

**2R - 799**

**Q3 GWMR**

**02 / 05 / 2013**



# **THIRD QUARTER 2012 GROUNDWATER MONITORING REPORT**

**BURTON FLATS BOOSTER STATION  
EDDY COUNTY, NEW MEXICO**

**Prepared For:**

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## 1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) is submitting this *Third Quarter 2012 Groundwater Monitoring Report* to DCP Midstream, LP (DCP) for the Burton Flats Booster Station in Eddy County, New Mexico. This report summarizes the September 2012 groundwater sampling event. Groundwater monitoring and sampling details, analytical results, and conclusions are presented below.

### **Site Background**

The site is a booster station located in Eddy County, New Mexico. The property's legal description is Lots 4 and 5, Section 1, Township 21 South (T21S), Range 27 East (R27E) (Figure 1). Four groundwater monitoring wells MW-1 through MW-4 were installed in 2011.

### **Hydrogeology**

Static groundwater depths ranged from 21.65 (MW-1) to 25.26 feet (ft) below ground surface (bgs) (MW-4) on September 26, 2012. Groundwater flows to the northwest with a gradient of 0.002 ft/ft (Figure 2).

## 2.0 GROUNDWATER MONITORING AND SAMPLING

CRA gauged groundwater monitoring wells MW-1 through MW-4 and collected groundwater samples from MW-1 through MW-3 on September 26, 2012. Light non-aqueous phase liquids (LNAPL) were measured in MW-4 during the sampling event; no sample was collected. Each well cap was removed to allow groundwater levels to stabilize and equilibrate prior to gauging. All sampled groundwater monitoring wells were purged of approximately three well-casing volumes while temperature, pH, and conductivity were measured. Groundwater samples, including a duplicate sample, were collected using clean disposable bailers and decanted into clean containers supplied by the analytical laboratory. Groundwater samples were submitted under chain-of-custody to Accutest Laboratories of Texas. CRA's standard operating procedures for groundwater monitoring and sampling are presented as Appendix A.

### **Purged Groundwater**

Purged groundwater was transported to the DCP Linam Ranch Facility, where purged groundwater was disposed in the onsite sump.

### 3.0 ANALYTICAL RESULTS

#### **Groundwater Analytical Methods**

Groundwater samples collected from MW-1 through MW-3 were analyzed for:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by SW846 8021B
- Total petroleum hydrocarbons as gasoline (TPH GRO) by SW846 8015
- Total petroleum hydrocarbons as diesel (TPH DRO) by SW845 8015M and SW846 3510C

#### **Groundwater Sampling Results**

No BTEX was detected above New Mexico Water Quality Control Commission (NMWQCC) cleanup levels in groundwater samples MW-2 and MW-3. Groundwater sample MW-1 contained 61.5 micrograms per liter ( $\mu\text{g}/\text{l}$ ) benzene, 829  $\mu\text{g}/\text{l}$  TPH GRO, and 17,000  $\mu\text{g}/\text{l}$  TPH DRO. BTEX, TPH GRO, and TPH DRO, concentrations in groundwater are presented on Figure 3. Current groundwater analytical results are summarized in Table 1. Historical groundwater analytical results are summarized in Table 2. The laboratory analytical report is presented as Appendix B.

### 4.0 CONCLUSIONS

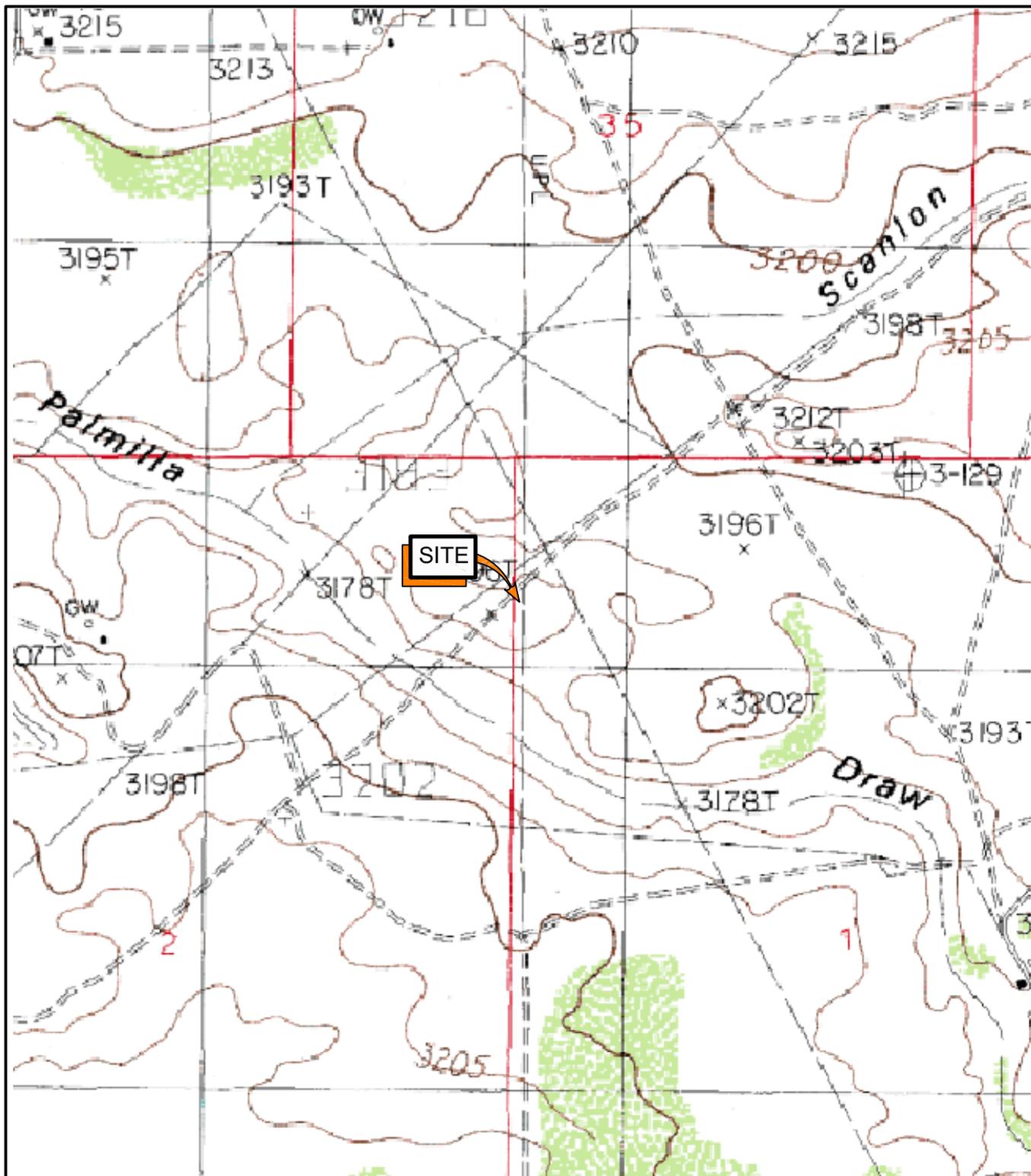
Benzene was detected above groundwater cleanup levels in monitoring well MW-1. DCP will continue quarterly monitoring and sampling in 2012 to evaluate site groundwater conditions.

