MARTIN YATES, III

FRANK W. YATES 1936-1986

> S.P YATES 1914:2000



105 SOUTH FOURTH STREET

#### ARTESIA, NEW MEXICO 88210-2118

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JOHN A. YATES

JOHN A. YATES JR.

DOUGLAS E. BROOKS
PRESIDENT
CHIEF EXECUTIVE OFFICER

JOHN D. PERINI EXECUTIVE VICE PRESIDENT CHIEF FINANCIAL OFFICER

JAMES S. BROWN CHIEF OPERATING OFFICER

January 22, 2016

Mr. Mike Bratcher or Ms. Heather Patterson NMOCD District II 811 South First Artesia, NM 88210

RE: Livingston Ridge SWD Water Line

(Wolf AJA Federal #17H) Section 25, T21S-R31E Eddy County, New Mexico

Mr. Bratcher or Ms. Patterson,

Yates Petroleum Corporation would like to submit the following plan of work to you regarding the release that occurred at the above mentioned facility on June 18, 2015 (2RP-3074). The release was 50 barrels of produced water released, with 0 barrels of produced water recovered.

With NMOCD and BLM approval of this work plan, Yates will hold a bid meeting allowing several contractors the opportunity to submit bids on this remediation project. Bids that are received will be forwarded to Yates Management for review. Once Yates Management reviews the bids and gives approval, the remediation project will be awarded to a contractor for work to commence.

If you have any questions or concerns, I can be reached at (575) 748-4111 or by email at agriffin@yatespetroleum.com.

Thank You,

Amber Griffin

Environmental Regulatory Agent

Yates Petroleum Corporation

# **Yates Petroleum Corporation**

Livingston Ridge SWD Work Plan (Wolf AJA Federal #17H)

**Section 25, T21S-R31E** 

**Eddy County, New Mexico** 

January 22, 2016

#### I. Location

The release area is located approximately 31.1 miles east of Carlsbad, NM on Highway 62/180, approximately 6.8 miles south of Highway 62/180 on Campbell Road (County Road 29) and approximately 0.1 miles west of Campbell Road (County Road 29) on a pipeline right-of-way.

#### II. Background

On June 18, 2015, Yates had a release of 50 barrels produced water, with 0 barrels produced water recovered. The area affected from this release was along the pipeline right-of-way for a Yates water transfer line that transports produced water to salt water disposal facilities in the area. An initial Form C-141 was submitted, via e-mail, to the NMOCD District II on June 24, 2015.

On July 28, 2015 Yates returned to the site and collected initial soil samples from the depths of 1' – 13' below surface level using a backhoe. The 1' – 3' soil samples were sent to an approved NMOCD laboratory and tested for BTEX 8021B, TPH 8015M, and Chlorides 300.0. The 4' – 13' soil samples were sent to the same laboratory and tested only for Chlorides 300.0. Yates received the analytical results on August 7, 2015 (Reports 1507D92 and 1507D93 attached to this work plan). The analytical results showed that both BTEX and TPH were at levels below NMOCD RRAL's. The analytical results also showed elevated chloride levels, and Yates determined that further vertical delineation of chlorides was needed.

On July 30, 2015 the overspray area of the release was treated with a 3% Micro-Blaze solution.

The release area contains mostly sandy soils and these soils would collapse while digging with heavy equipment. The collapsing of soils created personnel safety issues and made it impossible to obtain discrete samples from deeper depths. As a result, it was determined that a hollow stem auger core rig would be needed to complete further vertical delineation within the release area.

On November 9, 2015 Yates contacted a company with a hollow stem auger core rig to conduct further vertical delineation of the release area. The hollow stem auger was scheduled for December 15, 2015 and complete vertical delineation of chlorides was completed. Soil samples obtained with the hollow stem auger were sent to an approved NMOCD laboratory and tested for Chlorides 300.0. Yates received the analytical results on December 31, 2015 (Report 1512A75 attached to this work plan). The analytical results showed that Yates had successfully found the bottom of the chloride contamination.

#### III. Surface and Ground Water

Area surface geology is Cenozoic. The ChevronTexaco depth to ground water map shows the depth to groundwater to be approximately 125 feet making the site ranking for this site a zero (0). Watercourses in the area are dry except for infrequent flows in response to major precipitation events.

The ranking for this site is zero (0) based on the following:

Depth to ground water >100' Wellhead Protection Area > 1000' Distance to surface water body > 1000'

#### IV. Soils

The area consists of soils that are sand and interspersed with caliche and clay seams.

#### V. Scope of Work

Based off the analytical reports which show complete vertical delineation, Yates proposes to excavate four (4) feet from the release area. The excavation will be approximately 106' long, 46' wide. Once all soils have been excavated, a 20 mil synthetic liner will be placed in the bottom of the excavation. The backfill of the excavation will then be started with caliche (up to 2' below surface level) and finished with 2' of top soil or sand.

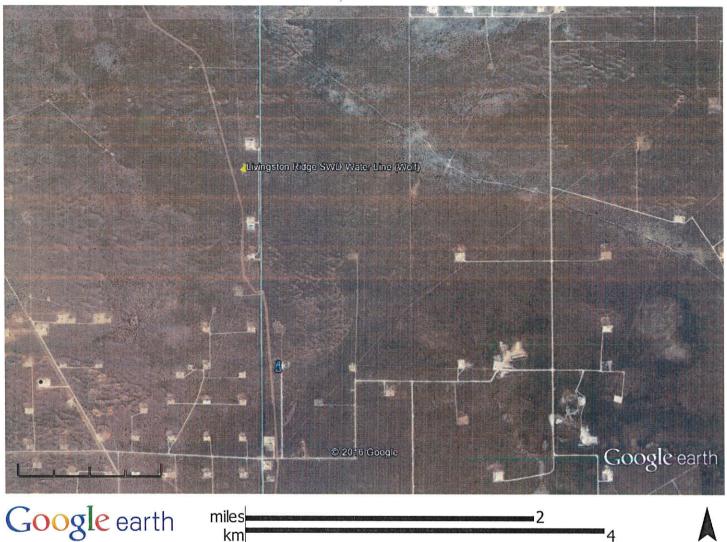
Contaminated soils that are excavated will be hauled to a NMOCD approved disposal facility, The Lea Land, Inc. Landfill.

Soil samples have been collected from the overspray area of the release and sent to an approved NMOCD laboratory. The collected soil was tested in the field using Hach Chloride QuanTab® Test Strips, 30-600 mg/L with a result of less than 1,000 ppm. If official laboratory results confirm these results, no further work will be conducted in the overspray area of the release. The official results will be forwarded to NMOCD and BLM once Yates receives them from the laboratory.

The backfill material for the excavation will be purchased from the nearest BLM pit.

