

AE Order Number Banner

Report Description

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App Number: pVF1805854730

3RP - 1062

WILLIAMS FOUR CORNERS, LLC

2/27/2018

3R-1062

Williams Four Corners LLC

Final C-141

Carracas CDP

02/27/2018

District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., 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

OIL CONS. DIV DIST. 3

Form C-141 Revised August 8, 2011

JAN 12 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPE	RATOR 🗌 Initial Report 🛛 Revised Final Report
Name of Company Williams Four Corners LLC	Contact Monica Sandoval
Address 1755 Arroyo Drive, Bloomfield, NM 87413	Telephone No. 505-632-4625
Facility Name Carracas CDP	Facility Type Compressor Station

Surface Owner US Forest Service

Mineral Owner

API No.

LOCATION OF RELEASE

Unit Letter E	Section 34	Township 32N	Range 5W	Feet from the	North/South Line	Feet from the	East/West Line	County Rio Arriba
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Latitude 36.938122° N Longitude -107.353703° W

NATURE OF RELEASE

Type of Release Lube Oil	Volume of Release 20 bbl	Volume Recovered 10 bbl
Source of Release: Bulk Lube Oil Tank Sight Glass	Date and Hour of Occurrence	Date and Hour of Discovery
	6/8/2017 - 6/13/2017 unknown	6/13/2017 9:30 AM MST
	exact time or date	
Was Immediate Notice Given?	If YES, To Whom?	
🛛 Yes 🗌 No 🗌 Not Required	Voicemail left with Vanessa Fields	
	Follow up email sent to Vanessa Fie	elds, Cory Smith and Whitney Thomas
	6/13/2017 12:06 PM MST	
By Whom? Monica Sandoval	Date and Hour 6/13/2017 10:19 AM	A MST
Was a Watercourse Reached?	If YES, Volume Impacting the Wate	ercourse.
🗌 Yes 🖾 No		

If a Watercourse was Impacted, Describe Fully.*

Not Applicable

Describe Cause of Problem and Remedial Action Taken.*

Bulk Lube Oil (refined/unused) tank has a broken sight glass. The cause of the broken sight glass is unknown, as it was a clean straight brake in the sight glass.

Describe Area Affected and Cleanup Action Taken.*

The release was contained in within the berm (secondary containment) area associated with the tank. Lube oil has been pumped on three occasions from the secondary containment area to the used lube oil tank onsite.

Williams began remediation actions on October 2, 2017. Retrofit of the below-grade tanks was occurring during the same time as the lube oil tank remediation. Waste characterization sampling was performed on October 4, 2017 for disposal of lube oil impacted soils. The field inspector indicated that the soils appeared to be clean and collected samples on October 6, 2017 from the floor and east/west sidewalls. After conducting further remediation, additional confirmation samples were collected from the excavation floor north/south side walls on October 12, 2017 and the results were below the remediation levels. The Williams COM received the October 12, 2017 sample results from analytical laboratory which were non-detect and continued to proceed on the project by backfilling and excavation. On October 24, 2017, Williams Environmental Specialist discovered that the excavation was backfilled and tanks had been placed back into service. The NMOCD was contacted on October 24, 2017 to communicate the concern that the 24 hour notification for witnessing confirmation sampling was not provided. Site activities were stopped on October 24, 2017.

Approximately 310 cubic yards of impacted soils were removed during the remediation for disposal. (supporting attachments pp 3-42)

On November 7, 2017 Heather Woods of Rule Engineering contacted Vanessa Fields to notify her that Rule Engineering had been retained to perform the site work on behalf of Williams.

Sampling took place on December 5th, samples were pulled by Heather Woods of Rule Engineering on behalf of Williams; with Vanessa from NMOCD present. The fill extended down to about 6 or 7 feet, and native sandy clay at about 8 feet in most of the borings. Borings were at 8 feet due to bedrock shale. West wall sample boring was an angled boring. Sample results were provided to NMOCD on December 18th. (supporting attachments pp 43-79)

On December 22nd Vanessa came back with approval of samples with no future action requested from OCD. (supporting attachments pp 79-82)

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: MonicaSandousa	OIL CONSERVATION	DIVISION
Printed Name: Monica Sandoval	Approved by Environmental Specialist:	Lan
Title: Environmental Specialist	Approval Date: 2 27 2018 Expiration D	Date:
E-mail Address: monica.sandoval@williams.com	Conditions of Approval:	Attached
Date: 1/8/2017 Phone: 505-632-4625	_	
* Attach Additional Sheets If Necessary	NVF1717255221	



1755 Arroyo Drive Bloomfield, NM 87413 (505) 632-4700 Fax (505) 632-4782

[Via Email]

October 27, 2017

Ms. Vanessa Fields Environmental Specialist 1000 Rio Brazos Road New Mexico Oil Conversation Division Aztec, New Mexico 87410

Re: Carracas Lube Oil Release Remediation Actions

Ms. Fields:

This report is being provided based on our telephone discussion on October 24, 2017 in which Williams communicated the discovery that notification of confirmation sampling was not provided to the New Mexico Oil Conservation Division (NMOCD) for the Carracas lube oil remediation performed during October 2017. This report provides a summary of the events and the results of the completed remediation actions.

On June 13, 2017, Williams discovered that the sight glass associated with a 300 BBL lube oil tank at the Carracas compression station broken resulting in the release of 20 BBLS of lube oil into secondary containment. A liner was present in secondary containment, however it was damaged and allowed liquids to impact underlying soils. Initial notification was made to the NMOCD on June 13, 2017. The NMOCD conducted two visits to the facility during the month of June. The OCD recommended that Williams removal liquid present in secondary containment which Williams completed on June 21, 2017.

A summary of the remediation activities completed is provided below:

- Williams began remediation actions on October 2, 2017.
- Retrofit of the below-grade tanks (BGTs) was occurring during the same times as the lube oil tank remediation.
- Waste characterization sampling was performed on October 4, 2017 for disposal of lube oil impacted soils.
- The field inspector indicated that the soils appeared to be clean and collected samples on October 6, 2017 from the floor and east/west sidewalls. The sample collected from the excavation floor indicated remediation action levels were not achieved and further remediation was performed. The sample collected from the east/west side walls achieved the remediation levels.

Ms. Fields October 27, 2017 Page 2

- After conducting further remediation, additional confirmation samples were collected from the excavation floor and north/south sidewalls on October 12, 2017 and the results were below the remediation levels.
- The excavation dimensions were 25 feet x 30 feet with depths ranging from 5 to 8 feet as presented on the attached Remediation and Excavation Sampling Form.
- Approximately 310 cubic yards of impacted soils were removed during the remediation and disposed of at the IEI landfarm.

Prior to starting the remediation, the Williams Environmental Specialist notified the Williams Coordinator of Maintenance (COM) that a 24 hour notification to NMOCD was required in order to allow the NMOCD the opportunity to witness confirmation sampling prior to backfilling and tank reinstallation. During this project, BGTs within the same secondary containment were ongoing retrofit. The Williams Environmental Specialist communicated to the Williams COM as well as the field inspector that the NMOCD did not require notification and sampling for the BGTs unless impacts were observed. No impacts were observed beneath the BGTs. A misunderstanding occurred at this point as the Williams COM and the field inspector was under the impression that since the BGTs did not require notification, that further notifications were not required to complete confirmation sampling for the other portion of the project. The Williams COM received the October 12, 2107 sample results from analytical laboratory which were nondetect and continued to proceed on the project by backfilling the excavation.

On October 24, 2017, Williams Environmental Specialist discovered that the excavation was backfilled and the tanks had been placed back into service. The NMOCD was contacted on October 24, 2017 to communicate the concern that the 24 hour notification for witnessing confirmation sampling was not provided. The NMOCD requested that Williams stop site activities until the sampling concern could be resolved. Site activities were stopped on October 24, 2017. During subsequent discussion, the Williams COM communicated that he was under the impression that NMOCD would not be present for the lube oil tank sampling since they were not present for the BGT removal.

Attached photographs were collected by the field inspector during the remediation actions for review by the NMOCD. Although the 24 hour notifications were not provided, Williams requests that the OCD accept the results and allow Williams to complete site activities. The photographs demonstrate the visual impacts were no longer apparent within the excavation. Additionally the site risk ranking is 5,000 mg/kg for TPH. The results for the floor and north/south walls were non-detect and the results from the east/west sidewalls were non-detect with the exception of TPH-DRO and TPH-GRO with reported concentrations of 57 mg/kg and 1,000 mg/kg, respectively. As an alternative, Williams will consider the collection of confirmation samples using a hand auger beneath the lube oil tanks with NMOCD representatives on site if needed.

In regards to corrective action, Williams has discussed this matter internally with employees as well as our contract field inspections to ensure that this issue does not re occur.

Please contact me if you need any additional information or if you would like to discuss in further detail.

Ms. Fields October 27, 2017 Page 3

Respectfully submitted,

Minicasandoual

Monica Sandoval Environmental Specialist

Attachment

From:Sandoval, MonicaTo:Sandoval, MonicaSubject:FW: Schedule for Sampling at the Williams Carracas CDPDate:Monday, January 08, 2018 1:48:43 PM

From: Fields, Vanessa, EMNRD [mailto:Vanessa.Fields@state.nm.us]
Sent: Friday, December 22, 2017 10:14 AM
To: Sandoval, Monica <<u>Monica.Sandoval@Williams.com</u>>; Heather Woods
<<u>hwoods@ruleengineering.com</u>>
Cc: Smith, Cory, EMNRD <<u>Cory.Smith@state.nm.us</u>>; Webre, Matt <<u>Matt.Webre@Williams.com</u>>
Subject: RE: Schedule for Sampling at the Williams Carracas CDP

Good morning Monica,

No further action is requested from the OCD at this time. Analytical results were below regulatory standards. Please send a hardcopy of all analytical results and all communication regarding this project along with your final C-141.

Please let me know if you have any further questions.

Merry Christmas!!

Thank You,

Vanessa Fields Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 119 Cell: (505) 419-0463 vanessa.fields@state.nm.us

From: Sandoval, Monica [mailto:Monica.Sandoval@Williams.com]
Sent: Friday, December 22, 2017 10:03 AM
To: Heather Woods <<u>hwoods@ruleengineering.com</u>>; Fields, Vanessa, EMNRD<<<u>Vanessa.Fields@state.nm.us</u>>
Cc: Smith, Cory, EMNRD <<u>Cory.Smith@state.nm.us</u>>; Webre, Matt <<u>Matt.Webre@Williams.com</u>>

Subject: RE: Schedule for Sampling at the Williams Carracas CDP

Vanessa,

Can you please provide NMOCD's recommendations on additional clean up, if any is needed?

Thank-you, Monica Sandoval

From: Heather Woods [mailto:hwoods@ruleengineering.com]
Sent: Monday, December 18, 2017 12:01 PM
To: Fields, Vanessa, EMNRD <<u>Vanessa.Fields@state.nm.us</u>>
Cc: Sandoval, Monica <<u>Monica.Sandoval@Williams.com</u>>; Smith, Cory, EMNRD
<<u>Cory.Smith@state.nm.us</u>>
Subject: [EXTERNAL] RE: Schedule for Sampling at the Williams Carracas CDP

Good Afternoon Vanessa,

I apologize. Monica alerted me Friday evening that the results had been sent out on Thursday, but I had not received them. Attached is a copy of the laboratory report along with a Figure illustrating the boring locations and a summary table of the field and laboratory results. The soils encountered generally consisted of red brown clayey sand fill to about 7 feet and was underlain by grey sandy lean clay (weathered shale) to auger refusal on the more competent weathered shale at the bottom of the borings. As you will notice, the sample at SB-3 @ 2.5 feet has a MRO concentration of 3,100 mg/kg. This sample did consist of the clayey sand backfill material and did have a slight odor, but was not stained. The samples above and below it did not have an odor. Please let me know if you have any questions.

Many Thanks, Heather

From: Fields, Vanessa, EMNRD [mailto:Vanessa.Fields@state.nm.us]
Sent: Monday, December 18, 2017 10:36 AM
To: Heather Woods <<u>hwoods@ruleengineering.com</u>>
Cc: Sandoval, Monica <<u>Monica.Sandoval@Williams.com</u>>; Smith, Cory, EMNRD
<<u>Cory.Smith@state.nm.us</u>>
Subject: RE: Schedule for Sampling at the Williams Carracas CDP

Good morning,

Could you please provide the analytical results from the sampling that occurred on the 5th?

Thank you,

Vanessa Fields Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 119

Cell: (505) 419-0463 vanessa.fields@state.nm.us

From: Heather Woods [mailto:hwoods@ruleengineering.com]
Sent: Tuesday, December 12, 2017 8:09 AM
To: Fields, Vanessa, EMNRD <<u>Vanessa.Fields@state.nm.us</u>>
Cc: Sandoval, Monica <<u>Monica.Sandoval@Williams.com</u>>; Smith, Cory, EMNRD
<<u>Cory.Smith@state.nm.us</u>>
Subject: Re: Schedule for Sampling at the Williams Carracas CDP

Vanessa,

We have not received the lab results. I expect to have them Thursday.

Thanks, Heather

On Dec 12, 2017, at 7:37 AM, "Fields, Vanessa, EMNRD" <<u>Vanessa.Fields@state.nm.us</u>> wrote:

Good morning,

Have you received the analytical results from last week's sampling?

Thank you,

Vanessa Fields Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 119 Cell: (505) 419-0463 vanessa.fields@state.nm.us

From: Heather Woods [mailto:hwoods@ruleengineering.com]
Sent: Tuesday, November 28, 2017 10:35 AM
To: Fields, Vanessa, EMNRD <<u>Vanessa.Fields@state.nm.us</u>>
Cc: Sandoval, Monica <<u>Monica.Sandoval@Williams.com</u>>
Subject: Schedule for Sampling at the Williams Carracas CDP

Good Morning Vanessa,

I would like to notify you that we will be sampling at the Williams Carracas CDP on December 5th, 2017, around 9:00 a.m., and may continue into the next day if needed. Please let me know if you have any questions.

Many Thanks, Heather

¥

Heather M. Woods, P.G.

<image001.jpg> 501 Airport Drive, Suite 205 Farmington, NM 87401 Office: (505) 325-1055 Fax: (303) 431-3750 Cell: (505) 716-2787

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District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., 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

*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

Revised A

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE **Generator Name and Address:** 1. Williams Four Corners LLC, 1755 Arroyo Drive, Bloomfield, NM 87413 **Originating Site:** 2. **Carracas Compressor Station** 3. Location of Material (Street Address, City, State or ULSTR): Unit F, Section 34, Township 32N, Range 5W Rio Arriba County, NM Source and Description of Waste: Impacted soil from a broken site glass on a lube oil storage tank. 4. 100 **Estimated Volume** yd³ Known Volume (to be entered by the operator at the end of the haul) vd3 / bbls 5. **GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS** MM CaS (Monica Sandoval Williams Four Corners LLC representative or authorized agent for do hereby Ι, certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with nonexempt waste. Operator Use Only: Waste Acceptance Frequency 🗆 Monthly 🗖 Weekly 🗖 Per Load RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) □ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4) **GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS** Monica Sandoval Williams Four Corners LLC , representative for authorize Industrial Ecosystems, Inc. to complete the required testing/sign the Generator Waste Testing Certification. Industrial Ecosystems, Inc. , representative for do hereby certify that I, representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC. **Transporter:** 5. **Triple F Trucking OCD Permitted Surface Waste Management Facility** Name and Facility Permit #: JFJ Landfarm c/o Industrial Ecosystems, Inc. Permit # NM-01-0010B Address of Facility: 49 CR 3150, Aztec, NM 87410 Method of Treatment and/or Disposal: Evaporation Injection Treating Plant Landfarm Landfill Other Waste Acceptance Status: **APPROVED DENIED** (Must Be Maintained As Permanent Record) TITLE: PRINT NAME: DATE:

SIGNATURE:

Surface Waste Management Facility Authorized Agent

TELEPHONE NO.:



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

October 12, 2017

Monica Sandoval Williams Field Services 1755 Arroyo Dr., Bloomfield, NM 87413 TEL: (505) 632-4442 FAX

RE: Caracass CDP Cleanup

OrderNo.: 1710289

Dear Monica Sandoval:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/5/2017 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 <u>www.hallenvironmental.com</u> 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,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report

Lab Order 1710289

Date Reported: 10/12/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Field Services Client Sample ID: CAR-1-COMP **Project:** Caracass CDP Cleanup Collection Date: 10/4/2017 9:30:00 AM Lab ID: 1710289-001 Matrix: SOIL Received Date: 10/5/2017 7:00:00 AM **PQL** Qual Units Analyses Result **DF** Date Analyzed Batch **EPA METHOD 7471: MERCURY** Analyst: ELS ND 0.033 mg/Kg 10/10/2017 11:48:20 AM 34324 Mercury 1 EPA METHOD 6010B: SOIL METALS Analyst: MED Arsenic 3.8 2.5 mg/Kg 1 10/9/2017 11:20:03 AM 34274 Barium 310 0.20 mg/Kg 2 10/9/2017 2:19:44 PM 34274 Cadmium ND 0.098 mg/Kg 1 10/9/2017 9:39:58 AM 34274 Chromium 7.2 0.29 mg/Kg 1 10/9/2017 11:20:03 AM 34274 Lead 3.8 0.25 mg/Kg 1 10/9/2017 9:39:58 AM 34274 2.5 Selenium ND mg/Kg 1 10/9/2017 9:39:58 AM 34274 Silver ND 0.25 mg/Kg 1 10/9/2017 9:39:58 AM 34274

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 4
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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: Williams Field Services **Project:** Caracass CDP Cleanup

Sample ID MB-34324	SampType: N	IBLK	Tes	tCode: EF	PA Method	7471: Mercu	у		
Client ID: PBS	Batch ID: 3	4324	F	RunNo: 40	6230				
Prep Date: 10/10/2017	Analysis Date:	10/10/2017	5	SeqNo: 14	472015	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND 0.03	3							
									the second s
Sample ID LCS-34324	SampType: L	CS	Tes	tCode: EF	PA Method	7471: Mercu	у		
Sample ID LCS-34324 Client ID: LCSS	SampType: L Batch ID: 3	CS 4324	Tes	tCode: EF	PA Method 6230	7471: Mercu	у		
Sample ID LCS-34324 Client ID: LCSS Prep Date: 10/10/2017	SampType: L Batch ID: 3 Analysis Date:	CS 4324 10/10/2017	Tes F	tCode: EF RunNo: 46 SeqNo: 14	PA Method 6230 472016	7471: Mercui Units: mg/K	g y		
Sample ID LCS-34324 Client ID: LCSS Prep Date: 10/10/2017 Analyte	SampType: L Batch ID: 3 Analysis Date: Result PQL	CS 4324 10/10/2017 SPK value	Tes F S SPK Ref Val	tCode: EF RunNo: 46 SeqNo: 14 %REC	PA Method 5230 172016 LowLimit	7471: Mercur Units: mg/K HighLimit	y g %RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded Η
- Not Detected at the Reporting Limit ND
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Value above quantitation range Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

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12-Oct-17

Hall Environmental Analysis Laboratory, Inc.