## FIGURES

FIGURE 1 VICINITY MAP

FIGURE 2 GROUNDWATER ELEVATION CONTOUR MAP

FIGURE 3 HYDROCARBON CONCENTRATIONS IN GROUNDWATER



USGS QUADRANGLE: ANGEL DRAW, NEW MEXICO  
 N 32.51969 W 104.15140

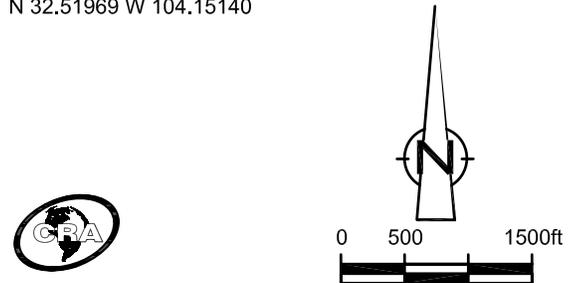
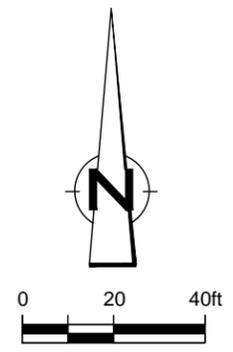
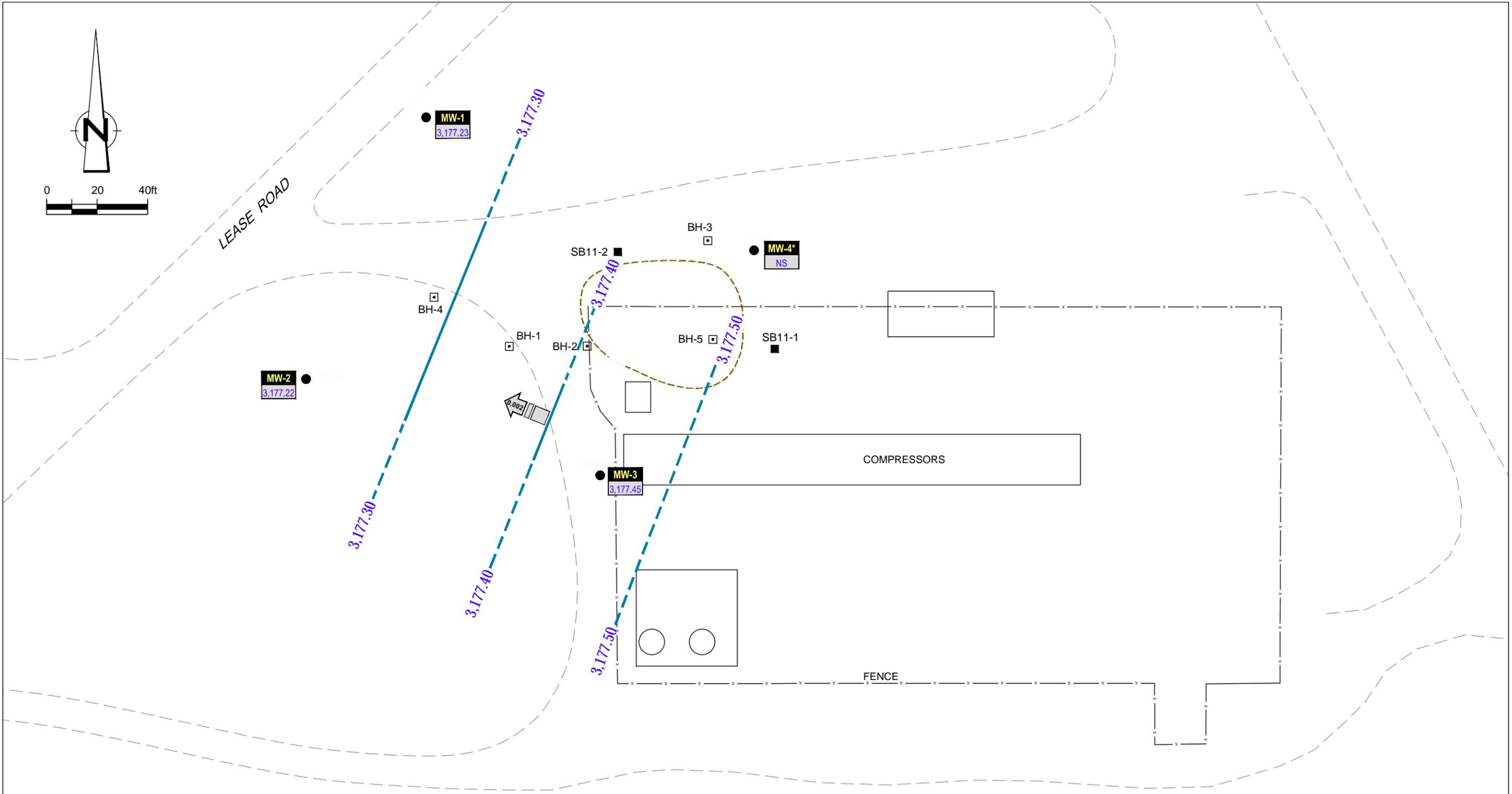


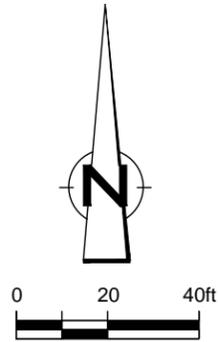
figure 1  
 VICINITY MAP  
 BURTON FLATS  
 EDDY COUNTY, NEW MEXICO  
*DCP Midstream*





- LEGEND**
- MONITORING WELL LOCATION (2011)
  - SOIL BORING LOCATION (2011)
  - SOIL BORING LOCATION (2010)
  - - - DIRT ROAD
  - - - AREA OF EXCAVATION (LOCATION IS APPROXIMATE DUE TO LIMITED DATA)
  - WELL ELEV: WELL DESIGNATION  
GROUNDWATER ELEVATION (MSL)
  - 3,177.50 — GROUNDWATER ELEVATION CONTOUR, IN FEET ABOVE MEAN SEA LEVEL (MSL), DASHED WHERE INFERRED
  - 0.002 GROUNDWATER FLOW DIRECTION AND GRADIENT
  - \* NOT USED FOR CONTOURING

