-2016 21:47

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-4
Collection Date: 19-Dec-2016 16:10

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-04
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	**0.41**		**0.050**	**mg/L**	50	26-Dec-2016 16:19
Toluene	**0.023**		**0.0010**	**mg/L**	1	23-Dec-2016 09:25
Ethylbenzene	**0.38**		**0.050**	**mg/L**	50	26-Dec-2016 16:19
Xylenes, Total	**0.88**		**0.050**	**mg/L**	50	26-Dec-2016 16:19
Surr: 1,2-Dichloroethane-d4	*92.4*		*71-125*	*%REC*	*1*	*23-Dec-2016 09:25*
Surr: 1,2-Dichloroethane-d4	*84.8*		*71-125*	*%REC*	*50*	*26-Dec-2016 16:19*
Surr: 4-Bromofluorobenzene	*94.9*		*70-125*	*%REC*	*1*	*23-Dec-2016 09:25*
Surr: 4-Bromofluorobenzene	*97.4*		*70-125*	*%REC*	*50*	*26-Dec-2016 16:19*
Surr: Dibromofluoromethane	*86.9*		*74-125*	*%REC*	*1*	*23-Dec-2016 09:25*
Surr: Dibromofluoromethane	*92.6*		*74-125*	*%REC*	*50*	*26-Dec-2016 16:19*
Surr: Toluene-d8	*105*		*75-125*	*%REC*	*1*	*23-Dec-2016 09:25*
Surr: Toluene-d8	*102*		*75-125*	*%REC*	*50*	*26-Dec-2016 16:19*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**310**		**10.0**	**mg/L**	20	29-Dec-2016 22:01

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-5
Collection Date: 19-Dec-2016 16:30

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-05
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	**0.091**		**0.0050**	**mg/L**	5	27-Dec-2016 19:04
Toluene	**0.040**		**0.0050**	**mg/L**	5	27-Dec-2016 19:04
Ethylbenzene	**0.46**		**0.0050**	**mg/L**	5	27-Dec-2016 19:04
Xylenes, Total	**1.3**		**0.0050**	**mg/L**	5	27-Dec-2016 19:04
Surr: 1,2-Dichloroethane-d4	*83.4*		*71-125*	*%REC*	*5*	*27-Dec-2016 19:04*
Surr: 4-Bromofluorobenzene	*96.9*		*70-125*	*%REC*	*5*	*27-Dec-2016 19:04*
Surr: Dibromofluoromethane	*91.7*		*74-125*	*%REC*	*5*	*27-Dec-2016 19:04*
Surr: Toluene-d8	*99.8*		*75-125*	*%REC*	*5*	*27-Dec-2016 19:04*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**427**		**10.0**	**mg/L**	20	29-Dec-2016 22:16

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-6
Collection Date: 19-Dec-2016 16:28

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-06
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	23-Dec-2016 09:51
Toluene	ND		0.0010	mg/L	1	23-Dec-2016 09:51
Ethylbenzene	ND		0.0010	mg/L	1	23-Dec-2016 09:51
Xylenes, Total	**0.0024**		**0.0010**	**mg/L**	1	23-Dec-2016 09:51
Surr: 1,2-Dichloroethane-d4	*88.6*		*71-125*	*%REC*	*1*	*23-Dec-2016 09:51*
Surr: 4-Bromofluorobenzene	*91.2*		*70-125*	*%REC*	*1*	*23-Dec-2016 09:51*
Surr: Dibromofluoromethane	*82.6*		*74-125*	*%REC*	*1*	*23-Dec-2016 09:51*
Surr: Toluene-d8	*105*		*75-125*	*%REC*	*1*	*23-Dec-2016 09:51*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**405**		**10.0**	**mg/L**	20	29-Dec-2016 22:30

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-7
Collection Date: 19-Dec-2016 16:20

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-07
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	23-Dec-2016 10:17
Toluene	ND		0.0010	mg/L	1	23-Dec-2016 10:17
Ethylbenzene	ND		0.0010	mg/L	1	23-Dec-2016 10:17
Xylenes, Total	ND		0.0010	mg/L	1	23-Dec-2016 10:17
Surr: 1,2-Dichloroethane-d4	*88.6*		*71-125*	*%REC*	*1*	*23-Dec-2016 10:17*
Surr: 4-Bromofluorobenzene	*88.7*		*70-125*	*%REC*	*1*	*23-Dec-2016 10:17*
Surr: Dibromofluoromethane	*83.1*		*74-125*	*%REC*	*1*	*23-Dec-2016 10:17*
Surr: Toluene-d8	*99.2*		*75-125*	*%REC*	*1*	*23-Dec-2016 10:17*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**358**		**10.0**	**mg/L**	20	29-Dec-2016 22:45

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-8
Collection Date: 19-Dec-2016 15:45

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-08
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	24-Dec-2016 09:01
Toluene	ND		0.0010	mg/L	1	24-Dec-2016 09:01
Ethylbenzene	ND		0.0010	mg/L	1	24-Dec-2016 09:01
Xylenes, Total	ND		0.0010	mg/L	1	24-Dec-2016 09:01
Surr: 1,2-Dichloroethane-d4	*86.8*		*71-125*	*%REC*	*1*	*24-Dec-2016 09:01*
Surr: 4-Bromofluorobenzene	*92.0*		*70-125*	*%REC*	*1*	*24-Dec-2016 09:01*
Surr: Dibromofluoromethane	*93.4*		*74-125*	*%REC*	*1*	*24-Dec-2016 09:01*
Surr: Toluene-d8	*103*		*75-125*	*%REC*	*1*	*24-Dec-2016 09:01*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**519**		**10.0**	**mg/L**	20	29-Dec-2016 22:59

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-9
Collection Date: 19-Dec-2016 15:13

