

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office to  
accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company <b>Burlington Resources Oil &amp; Gas Co.</b>	Contact <b>Bobby Spearman</b>
Address <b>3401 East 30<sup>th</sup> St, Farmington, NM</b>	Telephone No. <b>(505)-320-3045</b>
Facility Name: <b>Decker 3</b>	Facility Type: <b>Gas well</b>
Surface Owner: <b>Fee</b>	Mineral Owner: <b>Fee</b>
API No. <b>3004560068</b>	

**LOCATION OF RELEASE**

Unit Letter <b>M</b>	Section <b>23</b>	Township <b>32</b>	Range <b>12</b>	Feet from the <b>1090</b>	North/South Line <b>South</b>	Feet from the <b>890</b>	East/West Line <b>West</b>	County <b>San Juan</b>
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Latitude **36.967226** Longitude **-108.070137**

**NATURE OF RELEASE**

Type of Release <b>Condensate</b>	Volume of Release <b>22.3 bbl</b>	Volume Recovered <b>0 bbl</b>
Source of Release <b>Production tank</b>	Date and Hour of Occurrence <b>1-27-16 11:15A</b>	Date and Hour of Discovery <b>same</b>
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

**OIL CONS. DIV DIST. 3**

**AUG 31 2016**

Describe Cause of Problem and Remedial Action Taken.\*  
Hole in tank due to corrosion.

Describe Area Affected and Cleanup Action Taken.\*

**8-3-16 Crew completed the following:  
Excavation was 17' x 17' x 15' deep. App. 175c/yds of soil was transported to an approved landfarm and clean soil was placed in the excavation site. Analytical results were below NMOCD regulatory standards – no further action required. The soil sampling report is attached for review.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>B. Spearman</i>	<u>OIL CONSERVATION DIVISION</u>	
Printed Name: <b>Bobby Spearman</b>	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: <b>Field Environmental Specialist</b>	Approval Date: <b>9/21/2016</b>	Expiration Date:
E-mail Address: <b>Robert.E.Spearman@conocophillips.com</b>	Conditions of Approval: <b>NVF1603939780</b>	Attached <input type="checkbox"/>
Date: <b>8-29-2016</b>	Phone: <b>(505) 320-3045</b>	

\* Attach Additional Sheets If Necessary

## **Decker #3 Release Report**

Unit Letter M, Section 23, Township 32 North, Range 12 West  
San Juan County, New Mexico

August 23, 2016

Prepared for:  
ConocoPhillips  
5525 Highway 64  
Farmington, New Mexico 87401

Prepared by:  
Rule Engineering, LLC  
501 Airport Drive, Suite 205  
Farmington, New Mexico 87401

# ConocoPhillips Decker #3 Release Report

Prepared for:

ConocoPhillips  
5525 Highway 64  
Farmington, New Mexico 87401

Prepared by:

Rule Engineering, LLC  
501 Airport Drive, Suite 205  
Farmington, New Mexico 87401



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Heather M. Woods, P.G., Area Manager

Reviewed by:



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**Russell Knight, PG, Principal Hydrogeologist**

August 23, 2016

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## 1.0 Introduction

The ConocoPhillips Decker #3 release site is located in Unit Letter M, Section 23, Township 32 North, Range 12 West, in San Juan County, New Mexico. The release of an estimated 22.3 barrels (bbls) of condensate from the above ground storage tank was discovered on January 27, 2016.

A topographic map of the location reproduced from the United States Geological Society quadrangle map of the area is included as Figure 1 and an aerial site map is included as Figure 2.

## 2.0 Release Summary

<b>Site Name</b>	Decker #3		
<b>Site Location Description</b>	Unit Letter M, Section 23, Township 32 North, Range 12 West		
<b>Wellhead GPS Location</b>	N36.96627 and W108.06735	<b>Release GPS Location</b>	N36.96607 and W108.06705
<b>Land Jurisdiction</b>	Private	<b>Discovery Date</b>	January 27, 2016
<b>Release Source</b>	Above Grade Tank	<b>Substance(s) Released</b>	Condensate
<b>Volume Released</b>	Estimated 22.3 bbls	<b>Volume Recovered</b>	0 bbls
<b>NMOCD Site Rank</b>	40		
<b>Distance to Nearest Surface Water</b>	Unnamed, ephemeral wash located approximately 160 feet to the south which ultimately drains to Jaquez Arroyo		
<b>Estimated Depth to Groundwater</b>	Estimated to be less than 50 feet below grade surface (bgs)	<b>Distance to Nearest Water Well or Spring</b>	Greater than 1,000 feet

## 3.0 NMOCD Site Ranking

In accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 40 (Table 1).

Depth to groundwater at the site is estimated to be less than 50 feet bgs based on the reported depth to water of 63 feet bgs for a test well drilled at the Moore Gas Com E #1S located approximately 2,200 feet to the east at an elevation approximately 108 feet higher than the release location.

A review was completed of the New Mexico Office of the State Engineer (NMOSE) online New Mexico Water Rights Reporting System (NMWRRS) and no water wells were

identified within a 1,000 foot radius of the location. No water wells were observed within a 1,000 foot radius of the location during a visual inspection.

An unnamed, ephemeral wash traverses the area approximately 160 feet south of the release location which ultimately drains to Jaquez Arroyo.

Based on the ranking score of 40, action levels for remediated soils at the site are as follows: 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 100 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

## **4.0 Initial Site Assessment**

### **4.1 Field Activities**

On May 10, 2016, Rule Engineering, LLC (Rule) personnel conducted an initial site assessment to delineate the extents of the release which included advancing five soil borings (SB-1 through SB-5) utilizing a hand auger. Soil borings were advanced to approximately 13 feet bgs which is the maximum extent of the equipment. A sample location map showing the boring locations is included as Figure 3.

### **4.2 Soil Sampling**

Rule collected soil samples from the soil borings at 2 to 3 foot intervals. The lithology encountered at the site included interbedded clayey sand and poorly graded sand to the maximum depths of the soil borings.