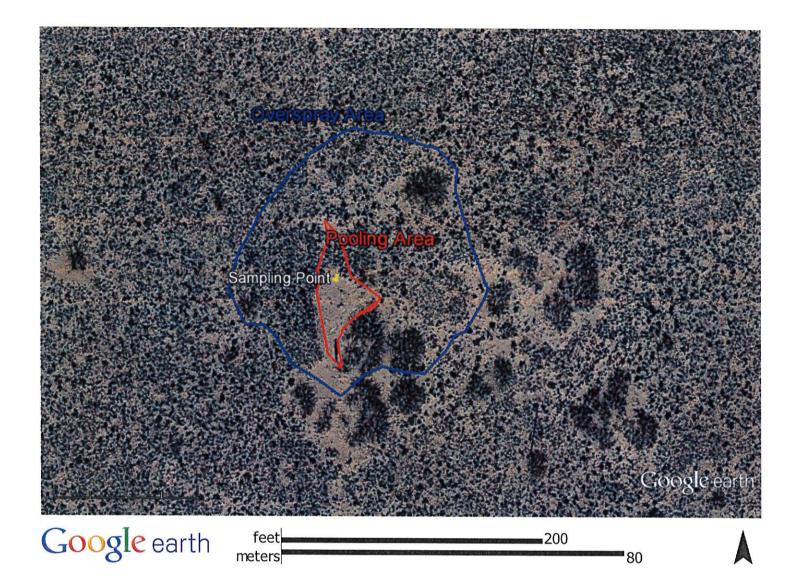
Once all excavation and backfill work is complete, Yates will submit a Final Form C-141 to NMOCD and BLM requesting closure of this release.

In April 2016 the release area will be re-seeded with the BLM Seed Mixture #2. The area will then be monitored for the re-establishment of vegetation.



miles km





# Livingston Ridge SWD Line (Wolf)

			Anaıytıcal							
	Sample Area	Sample Date	Report	Sample Type	Depth	BTEX	GRO	DRO	TOTAL	TOTAL Chlorides
Wolf - 1'	Release area	7/28/2015	1507D92	Grab/Backhoe	1.	ND	Ð	Ð	Ω	2,500
Wolf - 2'	Release area	7/28/2015	1507D92	Grab/Backhoe	2'	Q	Ð	Ð	ΩN	4,300
Wolf - 3'	Release area	7/28/2015	1507D92	Grab/Backhoe	3,	QN	Ð	Q	ND	5,600
Wolf - 4'	Release area	7/28/2015	1507D93	Grab/Backhoe	4.	,		,	1	5,500
Wolf - 5'	Release area	7/28/2015	1507D93	Grab/Backhoe	5.		1		1	5,200
Wolf - 6'	Release area	7/28/2015	1507D93	Grab/Backhoe	6,	•	ı		1	5,100
Wolf - 7'	Release area	7/28/2015	1507D93	Grab/Backhoe	7'		1	ı	t	2,400
Wolf - 8'	Release area	7/28/2015	1507D93	Grab/Backhoe	8,	•	ı	(1)	1	8,000
Wolf - 9'	Release area	7/28/2015	1507D93	Grab/Backhoe	9,		718	7.ILS	1	5,500
Wolf - 10'	Release area	7/28/2015	1507D93	Grab/Backhoe	10'	1	1	1	1	6,100
Wolf - 11'	Release area	7/28/2015	1507D93	Grab/Backhoe	11.		1		1	11,000
Wolf - 12'	Release area	7/28/2015	1507D93	Grab/Backhoe	12'		1		1	12,000
Wolf - 13'	Release area	7/28/2015	1507D93	Grab/Backhoe	13'	1	,		ï	2,700
Wolf - 15'	Release area	12/15/2015	1512A75	Hollow Stem Auger	15'		1		ı	180
Wolf - 20'	Release area	12/15/2015	1512A75	Hollow Stem Auger	20,	•			ı	100
Wolf - 25'	Release area	12/15/2015	1512A75	Hollow Stem Auger	25'	1			1	90

Site Ranking is ZERO (0). Depth to Ground Water >100' (approx. 125', per ChevronTexaco trend map).

All results are ppm.Chlorides for documentation.

Released: 50 B/PW; Recovered: 0 B/PW. Release Date: 6/18/2015, 2RP-3074



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

August 07, 2015

Amber Cannon
Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4217

FAX

RE: Livingston Ridge SWD Water Line (Wolf)

OrderNo.: 1507D92

#### Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/31/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 qualifers 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 Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

#### Lab Order 1507D92

Date Reported: 8/7/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Yates Petroleum Corporation

Client Sample ID: Wolf-1'

Project: Livingston Ridge SWD Water Line (Wol

Collection Date: 7/28/2015 7:56:00 AM

Lab ID:

1507D92-001

Matrix: SOIL

Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL Qu	ıal Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Analys	t: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	8/3/2015 8:32:54 AM	20541
Surr: DNOP	112	57.9-140	%REC	1	8/3/2015 8:32:54 AM	20541
EPA METHOD 8015D: GASOLINE RAI	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	8/3/2015 5:14:10 PM	20550
Surr: BFB	88.5	75.4-113	%REC	1	8/3/2015 5:14:10 PM	20550
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.049	mg/Kg	1	8/3/2015 5:14:10 PM	20550
Toluene	ND	0.049	mg/Kg	1	8/3/2015 5:14:10 PM	20550
Ethylbenzene	ND	0.049	mg/Kg	1	8/3/2015 5:14:10 PM	20550
Xylenes, Total	ND	0.099	mg/Kg	1	8/3/2015 5:14:10 PM	20550
Surr: 4-Bromofluorobenzene	94.4	80-120	%REC	1	8/3/2015 5:14:10 PM	20550

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 6 J
- P Sample pH Not In Range
- Reporting Detection Limit

# Lab Order 1507D92

Date Reported: 8/7/2015

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Yates Petroleum Corporation

Project: Livingston Ridge SWD Water Line (Wol

Lab ID:

1507D92-002

Matrix: SOIL

Client Sample ID: Wolf-2'

Collection Date: 7/28/2015 7:58:00 AM

Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL Qu	ıal Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANIC	s			Analys	t: <b>KJH</b>
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	8/3/2015 8:59:53 AM	20541
Surr: DNOP	111	57.9-140	%REC	1	8/3/2015 8:59:53 AM	20541
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	8/3/2015 5:38:51 PM	20550
Surr: BFB	87.0	75.4-113	%REC	1	8/3/2015 5:38:51 PM	20550
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.048	mg/Kg	1	8/3/2015 5:38:51 PM	20550
Toluene	ND	0.048	mg/Kg	1	8/3/2015 5:38:51 PM	20550
Ethylbenzene	ND	0.048	mg/Kg	1	8/3/2015 5:38:51 PM	20550
Xylenes, Total	ND	0.095	mg/Kg	1	8/3/2015 5:38:51 PM	20550
Surr: 4-Bromofluorobenzene	91.9	80-120	%REC	1	8/3/2015 5:38:51 PM	20550