Figure 2  
**GROUNDWATER ELEVATION CONTOUR MAP**  
**BURTON FLATS BOOSTER STATION**  
**LOTS 4 AND 5, SECTION 1, T21S, R27E**  
*Eddy County, New Mexico*  
*September 26, 2012*



LEASE ROAD

MW-1	
B	61.5
T	<1.0
E	80.3
X	1.5
TPH GRO	829.0
TPH DRO	17,000.0

MW-2	
B	<1.0
T	<1.0
E	<1.0
X	<3.0
TPH GRO	<50.0
TPH DRO	52.2

MW-3 / DUP-1	
B	<1.0 / <1.0
T	<1.0 / <1.0
E	0.57 / <1.0
X	<3.0 / <3.0
TPH GRO	<50.0 / <50.0
TPH DRO	164.0 / 175

WELL ID		WELL DESIGNATION
B	<1.0	ÓÒPZÒPÓÓUPÓÓP VÜCE/WP/ÁQ* BŠD
T	<1.0	VUŠWÓPÓÓUPÓÓP VÜCE/WP/ÁQ* BŠD
E	<1.0	ÓVPÝŠÓÓPZÓPÓÓUPÓÓP VÜCE/WP/ÁQ* BŠD
X	<3.0	ÝŸŠÓPÓÓUPÓÓP VÜCE/WP/ÁQ* BŠD
TPH GRO	<50.0	VÚPÓ/ÓUPÓÓP VÜCE/WP/ÁQ* BŠD
TPH DRO	<100.0	VÚPÓ/ÓUPÓÓP VÜCE/WP/ÁQ* BŠD

- LEGEND**
- MONITORING WELL LOCATION (2011)
  - SOIL BORING LOCATION (2011)
  - SOIL BORING LOCATION (2010)
  - - - DIRT ROAD
  - - - AREA OF EXCAVATION (LOCATION IS APPROXIMATE DUE TO LIMITED DATA)

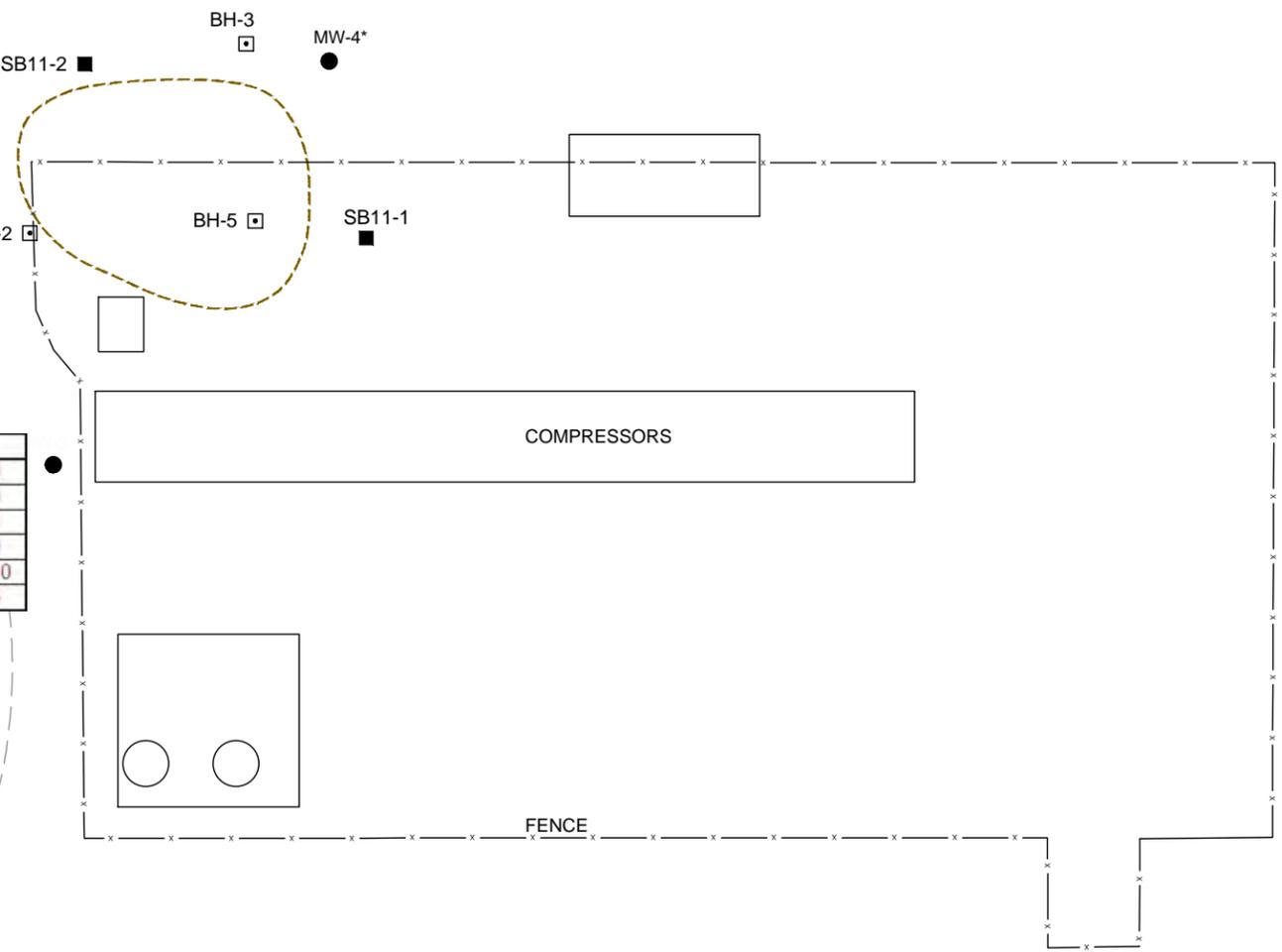


Figure 3  
 HYDROCARBON CONCENTRATIONS IN GROUNDWATER  
 BURTON FLATS BOOSTER STATION  
 LOTS 4 AND 5, SECTION 1, T21S, R27E  
 Eddy County, New Mexico  
 September 26, 2012