A portion of each sample was field screened for volatile organic compounds (VOCs) and selected samples were analyzed for TPH. Field screening for VOC vapors was conducted with a photoionization detector (PID). Prior to field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas. Field analysis for TPH was conducted for selected samples per United States Environmental Protection Agency (USEPA) Method 418.1, utilizing a total hydrocarbon analyzer. Prior to field analysis, the machine was calibrated following the manufacturer's procedure which includes calculation of a calibration curve using known concentration standards.

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per USEPA Method 8021B and TPH (GRO/DRO) per USEPA 8015D.

Initial site assessment field screening and laboratory analytical results are summarized in Table 2. The analytical laboratory report is included in Appendix A.

### **4.3 Field Screening and Results**

Field screening results for samples collected from soil borings SB-1 and SB-5 indicated VOC concentrations ranging from 6.5 ppm to 3,600 ppm. Field TPH results for samples collected from soil borings SB-1 through SB-5 indicated TPH concentrations ranging from below the reporting limit of 20 mg/kg to 1,090 mg/kg. Field screening results are summarized in Table 2.

### **4.4 Laboratory Analytical Results**

Laboratory analytical results for the initial site assessment sample, SB-1 at 13, reported the benzene concentration below the laboratory reporting limit of 0.12 mg/kg, which is below the NMOCD action level of 10 mg/kg. Total BTEX concentration for sample SB-1 at 13 feet was reported at 3.2 mg/kg, which is below the NMOCD action level of 50 mg/kg. Concentrations of TPH (GRO/DRO) for samples SB-1 at 13 feet was reported as 200 mg/kg GRO and 80 mg/kg DRO, which are above the NMOCD action level of 100 mg/kg for a site rank of 40.

Initial site assessment field screening and laboratory analytical results are summarized in Table 2. The analytical laboratory report is included in Appendix A.

## **5.0 Excavation Confirmation Sampling**

### **5.1 Field Activities**

On August 3, 2016, Rule personnel returned to the location to provide excavation guidance and collect confirmation samples from the resultant excavation. The maximum extent of the excavation measured approximately 17 feet by 17 feet by 15 feet deep. Approximately 175 cubic yards of impacted soils were transported to a local NMOCD approved landfarm for disposal/remediation and the excavation was backfilled with clean, imported material. A depiction of the final excavation with sample locations is included on Figure 3.

### **5.2 Soil Sampling**

Rule collected five composite confirmation soil samples (SC-1 through SC-5) from the final excavation for field screening and laboratory analysis. Each confirmation soil sample is a representative composite comprised of five equivalent portions of soil collected from the sampled area.

A portion of each sample was field screened for VOCs and selected samples were also field analyzed for TPH. Field screening for VOC vapors was conducted with a PID. Prior to field screening, the PID was calibrated with 100 ppm isobutylene gas. Field analysis for TPH was conducted for selected samples per USEPA Method 418.1, utilizing a total hydrocarbon analyzer. Prior to field analysis, the machine was calibrated following the

manufacturer's procedure which includes calculation of a calibration curve using known concentration standards.

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per USEPA Method 8021B, TPH (GRO/DRO) per USEPA Method 8015M/D, and chlorides per Method 300.0.

Field screening and laboratory analytical results are summarized in Table 3. The analytical laboratory report is included in Appendix A.

### **5.3 Field Screening Results**

Field screening results for soil confirmation samples SC-1 through SC-5 indicated VOC concentrations ranging from 0.2 ppm to 1,021 ppm. The field TPH concentration results for samples SC-1 through SC-3 ranged from below the reporting limit of 20 mg/kg to 68.7 mg/kg. Field screening results are summarized in Table 3.

### **5.4 Laboratory Analytical Results**

Laboratory analytical results for excavation confirmation samples SC-1 through SC-5 reported benzene concentrations below the laboratory reporting limits, which are below the NMOCD action level of 10 mg/kg. Total BTEX concentrations for samples SC-1 through SC-5 ranged from below the laboratory reporting limits to 0.37 mg/kg, which are below the NMOCD action level of 50 mg/kg. Concentration of TPH (GRO/DRO) for samples SC-1 through SC-5 ranged from below the laboratory reporting limits to 93 mg/kg, which are below the NMOCD action level of 100 mg/kg for a site rank of 40.

Laboratory analytical results are summarized in Table 3. The analytical laboratory report is included in Appendix A.

## **6.0 Conclusions**

The ConocoPhillips Decker #3 release site is located in Unit Letter M, Section 23, Township 32 North, Range 12 West, in San Juan County, New Mexico. The release of an estimated 22.3 bbls of condensate from the above ground storage tank was discovered on January 27, 2016. Following the excavation of hydrocarbon impacted soils, confirmation samples SC-1 through SC-5 were collected from the resultant excavation which measured approximately 17 feet by 17 feet by 15 feet deep. Laboratory analytical results for confirmation samples SC-1 through SC-5 reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below the applicable NMOCD action levels for a site rank of 40. Approximately 175 cubic yards of impacted soils were transported to a local NMOCD approved landfarm for disposal/remediation and the excavation was backfilled with clean, imported material.

Based on laboratory analytical results of the confirmation soil samples, no further work is recommended at this time.

## **7.0 Closure and Limitations**

This report has been prepared for the exclusive use of ConocoPhillips and is subject to the terms, conditions, and limitations stated in Rule's report and Service Agreement with ConocoPhillips. All work has been performed in accordance with generally accepted professional environmental consulting practices. No other warranty is expressed or implied.

