

# SITE CHARACTERIZATION AND REMEDIATION WORK PLAN

SC-1-13-1  
Eddy County, New Mexico

Prepared for:



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## 1. INTRODUCTION

Tasman Geosciences, Inc. (Tasman) has prepared this Site Characterization and Remediation Work Plan (SCRWP) on behalf of DCP Midstream, LP (DCP) to document the results of field activities that were conducted to characterize subsurface soil conditions at the SC-1-13-1 (Site) located in Eddy County, New Mexico (Figure 1). The Site characterization activities discussed herein were completed on March 13 and 14, 2017 and recommendations for the Site have been included.

## 2. SITE BACKGROUND AND CHARACTERIZATION

The Site is located in New Mexico Oil Conservation Division (OCD) District 2 within the southeast quarter of the southwest quarter of section 28, township 24 south, range 26 east of the Sixth Principal Meridian (Figure 1). The facility coordinates are 32.181699 degrees north and -104.300696 degrees west. The Site is located north of Creosote Road in a rural area surrounded by privately owned land and the nearest town of Carlsbad, New Mexico, is located approximately 14 miles north of the Site.

Subsequent to surfacing of condensate material from an apparent subsurface leak, DCP mobilized to the Site and removed visually impacted soil and located and repaired the line leak. Backfilling of the excavation was conducted and the line was activated. In accordance with the New Mexico Oil and Gas Conservation Commission (NMOCD) *Guidelines for Remediation of Leaks, Spills, and Releases (GRLSR)*, DCP submitted a C-141 Release Notification and Corrective Action Form for the Site.

On March 13, 2017, approximately 48 cubic yards (yd<sup>3</sup>) of stockpiled soil was removed from the Site and transported under waste manifest procedures to the Lea Land Disposal facility in Eddy County, New Mexico. Between March 13 and 14, 2017, drilling and soil sampling activities were conducted using direct push drilling with continuous core sampling methods. Major soil types were identified using the Unified Soil Classification System (USCS) and secondary characteristics such as grain size distribution, moisture content, density/plasticity, and visual/olfactory impacts were noted during borehole logging and soil sampling activities. Soil boring logs are included in Appendix A and the borehole global positioning system (GPS) coordinate locations were collected and are illustrated on Figure 2. Based on drilling and soil sampling, the Site subsurface typically consists of fine sand, silt, and clays with some gravel and caliche deposits. Groundwater was not encountered within any of the soil borings that were conducted.

During direct push drilling activities, a one quart zip-lock bag was filled half full with an aliquot of soil from the boring. Traditional headspace sampling techniques approved by the NMOCD were applied and the samples were analyzed in the field for volatile organic compound (VOC) concentrations using a photoionization detector (PID). Soil samples were collected from the locations illustrated on Figure 2 and were appropriately packaged and submitted under chain of custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico for analysis of BTEX using USEPA Method 8021B and total petroleum hydrocarbons gasoline range organics (TPH-GRO) and TPH diesel range organics (DRO) using USEPA Method 8015. Additionally, four samples from the area of disturbance (AOD) illustrated on Figure 2 and

one “background” sample from outside of the AOD were submitted to Cardinal for chloride analysis using USEPA Method SM 4500CL-B.

Soil impacts exceeding the NMOCD Action Levels for TPH were confirmed by PID readings and laboratory analysis at five soil boring locations (BH01, BH02, BH13, BH14, and BH17) between zero and five feet below ground surface (bgs). Soil samples at each of those five locations were collected below the 5-foot interval and were returned below the NMOCD Action Levels indicating that the vertical extents of petroleum hydrocarbon impacts were delineated. Soil samples from the remaining 12 AOD soil boring locations (BH03 through BH12, BH15, and BH16) were all returned below the NMOCD Action Levels for TPH. Additionally, laboratory analytical results for BTEX were not above the NMOCD Action Levels at any of the soil boring locations.

Chlorides were observed above the NMOCD guideline of 250 milligrams per kilogram within soil sample BH01@0-5’ with a detected concentration of 1,410 milligrams per kilogram (mg/kg). The remaining AOD chloride samples BH03@05’ (192 mg/kg), BH05@05’ (128 mg/kg), and BH16@0-5’ (192 mg/kg) were below the NMOCD guideline. However, as described above, one additional soil boring outside of the AOD as illustrated on Figure 2 was advanced to 16 feet bgs. A chloride soil sample was collected from the soil boring (BH18@14-16’) to act as a background comparison sample and the laboratory analytical result was above the NMOCD guideline with a detected concentration of 288 mg/kg. The soil sample laboratory analytical results are summarized in Table 1 and the laboratory analytical reports are included in Appendix B.

To assess the potential for impact to human, environmental, and cultural receptors, aerial photographs and online directories were consulted and a visual reconnaissance of the surrounding area was conducted. During the initial Site assessment, it was determined that no permitted water wells are located within a one-mile radius of the Site. Based on visual observations and a review of aerial photographs, the Site is not located within 1,000 feet of any known or labeled surface water bodies and surface water generally follows the Site topography to the north towards an unnamed intermittent riverine flood plain. Additionally, no permanent structures including habitable public and/or private buildings or residences (not related to oil and gas production activities) are located within a one-mile radius of the Site.

In accordance with Section IV of the *GRLSR*, soils which are contaminated by petroleum constituents are scored according to the ranking criteria summarized below to determine their relative threat to public health, fresh waters, and the environment. Based on the ranking criteria outlined in the *GRLSR*, the soil action levels for the Site include:

- Benzene - 10 milligrams per kilogram (mg/kg).
- Total BTEX – 50 mg/kg; and,
- Total Petroleum Hydrocarbons (TPH) – 100 mg/kg.

### 3. REMEDIATION WORK PLAN

Physical and laboratory analysis confirm that soil impacts exceeding the NMOCD Cleanup Goals for TPH and Chlorides were exceeded at the Site. As summarized on Table 1, TPH exceedances were observed between zero to 5-feet bgs in the vicinity of BH01, BH02, BH13, BH14, and BH17. However, the vertical extents of petroleum hydrocarbon impacts were confirmed through laboratory analysis and PID readings that were collected at those locations. Chlorides were observed above the NMOCD guideline of 250 mg/kg within borehole BH01 as well as the background sample at BH18. Based on the information that has been gathered through the field activities described herein and the estimated extent of TPH impacted soils, approximately 120 cubic yards (cy) of petroleum hydrocarbon impacted material is present at the Site.

Groundwater was not encountered during any of the field activities described herein. Additionally, based on the soil sample laboratory analytical data and PID readings that were collected, the vertical extents of petroleum hydrocarbon impacted soil have been delineated and do not extend to the static groundwater interval below the Site.

Due to the relatively small amount of petroleum hydrocarbon impacted soil as well as the location and lateral and vertical extents of the soil impacts, mechanical excavation and subsequent disposal at an approved facility has been chosen as the preferred remedial alternative for this Site. The anticipated extent of the impacted soil excavation area is illustrated on Figure 2. Excavated soil will be transported under manifesting procedures to the Lea Land Inc. Landfill in Eddy County, NM. Soil samples from the excavation sidewalls and base will be collected and field screened using PID headspace sampling techniques to verify that impacted soil is completely removed. Soil samples will be submitted to Cardinal for laboratory analysis of TPH-GRO/DRO using USEPA Method 8015. Additionally, soil samples that are collected from the base of the excavation will be submitted to Cardinal for laboratory analysis of Chlorides using USEPA Method SM 4500CL-B. Once clean extents have been verified through laboratory analysis, backfill material will be placed within the excavation and compacted to the surface in 1-foot lifts.

