

# First Quarter 2016 Groundwater Monitoring Summary Report

## Tampa Compressor Station Release Weld County, Colorado Remediation #9353

Prepared for:



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

*Prepared by:*



6899 Pecos Street, Unit C  
Denver, Colorado 80221

**April 11, 2016**

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## 1. Introduction

This report summarizes the groundwater monitoring activities conducted during the first quarter 2016 at the Tampa Compressor Station, Weld County, Colorado (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 in the Site subsurface. Current Site conditions were evaluated from field data and analytical laboratory results collected during the reporting period on February 23, 2016.

## 2. Site Location and Background

The Site is located in the southwestern quarter of the southwestern quarter of Section 31, Township 3 North, Range 63 West (approximate coordinates 40.176595 degrees north and -104.489837 degrees west), approximately 5 miles north on County Road (CR) 59 from Keenesburg, Colorado.

A petroleum hydrocarbon release originating from an underground pipeline occurred at the Site resulting in surface soil staining. DCP submitted an initial Form 19 on February 2, 2015, with a Supplemental Form 19 submitted on February 10, 2015, and the Colorado Oil and Gas Conservation Commission (COGCC) issued a spill tracking facility ID# 440770 for the Site.

Initial soil investigation activities were conducted on February 2, 2015, indicated that surface soil impacts were above COGCC standards. On February 6, 2015, hydrovacuum excavation and soil removal activities of the surface stained soils to approximately 1-foot below ground surface (bgs) was conducted and approximately 14 cubic yards (yd<sup>3</sup>) of material was removed.

On February 13, 2015, three soil borings (BH01 – BH03) were advanced and soil samples were collected from just above the saturated interval at each location. On February 19, 2015 groundwater monitoring activities were conducted at the well locations and light non-aqueous phase liquid (LNAPL) was observed in monitoring wells BH01 and BH03 with measured thicknesses of 3.14 feet and 1.83 feet, respectively. A groundwater sample was collected from BH02 and the laboratory analytical results from that well were below COGCC Table 910-1 standards. Locations of the soil borings are illustrated on Figure 2.

On April 28, 2015, a vacuum enhanced fluid recovery (EFR) event was conducted at monitoring wells BH01 and BH03 and approximately 5 barrels of liquid was removed during that event. Additional source area excavation activities were conducted at the site between May 6 and 22, 2015, and approximately 210 yd<sup>3</sup> of impacted soil and 33 barrels (bbl) of groundwater were removed during excavation. Soil samples were collected during excavation activities and based on the laboratory analytical results, impacted soil within the vadose zone remains in place in the northwest corner of the Site. Due to the existing infrastructure and off-site conditions, the soil was left in place and will be addressed through in-situ remediation activities. Additionally, during the May 2015 excavation activities, monitoring well BH01 was destroyed.

A Form 27 was submitted to the COGCC on November 4, 2015, and the COGCC issued remediation #9353 for the Site. In accordance with the approved work plan described in the Form 27, DCP installed

an additional nine (9) temporary monitoring wells and replaced the destroyed BH01 (Figure 2). Furthermore, DCP initiated approved groundwater monitoring activities at the Site.

### 3. Groundwater Monitoring

This section describes the field and laboratory activities performed during the first quarter 2016 groundwater monitoring event. Quarterly monitoring activities were conducted on February 23, 2016, and included Site-wide groundwater gauging and sampling. Figure 2 illustrates the groundwater monitoring network utilized to perform these activities at the Site.

#### 3.1 Groundwater Elevation Monitoring

Groundwater levels were measured in order to evaluate hydraulic characteristics and provide information regarding seasonal fluctuations in groundwater elevations at the Site. During the first quarter 2016, groundwater levels were measured at 12 monitoring well locations (BH01R through BH12).

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 the calculated groundwater elevations are presented in Table 1.

A first quarter 2016 groundwater elevation contour map, included as Figure 3, indicates that groundwater flow at the Site generally trends to the northeast. The range of groundwater elevations, average elevation change from the previous monitoring event, and the calculated average hydraulic gradient (using elevations from BH01R and BH08) at the Site are summarized in the table below.