## Tables

**Table 1. NMOCD Site Ranking Determination**  
**ConocoPhillips**  
**Decker #3**  
**San Juan County, New Mexico**

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
<b>Depth to Groundwater</b>				
<50 feet	20	20	Elevation differential information derived from the topographic map of the area and depth to water of 63 feet bgs reported from a test well installed at the Moore Gas Com E #1S located approximately 2,200 feet to the east. The release location elevation is approximately 108 feet higher in elevation, indicating groundwater may be present at less than 50 feet bgs.	NMOCD Online database, Adobe Downs Ranch Quadrangle, Google Earth, and Visual Inspection
50-99 feet	10			
>100 feet	0			
<b>Wellhead Protection Area</b>				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 foot radius of location.	NMOSE NMWRRS, Adobe Downs Ranch Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
<b>Distance to Surface Water Body</b>				
<200 horizontal feet	20	20	An unnamed, ephemeral wash located approximately 160 feet south of release location which ultimately drains to Jaquez Arroyo.	Adobe Downs Ranch Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		40		

**Table 2. Initial Site Assessment Field Screening and Laboratory Analytical Results**  
**ConocoPhillips**  
**Decker #3**  
**San Juan County, New Mexico**

Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Field TPH by 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)
NMOCD Action Level*			100	100	10	NE	NE	NE	50	100	
SB-1	5/10/2016	1	3,600	--	--	--	--	--	--	--	--
		2.5	2,000	--	--	--	--	--	--	--	--
		4	2,100	--	--	--	--	--	--	--	--
		6.5	1,250	--	--	--	--	--	--	--	--
		9	1,300	--	--	--	--	--	--	--	--
		11	2,300	--	--	--	--	--	--	--	--
		13	2,800	1,090	<0.12	<0.25	<0.25	3.2	3.2	200	80
SB-2	5/10/2016	0.5	300	--	--	--	--	--	--	--	--
		1.5	650	--	--	--	--	--	--	--	--
		3.5	667	--	--	--	--	--	--	--	--
		5	812	--	--	--	--	--	--	--	--
		7	900	21.7	--	--	--	--	--	--	--
		9	380	--	--	--	--	--	--	--	--
		13	750	--	--	--	--	--	--	--	--
SB-3	5/10/2016	1	13.0	--	--	--	--	--	--	--	--
		3	52.3	--	--	--	--	--	--	--	--
		5	68.3	--	--	--	--	--	--	--	--
		7	88.7	<20.0	--	--	--	--	--	--	--
		9	15.6	--	--	--	--	--	--	--	--
		11	6.5	--	--	--	--	--	--	--	--
		13	6.6	--	--	--	--	--	--	--	--
SB-4	5/10/2016	1	28.9	--	--	--	--	--	--	--	--
		5	39.1	--	--	--	--	--	--	--	--
		7	85.1	--	--	--	--	--	--	--	--
		9	39.1	--	--	--	--	--	--	--	--
		11	13.2	--	--	--	--	--	--	--	--
		13	53.1	--	--	--	--	--	--	--	--
SB-5	5/10/2016	1	2,045	--	--	--	--	--	--	--	--
		3	2,040	--	--	--	--	--	--	--	--
		5	1,892	--	--	--	--	--	--	--	--
		7	2,546	--	--	--	--	--	--	--	--
		9	2,116	--	--	--	--	--	--	--	--
		11.5	1,611	--	--	--	--	--	--	--	--
		13	1,457	--	--	--	--	--	--	--	--

Notes: VOCs - volatile organic compounds  
 PID - photoionization detector  
 ft bgs - feet below grade surface  
 ppm - parts per million  
 mg/kg - milligrams per kilogram  
 \*Based on the NMOCD Guidelines for Remediation of Leaks, Spills and Releases (August 1993)  
 \*\*Based on a site ranking of 20.

TPH - total petroleum hydrocarbons  
 GRO - gasoline range organics  
 DRO - diesel range organics  
 BTEX - benzene, toluene, ethylbenzene, and xylenes  
 NMOCD - New Mexico Oil Conservation Division

**Table 3. Excavation Confirmation Field Screening and Laboratory Analytical Results  
ConocoPhillips  
Decker #3  
San Juan County, New Mexico**

