

# First Quarter 2017 Groundwater Monitoring Summary Report

## County Road 20 and Highway 85 Release Fort Lupton, Colorado

Prepared for:



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

*Prepared by:*



6899 Pecos Street, Unit C  
Denver, Colorado 80221

**April 17, 2017**

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B	Laboratory Analytical Report – 1702212

## 1. Introduction

This report summarizes the groundwater monitoring and remediation activities conducted during the first quarter 2017 at the County Road (CR) 20 and Highway (Hwy) 85 pipeline release (Site) in Fort Lupton, 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. Current Site conditions were evaluated from field data and analytical laboratory results collected during the reporting period on February 28, 2017.

## 2. Site Location and Background

The Site is located in the southwestern quarter of the southwestern quarter of Section 17, Township 2 North, Range 66 West (approximate coordinates 40.130908 degrees north and -104.806673 degrees west). It is approximately 0.20 miles east on CR 20 from the intersection with Hwy 85, Ft. Lupton, Colorado.

On May 28, 2014, a petroleum hydrocarbon release was discovered following pipeline repair activities. An initial Form 19 was submitted to the Colorado Oil and Gas Conservation Commission (COGCC) on June 5, 2014.

## 3. Groundwater Monitoring

This section describes the field and laboratory activities performed during the first quarter 2017 groundwater monitoring event. Quarterly monitoring activities were conducted on February 28, 2017, 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 2017, groundwater levels were measured at six (6) monitoring well locations (BH01-BH03 and BH05-BH07).

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 2017 groundwater elevation contour map, included as Figure 3, indicates that groundwater appears to be mounded through the center of the Site (between BH01 and BH03) and flows generally north but also flows to the east and the west from that area. Previous monitoring events indicate that groundwater flow was generally to the north and/or east. The differences in flow direction that have been observed may be attributed to several factors including, but not limited to; increased use of the irrigation ditch to the west of the Site, flooding or increased irrigation of the farm to the north of the Site, and/or shallow groundwater used for irrigation to the east of the Site. Groundwater elevations will continue to be monitored for flow direction during subsequent events. The range of groundwater

elevations, average elevation change from the previous monitoring event, and the calculated average hydraulic gradient (using elevations from BH01 and BH06) at the Site are summarized in the table below.

**Summary of Measured Hydraulic Parameters**

	<b>First Quarter 2017 (2/28/17)</b>
Maximum Elevation (Well ID)	4,859.17 (BH01)
Minimum Elevation (Well ID)	4,859.07 (BH06)
Average Change from Previous Monitoring Event – All Wells	-2.04 feet
Average Hydraulic Gradient (ft/ft) / (Well IDs)	0.0011 (BH01 to BH06)

**3.2 Groundwater Quality Monitoring**

Subsequent to recording groundwater level measurements at each monitoring well, groundwater samples were collected from the six (6) monitoring wells on-Site using dedicated polyethylene bailers.

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 (°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 2017 event are included in Appendix A and the laboratory analytical report for the first quarter 2017 is included in Appendix B. Analytical results are also displayed on Figure 4.

Analytical results/observations are summarized below:

- A measurable amount of LNAPL was not observed during well gauging activities. A trace amount of LNAPL was observed on the surface of the bailer, however an LNAPL thickness was not detected by interface probe or was an LNAPL thickness observed within the bailer during sampling.
- BTEX concentrations from BH01 through BH03 and BH05 through BH06 were below the COGCC Table 910-1 standards and/or laboratory detection limits.
- Benzene, toluene, and ethylbenzene were below the COGCC Table 910-1 standards at BH07 during the first quarter 2017 sampling event. Total xylenes at BH07 were returned at the COGCC Table 910-1 standard of 1,400 micrograms per liter (µg/L) during the first quarter 2017.

## 4. Remediation Activities

This Section includes a description of the active remediation activities at the Site along with observations during remediation efforts.

### 4.1 Groundwater Remediation Activities

As reported in previous quarterly monitoring reports, mobile, vacuum enhanced fluid recovery (EFR) groundwater remediation events were initiated at the Site during the third quarter 2015 on July 22, 2015. Between July 22 and November 23, 2015, 9 EFR remediation events were conducted at monitoring wells BH02, BH03, BH05 and BH07 for a minimum 6-hour period. Due to the decrease in LNAPL volumes observed at the Site between the third and fourth quarter 2015, EFR remediation was discontinued at the Site. Mobile EFR events were re-initiated during the second quarter 2016 due to the presence of LNAPL that was observed and were continued through the fourth quarter 2016. Between September 30, and November 18, 2016, six EFR events were conducted at the Site for a project total of 15 events. A total of approximately 307 bbls of groundwater has been removed since EFR remediation activities were initiated at the Site. Recovered groundwater was disposed of at the NGL Water Solutions DJ, LLC, C-3 disposal well in LaSalle, CO. EFR events were discontinued subsequent to November 18, 2016 due to the absence of LNAPL at the Site as well as dry and/or insufficient volumes of water that were observed within the Site monitoring wells.