**Summary of Measured Hydraulic Parameters**

	<b>First Quarter 2016 (2/23/2016)</b>
Maximum Elevation (Well ID)	4,795.07 (BH01R)
Minimum Elevation (Well ID)	4,793.83 (BH08)
Average Change from Previous Monitoring Event – All Wells	0.08
Average Hydraulic Gradient (ft/ft) / (Well IDs)	0.027 (BH01R to BH08)

#### 3.2 Groundwater Quality Monitoring

Subsequent to recording groundwater level measurements at each monitoring well, groundwater samples were collected from 8 of the 12 monitor wells using disposable polyethylene bailers. Groundwater samples were not collected from monitoring wells BH03, BH04, BH06, and BH11 due to the presence of light non-aqueous phase liquid that was observed within the wells.

A minimum of three well casing volumes of groundwater were purged from each monitor 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 ( $^{\circ}\text{C}$ ) for transportation to the laboratory. Groundwater samples

were then delivered under chain-of-custody procedures to Summit Scientific Laboratories (Summit) in Golden, Colorado 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.

Table 2 summarizes BTEX concentrations in groundwater samples collected during the reporting period. Historic analytical results up to and including the first quarter 2016 event are included in Appendix A and the laboratory analytical report for the first 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 BH01R (35 micrograms per liter ( $\mu\text{g/L}$ ), BH05 (2,900  $\mu\text{g/L}$ ), BH07 (130  $\mu\text{g/L}$ ), BH08 (150  $\mu\text{g/L}$ ), and BH09 (23  $\mu\text{g/L}$ ) were in exceedance of the COGCC Table 910-1 standard of 5  $\mu\text{g/L}$ .
- Total Xylenes in groundwater samples from BH05 (1,500  $\mu\text{g/L}$ ) was in exceedance of the COGCC Table 910-1 standard of 1,400  $\mu\text{g/L}$ .
- BTEX concentrations from the remaining sample locations were below COGCC standards and/or below laboratory detection limits.
- LNAPL was observed in wells BH03, BH04, BH06, and BH11 with measured thicknesses of 0.11 feet, 0.13 feet, 0.07 feet, and 0.02 feet, respectively.

## 4. Conclusions

Observations of the first quarter 2016 monitoring data provides the following:

- LNAPL was observed in BH03, BH04, BH06, and BH11 during the first quarter 2016.
- Benzene concentrations in exceedance of the COGCC applicable groundwater standard was detected in five (5) of the sampled monitoring wells.
- Benzene and Toluene concentrations decreased when compared to the fourth quarter 2015 event.
- Overall LNAPL thicknesses decreased, with the exception of measurable LNAPL that was observed in MW11 during the first quarter 2016 event.

## 6. Recommendations

Based on evaluation of data from the first quarter 2016, recommendations for future activities include:

- Continue quarterly groundwater monitoring and sampling at the monitoring well locations illustrated on Figure 2.
- Initiate weekly mobile vacuum enhanced fluid recovery (EFR) remediation activities as described in the approved Form 27 remediation work plan.

## Tables

**TABLE 1**  
**FIRST QUARTER 2016 MONITORING EVENT**  
**SUMMARY OF GROUNDWATER ELEVATION DATA**  
**DCP TAMPA COMPRESSOR STATION**  
**WELD COUNTY, COLORADO**