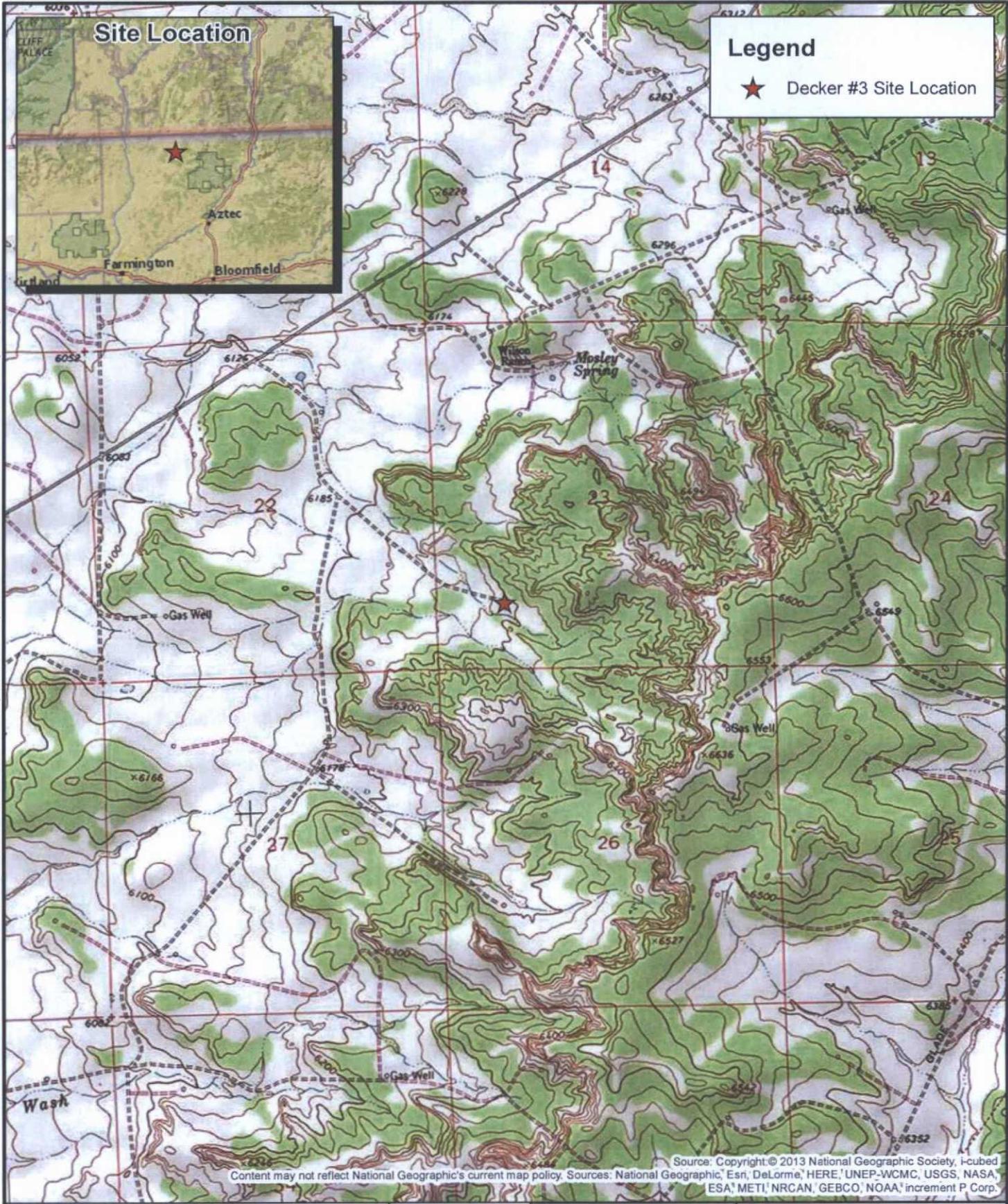
Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Field TPH by 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	Chlorides (mg/kg)
<b>NMOCD Action Level*</b>			<b>100**</b>	<b>100</b>	<b>10</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>50</b>	<b>100**</b>		<b>NE</b>
SC-1	8/3/2016	15	<b>1,021</b>	68.7	<0.019	<0.037	<0.037	0.37	0.37	77	16	<30
SC-2	8/3/2016	1 to 15	0.5	<20.0	<0.019	<0.038	<0.038	<0.076	<0.171	<3.8	<9.6	<30
SC-3	8/3/2016	1 to 15	0.2	<20.0	<0.019	<0.039	<0.039	<0.077	<0.174	<3.9	<9.7	<30
SC-4	8/3/2016	1 to 15	3.5	--	<0.020	<0.041	<0.041	<0.081	<0.183	<4.1	<9.7	<30
SC-5	8/3/2016	1 to 15	2.9	--	<0.019	<0.037	<0.037	<0.075	<0.168	<3.7	<9.6	<30

Notes: VOCs - volatile organic compounds  
 PID - photoionization detector  
 ft bgs - feet below grade surface  
 ppm - parts per million  
 mg/kg - milligrams per kilogram  
 NE - not-established  
 \*Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)*  
 \*\*Based on a site ranking of 40.

ND - not detected above laboratory reporting limits  
 BTEX - benzene, toluene, ethylbenzene, and xylenes  
 TPH - total petroleum hydrocarbons  
 GRO - gasoline range organics  
 DRO - diesel range organics  
 NMOCD - New Mexico Oil Conservation Division

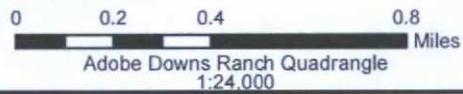
## Figures

Document Path: U:\ConocoPhillips\ConocoPhillips\Decker 3 Pro Rem 1\Decker 3 Pro Rem 1 Topo Map.mxd



Source: Copyright © 2013 National Geographic Society, i-cubed  
Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

**Rule Engineering, LLC**  
Solutions to Regulations for Industry



M-S23-T32N-R12W  
N36.96607, W108.06705  
San Juan County, NM  
API: 30-045-60068