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-09
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	**0.32**		**0.0050**	**mg/L**	5	27-Dec-2016 15:53
Toluene	**0.0015**		**0.0010**	**mg/L**	1	27-Dec-2016 14:18
Ethylbenzene	**0.051**		**0.0010**	**mg/L**	1	27-Dec-2016 14:18
Xylenes, Total	**0.071**		**0.0010**	**mg/L**	1	27-Dec-2016 14:18
Surr: 1,2-Dichloroethane-d4	*86.8*		*71-125*	*%REC*	*1*	*27-Dec-2016 14:18*
Surr: 1,2-Dichloroethane-d4	*83.7*		*71-125*	*%REC*	*5*	*27-Dec-2016 15:53*
Surr: 4-Bromofluorobenzene	*97.3*		*70-125*	*%REC*	*5*	*27-Dec-2016 15:53*
Surr: 4-Bromofluorobenzene	*96.0*		*70-125*	*%REC*	*1*	*27-Dec-2016 14:18*
Surr: Dibromofluoromethane	*92.5*		*74-125*	*%REC*	*1*	*27-Dec-2016 14:18*
Surr: Dibromofluoromethane	*92.2*		*74-125*	*%REC*	*5*	*27-Dec-2016 15:53*
Surr: Toluene-d8	*101*		*75-125*	*%REC*	*5*	*27-Dec-2016 15:53*
Surr: Toluene-d8	*100*		*75-125*	*%REC*	*1*	*27-Dec-2016 14:18*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**405**		**10.0**	**mg/L**	20	29-Dec-2016 23:43

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-10
Collection Date: 19-Dec-2016 15:24

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-10
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	**0.11**		**0.0010**	**mg/L**	1	27-Dec-2016 18:16
Toluene	**0.0033**		**0.0010**	**mg/L**	1	27-Dec-2016 18:16
Ethylbenzene	**0.60**		**0.0050**	**mg/L**	5	27-Dec-2016 18:40
Xylenes, Total	**1.5**		**0.0050**	**mg/L**	5	27-Dec-2016 18:40
Surr: 1,2-Dichloroethane-d4	*83.4*		*71-125*	*%REC*	*5*	*27-Dec-2016 18:40*
Surr: 1,2-Dichloroethane-d4	*80.8*		*71-125*	*%REC*	*1*	*27-Dec-2016 18:16*
Surr: 4-Bromofluorobenzene	*96.4*		*70-125*	*%REC*	*1*	*27-Dec-2016 18:16*
Surr: 4-Bromofluorobenzene	*96.3*		*70-125*	*%REC*	*5*	*27-Dec-2016 18:40*
Surr: Dibromofluoromethane	*91.7*		*74-125*	*%REC*	*5*	*27-Dec-2016 18:40*
Surr: Dibromofluoromethane	*90.3*		*74-125*	*%REC*	*1*	*27-Dec-2016 18:16*
Surr: Toluene-d8	*101*		*75-125*	*%REC*	*1*	*27-Dec-2016 18:16*
Surr: Toluene-d8	*102*		*75-125*	*%REC*	*5*	*27-Dec-2016 18:40*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**510**		**10.0**	**mg/L**	20	30-Dec-2016 00:41

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-11
Collection Date: 19-Dec-2016 15:44

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-11
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	24-Dec-2016 09:25
Toluene	ND		0.0010	mg/L	1	24-Dec-2016 09:25
Ethylbenzene	ND		0.0010	mg/L	1	24-Dec-2016 09:25
Xylenes, Total	ND		0.0010	mg/L	1	24-Dec-2016 09:25
Surr: 1,2-Dichloroethane-d4	*80.0*		*71-125*	*%REC*	*1*	*24-Dec-2016 09:25*
Surr: 4-Bromofluorobenzene	*89.0*		*70-125*	*%REC*	*1*	*24-Dec-2016 09:25*
Surr: Dibromofluoromethane	*92.1*		*74-125*	*%REC*	*1*	*24-Dec-2016 09:25*
Surr: Toluene-d8	*100*		*75-125*	*%REC*	*1*	*24-Dec-2016 09:25*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**431**		**10.0**	**mg/L**	20	30-Dec-2016 00:56

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-12
Collection Date: 19-Dec-2016 15:50

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-12
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	23-Dec-2016 11:35
Toluene	ND		0.0010	mg/L	1	23-Dec-2016 11:35
Ethylbenzene	ND		0.0010	mg/L	1	23-Dec-2016 11:35
Xylenes, Total	ND		0.0010	mg/L	1	23-Dec-2016 11:35
Surr: 1,2-Dichloroethane-d4	*87.8*		*71-125*	*%REC*	*1*	*23-Dec-2016 11:35*
Surr: 4-Bromofluorobenzene	*99.2*		*70-125*	*%REC*	*1*	*23-Dec-2016 11:35*
Surr: Dibromofluoromethane	*87.1*		*74-125*	*%REC*	*1*	*23-Dec-2016 11:35*
Surr: Toluene-d8	*106*		*75-125*	*%REC*	*1*	*23-Dec-2016 11:35*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**309**		**10.0**	**mg/L**	20	30-Dec-2016 01:39

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-13
Collection Date: 19-Dec-2016 16:00

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-13
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	23-Dec-2016 12:02
Toluene	ND		0.0010	mg/L	1	23-Dec-2016 12:02
Ethylbenzene	ND		0.0010	mg/L	1	23-Dec-2016 12:02
Xylenes, Total	ND		0.0010	mg/L	1	23-Dec-2016 12:02
Surr: 1,2-Dichloroethane-d4	*93.7*		*71-125*	*%REC*	*1*	*23-Dec-2016 12:02*
Surr: 4-Bromofluorobenzene	*93.6*		*70-125*	*%REC*	*1*	*23-Dec-2016 12:02*
Surr: Dibromofluoromethane	*88.3*		*74-125*	*%REC*	*1*	*23-Dec-2016 12:02*
Surr: Toluene-d8	*105*		*75-125*	*%REC*	*1*	*23-Dec-2016 12:02*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**333**		**10.0**	**mg/L**	20	30-Dec-2016 01:54

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-14
Collection Date: 19-Dec-2016 15:10

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-14
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	23-Dec-2016 12:28
Toluene	ND		0.0010	mg/L	1	23-Dec-2016 12:28
Ethylbenzene	ND		0.0010	mg/L	1	23-Dec-2016 12:28
Xylenes, Total	ND		0.0010	mg/L	1	23-Dec-2016 12:28
Surr: 1,2-Dichloroethane-d4	*91.5*		*71-125*	*%REC*	*1*	*23-Dec-2016 12:28*
Surr: 4-Bromofluorobenzene	*89.6*		*70-125*	*%REC*	*1*	*23-Dec-2016 12:28*
Surr: Dibromofluoromethane	*89.4*		*74-125*	*%REC*	*1*	*23-Dec-2016 12:28*
Surr: Toluene-d8	*104*		*75-125*	*%REC*	*1*	*23-Dec-2016 12:28*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**432**		**10.0**	**mg/L**	20	30-Dec-2016 02:38

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-15
Collection Date: 19-Dec-2016 15:32