## Tables

**TABLE 1**  
**DCP SC-1-13-1**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (Feet bgs)	PID Readings (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH - GRO (mg/kg)	TPH - DRO (mg/kg)	TPH <sup>(2)</sup> GRO/DRO (mg/kg)	Chloride (mg/kg)
BH01 @ 0-4'	3/13/2017	0-4	389.4	<0.050	<0.050	<0.050	<0.150	<0.300	<b>155</b>	<b>2,160</b>	<b>2,315</b>	<b>1,410</b>
BH01 @ 8-12'	3/13/2017	8-12	29.1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	25.8	25.8	NA
BH02 @ 0-4'	3/13/2017	0-4	7.8	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<b>121</b>	<b>121</b>	NA
BH02 @ 13-16'	3/13/2017	13-16	1.6	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH03 @ 0-5'	3/13/2017	0-5	1.6	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	192
BH04 @ 0-5'	3/13/2017	0-5	1.8	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH05 @ 0-5'	3/13/2017	0-5	1.3	NA	NA	NA	NA	NA	NA	NA	NA	128
BH05 @ 5-10'	3/13/2017	5-10	1.6	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH06 @ 5-10'	3/14/2017	5-10	1.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH07 @ 5-10'	3/14/2017	5-10	1.8	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	16.7	16.7	NA
BH08 @ 5-11'	3/14/2017	5-11	2.3	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH09 @ 0-5'	3/14/2017	0-5	2.2	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH10 @ 0-5'	3/14/2017	0-5	1.8	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH11 @ 10-14'	3/14/2017	10-14	3.4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH12 @ 0-5'	3/14/2017	0-5	3.9	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH13 @ 0-5'	3/14/2017	0-5	322.1	<0.050	<0.050	<0.050	0.561	0.561	67.5	<b>762</b>	829.5	NA
BH13 @ 5-10'	3/14/2017	5-10	7.4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH14 @ 0-5'	3/14/2017	0-5	118.2	<0.050	<0.050	<0.050	<0.150	<0.300	19.6	<b>538</b>	557.6	NA
BH14 @ 5-10'	3/14/2017	5-10	2.8	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH15 @ 14-16'	3/14/2017	14-16	1.2	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH16 @ 0-5'	3/14/2017	0-5	3.3	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	192

**TABLE 1**  
**DCP SC-1-13-1**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (Feet bgs)	PID Readings (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH - GRO (mg/kg)	TPH - DRO (mg/kg)	TPH <sup>(2)</sup> GRO/DRO (mg/kg)	Chloride (mg/kg)
BH17 @ 0-5'	3/14/2017	0-5	3.1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<b>1,120</b>	<b>1,120</b>	NA
BH17 @ 13-16'	3/14/2017	13-16	2.3	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	NA
BH18 @ 14-16'	3/14/2017	14-16	1.8	NA	NA	NA	NA	NA	NA	NA	NA	<b>288</b>
<b>NMOCD Action Levels - Soil (mg/kg) <sup>(1)</sup></b>				<b>10</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>50</b>	<b>NA</b>	<b>NA</b>	<b>100</b>	<b>250</b>

Notes:

1). Standards for Soil are taken from NMOCD Guidelines for Remediation of Leaks, Spills and Releases, 1993, total ranking >19

2). TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

**Bold** indicates concentration exceeds NMOCD Action Levels.

GRO - Gasoline range organics.

DRO - Diesel range organics.

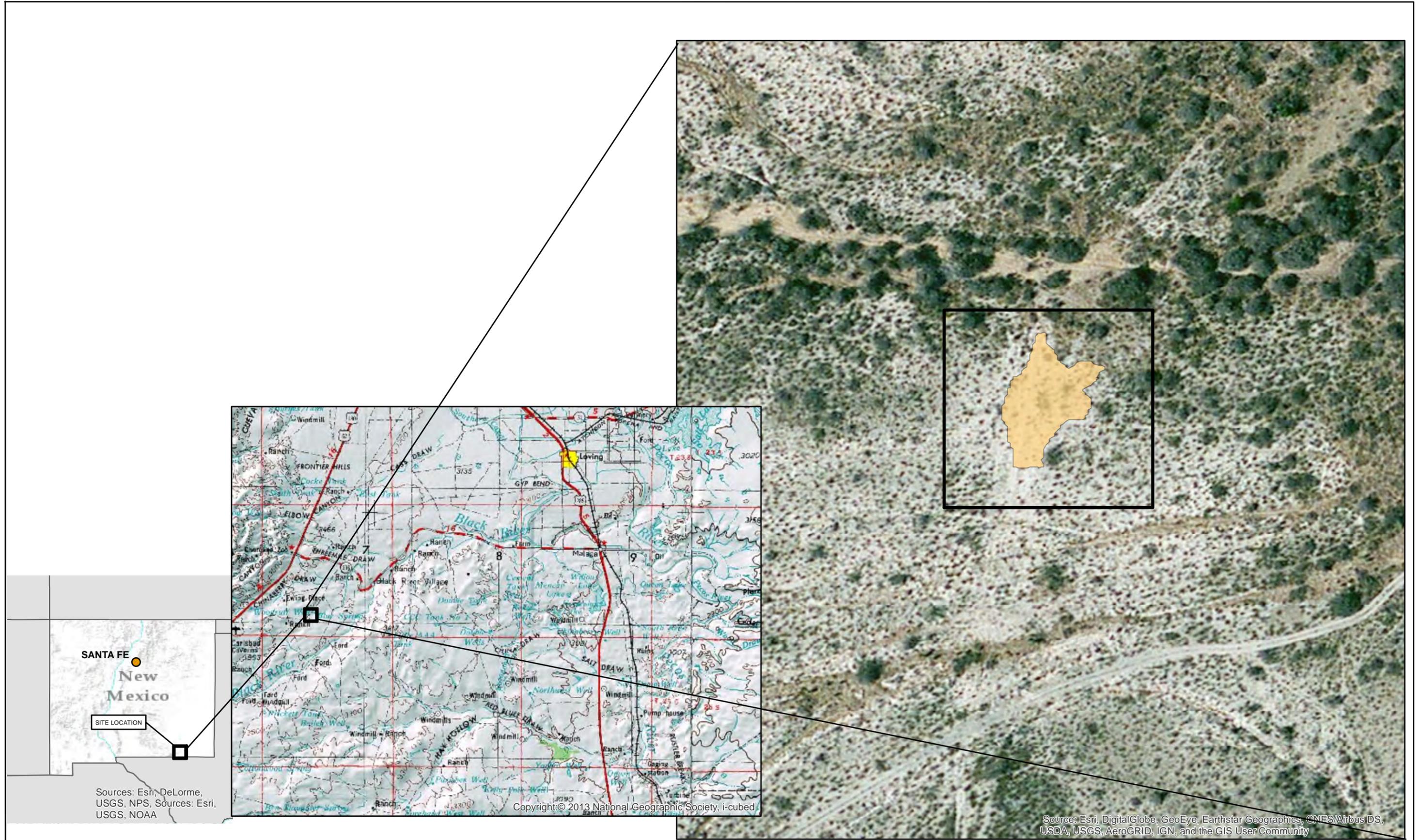
mg/kg= Milligrams per kilogram.

bgs - Below ground surface.