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)
BH01R	11/12/2015	11.48			16.41	4,805.57	4,794.09	NA
BH01R	2/23/2016	10.50			15.00	4,805.57	4,795.07	0.98
BH02	11/12/2015	13.64			18.90	4,807.70	4,794.06	NA
BH02	2/23/2016	13.55			18.55	4,807.70	4,794.15	0.09
BH03	11/12/2015	11.79	10.13	1.66	NM	4,804.31	4,793.76	NA
BH03	2/23/2016	10.34	10.23	0.11	NM	4,804.31	4,794.05	0.29
BH04	11/12/2015	12.58	11.79	0.79	16.36	4,806.95	4,794.96	NA
BH04	2/23/2016	12.70	12.57	0.13	NM	4,806.95	4,794.34	-0.61
BH05	11/12/2015	12.29			16.18	4,806.51	4,794.22	NA
BH05	2/23/2016	12.21			16.19	4,806.51	4,794.30	0.08
BH06	11/12/2015	12.44	12.29	0.15	16.37	4,806.46	4,794.13	NA
BH06	2/23/2016	12.31	12.24	0.07	NM	4,806.46	4,794.20	0.07
BH07	11/12/2015	12.02			15.26	4,806.01	4,793.99	NA
BH07	2/23/2016	11.96			15.57	4,806.01	4,794.05	0.06
BH08	11/12/2015	9.97			15.13	4,803.78	4,793.81	NA
BH08	2/23/2016	9.95			15.14	4,803.78	4,793.83	0.02
BH09	11/12/2015	10.24			15.25	4,804.08	4,793.84	NA
BH09	2/23/2016	10.20			15.29	4,804.08	4,793.88	0.04
BH10	11/12/2015	11.25			15.14	4,805.37	4,794.12	NA
BH10	2/23/2016	11.22			15.26	4,805.37	4,794.15	0.03
BH11	11/12/2015	11.00			14.44	4,804.97	4,793.97	NA
BH11	2/23/2016	11.09	11.07	0.02	14.43	4,804.97	4,793.89	-0.07
BH12	11/12/2015	11.27			15.24	4,805.13	4,793.86	NA
BH12	2/23/2016	11.28			15.19	4,805.13	4,793.85	-0.01
Average change in groundwater elevation between 11/12/15 and 2/23/16								0.08

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

NA = Not Applicable

TD = Total Depth

**TABLE 2**  
**FIRST QUARTER 2016 MONITORING EVENT**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**DCP TAMPA COMPRESSOR STATION**  
**WELD COUNTY, COLORADO**

Location Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Comments
<b>COGCC Standards (µg/L)<sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
BH01R	2/23/2016	<b>35</b>	<1.0	3.7	1.5	
BH02	2/23/2016	<1.0	<1.0	<1.0	<1.0	
BH03	2/23/2016	NS	NS	NS	NS	LNAPL
BH04	2/23/2016	NS	NS	NS	NS	LNAPL
BH05	2/23/2016	<b>2,900</b>	180	540	<b>1,500</b>	
BH06	2/23/2016	NS	NS	NS	NS	LNAPL
BH07	2/23/2016	<b>130</b>	70	170	110	
BH08	2/23/2016	<b>150</b>	37	15	74	
BH09	2/23/2016	<b>23</b>	<1.0	<1.0	<1.0	
BH10	2/23/2016	<1.0	<1.0	<1.0	<1.0	
BH11	2/23/2016	NS	NS	NS	NS	LNAPL
BH12	2/23/2016	<1.0	<1.0	<1.0	<1.0	

Notes:

1). The environmental cleanup standards for groundwater that are applicable to this site are the Colorado Oil and Gas Conservation Commission (COGCC) standards for contaminants in groundwater according to Table 910-1 of the COGCC 900 Series Rule for E&P Waste Management.