## 5. Conclusions

Comparison of the first quarter 2017 monitoring data and historic information provides the following general observations:

- The groundwater flow direction at the Site continues to fluctuate when compared to previous quarterly sampling events as indicated by the groundwater elevation contours illustrated on Figure 3. During the first quarter 2017 monitoring event, groundwater flow was generally to the north. However, apparent groundwater mounding appears to occur through the center of the Site between BH01 and BH03, then flows northeast and northwest from that area. Groundwater flow directions will continue to be monitored during subsequent quarterly events.
- A measurable LNAPL thickness was not detected with the interface probe in Monitoring well BH07 nor was an LNAPL thickness observed within the sample bailer during the first quarter 2017 sampling event. However, a trace amount of LNAPL was observed on the sidewalls of the sample bailer during well purging activities.
- BTEX concentrations were below COGCC standards or laboratory detection levels during the first quarter 2017 monitoring event, except in monitoring well BH07. Lab analysis indicate total xylenes in BH07 were equal to the COGCC standard of 1,400 µg/L.
- A total of 307 barrels of impacted liquids have been removed from the subsurface of the Site through mobile EFR remediation activities which were discontinued in 4<sup>th</sup> quarter 2016 due to absence of LNAPL.

## 6. Recommendations

Based on evaluation of data from the first quarter 2017 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.

## Tables

**TABLE 1**  
**FIRST QUARTER 2017**  
**SUMMARY OF GROUNDWATER ELEVATION DATA**  
**DCP CR 20 AND HWY 85 RELEASE**  
**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)
BH01	5/13/2016	15.69			18.14	4,875.68	4,859.99	1.47
BH01	8/10/2016	12.34			18.13	4,875.68	4,863.34	3.35
BH01	11/11/2016	14.45			18.13	4,875.68	4,861.23	-2.11
BH01	2/28/2017	16.51			18.13	4,875.68	4,859.17	-2.06
BH02	5/13/2016	15.02			18.74	4,874.94	4,859.92	1.53
BH02	8/10/2016	11.62			18.73	4,874.94	4,863.32	3.40
BH02	11/11/2016	13.81			18.73	4,874.94	4,861.13	-2.19
BH02	2/28/2017	15.82			18.76	4,874.94	4,859.12	-2.01
BH03	5/13/2016	14.53			18.74	4,874.51	4,859.98	1.51
BH03	8/10/2016	11.16			18.76	4,874.51	4,863.35	3.37
BH03	11/11/2016	13.31			18.76	4,874.51	4,861.20	-2.15
BH03	2/28/2017	15.34			18.76	4,874.51	4,859.17	-2.02
BH05	5/13/2016	Dry			19.01	4,874.67	NA	NA
BH05	8/10/2016	11.33			18.99	4,874.67	4,863.34	NA
BH05	11/11/2016	13.47			18.99	4,874.67	4,861.20	-2.14
BH05	2/28/2017	15.52			18.99	4,874.67	4,859.15	-2.05
BH06	5/13/2016	15.02			18.70	4,874.95	4,859.93	1.45
BH06	8/10/2016	12.61			18.56	4,874.95	4,862.34	2.41
BH06	11/11/2016	13.80			18.56	4,874.95	4,861.15	-1.19
BH06	2/28/2017	15.88			18.56	4,874.95	4,859.07	-2.08
BH07	5/13/2016	14.10			18.74	4,874.04	4,859.94	-0.91
BH07	8/10/2016	10.72			18.67	4,874.04	4,863.32	4.92
BH07	11/11/2016	Dry			18.70	4,874.04	NA	NA
BH07	2/28/2017	14.93			18.67	4,874.04	4,859.11	-4.21
Average change in groundwater elevation (11/11/2016 to 2/28/2017)								-2.04

Notes:

- 1- Changes in groundwater elevation calculated by subtracting the measurement collected during the previous monitoring event from the measurement
- amsl = feet above mean sea level
- TOC = top of casing
- Groundwater elevation = (TOC Elevation - Measured Depth to Water)
- NM = Not Measured
- NA = Not Applicable