ppm - Parts per million

NA - Not applicable

Figures



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

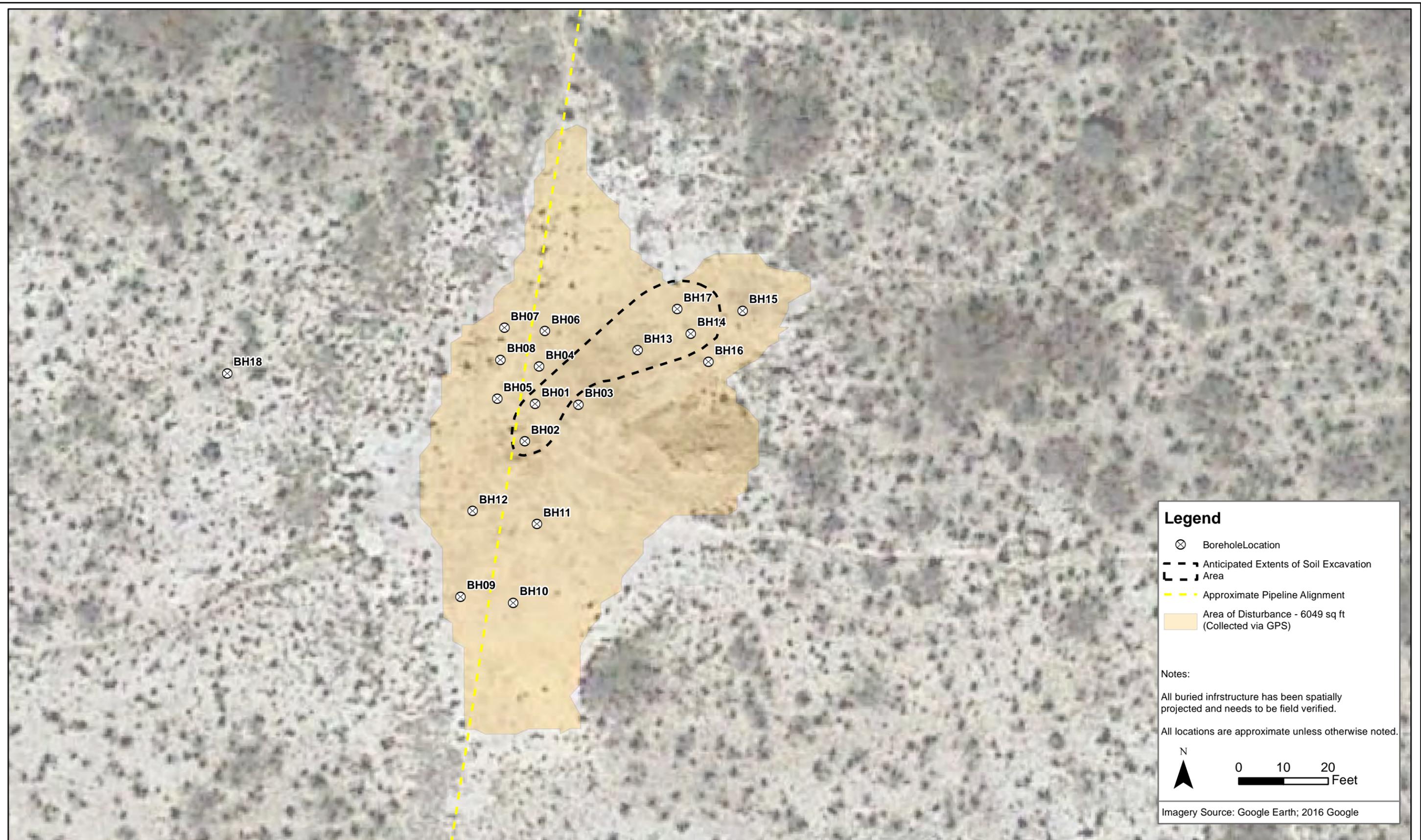


**TASMAN**  
 GEOSCIENCES  
 Tasman Geosciences, Inc.  
 6899 Pecos Street - Unit C  
 Denver, CO 80221

**DCP Midstream**  
**SC-1-13-1**  
 SE 1/4, SW 1/4, Section 28, Township 24 South, Range 26 East  
 Eddy County, New Mexico

Site Location  
 Map

Figure  
 1



DATE: May 2017

DESIGNED BY: K. Norman

DRAWN BY: D. Arnold



**DCP Midstream**  
**SC-1-13-1**  
SESW Section 28, Township 24 South, Range 26 East  
Eddy County, New Mexico

Soil Sample Location  
Map

Figure  
2

## Appendix A

Boring/Well ID #: **BH 01**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **DGP Midstream**  
 Date Started: **3-13-2017**      Location: **Eddy County, NM**  
 Date Completed: **3-13-2017**      TOC Elevation: **N/A**      DTW: **Not Encountered**  
 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**  
 Bit Size: **2-inch**      Project Manager: **Brian Humphrey**

 Drilling Company: **Tasman**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1					1220	SC	
2		Macro Core					Light Brown Hydro Carbon Clayey Sand Smell
3			75%	387.4	✓		
4					Yes		
5						SC	
6					1231		Slightly Damp
7			75%	112			Light Brown Hydro Carbon Clayey Sand Smell
8							
9							
10					1242	GC	Slightly Damp
11			100%	29.1	Yes ✓	<del>GC</del>	Clayey with some Gravel Sand
12							
13					1250		
14			100%	1.2	tbold	CL	Light Brown Clay with some Gravel
15							
16			100%	0.9	1360	CL	Light Brown Sandy Clay
17							
18							
19							
20							
21							
22							
23							
24							
25							

Boring/Well ID #: BH02      SITE NAME: SC-7-13-1      CLIENT NAME: DCP Midstream  
 Date Started: 3-13-17      Location: Eddy County, NM  
 Date Completed: 3-13-17      TOC Elevation: N/A      DTW: Not Encountered  
 Type of Drill: Direct Push      Geologist: Kyle Norman  
 Bit Size: 2 inch      Project Manager: Brian Humphrey  
 Drilling Company: Tasman

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							
2		Macro Core		7.8	13 14	SC	Sandy Clay w/some Caliche Light Brown
3			80%		Yes		
4							
5							Slight Odor
6			100%	4.8		SC	As Above
7					13 20		
8							
9							
10							
11			100%	0.9	13 25	CH	Light Brown Fat Clay
12							
13							
14							
15		✓	100%	1.6	13 32	CH	Light Brown Fat Clay w/some Caliche
16					Yes		
17							
18							
19							
20							
21							
22							
23							
24							
25							

## Borehole Logging Form

Boring/Well ID #: <b>BH03</b>	SITE NAME: <b>SC-1-13-1</b>	CLIENT NAME: <b>PCP Midstream</b>
Date Started: <b>3-13-17</b>	Location: <b>Eddy County, NM</b>	
Date Completed: <b>3-13-17</b>	TOC Elevation: <b>N/A</b>	DTW: <b>Not Encountered</b>
Type of Drill: <b>Direct Push</b>	Geologist: <b>Kyle Norman</b>	
Bit Size: <b>2 inch</b>	Project Manager: <b>Brian Humphrey</b>	
Drilling Company: <b>Tasman</b>		

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; width: 2px; height: 100%;"></div> <div style="margin: 0 5px;">↓</div> </div>							
2		Macro Core	<del>100%</del>		1352			
3			100%	1.6	<del>SC</del> Yes	SC	Light Brown Sandy Clay	
4								
5								
6								
7				80%	1.0	1357		
8				<del>100%</del>		<del>SC</del>	SC	Light Brown Sandy Clay
9								
10								
11								
12				<del>100%</del> 100%	1.2	1402	SC	Clayey Sandy Soil Light Brown
13								
14								
15				<del>100%</del> 100%	1.5	1408 Hold	SC	Clayey Sandy Soil Light Brown
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Boring/Well ID #: *BH04*      SITE NAME: *SC-1-13-1*      CLIENT NAME: *DCP Midstream*  
 Date Started: *3-13-17*      Location: *Eddy County, NM*  
 Date Completed: *3-13-17*      TOC Elevation: *N/A*      DTW: *Not Encountered*  
 Type of Drill: *Direct Push*      Geologist: *Kyle Norman*  
 Bit Size: *2 inch*      Project Manager: *Brian Humphrey*

 Drilling Company: *Tasman*

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							
2					<i>1455</i>	<i>SC</i>	<i>Sandy Light Brown Clay</i>
3		<i>Macro Core</i>	<i>75%</i>	<i>1.8</i>	<i>Yes</i>		
4							
5							
6							
7			<i>100%</i>	<i>1.8</i>	<i>1505</i>	<i>SC</i>	<i>Sandy Light Brown Clay</i>
8		<i>Macro Core</i>			<i>Hold</i>		
9							
10							
11		<i>Macro Core</i>					
12			<i>100%</i>	<i>1.0</i>	<i>1522</i>	<i>SC</i>	<i>Sandy Light Brown Clay w/some Caliche</i>
13							
14							
15		<i>Macro Core</i>	<i>100%</i>	<i>0.9</i>	<i>1526</i>	<i>SC</i>	<i>as Above</i>
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