Client:	Williams	Field Serv	vices								
Dominal D			nup		Tee			20100 0 . 11			
Sample ID	MB-34274	Sampi	ype: MI	BLK	les	tCode: El	PA Method	6010B: Soil	Metals		
Client ID:	PBS	Batch	n ID: 34	274	F	RunNo: 4	6195				
Prep Date:	10/6/2017	Analysis D	ate: 10	0/9/2017		SeqNo: 1	470617	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		ND	0.10								
Cadmium		ND	0.10								
Lead		ND	0.25								
Selenium		ND	2.5								
Silver		ND	0.25								
Sample ID	LCS-34274	SampT	ype: LC	s	Tes	tCode: El	PA Method	6010B: Soil	Metals		
Client ID:	LCSS	Batch	D: 34	274	F	RunNo: 4	6195				
Prep Date:	10/6/2017	Analysis D	ate: 10	0/9/2017	5	SeqNo: 1	470618	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		25	0.10	25.00	0	98.0	80	120			
Cadmium		25	0.10	25.00	0	99.8	80	120			
Lead		24	0.25	25.00	0	96.0	80	120			
Selenium		24	2.5	25.00	0	94.5	80	120			
Sample ID	LCS-34274(AG)	SampT	ype: LC	s	Tes	tCode: El	PA Method	6010B: Soil I	Metals		
Client ID:	LCSS	Batch	D: 34	274	F	RunNo: 4	6195				
Prep Date:	10/6/2017	Analysis D	ate: 10	0/9/2017	5	SeqNo: 1	470622	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	Land and	4.9	0.25	5.000	0	98.6	80	120			
Sample ID	LLLCS-34274	SampT	ype: LC	SLL	Tes	tCode: El	PA Method	6010B: Soil I	Metals		
Client ID:	BatchQC	Batch	1D: 34	274	F	RunNo: 4	6195				
Prep Date:	10/6/2017	Analysis D	ate: 10	0/9/2017	5	SeqNo: 1	470623	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		ND	0.10	0.1000	0	99.5	50	150			
Cadmium		0.10	0.10	0.1000	0	102	50	150			
Lead		ND	0.25	0.2500	0	84.6	50	150			
Selenium		3.4	2.5	2.500	0	137	50	150			
Silver	C. Lawrence	ND	0.25	0.2500	0	96.6	50	150			1 Car
Sample ID	MB-34274	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	6010B: Soil I	Metals		
Client ID:	PBS	Batch	ID: 34	274	F	RunNo: 4	6195				
Prep Date:	10/6/2017	Analysis D	ate: 10	0/9/2017	S	SeqNo: 14	470803	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
 - Sample pH Not In Range
- RL **Reporting Detection Limit**

Р

W Sample container temperature is out of limit as specified 1710289

WO#:

Page 3 of 4

12-Oct-17

Hall Environmental Analysis Laboratory, Inc.

Client: Project:	Williams Caracass	Field Serv CDP Clear	ices 1up								
Sample ID	MB-34274	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	6010B: Soil	Metals		
Client ID:	PBS	Batch	ID: 34	274	F	RunNo: 4	6195				
Prep Date:	10/6/2017	Analysis Da	ate: 10	0/9/2017	S	SeqNo: 14	470803	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium		ND	0.30								
Sample ID	LCS-34274	SampT	ype: LC	s	Tes	tCode: El	PA Method	6010B: Soil	Metals		
Client ID:	LCSS	Batch	ID: 34	274	F	RunNo: 4	6195				
Prep Date:	10/6/2017	Analysis Da	ate: 10	0/9/2017	5	SeqNo: 14	470804	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		25	2.5	25.00	0	102	80	120			
Chromium		24	0.30	25.00	0	97.9	80	120			
Sample ID	LLLCS-34274	SampTy	ype: LC	SLL	Tes	tCode: EF	PA Method	6010B: Soil	Metals		
Client ID:	BatchQC	Batch	ID: 34	274	F	RunNo: 4	6195				
Prep Date:	10/6/2017	Analysis Da	ate: 10	0/9/2017	S	SeqNo: 14	470945	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	2.5	1.000	0	108	50	150			
Chromium		0.32	0.30	0.3000	0	108	50	150			

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
- PQL Practical Quanitative Limit
- 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

Page 4 of 4

1710289 12-Oct-17

WO#:

HALL ENVIRONMENTA ANALYSIS LABORATORY	AL	Hall Environmental A Albua TEL: 505-345-3975 I Website: www.hal	Inalysi 4901 querqu FAX: 5 lenviro	s Labora Hawkin e, NM 8 05-345-4 nmental	atory ns NE 7109 4107 Lcom	Sam	ple Log-In Ci	heck List
Client Name: WILLIAMS	FIELD SERVI	Work Order Number:	1710	289			RcptNo:	1
Received By: Anne Tho	me	10/5/2017 7:00:00 AM			Am	4 Am	_	
Completed By: Anne Tho	me	10/5/2017 8:34:33 AM	1		0 m	4 Am	_	
Reviewed By:		10/5/17						
Chain of Custody								
1. Custody seals intact on s	ample bottles?		Yes		N	lo 🗌	Not Present	
2. Is Chain of Custody comp	olete?		Yes	\checkmark	N	lo 🗌	Not Present	
3. How was the sample deliv	vered?		Cour	<u>ier</u>				
Log In				_			_	
4. Was an attempt made to	cool the samples?	,	Yes	\checkmark	١	No 🛄	NA	
5. Were all samples receive	d at a temperature	of >0° C to 6.0°C	Yes		N	•		
6. Sample(s) in proper contr	ainer(s)?		Yes	\checkmark	١	No 🗌		
7. Sufficient sample volume	for indicated test(s	s)?	Yes		N	lo 🗆		
8. Are samples (except VOA	and ONG) proper	ly preserved?	Yes	\checkmark	N	lo 🗌		
9. Was preservative added t	o bottles?		Yes		N	lo 🗹	NA 🗌	
10. VOA vials have zero head	Ispace?		Yes		N	lo 🗌	No VOA Vials 🗹	
11. Were any sample contain	iers received broke	en?	Yes		N	No 🗹 🛛	# of preserved	
12. Does paperwork match be (Note discrepancies on ch	ottle labels? nain of custody)		Yes		N	lo 🗆	bottles checked for pH: (<2 of	>12 unless noted)
13. Are matrices correctly ide	ntified on Chain of	Custody?	Yes	\checkmark	N		Adjusted?	
14. Is it clear what analyses w	vere requested?		Yes		N		Ob a la la	
15. Were all holding times ab (If no, notify customer for	le to be met? authorization.)		Yes	⊻	N		Checked by:	
Special Handling (if ap	olicable)							
16. Was client notified of all d	iscrepancies with	this order?	Yes		N	lo 🗆	NA 🗹	
Person Notified:		Date		nach-rain Antoine	A)Acan Long.com			
By Whom:		Via:	eMa	ail 🔲	Phone [Fax	In Person	
Regarding:								
Client Instructions:								
17. Additional remarks:								
18. Cooler Information						-		
Cooler No Temp °C	Condition S	eal Intact Seal No S	eal D	ate	Signe	d By		
1 1.4	Good Ye	<u> </u>						
Page 1 of 1								

C	hain	-of-Cu	ustody Record	Turn-Around	Time:							_								
Client:	111:11	Ame 1	FIELD Service	A Standard	- Z Rust	10/9 Am				HA		E				N	1EP	ITA		
	201111	nn s		Project Name	e:					PAIN	W ho					50	RA	101	K I	
Mailing	Address	: 1753	- Appaula Davia	ABON	yeass ch)F		400		ww	w.na	nenv	Iron	men	tal.co		400			
RI	- Ci	1155	ALE MALIN SAMIZ	Project #:	Up			490	1 Hav	VKINS	NE -		uqu	erqu	e, N	M 87	109			
Phone	4.505.	1.87-1	WZW MRX/20 01917	UW	017238	686		Iel	. 50.5-	345-3	975 A	naly	ax	SU5-	-345	-410 t				
email o	r Fax# w	nonica	- SANDOULD williams	Project Mana	ner.			5	ି		Í		4	Inco	400					-
QA/QC	Package:			me	niza San	Dough	121)	luo	MR				SO,	B's						
□ Stan	Idard		Level 4 (Full Validation)				s (8(Gas	ò		IMS		PO	PC						
Accred	itation			Sampler:	ms		MB'	H	EI :		70 S		102,	082						-
	AP	□ Othe	er	On lice:	Yes	No	+	+	S é	0 7	- 82		03,1	s / 8		(A				N V
	(Type)			Sample Tem	perature 2, 2	-66-10-1.4	BE	B	0	po	0 0	etals	CI'N	cide	A	2				2
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEALNO.	BTEX + MI	BTEX + MI	TPH 8015E	EDB (Meth	PAH's (831	RCRA 8 M	Anions (F,C	8081 Pestic	8260B (VO	8270 (Sem				Air Bubblos
infulin	9:30	soil	CAR-1-COMP.	102	16.2	701						+								-
10/4/17	9:30	soil	CAR-1-COMP	402	ne				-	-		X	-//	B						
		-							+	+	-						+	+	+	
									+	1		-							+	-
									+	-									$ \vdash $	_
									+						-			+-	+	_
									+									+	+	-
		9																		-
	34-54				1															
Date:	Time:	Relinquish	ed by: WHO Stehl	Received by:	both	Date Time 10/4/17 1100	Rer	narks												_
Date:	Time:	Relinquish	+ Walt	Heceived by:	har	Date Time														

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.

Excavation Dimensions (fee	t)		
25H Length	3057 Width	5 to 8 ft	_ Depth
Excavation Diagram and San (Depict notable site features, excava	nple Locations tion extents, visual observations, sample	locations, north arrow	w, etc.)
54		t	754
ø X	767		4
•	8 BT		
• *	7.Ft	t	
5th			75
	INT 30'		Engl

Sample ID	Sample Date	Type (Composite, Grab)	Location (Floor, Sidewall)	Comments
CAR . W-COMP	10-12-17	composite	sidewell	
CAR - B-LOWP	10-12-17	composite	Floor	
CAR-LOB	10-6-17	Composite	Floor	
CAR-LOEW	10-6-17	Composite	Wall	



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

October 11, 2017

Monica Sandoval Williams Field Services 188 Co. Rd 4900 Bloomfield, NM 87413 TEL: FAX

RE: Caracuss CDP Cleanup

OrderNo.: 1710440

Dear Monica Sandoval:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/7/2017 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 <u>www.hallenvironmental.com</u> 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,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall En	vironmental Analys	sis Laborat	tory, In	ic.			Lab Order 1710440 Date Reported: 10/11/20)17				
CLIENT: Williams Field ServicesClient Sample ID: L-0-BProject: Caracuss CDP CleanupCollection Date: 10/6/2017 12:45:00 PMLab ID: 1710440-001Matrix: SOILReceived Date: 10/7/2017 10:35:00 AM												
Analyses	P. 1999	Result	PQL	Qual	Units	DF	Date Analyzed	Batch				
EPA MET	HOD 300.0: ANIONS						Analyst:	MRA				
Chloride		ND	30		mg/Kg	20	10/9/2017 3:01:29 PM	34306				
EPA MET	HOD 8015M/D: DIESEL RAN	GE ORGANICS	;				Analyst:	том				
Diesel Ra	ange Organics (DRO)	400	100		mg/Kg	10	10/9/2017 10:26:30 AM	34298				
Motor Oil	Range Organics (MRO)	2900	500		mg/Kg	10	10/9/2017 10:26:30 AM	34298				
Surr: D	NOP	0	70-130	S	%Rec	10	10/9/2017 10:26:30 AM	34298				
EPA MET	HOD 8015D: GASOLINE RAI	NGE					Analyst:	NSB				
Gasoline	Range Organics (GRO)	110	20		mg/Kg	5	10/9/2017 11:35:10 AM	G46204				
Surr: B	FB	271	54-150	S	%Rec	5	10/9/2017 11:35:10 AM	G46204				
EPA MET	HOD 8021B: VOLATILES						Analyst:	NSB				
Benzene		ND	0.10		mg/Kg	5	10/9/2017 11:35:10 AM	B46204				
Toluene		ND	0.20		mg/Kg	5	10/9/2017 11:35:10 AM	B46204				
Ethylbenz	zene	0.28	0.20		mg/Kg	5	10/9/2017 11:35:10 AM	B46204				
Xylenes,	Total	3.3	0.41		mg/Kg	5	10/9/2017 11:35:10 AM	B46204				
Surr: 4	-Bromofluorobenzene	101	66.6-132		%Rec	5	10/9/2017 11:35:10 AM	B46204				

Analytical Report

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method I	Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 1 of 6
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	rage roro
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix		W	Sample container temperature is out of limi	t as specified

Hall En	vironmental Analysi	is Labora	tory, Inc.			Lab Order 1710440 Date Reported: 10/11/20	17
CLIENT: Project: Lab ID:	Williams Field Services Caracuss CDP Cleanup 1710440-002	Matrix:	SOIL	Client Sample Collection I Received I	e ID: L-0 Date: 10/ Date: 10/	0-E-W 6/2017 1:00:00 PM 7/2017 10:35:00 AM	
Analyses		Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analyst:	MRA
Chloride		ND	30	mg/Kg	20	10/9/2017 3:38:43 PM	34306
EPA MET	HOD 8015M/D: DIESEL RANG	E ORGANICS	6			Analyst:	том
Diesel Ra	inge Organics (DRO)	57	19	mg/Kg	2	10/9/2017 12:17:05 PM	34298
Motor Oil	Range Organics (MRO)	1000	96	mg/Kg	2	10/9/2017 12:17:05 PM	34298
Surr: D	NOP	101	70-130	%Rec	2	10/9/2017 12:17:05 PM	34298
EPA MET	HOD 8015D: GASOLINE RAN	GE				Analyst:	NSB
Gasoline	Range Organics (GRO)	ND	5.5	mg/Kg	1	10/9/2017 11:58:38 AM	G46204
Surr: B	FB	113	54-150	%Rec	1	10/9/2017 11:58:38 AM	G46204
EPA MET	HOD 8021B: VOLATILES					Analyst:	NSB
Benzene		ND	0.027	mg/Kg	1	10/9/2017 11:58:38 AM	B46204
Toluene		ND	0.055	mg/Kg	1	10/9/2017 11:58:38 AM	B46204
Ethylbenz	zene	ND	0.055	mg/Kg	1	10/9/2017 11:58:38 AM	B46204
Xylenes,	Total	ND	0.11	mg/Kg	1	10/9/2017 11:58:38 AM	B46204
Surr: 4	Bromofluorobenzene	95.1	66.6-132	%Rec	1	10/9/2017 11:58:38 AM	B46204

Analytical Report

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

to the	e de sammary report and sampte togin encennis	t for mugg	you go unu unu preservation miorm	ation.
*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method	Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range	
Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 2 of 6
ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	1 age 2 01 0
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit	
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit	t as specified
	* D H ND PQL S	 * 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 PQL Practical Quanitative Limit S % Recovery outside of range due to dilution or matrix 	* Value exceeds Maximum Contaminant Level. B D Sample Diluted Due to Matrix E H Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P PQL Practical Quanitative Limit RL S % Recovery outside of range due to dilution or matrix W	* Value exceeds Maximum Contaminant Level. B Analyte detected in the associated Method I 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 PQL Practical Quanitative Limit RL Reporting Detection Limit S % Recovery outside of range due to dilution or matrix W Sample container temperature is out of limit

Hall Environmental Analysis Laboratory, Inc.