**TABLE 2  
FIRST QUARTER 2017  
SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER  
DCP CR 20 AND HWY 85 RELEASE  
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	2/28/2017	<1.0	<1.0	<1.0	<1.0	
BH02	2/28/2017	<1.0	<1.0	<1.0	560	
BH03	2/28/2017	<1.0	<1.0	<1.0	410	
BH05	2/28/2017	<1.0	<1.0	<1.0	<1.0	
BH06	2/28/2017	<1.0	<1.0	<1.0	<1.0	
BH07	2/28/2017	4.1	<1.0	90	<b>1,400</b>	

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.

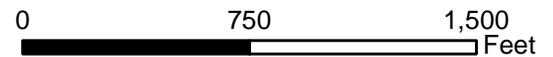
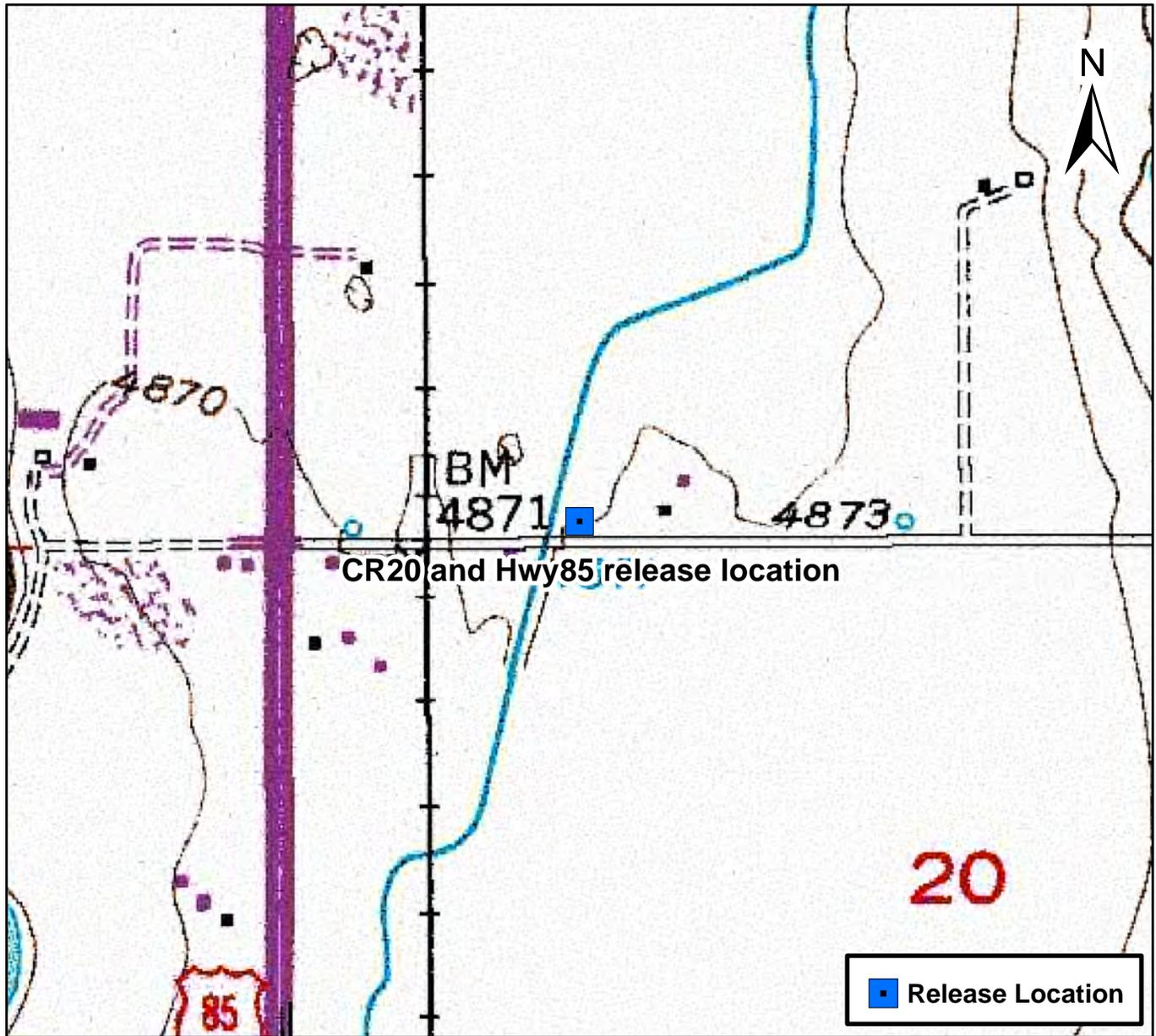
**Bold** red values indicate an exceedance of the COGCC groundwater standards for the Site.