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-15
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	23-Dec-2016 12:54
Toluene	ND		0.0010	mg/L	1	23-Dec-2016 12:54
Ethylbenzene	ND		0.0010	mg/L	1	23-Dec-2016 12:54
Xylenes, Total	ND		0.0010	mg/L	1	23-Dec-2016 12:54
Surr: 1,2-Dichloroethane-d4	*87.9*		*71-125*	*%REC*	*1*	*23-Dec-2016 12:54*
Surr: 4-Bromofluorobenzene	*92.2*		*70-125*	*%REC*	*1*	*23-Dec-2016 12:54*
Surr: Dibromofluoromethane	*81.6*		*74-125*	*%REC*	*1*	*23-Dec-2016 12:54*
Surr: Toluene-d8	*102*		*75-125*	*%REC*	*1*	*23-Dec-2016 12:54*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**418**		**10.0**	**mg/L**	20	30-Dec-2016 02:52

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: MW-16
Collection Date: 19-Dec-2016 15:02

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-16
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	23-Dec-2016 13:20
Toluene	ND		0.0010	mg/L	1	23-Dec-2016 13:20
Ethylbenzene	ND		0.0010	mg/L	1	23-Dec-2016 13:20
Xylenes, Total	ND		0.0010	mg/L	1	23-Dec-2016 13:20
Surr: 1,2-Dichloroethane-d4	*108*		*71-125*	*%REC*	*1*	*23-Dec-2016 13:20*
Surr: 4-Bromofluorobenzene	*90.3*		*70-125*	*%REC*	*1*	*23-Dec-2016 13:20*
Surr: Dibromofluoromethane	*87.0*		*74-125*	*%REC*	*1*	*23-Dec-2016 13:20*
Surr: Toluene-d8	*94.6*		*75-125*	*%REC*	*1*	*23-Dec-2016 13:20*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**445**		**10.0**	**mg/L**	20	30-Dec-2016 03:07

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: DUPLICATE
Collection Date: 19-Dec-2016 00:00

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-17
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	**0.15**		**0.010**	**mg/L**	10	27-Dec-2016 19:51
Toluene	**0.072**		**0.010**	**mg/L**	10	27-Dec-2016 19:51
Ethylbenzene	**0.79**		**0.010**	**mg/L**	10	27-Dec-2016 19:51
Xylenes, Total	**2.2**		**0.010**	**mg/L**	10	27-Dec-2016 19:51
Surr: 1,2-Dichloroethane-d4	*84.3*		*71-125*	*%REC*	*10*	*27-Dec-2016 19:51*
Surr: 4-Bromofluorobenzene	*96.1*		*70-125*	*%REC*	*10*	*27-Dec-2016 19:51*
Surr: Dibromofluoromethane	*93.5*		*74-125*	*%REC*	*10*	*27-Dec-2016 19:51*
Surr: Toluene-d8	*99.6*		*75-125*	*%REC*	*10*	*27-Dec-2016 19:51*
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**447**		**10.0**	**mg/L**	20	30-Dec-2016 03:21

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

Client: Tasman Geosciences
Project: DCP RR Extension
Sample ID: TRIP BLANK 121216-28
Collection Date: 19-Dec-2016 00:00

ANALYTICAL REPORT
WorkOrder:HS16121136
Lab ID:HS16121136-18
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**					Analyst: PC
Benzene	ND		0.0010	mg/L	1	23-Dec-2016 06:22
Toluene	ND		0.0010	mg/L	1	23-Dec-2016 06:22
Ethylbenzene	ND		0.0010	mg/L	1	23-Dec-2016 06:22
Xylenes, Total	ND		0.0010	mg/L	1	23-Dec-2016 06:22
Surr: 1,2-Dichloroethane-d4	*98.2*		*71-125*	*%REC*	*1*	*23-Dec-2016 06:22*
Surr: 4-Bromofluorobenzene	*93.6*		*70-125*	*%REC*	*1*	*23-Dec-2016 06:22*
Surr: Dibromofluoromethane	*91.5*		*74-125*	*%REC*	*1*	*23-Dec-2016 06:22*
Surr: Toluene-d8	*103*		*75-125*	*%REC*	*1*	*23-Dec-2016 06:22*

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R287098	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Water		
HS16121136-04	MW-4	19 Dec 2016 16:10			23 Dec 2016 09:25	1
HS16121136-06	MW-6	19 Dec 2016 16:28			23 Dec 2016 09:51	1
HS16121136-07	MW-7	19 Dec 2016 16:20			23 Dec 2016 10:17	1
HS16121136-12	MW-12	19 Dec 2016 15:50			23 Dec 2016 11:35	1
HS16121136-13	MW-13	19 Dec 2016 16:00			23 Dec 2016 12:02	1
HS16121136-14	MW-14	19 Dec 2016 15:10			23 Dec 2016 12:28	1
HS16121136-15	MW-15	19 Dec 2016 15:32			23 Dec 2016 12:54	1
HS16121136-16	MW-16	19 Dec 2016 15:02			23 Dec 2016 13:20	1
HS16121136-18	TRIP BLANK 121216-28	19 Dec 2016 00:00			23 Dec 2016 06:22	1
Batch ID R287116	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Water		
HS16121136-08	MW-8	19 Dec 2016 15:45			24 Dec 2016 09:01	1
HS16121136-11	MW-11	19 Dec 2016 15:44			24 Dec 2016 09:25	1
Batch ID R287152	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Water		
HS16121136-04	MW-4	19 Dec 2016 16:10			26 Dec 2016 16:19	50
Batch ID R287253	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Water		
HS16121136-01	MW-1	19 Dec 2016 15:54			27 Dec 2016 20:15	10
HS16121136-02	MW-2	19 Dec 2016 16:23			27 Dec 2016 13:54	1
HS16121136-03	MW-3	19 Dec 2016 16:30			27 Dec 2016 19:27	10
HS16121136-05	MW-5	19 Dec 2016 16:30			27 Dec 2016 19:04	5
HS16121136-09	MW-9	19 Dec 2016 15:13			27 Dec 2016 15:53	5
HS16121136-09	MW-9	19 Dec 2016 15:13			27 Dec 2016 14:18	1
HS16121136-10	MW-10	19 Dec 2016 15:24			27 Dec 2016 18:40	5
HS16121136-10	MW-10	19 Dec 2016 15:24			27 Dec 2016 18:16	1
HS16121136-17	DUPLICATE	19 Dec 2016 00:00			27 Dec 2016 19:51	10
Batch ID R287350	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Water		
HS16121136-03	MW-3	19 Dec 2016 16:30			28 Dec 2016 16:02	25
Batch ID R287458	**Test Name :** ANIONS BY SW9056A			**Matrix:** Water		
HS16121136-01	MW-1	19 Dec 2016 15:54			29 Dec 2016 20:49	20
HS16121136-02	MW-2	19 Dec 2016 16:23			29 Dec 2016 21:32	20
HS16121136-03	MW-3	19 Dec 2016 16:30			29 Dec 2016 21:47	20
HS16121136-04	MW-4	19 Dec 2016 16:10			29 Dec 2016 22:01	20
HS16121136-05	MW-5	19 Dec 2016 16:30			29 Dec 2016 22:16	20
HS16121136-06	MW-6	19 Dec 2016 16:28			29 Dec 2016 22:30	20
HS16121136-07	MW-7	19 Dec 2016 16:20			29 Dec 2016 22:45	20
HS16121136-08	MW-8	19 Dec 2016 15:45			29 Dec 2016 22:59	20
HS16121136-09	MW-9	19 Dec 2016 15:13			29 Dec 2016 23:43	20