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

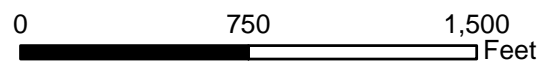
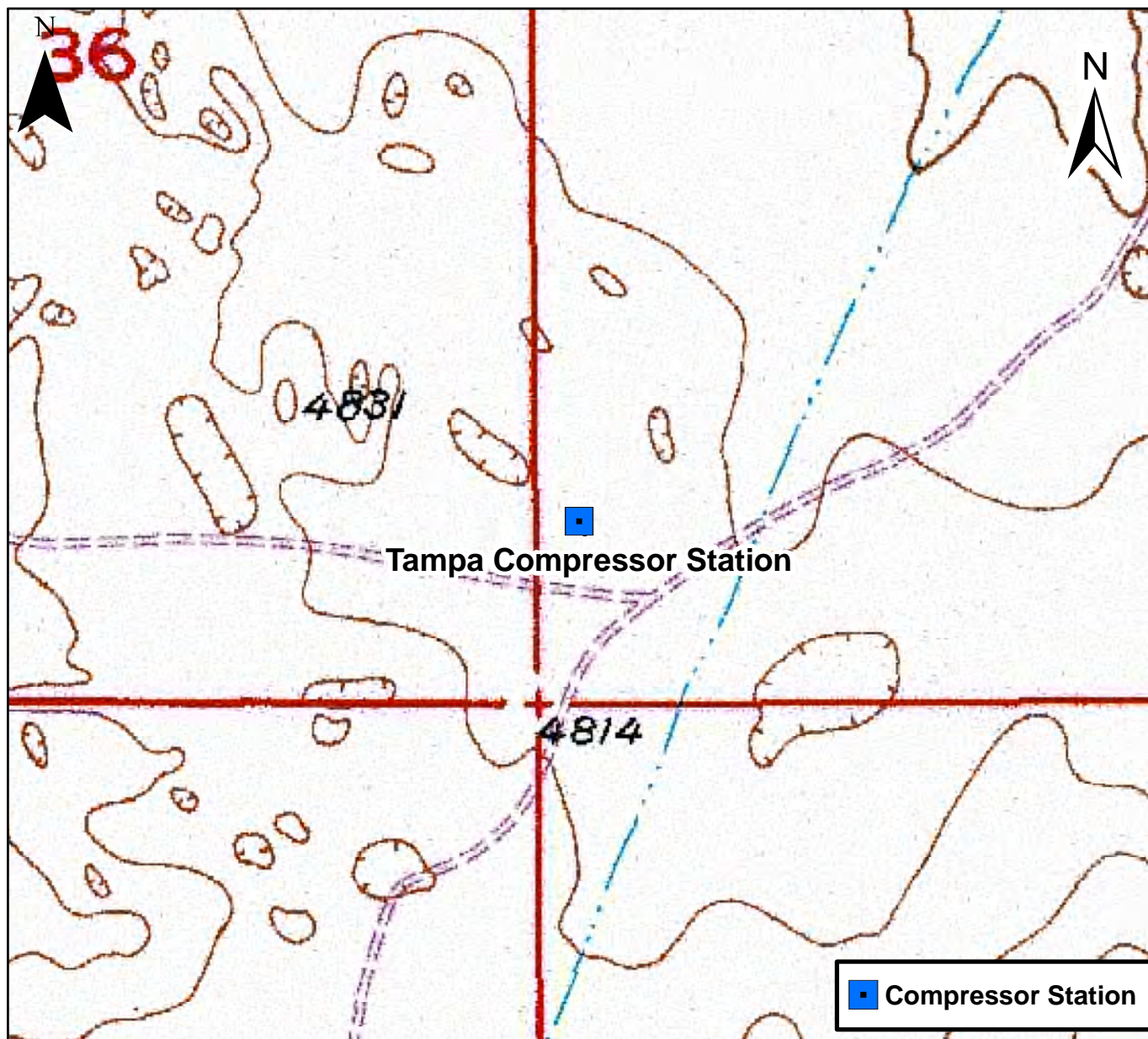
NS = Not sampled.

µg/L = micrograms per liter.