NS = Not sampled.

µg/L = micrograms per liter.

LNAPL - Light non-aqueous phase liquid

## Figures



## Figure 1

Site Location Map  
 CR20 and Hwy85 release location  
 SWSW S17 T2N R66W  
 Weld County, Colorado

Drawn By: DBA  
 Date: 06/04/2014





DATE:	April 2017
DESIGNED BY:	B. Humphrey
DRAWN BY:	D. Arnold



**TASMAN**  
GEOSCIENCES

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

**DCP Midstream**  
**County Road 20 and Highway 85 Release**  
 SWSW Section 17, Township 2 North, Range 66 West  
 Weld County, Colorado

Site Overview  
Map

Figure  
2



DATE:	April 2017
DESIGNED BY:	B. Humphrey
DRAWN BY:	D. Arnold



**TASMAN**  
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Denver, CO 80221

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**County Road 20 and Highway 85 Release**  
SWSW Section 17, Township 2 North, Range 66 West  
Weld County, Colorado

Groundwater Elevation  
Contour Map  
(February 28, 2017)

**Figure**  
**3**



DATE: April 2017  
 DESIGNED BY: B. Humphrey  
 DRAWN BY: D. Arnold



**DCP Midstream**  
**County Road 20 and Highway 85 Release**  
 SWSW Section 17, Township 2 North, Range 66 West  
 Weld County, Colorado

Groundwater Analytical  
 Results Map  
 (February 28, 2017)

Figure  
 4

Appendix A  
Historic Analytical Results

**APPENDIX A  
HISTORICAL ANALYTICAL DATA  
DCP CR 20 AND HWY 85 RELEASE  
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	5/14/2015	<1.0	<1.0	<1.0	<1.0	
BH01	9/24/2015	<1.0	<1.0	<1.0	<1.0	
BH01	11/17/2015	<1.0	<1.0	<1.0	<1.0	
BH01	2/15/2016	<1.0	<1.0	<1.0	<1.0	
BH01	5/13/2016	<1.0	<1.0	<1.0	<1.0	
BH01	8/10/2016	<1.0	<1.0	<1.0	<1.0	
BH01	11/11/2016	<1.0	<1.0	<1.0	<1.0	
BH01	2/28/2017	<1.0	<1.0	<1.0	<1.0	
BH02	5/14/2015	<b>120</b>	5	210	<b>2,000</b>	
BH02	9/24/2015	<b>20</b>	<1.0	48	370	
BH02	11/17/2015	<b>14</b>	<1.0	72	490	
BH02	2/15/2016	2.4	1.4	260	730	
BH02	5/13/2016	2.2	<1.0	160	1,100	
BH02	8/10/2016	<1.0	<1.0	13	340	
BH02	11/11/2016	1.5	<1.0	17	910	
BH02	2/28/2017	<1.0	<1.0	<1.0	560	
BH03	5/14/2015	<b>220</b>	130	400	<b>3,500</b>	
BH03	9/24/2015	1.8	<1.0	7.0	150	
BH03	11/17/2015	<1.0	<1.0	43	400	
BH03	2/15/2016	<1.0	<1.0	42	280	
BH03*	5/17/2016	<b>5.3</b>	<1.0	79	590	
BH03	8/10/2016	3.1	<1.0	230	<b>1,400</b>	
BH03	11/11/2016	<1.0	<1.0	<1.0	1,200	
BH03	2/28/2017	<1.0	<1.0	<1.0	410	
BH05	5/14/2015	<1.0	<1.0	3	22	
BH05	9/24/2015	<1.0	<1.0	<1.0	<1.0	
BH05	11/17/2015	<1.0	<1.0	<1.0	<1.0	
BH05	2/15/2016	<1.0	<1.0	<1.0	<1.0	
BH05	5/13/2016	NS	NS	NS	NS	Well was dry
BH05	8/10/2016	<1.0	<1.0	<1.0	<1.0	
BH05	11/11/2016	<1.0	<1.0	<1.0	<1.0	
BH05	2/28/2017	<1.0	<1.0	<1.0	<1.0	
BH06	5/14/2015	<1.0	<1.0	<1.0	5	
BH06	9/24/2015	<1.0	<1.0	<1.0	<1.0	
BH06	11/17/2015	<1.0	<1.0	<1.0	<1.0	
BH06	2/15/2016	<1.0	<1.0	<1.0	<1.0	
BH06	5/13/2016	<1.0	<1.0	<1.0	<1.0	
BH06	8/10/2016	<1.0	<1.0	<1.0	<1.0	
BH06	11/11/2016	<1.0	<1.0	<1.0	<1.0	
BH06	2/28/2017	<1.0	<1.0	<1.0	<1.0	