**Figure 1**  
**Topographic Map**  
Decker #3

### Legend

 Berm

Above Ground Tank  
Release Location  
GPS: N36.96607, W108.06705

Below Ground Tank

Separator

Decker #3 Wellhead  
GPS: N36.96627, W108.06735

Source: Google Maps

**Rule** Engineering, LLC  
Solutions to Regulations for Industry

0 3.75 7.5 15 22.5 30 Feet  
1 inch = 15 feet



**ConocoPhillips**

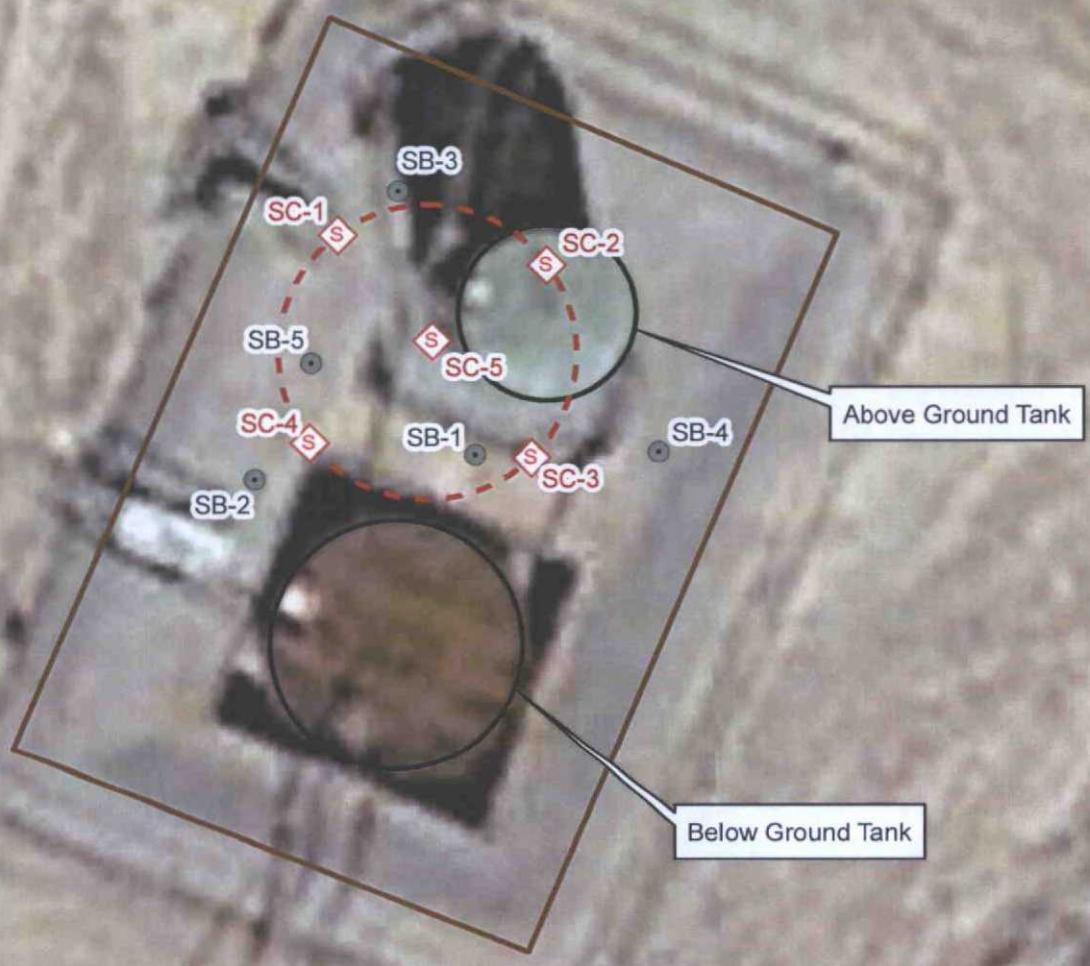
M-S23-T32N-R12W  
N36.96607, W108.06705  
San Juan County, NM  
API: 30-045-60068

**Figure 2**  
**Aerial Map**  
Decker #3

Document Path: U:\ConocoPhillips\ConocoPhillips\Decker 3 Pro Rem 1\Decker 3 Pro Rem 1\Sample Location Map.mxd

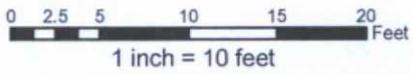
### Legend

-  Excavation
-  Excavation Sample Locations
-  Soil Boring Locations
-  Berm



Source: Google Maps

**Rule** Engineering, LLC  
Solutions to Regulations for Industry



M-S23-T32N-R12W  
 N36.96607, W108.06705  
 San Juan County, NM  
 API: 30-045-60068

**Figure 2**  
**Sample Location Map**  
 Decker #3

Appendix A  
Analytical Laboratory Reports



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

May 20, 2016

Heather Woods  
Rule Engineering LLC  
501 Airport Dr., Ste 205  
Farmington, NM 87401  
TEL: (505) 325-1055  
FAX

RE: CoP Decker #3

OrderNo.: 1605554

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/12/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Analytical Report**

Lab Order 1605554

Date Reported: 5/20/2016

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Rule Engineering LLC

**Client Sample ID:** SB-1 @ 13

**Project:** CoP Decker #3

**Collection Date:** 5/10/2016 10:30:00 AM

**Lab ID:** 1605554-001

**Matrix:** SOIL

**Received Date:** 5/12/2016 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	80	10		mg/Kg	1	5/18/2016 3:13:51 PM	25376
Surr: DNOP	101	70-130		%Rec	1	5/18/2016 3:13:51 PM	25376
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	200	25	D	mg/Kg	5	5/13/2016 10:49:19 PM	25287
Surr: BFB	321	80-120	SD	%Rec	5	5/13/2016 10:49:19 PM	25287
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.12	D	mg/Kg	5	5/13/2016 10:49:19 PM	25287
Toluene	ND	0.25	D	mg/Kg	5	5/13/2016 10:49:19 PM	25287
Ethylbenzene	ND	0.25	D	mg/Kg	5	5/13/2016 10:49:19 PM	25287
Xylenes, Total	3.2	0.49	D	mg/Kg	5	5/13/2016 10:49:19 PM	25287
Surr: 4-Bromofluorobenzene	118	80-120	D	%Rec	5	5/13/2016 10:49:19 PM	25287

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605554

20-May-16

Client: Rule Engineering LLC

Project: CoP Decker #3

Sample ID	LCS-25376		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	25376		RunNo:	34312				
Prep Date:	5/18/2016		Analysis Date:	5/18/2016		SeqNo:	1057969		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	46	10	50.00	0	92.6	62.6	124				
Surr: DNOP	4.7		5.000		94.9	70	130				

Sample ID	MB-25376		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	25376		RunNo:	34312				
Prep Date:	5/18/2016		Analysis Date:	5/18/2016		SeqNo:	1057971		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10									
Surr: DNOP	9.6		10.00		95.7	70	130				

Sample ID	LCS-25321		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	25321		RunNo:	34313				
Prep Date:	5/16/2016		Analysis Date:	5/18/2016		SeqNo:	1058336		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	4.4		5.000		88.6	70	130				

Sample ID	LCS-25322		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	25322		RunNo:	34313				
Prep Date:	5/16/2016		Analysis Date:	5/18/2016		SeqNo:	1058337		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	4.1		5.000		82.7	70	130				

Sample ID	MB-25321		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	25321		RunNo:	34313				
Prep Date:	5/16/2016		Analysis Date:	5/18/2016		SeqNo:	1058338		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	9.1		10.00		91.0	70	130				