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R287481	**Test Name :** ANIONS BY SW9056A			**Matrix:** Water		
HS16121136-10	MW-10	19 Dec 2016 15:24			30 Dec 2016 00:41	20
HS16121136-11	MW-11	19 Dec 2016 15:44			30 Dec 2016 00:56	20
HS16121136-12	MW-12	19 Dec 2016 15:50			30 Dec 2016 01:39	20
HS16121136-13	MW-13	19 Dec 2016 16:00			30 Dec 2016 01:54	20
HS16121136-14	MW-14	19 Dec 2016 15:10			30 Dec 2016 02:38	20
HS16121136-15	MW-15	19 Dec 2016 15:32			30 Dec 2016 02:52	20
HS16121136-16	MW-16	19 Dec 2016 15:02			30 Dec 2016 03:07	20
HS16121136-17	DUPLICATE	19 Dec 2016 00:00			30 Dec 2016 03:21	20

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287098 **Instrument: VOA1** **Method: SW8260**

MBLK Sample ID: **VBLKW-161222** Units: **ug/L** Analysis Date: **23-Dec-2016 03:45**
Client ID: Run ID: **VOA1_287098** SeqNo: **3941606** PrepDate: 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	1.0								
Surr: 1,2-Dichloroethane-d4	*43.22*	*1.0*	*50*	*0*	*86.4*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*48.82*	*1.0*	*50*	*0*	*97.6*	*70 - 125*				
Surr: Dibromofluoromethane	*43.05*	*1.0*	*50*	*0*	*86.1*	*74 - 125*				
Surr: Toluene-d8	*53.19*	*1.0*	*50*	*0*	*106*	*75 - 125*				

LCS Sample ID: **VLCSW-161222** Units: **ug/L** Analysis Date: **23-Dec-2016 02:53**
Client ID: Run ID: **VOA1_287098** SeqNo: **3941605** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	43.21	1.0	50	0	86.4	75 - 122				
Ethylbenzene	48.87	1.0	50	0	97.7	80 - 120				
Toluene	45.4	1.0	50	0	90.8	75 - 121				
Xylenes, Total	146.3	1.0	150	0	97.5	79 - 124				
Surr: 1,2-Dichloroethane-d4	*47.29*	*1.0*	*50*	*0*	*94.6*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*50.68*	*1.0*	*50*	*0*	*101*	*70 - 125*				
Surr: Dibromofluoromethane	*46.55*	*1.0*	*50*	*0*	*93.1*	*74 - 125*				
Surr: Toluene-d8	*49.51*	*1.0*	*50*	*0*	*99.0*	*75 - 125*				

MS Sample ID: **HS16121152-01MS** Units: **ug/L** Analysis Date: **23-Dec-2016 05:03**
Client ID: Run ID: **VOA1_287098** SeqNo: **3941609** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	38.12	1.0	50	0	76.2	75 - 122				
Ethylbenzene	43.77	1.0	50	0	87.5	80 - 120				
Toluene	40.3	1.0	50	0	80.6	75 - 121				
Xylenes, Total	131.2	1.0	150	0	87.5	80 - 124				
Surr: 1,2-Dichloroethane-d4	*54.75*	*1.0*	*50*	*0*	*110*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*47.1*	*1.0*	*50*	*0*	*94.2*	*70 - 125*				
Surr: Dibromofluoromethane	*45.28*	*1.0*	*50*	*0*	*90.6*	*74 - 125*				
Surr: Toluene-d8	*45.82*	*1.0*	*50*	*0*	*91.6*	*75 - 125*				

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287098 **Instrument: VOA1** **Method: SW8260**

MSD Sample ID: **HS16121152-01MSD** Units: **ug/L** Analysis Date: **23-Dec-2016 05:30**
Client ID: Run ID: **VOA1_287098** SeqNo: **3941610** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Benzene	41.92	1.0	50	0	83.8	75 - 122	38.12	9.5	20	
Ethylbenzene	44.81	1.0	50	0	89.6	80 - 120	43.77	2.34	20	
Toluene	45.04	1.0	50	0	90.1	75 - 121	40.3	11.1	20	
Xylenes, Total	137.1	1.0	150	0	91.4	80 - 124	131.2	4.4	20	
Surr: 1,2-Dichloroethane-d4	*48.23*	*1.0*	*50*	*0*	*96.5*	*71 - 125*	*54.75*	*12.7*	*20*	
Surr: 4-Bromofluorobenzene	*52.56*	*1.0*	*50*	*0*	*105*	*70 - 125*	*47.1*	*11*	*20*	
Surr: Dibromofluoromethane	*45.18*	*1.0*	*50*	*0*	*90.4*	*74 - 125*	*45.28*	*0.239*	*20*	
Surr: Toluene-d8	*58.75*	*1.0*	*50*	*0*	*117*	*75 - 125*	*45.82*	*24.7*	*20*	R

The following samples were analyzed in this batch:

HS16121136-04	HS16121136-06	HS16121136-07	HS16121136-12
HS16121136-13	HS16121136-14	HS16121136-15	HS16121136-16
HS16121136-18			

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287116 **Instrument: VOA6** **Method: SW8260**