**APPENDIX A  
HISTORICAL ANALYTICAL DATA  
DCP CR 20 AND HWY 85 RELEASE  
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>	
BH07	5/14/2015	<b>44</b>	310	200	<b>2,600</b>	
BH07	9/24/2015	NS	NS	NS	NS	Trace amount of LNAPL
BH07	11/17/2015	<b>85</b>	1.1	210	<b>3,100</b>	
BH07	2/15/2016	NS	NS	NS	NS	LNAPL - 0.03 ft
BH07	5/13/2016	<b>52</b>	<1.0	500	<b>3,300</b>	
BH07	8/10/2016	1.8	<1.0	<1.0	560	Trace amount of LNAPL
BH07	11/11/2016	DRY				
BH07	2/28/2017	4.1	<1.0	90	<b>1,400</b>	

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.

\* Monitoring well BH03 was sampled on May 17, 2016 subsequent to purging apparent LNAPL from the well.

**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 1702212

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 07, 2017

Steve Weathers  
DCP Operating Company  
370 17th Street #2500  
Denver, CO 80202  
RE: CR20 + Hwy 85 Release

Enclosed are the results of analyses for samples received by Summit Scientific on 02/28/17 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



DCP Operating Company  
370 17th Street #2500  
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
03/07/17 08:06

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1702212-01	Water	02/28/17 09:42	02/28/17 17:00
BH02	1702212-02	Water	02/28/17 09:51	02/28/17 17:00
BH03	1702212-03	Water	02/28/17 10:02	02/28/17 17:00
BH05	1702212-04	Water	02/28/17 10:07	02/28/17 17:00
BH06	1702212-05	Water	02/28/17 09:55	02/28/17 17:00
BH07	1702212-06	Water	02/28/17 09:30	02/28/17 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.*



DCP Operating Company  
370 17th Street #2500  
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

Reported:  
03/07/17 08:06

# Summit Scientific

1702217

741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Page 1 of 1

Client: DCP / Tasman Geosciences  
Address: 6899 Pecos St, Unit C  
City/State/Zip: Denver, CO 80221  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: Mitch Weller, Max Garza

Project Manager: Steve Weathers  
E-Mail: swweathers@dcpmidstream.com ; bhumphrey@tasman-geo.co  
Project Name: CR 20 & SS  
Project Number: \_\_\_\_\_

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)				
BH 01	2-28-17	0942	3		X								X		
BH 02		0951													
BH 03		1002													
BH 05		1007													
BH 06		0955													
BH 07		0930													
Relinquished by: <u>Mitch Weller</u>		Date/Time: <u>2-28-17 1700</u>		Received by: <u>MD</u>		Date/Time: <u>2/28/17 1700</u>		Turn Around Time (Check)				Notes:			
								Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>				on ice			
								24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>							
								48 Hours <input type="checkbox"/>							
Relinquished by: <u>MD</u>		Date/Time: <u>2/28/17 1730</u>		Received by: <u>MD</u>		Date/Time: <u>2-28-17 1730</u>		Sample Integrity:							
								Temperature Upon Receipt: <u>4.1°C</u>							
								Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							

www.s2scientific.com

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.



DCP Operating Company  
 370 17th Street #2500  
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
 Project Manager: Steve Weathers

Reported:  
 03/07/17 08:06

**Sample Receipt Checklist**

S2 Work Order: 1702212  
 Client: DCP/Tasman Client Project ID: CR20 +85  
 Shipped Via: PLU Airbill #: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Cooler ID					
Temp (°C)	4.1				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita  
 Custodian Printed Name

[Signature]  
 Signature or Initials of Custodian

2/28/17 1730  
 Date/Time

[Signature]



DCP Operating Company  
 370 17th Street #2500  
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
 Project Manager: Steve Weathers

**Reported:**  
 03/07/17 08:06

**BH01**  
**1702212-01 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/17 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703008	03/02/17	03/02/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/28/17 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	45-146		"	"	"	"	