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

- 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
- RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 6 J

- P Sample pH Not In Range
- Reporting Detection Limit

#### Lab Order 1507D92

Date Reported: 8/7/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Yates Petroleum Corporation

Project: Livingston Ridge SWD Water Line (Wol

Client Sample ID: Wolf-3'

Collection Date: 7/28/2015 8:00:00 AM

1507D92-003 Lab ID:

Matrix: SOIL

Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	8/3/2015 9:26:49 AM	20541
Surr: DNOP	104	57.9-140	%REC	1	8/3/2015 9:26:49 AM	20541
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	8/4/2015 12:40:22 AM	20550
Surr: BFB	91.3	75.4-113	%REC	1	8/4/2015 12:40:22 AM	20550
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.049	mg/Kg	1	8/4/2015 12:40:22 AM	20550
Toluene	ND	0.049	mg/Kg	1	8/4/2015 12:40:22 AM	20550
Ethylbenzene	ND	0.049	mg/Kg	1	8/4/2015 12:40:22 AM	20550
Xylenes, Total	ND	0.098	mg/Kg	1	8/4/2015 12:40:22 AM	20550
Surr: 4-Bromofluorobenzene	97.8	80-120	%REC	1	8/4/2015 12:40:22 AM	20550

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

- 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
- RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 3 of 6 J
- P Sample pH Not In Range
- Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D92

10-Aug-15

Client:

Yates Petroleum Corporation

Project:

Livingston Ridge SWD Water Line (Wolf)

Sample ID MB-20541 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 20541 RunNo: 27904 Prep Date: 7/31/2015 Analysis Date: 8/3/2015 SeqNo: 839331 Units: mg/Kg **PQL** SPK value SPK Ref Val %REC Analyte Result LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) ND 10 Surr: DNOP 10 10.00 101 57.9 140

Sample ID LCS-20541	SampT	ype: LC	s	Test	Code: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: LCSS	Batch	ID: <b>20</b>	541	R	lunNo: 2	7904				
Prep Date: 7/31/2015	Analysis D	ate: 8/	3/2015	S	SeqNo: 8	39332	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.8	57.4	139			
Surr: DNOP	5.0		5.000		101	57.9	140			

#### 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

Page 4 of 6

- P Sample pH Not In Range
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D92

10-Aug-15

Client:

Yates Petroleum Corporation

Project:

Livingston Ridge SWD Water Line (Wolf)

Project: Livingsto	on Ridge SWD W	ater Line (W	/olf)						
Sample ID MB-20550	SampType: M	BLK	Test	Code: EF	PA Method	8015D: Gaso	line Range	е	
Client ID: PBS	Batch ID: 20	550	R	lunNo: 27	7919				
Prep Date: 7/31/2015	Analysis Date: 8	/3/2015	S	eqNo: 83	39770	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	910	1000		91.4	75.4	113			
Sample ID LCS-20550	SampType: L0	cs	Test	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSS	Batch ID: 20	550	R	RunNo: 27	7919				
Prep Date: 7/31/2015	Analysis Date: 8	/3/2015	S	SeqNo: 83	39772	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26 5.0	25.00	0	103	79.6	122			
Surr: BFB	1000	1000		101	75.4	113			
Sample ID 5ML RB	SampType: M	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBS	Batch ID: R	27950	F	RunNo: 2	7950				
Prep Date:	Analysis Date: 8	/4/2015	S	SeqNo: 84	40981	Units: %RE	С		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	910	1000		91.1	75.4	113			
Sample ID 2.5UG GRO LCS	SampType: L	cs	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSS	Batch ID: R	27950	F	RunNo: 2	7950				
Prep Date:	Analysis Date: 8	8/4/2015	S	SeqNo: 8	40982	Units: %RE	С		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000	1000		101	75.4	113			

- \* 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
- Page 5 of 6

- P Sample pH Not In Range
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D92

10-Aug-15

Client:

Yates Petroleum Corporation

Project:

Livingston Ridge SWD Water Line (Wolf)

	Livingston	i idage 5 v	VD Wa	iter Effe (W							
Sample ID ME	3-20550	SampTy	pe: ME	BLK	Test	Code: EF	A Method	8021B: Volat	iles	26-0-16-18-18-18-18-18-18-18-18-18-18-18-18-18-	
Client ID: PB	s	Batch	ID: <b>20</b>	550	R	unNo: <b>27</b>	7919				
Prep Date: 7	/31/2015	Analysis Da	ate: 8/	3/2015	S	eqNo: 83	39800	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		ND	0.050								
Toluene		ND	0.050								
Ethylbenzene		ND	0.050								
Xylenes, Total		ND	0.10								
Surr: 4-Bromoflu	orobenzene	0.99		1.000		99.1	80	120			
Sample ID LC	S-20550	SampTy	/pe: LC	S	Tes	tCode: EF	A Method	8021B: Volat	iles		
Client ID: LC	ss	Batch	ID: 20	550	F	RunNo: 27	7919				
Prep Date: 7	/31/2015	Analysis Da	ate: 8/	3/2015	S	SeqNo: 8	39801	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		1.0	0.050	1.000	0	103	76.6	128			
Toluene		1.0	0.050	1.000	0	104	75	124			
Ethylbenzene		1.1	0.050	1.000	0	105	79.5	126			
Xylenes, Total		3.4	0.10	3.000	0	113	78.8	124			
Surr: 4-Bromoflu	iorobenzene	1.1		1.000		108	80	120			
Sample ID 5N	/IL RB	SampTy	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: PE	38	Batch	ID: R2	7950	F	RunNo: 2	7950				
Prep Date:		Analysis Da	ate: 8/	4/2015	Ş	SeqNo: 8	41022	Units: %RE	С		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromoflu	ıorobenzene	1.0		1.000		99.5	80	120			
Sample ID 10	ONG BTEX LCS	SampTy	ype: LC	s	Tes	tCode: El	PA Method	8021B: Volat	tiles		

Sample ID 100NG BTEX LC	SampT	ype: LC	s	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: LCSS	Batch	ID: R2	7950	6	RunNo: 2	7950				
Prep Date:	Analysis D	ate: 8/	4/2015	8	SeqNo: 8	41023	Units: %RE	С		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		108	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