MBLK Sample ID: **VBLKW-161223** Units: **ug/L** Analysis Date: **24-Dec-2016 00:18**
Client ID: Run ID: **VOA6_287116** SeqNo: **3942065** PrepDate: 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	1.0								
Surr: 1,2-Dichloroethane-d4	*42.8*	*1.0*	*50*	*0*	*85.6*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*45.67*	*1.0*	*50*	*0*	*91.3*	*70 - 125*				
Surr: Dibromofluoromethane	*45.97*	*1.0*	*50*	*0*	*91.9*	*74 - 125*				
Surr: Toluene-d8	*48.81*	*1.0*	*50*	*0*	*97.6*	*75 - 125*				

LCS Sample ID: **VLCSW-161223** Units: **ug/L** Analysis Date: **23-Dec-2016 23:31**
Client ID: Run ID: **VOA6_287116** SeqNo: **3942064** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	45.49	1.0	50	0	91.0	75 - 122				
Ethylbenzene	48.5	1.0	50	0	97.0	80 - 120				
Toluene	47.02	1.0	50	0	94.0	75 - 121				
Xylenes, Total	145.4	1.0	150	0	96.9	79 - 124				
Surr: 1,2-Dichloroethane-d4	*42.62*	*1.0*	*50*	*0*	*85.2*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*48.45*	*1.0*	*50*	*0*	*96.9*	*70 - 125*				
Surr: Dibromofluoromethane	*46.26*	*1.0*	*50*	*0*	*92.5*	*74 - 125*				
Surr: Toluene-d8	*52.28*	*1.0*	*50*	*0*	*105*	*75 - 125*				

MS Sample ID: **HS16121155-01MS** Units: **ug/L** Analysis Date: **24-Dec-2016 01:30**
Client ID: Run ID: **VOA6_287116** SeqNo: **3942068** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	39.49	1.0	50	0	79.0	75 - 122				
Ethylbenzene	40.98	1.0	50	0	82.0	80 - 120				
Toluene	39.61	1.0	50	0	79.2	75 - 121				
Xylenes, Total	124	1.0	150	0	82.7	80 - 124				
Surr: 1,2-Dichloroethane-d4	*42.69*	*1.0*	*50*	*0*	*85.4*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*48.5*	*1.0*	*50*	*0*	*97.0*	*70 - 125*				
Surr: Dibromofluoromethane	*45.66*	*1.0*	*50*	*0*	*91.3*	*74 - 125*				
Surr: Toluene-d8	*51.67*	*1.0*	*50*	*0*	*103*	*75 - 125*				

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287116 **Instrument: VOA6** **Method: SW8260**

MSD Sample ID: **HS16121155-01MSD** Units: **ug/L** Analysis Date: **24-Dec-2016 01:53**
Client ID: Run ID: **VOA6_287116** SeqNo: **3942069** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	40.53	1.0	50	0	81.1	75 - 122	39.49	2.59	20	
Ethylbenzene	43.47	1.0	50	0	86.9	80 - 120	40.98	5.91	20	
Toluene	42	1.0	50	0	84.0	75 - 121	39.61	5.85	20	
Xylenes, Total	132.1	1.0	150	0	88.1	80 - 124	124	6.36	20	
Surr: 1,2-Dichloroethane-d4	*42.51*	*1.0*	*50*	*0*	*85.0*	*71 - 125*	*42.69*	*0.425*	*20*	
Surr: 4-Bromofluorobenzene	*47.39*	*1.0*	*50*	*0*	*94.8*	*70 - 125*	*48.5*	*2.3*	*20*	
Surr: Dibromofluoromethane	*45.78*	*1.0*	*50*	*0*	*91.6*	*74 - 125*	*45.66*	*0.249*	*20*	
Surr: Toluene-d8	*50.13*	*1.0*	*50*	*0*	*100*	*75 - 125*	*51.67*	*3.03*	*20*	

The following samples were analyzed in this batch: HS16121136-08 HS16121136-11

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287152 **Instrument: VOA6** **Method: SW8260**

MBLK Sample ID: **VBLKW-161226** Units: **ug/L** Analysis Date: **26-Dec-2016 13:57**
Client ID: Run ID: **VOA6_287152** SeqNo: **3943128** PrepDate: 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								
Xylenes, Total	ND	1.0								
Surr: 1,2-Dichloroethane-d4	*42.04*	*1.0*	*50*	*0*	*84.1*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*47.28*	*1.0*	*50*	*0*	*94.6*	*70 - 125*				
Surr: Dibromofluoromethane	*46.21*	*1.0*	*50*	*0*	*92.4*	*74 - 125*				
Surr: Toluene-d8	*50.96*	*1.0*	*50*	*0*	*102*	*75 - 125*				

LCS Sample ID: **VLCSW-161226** Units: **ug/L** Analysis Date: **26-Dec-2016 15:56**
Client ID: Run ID: **VOA6_287152** SeqNo: **3943132** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	46.06	1.0	50	0	92.1	75 - 122				
Ethylbenzene	47.64	1.0	50	0	95.3	80 - 120				
Xylenes, Total	142.7	1.0	150	0	95.2	79 - 124				
Surr: 1,2-Dichloroethane-d4	*41.59*	*1.0*	*50*	*0*	*83.2*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*48.4*	*1.0*	*50*	*0*	*96.8*	*70 - 125*				
Surr: Dibromofluoromethane	*45.71*	*1.0*	*50*	*0*	*91.4*	*74 - 125*				
Surr: Toluene-d8	*50.06*	*1.0*	*50*	*0*	*100*	*75 - 125*				

MS Sample ID: **HS16121215-01MS** Units: **ug/L** Analysis Date: **26-Dec-2016 15:08**
Client ID: Run ID: **VOA6_287152** SeqNo: **3943130** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	41.69	1.0	50	0	83.4	75 - 122				
Ethylbenzene	43.67	1.0	50	0	87.3	80 - 120				
Xylenes, Total	131.3	1.0	150	0	87.6	80 - 124				
Surr: 1,2-Dichloroethane-d4	*42*	*1.0*	*50*	*0*	*84.0*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*47.97*	*1.0*	*50*	*0*	*95.9*	*70 - 125*				
Surr: Dibromofluoromethane	*46.64*	*1.0*	*50*	*0*	*93.3*	*74 - 125*				
Surr: Toluene-d8	*50.62*	*1.0*	*50*	*0*	*101*	*75 - 125*				

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287152 **Instrument: VOA6** **Method: SW8260**