Sample ID	MB-25322		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	25322		RunNo:	34313				
Prep Date:	5/16/2016		Analysis Date:	5/18/2016		SeqNo:	1058339		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	9.5		10.00		95.1	70	130				

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605554  
20-May-16

**Client:** Rule Engineering LLC  
**Project:** CoP Decker #3

Sample ID	<b>MB-25287</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>25287</b>	RunNo:	<b>34211</b>					
Prep Date:	<b>5/12/2016</b>	Analysis Date:	<b>5/13/2016</b>	SeqNo:	<b>1055224</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		102	80	120			

Sample ID	<b>LCS-25287</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>25287</b>	RunNo:	<b>34211</b>					
Prep Date:	<b>5/12/2016</b>	Analysis Date:	<b>5/13/2016</b>	SeqNo:	<b>1055225</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.8	80	120			
Surr: BFB	1100		1000		111	80	120			

Sample ID	<b>5ML RB</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>B34260</b>	RunNo:	<b>34260</b>					
Prep Date:		Analysis Date:	<b>5/16/2016</b>	SeqNo:	<b>1056341</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	80	120			

Sample ID	<b>2.5UG GRO LCS</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>B34260</b>	RunNo:	<b>34260</b>					
Prep Date:		Analysis Date:	<b>5/16/2016</b>	SeqNo:	<b>1056342</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1200		1000		118	80	120			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605554

20-May-16

**Client:** Rule Engineering LLC

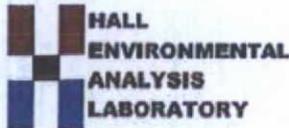
**Project:** CoP Decker #3

Sample ID	<b>MB-25287</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>25287</b>	RunNo:	<b>34211</b>					
Prep Date:	<b>5/12/2016</b>	Analysis Date:	<b>5/13/2016</b>	SeqNo:	<b>1055265</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	<b>LCS-25287</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>25287</b>	RunNo:	<b>34211</b>					
Prep Date:	<b>5/12/2016</b>	Analysis Date:	<b>5/13/2016</b>	SeqNo:	<b>1055266</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	75.3	123			
Toluene	1.0	0.050	1.000	0	99.9	80	124			
Ethylbenzene	0.99	0.050	1.000	0	98.8	82.8	121			
Xylenes, Total	3.0	0.10	3.000	0	98.9	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	80	120			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory  
 4901 Hawkins NE  
 Albuquerque, NM 87109  
 TEL: 505-345-3975 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1605554

RcptNo: 1

Received by/date: AT

Logged By: Ashley Gallegos 5/12/2016 7:20:00 AM AG

Completed By: Ashley Gallegos 5/12/2016 10:07:09 AM AG

Reviewed By: IO 05/12/16

### Chain of Custody

1. Custody seals intact on sample bottles? Yes  No  Not Present
2. Is Chain of Custody complete? Yes  No  Not Present
3. How was the sample delivered? Courier

### Log In

4. Was an attempt made to cool the samples? Yes  No  NA
5. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA
6. Sample(s) in proper container(s)? Yes  No
7. Sufficient sample volume for indicated test(s)? Yes  No
8. Are samples (except VOA and ONG) properly preserved? Yes  No
9. Was preservative added to bottles? Yes  No  NA
10. VOA vials have zero headspace? Yes  No  No VOA Vials
11. Were any sample containers received broken? Yes  No
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes  No
13. Are matrices correctly identified on Chain of Custody? Yes  No
14. Is it clear what analyses were requested? Yes  No
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes  No

# of preserved bottles checked for pH: \_\_\_\_\_  
 (<2 or >12 unless noted)  
 Adjusted? \_\_\_\_\_  
 Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	_____	Date	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

# Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr, Suite 205  
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:  
 Standard       Level 4 (Full Validation)

Accreditation  
 NELAP       Other \_\_\_\_\_

EDD (Type) \_\_\_\_\_

Turn-Around Time:  
 Standard       Rush \_\_\_\_\_

Project Name:  
COP Decker #3

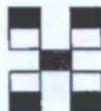
Project #:  
 \_\_\_\_\_

Project Manager:  
Heather Woods

Sampler: H. woods / J. Valdez

On Ice:  Yes       No

Sample Temperature: 1.0



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com  
 4901 Hawkins NE - Albuquerque, NM 87109  
 Tel. 505-345-3975      Fax 505-345-4107

### Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TCE/DBP (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / <del>8022</del> )	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
5/10/16	1030	Soil	SB-1 @ 13	(1) 4oz Glass	cold	1100555A -001	X	X										
<i>NFS HED</i>																		

Date: <u>5/11/16</u>	Time: <u>1814</u>	Relinquished by: <u>Heather M. Woods</u>	Received by: <u>Christine Walters</u>	Date: <u>5/11/16</u>	Time: <u>1814</u>	Remarks: Direct Bill to ConocoPhillips User ID: MKSPENC Area: 1      ordered By: Bobby Spearman Area Supervisor: Billy Schaaphok
Date: <u>5/11/16</u>	Time: <u>1830</u>	Relinquished by: <u>Christine Walters</u>	Received by: <u>[Signature]</u>	Date: <u>05/12/16</u>	Time: <u>0726</u>	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

August 05, 2016

Heather Woods  
Rule Engineering LLC  
501 Airport Dr., Ste 205  
Farmington, NM 87401  
TEL: (505) 325-1055  
FAX

RE: Decker 3

OrderNo.: 1608192

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/4/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Rule Engineering LLC  
 Project: Decker 3  
 Lab ID: 1608192-001

Client Sample ID: SC-1  
 Collection Date: 8/3/2016 10:10:00 AM  
 Matrix: MEOH (SOIL) Received Date: 8/4/2016 6:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	8/4/2016 12:18:06 PM	26787
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	16	9.5		mg/Kg	1	8/4/2016 3:24:24 PM	26779
Surr: DNOP	80.4	70-130		%Rec	1	8/4/2016 3:24:24 PM	26779
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	77	3.7		mg/Kg	1	8/4/2016 10:12:13 AM	26763
Surr: BFB	893	49.4-163	S	%Rec	1	8/4/2016 10:12:13 AM	26763
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	8/4/2016 10:12:13 AM	26763
Toluene	ND	0.037		mg/Kg	1	8/4/2016 10:12:13 AM	26763
Ethylbenzene	ND	0.037		mg/Kg	1	8/4/2016 10:12:13 AM	26763
Xylenes, Total	0.37	0.074		mg/Kg	1	8/4/2016 10:12:13 AM	26763
Surr: 4-Bromofluorobenzene	128	80-120	S	%Rec	1	8/4/2016 10:12:13 AM	26763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

**Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Rule Engineering LLC  
 Project: Decker 3  
 Lab ID: 1608192-002

Client Sample ID: SC-2  
 Collection Date: 8/3/2016 10:15:00 AM  
 Matrix: MEOH (SOIL) Received Date: 8/4/2016 6:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	8/4/2016 12:30:31 PM	26787
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/4/2016 3:46:10 PM	26779
Surr: DNOP	88.3	70-130		%Rec	1	8/4/2016 3:46:10 PM	26779
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	8/4/2016 10:35:41 AM	26763
Surr: BFB	104	49.4-163		%Rec	1	8/4/2016 10:35:41 AM	26763
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	8/4/2016 10:35:41 AM	26763
Toluene	ND	0.038		mg/Kg	1	8/4/2016 10:35:41 AM	26763
Ethylbenzene	ND	0.038		mg/Kg	1	8/4/2016 10:35:41 AM	26763
Xylenes, Total	ND	0.076		mg/Kg	1	8/4/2016 10:35:41 AM	26763
Surr: 4-Bromofluorobenzene	94.3	80-120		%Rec	1	8/4/2016 10:35:41 AM	26763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

**Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Rule Engineering LLC

Client Sample ID: SC-3

Project: Decker 3

Collection Date: 8/3/2016 10:20:00 AM

Lab ID: 1608192-003

Matrix: MEOH (SOIL)

Received Date: 8/4/2016 6:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	8/4/2016 12:42:56 PM	26787
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/4/2016 4:07:45 PM	26779
Surr: DNOP	94.9	70-130		%Rec	1	8/4/2016 4:07:45 PM	26779
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	8/4/2016 10:59:14 AM	26763
Surr: BFB	95.9	49.4-163		%Rec	1	8/4/2016 10:59:14 AM	26763
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	8/4/2016 10:59:14 AM	26763
Toluene	ND	0.039		mg/Kg	1	8/4/2016 10:59:14 AM	26763
Ethylbenzene	ND	0.039		mg/Kg	1	8/4/2016 10:59:14 AM	26763
Xylenes, Total	ND	0.077		mg/Kg	1	8/4/2016 10:59:14 AM	26763
Surr: 4-Bromofluorobenzene	89.8	80-120		%Rec	1	8/4/2016 10:59:14 AM	26763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Rule Engineering LLC  
**Project:** Decker 3  
**Lab ID:** 1608192-004

**Client Sample ID:** SC-4  
**Collection Date:** 8/3/2016 10:25:00 AM  
**Received Date:** 8/4/2016 6:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b> Analyst: <b>LGT</b>							
Chloride	ND	30		mg/Kg	20	8/4/2016 12:55:20 PM	26787
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> Analyst: <b>JME</b>							
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/4/2016 4:29:31 PM	26779
Surr: DNOP	97.4	70-130		%Rec	1	8/4/2016 4:29:31 PM	26779
<b>EPA METHOD 8015D: GASOLINE RANGE</b> Analyst: <b>NSB</b>							
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	8/4/2016 11:22:46 AM	26763
Surr: BFB	96.1	49.4-163		%Rec	1	8/4/2016 11:22:46 AM	26763
<b>EPA METHOD 8021B: VOLATILES</b> Analyst: <b>NSB</b>							
Benzene	ND	0.020		mg/Kg	1	8/4/2016 11:22:46 AM	26763
Toluene	ND	0.041		mg/Kg	1	8/4/2016 11:22:46 AM	26763
Ethylbenzene	ND	0.041		mg/Kg	1	8/4/2016 11:22:46 AM	26763
Xylenes, Total	ND	0.081		mg/Kg	1	8/4/2016 11:22:46 AM	26763
Surr: 4-Bromofluorobenzene	90.4	80-120		%Rec	1	8/4/2016 11:22:46 AM	26763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Rule Engineering LLC  
**Project:** Decker 3  
**Lab ID:** 1608192-005

**Client Sample ID:** SC-5  
**Collection Date:** 8/3/2016 10:30:00 AM  
**Received Date:** 8/4/2016 6:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	8/4/2016 1:07:45 PM	26787
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/4/2016 4:51:11 PM	26779
Surr: DNOP	96.5	70-130		%Rec	1	8/4/2016 4:51:11 PM	26779
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	8/4/2016 11:46:20 AM	26763
Surr: BFB	96.6	49.4-163		%Rec	1	8/4/2016 11:46:20 AM	26763
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	8/4/2016 11:46:20 AM	26763
Toluene	ND	0.037		mg/Kg	1	8/4/2016 11:46:20 AM	26763
Ethylbenzene	ND	0.037		mg/Kg	1	8/4/2016 11:46:20 AM	26763
Xylenes, Total	ND	0.075		mg/Kg	1	8/4/2016 11:46:20 AM	26763
Surr: 4-Bromofluorobenzene	89.1	80-120		%Rec	1	8/4/2016 11:46:20 AM	26763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608192  
05-Aug-16

**Client:** Rule Engineering LLC  
**Project:** Decker 3

Sample ID	<b>MB-26787</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>26787</b>	RunNo:	<b>36231</b>					
Prep Date:	<b>8/4/2016</b>	Analysis Date:	<b>8/4/2016</b>	SeqNo:	<b>1122323</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	<b>LCS-26787</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>26787</b>	RunNo:	<b>36231</b>					
Prep Date:	<b>8/4/2016</b>	Analysis Date:	<b>8/4/2016</b>	SeqNo:	<b>1122324</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.5	90	110			

Sample ID	<b>MB-26787</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>26787</b>	RunNo:	<b>36257</b>					
Prep Date:	<b>8/4/2016</b>	Analysis Date:	<b>8/4/2016</b>	SeqNo:	<b>1123236</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	<b>LCS-26787</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>26787</b>	RunNo:	<b>36257</b>					
Prep Date:	<b>8/4/2016</b>	Analysis Date:	<b>8/4/2016</b>	SeqNo:	<b>1123237</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	90	110			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608192

05-Aug-16

Client: Rule Engineering LLC

Project: Decker 3

Sample ID	MB-26779	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	26779	RunNo:	36220					
Prep Date:	8/3/2016	Analysis Date:	8/4/2016	SeqNo:	1122005	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.9		10.00		98.8	70	130			

Sample ID	LCS-26779	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	26779	RunNo:	36220					
Prep Date:	8/3/2016	Analysis Date:	8/4/2016	SeqNo:	1122006	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	97.0	62.6	124			
Surr: DNOP	5.2		5.000		104	70	130			

## Qualifiers:

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608192

05-Aug-16

Client: Rule Engineering LLC

Project: Decker 3

Sample ID	MB-26763	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	26763	RunNo:	36215					
Prep Date:	8/3/2016	Analysis Date:	8/4/2016	SeqNo:	1122450	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	970		1000		97.0	49.4	163			

Sample ID	LCS-26763	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	26763	RunNo:	36215					
Prep Date:	8/3/2016	Analysis Date:	8/4/2016	SeqNo:	1122452	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	102	80	120			
Surr: BFB	1000		1000		105	49.4	163			

## Qualifiers:

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608192  
05-Aug-16

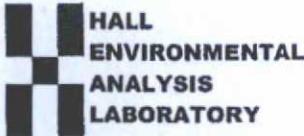
Client: Rule Engineering LLC  
Project: Decker 3

Sample ID	MB-26763	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	26763	RunNo:	36215					
Prep Date:	8/3/2016	Analysis Date:	8/4/2016	SeqNo:	1122473	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.92		1.000		91.5	80	120			

Sample ID	LCS-26763	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	26763	RunNo:	36215					
Prep Date:	8/3/2016	Analysis Date:	8/4/2016	SeqNo:	1122474	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.4	75.3	123			
Toluene	0.92	0.050	1.000	0	91.9	80	124			
Ethylbenzene	0.96	0.050	1.000	0	95.8	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	96.4	83.9	122			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.0	80	120			

### Qualifiers:

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



Hall Environmental Analysis Laboratory  
 4901 Hawkins NE,  
 Albuquerque, NM 87109  
 TEL: 505-345-3975 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: **RULE ENGINEERING LL**

Work Order Number: **1608192**

RcptNo: **1**

Received by/date: *AG* **08/04/16**  
 Logged By: **Ashley Gallegos** **8/4/2016 6:30:00 AM** *AG*  
 Completed By: **Ashley Gallegos** **8/4/2016 6:54:02 AM** *AG*  
 Reviewed By: *aj* **08/4/16**

### Chain of Custody

- 1. Custody seals intact on sample bottles? Yes  No  Not Present
- 2. Is Chain of Custody complete? Yes  No  Not Present
- 3. How was the sample delivered? Courier

### Log In

- 4. Was an attempt made to cool the samples? Yes  No  NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C? Yes  No  NA
- 6. Sample(s) in proper container(s)? Yes  No
- 7. Sufficient sample volume for indicated test(s)? Yes  No
- 8. Are samples (except VOA and ONG) properly preserved? Yes  No
- 9. Was preservative added to bottles? Yes  No  NA
- 10. VOA vials have zero headspace? Yes  No  No VOA Vials
- 11. Were any sample containers received broken? Yes  No
- 12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes  No  # of preserved bottles checked for pH: (**<2 or >12 unless noted**)
- 13. Are matrices correctly identified on Chain of Custody? Yes  No  Adjusted?
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes  No  Checked by:

### Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_  
 By Whom: \_\_\_\_\_ Via:  eMail  Phone  Fax  In Person  
 Regarding: \_\_\_\_\_  
 Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

# Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr Suite 205

Albuquerque, NM

Phone #: 505 793 9486

Email or Fax#: jvaldez@ruleeng.com

VQC Package:  Standard  Level 4 (Full Validation)

Accreditation:  NELAP  Other \_\_\_\_\_

EDD (Type) \_\_\_\_\_

Turn-Around Time:

Standard  Rush Same Day

Project Name: Decker ~~Pro #1~~ #3

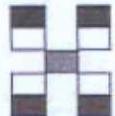
Project #: \_\_\_\_\_

Project Manager: Heather Woods

Sampler: Justin Valdez

On Ice:  Yes  No

Sample Temperature: 2.5



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

### Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TPH (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / TSS)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
3/6	1010	Soil	SL-1	4oz Glass	Cold	1108192-001	+	+						X				
3/6	1015	Soil	SL-2			-002	+	X					X					
3/6	1020	Soil	SL-3			-003	+	+					X					
3/6	1025	Soil	SL-4			-004	+	+					X					
3/6	1030	Soil	SL-5			-005	+	+					X					

Date: 3/6 Time: 1705 Relinquished by: [Signature] Received by: Justin Valdez Date: 8/3/10 Time: 1705

Date: 3/16 Time: 1904 Relinquished by: [Signature] Received by: [Signature] Date: 08/04/10 Time: 0630

Remarks: Direct Bill to ConocoPhillips  
 WO: 21466492  
 Approver: MKSPNCE  
 Area: 1  
 Area Supervisor: Billy Schaapok  
 ordered by: Bobby Spearman

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report