Page 6 of 6

P Sample pH Not In Range

RL Reporting Detection Limit



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

# Sample Log-In Check List

Client Name:	Yates Petroleum Corpora	Work Order Number:	1507D92			RcptNo: 1	
Received by/da	ite: 5A	013115					
Logged By:	Lindsay Mangin	7/31/2015 8:00:00 AM		(	Sandy Houge		
Completed By:	Lindsay Mangin	7/31/2015 9:03:57 AM		(	Juney Harris		
Reviewed By:	05	07/31/15		L.			
Chain of Cu	Make a constant of the first of the second o	o portio					
	eals intact on sample bottles?		Yes 🗆	4	No 🗆	Not Present	
	Custody complete?		Yes 🗹		No 🗔	Not Present	
	he sample delivered?		Courier				
<u>Log In</u>			Yes S	,	No 🗔	NA 🗆	
4. Was an al	ttempt made to cool the sample	387	100				
5 Were all s	amples received at a temperat	ure of >0° C to 6.0°C	Yes 🗸	3	No 🗆	NA 🗔	
			Yes !		No 🗔		
6. Sample(s	) in proper container(s)?		res :	X	hauri		
7 Sufficient	sample volume for indicated te	st(s)?	Yes S	1	No 🗆		
	les (except VOA and ONG) pro		Yes 5	1	No 🗌	parameter.	
	ervative added to bottles?		Yes		No 🗹	NA L	
40	L		Yes		No 🗌	No VOA Vials 🔽	
	s have zero headspace? y sample containers received b	roken?	Yes		No 🗸	Commence of the Commence of th	Marketon and the second of the second
11, vvete an	y sample contamora reconcer					# of preserved bottles checked	
12. Does par	perwork match bottle labels?		Yes	~	No 🗆	for pH (<2 o	or >12 unless noted
	crepancies on chain of custody		Yes	J	No []	Adjusted?	
	ices correctly identified on Cha			<b>v</b>	No 🗆		
	r what analyses were requested holding times able to be met?	.,	Yes		No 🗆	Checked by:	
(If no, no	otify customer for authorization.	)				resembly sensitive to the sensitive expension and sensitive to the sensiti	
Special M	andling (if applicable)						
	ent notified of all discrepancies	with this order?	Yes		No 🗆	NA 🗸	
and a second section of the section	erson Notified:	Dale	The second secon	possioni tem	many state and s		
	y Whom:	Via:	eMa	iil 🔲 I	Phone 🔲 Fax	In Person	
13.5	egarding:	and the first that the control of th					
	lient Instructions:	or and a second			Constitution of the Section PANICAL II	and the second second	- A-21-19
17. Additio	nal remarks:				Commence of the second		
	r Information			9		,	
Constitution of the contract o	ler No Temp °C Condition	Seal Intact   Seal No	Seal D	ate	Signed By		
1	4.9 Good	Not Present				1	

HALL ENVIRONMENTAL	ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	0	S't	O4	Z80	1.4 (H/ (H/ 08 /	/O/ sp oN sp dd dd 109	bor no / stel l <sub>i</sub> lo (AC	FPH Methors (Methors) (Methors) (FA & Majons (FA & Majons (Volume)	/ ×		×	×						TPH: 8015B, BTEX: 8021B. Please show BTEX	Anions: Chloride only	מ מכלים מוכי בי	and the analytical reports of the relative contract report.
			4901	Tel.		ζju	10 S	(Gas	) н	41	+ =	181	M + X3TE		1			announce of the same of the sa		es ANNO APPORTO			Remarks:	sults a	o cune	48
Turn-Around Time:	X Standard 🗆 Rush	Project Name:	Livingston Ridge SWD Water Line (Wolf)	Project #;	2RP-3074			Amber Griffin	PO # 205-2020	Amber Griffin ドロ	Ar Yes 🗆 No	Sample Temperature: 4,9	Container Preservativ HEAL No. + Type and # e Type			1-40z. lce -CC X	1-40Z. Ice -033 X						Date Time R	20 Just 07/71/15 0800	Received by: Date Time	
Chain-of-Custody Record	lient: Yates Petroleum Corporation		alling Address:	25 South 4th Street Artesia, NM 88210	23 SOUTH THE COURT OF EAST OF STR. 748-4111		mail or Fax#: acannon@yatespetroleum.com	**	Standard   Level 4 (Full Validation)	ccreditation:	NELAP 🗆 Other	(adv	Date Time Matrix Sample Request ID		728/2015 7:56 Soil Wall									hate: Timo: Relinquished by:	Time: Relinarished by	Þ

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-



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

August 07, 2015

Amber Cannon
Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4217

FAX

RE: Livingston Ridge SWD Water Line (Wolf)

OrderNo.: 1507D92

#### Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/31/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 qualifers 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 Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

#### Lab Order 1507D92

Date Reported: 8/7/2015

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Yates Petroleum Corporation

Client Sample ID: Wolf-1'

Project: Livingston Ridge SWD Water Line (Wol

Collection Date: 7/28/2015 7:56:00 AM

Lab ID:

1507D92-001

Matrix: SOIL

Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	/st: <b>LGT</b>
Chloride	2500	150	mg/Kg	100 8/5/2015 2:27:02 PM	20587

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

- 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
- RPD outside accepted recovery limits R
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 4 J
- P Sample pH Not In Range
- Reporting Detection Limit

Lab Order 1507D92

Date Reported: 8/7/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Yates Petroleum Corporation

Client Sample ID: Wolf-2'

Project: Livingston Ridge SWD Water Line (Wol

Collection Date: 7/28/2015 7:58:00 AM

Lab ID:

1507D92-002

Matrix: SOIL

Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	st: <b>LGT</b>
Chloride	4300	150	mg/Kg	100 8/5/2015 3:04:15 PM	20587

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- % 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 2 of 4 J
- P Sample pH Not In Range
- Reporting Detection Limit

Lab Order 1507D92

Date Reported: 8/7/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Yates Petroleum Corporation

Client Sample ID: Wolf-3'

Project: Livingston Ridge SWD Water Line (Wol

Collection Date: 7/28/2015 8:00:00 AM

Lab ID:

1507D92-003

Matrix: SOIL

Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Anal	yst: <b>LGT</b>
Chloride	5600	300	mg/Kg	200 8/5/2015 3:16:40 PM	1 20587

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

- 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
- RPD outside accepted recovery limits
- % 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 3 of 4
- P Sample pH Not In Range
- Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D92

10-Aug-15

Client:

Yates Petroleum Corporation

Project:

Livingston Ridge SWD Water Line (Wolf)