Cli Caracuss CDP Cleanup **Project:**

			Î
ient:	Williams Field S	ervices	

				the second se					the second s		
Sample ID MB-34306	SampT	ype: mb	olk	Tes	Code: E	PA Method	300.0: Anion	s			
Client ID: PBS	Batch	ID: 34	306	F	6208						
Prep Date: 10/9/2017	Analysis D	ate: 10)/9/2017	S	472041	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									
Sample ID LCS-34306	SampT	ype: Ics	5	Tes	Code: EF	PA Method	300.0: Anion	s			
Sample ID LCS-34306 Client ID: LCSS	SampTy Batch	ype: Ics	306	Tesi	Code: EF	PA Method 6208	300.0: Anion	s			
Sample ID LCS-34306 Client ID: LCSS Prep Date: 10/9/2017	SampTy Batch Analysis Da	ype: Ics ID: 34 ate: 1 0	306)/9/2017	Tes R S	Code: EF	PA Method 6208 472042	300.0: Anion Units: mg/K	s			
Sample ID LCS-34306 Client ID: LCSS Prep Date: 10/9/2017 Analyte	SampTy Batch Analysis Da Result	ype: Ics ID: 34 ate: 10 PQL	3 306)/9/2017 SPK value	Tesi R SPK Ref Val	Code: EF cunNo: 40 eqNo: 14 %REC	PA Method 6208 472042 LowLimit	300.0: Anion Units: mg/K HighLimit	s íg %RPD	RPDLimit	Qual	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank В
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

Page 3 of 6

Hall Environmental Analysis Laboratory, Inc.

Client: William Project: Caracus	s Field Serv CDP Clea	vices								
Sample ID LCS-34298	SampT	ype: LC	S 298	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Prep Date: 10/9/2017	Analysis D	ate: 10)/9/2017	S	SeqNo: 1	470767	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.3	73.2	114			
Surr: DNOP	4.2		5.000		83.3	70	130			
Sample ID MB-34298	SampT	уре: МЕ	BLK	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PBS	Batch	n ID: 34	298	F	RunNo: 4	6197				
Prep Date: 10/9/2017	Analysis D	ate: 10)/9/2017	S	SeqNo: 1	470768	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
SUTT: DNOP	98		10.00		98.1	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

1710440

WO#:

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Hall Environmental Analysis Laboratory, Inc.

Client:Williams Field ServicesProject:Caracuss CDP Cleanup

Sample ID RB	SampT	ype: ME	BLK	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch	ID: G4	6204	F	RunNo: 4	6204				
Prep Date:	Analysis D	ate: 10	0/9/2017	5	SeqNo: 1	471397	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		93.3	54	150			
					_	_				
Sample ID 2.5UG GRO LCS	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Sample ID 2.5UG GRO LCS Client ID: LCSS	SampT Batch	ype: LC	S 6204	Tes	tCode: El RunNo: 4	PA Method 6204	8015D: Gaso	line Rang	e	
Sample ID 2.5UG GRO LCS Client ID: LCSS Prep Date:	SampT Batch Analysis D	ype: LC ID: G4 ate: 10	S 6204 0/9/2017	Tes F	tCode: El RunNo: 4 SeqNo: 1	PA Method 6204 471398	8015D: Gaso Units: mg/M	bline Rang	e	
Sample ID 2.5UG GRO LCS Client ID: LCSS Prep Date: Analyte	SampT Batch Analysis D Result	ype: LC ID: G4 pate: 10 PQL	S 6204 0/9/2017 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 4 SeqNo: 1 %REC	PA Method 6204 471398 LowLimit	8015D: Gaso Units: mg/K HighLimit	oline Rang Kg %RPD	e RPDLimit	Qual
Sample ID 2.5UG GRO LCS Client ID: LCSS Prep Date: Analyte Gasoline Range Organics (GRO)	SampT Batch Analysis D Result 28	ype: LC n ID: G4 pate: 10 PQL 5.0	5 6204 0/9/2017 SPK value 25.00	Tes F S SPK Ref Val 0	tCode: El RunNo: 4 SeqNo: 1 %REC 114	PA Method 6204 471398 LowLimit 76.4	8015D: Gaso Units: mg/M HighLimit 125	vline Rang Kg %RPD	e RPDLimit	Qual

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
- PQL Practical Quanitative Limit
- 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

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WO#: 1710440 11-Oct-17

Hall Environmental Analysis Laboratory, Inc.

Client:	Williams	Field Serv	vices								
Project:	Caracuss	CDP Clea	inup								
Sample ID	RB	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID:	PBS	Batch	n ID: B4	6204	F	RunNo: 4	6204				
Prep Date:		Analysis D	ate: 10)/9/2017	S	SeqNo: 1	471413	Units: mg/k	g		
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-Brom	ofluorobenzene	0.97		1.000		97.4	66.6	132			
Sample ID	100NG BTEX LCS	SampT	ype: LC	s	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID:	LCSS	Batch	n ID: B4	6204	F	RunNo: 4	6204				
Prep Date:		Analysis D	ate: 10)/9/2017	S	SeqNo: 1	471414	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.98	0.025	1.000	0	97.7	80	120			
Toluene		0.96	0.050	1.000	0	96.5	80	120			
Ethylbenzene		1.0	0.050	1.000	0	99.8	80	120			
Xylenes, Total		3.0	0.10	3.000	0	99.8	80	120			
Surr: 4-Brom	ofluorobenzene	1.0		1.000		103	66.6	132			

Qualifiers:

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

WO#: 1710440 11-Oct-17

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J

	HALL ENVIR ANAL LABO	IONMENTA YSIS RATORY	L	Hall En TEL: 50 Web:	vironmental A Albuq 05-345-3975 I site: www.hall	nalysi 4901 juerqu FAX: 5 enviro	s Lab Hawi e, NM 05-34 nmen	oratory kins NE 187109 15-4107 tal.com	Sa	mp	le Log-In	Check Li	st
Clie	ent Name:	WILLIAMS F	TIELD SERVI	Work Ord	ler Number:	17104	140				RcptN	o: 1	
Rec Con Rev	eived By: npleted By: iewed By:	Andy Freen Anne Thom	nan ne	10/7/2017 1 10/9/2017 8 [1][9]] 7	10:35:00 AM 3:02:55 AM			a U	m A				
Cha	in of Cus	tody											
1.	Custody sea	als intact on sa	mple bottles?			Yes			No 🗌]	Not Present	•	
2.	Is Chain of (Custody compl	ete?			Yes	\checkmark		No 🗆]	Not Present]	
3.	How was the	e sample delive	ered?			Cour	ier						
Lo	g In												
4.	Was an atte	empt made to d	cool the sample:	s?		Yes			No [כ	NA		
5.	Were all sar	mples received	l at a temperatu	re of >0° C to	6.0°C	Yes		1	No]]	
6.	Sample(s) i	n proper conta	iner(s)?			Yes			No 🗌				
7.	Sufficient sa	mple volume f	or indicated test	t(s)?		Yes	\checkmark		No]			
8.	Are samples	(except VOA	and ONG) prop	erly preserved	?	Yes	\checkmark		No]			
9.	Was preserv	vative added to	bottles?			Yes			No 🗹		NA]	
10.	VOA vials ha	ave zero heads	space?			Yes			No 🗆]	No VOA Vials 🗹	•	
11.	Were any s	ample containe	ers received bro	ken?		Yes			No 🔽		# of preserved		
12.	Does paper	work match bol	ttle labels?			Yes			No 🗆	וו	for pH:		
	(Note discre	pancies on cha	ain of custody)								(<)	2 or >12 unless	noted)
13.	Are matrices	s correctly iden	tified on Chain of	of Custody?		Yes				1	/ lajubitou !		-
14.	Is it clear wh	ding times able	ere requested?			Yes				1	Checked by		
10.	(If no, notify	customer for a	uthorization.)			105				· L			
Spe	cial Hand	lling (if app	licable)										
16.	Was client n	otified of all dis	screpancies with	this order?		Yes			No []	NA 🗹	3	
	Persor	Notified:	CONTRACTOR AND A DESCRIPTION OF A	MARAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Date	dille montate				-			
	By Wh	iom:		araala aha ahaa maalaa aha	Via:	eMa	ail [] Phone	🗌 Fa	ax [In Person		
	Regard	ding:											
	Client	Instructions:											
17.	Additional n	emarks:											
18.	Cooler Info	o Temp °C 2.2	Condition Good Y	Seal Intact Seal	eal No S	eal Da	ate	Sign	ed By				

Page 1 of 1

Client: Mailing Phone a	Address 3/004	-of-Cu Ims F 175- Fiezd	SERVILE SERVILE SARROYA DRIVE NEW MEXICO 87413 2-4625	Turn-Around	Time: OUR A Rush CASS C VP	DP 686	A.M.S	HALL ENVIRONMENTA ANALYSIS LABORATOR www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request								Y					
email or QA/QC I Stan Accredi NEL	r Fax#: A Package: dard tation AP (Type)	D Othe	##npo∞/@ ⊮?///#ms □ Level 4 (Full Validation) r	Project Mana Moh Sampler: M Sample Tem	ger: iča Span UK Beyesa Tetalure: 2.	ooral		'BE + TMB's (8021)	BE + TPH (Gas only)	(GRO / DRO / MRO)	od 418.1)	od 504.1)	O OI OZI O OIMOJ	31,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	cides / 8082 PCB's	A)	-VOA)	nde			(Y or N)
Date	Time	Matrix	Sample Request ID	Mr. off kills	Preservative Type	HEA	Nos	BTEX + MT	BTEX + MT	TPH 8015B	TPH (Metho	EDB (Meth		Anions (F,C	8081 Pestic	8260B (VO	8270 (Semi	CX/W			Air Bubbles
10-6-17	1300	50il 50il	1-0-B 1-0-E-W	402 402	ICR ICR		7001	XX	-	X								X			
	Time: 1565 Time: 844	Relinquish Mh Relinquish	ed by: & Stahle ed by: A Add	Received by:	Jay Jay	Date 10/6/m Date 16/7//	Time 1505 Time 7 /035	Ren	narks	5:										+	

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: <u>www.hallenvironmental.com</u>

October 16, 2017

Monica Sandoval Williams Field Services 188 Co. Rd 4900 Bloomfield, NM 87413 TEL: FAX

RE: Caracass CDP Cleanup

OrderNo.: 1710756

Dear Monica Sandoval:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/13/2017 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 <u>www.hallenvironmental.com</u> 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,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environmental Analys	sis Labora	tory, Inc.			Lab Order 1710756 Date Reported: 10/16/2	2017
CLIENT: Williams Field Services Project: Caracass CDP Cleanup			Client Sampl Collection	e ID: CA Date: 10/	R-W-COMP /12/2017 1:30:00 PM	
Lab ID: 1710756-001	Matrix:	SOIL	Received 1	Date: 10/	13/2017 7:56:00 AM	
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: MRA
Chloride	ND	30	mg/Kg	20	10/13/2017 11:13:05 A	M 34404
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	10/13/2017 10:02:36 A	M 34400
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	10/13/2017 10:02:36 A	M 34400
Surr: DNOP	95.6	70-130	%Rec	1	10/13/2017 10:02:36 A	M 34400
EPA METHOD 8015D: GASOLINE RAM	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.0	mg/Kg	1	10/13/2017 9:42:19 AM	1 34383
Surr: BFB	94.4	54-150	%Rec	1	10/13/2017 9:42:19 AM	1 34383
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.020	mg/Kg	1	10/13/2017 9:42:19 AM	1 34383
Toluene	ND	0.040	mg/Kg	1	10/13/2017 9:42:19 AM	1 34383
Ethylbenzene	ND	0.040	mg/Kg	1	10/13/2017 9:42:19 AM	1 34383
Xylenes, Total	ND	0.081	mg/Kg	1	10/13/2017 9:42:19 AM	1 34383
Surr: 4-Bromofluorobenzene	100	66.6-132	%Rec	1	10/13/2017 9:42:19 AM	1 34383

Analytical Report

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank			
	D	Sample Diluted Due to Matrix	E	Value above quantitation range			
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1			
	ND Not Detected at the Reporting Limit			Sample pH Not In Range	rage 1 01 0		
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit			
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limi	t as specified		

Hall Environmental Analys	is Labora	c.	Analytical Report Lab Order 1710756 Date Reported: 10/16/2017						
CLIENT: Williams Field Services Project: Caracass CDP Cleanup Lab ID: 1710756-002	Matrix:	SOIL	Client Sampl Collection 1 Received 1	Client Sample ID: CAR-B-COMP Collection Date: 10/12/2017 2:00:00 PM Received Date: 10/13/2017 7:56:00 AM					
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch			
EPA METHOD 300.0: ANIONS					Anal	yst: MRA			
Chloride	ND	30	mg/Kg	20	10/13/2017 11:50:17	AM 34404			
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Anal	yst: TOM			
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	10/13/2017 10:24:42	AM 34400			
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	10/13/2017 10:24:42	AM 34400			
Surr: DNOP	92.9	70-130	%Rec	1	10/13/2017 10:24:42	AM 34400			
EPA METHOD 8015D: GASOLINE RAM	IGE				Anal	yst: NSB			
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	10/13/2017 10:05:41	AM 34383			
Surr: BFB	97.0	54-150	%Rec	1	10/13/2017 10:05:41	AM 34383			
EPA METHOD 8021B: VOLATILES					Anal	yst: NSB			
Benzene	ND	0.024	mg/Kg	1	10/13/2017 10:05:41	AM 34383			
Toluene	ND	0.048	mg/Kg	1	10/13/2017 10:05:41	AM 34383			
Ethylbenzene	ND	0.048	mg/Kg	1	10/13/2017 10:05:41	AM 34383			
Xylenes, Total	ND	0.096	mg/Kg	1	10/13/2017 10:05:41	AM 34383			
Surr: 4-Bromofluorobenzene	102	66.6-132	%Rec	1	10/13/2017 10:05:41	AM 34383			

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank			
	D	Sample Diluted Due to Matrix E Value above quantitation range					
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of			
	ND Not Detected at the Reporting Limit			Sample pH Not In Range			
	PQL	Practical Quanitative Limit	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: Project:	William Caracass	s Field Service s CDP Cleanup	s								
Sample ID	MB-34404 SampType: mblk				Test	tCode: El					
Client ID:	PBS Batch ID: 34404			404	RunNo: 46328						
Prep Date:	10/13/2017 Analysis Date: 10/13/2017				S	SeqNo: 1	476892	Units: mg/Kg			
Analyte		Result P	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID	LCS-34404	Test	tCode: El	PA Method	300.0: Anion	S					
Client ID:	LCSS	Batch ID	34	404	R	aunNo: 4	6328				
Prep Date:	10/13/2017	017 Analysis Date: 10/13/2017			SeqNo: 1476893			Units: mg/K	g		
Analyte		Result P	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	94.8	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
- PQL Practical Quanitative Limit
- 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

Page 3 of 6

Hall Environmental Analysis Laboratory, Inc.

