



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

June 28, 2016

Amber Griffin

Yates Petroleum Corporation

105 South Fourth Street

Artesia, NM 88210

TEL: (575) 748-4111

FAX

RE: Caravan State Unit Waterline

OrderNo.: 1606982

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/17/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1606982**

Date Reported: **6/28/2016**

**CLIENT:** Yates Petroleum Corporation

**Client Sample ID:** Stockpile

**Project:** Caravan State Unit Waterline

**Collection Date:** 6/15/2016 10:30:00 AM

**Lab ID:** 1606982-001

**Matrix:** SOIL

**Received Date:** 6/17/2016 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	15	9.5		mg/Kg	1	6/20/2016 10:00:54 AM	25933
Surr: DNOP	89.7	70-130		%Rec	1	6/20/2016 10:00:54 AM	25933
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/25/2016 5:52:28 AM	25923
Surr: BFB	83.3	80-120		%Rec	1	6/25/2016 5:52:28 AM	25923
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	6/25/2016 5:52:28 AM	25923
Toluene	ND	0.048		mg/Kg	1	6/25/2016 5:52:28 AM	25923
Ethylbenzene	ND	0.048		mg/Kg	1	6/25/2016 5:52:28 AM	25923
Xylenes, Total	ND	0.096		mg/Kg	1	6/25/2016 5:52:28 AM	25923
Surr: 4-Bromofluorobenzene	92.9	80-120		%Rec	1	6/25/2016 5:52:28 AM	25923

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

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1606982

28-Jun-16

Client: Yates Petroleum Corporation

Project: Caravan State Unit Waterline

Sample ID	MB-25933		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 25933		RunNo: 35010					
Prep Date:	6/20/2016		Analysis Date: 6/20/2016		SeqNo: 1082080		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.4		10.00		94.4	70	130			

Sample ID	LCS-25933		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 25933		RunNo: 35010					
Prep Date:	6/20/2016		Analysis Date: 6/20/2016		SeqNo: 1082094		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.6	62.6	124			
Surr: DNOP	4.4		5.000		88.8	70	130			

Sample ID	MB-25888		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 25888		RunNo: 35005					
Prep Date:	6/16/2016		Analysis Date: 6/20/2016		SeqNo: 1082125		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.0		10.00		90.4	70	130			

Sample ID	LCS-25888		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 25888		RunNo: 35005					
Prep Date:	6/16/2016		Analysis Date: 6/20/2016		SeqNo: 1082126		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		90.3	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1606982

28-Jun-16

Client: Yates Petroleum Corporation

Project: Caravan State Unit Waterline

Sample ID	LCS-25923		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 25923		RunNo: 35159					
Prep Date:	6/17/2016		Analysis Date: 6/24/2016		SeqNo: 1088059		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	108	80	120			
Surr: BFB	910		1000		90.9	80	120			

Sample ID	MB-25923		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 25923		RunNo: 35159					
Prep Date:	6/17/2016		Analysis Date: 6/24/2016		SeqNo: 1088060		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		93.3	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1606982

28-Jun-16

Client: Yates Petroleum Corporation

Project: Caravan State Unit Waterline

Sample ID	MB-25923		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 25923		RunNo: 35096					
Prep Date:	6/17/2016		Analysis Date: 6/23/2016		SeqNo: 1085704		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		109	80	120			

Sample ID	LCS-25923		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 25923		RunNo: 35159					
Prep Date:	6/17/2016		Analysis Date: 6/24/2016		SeqNo: 1088079		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.5	75.3	123			
Toluene	0.87	0.050	1.000	0	87.3	80	124			
Ethylbenzene	0.87	0.050	1.000	0	86.6	82.8	121			
Xylenes, Total	2.6	0.10	3.000	0	85.4	83.9	122			
Surr: 4-Bromofluorobenzene	0.99		1.000		98.8	80	120			

### Qualifiers:

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D Sample Diluted Due to Matrix  
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## Sample Log-In Check List

Client Name: Yates Petroleum Corpora

Work Order Number: 1606982

RcptNo: 1

Received by/date: Ja 06/17/16

Logged By: Ashley Gallegos 6/17/2016 9:40:00 AM Ag

Completed By: Ashley Gallegos 6/17/2016 10:20:42 AM Ag

Reviewed By: Ja 06/17/16

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			

# Chain-of-Custody Record

Client: Yates Petroleum Corporation

Mailing Address:

15 South 4th Street Artesia, NM 88210

Phone #: 575-513-8799 or 575-748-4111

Email or Fax#: agriffin@yatespetroleum.com

QC Package:

Standard ☐ Level 4 (Full Validation) ☐ Other

Creditation:

NELAP ☐ Other

EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush 6/20/2016

Project Name:

Caravan State Unit Waterline

Project #:

1RP-3332

Project Manager:

Amber Griffin

PO # 205-2020

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.3

Date

Time

Matrix

Sample Request ID

Container Type and #

Preservative Type

HEAL No.

10000982

1001

ICE

1 - 4oz.

Stockpile

Soil

10:30

3/15/2016

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