Sample ID MB-20587

SampType: MBLK

SampType: LCS

Batch ID: 20587

TestCode: EPA Method 300.0: Anions

Client ID: PBS

Batch ID: 20587

RunNo: 27959

Prep Date: 8/4/2015

Sample ID LCS-20587

LCSS

Analysis Date: 8/4/2015

SeqNo: 841176

Units: mg/Kg HighLimit

%RPD

**RPDLimit** Qual

Analyte Chloride

Result

ND

1.5

1.5

PQL

TestCode: EPA Method 300.0: Anions

SPK value SPK Ref Val %REC LowLimit

RunNo: 27959

Prep Date: 8/4/2015

SeqNo: 841177

Units: mg/Kg

Analyte

Client ID:

Analysis Date: 8/4/2015

SPK value SPK Ref Val

%REC LowLimit

HighLimit

%RPD **RPDLimit** 

Qual

Chloride

**PQL** 

110

14

15.00

90.5

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Holding times for preparation or analysis exceeded H
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- 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
- Sample pH Not In Range
- Reporting Detection Limit

Page 4 of 4



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.kallenvironmental.com

# Sample Log-In Check List

Client Name: Yates Petroleum Corpora	Work Order Number:	1507D92		RcptNo: 1
Received by/date:   Logged By: Lindsay Mangin  Completed By: Lindsay Mangin	7/31/2015 8:00:00 AM 7/31/2015 9:03:57 AM		James flestyse James flestyse	
Reviewed By: (15	67/31/15	and the property of the second second	anne in a recognision of the first file of the section of the file	
Chain of Custody		-	p-out	
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				y
4. Was an attempt made to cool the sam	iples?	Yes 🗸	No 🗌	NA 🗀
5. Were all samples received at a tempe	rature 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 🗆	r
9. Was preservative added to bottles?		Yes 🗌	No 🗹	NA L
10.VOA vials have zero headspace?		Yes 🗆	No 🗆	No VOA Vials
11, Were any sample containers receive	d broken?	Yes 🗆	No 🗸	# of preserved
		(permeter)	-	bottles checked
12. Does paperwork match bottle labels?		Yes 🗹	No 🗔	for pH (<2 or >12 unless not
(Note discrepancies on chain of custo		Yes 🗸	No 🗔	Adjusted?
13. Are matrices correctly identified on C		Yes 🗹	No 🗆	
14. Is it clear what analyses were reques		Yes 🗹	No 🗆	Checked by:
<ol> <li>Were all holding times able to be me (If no, notify customer for authorization)</li> </ol>		100		the annual state of the state o
Special Handling (if applicable)				
16. Was client notified of all discrepance		Yes 🔲	No 🗆	NA 🗹
Person Notified	Date		del may meneral alla politica del returnado no	
By Whom:	Via:	eMail	Phone Fax	In Person
Regarding:			CONTRACTOR STATE OF THE STATE O	codes a sea recommendar registrações en la formación de de Colombia (III).
Client Instructions:				
17. Additional remarks:				
18. Cooler Information			1 0	1
Cooler No Temp °C Condit		Seal Date	Signed By	4
1 4.9 Good	Not Present			

A Statutation	Chain-of-Custody Record	Turn-Around Time:	Fine:				I	43	EN	HALL ENVIRONMENTAL	<u>0</u> 8	ΣC	EN	Z C	_, ≥
The part		A Standard	L Kusn		3		4	4	<u>ה</u>	Ú T			5		
Auth Street Artista MW 8210		Project Name			I		}	w.ha	enviro	nmen	9.6	Ē			
Table State   Artesia, NM 69210   Project #:   Table State   Table Sta	g Address:	Livingsto	n Ridge SWD	Water Line (Wolf)	₹	901 H	awkins	豐	Albuc	Inerqu	e S	M 871	0		
Sample:   Sample:   Project   Manager:   Amber Griffin   Amber Griffin   Post   Manager:   Amber Griffin   Post   Manager:   Post	outh 4th Street Artesia, NM 88210	Project #:				el. 5(	5-345-	3975	Fa	505	345	4107		_	ı
Time   Worlf - 2   Continued by   Project   Warnington			2RP-30	74			-	₫ -	lalysi	s Ked	nest	ŀ	-		
Container   Amber Griffin	ax#:	Project Mana	ger			-		Named Street	28.			<b>4</b>			
Cother   Cother   Sample:   Amber Griffin   Action   Amber Griffin   A	mi		Amber G	riffin 2020	-		Laboration constitution of the	***************************************	Od "			e and the Control of the			Average of the second
Contact   Cont		T		1000			-		Or	-		-10-			(1)
Matrix   Sample Request   D   Type and #   Freservativ   HEAL No.   Freservativ   Frese	on:			7					-		-	(AO			110)
Type and #   Preservativ   HEAL No.   #   #   #   #   #   #   #   #   #		Sample Temp	perature: 4, 4		-				-	-	(AC	V-in	u berittinin		() 50
7:56 Soil Wolf - 1' 1 - 4oz loeCC X X X X	те Матіх		Preservativ e Type	HEAL NO.	WHITE REPORT THE PROPERTY OF THE PARTY OF TH						V) 80928	9270 (Sen			alddir 8 vi A
7:58 Soil         Wolf - 2'         1 - 40z.         Ice         -CCZ         X         X           8:00 Soil         Wolf - 3'         1 - 40z.         Ice         -CCZ         X         X           8:00 Soil         Wolf - 3'         1 - 40z.         Ice         -CCZ         X         X           8:00 Soil         Wolf - 3'         X <td>7-58 Spi</td> <td>1 - 402.</td> <td><u>8</u></td> <td>100-</td> <td>×</td> <td>×</td> <td></td> <td></td> <td></td> <td></td> <td>auxou/smr*p</td> <td></td> <td>_</td> <td></td> <td></td>	7-58 Spi	1 - 402.	<u>8</u>	100-	×	×					auxou/smr*p		_		
8:00 Soil Wolf - 3'	7. F. Co.	1 - 402	<u>8</u>	-02	×	×			_		CTOP III ALAA				
Time: Reinquished by:  Received by:  Receive	10000	1 - 407	90	-033	×	×	***************************************								
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Received by:  Re						_									
Received by:    Received by:   Date Time Remarks: TPH: 8   Color						-					ANdrois		Source and		
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Reinquished by:	ir	Received by:	MAK	12	Remar result result	s as r	TPH: ng/kg.	3015B Anior ate re	, BTE is: Ch port f	X: 80 loride rom T	only PH a	Plea 7. Ple nd B	se sh ase p TEX.	ow B ut ch	TEX
	ACCOUNT OF THE PARTY OF	Necesived by.			*************										

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



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

August 07, 2015

Amber Cannon
Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4217

FAX

RE: Livingston Ridge SWD Water Line (Wolf)

OrderNo.: 1507D93

#### Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 10 sample(s) on 7/31/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 qualifers 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 Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order: 1507D93