4.0

4.583

Client:	Williams	Field Serv	vices								
Project:	Caracass	CDP Clea	inup								
Sample ID	LCS-34400	Tes	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID:	LCSS	Batcl	400	F	RunNo: 4	6322					
Prep Date:	10/13/2017	017 Analysis Date: 1		10/13/2017		SeqNo: 1475537		Units: mg/Kg			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	44	10	50.00	0	88.3	73.2	114			
Surr: DNOP		4.3		5.000		86.4	70	130			
Sample ID	MB-34400	SampT	Гуре: МІ	BLK	Tes	tCode: El	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	PBS	Batcl	h ID: 34	400	F	RunNo: 4	6322				
Prep Date:	10/13/2017	Analysis D	Date: 1	0/13/2017	S	SeqNo: 1	475538	Units: mg/K			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	ND	10								
Motor Oil Rang	ge Organics (MRO)	ND	50								
Surr: DNOP		9.5		10.00		94.9	70	130			
Sample ID	1710756-001AMS	SampT	ype: MS	S	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID:	CAR-W-COMP	Batch	h ID: 34	400	F	RunNo: 4	6322				
Prep Date:	10/13/2017	Analysis D	Date: 1	0/13/2017	5	SeqNo: 1	475799	Units: mg/K	g		
Analyte	1.4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (Organics (DRO)	42	9.5	47.35	0	88.1	55.8	122			
Surr: DNOP		4.3		4.735		90.2	70	130			
Sample ID	1710756-001AMS	Samp1	ype: MS	SD	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID:	CAR-W-COMP	Batch	h ID: 34	400	F	RunNo: 4	6322				
Prep Date:	10/13/2017	Analysis D	Date: 1	0/13/2017	5	SeqNo: 1	475800	Units: mg/K	g		
Analyte	d	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	38	9.2	45.83	0	83.7	55.8	122	8.37	20	

Qualifiers:

Surr: DNOP

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range

86.4

70

130

0

- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

- Page 4 of 6

0

WO#:

1710756 16-Oct-17
QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

Client: William Project: Caracas	ns Field Services as CDP Cleanup	5							
	1								
Sample ID MB-34383	SampType:	MBLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: PBS	Batch ID:	34383	F	RunNo: 4	6333				
Prep Date: 10/12/2017	Analysis Date:	10/13/2017	S	SeqNo: 14	476152	Units: mg/k	(g		
Analyte	Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0							
Surr: BFB	950	1000		94.7	54	150			
Sample ID LCS-34383	SampType:	LCS	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSS	Batch ID:	34383	R	RunNo: 40	6333				
Prep Date: 10/12/2017	Analysis Date:	10/13/2017	S	eqNo: 14	476153	Units: mg/k	٢g		
Analyte	Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	5.0 25.00	0	119	75.9	131			
Surr: BFB	1100	1000		109	54	150			

Qualifiers:

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

Page 5 of 6

16-Oct-17

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

Client: Project:	Williams Field Se Caracass CDP Cle	rvices eanup								
Sample ID MB-343	83 Sam	туре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: PBS	Bat	ch ID: 34	383	F	RunNo: 4	6333				
Prep Date: 10/12/	2017 Analysis	Date: 10	0/13/2017	S	SeqNo: 1	476175	Units: mg/K	g		
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-Bromofluorober	nzene 1.0		1.000		102	66.6	132			
Sample ID LCS-34	383 Samp	Type: LC	s	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: LCSS	Bat	ch ID: 34	383	F	RunNo: 4	6333				
Prep Date: 10/12/	2017 Analysis	Date: 10	0/13/2017	S	SeqNo: 1	476176	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.1	80	120			
Toluene	0.97	0.050	1.000	0	97.0	80	120			
Ethylbenzene	1.0	0.050	1.000	0	99.6	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.4	80	120			
Surr: 4-Bromofluorober	nzene 1.0		1.000		102	66.6	132			

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
- PQL Practical Quanitative Limit
- 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

Page 6 of 6

WO#: 1710756 16-Oct-17

HALL ENVIR ANALY LABOR	ONMENTAL /SIS &ATORY	Hall Environmental A Albuq TEL: 505-345-3975 F Website: www.hall	nalysi 4901 juergu 7AX: 5 enviro	is Laboratory Hawkins NE 10, NM 87109 105-345-4107 mmental.com	S	amp	ble Log-In Check	List
Client Name:	WILLIAMS FIELD SERVI	Work Order Number:	17107	756			RcptNo: 1	
Received By: Completed By: Reviewed By:	Anne Thorne Anne Thorne	10/13/2017 7:56:00 AM 10/13/2017 8:04:02 AM /6//3//7			Arru , Arru ,	H- H-	-	
Chain of Cust	tody							
1. Custody sea	is intact on sample bottles?		Yes		No		Not Present	
2. Is Chain of C	sustody complete?		Yes		No		Not Present	
3. How was the	sample delivered?		Cour	ier				
Log In								
4. Was an atte	mpt made to cool the samp	les?	Yes	\checkmark	No			
5. Were all sam	nples received at a tempera	ture of >0° C to 6.0°C	Yes	\checkmark	No			
6. Sample(s) in	proper container(s)?		Yes	V	No			
7. Sufficient sar	mple volume for indicated te	est(s)?	Yes		No			
8. Are samples	(except VOA and ONG) pro	operly preserved?	Yes	\checkmark	No			
9. Was preserve	ative added to bottles?		Yes		No	\checkmark	NA 🗆	
10.VOA vials ha	ve zero headspace?		Yes		No		No VOA Vials	
11. Were any sa	mple containers received b	roken?	Yes		No		# of preserved	
12. Does paperw (Note discrep	ork match bottle labels? Dancies on chain of custody)	Yes		No		for pH: (<2 or >12 un	less noted)
13. Are matrices	correctly identified on Chai	n of Custody?	Yes	\checkmark	No		Adjusted?	
14. Is it clear what	at analyses were requested	?	Yes	\checkmark	No			
15. Were all hold (If no, notify o	ling times able to be met? customer for authorization.)		Yes		No		Checked by:	
Special Hand	ling (if applicable)							
10							N10	

16. W	as client notified of all o	liscrepancies with this order?		Yes [No 🗌		NA 🗹
	Person Notified: By Whom:		Date Via:	🗌 eMail	Phon	e 🗌 Fax	In Perso	on
	Regarding: Client Instructions:			an forman an a far an an		n nan dalam kalendar ka		

17. Additional remarks:

18. Cooler Information

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

Page 1 of 1

C	hain	-of-Cu	ustody Record	I um-Around	l ime:	Same Day M							-								
Client:	Nillin	tims 1	FIELD SERVICES	□ Standard	A Rush	10-14 results			F	A		AL	YS	SI	S L		30	RA	TO	AL RY	r
				Project Name	e: l Inpcass	CPP					www	v.hal	lenv	iron	ment	tal.co	om				
Mailing	Address	1773	5 ARROYA DR.	C	leanup			49	01 H	awki	ins N	IE -	Alb	uqu	erqu	e, N	M 87	109			
BL	loom	FIEL	0 A.M. 87413	Project #:	1/1/1772	NIOSILO		Te	el. 50	5-34	5-39	975	F	ax	505-	345	410	7			
Phone	#: 50	5-632	2-4625	W.0, 0	WOFLES							A	naly	sis	Req	ues	t				
email o	r Fax#: /	nonica	sandoud @William	Project Mana	ager:	. 1	=	(ylu	RO)					04)							
QA/QC	Package:			Mon	ich Spha	oval	802	as o	W/			3		04,S	CB's						
□ Stan	Idard		□ Level 4 (Full Validation)				3's (Ő	RO			SIN		PC PC	2 P(
Accredi	itation	C Oth		Sampler:	MS	70-71-7120-00-00-00-00-00-00-00-00-00-00-00-00-0	TME	TPH		=	Ē	270		NO	808						N
				Onice	Yes	□ Notes and the second	+ 	+ Ш	BRO	418	504	or 8	S	Š	es /		(VO)	4			Sr.
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No	3TEX + MTB	STEX + MTB	rPH 8015B (FPH (Method	EDB (Method	AH's (8310	RCRA 8 Mets	Anions (F,CI,I	3081 Pesticid	3260B (VOA)	3270 (Semi-V	e Long			Air Ruhhlae A
minter	1330	Soil	MAR-W-LOMP	MAZ	100	701	Ž		X		-	-	-	4	0	0	8	4	-		9
20/12/11	1408	soil	CAR-B-Comp	402	ICR	-202	X	_	X									F	+		F
- in ite																					
																			\pm		
																			\pm		
																			+		-
																			_		
Date:	Time: 1655 Time: 1844	Relinquish	hed by: Whe Stehle Hual	Received by: Received by:	phat the	Date Time 10/2/17 1655 Date Time 1 /0/13/17 0756	Rer	nark	s:						ł		L				

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.

Ranking Score Determination Site Name <u>Carracas</u> Legal (Unit, Sec, Twn, Rng) <u>Unit F, Section 34, Township32N, Range 5W</u> GPS Coordinates <u>36.938532, -107.353838</u>

Ranking Score based on NMOCD <u>Guidelines for Remediation of Leaks, Spills, and Releases</u> dated August 13, 1993.

Depth to Ground - The operator should determine the depth to ground water at each site. The depth to ground water is defined as the vertical distance from the lowermost contaminants to the seasonal high water elevation of the ground water. If the exact depth to ground water is unknown, the ground water depth can be estimated using either local water well information, published regional ground water information, data on file with the New Mexico State Engineer Office or the vertical distance from adjacent ground water or surface water.

Notes: Distance to well is 6849 meters, depth of water is 950 feet

Depth to Groundwater	<50 feet	50 – 99 feet	>100 feet
Ranking Score (circle one)	20	10	0

Wellhead Protection Area - The operator should determine the horizontal distance from all water sources including private and domestic water sources. Water sources are defined as wells, springs or other sources of fresh water extraction. Private and domestic water sources are those water sources used by less than five households for domestic or stock purposes.

Notes: Nearest Water Well is 6849 meters

Wellhead Protection Area	<1000 from a water source; or <200 feet f	rom a private domestic water source
Ranking Score (circle one)	Yes → 20	$No \rightarrow 0$

Distance To Nearest Surface Water Body - The operator should determine the horizontal distance to all downgradient surface water bodies. Surface water bodies are defined as perennial rivers, streams, creeks, irrigation canals and ditches, lakes, ponds and playas.

Notes: 871.3 feet to the nearest stream directly west of facility. All other nearby streams greater than 1,000 feet.

Distance to Surface Water Body	<200 horizontal feet	<mark>200 – 1,000</mark> horizontal feet	>1,000 horizontal feet
Ranking Score (circle one)	20	10	0

Remediation Action Levels

Ranking Score (Circle One)	>19	10 - 19	<mark>0 - 9</mark>
Benzene		10 mg/kg	
BTEX (total)		50 mg/kg	
TPH (GRO and DRO)	100 mg/kg	1,000 mg/kg	5,000 mg/kg

Ranking Completed by (print and sign) _____Monica Sandoval _____ Date ____10/10/2017_____

Sources: <u>GPS Conversion Tool</u> <u>New Mexico Water Rights Reporting System</u> – Water Column/Average Depth to Water Report <u>New Mexico Oil and Gas Map</u>

New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW###### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)	(R=POD has been replaced O=orphaned, C=the file is closed)	j, (qua	rter rter	s a	are 1: are si	=NW	2=NE 3 st to lar	3=SW 4=\$ gest) (SE) (NAD83 UTM in	meters)	(In feet)	
POD Number	POD Sub- Code basin (County	Q / 64	Q 16	Q 4	Sec	Tws	Rng	;	x Y	Distance	Depth Well	Depth Water	Water Column
SJ 02232		RA	1	1	3	20	32N	04W	29650	9 4094133*	6849	950	800	150
SJ 02711		SJ	3	1	3	11	32N	06W	28329	3 4096778*	9750	200	120	80
SJ 04225 POD1	SJM1	RA		4	3	23	31N	06W	28290	0 4084335	9939	320	60	260
										Ave	erage Depth to	Water:	326	feet
											Minimum	Depth:	60	feet
										-	Maximum	Depth:	800	feet

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 290724

Northing (Y): 4090465

Radius: 10000

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.













From:	Heather Woods
To:	Fields, Vanessa, EMNRD
Cc:	Sandoval, Monica; Smith, Cory, EMNRD
Subject:	[EXTERNAL] RE: Schedule for Sampling at the Williams Carracas CDP
Date:	Monday, December 18, 2017 12:04:36 PM
Attachments:	171218 Williams Carracas Boring Location Map.pdf
	Rpt 1712530 Final v1.pdf
	171218 Table A Carracas CDP Field Screening and Laboratory Results.pdf

Good Afternoon Vanessa,

I apologize. Monica alerted me Friday evening that the results had been sent out on Thursday, but I had not received them. Attached is a copy of the laboratory report along with a Figure illustrating the boring locations and a summary table of the field and laboratory results. The soils encountered generally consisted of red brown clayey sand fill to about 7 feet and was underlain by grey sandy lean clay (weathered shale) to auger refusal on the more competent weathered shale at the bottom of the borings. As you will notice, the sample at SB-3 @ 2.5 feet has a MRO concentration of 3,100 mg/kg. This sample did consist of the clayey sand backfill material and did have a slight odor, but was not stained. The samples above and below it did not have an odor. Please let me know if you have any questions.

Many Thanks, Heather

From: Fields, Vanessa, EMNRD [mailto:Vanessa.Fields@state.nm.us]
Sent: Monday, December 18, 2017 10:36 AM
To: Heather Woods <hwoods@ruleengineering.com>
Cc: Sandoval, Monica <Monica.Sandoval@Williams.com>; Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Subject: RE: Schedule for Sampling at the Williams Carracas CDP

Good morning,

Could you please provide the analytical results from the sampling that occurred on the 5th?

Thank you,

Vanessa Fields Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 119 Cell: (505) 419-0463 vanessa.fields@state.nm.us From: Heather Woods [mailto:hwoods@ruleengineering.com]
Sent: Tuesday, December 12, 2017 8:09 AM
To: Fields, Vanessa, EMNRD <<u>Vanessa.Fields@state.nm.us</u>>
Cc: Sandoval, Monica <<u>Monica.Sandoval@Williams.com</u>>; Smith, Cory, EMNRD
<<u>Cory.Smith@state.nm.us</u>>
Subject: Re: Schedule for Sampling at the Williams Carracas CDP

Vanessa,

We have not received the lab results. I expect to have them Thursday.

Thanks, Heather

On Dec 12, 2017, at 7:37 AM, "Fields, Vanessa, EMNRD" <<u>Vanessa.Fields@state.nm.us</u>> wrote:

Good morning,

Have you received the analytical results from last week's sampling?

Thank you,

Vanessa Fields Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 119 Cell: (505) 419-0463 vanessa.fields@state.nm.us

From: Heather Woods [mailto:hwoods@ruleengineering.com]
Sent: Tuesday, November 28, 2017 10:35 AM
To: Fields, Vanessa, EMNRD <<u>Vanessa.Fields@state.nm.us</u>>
Cc: Sandoval, Monica <<u>Monica.Sandoval@Williams.com</u>>
Subject: Schedule for Sampling at the Williams Carracas CDP

Good Morning Vanessa,

I would like to notify you that we will be sampling at the Williams Carracas CDP on December 5th, 2017, around 9:00 a.m., and may continue into the next day if needed.

Please let me know if you have any questions.

Many Thanks, Heather

Heather M. Woods, P.G.

<image001.jpg> 501 Airport Drive, Suite 205 Farmington, NM 87401 Office: (505) 325-1055 Fax: (303) 431-3750 Cell: (505) 716-2787

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Table A. Field Screening and Laboratory Analytical Results Williams Field Services Carracas CDP Rio Arriba County, New Mexico

			Field Results	Laboratory Results								
Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylben- zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)	
	NMOC	D Action Level*	100	10	NE	NE	NE	50		1,000**	an estates	
		3	0.1									
		4	0.2									
		5	0.2									
		6	0.3	< 0.024	<0.048	<0.048	<0.097	ND	<4.8	<9.8	<49	
SB-1	12/5/2017	7	0.2									
		8.5	0.2									
		10	0.0									
		11	0.0					-				
		12	0.0	< 0.24	< 0.049	< 0.049	<0.097	ND	<4.9	<9.5	<48	
		1	0.2									
		2	1.4	< 0.024	< 0.047	< 0.047	<0.094	ND	<4.7	<9.4	<47	
CR 2	12/5/2017	3	0.3									
50-2	12/3/2017	4	0.2									
		5	0.2									
		6	0.2	< 0.023	<0.046	< 0.046	<0.092	ND	<4.6	<9.9	<49	
		1.5	0.2									
		2.5	2.1	< 0.024	<0.049	< 0.049	<0.097	ND	<4.9	<97	3,100	
CP 3	12/5/2017	3.5	0.2									
00-0	12/3/2017	4.5	0.2									
		6	0.2									
		7	0.2	< 0.025	< 0.049	<0.049	<0.098	ND	<4.9	<9.2	<46	
		1	0.2									
		2	0.2									
SR.4	12/5/2017	3	0.2									
00-4	12/0/2017	4	0.2									
		5	0.2	< 0.024	< 0.049	<0.049	<0.097	ND	<4.9	<9.3	<46	
		6	0.2	< 0.024	< 0.049	< 0.049	< 0.097	ND	<4.9	<9.3	<47	



Table A. Field Screening and Laboratory Analytical Results Williams Field Services Carracas CDP Rio Arriba County, New Mexico

		Rest Calify The	Field Results	Laboratory Results								
Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylben- zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)	
Second S	NMOCD Action Level*		100	10	NE	NE	NE	50		1,000**		
		2	0.1							-		
		3	0.1									
		4	0.1									
SR.5	12/6/2017	5	0.4	< 0.024	<0.048	<0.048	<0.097	ND	<4.8	12	<46	
30-5	12/0/2017	6	0.3									
		7	0.1	< 0.024	<0.049	<0.049	<0.098	ND	<4.9	<9.6	<48	
		8	0.0									
		9	0.1	< 0.023	<0.046	<0.046	<0.92	ND	<4.6	<9.5	<48	
		1	0.1									
		2	0.1									
	12/6/2017		3	0.1								
SB-6		4	0.1									
50-0	12/0/2017	5	0.1									
		6	0.1									
		7	0.2	< 0.023	<0.046	<0.046	<0.092	ND	<4.6	<9.2	<46	
		8	0.1	<0.023	<0.046	< 0.046	< 0.093	ND	<4.6	<9.2	<46	
		1	0.2									
		2	0.1									
		3	0.1									
SR.7	12/6/2017	4	0.1									
00-7	12/0/2017	5	0.1									
		6	0.1									
		7	0.2	<0.025	<0.050	<0.050	<0.099	ND	<5.0	<9.9	<50	
		8	0.1	<0.025	< 0.049	< 0.049	<0.098	ND	<4.9	<9.7	<49	



Table A. Field Screening and Laboratory Analytical Results Williams Field Services Carracas CDP Rio Arriba County, New Mexico

		Not See 128	Field Results	12002253			Laborato	ry Results			
Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylben- zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)
NMOCD Action Level*		100	10	NE	NE	NE	50		1,000**		
		1	0.0								
		2	0.0								
		3	0.0								
	12/6/2017	4	1.2	<0.024	<0.048	<0.048	<0.097	ND	<4.8	<9.3	<46
SB-8		5	0.5								
		6	0.0								
		7	0.0	< 0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.4	<47
		8	0.0								
		8.5	0.0	< 0.024	<0.047	<0.047	< 0.094	ND	<4.7	<9.4	<47
		1	0.1								
		2	0.2								
		3	0.0								
SP 0	126/2017	4	0.0								
30-9	120/2017	5	0.0								
		6	0.1								
		7	0.0	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.7	<48
		8	0.0	< 0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.8	<49

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 TPH - total petroleum hydrocarbons GRO - gasoline range organics DRO - diesel range organics MRO - mineral oil range organics NMOCD - New Mexico Oil Conservation Division

*Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)* **Based on a site ranking of 10.





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

December 14, 2017

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

RE: Williams Carracas CDP

OrderNo.: 1712530

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 20 sample(s) on 12/8/2017 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 <u>www.hallenvironmental.com</u> 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,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environmental Analy	all Environmental Analysis Laboratory, Inc.									
CLIENT: Rule Engineering LLCProject: Williams Carracas CDPLab ID: 1712530-001	Client Sample ID: SB-1 @ 6 Collection Date: 12/5/2017 1:37:00 PM Matrix: Received Date: 12/8/2017 7:55:00 AM									
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch				
EPA METHOD 8015M/D: DIESEL RAM	NGE ORGANICS				Analyst	TOM				
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	12/13/2017 1:08:24 PM	35468				
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	12/13/2017 1:08:24 PM	35468				
Surr: DNOP	97.0	70-130	%Rec	1	12/13/2017 1:08:24 PM	35468				
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB				
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	12/12/2017 7:10:28 PM	35439				
Surr: BFB	78.5	15-316	%Rec	1	12/12/2017 7:10:28 PM	35439				
EPA METHOD 8021B: VOLATILES					Analyst	NSB				
Benzene	ND	0.024	mg/Kg	1	12/12/2017 7:10:28 PM	35439				
Toluene	ND	0.048	mg/Kg	1	12/12/2017 7:10:28 PM	35439				
Ethylbenzene	ND	0.048	mg/Kg	1	12/12/2017 7:10:28 PM	35439				
Xylenes, Total	ND	0.097	mg/Kg	1	12/12/2017 7:10:28 PM	35439				
Surr: 4-Bromofluorobenzene	98.3	80-120	%Rec	1	12/12/2017 7:10:28 PM	35439				

Analytical Report

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 24
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

					Analytical Report	
					Lab Order 1712530	
Hall Environmental Analy	sis Laborat	ory, Inc.			Date Reported: 12/14/2	017
CLIENT: Rule Engineering LLC			Client Sampl	e ID: SE	3-1 @ 12	
Project: Williams Carracas CDP			Collection 1	Date: 12	/5/2017 1:35:00 PM	
Lab ID: 1712530-002	Matrix:		Received I	Date: 12	/8/2017 7:55:00 AM	
Analyses	Result	PQL Qua	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analys	том
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	12/13/2017 2:14:37 PN	35468
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	12/13/2017 2:14:37 PM	35468
Surr: DNOP	105	70-130	%Rec	1	12/13/2017 2:14:37 PM	35468
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/12/2017 7:33:56 PN	35439
Surr: BFB	85.7	15-316	%Rec	1	12/12/2017 7:33:56 PM	35439
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.024	mg/Kg	1	12/12/2017 7:33:56 PN	35439
Toluene	ND	0.049	mg/Kg	1	12/12/2017 7:33:56 PM	35439
Ethylbenzene	ND	0.049	mg/Kg	1	12/12/2017 7:33:56 PM	35439
Xylenes, Total	ND	0.097	mg/Kg	1	12/12/2017 7:33:56 PN	35439
Surr: 4-Bromofluorobenzene	103	80-120	%Rec	1	12/12/2017 7:33:56 PM	35439

Qualifiers:

*

Value exceeds Maximum Contaminant Level.

- Sample Diluted Due to Matrix D
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank В
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 24 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analys	sis Laborat	ory, Inc.			Date Reported: 12/14/2	017			
CLIENT: Rule Engineering LLC Project: Williams Carracas CDP	Client Sample ID: SB-2 @ 2 Collection Date: 12/5/2017 2:20:00 PM								
Lab ID: 1712530-003	Matrix: Received Date: 12/8/2017 7:55:00 AM								
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch			
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst	том			
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	12/13/2017 2:36:47 PM	35468			
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	12/13/2017 2:36:47 PM	35468			
Surr: DNOP	94.5	70-130	%Rec	1	12/13/2017 2:36:47 PM	35468			
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB			
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	12/12/2017 7:57:20 PM	35439			
Surr: BFB	84.7	15-316	%Rec	1	12/12/2017 7:57:20 PM	35439			
EPA METHOD 8021B: VOLATILES					Analyst	NSB			
Benzene	ND	0.024	mg/Kg	1	12/12/2017 7:57:20 PM	35439			
Toluene	ND	0.047	mg/Kg	1	12/12/2017 7:57:20 PM	35439			
Ethylbenzene	ND	0.047	mg/Kg	1	12/12/2017 7:57:20 PM	35439			
Xylenes, Total	ND	0.094	mg/Kg	1	12/12/2017 7:57:20 PM	35439			
Surr: 4-Bromofluorobenzene	102	80-120	%Rec	1	12/12/2017 7:57:20 PM	35439			

Analytical Report Lab Order 1712530

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 24
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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 Analy	sis Laborat	ory, Inc.			Lab Order 1712530 Date Reported: 12/14 /	2017
CLIENT: Rule Engineering LLCProject:Williams Carracas CDPLab ID:1712530-004	Matrix:	8-2 @ 6 /5/2017 2:40:00 PM /8/2017 7:55:00 AM				
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analys	st: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	12/13/2017 2:58:47 PI	M 35468
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	12/13/2017 2:58:47 PI	M 35468
Surr: DNOP	94.2	70-130	%Rec	1	12/13/2017 2:58:47 PI	M 35468
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	12/12/2017 8:20:44 PI	M 35439
Surr: BFB	85.8	15-316	%Rec	1	12/12/2017 8:20:44 PI	M 35439
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.023	mg/Kg	1	12/12/2017 8:20:44 PI	M 35439
Toluene	ND	0.046	mg/Kg	1	12/12/2017 8:20:44 PI	M 35439
Ethylbenzene	ND	0.046	mg/Kg	1	12/12/2017 8:20:44 PI	M 35439
Xylenes, Total	ND	0.092	mg/Kg	1	12/12/2017 8:20:44 PI	M 35439
Surr: 4-Bromofluorobenzene	105	80-120	%Rec	1	12/12/2017 8·20·44 PI	M 35439

Qualifiers: * Value exceeds Maximum Contaminant Level. В

- Sample Diluted Due to Matrix D
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- Analyte detected in the associated Method Blank
- E Value above quantitation range
 - Analyte detected below quantitation limits Page 4 of 24 J

Analytical Report

- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analy	all Environmental Analysis Laboratory, Inc.								
CLIENT: Rule Engineering LLCClient Sample ID: SB-3 @ 2.5Project:Williams Carracas CDPCollection Date: 12/5/2017 2:49:00 ILab ID:1712530-005Matrix:Received Date: 12/8/2017 7:55:00 A									
Analyses	Result	PQL Q	Qual	Units	DF	Date Analyzed	Batch		
EPA METHOD 8015M/D: DIESEL RAM	GE ORGANICS				Analyst	TOM			
Diesel Range Organics (DRO)	ND	97		mg/Kg	10	12/13/2017 3:21:00 PM	35468		
Motor Oil Range Organics (MRO)	3100	480	D	mg/Kg	10	12/13/2017 3:21:00 PM	35468		
Surr: DNOP	0	70-130	S	%Rec	10	12/13/2017 3:21:00 PM	35468		
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst	NSB		
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/12/2017 8:44:06 PM	35439		
Surr: BFB	84.0	15-316		%Rec	1	12/12/2017 8:44:06 PM	35439		
EPA METHOD 8021B: VOLATILES						Analyst	NSB		
Benzene	ND	0.024		mg/Kg	1	12/12/2017 8:44:06 PM	35439		
Toluene	ND	0.049		mg/Kg	1	12/12/2017 8:44:06 PM	35439		
Ethylbenzene	ND	0.049		mg/Kg	1	12/12/2017 8:44:06 PM	35439		
Xylenes, Total	ND	0.097		mg/Kg	1	12/12/2017 8:44:06 PM	35439		
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	12/12/2017 8:44:06 PM	35439		

Analytical Report

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 24
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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 Analys	all Environmental Analysis Laboratory, Inc. Date Reported: 12/14/2017									
CLIENT: Rule Engineering LLC Project: Williams Carracas CDP Lab ID: 1712530-006	Client Sample ID: SB-3 @ 7 Collection Date: 12/5/2017 3:05:00 PM Matrix: Received Date: 12/8/2017 7:55:00 AM									
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch				
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analys	t: TOM				
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	12/13/2017 4:27:12 PM	35468				
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	12/13/2017 4:27:12 PM	35468				
Surr: DNOP	97.7	70-130	%Rec	1	12/13/2017 4:27:12 PM	35468				
EPA METHOD 8015D: GASOLINE RAN	NGE				Analys	: NSB				
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/12/2017 9:07:28 PM	35439				
Surr: BFB	80.1	15-316	%Rec	1	12/12/2017 9:07:28 PM	35439				
EPA METHOD 8021B: VOLATILES					Analys	NSB				
Benzene	ND	0.025	mg/Kg	1	12/12/2017 9:07:28 PM	35439				
Toluene	ND	0.049	mg/Kg	1	12/12/2017 9:07:28 PN	35439				
Ethylbenzene	ND	0.049	mg/Kg	1	12/12/2017 9:07:28 PM	35439				
Xylenes, Total	ND	0.098	mg/Kg	1	12/12/2017 9:07:28 PM	35439				
Surr: 4-Bromofluorobenzene	99.3	80-120	%Rec	1	12/12/2017 9:07:28 PM	35439				

Analytical Report Lab Order 1712530

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 24
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Han Environmental Analy		ory, me.			Date Reported: 12/14/2	017	
CLIENT: Rule Engineering LLC			Client Sampl	e ID: SB	-4 @ 5		
Project: Williams Carracas CDP	Collection Date: 12/5/2017 3:55:00 PM						
Lab ID: 1712530-007	Matrix: Received Date: 12/8/2017 7:55:00						
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analyst	том	
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	12/13/2017 4:49:25 PM	35468	
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	12/13/2017 4:49:25 PM	35468	
Surr: DNOP	96.1	70-130	%Rec	1	12/13/2017 4:49:25 PM	35468	
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/12/2017 9:30:51 PM	35439	
Surr: BFB	83.3	15-316	%Rec	1	12/12/2017 9:30:51 PM	35439	
EPA METHOD 8021B: VOLATILES					Analyst	NSB	
Benzene	ND	0.024	mg/Kg	1	12/12/2017 9:30:51 PM	35439	
Toluene	ND	0.049	mg/Kg	1	12/12/2017 9:30:51 PM	35439	
Ethylbenzene	ND	0.049	mg/Kg	1	12/12/2017 9:30:51 PM	35439	
Xylenes, Total	ND	0.097	mg/Kg	1	12/12/2017 9:30:51 PM	35439	
Surr: 4-Bromofluorobenzene	101	80-120	%Rec	1	12/12/2017 9:30:51 PM	35439	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 24
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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.

Analytical Report Lab Order 1712530

Hall Environmental Analy		Lab Order 1712530 Date Reported: 12/14/2017				
CLIENT: Rule Engineering LLC Project: Williams Carracas CDP Lab ID: 1712530-008	Client Sample ID: SB-4 @ 6 Collection Date: 12/5/2017 4:00:00 PM Matrix: Received Date: 12/8/2017 7:55:00 AM					
Analyses	Result	PQL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	12/13/2017 5:11:30 PM	35468
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	12/13/2017 5:11:30 PM	35468
Surr: DNOP	97.8	70-130	%Rec	1	12/13/2017 5:11:30 PM	35468
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/12/2017 9:54:10 PM	35439
Surr: BFB	82.3	15-316	%Rec	1	12/12/2017 9:54:10 PM	35439
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	12/12/2017 9:54:10 PM	1 35439
Toluene	ND	0.049	mg/Kg	1	12/12/2017 9:54:10 PM	35439
Ethylbenzene	ND	0.049	mg/Kg	1	12/12/2017 9:54:10 PM	35439
Xylenes, Total	ND	0.097	mg/Kg	1	12/12/2017 9:54:10 PM	35439
Surr: 4-Bromofluorobenzene	99.0	80-120	%Rec	1	12/12/2017 9:54:10 PM	35439

Analytical Report

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 8 of 24
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

nall El	ivironmental Analys	sis Laborat	ory, m	с.	I	Date Reported: 12/14/2	017
CLIENT: Project: Lab ID:	Rule Engineering LLC Williams Carracas CDP 1712530-009	Matrix:		Client Sam Collection Received	ple ID: SB-: n Date: 12/6 d Date: 12/8	5 @ 5 /2017 10:50:00 AM /2017 7:55:00 AM	
Analyses		Result	PQL	Qual Units	DF I	Date Analyzed	Batch
EPA MET	HOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst	TOM
Diesel Ra	ange Organics (DRO)	12	9.1	mg/Kg	1	12/13/2017 5:33:35 PM	35468
Motor Oil	Range Organics (MRO)	ND	46	mg/Kg	1	12/13/2017 5:33:35 PN	35468
Surr: D	DNOP	97.2	70-130	%Rec	1	12/13/2017 5:33:35 PM	35468
EPA MET	HOD 8015D: GASOLINE RAI	NGE				Analyst	NSB
Gasoline	Range Organics (GRO)	ND	4.8	mg/Kg	1	12/12/2017 10:17:31 P	M 35439
Surr: E	3FB	80.2	15-316	%Rec	1	12/12/2017 10:17:31 P	M 35439
EPA MET	HOD 8021B: VOLATILES					Analyst	NSB
Benzene		ND	0.024	mg/Kg	1	12/12/2017 10:17:31 P	M 35439
Toluene		ND	0.048	mg/Kg	1	12/12/2017 10:17:31 P	M 35439
Ethylben	zene	ND	0.048	mg/Kg	1	12/12/2017 10:17:31 P	M 35439
Xylenes,	Total	ND	0.097	mg/Kg	1	12/12/2017 10:17:31 P	M 35439
Surr: 4	Bromofluorobenzene	98.9	80-120	%Rec	1	12/12/2017 10:17:31 P	M 35439

* 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
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 9 of 24 J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratowy Inc

Analytical Report Lab Order 1712530

Hall Environmental Analysis Laboratory, Inc.Lab Order 1712530Date Reported: 12/14/2017							
CLIENT: Rule Engineering LLC Client Sample ID: SB-5 @ 7							
Project: Williams Carracas CDP			Collection I	Date: 12	/6/2017 11:00:00 AM		
Lab ID: 1712530-010	Matrix:	Matrix: Received Date: 12/8/2017 7:55:00 AM					
Analyses	Result	PQL Q	ual Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analys	t: TOM	
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	12/13/2017 5:55:37 PM	A 35468	
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	12/13/2017 5:55:37 PM	A 35468	
Surr: DNOP	97.4	70-130	%Rec	1	12/13/2017 5:55:37 PM	A 35468	
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/12/2017 10:40:54 F	PM 35439	
Surr: BFB	82.9	15-316	%Rec	1	12/12/2017 10:40:54 F	PM 35439	
EPA METHOD 8021B: VOLATILES					Analys	t: NSB	
Benzene	ND	0.024	mg/Kg	1	12/12/2017 10:40:54 F	M 35439	
Toluene	ND	0.049	mg/Kg	1	12/12/2017 10:40:54 F	M 35439	
Ethylbenzene	ND	0.049	mg/Kg	1	12/12/2017 10:40:54 F	M 35439	
Xylenes, Total	ND	0.098	mg/Kg	1	12/12/2017 10:40:54 F	°M 35439	
Surr: 4-Bromofluorobenzene	100	80-120	%Rec	1	12/12/2017 10:40:54 F	M 35439	

Analytical Report

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limitspace 10 of 24
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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 Analys	sis Laborat	ory, Inc.			Date Reported: 12/14	2017
CLIENT: Rule Engineering LLCProject:Williams Carracas CDPLab ID:1712530-011	Matrix:		Client Sampl Collection Received	e ID: SE Date: 12 Date: 12	-5 @ 9 /6/2017 11:10:00 AM /8/2017 7:55:00 AM	1
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analy	st: TOM
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	12/13/2017 6:17:41 P	M 35468
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	12/13/2017 6:17:41 P	M 35468
Surr: DNOP	101	70-130	%Rec	1	12/13/2017 6:17:41 P	M 35468
EPA METHOD 8015D: GASOLINE RAI	NGE				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	12/13/2017 12:14:06	AM 35439
Surr: BFB	81.3	15-316	%Rec	1	12/13/2017 12:14:06	AM 35439
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	ND	0.023	mg/Kg	1	12/13/2017 12:14:06	AM 35439
Toluene	ND	0.046	mg/Kg	1	12/13/2017 12:14:06	AM 35439
Ethylbenzene	ND	0.046	mg/Kg	1	12/13/2017 12:14:06	AM 35439
Xylenes, Total	ND	0.092	mg/Kg	1	12/13/2017 12:14:06	AM 35439
Surr: 4-Bromofluorobenzene	97.5	80-120	%Rec	1	12/13/2017 12:14:06	AM 35439

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
- PQL Practical Quanitative Limit
- 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 Page 11 of 24

Analytical Report Lab Order 1712530

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analys		Date Reported: 12/14/2	017			
CLIENT: Rule Engineering LLC Project: Williams Carracas CDP			Client Sampl Collection 1	e ID: SB Date: 12/	3-6 @ 7 /6/2017 11:29:00 AM	
Lab ID: 1712530-012	Matrix:		Received I	Date: 12/	/8/2017 7:55:00 AM	
Analyses	Result	PQL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	12/13/2017 6:39:34 PM	35468
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	12/13/2017 6:39:34 PM	35468
Surr: DNOP	99.7	70-130	%Rec	1	12/13/2017 6:39:34 PM	35468
EPA METHOD 8015D: GASOLINE RAI	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	12/13/2017 12:37:23 A	M 35439
Surr: BFB	79.7	15-316	%Rec	1	12/13/2017 12:37:23 A	M 35439
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.023	mg/Kg	1	12/13/2017 12:37:23 A	M 35439
Toluene	ND	0.046	mg/Kg	1	12/13/2017 12:37:23 A	M 35439
Ethylbenzene	ND	0.046	mg/Kg	1	12/13/2017 12:37:23 A	M 35439
Xylenes, Total	ND	0.092	mg/Kg	1	12/13/2017 12:37:23 A	M 35439
Surr: 4-Bromofluorobenzene	98.3	80-120	%Rec	1	12/13/2017 12:37:23 A	M 35439

Iten		e Qe Summary report and sample login enceknis	st for hage	geu QC uata anu
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in
	D	Sample Diluted Due to Matrix	Е	Value above quant
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected b
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In
	PQL	Practical Quanitative Limit	RL	Reporting Detection

- % Recovery outside of range due to dilution or matrix S
- n the associated Method Blank
- titation range
- pelow quantitation limits Page 12 of 24

Analytical Report Lab Order 1712530

- Range
- on Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analys	is Laborat	ory, Inc.			Date Reported: 12/14/20	017	
CLIENT: Rule Engineering LLCProject: Williams Carracas CDPLab ID: 1712530-013	Client Sample ID: SB-6 @ 8 Collection Date: 12/6/2017 11:34:00 AM Matrix: Received Date: 12/8/2017 7:55:00 AM						
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst	том	
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	12/13/2017 7:01:36 PM	35468	
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	12/13/2017 7:01:36 PM	35468	
Surr: DNOP	100	70-130	%Rec	1	12/13/2017 7:01:36 PM	35468	
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	NSB	
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	12/13/2017 1:00:33 AM	35439	
Surr: BFB	80.1	15-316	%Rec	1	12/13/2017 1:00:33 AM	35439	
EPA METHOD 8021B: VOLATILES					Analyst	NSB	
Benzene	ND	0.023	mg/Kg	1	12/13/2017 1:00:33 AM	35439	
Toluene	ND	0.046	mg/Kg	1	12/13/2017 1:00:33 AM	35439	
Ethylbenzene	ND	0.046	mg/Kg	1	12/13/2017 1:00:33 AM	35439	
Xylenes, Total	ND	0.093	mg/Kg	1	12/13/2017 1:00:33 AM	35439	
Surr: 4-Bromofluorobenzene	96.7	80-120	%Rec	1	12/13/2017 1:00:33 AM	35439	

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

PQL Practical Quanitative Limit

- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 13 of 24 J

Analytical Report Lab Order 1712530

- Р Sample pH Not In Range
- RL **Reporting Detection Limit**

W Sample container temperature is out of limit as specified

Lab Order 171Date ReportedCLIENT: Rule Engineering LLCClient Sample ID: SB-7 @ 7Project:Williams Carracas CDPCollection Date: 12/6/2017 12:06Lab ID:1712530-014Matrix:Received Date: 12/8/2017 7:55:07					Lab Order 1712530 Date Reported: 12/14/2017			
					3-7 @ 7 /6/2017 12:06:00 PM /8/2017 7:55:00 AM			
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch		
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	TOM		
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	12/13/2017 7:23:33 PM	35468		
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	12/13/2017 7:23:33 PM	35468		
Surr: DNOP	97.9	70-130	%Rec	1	12/13/2017 7:23:33 PM	35468		
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	NSB		
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	12/13/2017 1:23:46 AM	35439		
Surr: BFB	81.6	15-316	%Rec	1	12/13/2017 1:23:46 AM	35439		
EPA METHOD 8021B: VOLATILES					Analyst	NSB		
Benzene	ND	0.025	mg/Kg	1	12/13/2017 1:23:46 AM	35439		
Toluene	ND	0.050	mg/Kg	1	12/13/2017 1:23:46 AM	35439		
Ethylbenzene	ND	0.050	mg/Kg	1	12/13/2017 1:23:46 AM	35439		
Xylenes, Total	ND	0.099	mg/Kg	1	12/13/2017 1:23:46 AM	35439		
Surr: 4-Bromofluorobenzene	101	80-120	%Rec	1	12/13/2017 1:23:46 AM	35439		

Analytical Report

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limitspace 14 of 24
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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.					Date Reported: 12/14/2017		
CLIENT: Rule Engineering LLC			Client Sampl	e ID: SE	3-7 @ 8		
Project: Williams Carracas CDP		Collection Date: 12/6/2017 12:11:00 PM					
Lab ID: 1712530-015	Matrix:	Received Date: 12/8/2017 7:55:00 AM					
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analyst	TOM	
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	12/13/2017 7:45:32 PM	35468	
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	12/13/2017 7:45:32 PM	35468	
Surr: DNOP	98.5	70-130	%Rec	1	12/13/2017 7:45:32 PM	35468	
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/13/2017 1:46:59 AM	35439	
Surr: BFB	77.9	15-316	%Rec	1	12/13/2017 1:46:59 AM	35439	
EPA METHOD 8021B: VOLATILES					Analyst	NSB	
Benzene	ND	0.025	mg/Kg	1	12/13/2017 1:46:59 AM	35439	
Toluene	ND	0.049	mg/Kg	1	12/13/2017 1:46:59 AM	35439	
Ethylbenzene	ND	0.049	mg/Kg	1	12/13/2017 1:46:59 AM	35439	
Xylenes, Total	ND	0.098	mg/Kg	1	12/13/2017 1:46:59 AM	35439	
Surr: 4-Bromofluorobenzene	96.7	80-120	%Rec	1	12/13/2017 1:46:59 AM	35439	

Qualifiers:

* Value exceeds Maximum Contaminant Level.

- Sample Diluted Due to Matrix D
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 15 of 24 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1712530

Hall Environmental Analy		Lab Order 1712530 Date Reported: 12/14/2017					
CLIENT: Rule Engineering LLCProject: Williams Carracas CDPLab ID: 1712530-016	Client Sample ID: SB-8 @ 4 Collection Date: 12/6/2017 12:23:00 PM Matrix: Received Date: 12/8/2017 7:55:00 AM						
Analyses	Result	PQL Q	ual Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: TOP							
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	12/13/2017 8:07:32 PM	35468	
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	12/13/2017 8:07:32 PM	35468	
Surr: DNOP	96.7	70-130	%Rec	1	12/13/2017 8:07:32 PM	35468	
EPA METHOD 8015D: GASOLINE RA				Analys	t: NSB		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	12/13/2017 2:10:09 AM	1 35439	
Surr: BFB	78.2	15-316	%Rec	1	12/13/2017 2:10:09 AM	35439	
EPA METHOD 8021B: VOLATILES					Analys	t: NSB	
Benzene	ND	0.024	mg/Kg	1	12/13/2017 2:10:09 AM	35439	
Toluene	ND	0.048	mg/Kg	1	12/13/2017 2:10:09 AM	35439	
Ethylbenzene	ND	0.048	mg/Kg	1	12/13/2017 2:10:09 AN	35439	
Xylenes, Total	ND	0.097	mg/Kg	1	12/13/2017 2:10:09 AN	35439	
Surr: 4-Bromofluorobenzene	94.9	80-120	%Rec	1	12/13/2017 2:10:09 AN	35439	

Analytical Report

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank							
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range							
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limitspace 16 of 24							
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range							
	PQL	Practical Quanitative Limit	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 Analy	all Environmental Analysis Laboratory, Inc.										
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CLIENT: Rule Engineering LLCProject:Williams Carracas CDPLab ID:1712530-017	Matrix:	Client Sample ID: SB-8 @ 7 Collection Date: 12/6/2017 12:37:00 PM Matrix: Received Date: 12/8/2017 7:55:00 AM									
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch					
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	TOM					
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	12/13/2017 8:29:33 PM	35468					
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	12/13/2017 8:29:33 PM	35468					
Surr: DNOP	98.9	70-130	%Rec	1	12/13/2017 8:29:33 PM	35468					
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	NSB					
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	12/13/2017 2:33:13 AM	35439					
Surr: BFB	84.2	15-316	%Rec	1	12/13/2017 2:33:13 AM	35439					
EPA METHOD 8021B: VOLATILES					Analyst	NSB					
Benzene	ND	0.024	mg/Kg	1	12/13/2017 2:33:13 AM	35439					
Toluene	ND	0.048	mg/Kg	1	12/13/2017 2:33:13 AM	35439					
Ethylbenzene	ND	0.048	mg/Kg	1	12/13/2017 2:33:13 AM	35439					
Xylenes, Total	ND	0.096	mg/Kg	1	12/13/2017 2:33:13 AM	35439					
Surr: 4-Bromofluorobenzene	102	80-120	%Rec	1	12/13/2017 2:33:13 AM	35439					

Refe	er to th	e QC Summary report and sample login checklis	st for flagg	ged QC data and preservation information.
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	POL	Practical Quanitative Limit	RL	Reporting Detection Limit

- S % Recovery outside of range due to dilution or matrix
- ep ng
- W Sample container temperature is out of limit as specified

Analytical Report

		The second second							
CLIENT: Rule Engineering LLC Project: Williams Carracas CDP	Client Sample ID: SB-8 @ 8.5 Collection Date: 12/6/2017 12:47:00 PM								
Lab ID: 1712530-018	Matrix: Received Date: 12/8/2017 7:55:00 AM								
Analyses	Result	PQL	Qual Units	DF Date Analyzed Batch					
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS			Analyst: TOM					
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1 12/13/2017 8:51:23 PM 35468					
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1 12/13/2017 8:51:23 PM 35468					
Surr: DNOP	96.7	70-130	%Rec	1 12/13/2017 8:51:23 PM 35468					
EPA METHOD 8015D: GASOLINE RANG	GE			Analyst: NSB					
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1 12/13/2017 2:56:16 AM 35439					
Surr: BFB	80.1	15-316	%Rec	1 12/13/2017 2:56:16 AM 35439					
EPA METHOD 8021B: VOLATILES				Analyst: NSB					
Benzene	ND	0.024	mg/Kg	1 12/13/2017 2:56:16 AM 35439					
Toluene	ND	0.047	mg/Kg	1 12/13/2017 2:56:16 AM 35439					
Ethylbenzene	ND	0.047	mg/Kg	1 12/13/2017 2:56:16 AM 35439					
Xylenes, Total	ND	0.094	mg/Kg	1 12/13/2017 2:56:16 AM 35439					
Surr: 4-Bromofluorobenzene	97.5	80-120	%Rec	1 12/13/2017 2:56:16 AM 35439					

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limitspace 18 of 24
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report Lab Order 1712530 Date Reported: 12/14/2017

Hall Environmental Analysis Laboratory, Inc.

						Lab Order 1712530			
Hall Environmental Analy	sis Laborat	ory, Inc	2.			Date Reported: 12/14/2	017		
CLIENT: Rule Engineering LLC			Cl	ient Sampl	e ID: SB	-9 @ 7			
Project: Williams Carracas CDP		Collection Date: 12/6/2017 1:17:00 PM							
Lab ID: 1712530-019	Matrix:	Matrix: Received Date: 12/8/2017 7:55:00 AM							
Analyses	Result	PQL Q	Qual	Units	DF	Date Analyzed	Batch		
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS					Analyst	TOM		
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/13/2017 9:13:21 PM	35468		
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/13/2017 9:13:21 PM	35468		
Surr: DNOP	93.8	70-130		%Rec	1	12/13/2017 9:13:21 PM	35468		
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst	NSB		
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/13/2017 3:19:16 AM	35439		
Surr: BFB	77.3	15-316		%Rec	1	12/13/2017 3:19:16 AM	35439		
EPA METHOD 8021B: VOLATILES						Analyst	NSB		
Benzene	ND	0.024		mg/Kg	1	12/13/2017 3:19:16 AM	35439		
Toluene	ND	0.048		mg/Kg	1	12/13/2017 3:19:16 AM	35439		
Ethylbenzene	ND	0.048		mg/Kg	1	12/13/2017 3:19:16 AM	35439		
Xylenes, Total	ND	0.096		mg/Kg	1	12/13/2017 3:19:16 AM	35439		
Surr: 4-Bromofluorobenzene	98.2	80-120		%Rec	1	12/13/2017 3:19:16 AM	35439		

Analytical Report

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limitspace 10 of 24
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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.Lab Order 1712530Date Reported: 12/14/2017											
CLIENT: Rule Engineering LLCClient Sample ID: SB-9 @ 8Project:Williams Carracas CDPCollection Date: 12/6/2017 1:22:00 PMLab ID:1712530-020Matrix:Received Date: 12/8/2017 7:55:00 AM											
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch					
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: TOM											
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	12/13/2017 9:35:26 PM	35468					
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	12/13/2017 9:35:26 PM	35468					
Surr: DNOP	95.2	70-130	%Rec	1	12/13/2017 9:35:26 PM	35468					
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB					
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	12/13/2017 3:42:17 AM	35439					
Surr: BFB	79.4	15-316	%Rec	1	12/13/2017 3:42:17 AM	35439					
EPA METHOD 8021B: VOLATILES					Analyst	NSB					
Benzene	ND	0.024	mg/Kg	1	12/13/2017 3:42:17 AM	35439					
Toluene	ND	0.048	mg/Kg	1	12/13/2017 3:42:17 AM	35439					
Ethylbenzene	ND	0.048	mg/Kg	1	12/13/2017 3:42:17 AM	35439					
Xylenes, Total	ND	0.096	mg/Kg	1	12/13/2017 3:42:17 AM	35439					
Surr: 4-Bromofluorobenzene	99.2	80-120	%Rec	1	12/13/2017 3:42:17 AM	35439					

Analytical Report

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

0			_				
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank			
	D	Sample Diluted Due to Matrix	E	Value above quantitation range			
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limitspace 20 of 24			
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range			
	PQL	Practical Quanitative Limit	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.

Client: Rule Engineering LLC **Project:** Williams Carracas CDP

Comple ID 1 00 05470									
Sample ID LCS-35476	SampType: L	cs	Tes	tCode: EF	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: LCSS	Batch ID: 3	5476	F	RunNo: 4	7737				
Prep Date: 12/13/2017	Analysis Date: 1	2/13/2017	S	SeqNo: 1	526304	Units: %Re	с		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5	5.000		89.2	70	130			
Sample ID MB-35476	SampType: M	IBLK	Tes	tCode: EF	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PBS	Batch ID: 3	5476	F	RunNo: 47	7737				
Prep Date: 12/13/2017	Analysis Date: 1	2/13/2017	S	SeqNo: 1	526305	Units: %Re	с		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.6	10.00		96.0	70	130			
Sample ID 1712530-001AMS	SampType: M	S	Tes	tCode: EF	PA Method	8015M/D: Di	esel Range	e Organics	
Client ID: SB-1 @ 6	Batch ID: 3	5468	F	RunNo: 47	7737			_	
Prep Date: 12/12/2017	Analysis Date: 1	2/13/2017	S	SeqNo: 1	526761	Units: mg/k	٢g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47 9.2	45.83	6.423	88.1	55.8	125			
Surr: DNOP	4.4	4.583		96.4	70	130			
Sample ID 1712530-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics									
Client ID: SB-1 @ 6	Batch ID: 3	5468	F	RunNo: 47	7737				
Prep Date: 12/12/2017	Analysis Date: 1	2/13/2017	S	SeqNo: 1	526762	Units: mg/k	٢g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
D' 10 0 1 (DDO)									
Diesel Range Organics (DRO)	50 9.6	48.03	6.423	91.5	55.8	125	7.35	20	
Surr: DNOP	50 9.6 4.6	48.03 4.803	6.423	91.5 95.7	55.8 70	125 130	7.35 0	20 0	
Sample ID LCS-35468	50 9.6 4.6 SampType: L	48.03 4.803	6.423 Tes	91.5 95.7 tCode: EF	55.8 70 PA Method	125 130 8015M/D: Di	7.35 0 esel Range	20 0 e Organics	
Sample ID LCS-35468 Client ID: LCSS	50 9.6 4.6 SampType: Lt Batch ID: 34	48.03 4.803 CS 5468	6.423 Tes	91.5 95.7 tCode: EF	55.8 70 PA Method 7737	125 130 8015M/D: Di	7.35 0 esel Rango	20 0 e Organics	
Sample ID LCS-35468 Client ID: LCSS Prep Date: 12/12/2017	50 9.6 4.6 SampType: Lu Batch ID: 34 Analysis Date: 1	48.03 4.803 CS 5468 12/13/2017	6.423 Tes F	91.5 95.7 tCode: EF RunNo: 47 SeqNo: 1	55.8 70 PA Method 7737 526766	125 130 8015M/D: Di Units: mg/H	7.35 0 esel Rango	20 0 e Organics	
Sample ID LCS-35468 Client ID: LCSS Prep Date: 12/12/2017 Analyte	50 9.6 4.6 SampType: Li Batch ID: 39 Analysis Date: 1 Result PQL	5 48.03 4.803 CS 5468 2/13/2017 SPK value	6.423 Tes F SPK Ref Val	91.5 95.7 tCode: EF RunNo: 47 SeqNo: 18 %REC	55.8 70 PA Method 7737 526766 LowLimit	125 130 8015M/D: Di Units: mg/H HighLimit	7.35 0 esel Rango (g %RPD	20 0 e Organics RPDLimit	Qual
Diesel Range Organics (DRO) Surr: DNOP Sample ID LCS-35468 Client ID: LCSS Prep Date: 12/12/2017 Analyte Diesel Range Organics (DRO)	50 9.6 4.6 9.6 SampType: Lu Batch ID: 38 Analysis Date: 1 Result PQL 47 10	6 48.03 4.803 CS 5468 2/13/2017 SPK value 0 50.00	6.423 Tes F SPK Ref Val 0	91.5 95.7 tCode: EF RunNo: 47 SeqNo: 18 %REC 95.0	55.8 70 PA Method 7737 526766 LowLimit 73.2	125 130 8015M/D: Di Units: mg/H HighLimit 114	7.35 0 esel Range Kg %RPD	20 0 e Organics RPDLimit	Qual
Diesel Range Organics (DRO) Surr: DNOP Sample ID LCS-35468 Client ID: LCSS Prep Date: 12/12/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP	50 9.6 4.6 SampType: Li Batch ID: 3 Analysis Date: 1 Result PQL 47 10 4.6	 48.03 4.803 4.803 5468 2/13/2017 SPK value 50.00 5.000 	6.423 Tes F S SPK Ref Val 0	91.5 95.7 tCode: EF RunNo: 47 SeqNo: 19 %REC 95.0 92.8	55.8 70 PA Method 7737 526766 LowLimit 73.2 70	125 130 8015M/D: Di Units: mg/k HighLimit 114 130	7.35 0 esel Rango (g %RPD	20 0 e Organics RPDLimit	Qual
Diesel Range Organics (DRO) Surr: DNOP Sample ID LCS-35468 Client ID: LCSS Prep Date: 12/12/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID MB-35468	50 9.6 4.6 SampType: Lu Batch ID: 3 Analysis Date: 1 Result PQL 47 10 4.6 SampType: M	 48.03 4.803 4.803 5468 2/13/2017 SPK value 50.00 5.000 BLK 	6.423 Tes SPK Ref Val 0 Tes	91.5 95.7 tCode: EF RunNo: 47 SeqNo: 18 %REC 95.0 92.8 tCode: EF	55.8 70 PA Method 7737 526766 LowLimit 73.2 70 PA Method	125 130 8015M/D: Di Units: mg/F HighLimit 114 130 8015M/D: Di	7.35 0 esel Rango %RPD esel Rango	20 0 e Organics RPDLimit	Qual
Diesel Range Organics (DRO) Surr: DNOP Sample ID LCS-35468 Client ID: LCSS Prep Date: 12/12/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID MB-35468 Client ID: PBS	50 9.6 4.6 9.6 SampType: Li Batch ID: 34 Analysis Date: 1 Result PQL 47 10 4.6 9.6 SampType: M Batch ID: 34 SampType: M Batch ID: 34	 48.03 4.803 4.803 CS 5468 2/13/2017 SPK value 50.00 50.00 BLK 5468 	6.423 Tes F S SPK Ref Val 0 Tes F	91.5 95.7 tCode: EF RunNo: 47 SeqNo: 19 %REC 95.0 92.8 tCode: EF RunNo: 47	55.8 70 PA Method 7737 526766 LowLimit 73.2 70 PA Method 7737	125 130 8015M/D: Di Units: mg/H HighLimit 114 130 8015M/D: Di	7.35 0 esel Rango %RPD esel Rango	20 0 e Organics RPDLimit	Qual
Diesel Range Organics (DRO) Surr: DNOP Sample ID LCS-35468 Client ID: LCSS Prep Date: 12/12/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID MB-35468 Client ID: PBS Prep Date: 12/12/2017	50 9.6 4.6 SampType: L Batch ID: 3 Analysis Date: 1 Result PQL 47 10 4.6 SampType: M Batch ID: 3 Analysis Date: 1	 48.03 4.803 4.803 5468 2/13/2017 SPK value 50.00 5.000 BLK 5468 2/13/2017 	6.423 Tes SPK Ref Val 0 Tes S	91.5 95.7 tCode: EF RunNo: 47 SeqNo: 18 %REC 95.0 92.8 tCode: EF RunNo: 47 SeqNo: 18	55.8 70 PA Method 7737 526766 LowLimit 73.2 70 PA Method 7737 526767	125 130 8015M/D: Di Units: mg/F HighLimit 114 130 8015M/D: Di Units: mg/F	7.35 0 esel Rango %RPD esel Rango	20 0 e Organics RPDLimit	Qual
Diesel Range Organics (DRO) Surr: DNOP Sample ID LCS-35468 Client ID: LCSS Prep Date: 12/12/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID MB-35468 Client ID: PBS Prep Date: 12/12/2017 Analyte	50 9.6 4.6 SampType: Li Batch ID: 3 Analysis Date: 1 Result PQL 47 10 4.6 SampType: M Batch ID: 3 Analysis Date: 1 Result PQL	48.03 4.803 5468 2/13/2017 SPK value 50.00 5.000 5.000 5.000 5.000 5.000 SPK value	6.423 Tes SPK Ref Val 0 Tes FR SPK Ref Val	91.5 95.7 tCode: EF RunNo: 47 SeqNo: 19 %REC 95.0 92.8 tCode: EF RunNo: 47 SeqNo: 19 %REC	55.8 70 PA Method 7737 526766 LowLimit 73.2 70 PA Method 7737 526767 LowLimit	125 130 8015M/D: Di Units: mg/P HighLimit 114 130 8015M/D: Di Units: mg/P HighLimit	7.35 0 esel Range %RPD esel Range	20 0 e Organics RPDLimit	Qual
Diesel Range Organics (DRO) Surr: DNOP Sample ID LCS-35468 Client ID: LCSS Prep Date: 12/12/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID MB-35468 Client ID: PBS Prep Date: 12/12/2017 Analyte Diesel Range Organics (DRO)	509.64.69.6SampType:LiBatch ID:34Analysis Date:1ResultPQL47104.69.6SampType:MBatch ID:34Analysis Date:1ResultPQLND10	48.03 4.803 5468 2/13/2017 SPK value 5.000 5.000 5.000 5.000 5.000 5.000	6.423 Tes SPK Ref Val 0 Tes SPK Ref Val	91.5 95.7 tCode: EF RunNo: 47 SeqNo: 18 %REC 95.0 92.8 tCode: EF RunNo: 47 SeqNo: 18 %REC	55.8 70 PA Method 7737 526766 LowLimit 73.2 70 PA Method 7737 526767 LowLimit	125 130 8015M/D: Di Units: mg/P HighLimit 114 130 8015M/D: Di Units: mg/P HighLimit	7.35 0 esel Rango %RPD esel Rango %RPD	20 0 e Organics RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Page 21 of 24

- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

WO#: 1712530

14-Dec-17

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Rule Engineering LLC Williams Carracas CDP **Project:**

Sample ID MB-35468	SampType: N	Tes	TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch ID: 35468 RunNo: 47737								
Prep Date: 12/12/2017	Analysis Date:	12/13/2017	S	SeqNo: 1	526767	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.1	10.00		91.1	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- Analyte detected in the associated Method Blank В
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Page 22 of 24

Sample pH Not In Range RL **Reporting Detection Limit**

P

W Sample container temperature is out of limit as specified WO#: 1712530 14-Dec-17

QC SUMMARY REPORT

Client:

Hall	Environmental	Analysis	Laboratory,	Inc.

Rule Engineering LLC

Project:	Williams	Carracas	CDP								
Sample ID	MB-35439	SampT	ype: MI	BLK	Tes	tCode: E	PA Method	8015D: Gas	oline Rang	e	
Client ID:	PBS	Batch	n ID: 35	439	F	RunNo: 47704					
Prep Date:	12/11/2017	Analysis D	ate: 1	2/12/2017	S	SeqNo: 1	525337	Units: mg/l	٨g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	ND	5.0								
Surr: BFB		800		1000		79.9	15	316			
Sample ID LCS-35439 SampType: LCS					Tes	tCode: El	PA Method	8015D: Gase	oline Rang	e	
Client ID:	LCSS	Batch	n ID: 35	439	F	RunNo: 4	7704				
Prep Date:	12/11/2017	Analysis D	ate: 1	2/12/2017	5	SeqNo: 1	525338	Units: mg/l	٨g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	27	5.0	25.00	0	110	75.9	131			
Surr: BFB		990		1000		99.3	15	316			
Sample ID	1712530-002AMS	SampT	ype: MS	5	Tes	tCode: El	PA Method	8015D: Gase	oline Rang	e	
Client ID:	SB-1 @ 12	Batch	n ID: 35	439	F	RunNo: 4	7704				
Prep Date:	12/11/2017	Analysis D	ate: 1	2/12/2017	5	SeqNo: 1	525341	Units: mg/l	۲g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	28	4.8	23.83	0	118	77.8	128			
Surr: BFB		920		953.3		96.5	15	316			
Sample ID	1712530-002AMS	SampT	ype: MS	SD	Tes	tCode: El	PA Method	8015D: Gase	oline Rang	e	
Client ID:	SB-1 @ 12	Batch	n ID: 35	439	F	RunNo: 4	7704				
Prep Date:	12/11/2017	Analysis D	ate: 1	2/12/2017	5	SeqNo: 1	525342	Units: mg/ł	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	27	4.6	23.00	0	116	77.8	128	5.95	20	
Surr: BFB		850		920.0		92.6	15	316	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Page 23 of 24

- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

14-Dec-17

1712530

WO#:

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

Client: Rule Engineering LLC **Project:** Williams Carracas CDP

Sample ID	MB-35439	Samp	Гуре: МЕ	BLK	Tes	tCode: El					
Client ID:	PBS	Batc	h ID: 35	439	F	RunNo: 4	7704				
Prep Date:	12/11/2017	Analysis [Date: 12	2/12/2017	5	SeqNo: 1	525370	Units: mg/k			
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								
Xvlenes, Total		ND	0.10								
Surr: 4-Bron	nofluorobenzene	0.99		1.000		99.1	80	120			
Sample ID	LCS-35439	Samp	Гуре: LC	S	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID:	LCSS	Batc	h ID: 35	439	F	RunNo: 4	7704				
Prep Date:	12/11/2017	Analysis [Date: 12	2/12/2017	S	SeqNo: 1	525371	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.97	0.025	1.000	0	96.5	77.3	128			
Toluene		0.97	0.050	1.000	0	97.5	79.2	125			
Ethylbenzene		0.98	0.050	1.000	0	97.9	80.7	127			
Xylenes, Total		3.0	0.10	3.000	0	98.9	81.6	129			
Surr: 4-Bron	nofluorobenzene	1.1		1,000		109	80	120			
				1.000		100					
Sample ID	1712530-001AMS	Samp	Гуре: МS	3	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Sample ID Client ID:	1712530-001AMS SB-1 @ 6	Samp [¬] Batc	Гуре: МS h ID: 35 4	439	Tes F	tCode: El	PA Method	8021B: Vola	tiles		
Sample ID Client ID: Prep Date:	1712530-001AMS SB-1 @ 6 12/11/2017	Samp Batc Analysis [Гуре: MS h ID: 354 Date: 12	439 2/12/2017	Tes F	tCode: El RunNo: 4 SeqNo: 1	PA Method 7704 525373	8021B: Vola	tiles (g		
Sample ID Client ID: Prep Date: Analyte	1712530-001AMS SB-1 @ 6 12/11/2017	Samp Batc Analysis I Result	Гуре: МS h ID: 35 Date: 12 PQL	439 2/12/2017 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 4 SeqNo: 1 %REC	PA Method 7704 525373 LowLimit	8021B: Vola Units: mg/ł HighLimit	tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene	1712530-001AMS SB-1 @ 6 12/11/2017	Samp Batc Analysis I Result 0.88	Type: MS h ID: 354 Date: 12 PQL 0.024	3 439 2/12/2017 SPK value 0.9794	Tes F S SPK Ref Val 0	tCode: El RunNo: 4 BeqNo: 1 %REC 89.7	PA Method 7704 525373 LowLimit 80.9	8021B: Vola Units: mg/k HighLimit 132	tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene	1712530-001AMS SB-1 @ 6 12/11/2017	Samp Batc Analysis E Result 0.88 0.90	Type: MS h ID: 354 Date: 12 PQL 0.024 0.049	5 439 2/12/2017 SPK value 0.9794 0.9794	Tes F S SPK Ref Val 0 0	tCode: El RunNo: 4 BeqNo: 1 %REC 89.7 92.1	PA Method 7704 525373 LowLimit 80.9 79.8	8021B: Vola Units: mg/k HighLimit 132 136	tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene	1712530-001AMS SB-1 @ 6 12/11/2017	Samp ^T Batc Analysis I Result 0.88 0.90 0.89	Type: MS h ID: 354 Date: 12 PQL 0.024 0.049 0.049	5 439 2/12/2017 SPK value 0.9794 0.9794 0.9794	Tes F S SPK Ref Val 0 0 0	tCode: El RunNo: 4 SeqNo: 1 %REC 89.7 92.1 91.2	PA Method 7704 525373 LowLimit 80.9 79.8 79.4	8021B: Vola Units: mg/k HighLimit 132 136 140	tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total	1712530-001AMS SB-1 @ 6 12/11/2017	Samp Batcl Analysis I Result 0.88 0.90 0.89 2.7	Type: MS h ID: 354 Date: 12 0.024 0.049 0.049 0.098	2/12/2017 SPK value 0.9794 0.9794 0.9794 2.938	Tes F SPK Ref Val 0 0 0 0 0 0	tCode: El RunNo: 4 SeqNo: 1 %REC 89.7 92.1 91.2 93.5	PA Method 7704 525373 LowLimit 80.9 79.8 79.8 79.4 78.5	8021B: Vola Units: mg/P HighLimit 132 136 140 142	tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Sur: 4-Bron	1712530-001AMS SB-1 @ 6 12/11/2017	Samp ^T Batc Analysis I Result 0.88 0.90 0.89 2.7 0.99	Type: MS h ID: 35 Date: 12 PQL 0.024 0.049 0.049 0.098	3 439 2/12/2017 SPK value 0.9794 0.9794 0.9794 2.938 0.9794	Tes F SPK Ref Val 0 0 0 0 0	Code: El RunNo: 4 %REC 89.7 92.1 91.2 93.5 101	PA Method 7704 525373 LowLimit 80.9 79.8 79.8 79.4 78.5 80	8021B: Vola Units: mg// HighLimit 132 136 140 142 120	tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID	1712530-001AMS SB-1 @ 6 12/11/2017 nofluorobenzene 1712530-001AMSI	Samp [¬] Batcl Analysis I Result 0.88 0.90 0.89 2.7 0.99 D Samp [¬]	Fype: MS h ID: 35- Date: 12 0.024 0.049 0.049 0.098	439 2/12/2017 SPK value 0.9794 0.9794 0.9794 2.938 0.9794 5D	Tes F SPK Ref Val 0 0 0 0 0 Tes	tCode: El RunNo: 4 %REC 89.7 92.1 91.2 93.5 101 tCode: El	PA Method 7704 525373 LowLimit 80.9 79.8 79.4 78.5 80 PA Method	8021B: Vola Units: mg/k HighLimit 132 136 140 142 120 8021B: Vola	tiles (g %RPD tiles	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID:	1712530-001AMS SB-1 @ 6 12/11/2017 nofluorobenzene 1712530-001AMSI SB-1 @ 6	Samp ^T Batc Analysis I Result 0.88 0.90 0.89 2.7 0.99 D Samp ^T Batc	Fype: MS h ID: 35 Date: 12 Date: 12 0.024 0.049 0.049 0.098	439 2/12/2017 SPK value 0.9794 0.9794 0.9794 2.938 0.9794 5D 439	Tes SPK Ref Val 0 0 0 0 0 Tes F	Code: El RunNo: 4 SeqNo: 1 %REC 89.7 92.1 91.2 93.5 101 tCode: El RunNo: 4	PA Method 7704 525373 LowLimit 80.9 79.8 79.4 78.5 80 PA Method 7704	8021B: Vola Units: mg/ł HighLimit 132 136 140 142 120 8021B: Vola	tiles Kg %RPD tiles	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID: Prep Date:	1712530-001AMS SB-1 @ 6 12/11/2017 nofluorobenzene 1712530-001AMSI SB-1 @ 6 12/11/2017	Samp Batc Analysis I Result 0.88 0.90 0.89 2.7 0.99 D Samp Batc Analysis I	Fype: MS h ID: 35- Date: 12 0.024 0.049 0.049 0.049 0.098 Fype: MS h ID: 35- Date: 12	439 2/12/2017 SPK value 0.9794 0.9794 2.938 0.9794 5D 439 2/12/2017	Tes F SPK Ref Val 0 0 0 0 0 Tes F S	Code: El RunNo: 4 %REC 89.7 92.1 91.2 93.5 101 Code: El RunNo: 4 SeqNo: 1	PA Method 7704 525373 LowLimit 80.9 79.8 79.4 78.5 80 PA Method 7704 525374	8021B: Vola Units: mg/k HighLimit 132 136 140 142 120 8021B: Vola Units: mg/k	tiles (g %RPD tiles (g	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID: Prep Date: Analyte	1712530-001AMS SB-1 @ 6 12/11/2017 nofluorobenzene 1712530-001AMSI SB-1 @ 6 12/11/2017	Samp Batc Analysis I Result 0.88 0.90 0.89 2.7 0.99 D Samp Batc Analysis I Result	Fype: MS h ID: 35 Date: 12 Date: 12 0.024 0.049 0.049 0.098 0.098 Fype: MS h ID: 35 Date: 12 PQL	439 2/12/2017 SPK value 0.9794 0.9794 2.938 0.9794 2.938 0.9794 5D 439 2/12/2017 SPK value	Tes SPK Ref Val 0 0 0 0 Tes SPK Ref Val	Code: El RunNo: 4 SeqNo: 1 %REC 89.7 92.1 91.2 93.5 101 tCode: El RunNo: 4 SeqNo: 1 %REC	PA Method 7704 525373 LowLimit 80.9 79.8 79.4 78.5 80 PA Method 7704 525374 LowLimit	8021B: Vola Units: mg// HighLimit 132 136 140 142 120 8021B: Vola Units: mg// HighLimit	tiles %RPD tiles %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID: Prep Date: Analyte Benzene	1712530-001AMS SB-1 @ 6 12/11/2017 nofluorobenzene 1712530-001AMSI SB-1 @ 6 12/11/2017	Samp ^T Batc Analysis I Result 0.88 0.90 0.89 2.7 0.99 D Samp ^T Batc Analysis I Result 0.89	Fype: MS h ID: 35 Date: 12 0.024 0.049 0.049 0.049 0.098 Fype: MS h ID: 35 Date: 12 PQL 0.025	2/12/2017 SPK value 0.9794 0.9794 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 0.9795 0.9795 0.9795 0.9795 0.9795 0.9795 0.9795 0.9795 0.9795 0.9795 0.9795 0.9795 0.9795 0.9795 0.9795 0.97555 0.97555 0.97555 0.97555 0.97555 0.9755 0.9755 0	Tes SPK Ref Val 0 0 0 0 0 Tes SPK Ref Val 0	Code: El RunNo: 4 SeqNo: 1 %REC 89.7 92.1 91.2 93.5 101 tCode: El RunNo: 4 SeqNo: 1 %REC 90.4	PA Method 7704 525373 LowLimit 80.9 79.8 79.4 78.5 80 PA Method 7704 525374 LowLimit 80.9	8021B: Vola Units: mg// HighLimit 132 136 140 142 120 8021B: Vola Units: mg// HighLimit 132	tiles (g %RPD tiles (g %RPD 1.41	RPDLimit RPDLimit 20	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID: Prep Date: Analyte Benzene Toluene	1712530-001AMS SB-1 @ 6 12/11/2017 nofluorobenzene 1712530-001AMSI SB-1 @ 6 12/11/2017	Samp ^T Batc Analysis I Result 0.88 0.90 0.89 2.7 0.99 D Samp ^T Batc Analysis I Result 0.89 0.92	Fype: MS h ID: 35- Date: 12 0.024 0.049 0.049 0.098 Fype: MS h ID: 35- Date: 12 PQL 0.025 0.049	2/12/2017 SPK value 0.9794 0.9794 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 0.9852 0.9852 0.9852	Tes SPK Ref Val 0 0 0 0 0 Tes SPK Ref Val 0 0	Code: El RunNo: 4 SeqNo: 1 %REC 89.7 92.1 91.2 93.5 101 tCode: El RunNo: 4 SeqNo: 1 %REC 90.4 93.1	PA Method 7704 525373 LowLimit 80.9 79.8 79.4 78.5 80 PA Method 7704 525374 LowLimit 80.9 79.8	8021B: Vola Units: mg// HighLimit 132 136 140 142 120 8021B: Vola Units: mg// HighLimit 132 136	tiles (g %RPD tiles (g %RPD 1.41 1.72	RPDLimit RPDLimit 20 20	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene	1712530-001AMS SB-1 @ 6 12/11/2017 nofluorobenzene 1712530-001AMSI SB-1 @ 6 12/11/2017	Samp ^T Batcl Analysis I Result 0.88 0.90 0.89 2.7 0.99 D Samp ^T Batcl Analysis I Result 0.89 0.92 0.92	Type: MS h ID: 35- Date: 12 PQL 0.024 0.049 0.049 0.098 Type: MS h ID: 35- Date: 12 PQL 0.025 0.049 0.049	3 439 2/12/2017 SPK value 0.9794 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 2.938 0.9794 0.9795 0.9852 0.9852 0.9852 0.9852	Tes: 5 SPK Ref Val 0 0 0 0 0 0 Tes: 5 SPK Ref Val 0 0 0 0	Code: El RunNo: 4 SeqNo: 1 %REC 89.7 92.1 91.2 93.5 101 Code: El RunNo: 4 SeqNo: 1 %REC 90.4 93.1 93.6	PA Method 7704 525373 LowLimit 80.9 79.8 79.4 78.5 80 PA Method 7704 525374 LowLimit 80.9 79.8 79.8 79.8 79.4	8021B: Vola Units: mg/k HighLimit 132 136 140 142 120 8021B: Vola Units: mg/k HighLimit 132 136 140	tiles (g %RPD tiles (g %RPD 1.41 1.72 3.13	RPDLimit RPDLimit 20 20 20	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total	1712530-001AMS SB-1 @ 6 12/11/2017 nofluorobenzene 1712530-001AMSI SB-1 @ 6 12/11/2017	Samp ^T Batcl Analysis I Result 0.88 0.90 0.89 2.7 0.99 D Samp ^T Batcl Analysis I Result 0.89 0.92 0.92 2.8	Type: MS h ID: 35- Date: 12 0.024 0.049 0.049 0.098 Type: MS h ID: 35- Date: 12 PQL 0.025 0.049 0.049 0.049 0.099	3 439 2/12/2017 SPK value 0.9794 0.9794 2.938 0.9794 2.938 0.9794 50 439 2/12/2017 SPK value 0.9852 0.9852 0.9852 2.956	Tes 5 SPK Ref Val 0 0 0 0 0 0 5 SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0	Code: El RunNo: 4 SeqNo: 1 %REC 89.7 92.1 91.2 93.5 101 Code: El RunNo: 4 SeqNo: 1 %REC 90.4 93.1 93.6 95.3	PA Method 7704 525373 LowLimit 80.9 79.8 79.4 78.5 80 PA Method 7704 525374 LowLimit 80.9 79.8 79.8 79.8 79.8 79.4 79.8	8021B: Vola Units: mg/k HighLimit 132 136 140 142 120 8021B: Vola Units: mg/k HighLimit 132 136 140 142	tiles (g %RPD tiles (g %RPD 1.41 1.72 3.13 2.42	RPDLimit RPDLimit 20 20 20 20 20 20	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Page 24 of 24

- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

14-Dec-17

HALL ENVIRONMENTAL ANALYSIS LABORATORY			Hall Environ TEL: 505-34 Website: v	mental Analys 4901 Albuquerqu 5-3975 FAX: 1 www.hallenvirt	is Laborator, Hawkins Ni w, NM 8710 505-345-410 ommental.com	ple Log-In Check List						
Client Name:	RULE ENGI	NEERING LL	Work Order N	umber: 1712	530		RcptNo:	1				
Received By:	Anne Thor	ne	12/8/2017 7:55:	MA 00		ame Am	_					
Completed By:	Anne Thom	ne	12/11/2017 8:48	:04 AM		ann Am	_					
Reviewed By:	INC	•	ריןייןבו									
Chain of Cus	tody											
1. Custody sea	Is intact on sa	mple bottles?		Yes		No 🗌	Not Present					
2. Is Chain of C	Custody comp	iete?		Yes	¥	No 🗌	Not Present					
3. How was the	e sample deliv	ered?		Cou	rier							
Log In												
4. Was an atte	mpt made to	cool the sample	es?	Yes	\checkmark	No	NA 🗆					
5. Were all san	nples received	l at a temperat	ure of >0° C to 6.0°C	C Yes	~	No 🗌	NA					
6. Sample(s) in	n proper conta	iner(s)?		Yes	V	No 🗌						
7. Sufficient sa	mple volume i	for indicated te	st(s)?	Yes	V	No						
8. Are samples	(except VOA	and ONG) pro	perly preserved?	Yes		No						
9. Was preserv	ative added to	bottles?		Yes		No 🗹	NA					
10.VOA vials ha	ave zero head	space?		Yes		No 🗌	No VOA Vials 🗹					
11. Were any sa	ample contain	ers received br	oken?	Yes		No 🖌	# of preserved					
12. Does paperw (Note discret	vork match bo pancies on ch	ttle labels? ain of custody)		Yes	¥	No	for pH: (<2 o	>12 unless noted)				
13, Are matrices	correctly ider	tified on Chain	of Custody?	Yes	$\mathbf{\overline{\mathbf{v}}}$	No 🗌	Adjusted?					
14. Is it clear wh	at analyses w	ere requested?	2	Yes	~	No						
15. Were all hold (If no, notify of	ding times able customer for a	e to be met? authorization.)		Yes	×	No	Checked by:					
Special Hand	ling (if ann	licable)										
16. Was client n	otified of all di	screpancies wi	th this order?	Yes		No 🗌	NA 🗹					
Person	Notified.			Date		Notation de aparticipation de administra						
By Wh	om:			/ia: eM	ail Pho	ne Fax	In Person					
Regard	ling:											
Client I	Instructions:				*******	https://www.antibiotestaria.com						
17. Additional re	emarks:											
18. Cooler Info	rmation	Condition	Seal Intact Seal N	lo Seal D	ate S	ioned By						
1	1.0	Good	Yes	iv GearD	0	Auen Dà						
Dage 1 of	F1											

Chain-of-Custody Record													NT	A1								
Client: Rule Engineering, uc				🕅 Standard 🗆 Rush						E		N	AL	Y	SIS	5 L	AE	30	RA	TC	R	ŕ
3 0,				Projec	t Name	K		www.ballenvironmental.com														
Mailing Address: 501 Arcount Dr. 54 205				Williams Corracos CDP				4901 Hawkins NE - Albuquerque NM 87109														
Forminglon UN 67001				Project #:				Tel. 505-345-3975 Fax 505-345-4107														
Phone #: (505) 716-2787				1									A	naly	sis	Req	uest	t				
email or Fax#: hwords & nulleansmessing.com QAVQC Package: Monice.sandowel. williams.com				Project Manager:				(8021)	Sas only)	O / MRO)			MS)		O4,SO4)	CB's						
Accreditation			Samo	lor ile	upors	ell in della	1	H (0	DRO		~	0.51		02,P	82							
NELAP Other			On Ice: ZYes INO				简 +	HTP	102	18.1	04.1	827		3.N	/ 80		(¥				Dr N	
	I EDD (Type)		Sample Temperature: 1.0				闄	BE	(GF	bd 4	od 5	0 or	etals	N'N	cides	(A)	07-				E	
Date	Time	Matrix	Sample Request ID	Con Type	tainer and #	Preservative Type	HEAL No.	BTEX + MB	BTEX + MI	TPH 8015E	TPH (Metho	EDB (Meth	PAH's (831	RCRA 8 M	Anions (F,C	8081 Pestic	8260B (VO	8270 (Sem				Air Bubbles
2/5/17	1337	Soil	58-184	(1)40	AGUSS	Non	-col	X		X												
2/5/17	1335	Sal	58-1012		1	1	702	X		x												
215/17	1420	Soul	58-202				203	X		x												
2/5/17	1440	Scil	5B-286		1		204	X		£											1	
2/5/17	1449	Scil	58.38 2.5				205	X		x												
12/5/11	1505	Soil	5B-307				716	x		x												
2/5/17	1955	Soil	58-405				-207	x		×												
2/5/17	1600	Soll	58-466				-718	X		x												
12/5/17	1050	Sol	58-505				-209	X		×												
12/6/17	1100	Soul	58-5@7				710	x		x		~										
12/4/13	1110	So.I	58-509				-011	x		x												
12/4/12	1129	Seil	5B-607	-	1	4	-012	VO		X												
Date: 17/11 Date: 1/11	Time: 1930 Time: 2663	Relinquish Heart Relinquish	ed by: hed by:	Receiv	ed by:	n a	Date Time 12/7 (930 Date Time 12/08/17 6755	P(nark	s: D	sirec F 2	+ F	3711	to	Wil	llan	ns					

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.

ENVIDONMENTAL													
ANALYSIS LABORATORY													
www.hallenvironmental.com													
4901 Hawkins NE - Albuquerque, NM 87109													
Tel. 505-345-3975 Fax 505-345-4107													
Analysis Request													
04)													
04.S													
32 P													
NON (2)													
(Y o VOA													
RCRA 8 Me Anions (F,Cl 8081 Pestici 8260B (VOA 8270 (Semi-													
te Williams													

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.