LNAPL - Light non-aqueous phase liquid



## Figures

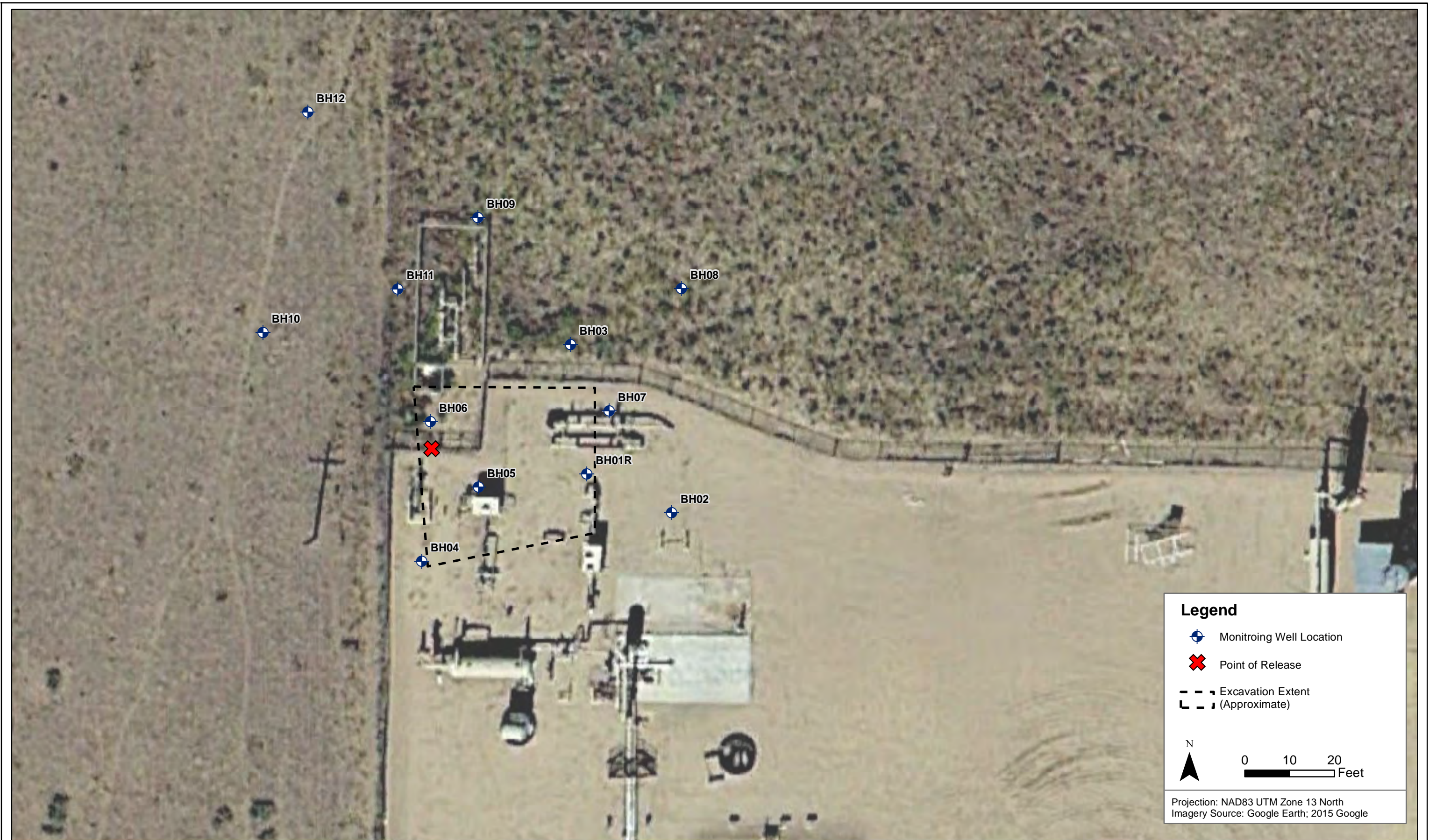


## Figure 1

Site Location Map  
Tampa Compressor Station  
SWSW S31 T3N R63W  
Weld County, Colorado