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 8/7/2015

CLIENT: Y	ates Petroleum Corp	ooration			Ls	ab Order:	1507I	093
	ivingston Ridge SW		f)				10071	
Lab ID:	1507D93-001				Collection Date:	7/28/2015	8:06:00 A	M
Client Sample ID:	Wolf-4'				Matrix:	SOIL		
Analyses		Result	RL	Qual	Units	DF Date A	nalyzed	Batch ID
EPA METHOD 300	.0: ANIONS						Ana	alyst: LGT
Chloride		5500	300		mg/Kg	200 8/5/201	15 3:29:05 P	M 20587
Lab ID:	1507D93-002				Collection Date:	7/28/2015	8:11:00 A	M
Client Sample ID:	Wolf-5'				Matrix:	SOIL		
Analyses		Result	RL	Qual	Units	DF Date A	nalyzed	Batch ID
EPA METHOD 300	.0: ANIONS						Ana	alyst: LGT
Chloride		5200	300		mg/Kg	200 8/5/20	15 3:41:30 P	M 20587
Lab ID:	1507D93-003				Collection Date:	7/28/2015	8:16:00 A	M
Client Sample ID:	Wolf-6'				Matrix:	SOIL		
Analyses		Result	RL	Qual	Units	DF Date A	nalyzed	Batch ID
EPA METHOD 300	.0: ANIONS						Ana	alyst: <b>LGT</b>
Chloride		5100	300		mg/Kg	200 8/5/20	15 3:53:54 F	PM 20587
Lab ID:	1507D93-004				Collection Date:	7/28/2015	8:28:00 A	M
Client Sample ID:	Wolf-7'				Matrix:	SOIL		
Analyses		Result	RL	Qual	Units	DF Date A	analyzed	Batch ID
EPA METHOD 300	.0: ANIONS						Ana	alyst: <b>LGT</b>
Chloride		2400	75	i	mg/Kg	50 8/5/20	15 4:06:19 F	PM 20587
Lab ID:	1507D93-005				Collection Date:	7/28/2015	8:40:00 A	М
Client Sample ID:	Wolf-8'				Matrix	: SOIL		
Analyses		Result	RL	Qual	Units	DF Date A	Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS			10	CHATTER SALES OF THE SALES	3	An	alyst: <b>LGT</b>

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

300

mg/Kg

8000

Qualifiers:

Chloride

- 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 Page 1 of 3

200 8/5/2015 4:18:43 PM

20587

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order: 1507D93

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 8/7/2015

		_					
	ates Petroleum Corp ivingston Ridge SW		olf)		Lab Order:	1507D	93
Lab ID: Client Sample ID:	1507D93-006 Wolf-9'				te: 7/28/2015 8::	57:00 AN	M
Analyses		Result	RL Qua	l Units	DF Date Ana	alyzed	Batch ID
EPA METHOD 300 Chloride	.0: ANIONS	5500	300	mg/Kg	200 8/5/2015		lyst: <b>LGT</b> M 20603
Lab ID:	1507D93-007	etilinistikki (Shatikasikasikasikasikasikasikasi		Collection Da	te: 7/28/2015 9:	00:00 Al	M
Client Sample ID:	Wolf-10'			Matr	ix: SOIL		
Analyses		Result	RL Qua	l Units	DF Date Ana	alyzed	Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	6100	300	mg/Kg	200 8/5/2015		llyst: <b>LGT</b> M 20603
Lab ID:	1507D93-008			Collection Da	te: 7/28/2015 9:	03:00 Al	M
Client Sample ID:	Wolf-11'			Matr	ix: SOIL		
Analyses		Result	RL Qua	al Units	DF Date Ana	alyzed	Batch ID
EPA METHOD 300	0.0: ANIONS					Ana	alyst: LGT
Chloride		11000	750	mg/Kg	500 8/5/2015		
Lab ID:	1507D93-009			Collection Da	ite: 7/28/2015 9:	08:00 AI	M
Client Sample ID:	Wolf-12'			Matr	ix: SOIL		
Analyses		Result	RL Qua	al Units	DF Date An	alyzed	Batch ID
EPA METHOD 300	0.0: ANIONS					Ana	alyst: <b>LGT</b>
Chloride		12000	750	mg/Kg	500 8/5/2015	5:33:11 P	M 20603
Lab ID:	1507D93-010			Collection Da	nte: 7/28/2015 9:	17:00 A	M
Client Sample ID:	Wolf-13'			Matr	rix: SOIL		

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

150

RL Qual Units

mg/Kg

Result

2700

Qualifiers:

Analyses

Chloride

**EPA METHOD 300.0: ANIONS** 

- 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 Page 2 of 3

**DF** Date Analyzed

100 8/5/2015 5:45:35 PM

**Batch ID** 

20603

Analyst: LGT

- P Sample pH Not In Range
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D93

07-Aug-15

Client:

Yates Petroleum Corporation

Project:

Livingston Ridge SWD Water Line (Wolf)

Sample ID MB-20587

SampType: MBLK

TestCode: EPA Method 300.0: Anions

Client ID:

**PBS** 

Batch ID: 20587

RunNo: 27959

Prep Date: 8/4/2015 Analysis Date: 8/4/2015

SeqNo: 841176

Units: mg/Kg

Analyte

Result

**PQL** 1.5

SPK value SPK Ref Val %REC LowLimit

HighLimit

**RPDLimit** 

Qual

Chloride

ND

Sample ID LCS-20587

SampType: LCS

TestCode: EPA Method 300.0: Anions

Client ID: LCSS Prep Date: 8/4/2015

Batch ID: 20587 Analysis Date: 8/4/2015 RunNo: 27959

SeqNo: 841177

Units: mg/Kg

110

%RPD

Analyte

Result PQL

1.5

Batch ID: 20603

Analysis Date: 8/4/2015

SPK value SPK Ref Val 15.00

%REC LowLimit 90.5

HighLimit 90

%RPD **RPDLimit** 

Qual

Chloride

Client ID:

Client ID:

PBS

Prep Date: 8/4/2015

Sample ID MB-20603

SampType: MBLK

14

TestCode: EPA Method 300.0: Anions

RunNo: 27959 SeqNo: 841213

Units: mg/Kg

Analyte Chloride

Result PQL ND

SPK value SPK Ref Val %REC LowLimit

HighLimit

%RPD

**RPDLimit** 

Qual

LCSS

Sample ID LCS-20603

SampType: LCS

Batch ID: 20603

1.5

TestCode: EPA Method 300.0: Anions

RunNo: 27959

Units: mg/Kg

%RPD

**RPDLimit** 

Page 3 of 3

Prep Date: 8/4/2015

Analysis Date: 8/4/2015

Result

14

SeqNo: 841214

LowLimit

HighLimit

110

Qual

Analyte Chloride

PQL

1.5

SPK value SPK Ref Val

15.00

%REC 96.4

90

Qualifiers:

R

S

Value exceeds Maximum Contaminant Level.