MSD Sample ID: **HS16121215-01MSD** Units: **ug/L** Analysis Date: **26-Dec-2016 15:32**
Client ID: Run ID: **VOA6_287152** SeqNo: **3943131** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	41.1	1.0	50	0	82.2	75 - 122	41.69	1.42	20	
Ethylbenzene	42.8	1.0	50	0	85.6	80 - 120	43.67	2.01	20	
Xylenes, Total	129.5	1.0	150	0	86.3	80 - 124	131.3	1.42	20	
Surr: 1,2-Dichloroethane-d4	*42.55*	*1.0*	*50*	*0*	*85.1*	*71 - 125*	*42*	*1.32*	*20*	
Surr: 4-Bromofluorobenzene	*48.41*	*1.0*	*50*	*0*	*96.8*	*70 - 125*	*47.97*	*0.921*	*20*	
Surr: Dibromofluoromethane	*46.77*	*1.0*	*50*	*0*	*93.5*	*74 - 125*	*46.64*	*0.28*	*20*	
Surr: Toluene-d8	*51.3*	*1.0*	*50*	*0*	*103*	*75 - 125*	*50.62*	*1.32*	*20*	

The following samples were analyzed in this batch: HS16121136-04

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287253 **Instrument: VOA6** **Method: SW8260**

MBLK Sample ID: **VBLKW-161227** Units: **ug/L** Analysis Date: **27-Dec-2016 11:08**
Client ID: Run ID: **VOA6_287253** SeqNo: **3945038** PrepDate: 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	1.0								
Surr: 1,2-Dichloroethane-d4	*42.52*	*1.0*	*50*	*0*	*85.0*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*47.33*	*1.0*	*50*	*0*	*94.7*	*70 - 125*				
Surr: Dibromofluoromethane	*46.49*	*1.0*	*50*	*0*	*93.0*	*74 - 125*				
Surr: Toluene-d8	*49.79*	*1.0*	*50*	*0*	*99.6*	*75 - 125*				

LCS Sample ID: **VLCSW-161227** Units: **ug/L** Analysis Date: **27-Dec-2016 15:30**
Client ID: Run ID: **VOA6_287253** SeqNo: **3945049** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	46.75	1.0	50	0	93.5	75 - 122				
Ethylbenzene	47.52	1.0	50	0	95.0	80 - 120				
Toluene	45.61	1.0	50	0	91.2	75 - 121				
Xylenes, Total	144.9	1.0	150	0	96.6	79 - 124				
Surr: 1,2-Dichloroethane-d4	*41.25*	*1.0*	*50*	*0*	*82.5*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*48.78*	*1.0*	*50*	*0*	*97.6*	*70 - 125*				
Surr: Dibromofluoromethane	*46.3*	*1.0*	*50*	*0*	*92.6*	*74 - 125*				
Surr: Toluene-d8	*50.75*	*1.0*	*50*	*0*	*101*	*75 - 125*				

MS Sample ID: **HS16121211-04MS** Units: **ug/L** Analysis Date: **27-Dec-2016 14:42**
Client ID: Run ID: **VOA6_287253** SeqNo: **3945047** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	43.8	1.0	50	0	87.6	75 - 122				
Ethylbenzene	45.04	1.0	50	0	90.1	80 - 120				
Toluene	42.7	1.0	50	0	85.4	75 - 121				
Xylenes, Total	134.3	1.0	150	0	89.6	80 - 124				
Surr: 1,2-Dichloroethane-d4	*41.42*	*1.0*	*50*	*0*	*82.8*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*47.47*	*1.0*	*50*	*0*	*94.9*	*70 - 125*				
Surr: Dibromofluoromethane	*45.51*	*1.0*	*50*	*0*	*91.0*	*74 - 125*				
Surr: Toluene-d8	*49.89*	*1.0*	*50*	*0*	*99.8*	*75 - 125*				

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287253 **Instrument: VOA6** **Method: SW8260**

MSD Sample ID: **HS16121211-04MSD** Units: **ug/L** Analysis Date: **27-Dec-2016 15:06**
Client ID: Run ID: **VOA6_287253** SeqNo: **3945048** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	43.55	1.0	50	0	87.1	75 - 122	43.8	0.592	20	
Ethylbenzene	44.23	1.0	50	0	88.5	80 - 120	45.04	1.81	20	
Toluene	42.28	1.0	50	0	84.6	75 - 121	42.7	0.983	20	
Xylenes, Total	134.3	1.0	150	0	89.5	80 - 124	134.3	0.0216	20	
Surr: 1,2-Dichloroethane-d4	*41.9*	*1.0*	*50*	*0*	*83.8*	*71 - 125*	*41.42*	*1.15*	*20*	
Surr: 4-Bromofluorobenzene	*49*	*1.0*	*50*	*0*	*98.0*	*70 - 125*	*47.47*	*3.18*	*20*	
Surr: Dibromofluoromethane	*46.59*	*1.0*	*50*	*0*	*93.2*	*74 - 125*	*45.51*	*2.35*	*20*	
Surr: Toluene-d8	*50.8*	*1.0*	*50*	*0*	*102*	*75 - 125*	*49.89*	*1.8*	*20*	

The following samples were analyzed in this batch: HS16121136-01 HS16121136-02 HS16121136-03 HS16121136-05 HS16121136-09 HS16121136-10 HS16121136-17

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287350 **Instrument: VOA6** **Method: SW8260**

MBLK Sample ID: **VBLKW-161228** Units: **ug/L** Analysis Date: **28-Dec-2016 11:40**
Client ID: Run ID: **VOA6_287350** SeqNo: **3947060** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	*42.22*	*1.0*	*50*	*0*	*84.4*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*47.06*	*1.0*	*50*	*0*	*94.1*	*70 - 125*				
Surr: Dibromofluoromethane	*46.2*	*1.0*	*50*	*0*	*92.4*	*74 - 125*				
Surr: Toluene-d8	*49.81*	*1.0*	*50*	*0*	*99.6*	*75 - 125*				

LCS Sample ID: **VLCSW-161228** Units: **ug/L** Analysis Date: **28-Dec-2016 10:28**
Client ID: Run ID: **VOA6_287350** SeqNo: **3947059** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	47.23	1.0	50	0	94.5	75 - 122				
Surr: 1,2-Dichloroethane-d4	*41.77*	*1.0*	*50*	*0*	*83.5*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*48.58*	*1.0*	*50*	*0*	*97.2*	*70 - 125*				
Surr: Dibromofluoromethane	*46.26*	*1.0*	*50*	*0*	*92.5*	*74 - 125*				
Surr: Toluene-d8	*50.92*	*1.0*	*50*	*0*	*102*	*75 - 125*				