DATE:	December 2015
DESIGNED BY:	B. Humphrey
DRAWN BY:	D. Arnold



**TASMAN**  
GEOSCIENCES

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

**DCP Midstream  
Tampa Compressor Station**  
SWSW Section 31, Township 3 North, Range 63 West  
Weld County, Colorado

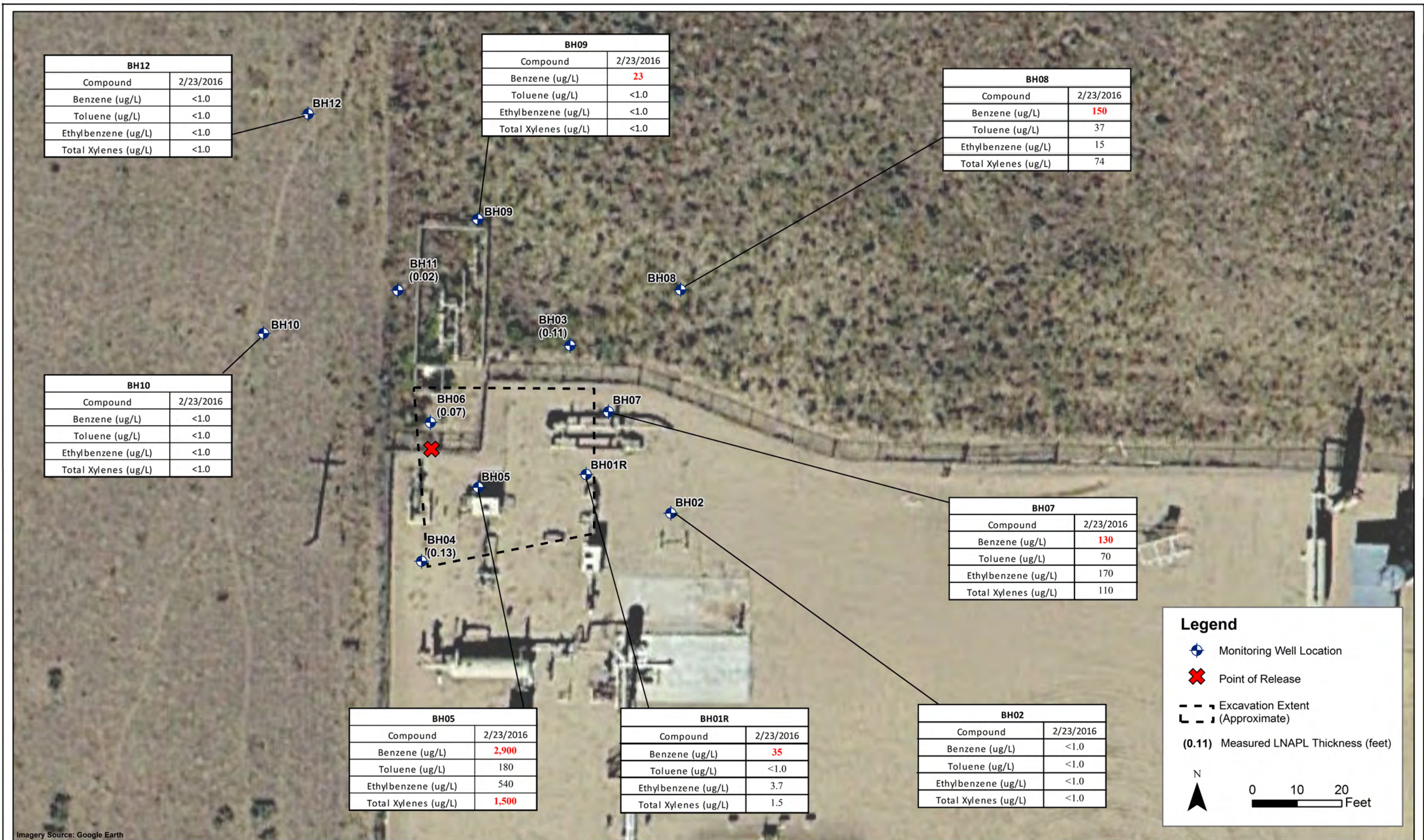
Site Map with  
Monitoring Well Location

Figure  
2









DATE:  
March 2016

DESIGNED BY:  
B. Humphrey

DRAWN BY:  
D. Arnold



**DCP Midstream**  
**Tampa Compressor Station**  
SWSW Section 31, Township 3 North, Range 63 West  
Weld County, Colorado

Groundwater Analytical Results  
Map  
(February 23, 2016)