## Borehole Logging Form

Boring/Well ID #: BH05      SITE NAME: SC-1-13-1      CLIENT NAME: DCP Midstream  
 Date Started: 3-13-17      Location: Eddy County, NM  
 Date Completed: 3-13-17      TOC Elevation: N/A      DTW: Not Encountered  
 Type of Drill: Direct Push      Geologist: Kyle Norman  
 Bit Size: 2 inch      Project Manager: Brian Humphrey  
 Drilling Company: Tasman

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							
2							
3		<del>Top</del>	100%	1.3	1540	SC	Sandy Light Brown Clay With some Caliche
4		Macro Core			<del>15</del>		
5							
6							
7						SC	As Above
8			100%	1.6	15:50		
9					Yes		
10							
11					1600	SC	Sandy Light Brown Clay
12			100%	1.3	Hold		
13							
14							
15			100%	1.1	1605	SC	as Above
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Boring/Well ID #: **BH 06**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **DCP Midstream**

 Date Started: **3-14-17**      Location: **Eddy County, NM**  
 Date Completed: **3-14-17**      TOC Elevation: **N/A**      DTW: **Not Encountered**

 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**

 Bit Size: **2-inch**      Project Manager: **Brian Humphrey**

 Drilling Company: **Tasman**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	[Vertical line]							
2						SC	Sandy Clay, Light Brown dry	
3		Macro Core	100%	0.9	0848			
4					Yes			
5								
6								
7					1.0		SC	Sandy Clay, Light Brown with some Caliche
8				100%		0855		
9								
10								
11								
12				100%	0.6	0900	CL	Clayey Sand, Light Brown with some Caliche
13								
14								
15			✓	100%	1.0	0908 Hold	CL	as Above
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Boring/Well ID #: **BH07**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **DCP Midstream**  
 Date Started: **3-14-17**      Location: **Eddy County, NM**  
 Date Completed: **3-14-17**      TOC Elevation: **N/A**      DTW: **Not Encountered**  
 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**  
 Bit Size: **2 inch**      Project Manager: **Brian Humphrey**  
 Drilling Company: **Tasman**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	[Well Completion Column]							
2					0915	SC	Sandy <sup>dry</sup> Clay Light Brown	
3		Macro Core	100%					
4					0.5			
5								
6								
7						0920	SC	Sandy Clay Light Brown With some Caliche
8				100%	1.8	Yes		
9								
10								
11							CL	Clayey Sand Light Brown With some Caliche
12				100%	1.3	0926		
13						Hold		
14								
15	Hard caliche							
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Boring/Well ID #: *BH08*      SITE NAME: *SC-1-134*      CLIENT NAME: *DCP Midstream*  
 Date Started: *3-14-17*      Location: *Eddy County, NM*  
 Date Completed: *3-14-17*      TOC Elevation: *N/A*      DTW: *Not Encountered*  
 Type of Drill: *Direct Push*      Geologist: *Kyle Norman*  
 Bit Size: *2 inch*      Project Manager: *Brian Humphrey*  
 Drilling Company: *Tasman*

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1								
2					<i>0943</i>	<i>SC</i>	<i>Sandy Clay, Light Brown</i>	
3		<i>Macro Core</i>	<i>100%</i>	<i>1.5</i>				
4								
5								
6								
7				<i>100%</i>	<i>2.3</i>	<i>0950</i>	<i>SC</i>	<i>as Above</i>
8					<i>Yes</i>			
9								
10								
11								
12								
13								
14				<i>100%</i>	<i>1.4</i>	<i>0955</i>	<i>CL</i>	<i>Clay Sand Light Brown With some Caliche</i>
15						<i>Hold</i>		
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Boring/Well ID #: BH09      SITE NAME: SC-1-13-1      CLIENT NAME: PEP Midstream  
 Date Started: 3-14-17      Location: Eddy County, NM  
 Date Completed: 3-14-17      TOC Elevation: N/A      DTW: Not Encountered  
 Type of Drill: Direct Push      Geologist: Kyle Norman  
 Bit Size: 2 inch      Project Manager: Brian Humphrey  
 Drilling Company: Tasman

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							
2							
3		Macro Core	100%	2.2	1008 Yes	SC	Sandy Clay, Light Brown
4							
5							
6							
7				1.8	1013 Hold	SC	Sandy Clay, Light Brown With Some Caliche
8			100%				
9							
10							
11							
12			100%	1.8	1025	CL	Clay, Sand Light Brown With Caliche
13							
14							
15			100%	1.1	1030	SC	Sandy Clay Light Brown With Caliche
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

## Borehole Logging Form

Boring/Well ID #: **BH 10**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **DCP Midstream**  
 Date Started: **3-14-17**      Location: **Eddy County, NM**  
 Date Completed: **3-14-17**      TOC Elevation: **N/A**      DTW: **Not Encountered**  
 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**  
 Bit Size: **2 inch**      Project Manager: **Brian Humphrey**  
 Drilling Company: **Tasman**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							
2			100%	1.8	10 45	SC	Sandy Clay Light + Brown with Caliche
3		Macro Core			Yes		
4							
5							
6							
7			100%	0.8	10 53	SL	AS Above
8							
9							
10							
11							
12			100%	1.7	11 00 Hold	SC	AS Above
13							
14							
15			100%	0.8	11 10	SC	AS Above
16		↓					With Gravel
17							
18							
19							
20							
21							
22							
23							
24							
25							

## Borehole Logging Form

Boring/Well ID #: **BH 11**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **DCP Midstream**  
 Date Started: **3-14-17**      Location: **Eddy County, NM**  
 Date Completed: **3-14-17**      TOC Elevation: **N/A**      DTW: **Not Encountered**  
 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**  
 Bit Size: **2 inch**      Project Manager: **Brian Humphrey**

Drilling Company: **Tasman**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							
2							
3		Macro Core	100%	0.8	1299	SC	Sandy Clay Light Brown
4							
5							
6							
7					1218	SC	As Above
8			100%	2.3			
9							
10							
11							
12			100%	3.4	1226 Yes	CL	Clay Sand Light Brown With some Catclay
13							
14							
15			100%	2.2	1232	CL	as Above
16					Hold		
17							
18							
19							
20							
21							
22							
23							
24							
25							

## Borehole Logging Form

Boring/Well ID #: **BH 12**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **DCP Midstream**  
 Date Started: **3-14-77**      Location: **Eddy County, NM**  
 Date Completed: **3-14-77**      TOC Elevation: **N/A**      DTW: **Not Encountered**  
 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**  
 Bit Size: **2 inch**      Project Manager: **Brian Humphrey**

Drilling Company: **Tasman**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1								
2					12 35	SC	Sandy Clay Light Brown w/ some Caliche	
3		Macro Core	100%	3.9	Yes			
4								
5								
6								
7								
8				100%	2.6	12 42	CL	Clay Sand Light Brown w/ Caliche
9								
10								
11								
12				100%	3.3	12 55	CL	As Above
13						Hold		
14								
15							@ 14' Hard Rock	
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Boring/Well ID #: **BH 13**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **DCP Midstream**

 Date Started: **3-14-17**      Location: **Eddy County, NM**

 Date Completed: **3-14-17**      TOC Elevation: **N/A**      DTW: **Not Encountered**

 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**

 Bit Size: **2 inch**      Project Manager: **Brian Humphrey**

 Drilling Company: **Tasman**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							
2							<i>Slight odor</i>
3		Macro Core	100%	322	13 12	SC	Sandy Clay Light Brown
4					Yes		
5							
6							
7			100%	7.4	13 16	CL	Clay Sandy Light+Brown With some Caliche
8					Yes		
9							
10							
11					1320	CL	As Above
12			100%	3.5	Hold		
13							
14			100%	2.7	13 25	CL	As Above
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

**Borehole Logging Form**

Boring/Well ID #: **BH14**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **Dcp Midstream**  
 Date Started: **3-14-17**      Location: **Eddy County, NM**  
 Date Completed: **3-14-17**      TOC Elevation: **N/A**      DTW: **Not Encountered**  
 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**  
 Bit Size: **2 inch**      Project Manager: **Brian Humphrey**  
 Drilling Company: **Tasman**