## TABLES

TABLE 1      CURRENT GROUNDWATER ANALYTICAL RESULTS

TABLE 2      HISTORICAL GROUNDWATER ANALYTICAL RESULTS

## CONESTOGA-ROVERS & ASSOCIATES

<b>Table 1. Current Groundwater Analytical Results - Burton Flats Booster Station, Eddy County, New Mexico</b>													
Well ID	Date	TOC (ft msl)	DTW (ft bgs)	GWE (ft msl)	←	Benzene	Toluene	Ethyl - benzene	Total Xylenes	→	TPH GRO	TPH DRO	
					Concentrations in µg/l								
<b>NMWQCC Cleanup Levels</b>					<b>10</b>	<b>750</b>	<b>750</b>	<b>620</b>	·	·			
MW-1	9/26/2012	3,198.88	21.65	3177.23	<b>61.5</b>	<1.0	<1.0	80.3	1.5	829	17,000		
MW-2	9/26/2012	3,200.00	22.78	3177.22	<1.0	<1.0	<1.0	<3.0	<50.0	<50.0	52.2		
MW-3	9/26/2012	3,200.85	23.40	3177.45	<1.0/<1.0	<1.0/<1.0	0.57/<1.0	<3.0/<3.0	<50.0/<50.0	164/175			
MW-4	9/26/2012	--	25.26	--	LNAPL Present								

**Notes and Abbreviations:**

ID = Identification

TOC = Top of casing

DTW = Depth to water

GWE = Groundwater elevation

BTEX = Benzene, toluene, ethylbenzene, and total xylenes by SW846 8021

TPH GRO = Total petroleum hydrocarbons as gasoline by SW846 8015

TPH DRO = Total petroleum hydrocarbons as diesel by SW845 8015M and SW846 3510C

ft msl = Feet above mean sea level

ft bgs = Feet below ground surface

µg/l = Micrograms per liter

NMWQCC = New Mexico Water Quality Control Commission

· = NMWQCC Cleanup Level not established

**BOLD** = Indicates concentration above the NMWQCC Cleanup Levels

x/y = Sample results/blind duplicate results

<x = Not detected above x µg/l

-- = Not measured

LNAPL = Light Non-Aqueous Phase Liquid

## CONESTOGA-ROVERS & ASSOCIATES

**Table 2. Historical Groundwater Analytical Results - Burton Flats Booster Station, Eddy County, New Mexico**

Well ID	Date	TOC (ft msl)	DTW (ft bgs)	LNAPL thickness (fbgs)	GWE (ft msl)	Concentrations in µg/l					
						Benzene	Toluene	Ethyl - benzene	Total Xylenes	TPH GRO	TPH DRO
<b>NMWQCC Cleanup Levels</b>						<b>10</b>	<b>750</b>	<b>750</b>	<b>620</b>	.	.
MW-1	12/14/2011	--	21.17	--	--	<b>108/140</b>	3.4 / 2.6	200 / 178	111 / 99.9	3,890 / 2,880	44,900 / 37,300
MW-1	4/26/2012	3,198.88	21.24	--	3177.64	<b>153</b>	<1.0	229	7.3	3,010	16,900
MW-1	6/20/2012	3,198.88	21.50	--	3177.38	<b>90.7/96.7</b>	<1.0/<1.0	284 <sup>a</sup> /260 <sup>a</sup>	47.4/47.0	2,390/4,600	27,400/24,000
MW-1	9/26/2012	3,198.88	21.65	--	3177.23	<b>61.5</b>	<1.0	80.3	1.5	829	17,000
MW-2	12/14/2011	--	22.33	--	--	<1.0	<1.0	<1.0	<3.0	<50.0	106
MW-2	4/26/2012	3,200.00	22.39	--	3177.61	<1.0	<1.0	<1.0	<3.0	<50.0	<100.0
MW-2	6/20/2012	3,200.00	22.66	--	3177.34	<1.0	<1.0	<1.0	<3.0	<50.0	34.0
MW-2	9/26/2012	3,200.00	22.78	--	3177.22	<1.0	<1.0	<1.0	<3.0	<50.0	52.2
MW-3	12/14/2011	--	23.02	--	--	<1.0	<1.0	<1.0	<3.0	<50.0	139
MW-3	4/26/2012	3,200.85	23.08	--	3,177.77	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<3.0/<3.0	8.0/<50.0	46.1/50.7
MW-3	6/20/2012	3,200.85	23.18	--	3,177.67	<1.0	<1.0	0.50	<3.0	35.9	74.4
MW-3	9/26/2012	3,200.85	23.40	--	3,177.45	<1.0/<1.0	<1.0/<1.0	0.57/<1.0	<3.0/<3.0	<50.0/<50.0	164/175
MW-4	4/26/2012	--	24.00	0.99	--						LNAPL Present
MW-4	6/20/2012	--	24.82	1.75	--						LNAPL Present
MW-4	9/26/2012	--	25.26	2.05	--						LNAPL Present

**Notes and Abbreviations:**

ID = Identification

TOC = Top of casing

DTW = Depth to water

GWE = Groundwater elevation

BTEX = Benzene, toluene, ethylbenzene, and total xylenes by SW846 8021

TPH GRO = Total petroleum hydrocarbons as gasoline by SW846 8015

TPH DRO = Total petroleum hydrocarbons as diesel by SW845 8015M and SW846 3510C

ft msl = Feet above mean sea level

ft bgs = Feet below ground surface

µg/l = Micrograms per liter

NMWQCC = New Mexico Water Quality Control Commission

. = NMWQCC Cleanup Level not established

-- = Not measured

**BOLD** = Indicates concentration above the NMWQCC Cleanup Levels

x/y = Sample results/blind duplicate results

<x = Not detected above x µg/l

LNAPL = Light Non-Aqueous Phase Liquid

APPENDIX A

STANDARD OPERATING PROCEDURES FOR GROUNDWATER MONITORING AND  
SAMPLING



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& ASSOCIATES**

## **STANDARD FIELD PROCEDURES FOR GROUNDWATER MONITORING AND SAMPLING**

This document presents standard field methods for groundwater monitoring, purging and sampling, and well development. These procedures are designed to comply with Federal, State and local regulatory guidelines. Conestoga-Rovers & Associates' specific field procedures are summarized below.

### **Groundwater Monitoring**

Prior to performing monitoring activities, the historical monitoring and analytical data of each monitoring well shall be reviewed to determine if any of the wells are likely to contain separate phase hydrocarbons (SPH) and to determine the order in which the wells will be monitored (i.e. cleanest to dirtiest). Groundwater monitoring should not be performed when the potential exists for surface water to enter the well (i.e. flooding during a rainstorm).

Prior to monitoring, each well shall be opened and the well cap removed to allow water levels to stabilize and equilibrate. The condition of the well box and well cap shall be observed and recommended repairs noted. Any surface water that may have entered and flooded the well box should be evacuated prior to removing the well cap. In wells with no history of SPH, the static water level and total well depth shall be measured to the nearest 0.01 foot with an electronic water level meter. Wells with the highest contaminant concentrations shall be monitored last. In wells with a history of SPH, the SPH level/thickness and static water level shall be measured to the nearest 0.01 foot using an electronic interface probe. The water level meter and/or interface probe shall be thoroughly cleaned and decontaminated at the beginning of the monitoring event and between each well. Monitoring equipment shall be washed using soapy water consisting of Liqui-nox™ or Alconox™ followed by one rinse of clean tap water and then two rinses of distilled water.