RPD outside accepted recovery limits

D Sample Diluted Due to Matrix

H

ND Not Detected at the Reporting Limit

Holding times for preparation or analysis exceeded

% Recovery outside of range due to dilution or matrix

B E

1 Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

Analyte detected in the associated Method Blank Value above quantitation range



tian Environmenta Amuysis Laboratory 4901 Hawkins NE

Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

# Sample Log-In Check List

Work Order Number: 1507D93 ReptNo: 1 Yates Petroleum Corpora Client Name Received by/date: 7/31/2015 8:00:00 AM Logged By: Lindsay Mangin 7/31/2015 9:09:09 AM Lindsay Mangin Completed By: 07/31/15 Reviewed By: NS Chain of Custody Yes No 🗌 Not Present V 1 Custody seals intact on sample bottles? Yes 🗸 No Not Present 2. Is Chain of Custody complete? Courier 3. How was the sample delivered? Log In NA No 🗌 4. Was an attempt made to cool the samples? APPROVED BY CLIENT, A CHAILE 5. Were all samples received at a temperature of >0° C to 6.0°C Yes V No \_ Sample(s) in proper container(s)? No . 7 Sufficient sample volume for indicated test(s)? No 8. Are samples (except VOA and ONG) properly preserved? No V NA ... Yes 9. Was preservative added to bottles? No VOA Vials No 10. VOA vials have zero headspace? No V 11. Were any sample containers received broken? # of preserved bottles checked Yes V No 🗔 for pH: 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No . 13. Are matrices correctly identified on Chain of Custody? No ... 14. Is it clear what analyses were requested? No 🔲 Checked by: Yes 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) Yes No NA V 16. Was client notified of all discrepancies with this order? Date Person Notified: Via: eMail Phone Fax In Person By Whom: Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Cooler No Temp C Condition | Seal Intact | Seal No Seal Date Signed By 4.9 Good Not Present 11,2 Page 1 of 1

AL	ANALYSIS LABORATORY													More				Энна								
HALL ENVIRONMENTAL	ORA	٤	Albuquerque, NM 87109	Fax 505-345-4107				Waterday		(AC	۰۸۱	mə2) 0728							W P V			a service			H-112-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	
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I	A	ş	kins	345						-		EDB (Meth		100						-					Anions: Chloride only.	
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		臺	4			was the same of the	Anna Carlo Carlo	ALTON S ALCOHOL				TM + X3T8													Remarks:	
anoma di	A THE RESIDENCE OF SERVICE AND ADDRESS OF SER		Livingston Ridge SWD Water Line (Wolf)		74				Amber Griffin	Ø No	7	HEAL NO. 1507093	100-	-002	-003	1 FB-	-035	-œ	10-	-00%	-000	-010			Date Time R	Date Time
E	l □ Rush	ë	on Ridge SWD		2RP-3074	١	Amber Griffin	PO # 205-2020		□ Yes	perature: 19.	Preservativ e Type	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required			Note O	120
urn-Around   ime:	X Standard	Project Name:	Livingsto	Project #:	Wiles III.	Project Manager			Sampler:	On Ice:	Sample Temperature:	Container Type and #	1 - 40z.	1 - 40z.	1 - 40z.	1 - 402.	1 - 4oz.	1 - 402.	1 - 402.	1 - 402.	1 - 4oz.	1 - 402.			Received by:	Received by:
Chain-of-Custody Record	Yates Petroleum Corporation			105 South 4th Street Artesia, NM 88210	575-513-8799 or 575-748-4111	acannon@yatespetroleum.com		☐ Level 4 (Full Validation)				Sample Request ID	Wolf - 4'	Wolf - 5'	Wolf - 6'	Wolf - 7"	Wolf - 8'	Wolf - 9'	Wolf - 10'	Wolf - 11'	Wolf - 12'	Wolf - 13'			ed by:	d by:
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ain	Yates		fress:	4th S		技	:age:	753	j.		'pe)	Тіте	8:0	8:1	8:1	8:2	8:4	8:5	9:0	9:0	9:0	9:1			Time:	Time:
	Client		Mailing Address:	105 South	Phone #	email or Fax#:	QA/QC Package:	□ Standard	Accreditation:	□ NELAP	□ EDD (Type)	Date	7/28/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015			Date:	Date:



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

December 31, 2015

Amber Griffin
Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4111

FAX

RE: Wolf ASA Fed. Waterline Livingston Ridge SWD Water Line OrderNo.: 1512A75

#### Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 3 sample(s) on 12/23/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 qualifers 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 Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order: 1512A75

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 12/31/2015

CLIENT: Yates Petroleum Corporation Lab Order: 1512A75 Project: Wolf ASA Fed. Waterline Livingston Ridge SW Lab ID: Collection Date: 12/15/2015 1:18:00 PM 1512A75-001 Client Sample ID: Wolf-15' Matrix: SOIL Result **RL Qual Units** Analyses **DF** Date Analyzed **Batch ID EPA METHOD 300.0: ANIONS** Analyst: LGT Chloride 180 30 mg/Kg 12/30/2015 3:23:18 AM 23001 Lab ID: 1512A75-002 Collection Date: 12/15/2015 1:31:00 PM Client Sample ID: Wolf-20' Matrix: SOIL **RL Qual Units** Result **DF** Date Analyzed Analyses **Batch ID EPA METHOD 300.0: ANIONS** Analyst: LGT Chloride 100 30 mg/Kg 12/30/2015 3:35:43 AM 23001 Lab ID: 1512A75-003 Collection Date: 12/15/2015 1:47:00 PM Client Sample ID: Wolf-25' Matrix: SOIL Result **RL Qual Units DF** Date Analyzed Batch ID Analyses **EPA METHOD 300.0: ANIONS** Analyst: LGT Chloride 90 20 12/30/2015 3:48:07 AM 23001 30 mg/Kg

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

- 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 Page 1 of 2
- P Sample pH Not In Range
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1512A75

31-Dec-15

Client:

Yates Petroleum Corporation

Project:

Wolf ASA Fed. Waterline Livingston Ridge SW

Sample ID MB-23001

SampType: MBLK

TestCode: EPA Method 300.0: Anions

Client ID:

PBS

Batch ID: 23001

RunNo: 31145

Prep Date: 12/29/2015

Sample ID LCS-23001

LCSS

Analysis Date: 12/30/2015

**PQL** 

1.5

SeqNo: 953296

Units: mg/Kg

HighLimit

%RPD **RPDLimit** 

Qual

Analyte Chloride

Result

ND

SampType: LCS

Batch ID: 23001

PQL

1.5

TestCode: EPA Method 300.0: Anions

RunNo: 31145

Units: mg/Kg

Prep Date: 12/29/2015

Analysis Date: 12/30/2015

SeqNo: 953297 %REC

HighLimit

%RPD

**RPDLimit** 

Page 2 of 2

Qual

Analyte

Client ID:

