



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 21, 2016

Amber Griffin

Yates Petroleum Corporation  
105 South Fourth Street  
Artesia, NM 88210  
TEL: (575) 748-4195  
FAX

RE: Satchmo SWD State 1

OrderNo.: 1606764

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/14/2016 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 white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606764

Date Reported: 6/21/2016

**CLIENT:** Yates Petroleum Corporation

**Client Sample ID:** Off Pad-2'

**Project:** Satchmo SWD State 1

**Collection Date:** 6/9/2016 12:30:00 PM

**Lab ID:** 1606764-001

**Matrix:** SOIL

**Received Date:** 6/14/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	8600	750		mg/Kg	500	6/16/2016 7:32:19 PM	25885

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

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

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606764

Date Reported: 6/21/2016

**CLIENT:** Yates Petroleum Corporation

**Client Sample ID:** Off Pad-3'

**Project:** Satchmo SWD State 1

**Collection Date:** 6/9/2016 12:35:00 PM

**Lab ID:** 1606764-002

**Matrix:** SOIL

**Received Date:** 6/14/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	14000	750		mg/Kg	500	6/16/2016 7:44:44 PM	25885

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

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

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606764

Date Reported: 6/21/2016

**CLIENT:** Yates Petroleum Corporation

**Client Sample ID:** Pad 1-Surface

**Project:** Satchmo SWD State 1

**Collection Date:** 6/9/2016 12:42:00 PM

**Lab ID:** 1606764-003

**Matrix:** SOIL

**Received Date:** 6/14/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	1300	75		mg/Kg	50	6/16/2016 7:57:08 PM	25885

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

Qualifiers:				
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	
D	Sample Diluted Due to Matrix	E	Value above quantitation range	
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 3 of 6
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606764

Date Reported: 6/21/2016

**CLIENT:** Yates Petroleum Corporation

**Client Sample ID:** Pad 2-Surface

**Project:** Satchmo SWD State 1

**Collection Date:** 6/9/2016 12:44:00 PM

**Lab ID:** 1606764-004

**Matrix:** SOIL

**Received Date:** 6/14/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	26000	1500		mg/Kg	1E	6/16/2016 8:09:32 PM	25885

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

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

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606764

Date Reported: 6/21/2016

**CLIENT:** Yates Petroleum Corporation

**Client Sample ID:** Pad 3-Surface

**Project:** Satchmo SWD State 1

**Collection Date:** 6/9/2016 12:46:00 PM

**Lab ID:** 1606764-005

**Matrix:** SOIL

**Received Date:** 6/14/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	18000	1500		mg/Kg	1E	6/16/2016 8:21:56 PM	25885

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#: 1606764

21-Jun-16

**Client:** Yates Petroleum Corporation

**Project:** Satchmo SWD State 1

Sample ID	<b>MB-25885</b>	SampType:	<b>mblk</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>25885</b>	RunNo:	<b>34957</b>					
Prep Date:	<b>6/15/2016</b>	Analysis Date:	<b>6/15/2016</b>	SeqNo:	<b>1080065</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	<b>LCS-25885</b>	SampType:	<b>lcs</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>25885</b>	RunNo:	<b>34957</b>					
Prep Date:	<b>6/15/2016</b>	Analysis Date:	<b>6/15/2016</b>	SeqNo:	<b>1080066</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.0	90	110			

**Qualifiers:**

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

**Sample Log-In Check List**

Client Name: **Yates Petroleum Corporat**      Work Order Number: **1606764**      RcptNo: **1**

Received by/date: *[Signature]* *06/14/16*  
 Logged By: **Lindsay Mangin**      **6/14/2016 10:00:00 AM**      *[Signature]*  
 Completed By: **Lindsay Mangin**      **6/14/2016 3:13:22 PM**      *[Signature]*  
 Reviewed By: *[Signature]*      *06/15/16*

**Chain of Custody**

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

**Log In**

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

**Special Handling (if applicable)**

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

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

17. Additional remarks:

**18. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			

# Chain-of-Custody Record

Client: Yates Petroleum Corporation

Mailing Address:  
 105 South 4th Street Artesia, NM 88210  
 Phone #: 575-513-8799 or 575-748-4111  
 email or Fax#: agriffin@yatespetroleum.com

QA/QC Package:  
 Standard  Level 4 (Full Validation)  
 Accreditation:  
 NELAP  Other  
 EDD (Type)

Turn-Around Time:  
 Standard  Rush

Project Name:  
 Satchmo SWD State #1

Project #:  
 6/3/2016 Release

Project Manager:  
 Amber Griffin  
 PO # 205-2020

Sampler:  
 Amber Griffin

On Ice:  Yes  No

Sample Temperature: 1.7

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
6/9/2016	12:30	Soil	Off Pad - 2'	1 - 4 oz.	Ice	16067604 -001
6/9/2016	12:35	Soil	Off Pad - 3'	1 - 4 oz.	Ice	-002
6/9/2016	12:42	Soil	Pad 1 - Surface	1 - 4 oz.	Ice	-003
6/9/2016	12:44	Soil	Pad 2 - Surface	1 - 4 oz.	Ice	-004
6/9/2016	12:46	Soil	Pad 3 - Surface	1 - 4 oz.	Ice	-005

Date: 6/13/16  
 Date: 06/14/16

Time: 1000  
 Time: 1000

Relinquished by: Amber Griffin  
 Relinquished by: J.E. but

Received by: J.E. but  
 Received by:



**HALL ENVIRONMENTAL ANALYSIS LABORATORY**  
 www.hallenvironmental.com

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

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
X	X	X					X				
X	X	X					X				
X	X	X					X				
X	X	X					X				
X	X	X					X				

Remarks: TPH: 8015B, BTEX: 8021B. Please show BTEX results as mg/kg. Anions: Chloride only, please show on a separate report.

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.