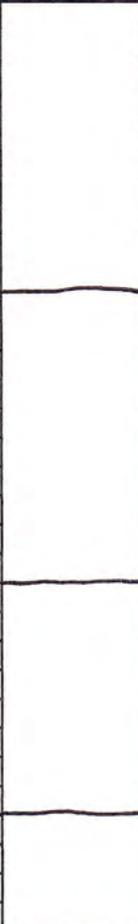
Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							
2		Macro		<del>18.2</del>			Slight odor
3		Core	100%	18.2	1355	SC	Sandy Clay Light Brown
4					Yes		
5							
6							
7			100%	2.8	1402	SC	Sandy Clay Light Brown
8					Yes		
9							
10							
11			100%		1408		
12				2.3	Hold	SC	Sandy Clay Light Brown w/some calcite
13							
14							
15			100%	3.0	1416	SC	As Above
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Boring/Well ID #: **BH15**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **DCP Midstream**  
 Date Started: **3-14-17**      Location: **Eddy County, NM**  
 Date Completed: **3-14-17**      TOC Elevation: **N/A**      DTW: **Not Encountered**  
 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**  
 Bit Size: **2 inch**      Project Manager: **Brian Humphrey**  
 Drilling Company: **Tasman**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description		
1	↓	Macro Core	100%						
2					<del>7.5</del> 1422	SC	Sandy Clay Light Brown		
3					0.5				
4									
5									
6									
7					100%	0.6	1428	SC	Sandy Clay Light Brown w/ some caliche
8									
9									
10									
11									
12					100%	1.1	1433	SC	As Above
13									
14									
15					100%	1.2	1438	SC	As Above
16							Yes		
17									
18									
19									
20									
21									
22									
23									
24									
25									

## Borehole Logging Form

Boring/Well ID #: **BH 16**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **DCP Midstream**  
 Date Started: **3-14-17**      Location: **Eddy County, NM**  
 Date Completed: **3-14-17**      TOC Elevation: **N/A**      DTW: **Not Encountered**  
 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**  
 Bit Size: **2 inch**      Project Manager: **Brian Humphrey**  
 Drilling Company: **Tasman**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1								
2		Macro Core	100%	3.3	1452	SC	Sandy Clay, Light Brown	
3					Yes			
4								
5								
6								
7				100%	1.4	1458	SC	As Above
8								
9								
10								
11								
12				100%	1.5	1505	SC	As Above With some Caliche
13								
14								
15				100%	1.7	1512	SC	As Above With some Caliche
16			↓			Hold		
17								
18								
19								
20								
21								
22								
23								
24								
25								

Boring/Well ID #: <b>BH 17</b>	SITE NAME: <b>SC-1-13-1</b>	CLIENT NAME: <b>DCP Midstream</b>
Date Started: <b>3-14-17</b>	Location: <b>Eddy County, NM</b>	
Date Completed: <b>3-14-17</b>	TOC Elevation: <b>N/A</b>	DTW: <b>Not Encountered</b>
Type of Drill: <b>Direct Push</b>	Geologist: <b>Kyle Norman</b>	
Bit Size: <b>2 inch</b>	Project Manager: <b>Brian Humphrey</b>	
Drilling Company: <b>Tasman</b>		

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1		Macro Core	100%	3.1	1520	SC	Sandy Clay, Light Brown	
2								Yes
3								
4								
5								
6								
7				100%	2.2	1525	SC	As Above
8								
9								
10								
11				100%	1.5	1530	SC	As Above
12								
13								
14				100%	2.3	1535	SC	As Above
15						Hold		
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Boring/Well ID #: **BH 18**      SITE NAME: **SC-1-13-1**      CLIENT NAME: **DCP Midstream**  
 Date Started: **3-14-17**      Location: **Eddy County, NM**  
 Date Completed: **3-14-17**      TOC Elevation: **N/A**      DTW: **Not Encountered**  
 Type of Drill: **Direct Push**      Geologist: **Kyle Norman**  
 Bit Size: **2 inch**      Project Manager: **Brian Humphrey**  
 Drilling Company: **Tasman**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1								
2		Macro Core	100%	5.5	1545	SC	Sandy Clay, Light Brown	
3								
4								
5								
6								
7				100%	6.4	1552	SC	As Above
8								
9								
10								
11								
12				100%	3.2	1600	SC	As Above With Caliche
13								
14								
15				100%	1.8	1606	SC	As Above With Caliche
16			↓			Yes CL		
17								
18								
19								
20								
21								
22								
23								
24								
25								

## Appendix B



March 17, 2017

HACK CONDER

DCP Midstream - Midland

10 Desta Dr., #400-W

Midland, TX 79705

RE: SC -1-13-1

Enclosed are the results of analyses for samples received by the laboratory on 03/14/17 18:26.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Midland  
 HACK CONDER  
 10 Desta Dr., #400-W  
 Midland TX, 79705  
 Fax To: None

 Received: 03/14/2017  
 Reported: 03/17/2017  
 Project Name: SC -1-13-1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 03/13/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH01 0' - 4' (H700649-01)**

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/14/2017	ND	2.03	101	2.00	4.03	
Toluene*	<0.050	0.050	03/14/2017	ND	1.89	94.6	2.00	4.09	
Ethylbenzene*	<0.050	0.050	03/14/2017	ND	1.87	93.7	2.00	4.51	
Total Xylenes*	<0.150	0.150	03/14/2017	ND	5.34	89.1	6.00	4.35	
Total BTEX	<0.300	0.300	03/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 186 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>1410</b>	16.0	03/14/2017	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>155</b>	10.0	03/14/2017	ND	196	98.1	200	2.00	
<b>DRO &gt;C10-C28</b>	<b>2160</b>	10.0	03/14/2017	ND	200	100	200	0.123	

Surrogate: 1-Chlorooctane 132 % 25.1-158

Surrogate: 1-Chlorooctadecane 141 % 26.8-170

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Midland  
 HACK CONDER  
 10 Desta Dr., #400-W  
 Midland TX, 79705  
 Fax To: None

 Received: 03/14/2017  
 Reported: 03/17/2017  
 Project Name: SC -1-13-1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 03/13/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH01 8' - 12' (H700649-02)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/14/2017	ND	2.03	101	2.00	4.03	
Toluene*	<0.050	0.050	03/14/2017	ND	1.89	94.6	2.00	4.09	
Ethylbenzene*	<0.050	0.050	03/14/2017	ND	1.87	93.7	2.00	4.51	
Total Xylenes*	<0.150	0.150	03/14/2017	ND	5.34	89.1	6.00	4.35	
Total BTEX	<0.300	0.300	03/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/14/2017	ND	196	98.1	200	2.00	
<b>DRO &gt;C10-C28</b>	<b>25.8</b>	10.0	03/14/2017	ND	200	100	200	0.123	

Surrogate: 1-Chlorooctane 97.7 % 25.1-158

Surrogate: 1-Chlorooctadecane 86.1 % 26.8-170

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Midland  
 HACK CONDER  
 10 Desta Dr., #400-W  
 Midland TX, 79705  
 Fax To: None

 Received: 03/14/2017  
 Reported: 03/17/2017  
 Project Name: SC -1-13-1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 03/13/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH02 0' - 4' (H700649-04)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/14/2017	ND	2.03	101	2.00	4.03	
Toluene*	<0.050	0.050	03/14/2017	ND	1.89	94.6	2.00	4.09	
Ethylbenzene*	<0.050	0.050	03/14/2017	ND	1.87	93.7	2.00	4.51	
Total Xylenes*	<0.150	0.150	03/14/2017	ND	5.34	89.1	6.00	4.35	
Total BTEX	<0.300	0.300	03/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/14/2017	ND	196	98.1	200	2.00	
<b>DRO &gt;C10-C28</b>	<b>121</b>	10.0	03/14/2017	ND	200	100	200	0.123	