Figure  
4



## Appendix A

### Historic Analytical Results

**APPENDIX A**  
**HISTORIC ANALYTIC DATA**  
**DCP TAMPA COMPRESSOR STATION**  
**WELD COUNTY, COLORADO**

Location Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Comments
<b>COGCC Standards (µg/L)</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
BH01	2/19/2015	NS	NS	NS	NS	LNAPL
BH01R	11/12/2015	<b>82</b>	<1.0	7.5	3.8	
BH01R	2/23/2016	<b>35</b>	<1.0	3.7	1.5	
BH02	2/19/2015	<1.0	1.7	<1.0	1.1	
BH02	11/12/2015	<1.0	1.6	<1.0	4.5	
BH02	2/23/2016	<1.0	<1.0	<1.0	<1.0	
BH03	2/19/2015	NS	NS	NS	NS	LNAPL
BH03	11/12/2015	NS	NS	NS	NS	LNAPL
BH03	2/23/2016	NS	NS	NS	NS	LNAPL
BH04	11/12/2015	NS	NS	NS	NS	LNAPL
BH04	2/23/2016	NS	NS	NS	NS	LNAPL
BH05	11/12/2015	<b>6,700</b>	<b>590</b>	610	<b>2,300</b>	
BH05	2/23/2016	<b>2,900</b>	180	540	<b>1,500</b>	
BH06	11/12/2015	NS	NS	NS	NS	LNAPL
BH06	2/23/2016	NS	NS	NS	NS	LNAPL
BH07	11/12/2015	<b>1,600</b>	<b>1,000</b>	290	1,000	
BH07	2/23/2016	<b>130</b>	70	170	110	
BH08	11/12/2015	<b>160</b>	16	11	40	
BH08	2/23/2016	<b>150</b>	37	15	74	
BH09	11/12/2015	<b>610</b>	46	18	80	
BH09	2/23/2016	<b>23</b>	<1.0	<1.0	<1.0	
BH10	11/12/2015	<1.0	<1.0	<1.0	<1.0	
BH10	2/23/2016	<1.0	<1.0	<1.0	<1.0	
BH11	11/12/2015	<b>2,100</b>	<b>1,800</b>	200	840	
BH11	2/23/2016	NS	NS	NS	NS	LNAPL
BH12	11/12/2015	<1.0	<1.0	<1.0	<1.0	
BH12	2/23/2016	<1.0	<1.0	<1.0	<1.0	

Notes:

1). The environmental cleanup standards for groundwater that are applicable to this site are the Colorado Oil and Gas Conservation Commission (COGCC) standards for contaminants in groundwater according to Table 910-1 of the COGCC 900 Series Rule for E&P Waste Management.

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

NS = Not sampled.

µg/L = micrograms per liter.

LNAPL - Light non-aqueous phase liquid

## Appendix B

Laboratory Analytical Report  
Summit Scientific - 1602186



# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 02, 2016

Brian Humphrey  
Tasman Geosciences  
6899 Pecos Street  
Denver, CO 80221  
RE: Tampa Compressor Station

Enclosed are the results of analyses for samples received by Summit Scientific on 02/23/16 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Tampa Compressor Station

Project Number: 211510414  
Project Manager: Brian Humphrey

**Reported:**  
03/02/16 08:45

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01R	1602186-01	Water	02/23/16 10:30	02/23/16 17:00
BH02	1602186-02	Water	02/23/16 10:20	02/23/16 17:00
BH05	1602186-03	Water	02/23/16 10:10	02/23/16 17:00
BH07	1602186-04	Water	02/23/16 10:00	02/23/16 17:00
BH08	1602186-05	Water	02/23/16 09:50	02/23/16 17:00
BH09	1602186-06	Water	02/23/16 09:40	02/23/16 17:00
BH10	1602186-07	Water	02/23/16 09:30	02/23/16 17:00
BH12	1602186-08	Water	02/23/16 09:20	02/23/16 17:00

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Tampa Compressor Station

Project Number: 211510414  
Project Manager: Brian Humphrey

Reported:  
03/02/16 08:45

## Summit Scientific

1602186

741 Corporate Circle Suite I • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Page 1 of 1

Client: DCP/Tasman

Address:

City/State/Zip:

Phone: 303-945-3944

Fax:

Sampler Name: Elliot Dillon-Harlog

Project Manager:

E-Mail: bhumphrey@tasman-geo.com / sum@tasman-geo.com

Project Name: Tampa Compressor Station

Project Number: 211510414

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix		Analyze For:				Special Instructions
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX 8260		
BH01R	02/23/16	1030	3											
BH02		1020												
BH05		1010												
BH07		1000												
BH08		0950												
BH09		0940												
BH10		0930												
BH12		0920												

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
	02/23/16 1430			Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>	on ice
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>	
	2/23/16 1700		2/23/16 1700	48 Hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity:	
	2/23/16 1745			Temperature Upon Receipt: 6.4°C	
				Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>	

[www.s2scientific.com](http://www.s2scientific.com)

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Tampa Compressor Station  
Project Number: 211510414  
Project Manager: Brian Humphrey

Reported:  
03/02/16 08:45

**BH01R**  
**1602186-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 02/23/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>35</b>	1.0	ug/l	1	1602255	02/26/16	02/26/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>3.7</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>1.5</b>	1.0	"	"	"	"	"	"	

Date Sampled: 02/23/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.0 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		95.4 %	45-146		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Tampa Compressor Station  
Project Number: 211510414  
Project Manager: Brian Humphrey