0

LowLimit

15.00

SPK value SPK Ref Val

Chloride

14

SPK value SPK Ref Val %REC LowLimit

93.4

90

110

- 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 RPD outside accepted recovery limits R
- 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
- P Sample pH Not In Range
- Reporting Detection Limit RL



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name:	Yates Petrol	eum Corporat	Work Order Num	nber: 1512/	75			Rcpti	No: 1
Received by/date	e: .	H	12/29/5						
Logged By:	Lindsay Ma	ngin	12/23/2015 9:40:0	0 AM		Junely 4			
Completed By:	Lindsay Ma	ngin	12/23/2015 10:34:	47 AM		Juney 4	روا		
Reviewed By:	(	15	12/23/15			U	0		
Chain of Cus	tody	32 (13	(5)(1.5						
1. Custody sea	als intact on sa	mple bottles?		Yes		No	LJ	Not Present	7
2. Is Chain of C	Custody compl	ete?		Yes		No		Not Present [	
3. How was the	e sample delive	ered?		Cour	<u>ier</u>				
Log In									
4. Was an atte	empt made to	cool the samples?		Yes		No	[-]	NA	
5. Were all sar	mples received	at a temperature	of >0° C to 6.0°C	Yes		No		na L	_]
6. Sample(s) is	n proper conta	iner(s)?		Yes		No			
7. Sufficient sa	ample volume f	or indicated test(s	3)?	Yes		No	[.]		
8. Are samples	except VOA	and ONG) proper	ly preserved?	Yes		No			
9. Was presen	vative added to	bottles?		Yes		No		NA	
10.VOA vials h	ave zero head:	space?		Yes		No		No VOA Vials	
11. Were any s	ample contain	ers received broke	en?	Yes		No			
							-	# of preserved bottles checked	1
12.Does papen (Note discre		ttle labels? ain of custody)		Yes		No	П	for pH:	<2 or >12 unless noted)
		itified on Chain of	Custody?	Yes		No	П	Adjusted <sup>*</sup>	
14. Is it clear wh			1 6 2 2 4 3 <b>3</b> 4 11	Yes		No			
15. Were all hol (If no, notify	lding times abl customer for a			Yes		No		Checked	by:
Special Hand	iling (if app	olicable)							
16.Was client r	notified of all di	screpancies with	this order?	Yes	[]	No		NA	
Perso	n Notified:		Da	ate:		MONTH OF THE REAL	-		
By Wi	hom:	***************************************	Via	100000	ail [_]	Phone []	Fax	[] In Person	
Regar	rding:		*****************		<del></del>		*148/51-4-		
Client	Instructions:	THE PARTY OF THE P	Marine trade de constante de la	*****************	manufikitating ( NA	(at 4)-8550-1016			-
17. Additional r	remarks:								
18. Cooler Info Cooler N		Condition   S Good Ye			ate	Signed I	Ву		

etroleum Corporation X Standard	1		1 1 11 11 11 11				THE PARTY OF THE P		-		-
Troject Name:   Project Name:   Project Name:   Project Name:   Project Name:   Lungston Ridge SWD Water Line (Wolf)		rporation	X Standard	□ Rush			ANA	LYSI	SLAE	PORAT	ORY
Actress:   Lunnaston Ridge Syrio Water Line (Worl)   Tel. 605-345-3975			Project Name	ANA Fed	. Water and		www.h	allonviror	mental.co	E	
Factor   Authoritists   Factor   Fact	g Address:		Livingsto	n Ridge SWD	Water Line (Wolf)	4901 H	awkins NE		nerque, N	M 87109	
Fackage:	outh 4th Street Artesia, NN	W 88210	Project #:			Tel. 50	5-345-397	5 Fax	505-345	-4107	
Poject Manager:   Poject Manager:   Amber Griffin   Poject Manager:	s #: 575-513-879	19 or 575-748-4111	7	2RP-307				Analysis	Request		
Package:   Clevel 4 (Full Validation)		atespetroleum.com	Project Mana	ger		juo		os			
Compiler				Amber Gr	iffin	885		<sup>17</sup> O <sub>4</sub>	-		D-Stein our House In-
Container   Cont						) H		d' <sup>«</sup> C			i achaeoir in
Time   Reinquished by   Time   Reinquished by   Time   Time   Time   Reinquished by   Time   Time   Reinquished by   Time   Time   Reinquished by   Time   Time   Reinquished by   Time   Tim	ditation:		Sampler:			<u>q1</u>	1.4			()	
Sample Temperature:			On Ice:		- 2 0	+ 3	09	S		ΑO	**********
Time   Motrix   Sample Request   D   Type and #   e Type     Type and #   e Type     E   E   E   E   E   E   E   E   E	JD (Type)		Sample Temp		د'ځ	381	pol	eta	cide	ν-lι	
5/2015 1:18 Soil Wolf - 15	Time Matrix	Sample Request ID	Container Type and #	Preservativ e Type	HEAL NO.	BTEX + M	EDB (Meth	M 8 ARDA	itse9 1808	m9S) 0XZ8	
5/2015 1:31 Soil Wolf - 20' 1 - 402. Not Required - CO2 5/2015 1:47 Soil Wolf - 25' 1 - 402. Not Required - CO2 7 Time: Relinguished by Received by: Cont. C	1:18 Soil	M - 15'		Not Required	100-			×			
1-402. Not Required	1:31 Soil	off - 20°		Not Required	-002			_×			
Time: Reinquished by Received by Received by School	1:47 Soil	olf - 25"		Not Required	-003			×			
Time: Reinquished by  Received by  Received by  A. Date Time Remarks:											
Time: Reinquished by Received by Carl I'me Remarks:											1
Time: Relinguished by  Received by:  Received by:  Received by:  A Date Time Remarks:										***************************************	
Time: Reinquished by  Received by					general contract of the contra						
Time: Relinquished by  Received by:    Substitute   Date   Time   Remarks:											
Time: Relinquished by  Received by:    Received by:   Date Time   Remarks:			The second secon				-				
Time: Retinguished by  Received by:  Receive										- Constants	- Dallari
Time: Relinquished by Received by Bate Time Remarks:			- 1								
Time: Reinquished by Received by Carlo Remarks:			1					617-002 - 6.		- Commontage de	
	S.O.A.	Graffin	Received by:	Z1	٧,		Anions: Ch	loride or	.ýl		
Time: Relinguished by:	Time:		Received by:	<del>-</del>				. Mora, I al action			