Summit Scientific

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DCP Operating Company  
 370 17th Street #2500  
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
 Project Manager: Steve Weathers

**Reported:**  
 03/07/17 08:06

**BH02**  
**1702212-02 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/17 09:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703008	03/02/17	03/02/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>560</b>	1.0	"	"	"	"	"	"	

Date Sampled: **02/28/17 09:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		111 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.0 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	45-146		"	"	"	"	

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DCP Operating Company  
 370 17th Street #2500  
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
 Project Manager: Steve Weathers

**Reported:**  
 03/07/17 08:06

**BH03**  
**1702212-03 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/17 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703008	03/02/17	03/02/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>410</b>	1.0	"	"	"	"	"	"	

Date Sampled: **02/28/17 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		111 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.7 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		97.7 %	45-146		"	"	"	"	

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DCP Operating Company  
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 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
 Project Manager: Steve Weathers

**Reported:**  
 03/07/17 08:06

**BH05**  
**1702212-04 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/17 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703008	03/02/17	03/02/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/28/17 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.9 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	45-146		"	"	"	"	

Summit Scientific

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DCP Operating Company  
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 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
 Project Manager: Steve Weathers

**Reported:**  
 03/07/17 08:06

**BH06**  
**1702212-05 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/17 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703008	03/02/17	03/02/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/28/17 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.6 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.5 %	45-146		"	"	"	"	

Summit Scientific

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 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
 Project Manager: Steve Weathers

**Reported:**  
 03/07/17 08:06

**BH07**  
**1702212-06 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/17 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>4.1</b>	1.0	ug/l	1	1703008	03/02/17	03/02/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>90</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>1400</b>	25	"	25	"	"	"	"	

Date Sampled: **02/28/17 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.8 %	45-146		"	"	"	"	

Summit Scientific

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DCP Operating Company  
370 17th Street #2500  
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

Reported:  
03/07/17 08:06

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

**Summit Scientific**

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

**Batch 1703008 - EPA 5030 Water MS**

**Blank (1703008-BLK1)**

Prepared & Analyzed: 03/01/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		112	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.4	45-146			

**LCS (1703008-BS1)**

Prepared & Analyzed: 03/01/17

Benzene	38.4	1.0	ug/l	33.3		115	51-132			
Toluene	37.8	1.0	"	33.3		113	51-138			
Ethylbenzene	43.0	1.0	"	33.1		130	58-146			
m,p-Xylene	81.5	2.0	"	66.5		123	57-144			
o-Xylene	40.3	1.0	"	32.7		123	53-146			
Surrogate: 1,2-Dichloroethane-d4	15.6		"	13.3		117	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	45-149			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	45-146			

**Matrix Spike (1703008-MS1)**

Source: 1702212-01

Prepared & Analyzed: 03/01/17

Benzene	40.3	1.0	ug/l	33.3	ND	121	34-141			
Toluene	38.5	1.0	"	33.3	ND	116	27-151			
Ethylbenzene	44.4	1.0	"	33.1	ND	134	29-160			
m,p-Xylene	83.6	2.0	"	66.5	ND	126	20-166			
o-Xylene	41.3	1.0	"	32.7	ND	126	33-159			
Surrogate: 1,2-Dichloroethane-d4	15.6		"	13.3		117	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.5	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.6	45-146			

Summit Scientific

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 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
 Project Manager: Steve Weathers

**Reported:**  
 03/07/17 08:06

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

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

**Batch 1703008 - EPA 5030 Water MS**

<b>Matrix Spike Dup (1703008-MSD1)</b>	<b>Source: 1702212-01</b>			<b>Prepared &amp; Analyzed: 03/01/17</b>						
Benzene	40.2	1.0	ug/l	33.3	ND	121	34-141	0.0994	32	
Toluene	39.4	1.0	"	33.3	ND	118	27-151	2.18	25	
Ethylbenzene	44.3	1.0	"	33.1	ND	134	29-160	0.271	50	
m,p-Xylene	83.1	2.0	"	66.5	ND	125	20-166	0.588	36	
o-Xylene	41.4	1.0	"	32.7	ND	127	33-159	0.363	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.9</i>		<i>"</i>	<i>13.3</i>		<i>119</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.2</i>		<i>"</i>	<i>13.3</i>		<i>99.3</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.0</i>		<i>"</i>	<i>13.3</i>		<i>97.9</i>	<i>45-146</i>			

Summit Scientific

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DCP Operating Company  
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Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
03/07/17 08:06

### 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