Reported:  
03/02/16 08:45

**BH02**  
**1602186-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/23/16 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1602255	02/26/16	02/26/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/16 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.1 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Tampa Compressor Station  
Project Number: 211510414  
Project Manager: Brian Humphrey

Reported:  
03/02/16 08:45

**BH05**  
**1602186-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/23/16 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>2900</b>	50	ug/l	50	1602255	02/26/16	02/26/16	EPA 8260B	
<b>Toluene</b>	<b>180</b>	1.0	"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>540</b>	50	"	50	"	"	"	"	
<b>Xylenes (total)</b>	<b>1500</b>	50	"	"	"	"	"	"	

Date Sampled: **02/23/16 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		93.9 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		103 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		94.8 %	45-146		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Tampa Compressor Station  
Project Number: 211510414  
Project Manager: Brian Humphrey

Reported:  
03/02/16 08:45

**BH07**  
**1602186-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/23/16 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>130</b>	1.0	ug/l	1	1602255	02/26/16	02/26/16	EPA 8260B	
<b>Toluene</b>	<b>70</b>	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>170</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>110</b>	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/16 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.4 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		92.6 %	45-146		"	"	"	"	

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Project Manager: Brian Humphrey

**Reported:**  
03/02/16 08:45

**BH08**  
**1602186-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/23/16 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>150</b>	1.0	ug/l	1	1602255	02/26/16	02/26/16	EPA 8260B	
<b>Toluene</b>	<b>37</b>	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>15</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>74</b>	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/16 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.2 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		97.1 %	45-146		"	"	"	"	

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Reported:  
03/02/16 08:45

**BH09**  
**1602186-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/23/16 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>23</b>	1.0	ug/l	1	1602255	02/26/16	02/26/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/16 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		96.9 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		97.3 %	45-146		"	"	"	"	

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Reported:  
03/02/16 08:45

**BH10**  
**1602186-07 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/23/16 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1602255	02/26/16	02/26/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/16 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %	45-146		"	"	"	"	

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Reported:  
03/02/16 08:45

**BH12**  
**1602186-08 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/23/16 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1602255	02/26/16	02/26/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/16 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	45-146		"	"	"	"	

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Reported:  
03/02/16 08:45

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch 1602255 - EPA 5030 Water MS

##### Blank (1602255-BLK1)

Prepared & Analyzed: 02/26/16

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.5	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.0	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.0	45-146			

##### LCS (1602255-BS1)

Prepared & Analyzed: 02/26/16

Benzene	43.9	1.0	ug/l	33.3		132	51-132			
Toluene	37.7	1.0	"	33.3		113	51-138			
Ethylbenzene	47.0	1.0	"	33.1		142	58-146			
m,p-Xylene	90.5	2.0	"	66.5		136	57-144			
o-Xylene	42.6	1.0	"	32.7		130	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.3		100	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.8	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.6	45-146			

##### Matrix Spike (1602255-MS1)

Source: 1602185-01

Prepared & Analyzed: 02/26/16

Benzene	43.7	1.0	ug/l	33.3	ND	131	34-141			
Toluene	37.4	1.0	"	33.3	ND	112	27-151			
Ethylbenzene	47.3	1.0	"	33.1	ND	143	29-160			
m,p-Xylene	91.0	2.0	"	66.5	ND	137	20-166			
o-Xylene	43.0	1.0	"	32.7	ND	132	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		96.3	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7	45-146			

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03/02/16 08:45

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1602255 - EPA 5030 Water MS**

Matrix Spike Dup (1602255-MSD1)	Source: 1602185-01			Prepared & Analyzed: 02/26/16						
Benzene	43.8	1.0	ug/l	33.3	ND	131	34-141	0.114	32	
Toluene	37.3	1.0	"	33.3	ND	112	27-151	0.214	25	
Ethylbenzene	47.9	1.0	"	33.1	ND	145	29-160	1.20	50	
m,p-Xylene	92.2	2.0	"	66.5	ND	139	20-166	1.21	36	
o-Xylene	43.8	1.0	"	32.7	ND	134	33-159	1.85	26	
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		99.0	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		95.6	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.8	45-146			

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**Reported:**  
03/02/16 08:45

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

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