### **Groundwater Purging and Sampling**

Prior to groundwater purging and sampling, the historical analytical data of each monitoring well shall be reviewed to determine the order in which the wells should be purged and sampled (i.e. cleanest to dirtiest). No purging or groundwater sampling shall be performed on wells with a measurable thickness of SPH or floating SPH globules. If a sheen is observed, the well should be purged and a groundwater sample collected only if no SPH is present. Wells shall be purged either by hand using a disposal or PVC bailer or by using an aboveground pump (e.g. peristaltic or Wattera™) or down-hole pump (e.g. Grundfos™ or DC Purger pump).

Groundwater wells shall be purged approximately three to ten well-casing volumes (depending on the regulatory agency requirements) or until groundwater parameters of temperature, pH, and conductivity have stabilized to within 10% for three consecutive readings. Temperature, pH, and conductivity shall be measured and recorded at the start of purging, once per well casing volume removed, and at the completion of purging. The total volume of groundwater removed shall be recorded along with any other notable physical characteristic such as color and odor. If required, field parameters such as turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) shall be measured prior to collection of each groundwater sample.

Groundwater samples shall be collected after the well has been purged and allowed to recharge to 80% of the pre-purging static water level, or if the well is slow to recharge, after waiting a minimum of 2 hours. Groundwater samples shall be collected using clean disposable bailers or



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pumps (if an operating remediation system exists on site and the project manager approves of its use for sampling) and shall be decanted into clean containers supplied by the analytical laboratory. New latex gloves and disposable tubing or bailers shall be used for sampling each well. If a PVC bailer or down-hole pump is used for groundwater purging, it shall be decontaminated before purging each well by using soapy water consisting of Liqui-nox™ or Alconox™ followed by one rinse of clean tap water and then two rinses of distilled water. If a submersible pump with non-dedicated discharge tubing is used for groundwater purging, both the inside and outside of pump and discharge tubing shall be decontaminated as described above.

### **Sample Handling**

Except for samples that will be tested in the field, or that require special handling or preservation, samples shall be stored in coolers chilled to 4° C for shipment to the analytical laboratory. Samples shall be labeled, placed in protective foam sleeves or bubble wrap as needed, stored on crushed ice at or below 4° C, and submitted under chain-of-custody (COC) to the laboratory. The laboratory shall be notified of the sample shipment schedule and arrival time. Samples shall be shipped to the laboratory within a time frame to allow for extraction and analysis to be performed within the standard sample holding times.

Sample labels shall be filled out using indelible ink and must contain the site name; field identification number; the date, time, and location of sample collection; notation of the type of sample; identification of preservatives used; remarks; and the signature of the sampler. Field identification must be sufficient to allow easy cross-reference with the field datasheet.

All samples submitted to the laboratory shall be accompanied by a COC record to ensure adequate documentation. One copy of the COC shall be kept in the QA/QC file and another copy shall be retained in the project file. Information on the COC shall consist of the project name and number; project location; sample numbers; sampler/recorder's signature; date and time of collection of each sample; sample type; analyses requested; name of person receiving the sample; and date of receipt of sample.

Laboratory-supplied trip blanks shall accompany the samples and be analyzed to check for cross-contamination, if requested by the project manager.

### **Well Development**

Wells shall be developed using a combination of groundwater surging and extraction. A surge block shall be used to swab the well and agitate the groundwater in order to dislodge any fine sediment from the sand pack. After approximately ten minutes of swabbing the well, groundwater shall be extracted from the well using a bailer, pump and/or reverse air-lifting through a pipe to remove the sediments from the well. Alternating surging and extraction shall continue until the sediment volume in the groundwater (i.e. turbidity) is negligible, which typically requires extraction of approximately ten well-casing volumes of groundwater. Preliminary well development usually is performed during well installation prior to placing the sanitary surface seal to ensure sand pack stabilization. Well development that is performed after surface seal installation, should occur 72 hours after seal installation to ensure that the cement has had adequate time to set.



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### **Waste Handling and Disposal**

Groundwater extracted during development and sampling shall be stored onsite in sealed U.S. DOT H17 55-gallon drums. Each drum shall be labeled with the contents, date of generation, generator identification and consultant contact. If hydrocarbon concentrations in the purged groundwater are below ADEC cleanup levels or the site is in a remote area (pending ADEC approval) groundwater will be discharged to the ground surface, at least 100 feet from the nearest surface water body.

\\DEN-S1\Shared\Denver\Alaska\AK SOP\CRA Alaska SOP\AK Groundwater Monitoring and Sampling SOP - CRA.doc

APPENDIX B

LABORATORY ANALYTICAL REPORT

**Technical Report for**

**DCP Midstream, LLC**

**CRA: Burton Flats Eddy County Carlsbad, NM**

**Accutest Job Number: TC17204**

**Sampling Date: 09/26/12**

**Report to:**

**DCP Midstream, L.P.**  
**370 17th Street Suite 2500**  
**Denver, CO 80202**  
**cecole@dcpmidstream.com; jriggi@croworld.com;**  
**ntaylor@croworld.com; spritchard@croworld.com**  
**ATTN: Mr. Chandler Cole**

**Total number of pages in report: 48**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

  
**Richard Rodriguez**  
**Laboratory Director**

**Client Service contact: Sylvia Garza 713-271-4700**

Certifications: TX (T104704220-12-8) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)  
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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### Sample Summary

DCP Midstream, LLC

Job No: TC17204

CRA: Burton Flats Eddy County Carlsbad, NM

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
TC17204-1	09/26/12	14:45	09/28/12	AQ	Ground Water	MW-1
TC17204-2	09/26/12	14:15	09/28/12	AQ	Ground Water	MW-2
TC17204-3	09/26/12	14:15	09/28/12	AQ	Ground Water	MW-3
TC17204-4	09/26/12	00:00	09/28/12	AQ	Ground Water	DUP-1
TC17204-5	09/26/12	00:00	09/28/12	AQ	Trip Blank Water	TRIP BLANK
TC17204-6	09/26/12	00:00	09/28/12	AQ	Trip Blank Water	TRIP BLANK