Surrogate: 1-Chlorooctane 101 % 25.1-158

Surrogate: 1-Chlorooctadecane 99.0 % 26.8-170

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Midland  
 HACK CONDER  
 10 Desta Dr., #400-W  
 Midland TX, 79705  
 Fax To: None

 Received: 03/14/2017  
 Reported: 03/17/2017  
 Project Name: SC -1-13-1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 03/13/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH02 13' - 16' (H700649-05)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2017	ND	1.97	98.6	2.00	1.14		
Toluene*	<0.050	0.050	03/15/2017	ND	1.84	91.9	2.00	1.47		
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.83	91.5	2.00	1.59		
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.22	86.9	6.00	1.74		
Total BTEX	<0.300	0.300	03/15/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/15/2017	ND	195	97.6	200	0.583		
DRO >C10-C28	<10.0	10.0	03/15/2017	ND	206	103	200	0.0802		

Surrogate: 1-Chlorooctane 99.6 % 25.1-158

Surrogate: 1-Chlorooctadecane 106 % 26.8-170

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Midland  
 HACK CONDER  
 10 Desta Dr., #400-W  
 Midland TX, 79705  
 Fax To: None

 Received: 03/14/2017  
 Reported: 03/17/2017  
 Project Name: SC -1-13-1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 03/13/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH03 0' - 5' (H700649-06)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/14/2017	ND	2.03	101	2.00	4.03		
Toluene*	<0.050	0.050	03/14/2017	ND	1.89	94.6	2.00	4.09		
Ethylbenzene*	<0.050	0.050	03/14/2017	ND	1.87	93.7	2.00	4.51		
Total Xylenes*	<0.150	0.150	03/14/2017	ND	5.34	89.1	6.00	4.35		
Total BTEX	<0.300	0.300	03/14/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	03/17/2017	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/14/2017	ND	196	98.1	200	2.00		
DRO >C10-C28	<10.0	10.0	03/14/2017	ND	200	100	200	0.123		

Surrogate: 1-Chlorooctane 101 % 25.1-158

Surrogate: 1-Chlorooctadecane 89.3 % 26.8-170

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Midland  
 HACK CONDER  
 10 Desta Dr., #400-W  
 Midland TX, 79705  
 Fax To: None

 Received: 03/14/2017  
 Reported: 03/17/2017  
 Project Name: SC -1-13-1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 03/13/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH04 0' - 5' (H700649-08)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/14/2017	ND	2.03	101	2.00	4.03		
Toluene*	<0.050	0.050	03/14/2017	ND	1.89	94.6	2.00	4.09		
Ethylbenzene*	<0.050	0.050	03/14/2017	ND	1.87	93.7	2.00	4.51		
Total Xylenes*	<0.150	0.150	03/14/2017	ND	5.34	89.1	6.00	4.35		
Total BTEX	<0.300	0.300	03/14/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/14/2017	ND	196	98.1	200	2.00		
DRO >C10-C28	<10.0	10.0	03/14/2017	ND	200	100	200	0.123		

Surrogate: 1-Chlorooctane 99.6 % 25.1-158

Surrogate: 1-Chlorooctadecane 94.0 % 26.8-170

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Midland  
 HACK CONDER  
 10 Desta Dr., #400-W  
 Midland TX, 79705  
 Fax To: None

 Received: 03/14/2017  
 Reported: 03/17/2017  
 Project Name: SC -1-13-1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 03/13/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH05 5' - 10' (H700649-10)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/14/2017	ND	2.03	101	2.00	4.03		
Toluene*	<0.050	0.050	03/14/2017	ND	1.89	94.6	2.00	4.09		
Ethylbenzene*	<0.050	0.050	03/14/2017	ND	1.87	93.7	2.00	4.51		
Total Xylenes*	<0.150	0.150	03/14/2017	ND	5.34	89.1	6.00	4.35		
Total BTEX	<0.300	0.300	03/14/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/14/2017	ND	196	98.1	200	2.00		
DRO >C10-C28	<10.0	10.0	03/14/2017	ND	200	100	200	0.123		

Surrogate: 1-Chlorooctane 100 % 25.1-158

Surrogate: 1-Chlorooctadecane 101 % 26.8-170

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

- S-04            The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND             Analyte NOT DETECTED at or above the reporting limit
- RPD            Relative Percent Difference
- \*\*              Samples not received at proper temperature of 6°C or below.
- \*\*\*             Insufficient time to reach temperature.
- Chloride by SM450Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

*RUSH*

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

**BILL TO**

**ANALYSIS REQUEST**

Company Name: *DCP Midstream* P.O. #: *F-2161*  
 Project Manager: *Brian Humphrey / Hock Condar* Company: \_\_\_\_\_  
 Address: \_\_\_\_\_ Attn: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_  
 Project #: \_\_\_\_\_ Project Owner: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Project Name: \_\_\_\_\_ Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_  
 Project Location: *SC-1-13-Y'*  
 Sampler Name: *Kyle Norman*

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)GRAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS	REMARKS		
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :						
<i>HTD0049</i>	BH01 0-4'	<i>G</i>	<i>1</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>3-13-17</i>	<i>12:20</i>	<i>BTET</i>	<i>TPH</i>	<i>CL</i>					
<i>1</i>	BH01 8'-12'			<input checked="" type="checkbox"/>	<input type="checkbox"/>						<i>HOLD</i>				
<i>2</i>	BH01 12'-15'			<input checked="" type="checkbox"/>	<input type="checkbox"/>						<i>HOLD</i>				
<i>3</i>	BH02 0-4'			<input checked="" type="checkbox"/>	<input type="checkbox"/>						<i>HOLD</i>				
<i>4</i>	BH02 13'-16'			<input checked="" type="checkbox"/>	<input type="checkbox"/>						<i>HOLD</i>				
<i>5</i>	BH03 0-5'			<input checked="" type="checkbox"/>	<input type="checkbox"/>						<i>HOLD</i>				
<i>6</i>	BH03 14'-16'			<input checked="" type="checkbox"/>	<input type="checkbox"/>						<i>HOLD</i>				
<i>7</i>	BH04 0-5'			<input checked="" type="checkbox"/>	<input type="checkbox"/>						<i>HOLD</i>				
<i>8</i>	BH04 5'-10'			<input checked="" type="checkbox"/>	<input type="checkbox"/>						<i>HOLD</i>				
<i>9</i>	BH05 5'-10'			<input checked="" type="checkbox"/>	<input type="checkbox"/>						<i>HOLD</i>				

Relinquished By: *Kyle Norman* Date: *3-13-17* Received By: *Brian Humphrey* Date: *3-13-17*  
 Time: *8:30* Time: *6:20*

Delivered By: (Circle One) *#75* UPS  Bus  Other  *0.92*

Sample Condition: Cool  Intact  Yes  No  No  No

CHECKED BY: *[Signature]*

REMARKS: *ponder @ dcp midstream . com*  
*hamphrey @ tasman-geo. com*  
*Norman @*  
*-05 added 3/14/17 upon Brian . ca 3/14/17*

\* Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



March 17, 2017

HACK CONDER

DCP Midstream - Midland

10 Desta Dr., #400-W

Midland, TX 79705

RE: SC -1-13-1

Enclosed are the results of analyses for samples received by the laboratory on 03/17/17 10:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Midland  
 HACK CONDER  
 10 Desta Dr., #400-W  
 Midland TX, 79705  
 Fax To: None

 Received: 03/17/2017  
 Reported: 03/17/2017  
 Project Name: SC -1-13-1  
 Project Number: F-261  
 Project Location: NOT GIVEN

 Sampling Date: 03/13/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: BH05 @ 0' - 5' (H700702-01)**
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>128</b>	16.0	03/17/2017	ND	432	108	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report



---

Celey D. Keene, Lab Director/Quality Manager



**CARDINAL**  
Laboratories

RUSA

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

**BILL TO**

**ANALYSIS REQUEST**

Company Name: DCP Midstream / Tasman Gas  
Project Manager: Brian Humphrey / Hank Conder

P.O. #:

Address:

Company:

City: State: Zip:

Attn:

Phone #: Fax #:

Address:

Project #: Project Owner:

City:

Project Name:

State: Zip:

Project Location: SC-1-13-1

Phone #:

Sampler Name: Kyle Norman

Fax #:

FOR LAB USE ONLY

MATRIX

PRESERV

SAMPLING

Lab I.D. Sample I.D.