MS Sample ID: **HS16120973-12MS** Units: **ug/L** Analysis Date: **28-Dec-2016 13:39**
Client ID: Run ID: **VOA6_287350** SeqNo: **3947065** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	74.51	1.0	50	18.91	111	75 - 122				
Surr: 1,2-Dichloroethane-d4	*41.31*	*1.0*	*50*	*0*	*82.6*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*47.63*	*1.0*	*50*	*0*	*95.3*	*70 - 125*				
Surr: Dibromofluoromethane	*45.87*	*1.0*	*50*	*0*	*91.7*	*74 - 125*				
Surr: Toluene-d8	*49.67*	*1.0*	*50*	*0*	*99.3*	*75 - 125*				

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287350 **Instrument: VOA6** **Method: SW8260**

MSD Sample ID: **HS16120973-12MSD** Units: **ug/L** Analysis Date: **28-Dec-2016 14:03**
Client ID: Run ID: **VOA6_287350** SeqNo: **3947066** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	57.04	1.0	50	18.91	76.3	75 - 122	74.51	26.6	20	R
Surr: 1,2-Dichloroethane-d4	*42.53*	*1.0*	*50*	*0*	*85.1*	*71 - 125*	*41.31*	*2.92*	*20*	
Surr: 4-Bromofluorobenzene	*48.61*	*1.0*	*50*	*0*	*97.2*	*70 - 125*	*47.63*	*2.04*	*20*	
Surr: Dibromofluoromethane	*46.95*	*1.0*	*50*	*0*	*93.9*	*74 - 125*	*45.87*	*2.35*	*20*	
Surr: Toluene-d8	*51.22*	*1.0*	*50*	*0*	*102*	*75 - 125*	*49.67*	*3.08*	*20*	

The following samples were analyzed in this batch: HS16121136-03

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287458 **Instrument: ICS2100** **Method: SW9056**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
MBLK Sample ID: **WBLKW1-122916** Units: **mg/L** Analysis Date: **29-Dec-2016 08:38**										
Client ID: Run ID: **ICS2100_287458** SeqNo: **3949281** PrepDate: DF: **1**										
Chloride	ND	0.500								
LCS Sample ID: **WLCSW1-122916** Units: **mg/L** Analysis Date: **29-Dec-2016 08:53**										
Client ID: Run ID: **ICS2100_287458** SeqNo: **3949282** PrepDate: DF: **1**										
Chloride	20.3	0.500	20	0	101	80 - 120				
LCSD Sample ID: **WLCSDW1-122916** Units: **mg/L** Analysis Date: **29-Dec-2016 09:07**										
Client ID: Run ID: **ICS2100_287458** SeqNo: **3949283** PrepDate: DF: **1**										
Chloride	19.6	0.500	20	0	98.0	80 - 120	20.3	3.48	20	
MS Sample ID: **HS16121339-01MS** Units: **mg/L** Analysis Date: **29-Dec-2016 11:41**										
Client ID: Run ID: **ICS2100_287458** SeqNo: **3949285** PrepDate: DF: **1**										
Chloride	76.16	0.500	10	68.66	75.0	80 - 120				SO
MS Sample ID: **HS16121136-01MS** Units: **mg/L** Analysis Date: **29-Dec-2016 21:03**										
Client ID: **MW-1** Run ID: **ICS2100_287458** SeqNo: **3949308** PrepDate: DF: **20**										
Chloride	530.4	10.0	200	312.1	109	80 - 120				
MSD Sample ID: **HS16121339-01MSD** Units: **mg/L** Analysis Date: **29-Dec-2016 11:56**										
Client ID: Run ID: **ICS2100_287458** SeqNo: **3949286** PrepDate: DF: **1**										
Chloride	75.26	0.500	10	68.66	66.0	80 - 120	76.16	1.18	20	SO

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287458 **Instrument: ICS2100** **Method: SW9056**

MSD Sample ID: **HS16121136-01MSD** Units: **mg/L** Analysis Date: **29-Dec-2016 21:18**
Client ID: **MW-1** Run ID: **ICS2100_287458** SeqNo: **3949309** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	519.4	10.0	200	312.1	104	80 - 120	530.4	2.09	20	

The following samples were analyzed in this batch: HS16121136-01, HS16121136-02, HS16121136-03, HS16121136-04, HS16121136-05, HS16121136-06, HS16121136-07, HS16121136-08, HS16121136-09

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287481 **Instrument: ICS2100** **Method: SW9056**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
MBLK Sample ID: **WBLKW2-122916** Units: **mg/L** Analysis Date: **29-Dec-2016 23:58**										
Client ID: Run ID: **ICS2100_287481** SeqNo: **3949798** PrepDate: DF: **1**										
Chloride	ND	0.500								
LCS Sample ID: **WLCSW2-122916** Units: **mg/L** Analysis Date: **30-Dec-2016 00:12**										
Client ID: Run ID: **ICS2100_287481** SeqNo: **3949799** PrepDate: DF: **1**										
Chloride	19.88	0.500	20	0	99.4	80 - 120				
LCSD Sample ID: **WLCSDW2-122916** Units: **mg/L** Analysis Date: **30-Dec-2016 00:27**										
Client ID: Run ID: **ICS2100_287481** SeqNo: **3949800** PrepDate: DF: **1**										
Chloride	19.89	0.500	20	0	99.5	80 - 120	19.88	0.0704	20	
MS Sample ID: **HS16121141-01MS** Units: **mg/L** Analysis Date: **30-Dec-2016 03:50**										
Client ID: Run ID: **ICS2100_287481** SeqNo: **3949814** PrepDate: DF: **50**										
Chloride	1183	25.0	500	768.8	82.9	80 - 120				
MS Sample ID: **HS16121136-11MS** Units: **mg/L** Analysis Date: **30-Dec-2016 01:10**										
Client ID: **MW-11** Run ID: **ICS2100_287481** SeqNo: **3949803** PrepDate: DF: **20**										
Chloride	634.6	10.0	200	430.6	102	80 - 120				
MSD Sample ID: **HS16121141-01MSD** Units: **mg/L** Analysis Date: **30-Dec-2016 04:05**										
Client ID: Run ID: **ICS2100_287481** SeqNo: **3949815** PrepDate: DF: **50**										
Chloride	1243	25.0	500	768.8	94.9	80 - 120	1183	4.94	20	