## Summary of Hits

**Job Number:** TC17204  
**Account:** DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM  
**Collected:** 09/26/12

2

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

**TC17204-1 MW-1**

TPH-GRO (C6-C10)	0.829	0.25	0.061	mg/l	SW846 8015
Benzene	0.0615	0.0010	0.00058	mg/l	SW846 8021B
Ethylbenzene	0.0803	0.0010	0.00052	mg/l	SW846 8021B
Xylenes (total)	0.0015 J	0.0030	0.0013	mg/l	SW846 8021B
TPH (C10-C28)	17.0	1.0	0.32	mg/l	SW846 8015 M
Chloride	590	50		mg/l	EPA 300/SW846 9056

**TC17204-2 MW-2**

TPH (C10-C28)	0.0522 J	0.10	0.031	mg/l	SW846 8015 M
Chloride	1130	50		mg/l	EPA 300/SW846 9056

**TC17204-3 MW-3**

Ethylbenzene	0.00057 J	0.0010	0.00052	mg/l	SW846 8021B
TPH (C10-C28)	0.164	0.10	0.031	mg/l	SW846 8015 M
Chloride	447	25		mg/l	EPA 300/SW846 9056

**TC17204-4 DUP-1**

TPH (C10-C28)	0.175	0.11	0.033	mg/l	SW846 8015 M
Chloride	439	25		mg/l	EPA 300/SW846 9056

**TC17204-5 TRIP BLANK**

No hits reported in this sample.



Sample Results

---

Report of Analysis

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## Report of Analysis

3.1  
3

<b>Client Sample ID:</b> MW-1	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-1	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8015	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0012539.D	5	10/04/12	LT	n/a	n/a	GHH676
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	0.829	0.25	0.061	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	4-Bromofluorobenzene	77%		52-127%		
98-08-8	aaa-Trifluorotoluene	91%		58-141%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

3.1  
3

<b>Client Sample ID:</b> MW-1	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-1	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8021B	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK045087.D	1	10/05/12	JL	n/a	n/a	GKK2093
Run #2	KK045106.D	1	10/08/12	JL	n/a	n/a	GKK2094

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

**Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.0615	0.0010	0.00058	mg/l	
108-88-3	Toluene	ND	0.0010	0.00050	mg/l	
100-41-4	Ethylbenzene	0.0803	0.0010	0.00052	mg/l	
1330-20-7	Xylenes (total)	0.0015	0.0030	0.0013	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	119%	117%	60-146%
98-08-8	aaa-Trifluorotoluene	145% <sup>a</sup>	140% <sup>a</sup>	69-137%

(a) Outside control limits due to matrix interference. Confirmed by reanalysis.

---

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

3.1  
3

<b>Client Sample ID:</b> MW-1	
<b>Lab Sample ID:</b> TC17204-1	<b>Date Sampled:</b> 09/26/12
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 09/28/12
<b>Method:</b> SW846 8015 M SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC228050.D	10	10/09/12	FO	10/03/12	OP25427	GCC1407
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	17.0	1.0	0.32	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	93%		37-135%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-1	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-1	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

### General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	590	50	mg/l	100	10/03/12 06:22	RA	EPA 300/SW846 9056

RL = Reporting Limit

## Report of Analysis

32  
3

<b>Client Sample ID:</b> MW-2	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-2	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8015	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0012537.D	1	10/04/12	LT	n/a	n/a	GHH676
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.012	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	4-Bromofluorobenzene	75%		52-127%		
98-08-8	aaa-Trifluorotoluene	86%		58-141%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

32  
3

<b>Client Sample ID:</b> MW-2	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-2	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8021B	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK045085.D	1	10/05/12	JL	n/a	n/a	GKK2093
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0010	0.00058	mg/l	
108-88-3	Toluene	ND	0.0010	0.00050	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00052	mg/l	
1330-20-7	Xylenes (total)	ND	0.0030	0.0013	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	107%		60-146%
98-08-8	aaa-Trifluorotoluene	123%		69-137%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

32  
3

<b>Client Sample ID:</b> MW-2	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-2	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8015 M SW846 3510C	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC228016.D	1	10/03/12	FO	10/03/12	OP25427	GCC1406
Run #2							

Run #	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	0.0522	0.10	0.031	mg/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	81%		37-135%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-2	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-2	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

### General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	1130	50	mg/l	100	10/03/12 07:13	RA	EPA 300/SW846 9056

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-3	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-3	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8015	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0012538.D	1	10/04/12	LT	n/a	n/a	GHH676
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.012	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	4-Bromofluorobenzene	73%		52-127%		
98-08-8	aaa-Trifluorotoluene	83%		58-141%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b> MW-3		<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-3		<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8021B		
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK045107.D	1	10/08/12	JL	n/a	n/a	GKK2094
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0010	0.00058	mg/l	
108-88-3	Toluene	ND	0.0010	0.00050	mg/l	
100-41-4	Ethylbenzene	0.00057	0.0010	0.00052	mg/l	J
1330-20-7	Xylenes (total)	ND	0.0030	0.0013	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	106%		60-146%
98-08-8	aaa-Trifluorotoluene	128%		69-137%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-3	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-3	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8015 M SW846 3510C	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC228017.D	1	10/03/12	FO	10/03/12	OP25427	GCC1406
Run #2							

Run #	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	0.164	0.10	0.031	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	88%		37-135%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-3	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-3	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

### General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	447	25	mg/l	50	10/03/12 07:30	RA	EPA 300/SW846 9056

RL = Reporting Limit

## Report of Analysis

3.4  
3

<b>Client Sample ID:</b> DUP-1	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-4	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8015	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0012571.D	1	10/08/12	LT	n/a	n/a	GHH679
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.012	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	4-Bromofluorobenzene	77%		52-127%		
98-08-8	aaa-Trifluorotoluene	88%		58-141%		

---

ND = Not detected	MDL - Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

34  
3

<b>Client Sample ID:</b> DUP-1	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-4	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8021B	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK045110.D	1	10/08/12	JL	n/a	n/a	GKK2094
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0010	0.00058	mg/l	
108-88-3	Toluene	ND	0.0010	0.00050	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00052	mg/l	
1330-20-7	Xylenes (total)	ND	0.0030	0.0013	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	97%		60-146%
98-08-8	aaa-Trifluorotoluene	114%		69-137%

---

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

3.4  
3

<b>Client Sample ID:</b> DUP-1	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-4	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8015 M SW846 3510C	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC228022.D	1	10/03/12	FO	10/03/12	OP25427	GCC1406
Run #2							

Run #	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	0.175	0.11	0.033	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	77%		37-135%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> DUP-1	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-4	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