H100702

BH05 @ 0'-5'

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

3-17-17

1540

✓

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Relinquished By:

Date: 3-17-17

Received By:

CHECKED BY:

Phone Result:  Yes  No Add'l Phone #:  
Fax Result:  Yes  No Add'l Fax #:

Relinquished By: [Signature]

Date: 3-17-17

Received By: [Signature]

CHECKED BY: [Signature]

Delivered By: (Circle One)

Date: 3-17-17

Received By: [Signature]

CHECKED BY: [Signature]

Sampler - UPS - Bus - Other:

Date: 3-17-17

Received By: [Signature]

CHECKED BY: [Signature]

REMARKS:

humphrey @ tasman-geo.com  
hconder @ depmidstream.EDM  
knorman @ tasman-geo.com



March 17, 2017

HACK CONDER

DCP Midstream - Hobbs

1625 W. MARLAND

Hobbs, NM 88240

RE: SC-1-13-1

Enclosed are the results of analyses for samples received by the laboratory on 03/15/17 9:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Hobbs  
 HACK CONDER  
 1625 W. MARLAND  
 Hobbs NM, 88240  
 Fax To: (575) 397-5598

Received:	03/15/2017	Sampling Date:	03/14/2017
Reported:	03/17/2017	Sampling Type:	Soil
Project Name:	SC-1-13-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SC-1-13-1		

**Sample ID: BH06 @ 5'-10' (H700674-01)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2017	ND	1.97	98.6	2.00	1.14		
Toluene*	<0.050	0.050	03/15/2017	ND	1.84	91.9	2.00	1.47		
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.83	91.5	2.00	1.59		
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.22	86.9	6.00	1.74		
Total BTEX	<0.300	0.300	03/15/2017	ND						

*Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148*

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/15/2017	ND	221	111	200	1.31		
DRO >C10-C28	<10.0	10.0	03/15/2017	ND	234	117	200	2.19		

*Surrogate: 1-Chlorooctane 110 % 25.1-158*
*Surrogate: 1-Chlorooctadecane 121 % 26.8-170*

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Hobbs  
 HACK CONDER  
 1625 W. MARLAND  
 Hobbs NM, 88240  
 Fax To: (575) 397-5598

 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH07 @ 5'-10' (H700674-03)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/15/2017	ND	1.97	98.6	2.00	1.14	
Toluene*	<0.050	0.050	03/15/2017	ND	1.84	91.9	2.00	1.47	
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.83	91.5	2.00	1.59	
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.22	86.9	6.00	1.74	
Total BTEX	<0.300	0.300	03/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/16/2017	ND	221	111	200	1.31	
<b>DRO &gt;C10-C28</b>	<b>16.7</b>	10.0	03/16/2017	ND	234	117	200	2.19	

Surrogate: 1-Chlorooctane 101 % 25.1-158

Surrogate: 1-Chlorooctadecane 112 % 26.8-170

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Hobbs  
 HACK CONDER  
 1625 W. MARLAND  
 Hobbs NM, 88240  
 Fax To: (575) 397-5598

Received:	03/15/2017	Sampling Date:	03/14/2017
Reported:	03/17/2017	Sampling Type:	Soil
Project Name:	SC-1-13-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SC-1-13-1		

**Sample ID: BH08 @ 5'-11' (H700674-05)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/15/2017	ND	1.97	98.6	2.00	1.14	
Toluene*	<0.050	0.050	03/15/2017	ND	1.84	91.9	2.00	1.47	
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.83	91.5	2.00	1.59	
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.22	86.9	6.00	1.74	
Total BTEX	<0.300	0.300	03/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/16/2017	ND	221	111	200	1.31	
DRO >C10-C28	<10.0	10.0	03/16/2017	ND	234	117	200	2.19	

Surrogate: 1-Chlorooctane 105 % 25.1-158

Surrogate: 1-Chlorooctadecane 115 % 26.8-170

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Hobbs  
 HACK CONDER  
 1625 W. MARLAND  
 Hobbs NM, 88240  
 Fax To: (575) 397-5598

 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH09 @ 0'-5' (H700674-07)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2017	ND	1.97	98.6	2.00	1.14		
Toluene*	<0.050	0.050	03/15/2017	ND	1.84	91.9	2.00	1.47		
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.83	91.5	2.00	1.59		
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.22	86.9	6.00	1.74		
Total BTEX	<0.300	0.300	03/15/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/16/2017	ND	221	111	200	1.31		
DRO >C10-C28	<10.0	10.0	03/16/2017	ND	234	117	200	2.19		

Surrogate: 1-Chlorooctane 90.1 % 25.1-158

Surrogate: 1-Chlorooctadecane 99.2 % 26.8-170

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Hobbs  
 HACK CONDER  
 1625 W. MARLAND  
 Hobbs NM, 88240  
 Fax To: (575) 397-5598

 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH10 @ 0'-5' (H700674-09)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2017	ND	1.97	98.6	2.00	1.14		
Toluene*	<0.050	0.050	03/15/2017	ND	1.84	91.9	2.00	1.47		
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.83	91.5	2.00	1.59		
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.22	86.9	6.00	1.74		
Total BTEX	<0.300	0.300	03/15/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/16/2017	ND	221	111	200	1.31		
DRO >C10-C28	<10.0	10.0	03/16/2017	ND	234	117	200	2.19		

Surrogate: 1-Chlorooctane 94.2 % 25.1-158

Surrogate: 1-Chlorooctadecane 104 % 26.8-170

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 DCP Midstream - Hobbs  
 HACK CONDER  
 1625 W. MARLAND  
 Hobbs NM, 88240  
 Fax To: (575) 397-5598

 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH11 @ 10'-14' (H700674-11)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2017	ND	1.97	98.6	2.00	1.14		
Toluene*	<0.050	0.050	03/15/2017	ND	1.84	91.9	2.00	1.47		
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.83	91.5	2.00	1.59		
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.22	86.9	6.00	1.74		
Total BTEX	<0.300	0.300	03/15/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/16/2017	ND	221	111	200	1.31		
DRO >C10-C28	<10.0	10.0	03/16/2017	ND	234	117	200	2.19		

Surrogate: 1-Chlorooctane 101 % 25.1-158

Surrogate: 1-Chlorooctadecane 111 % 26.8-170

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 Hobbs NM, 88240  
 Fax To: (575) 397-5598

 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH12 @ 0'-5' (H700674-13)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/15/2017	ND	2.01	100	2.00	1.32	
Toluene*	<0.050	0.050	03/15/2017	ND	1.88	93.9	2.00	1.12	
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.87	93.5	2.00	1.26	
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.34	89.0	6.00	1.02	
Total BTEX	<0.300	0.300	03/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/16/2017	ND	221	111	200	1.31	
DRO >C10-C28	<10.0	10.0	03/16/2017	ND	234	117	200	2.19	

Surrogate: 1-Chlorooctane 98.3 % 25.1-158

Surrogate: 1-Chlorooctadecane 104 % 26.8-170

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 Fax To: (575) 397-5598

 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH13 @ 0'-5' (H700674-15)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2017	ND	2.01	100	2.00	1.32		
Toluene*	<0.050	0.050	03/15/2017	ND	1.88	93.9	2.00	1.12		
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.87	93.5	2.00	1.26		
<b>Total Xylenes*</b>	<b>0.561</b>	0.150	03/15/2017	ND	5.34	89.0	6.00	1.02		
<b>Total BTEX</b>	<b>0.561</b>	0.300	03/15/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 133 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>67.5</b>	10.0	03/16/2017	ND	221	111	200	1.31		
<b>DRO &gt;C10-C28</b>	<b>762</b>	10.0	03/16/2017	ND	234	117	200	2.19		

Surrogate: 1-Chlorooctane 119 % 25.1-158

Surrogate: 1-Chlorooctadecane 127 % 26.8-170

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 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH13 @ 5'-10' (H700674-16)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2017	ND	2.01	100	2.00	1.32		
Toluene*	<0.050	0.050	03/15/2017	ND	1.88	93.9	2.00	1.12		
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.87	93.5	2.00	1.26		
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.34	89.0	6.00	1.02		
Total BTEX	<0.300	0.300	03/15/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/15/2017	ND	195	97.6	200	0.583		
DRO >C10-C28	<10.0	10.0	03/15/2017	ND	206	103	200	0.0802		

Surrogate: 1-Chlorooctane 97.6 % 25.1-158

Surrogate: 1-Chlorooctadecane 103 % 26.8-170

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 Fax To: (575) 397-5598

 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH14 @ 0'-5' (H700674-18)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/15/2017	ND	2.01	100	2.00	1.32	
Toluene*	<0.050	0.050	03/15/2017	ND	1.88	93.9	2.00	1.12	
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.87	93.5	2.00	1.26	
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.34	89.0	6.00	1.02	
Total BTEX	<0.300	0.300	03/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 120 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>19.6</b>	10.0	03/16/2017	ND	221	111	200	1.31	
<b>DRO &gt;C10-C28</b>	<b>538</b>	10.0	03/16/2017	ND	234	117	200	2.19	

Surrogate: 1-Chlorooctane 105 % 25.1-158

Surrogate: 1-Chlorooctadecane 127 % 26.8-170

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 1625 W. MARLAND  
 Hobbs NM, 88240  
 Fax To: (575) 397-5598

 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH14 @ 5'-10' (H700674-19)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2017	ND	2.01	100	2.00	1.32		
Toluene*	<0.050	0.050	03/15/2017	ND	1.88	93.9	2.00	1.12		
Ethylbenzene*	<0.050	0.050	03/15/2017	ND	1.87	93.5	2.00	1.26		
Total Xylenes*	<0.150	0.150	03/15/2017	ND	5.34	89.0	6.00	1.02		
Total BTEX	<0.300	0.300	03/15/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/15/2017	ND	184	92.2	200	0.325		
DRO >C10-C28	<10.0	10.0	03/15/2017	ND	194	97.1	200	0.595		

Surrogate: 1-Chlorooctane 86.3 % 25.1-158

Surrogate: 1-Chlorooctadecane 83.0 % 26.8-170

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 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH15 @ 14'-16' (H700674-21)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/16/2017	ND	2.01	100	2.00	1.32	
Toluene*	<0.050	0.050	03/16/2017	ND	1.88	93.9	2.00	1.12	
Ethylbenzene*	<0.050	0.050	03/16/2017	ND	1.87	93.5	2.00	1.26	
Total Xylenes*	<0.150	0.150	03/16/2017	ND	5.34	89.0	6.00	1.02	
Total BTEX	<0.300	0.300	03/16/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/15/2017	ND	184	92.2	200	0.325	
DRO >C10-C28	<10.0	10.0	03/15/2017	ND	194	97.1	200	0.595	

Surrogate: 1-Chlorooctane 92.9 % 25.1-158

Surrogate: 1-Chlorooctadecane 96.2 % 26.8-170

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 Fax To: (575) 397-5598

 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH16 @ 0'-5' (H700674-22)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/16/2017	ND	2.01	100	2.00	1.32	
Toluene*	<0.050	0.050	03/16/2017	ND	1.88	93.9	2.00	1.12	
Ethylbenzene*	<0.050	0.050	03/16/2017	ND	1.87	93.5	2.00	1.26	
Total Xylenes*	<0.150	0.150	03/16/2017	ND	5.34	89.0	6.00	1.02	
Total BTEX	<0.300	0.300	03/16/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	03/17/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/15/2017	ND	184	92.2	200	0.325	
DRO >C10-C28	<10.0	10.0	03/15/2017	ND	194	97.1	200	0.595	

Surrogate: 1-Chlorooctane 92.6 % 25.1-158

Surrogate: 1-Chlorooctadecane 94.2 % 26.8-170

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 DCP Midstream - Hobbs  
 HACK CONDER  
 1625 W. MARLAND  
 Hobbs NM, 88240  
 Fax To: (575) 397-5598

 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH17 @ 0'-5' (H700674-24)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/16/2017	ND	2.01	100	2.00	1.32		
Toluene*	<0.050	0.050	03/16/2017	ND	1.88	93.9	2.00	1.12		
Ethylbenzene*	<0.050	0.050	03/16/2017	ND	1.87	93.5	2.00	1.26		
Total Xylenes*	<0.150	0.150	03/16/2017	ND	5.34	89.0	6.00	1.02		
Total BTEX	<0.300	0.300	03/16/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/16/2017	ND	184	92.2	200	0.325		
<b>DRO &gt;C10-C28</b>	<b>1120</b>	10.0	03/16/2017	ND	194	97.1	200	0.595		

Surrogate: 1-Chlorooctane 92.7 % 25.1-158

Surrogate: 1-Chlorooctadecane 133 % 26.8-170

Cardinal Laboratories

\*=Accredited Analyte

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 Received: 03/15/2017  
 Reported: 03/17/2017  
 Project Name: SC-1-13-1  
 Project Number: NONE GIVEN  
 Project Location: SC-1-13-1

 Sampling Date: 03/14/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH17 @ 13'-16' (H700674-25)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/17/2017	ND	2.07	103	2.00	0.523		
Toluene*	<0.050	0.050	03/17/2017	ND	1.94	97.2	2.00	0.0733		
Ethylbenzene*	<0.050	0.050	03/17/2017	ND	1.96	98.1	2.00	0.977		
Total Xylenes*	<0.150	0.150	03/17/2017	ND	5.61	93.5	6.00	1.04		
Total BTEX	<0.300	0.300	03/17/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/17/2017	ND	182	91.0	200	4.18		
DRO >C10-C28	<10.0	10.0	03/17/2017	ND	196	97.8	200	0.645		

Surrogate: 1-Chlorooctane 83.2 % 25.1-158

Surrogate: 1-Chlorooctadecane 88.0 % 26.8-170

**Sample ID: BH18 @ 14'-16' (H700674-26)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	288	16.0	03/15/2017	ND	400	100	400	7.69		

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\*=Accredited Analyte

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**Notes and Definitions**

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report





**ARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

RUSH

1 of 3

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: DCP Midstream / Tasman Geoscience		P.O. #: F-261		ANALYSIS REQUEST	
Project Manager: Brian Humphrey / Hack Conder		Company: DCP Midstream			
Address:		Attn:			
City:		Address:			
Phone #:		City:			
Project #:		State:			
Project Name:		Zip:			
Project Location: SC-1-13-1		Phone #:			
Sampler Name: Kyle Norman		FAX #:			

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :								
HT00674	BH06 @ 5'-10'	5	1							3-4-17	0855	✓	✓	✓			HOLD
	BH06 @ 14'-16'									0920	0920	✓	✓	✓			HOLD
	BH07 @ 5'-10'									0926	0926	✓	✓	✓			HOLD
	BH07 @ 10'-14'									0950	0950	✓	✓	✓			HOLD
	BH08 @ 5'-11'									0955	0955	✓	✓	✓			HOLD
	BH08 @ 11'-16'									1008	1008	✓	✓	✓			HOLD
	BH09 @ 0-5'									1013	1013	✓	✓	✓			HOLD
	BH09 @ 5'-10'									1045	1045	✓	✓	✓			HOLD
	BH10 @ 0-5'									1100	1100	✓	✓	✓			HOLD
	BH10 @ 10'-13'																

Relinquished By: Kyle Norman	Date: 3-15-17	Received By: Scott Stinson	Date: 3-15-17
Relinquished By: Kyle Norman	Time: 9:25	Received By: Scott Stinson	Time:

Delivered By: (Circle One)	Sample Condition	CHECKED BY: (Initial)
UPS <input checked="" type="checkbox"/> Bus <input type="checkbox"/> Other <input type="checkbox"/>	Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	AF
#75	2.82	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