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: HS16121136

QC BATCH REPORT

Batch ID: R287481 **Instrument: ICS2100** **Method: SW9056**

MSD Sample ID: **HS16121136-11MSD** Units: **mg/L** Analysis Date: **30-Dec-2016 01:25**
Client ID: **MW-11** Run ID: **ICS2100_287481** SeqNo: **3949804** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	613.4	10.0	200	430.6	91.4	80 - 120	634.6	3.39	20	

The following samples were analyzed in this batch: HS16121136-10 HS16121136-11 HS16121136-12 HS16121136-13 HS16121136-14 HS16121136-15 HS16121136-16 HS16121136-17

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

Client: Tasman Geosciences
Project: DCP RR Extension
WorkOrder: **HS16121136**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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/SDL

Acronym	Description
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 Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	16-022-1	27-Mar-2017
California	2919 2016-2018	31-Jul-2018
Illinois	003872	09-May-2017
Kansas	E-10352 2016-2017	31-Jul-2017
Kentucky	96 2016-2017	30-Apr-2017
Louisiana	03087 2016-2017	30-Jun-2017
North Carolina	624 - 2016	31-Dec-2016
North Dakota	R193 2016-2017	30-Apr-2017
Oklahoma	2016-122	31-Aug-2017
Texas	TX104704231-16-17	30-Apr-2017

Client: Tasman Geosciences
Project: DCP RR Extension
Work Order: HS16121136

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS16121136-01	MW-1	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-01	MW-1	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-02	MW-2	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-02	MW-2	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-03	MW-3	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-03	MW-3	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-04	MW-4	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-04	MW-4	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-05	MW-5	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-05	MW-5	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-06	MW-6	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-06	MW-6	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-07	MW-7	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-07	MW-7	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-08	MW-8	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-08	MW-8	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-09	MW-9	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-09	MW-9	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-10	MW-10	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-10	MW-10	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-11	MW-11	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-11	MW-11	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-12	MW-12	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-12	MW-12	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-13	MW-13	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-13	MW-13	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-14	MW-14	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-14	MW-14	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-15	MW-15	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-15	MW-15	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-16	MW-16	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-16	MW-16	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-17	DUPLICATE	Login	12/22/2016 12:34:26 PM	KRM	19C
HS16121136-17	DUPLICATE	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-18	TRIP BLANK 121216-28	Login	12/22/2016 12:34:26 PM	KRM	VW-3
HS16121136-19	TRIP BLANK 121216-44	Login	12/22/2016 12:34:26 PM	KRM	VW-3

Sample Receipt Checklist

Client Name: Tasman Geosciences
Work Order: HS16121136
Date/Time Received: **22-Dec-2016 10:10**
Received by: **Jared R. Makan**

Checklist completed by: *Krysta Mathis* eSignature 22-Dec-2016 Date
Reviewed by: *Sonia West* eSignature 28-Dec-2016 Date

Matrices: **WATERS**
Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.1/3.4 U/C	11	
Cooler(s)/Kit(s):	25346		
Date/Time sample(s) sent to storage:	12/22/2016 13:30		
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:

Corrective Action:

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Charleston, WV 56 3168
05 5280

Chain of Custody

Page 1 of 2

COC ID: 1544

HS16121136

Tasman Geosciences

DCP RR Extension

ALS Project Manage

Customer Information		Project Information			
Purchase Order	3907641105	Project Name	DCP RR Extension	A	8260_TL_W (BTEX)
Work Order		Project Number	F210	B	9056_anions_W (Chloride)
Company Name	Tasman Geosciences	Bill To Company	DCP Midstream, LP	C	
Send Report To	Brien Humphrey	Invoice Attn	Stephen Weathers	D	
Address	8359 Pecos St Unit C	Address	370 17th Street, Suite 2500	E	
				F	
City/State/Zip	Denver, CO 80221	City/State/Zip	Denver, Colorado 80202	G	
Phone	303-467-1339	Phone		H	
Fax		Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-1	12-19-16	1554	Water	1	4	X	X									
2	MW-2		1623	Water		4	X	X									
3	MW-3		1630	Water		4	X	X									
4	MW-4		1610	Water		4	X	X									
5	MW-5		1630	Water		4	X	X									
6	MW-6		1628	Water		4	X	X									
7	MW-7		1620	Water		4	X	X									
8	MW-8		1545	Water		4	X	X									
9	MW-9		1513	Water		4	X	X									
10																	

Sampler(s) Please Print & Sign: Mitch Weller

Shipment Method: FedEx Overnight

Required Turnaround Time: (Check Box) 10 days

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Mitch Weller	12-21-16	1300	
Relinquished by:	Date:	Time:	Received by (Laboratory):
	12/22/16	10:10	Jim
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.
25346	3.1
	IR11
	CF03

QC Package: (Check One Box Below)

QC Level: STD

Other:

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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 in

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

Chain of Custody For[m]

Page 2 of 2

COC ID: 154424

HS16121136

Tasman Geosciences

DCP RR Extension

ALS Project Manager:

Customer Information		Project Information	
Purchase Order	[illegible]	Project Name	DCP RR Extension
Work Order		Project Number	F216
Company Name	Tasman Geosciences	Bill To Company	DCP Midstream, LP
Send Report To	[illegible]	Invoice Attn	Stephen Weathers
Address	[illegible] Pecos St, Unit C	Address	370 17th Street Suite 2500
City/State/Zip	Denver, CO 80221	City/State/Zip	Denver, Colorado 80202
Phone	303-487-1228	Phone	
Fax		Fax	
e-Mail Address		e-Mail Address	

A: 8260_LL_[illegible]

B: [illegible]

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-10	12-19-16	1524	Water	1	4	X	X									
2	MW-11	↓	1544	Water	↓	4	X	X									
3	MW-12		1550	Water		4	X	X									
4	MW-13		1600	Water		4	X	X									
5	MW-14		1510	Water		4	X	X									
6	MW-15		1532	Water		4	X	X									
7	[illegible]	↓	1502	Water		4	X	X									
8	Duplicate	—	—	Water	↓	4	X	X									
9	Trip Blank	—	—	Water	—	2	X										
10																	

Sampler(s) Please Print & Sign: Mitch Weller

Shipment Method: FedEx Overnight

Required Turnaround Time: (Check Box) 10 days

Results Due Date:

Relinquished by: Mitchell Weller | Date: 12-21-16 | Time: 1300 | Received by:

Relinquished by: | Date: 12/22/16 | Time: 10:10 | Received by (Laboratory): JM

Logged by (Laboratory): | Date: | Time: | Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)
25346	3.1 / IR11 / CF0.3	QC Level STD / Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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 [illegible]