### General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	439	25	mg/l	50	10/03/12 07:47	RA	EPA 300/SW846 9056

RL = Reporting Limit

## Report of Analysis

3.5  
3

<b>Client Sample ID:</b> TRIP BLANK	<b>Date Sampled:</b> 09/26/12
<b>Lab Sample ID:</b> TC17204-5	<b>Date Received:</b> 09/28/12
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8021B	
<b>Project:</b> CRA: Burton Flats Eddy County Carlsbad, NM	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK045111.D	1	10/08/12	JL	n/a	n/a	GKK2094
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0010	0.00058	mg/l	
108-88-3	Toluene	ND	0.0010	0.00050	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00052	mg/l	
1330-20-7	Xylenes (total)	ND	0.0030	0.0013	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		60-146%
98-08-8	aaa-Trifluorotoluene	118%		69-137%

---

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

Misc. Forms

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Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



**Accutest Job Number:** TC17204      **Client:** CONESTOGA ROVERS & ASSOCIATES      **Project:** DCP BURTON FLATS 070537-2012-04  
**Date / Time Received:** 9/28/2012      **Delivery Method:** \_\_\_\_\_      **Airbill #'s:** 540704992041  
**No. Coolers:** 1      **Therm ID:** IRGUN5;      **Temp Adjustment Factor:** -0.4;  
**Cooler Temps (Initial/Adjusted):** #1: (5.5/5.1);

<u>Cooler Security</u>		<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Cooler Temperature</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Cooler temp verification:	_____			
3. Cooler media:	Ice (bag)			

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>			
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		

<u>Sample Integrity - Documentation</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
3. Sample container label / COC agree:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	

<u>Sample Integrity - Condition</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
3. Condition of sample:	Intact			

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

- Received extra set of [water] Trip Blank not listed on COC. Added to end of job.
- [mw-2]: Collection [time] on label ((14:45)) does not match the [time] listed on COC ((14:15))

4.1  
4

**Accutest Job Number:** TC17204

**CSR:** Sylvia Garza

**Response Date:** 9/28/2012

**Response:** Follow 1415, time on jar per client.

4.1  
4

**TC17204: Chain of Custody**  
**Page 3 of 5**

Job #: TC17204

Date / Time Received: 9/28/2012 9:20:00 AM

Initials: CH

Client: CONESTOGA ROVERS & ASSOCIATES

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC17204-1	LAG	1	4W	N/P	Note #2 - Preservative check not applicable.	IRGUN5	5.5	-0.4	5.1
1	TC17204-1	LAG	2	4W	N/P	Note #2 - Preservative check not applicable.	IRGUN5	5.5	-0.4	5.1
1	TC17204-1	250ml	3	3P	N/P	Note #2 - Preservative check not applicable.	IRGUN5	5.5	-0.4	5.1
1	TC17204-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-1	40ml	7	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-1	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-1	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-2	LAG	1	4W	N/P	Note #2 - Preservative check not applicable.	IRGUN5	5.5	-0.4	5.1
1	TC17204-2	LAG	2	4W	N/P	Note #2 - Preservative check not applicable.	IRGUN5	5.5	-0.4	5.1
1	TC17204-2	250ml	3	3P	N/P	Note #2 - Preservative check not applicable.	IRGUN5	5.5	-0.4	5.1
1	TC17204-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-2	40ml	7	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-2	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-2	40ml	9	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-3	LAG	1	4W	N/P	Note #2 - Preservative check not applicable.	IRGUN5	5.5	-0.4	5.1
1	TC17204-3	LAG	2	4W	N/P	Note #2 - Preservative check not applicable.	IRGUN5	5.5	-0.4	5.1
1	TC17204-3	250ml	3	3P	N/P	Note #2 - Preservative check not applicable.	IRGUN5	5.5	-0.4	5.1
1	TC17204-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1
1	TC17204-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.5	-0.4	5.1

4.1  
4

TC17204: Chain of Custody

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## GC Volatiles

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## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GHH676-MB	HH0012536.D		10/04/12	LT	n/a	n/a	GHH676

The QC reported here applies to the following samples:

Method: SW846 8015

TC17204-1, TC17204-2, TC17204-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.012	mg/l	

CAS No.	Surrogate Recoveries	Limits	
460-00-4	4-Bromofluorobenzene	76%	52-127%
98-08-8	aaa-Trifluorotoluene	88%	58-141%

## Method Blank Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GHH679-MB	HH0012570.D		10/08/12	LT	n/a	n/a	GHH679

The QC reported here applies to the following samples:

Method: SW846 8015

TC17204-4

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.012	mg/l	

CAS No.	Surrogate Recoveries	Limits	
460-00-4	4-Bromofluorobenzene	73%	52-127%
98-08-8	aaa-Trifluorotoluene	84%	58-141%

## Method Blank Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK2093-MB	KK045074.D 1		10/05/12	JL	n/a	n/a	GKK2093

The QC reported here applies to the following samples:

Method: SW846 8021B

TC17204-1, TC17204-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.58	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.52	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.3	ug/l	

CAS No.	Surrogate Recoveries	Limits	
460-00-4	4-Bromofluorobenzene	88%	60-146%
98-08-8	aaa-Trifluorotoluene	98%	69-137%

## Method Blank Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK2094-MB	KK045105.D 1		10/08/12	JL	n/a	n/a	GKK2094

The QC reported here applies to the following samples:

Method: SW846 8021B

TC17204-1, TC17204-3, TC17204-4, TC17204-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.58	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.52	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.3	ug/l	

CAS No.	Surrogate Recoveries	Limits	
460-00-4	4-Bromofluorobenzene	96%	60-146%
98-08-8	aaa-Trifluorotoluene	110%	69-137%

# Blank Spike Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GHH676-BS	HH0012534.D		10/04/12	LT	n/a	n/a	GHH676

The QC reported here applies to the following samples:

Method: SW846 8015

TC17204-1, TC17204-2, TC17204-3

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.417	104	73-122

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	89%	52-127%
98-08-8	aaa-Trifluorotoluene	101%	58-141%

\* = Outside of Control Limits.

# Blank Spike Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GHH679-BS	HH0012568.D		10/08/12	LT	n/a	n/a	GHH679

The QC reported here applies to the following samples:

Method: SW846 8015

TC17204-4

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.461	115	73-122

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	87%	52-127%
98-08-8	aaa-Trifluorotoluene	103%	58-141%

\* = Outside of Control Limits.

# Blank Spike Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK2093-BS	KK045073.D 1		10/05/12	JL	n/a	n/a	GKK2093

The QC reported here applies to the following samples:

Method: SW846 8021B

TC17204-1, TC17204-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	17.3	87	80-118
100-41-4	Ethylbenzene	20	19.9	100	79-118
108-88-3	Toluene	20	16.3	82	80-116
1330-20-7	Xylenes (total)	60	54.3	91	81-117

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	91%	60-146%
98-08-8	aaa-Trifluorotoluene	109%	69-137%

\* = Outside of Control Limits.

# Blank Spike Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK2094-BS	KK045104.D 1		10/08/12	JL	n/a	n/a	GKK2094

The QC reported here applies to the following samples:

Method: SW846 8021B

TC17204-1, TC17204-3, TC17204-4, TC17204-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	18.6	93	80-118
100-41-4	Ethylbenzene	20	20.1	101	79-118
108-88-3	Toluene	20	17.7	89	80-116
1330-20-7	Xylenes (total)	60	58.2	97	81-117

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	101%	60-146%
98-08-8	aaa-Trifluorotoluene	120%	69-137%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC17204-4MS	HH0012541.15		10/04/12	LT	n/a	n/a	GHH676
TC17204-4MSD	HH0012542.15		10/04/12	LT	n/a	n/a	GHH676
TC17204-4 <sup>a</sup>	HH0012540.15		10/04/12	LT	n/a	n/a	GHH676

The QC reported here applies to the following samples:

Method: SW846 8015

TC17204-1, TC17204-2, TC17204-3

CAS No.	Compound	TC17204-4 mg/l	Spike Q mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2	2.33	117	2.26	113	3	73-122/15

CAS No.	Surrogate Recoveries	MS	MSD	TC17204-4	Limits
460-00-4	4-Bromofluorobenzene	89%	85%		52-127%
98-08-8	aaa-Trifluorotoluene	104%	104%		58-141%

(a) Sample used for QC purposes only.

\* = Outside of Control Limits.

5.3.1  
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# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC17204-4MS	HH0012572.D		10/08/12	LT	n/a	n/a	GHH679
TC17204-4MSD	HH0012573.D		10/08/12	LT	n/a	n/a	GHH679
TC17204-4	HH0012571.D		10/08/12	LT	n/a	n/a	GHH679

The QC reported here applies to the following samples:

Method: SW846 8015

TC17204-4

CAS No.	Compound	TC17204-4 mg/l	Spike Q mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	0.4	0.424	106	0.374	94	13	73-122/15

CAS No.	Surrogate Recoveries	MS	MSD	TC17204-4	Limits
460-00-4	4-Bromofluorobenzene	78%	81%	77%	52-127%
98-08-8	aaa-Trifluorotoluene	96%	100%	88%	58-141%

\* = Outside of Control Limits.

5.3.2  
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# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC17204-2MS	KK045096.D 1		10/06/12	JL	n/a	n/a	GKK2093
TC17204-2MSD	KK045097.D 1		10/06/12	JL	n/a	n/a	GKK2093
TC17204-2	KK045085.D 1		10/05/12	JL	n/a	n/a	GKK2093

The QC reported here applies to the following samples:

Method: SW846 8021B

TC17204-1, TC17204-2

CAS No.	Compound	TC17204-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	16.9	85	16.3	82	4	80-118/22
100-41-4	Ethylbenzene	ND	20	19.4	97	18.2	91	6	79-118/14
108-88-3	Toluene	ND	20	16.6	83	16.1	81	3	80-116/22
1330-20-7	Xylenes (total)	ND	60	52.9	88	49.6	83	6	81-117/16

CAS No.	Surrogate Recoveries	MS	MSD	TC17204-2	Limits
460-00-4	4-Bromofluorobenzene	87%	82%	107%	60-146%
98-08-8	aaa-Trifluorotoluene	104%	102%	123%	69-137%

\* = Outside of Control Limits.

5.3.3  
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# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC17204-3MS	KK045108.D 1		10/08/12	JL	n/a	n/a	GKK2094
TC17204-3MSD	KK045109.D 1		10/08/12	JL	n/a	n/a	GKK2094
TC17204-3	KK045107.D 1		10/08/12	JL	n/a	n/a	GKK2094

The QC reported here applies to the following samples:

Method: SW846 8021B

TC17204-1, TC17204-3, TC17204-4, TC17204-5

CAS No.	Compound	TC17204-3 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	19.7	99	19.1	96	3	80-118/22
100-41-4	Ethylbenzene	0.57	J	20	23.6	115	23.0	112	3	79-118/14
108-88-3	Toluene	ND		20	19.3	97	18.6	93	4	80-116/22
1330-20-7	Xylenes (total)	ND		60	63.9	107	61.5	103	4	81-117/16

CAS No.	Surrogate Recoveries	MS	MSD	TC17204-3	Limits
460-00-4	4-Bromofluorobenzene	100%	100%	106%	60-146%
98-08-8	aaa-Trifluorotoluene	121%	120%	128%	69-137%

\* = Outside of Control Limits.

5.3.4  
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## GC Semi-volatiles

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP25427-MB	CC228012.D 1		10/03/12	FO	10/03/12	OP25427	GCC1406

The QC reported here applies to the following samples:

Method: SW846 8015 M

TC17204-1, TC17204-2, TC17204-3, TC17204-4

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	0.10	0.031	mg/l	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	68% 37-135%

# Blank Spike/Blank Spike Duplicate Summary

**Job Number:** TC17204  
**Account:** DUKE DCP Midstream, LLC  
**Project:** CRA: Burton Flats Eddy County Carlsbad, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP25427-BS	CC228013.D	1	10/03/12	FO	10/03/12	OP25427	GCC1406
OP25427-BSD	CC228014.D	1	10/03/12	FO	10/03/12	OP25427	GCC1406

The QC reported here applies to the following samples:

Method: SW846 8015 M

TC17204-1, TC17204-2, TC17204-3, TC17204-4

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	1	0.742	74	0.754	75	2	42-105/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	63%	80%	37-135%

\* = Outside of Control Limits.

## General Chemistry

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: TC17204  
Account: DUKE - DCP Midstream, LLC  
Project: CRA: Burton Flats Eddy County Carlsbad, NM

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP20968/GN45343	0.50	0.0	mg/l	10	9.13	91.3	90-110%

Associated Samples:

Batch GP20968: TC17204-1, TC17204-2, TC17204-3, TC17204-4

(\*) Outside of QC limits

7.1

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DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: TC17204  
Account: DUKE - DCP Midstream, LLC  
Project: CRA: Burton Flats Eddy County Carlsbad, NM

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chloride	GP20968/GN45343	TC17204-1	mg/l	590	576	2.4	0-13%

Associated Samples:

Batch GP20968: TC17204-1, TC17204-2, TC17204-3, TC17204-4

(\*) Outside of QC limits

7.2  
7

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: TC17204  
Account: DUKE - DCP Midstream, LLC  
Project: CRA: Burton Flats Eddy County Carlsbad, NM

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP20968/GN45343	TC17204-1	mg/l	590	1000	1710	112.0N	90-110%

Associated Samples:

Batch GP20968: TC17204-1, TC17204-2, TC17204-3, TC17204-4

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits