

MARTIN YATES, III

1912-1985

FRANK W. YATES

1936-1986

S.P. YATES

1914-2008



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ARTESIA, NEW MEXICO 88210-2118

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www.yatespetroleum.com

JOHN A. YATES
CHAIRMAN EMERITUS

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JAMES S. BROWN
CHIEF OPERATING OFFICER

January 22, 2016

Mr. Jamie Keys or Ms. Kellie Jones
NMOCD District I
1625 N. French Dr.
Hobbs, NM 88240

RE: Union Federal SWD #1
30-025-31412
Section 8, T21S-R32E
Lea County, New Mexico

1/26/2016
Submitted via email to
NMOCD: BLM
- All analyticals attached
to submission.
AG

Mr. Keys or Ms. Jones,

Yates Petroleum Corporation (Yates) would like to submit the attached plan of work to you regarding the two releases that occurred at the above mentioned facility on March 9, 2015 (1RP-3568) and March 10, 2015 (1RP-3568).

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

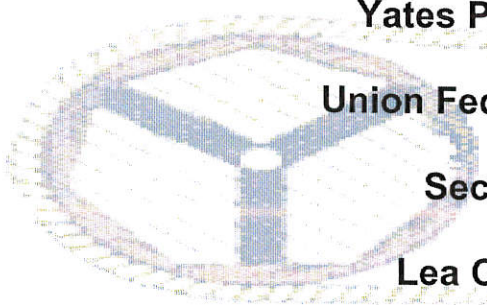
Amber Griffin
Environmental Regulatory Agent
Yates Petroleum Corporation

RECEIVED

By JKeyes at 11:02 am, Feb 08, 2016

APPROVED

By JKeyes at 11:03 am, Feb 08, 2016



Yates Petroleum Corporation

Union Federal SWD #1 Work Plan

Section 8, T21S-R32E

Lea County, New Mexico

January 22, 2016

I. Location

The well is located approximately 31.1 miles east of Carlsbad, NM on Highway 62/180, approximately 5.8 miles south of Highway 62/180 on Campbell Road (County Road 29) and approximately 1.8 miles east of Campbell Road (County Road 29) on a lease road.

II. Background

On March 9, 2015, Yates had a release of 10 barrels produced water, with 10 barrels produced water recovered. On March 10, 2015, Yates had a release of 300 barrels produced water, with 300 barrels produced water recovered. The area affected from these releases was within the unlined, bermed battery. An initial Form C-141 was submitted, via e-mail, to the NMOCD District I office on March 18, 2015 for both releases.

On April 1, 2015 personnel returned to the release area and collected initial composite soil samples from the surface and from the depths of 6" – 2' below surface level using a hand auger. The soil samples were sent to an approved NMOCD laboratory and tested for BTEX 8021B, TPH 8015M, and Chlorides SM4500Cl-B. Yates received the analytical results on April 9, 2015 (Report H500883 attached to this work plan). The analytical results showed that BTEX was at levels below NMOCD RRAL's. The analytical results also showed that TPH was at levels above NMOCD RRAL's and there were elevated chloride levels. Yates determined that further vertical delineation of TPH and chlorides was needed within the release area.

Due to the initial analytical results and two releases occurring within two days, Yates made the decision to relocate the tanks of this location from the south side to the east side of the production pad. It was decided that the tanks needed to be in a steel containment with a liner to prevent further environmental issues if more releases occurred at this facility. Production started the process to relocate the tanks into a lined, steel containment system. The tanks also needed to be re-located in order for environmental personnel to be able to safely and effectively complete vertical delineation within the release area. Further sampling and remediation of this site was put on hold until the tank re-location process was complete.

On July 29, 2015 personnel returned to the release area and completed further vertical delineation within the battery using a backhoe. During this sampling event, the release area was split into three separate sections in order to have a better picture of the contamination issues at the site. For Section 1 of the release area, Yates sampled at depths of 1' – 5' below surface level. For Section 2 of the release area, Yates was able to successfully collect soil samples from the depths of 3' – 13' below surface level. For Section 3 of the release area, Yates was able to successfully collect soil samples from the depth of 3' – 11' below surface level. The backhoe was not able to safely or effectively pull samples from deeper depths. The soil samples from this sampling event were sent to an approved NMOCD laboratory and tested for BTEX 8021B, TPH 8051M, and Chlorides 300.0. Yates received the analytical results August 7, 10 & 24, 2015 (Reports 1507D85, 1507D95 and 1508707 attached to this work plan). The analytical results showed that both BTEX and TPH had delineated to levels below NMOCD RRAL's. The analytical results showed that there were still elevated chloride levels, and Yates determined that further vertical delineation of chlorides was still needed within the release area.

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 January 6, 2016 (Report 1512A71 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 100 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.

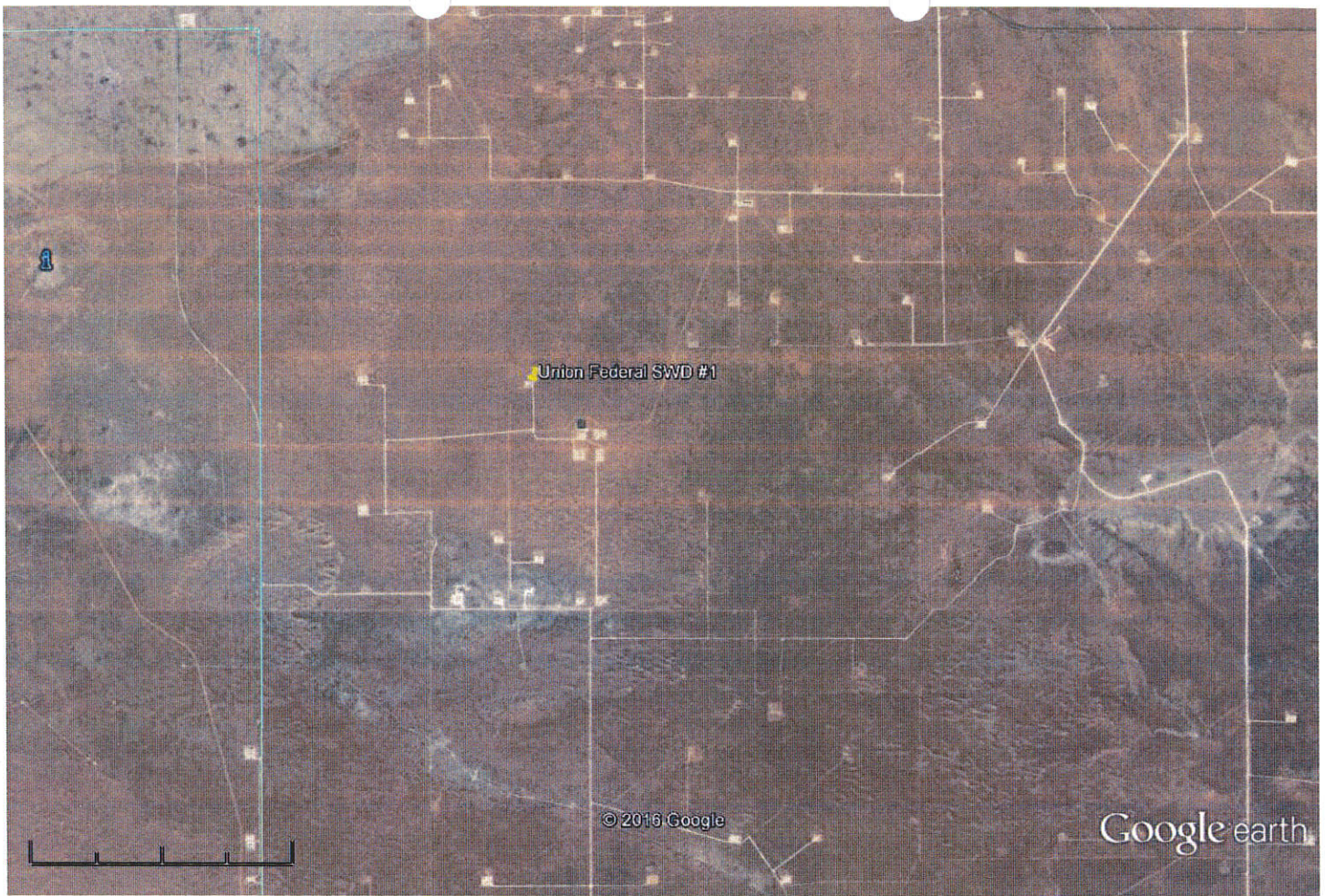
V. Scope of Work

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 154' long, 29' 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.

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 these three releases.



Google earth

miles 4
km 6

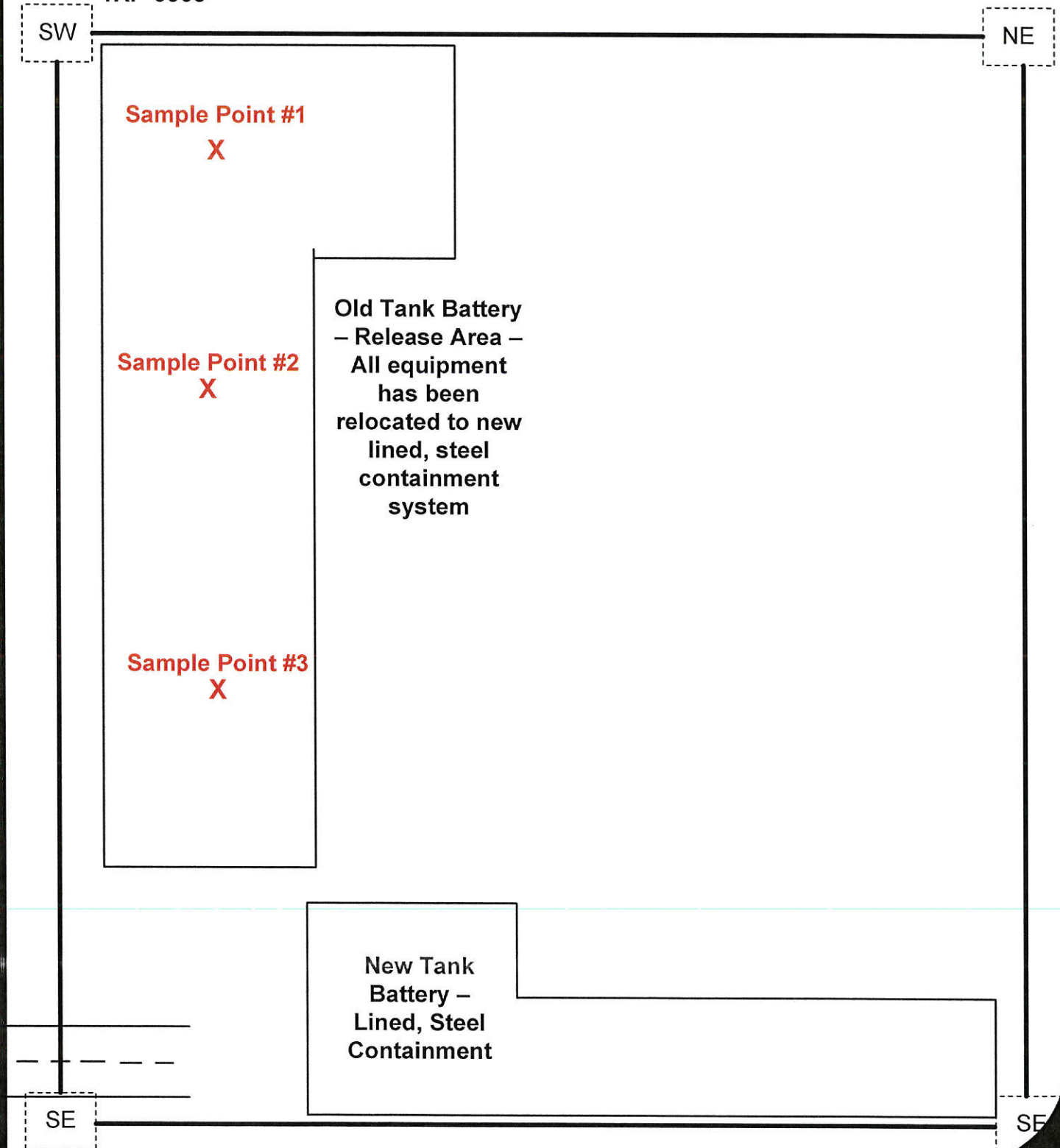


YATES PETROLEUM CORPORATION

Union Federal SWD #1
30-025-31412
Section 8, T21S-R32E
Lea County, New Mexico
1RP-3568

**DRAWING IS NOT TO
SCALE**

Friday, January 22, 2016



Union Federal SWD #1

	Sample Area	Sample Date	Analytical Report	Sample Type	Depth	BTEX	GRO	DRO	TOTAL	Chlorides
	Release area	4/1/2015	H500883	Grab/Auger	Surface	5.21	295	10,500	10,795	11,600
6"	Release area	4/1/2015	H500883	Grab/Auger	6"	3.59	271	3710	3,981	9,600
1'	Release area	4/1/2015	H500883	Grab/Auger	1'	0.54	152	1820	1,972	7,600
2'	Release area	4/1/2015	H500883	Grab/Auger	2'	8.93	426	3510	3,936	10,400
1 - 1'	Release area	7/29/2015	1507D95	Grab/Backhoe	1'	ND	ND	170	170	690
1 - 2'	Release area	7/29/2015	1507D95	Grab/Backhoe	2'	ND	ND	140	140	83
1 - 3'	Release area	7/29/2015	1507D95	Grab/Backhoe	3'	ND	ND	170	170	ND
1 - 4'	Release area	7/29/2015	1507D95	Grab/Backhoe	4'	-	-	-	-	340
1 - 5'	Release area	7/29/2015	1507D95	Grab/Backhoe	5'	-	-	-	-	130
2 - 3'	Release area	7/29/2015	1507D95	Grab/Backhoe	3'	ND	ND	ND	ND	1,600
2 - 4'	Release area	7/29/2015	1507D95	Grab/Backhoe	4'	ND	ND	ND	ND	5,700
2 - 5'	Release area	7/29/2015	1507D95	Grab/Backhoe	5'	ND	ND	ND	ND	2,500
2 - 6'	Release area	7/29/2015	1507D85	Grab/Backhoe	6'	-	-	-	-	11,000
2 - 7'	Release area	7/29/2015	1507D85	Grab/Backhoe	7'	-	-	-	-	8,700
2 - 8'	Release area	7/29/2015	1507D85	Grab/Backhoe	8'	-	-	-	-	15,000
2 - 9'	Release area	7/29/2015	1507D85	Grab/Backhoe	9'	-	-	-	-	5,600
2 - 10'	Release area	7/29/2015	1508707	Grab/Backhoe	10'	-	-	-	-	4,800
2 - 11'	Release area	7/29/2015	1508707	Grab/Backhoe	11'	-	-	-	-	6,600
2 - 12'	Release area	7/29/2015	1508707	Grab/Backhoe	12'	-	-	-	-	14,000
2 - 13'	Release area	7/29/2015	1508707	Grab/Backhoe	13'	-	-	-	-	15,000
2 - 15'	Release area	12/15/2015	1512A71	Hollow Stem Auger	15'	-	-	-	-	5,500
2 - 20'	Release area	12/15/2015	1512A71	Hollow Stem Auger	20'	-	-	-	-	1,700
2 - 25'	Release area	12/15/2015	1512A71	Hollow Stem Auger	25'	-	-	-	-	1,800
2 - 30'	Release area	12/15/2015	1512A71	Hollow Stem Auger	30'	-	-	-	-	1,600
2 - 35'	Release area	12/15/2015	1512A71	Hollow Stem Auger	35'	-	-	-	-	2,000
2 - 40'	Release area	12/15/2015	1512A71	Hollow Stem Auger	40'	-	-	-	-	1,800
2 - 45'	Release area	12/15/2015	1512A71	Hollow Stem Auger	45'	-	-	-	-	700
2 - 50'	Release area	12/15/2015	1512A71	Hollow Stem Auger	50'	-	-	-	-	230
3 - 3'	Release area	7/29/2015	1507D95	Grab/Backhoe	3'	ND	ND	ND	ND	5,600
3 - 4'	Release area	7/29/2015	1507D95	Grab/Backhoe	4'	ND	ND	ND	ND	430
3 - 5'	Release area	7/29/2015	1507D95	Grab/Backhoe	5'	ND	ND	ND	ND	2,500
3 - 6'	Release area	7/29/2015	1507D85	Grab/Backhoe	6'	-	-	-	-	2,200
3 - 7'	Release area	7/29/2015	1507D85	Grab/Backhoe	7'	-	-	-	-	440
3 - 8'	Release area	7/29/2015	1507D85	Grab/Backhoe	8'	-	-	-	-	1,500
3 - 9'	Release area	7/29/2015	1507D85	Grab/Backhoe	9'	-	-	-	-	1,200
3 - 10'	Release area	7/29/2015	1508707	Grab/Backhoe	10'	-	-	-	-	480
3 - 11'	Release area	7/29/2015	1508707	Grab/Backhoe	11'	-	-	-	-	630

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

All results are ppm.Chlorides for documentation.

Released: 10 B/PW; Recovered: 10 B/PW. Release Date: 3/9/2015, 1RP-3568

Released: 300 B/PW; Recovered: 300 B/PW. Release Date: 3/10/2015, 1RP-3568



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 09, 2015

AMBER CANNON

YATES PETROLEUM CORPORATION

105 S 4th Street

Artesia, NM 88210

RE: UNION FEDERAL SWD #1

Enclosed are the results of analyses for samples received by the laboratory on 04/02/15 11:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 YATES PETROLEUM CORPORATION
 AMBER CANNON
 105 S 4th Street
 Artesia NM, 88210
 Fax To: (505) 748-4635

 Received: 04/02/2015
 Reported: 04/09/2015
 Project Name: UNION FEDERAL SWD #1
 Project Number: 1RP-3568
 Project Location: 8-21S-32E, LEA COUNTY

 Sampling Date: 04/01/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SURFACE (H500883-01)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	04/08/2015	ND	1.82	91.2	2.00	2.09	
Toluene*	0.677	0.200	04/08/2015	ND	1.74	86.9	2.00	0.754	
Ethylbenzene*	0.804	0.200	04/08/2015	ND	1.68	84.2	2.00	0.196	
Total Xylenes*	3.73	0.600	04/08/2015	ND	5.29	88.1	6.00	0.465	
Total BTEX	5.21	1.20	04/08/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 127 % 61-154

TPH 8015M		mg/kg	Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	295	50.0	04/06/2015	ND	193	96.5	200	0.183	
DRO >C10-C28	10500	50.0	04/06/2015	ND	203	101	200	0.985	

Surrogate: 1-Chlorooctane 128 % 47.2-157

Surrogate: 1-Chlorooctadecane 215 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 YATES PETROLEUM CORPORATION
 AMBER CANNON
 105 S 4th Street
 Artesia NM, 88210
 Fax To: (505) 748-4635

 Received: 04/02/2015
 Reported: 04/09/2015
 Project Name: UNION FEDERAL SWD #1
 Project Number: 1RP-3568
 Project Location: 8-21S-32E, LEA COUNTY

 Sampling Date: 04/01/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: 6" (H500883-02)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	04/08/2015	ND	1.82	91.2	2.00	2.09	
Toluene*	0.431	0.200	04/08/2015	ND	1.74	86.9	2.00	0.754	
Ethylbenzene*	0.453	0.200	04/08/2015	ND	1.68	84.2	2.00	0.196	
Total Xylenes*	2.70	0.600	04/08/2015	ND	5.29	88.1	6.00	0.465	
Total BTX	3.59	1.20	04/08/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 130 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	271	50.0	04/06/2015	ND	193	96.5	200	0.183		
DRO >C10-C28	3710	50.0	04/06/2015	ND	203	101	200	0.985		

Surrogate: 1-Chlorooctane 113 % 47.2-157

Surrogate: 1-Chlorooctadecane 125 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 YATES PETROLEUM CORPORATION
 AMBER CANNON
 105 S 4th Street
 Artesia NM, 88210
 Fax To: (505) 748-4635

 Received: 04/02/2015
 Reported: 04/09/2015
 Project Name: UNION FEDERAL SWD #1
 Project Number: 1RP-3568
 Project Location: 8-21S-32E, LEA COUNTY

 Sampling Date: 04/01/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: 1' (H500883-03)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/08/2015	ND	1.82	91.2	2.00	2.09	
Toluene*	0.058	0.050	04/08/2015	ND	1.74	86.9	2.00	0.754	
Ethylbenzene*	<0.050	0.050	04/08/2015	ND	1.68	84.2	2.00	0.196	
Total Xylenes*	0.478	0.150	04/08/2015	ND	5.29	88.1	6.00	0.465	
Total BTX	0.536	0.300	04/08/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 135 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	152	50.0	04/06/2015	ND	193	96.5	200	0.183	
DRO >C10-C28	1820	50.0	04/06/2015	ND	203	101	200	0.985	

Surrogate: 1-Chlorooctane 103 % 47.2-157

Surrogate: 1-Chlorooctadecane 114 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 YATES PETROLEUM CORPORATION
 AMBER CANNON
 105 S 4th Street
 Artesia NM, 88210
 Fax To: (505) 748-4635

 Received: 04/02/2015
 Reported: 04/09/2015
 Project Name: UNION FEDERAL SWD #1
 Project Number: 1RP-3568
 Project Location: 8-21S-32E, LEA COUNTY

 Sampling Date: 04/01/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: 2' (H500883-04)

BTX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	04/08/2015	ND	1.82	91.2	2.00	2.09	
Toluene*	0.301	0.200	04/08/2015	ND	1.74	86.9	2.00	0.754	
Ethylbenzene*	0.262	0.200	04/08/2015	ND	1.68	84.2	2.00	0.196	
Total Xylenes*	8.37	0.600	04/08/2015	ND	5.29	88.1	6.00	0.465	
Total BTX	8.93	1.20	04/08/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 115 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	426	50.0	04/06/2015	ND	193	96.5	200	0.183	
DRO >C10-C28	3510	50.0	04/06/2015	ND	203	101	200	0.985	

Surrogate: 1-Chlorooctane 121 % 47.2-157

Surrogate: 1-Chlorooctadecane 131 % 52.1-176

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



Project Name: Union Federal SWD #1

Project #: 1RP-3568

Project Loc: 8-21S-32E, Lea County

PO #: 205-2020

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

acannon@yatespetroleum.com

Fax No: 575-748-4131

Artesia, NM 88210

105 South 4th Street

Yates Petroleum Corporation

Amber Cannon

(lab use only)
ORDER #: H500883

LAB # (lab use only)					
FIELD CODE					
Beginning Depth		Ending Depth		Date Sampled	
Time Sampled		Field Filtered		Total #. of Containers	
Ice		HNO ₃		HCl	
H ₂ SO ₄		NaOH		Na ₂ S ₂ O ₃	
None		Other (Specify)		Matrix	
DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other		TPH: 418.1 8015M 8015I		TOTAL:	
TPH: TX 1005 TX 1006		Cations (Ca, Mg, Na, K)		Anions (Cl, SO ₄ , Alkalinity)	
SAR / ESP / CEC		Metals: As Ag Ba Cd Cr Pb Hg Se		Volatiles	
Semivolatiles		BTEX 8021B /5030 or BTEX 8260		RCI	
N.O.R.M.		Chlorides		SAR	
RUSH TAT (Pre-Schedule) 24, 48, 72 hrs		Standard TAT			

Reinquinished by:	Date	Time	Received by:	Date	Time
Amber Canon	4/2/2015		Alex Steiner	4/2/15	11:35
Reinquinished by:	Date	Time	Received by ELDT:	Date	Time

Special Instructions:	TPH: 8015B, BTEX: 8021B. Please show BTEX results as mg/kg. Please put chlorides on a separate report. Thank you.
Laboratory Comments:	Sample Containers Intact? <input checked="" type="checkbox"/> Y VOCs Free of HeadSpace? <input checked="" type="checkbox"/> Y Labels on container(s) <input checked="" type="checkbox"/> Y Custody seals on container(s) <input checked="" type="checkbox"/> Y Sample Hand Delivered by Sampler/Client Rep.? <input checked="" type="checkbox"/> Y by Courier? UPS DHL FedEx Lone Star Temperature Upon Receipt: 20°C



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 09, 2015

AMBER CANNON

YATES PETROLEUM CORPORATION

105 S 4th Street

Artesia, NM 88210

RE: UNION FEDERAL SWD #1

Enclosed are the results of analyses for samples received by the laboratory on 04/02/15 11:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 YATES PETROLEUM CORPORATION
 AMBER CANNON
 105 S 4th Street
 Artesia NM, 88210
 Fax To: (505) 748-4635

 Received: 04/02/2015
 Reported: 04/09/2015
 Project Name: UNION FEDERAL SWD #1
 Project Number: 1RP-3568
 Project Location: 8-21S-32E, LEA COUNTY

 Sampling Date: 04/01/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SURFACE (H500883-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11600	16.0	04/06/2015	ND	400	100	400	0.00	

Sample ID: 6" (H500883-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	9600	16.0	04/06/2015	ND	400	100	400	0.00		

Sample ID: 1' (H500883-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7600	16.0	04/06/2015	ND	400	100	400	0.00		

Sample ID: 2' (H500883-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10400	16.0	04/06/2015	ND	400	100	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



ARDEN LABORATORIES

101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Amber Cannon

Project Name: Union Federal SWD #1

Company Address: 105 South 4th Street

Project #: 1RP-3568

City/State/Zip: Artesia, NM 88210

Project Loc: 8-21S-32E, Lea County

Telephone No: 575-748-4111 or 575-513-8799

Fax No: 575-748-4131

Sampler Signature: Amber Cannon

e-mail: acannon@yatespetroleum.com

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

PO #: 205-2020

(lab use only)

ORDER #: H500883

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B / 5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides	SAR	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT	
1	Surface	Surf.	Surf.	4/1/2015	10:42 AM		1	X									S	X																
2	6"	6"	6"	4/1/2015	11:06 AM		1	X									S	X																
3	1'	1'	1'	4/1/2015	11:23 AM		1	X									S	X																
4	2'	2'	2'	4/1/2015	11:45 AM		1	X									S	X																

Special Instructions:

TPH: 8015B, BTEX: 8021B. Please show BTEX results as mg/kg. Please put chlorides on a separate report. Thank you.

Relinquished by:

Relinquished by:

Relinquished by:

Date

Date

Date

Time

Time

Time

Received by:

Received by:

Received by:

Date

Date

Date

Time

Time

Time

Laboratory Comments:

Sample Containers Intact?

VOCs Free of Headspace?

Labels on container(s)?

Custody seals on container(s)?

Sample Hand Delivered?

by Courier? UPS DHL FedEx

Temperature Upon Receipt:

#54

20°C



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) 748-4195
FAX

RE: Union Federal SWD #1

OrderNo.: 1507D85

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order: 1507D85

Date Reported: 8/7/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1

Lab Order: 1507D85

Lab ID: 1507D85-001 **Collection Date:** 7/29/2015 7:28:00 AM
Client Sample ID: 1-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	340	30		mg/Kg	20	8/4/2015 11:51:20 AM	20587

Lab ID: 1507D85-002 **Collection Date:** 7/29/2015 7:31:00 AM
Client Sample ID: 1-5' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	130	30		mg/Kg	20	8/4/2015 12:28:33 PM	20587

Lab ID: 1507D85-003 **Collection Date:** 7/29/2015 8:04:00 AM
Client Sample ID: 2-6' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	11000	750		mg/Kg	500	8/5/2015 1:00:08 PM	20587

Lab ID: 1507D85-004 **Collection Date:** 7/29/2015 8:09:00 AM
Client Sample ID: 2-7' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	8700	300		mg/Kg	200	8/5/2015 1:12:33 PM	20587

Lab ID: 1507D85-005 **Collection Date:** 7/29/2015 8:13:00 AM
Client Sample ID: 2-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	15000	750		mg/Kg	500	8/5/2015 1:24:58 PM	20587

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	Page 1 of 3
	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			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1507D85

Date Reported: 8/7/2015

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1

Lab Order: 1507D85

Lab ID:	1507D85-006	Collection Date:	7/29/2015 8:16:00 AM
Client Sample ID:	2-9'	Matrix:	SOIL
Analyses	Result	RL Qual Units	DF Date Analyzed Batch ID
EPA METHOD 300.0: ANIONS			
Chloride	5600	300 mg/Kg	200 8/5/2015 1:37:23 PM 20587
Analyses	Result	RL Qual Units	DF Date Analyzed Batch ID
EPA METHOD 300.0: ANIONS			
Chloride	2200	75 mg/Kg	50 8/5/2015 1:49:48 PM 20587
Lab ID:	1507D85-007	Collection Date:	7/29/2015 9:20:00 AM
Client Sample ID:	3-6'	Matrix:	SOIL
Analyses	Result	RL Qual Units	DF Date Analyzed Batch ID
EPA METHOD 300.0: ANIONS			
Chloride	440	30 mg/Kg	20 8/4/2015 2:07:49 PM 20587
Lab ID:	1507D85-008	Collection Date:	7/29/2015 9:25:00 AM
Client Sample ID:	3-7'	Matrix:	SOIL
Analyses	Result	RL Qual Units	DF Date Analyzed Batch ID
EPA METHOD 300.0: ANIONS			
Chloride	1500	75 mg/Kg	50 8/5/2015 2:02:12 PM 20587
Lab ID:	1507D85-009	Collection Date:	7/29/2015 9:35:00 AM
Client Sample ID:	3-8'	Matrix:	SOIL
Analyses	Result	RL Qual Units	DF Date Analyzed Batch ID
EPA METHOD 300.0: ANIONS			
Chloride	1200	75 mg/Kg	50 8/5/2015 2:14:37 PM 20587
Lab ID:	1507D85-010	Collection Date:	7/29/2015 9:42:00 AM
Client Sample ID:	3-9'	Matrix:	SOIL
Analyses	Result	RL Qual Units	DF Date Analyzed Batch ID
EPA METHOD 300.0: ANIONS			
Chloride			

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	Page 2 of 3
	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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507D85

07-Aug-15

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

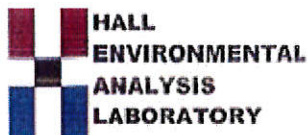
Sample ID	MB-20587	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	20587	RunNo:	27959					
Prep Date:	8/4/2015	Analysis Date:	8/4/2015	SeqNo:	841176	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-20587	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	20587	RunNo:	27959					
Prep Date:	8/4/2015	Analysis Date:	8/4/2015	SeqNo:	841177	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.5	90	110			

Qualifiers:

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

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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 Petroleum Corpora

Work Order Number: 1507D85

RcptNo: 1

Received by/date: AT 07/31/15

Logged By: Lindsay Mangin 7/31/2015 7:10:00 AM

Completed By: Lindsay Mangin 7/31/2015 8:24:11 AM

Reviewed By: CS 07/31/15

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°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 VCA 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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	21.0	Good	Yes			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Chain-of-Custody Record				Turn-Around Time:	
Client: Yates Petroleum Corporation		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush			
Mailing Address:		Project Name:		Union Federal SWD #1	
105 South 4th Street Artesia, NM 88210		Project #:		1RP-3568	
Phone #: 575-513-8799 or 575-748-4111		Project Manager:		Amber Griffin PO # 205-2020	
email or Fax#: acannon@yatespetroleum.com		Sampler:		Amber Griffin AG	
<input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		On Ice: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Accreditation: <input type="checkbox"/> NELAP <input type="checkbox"/> Other		Sample Temperature:		21.6	
<input type="checkbox"/> EDD (Type)		HEAL No.		15071585	
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type
7/29/2015	7:28	Soil	1 - 4'	1 - 4oz.	Not Required
7/29/2015	7:31	Soil	1 - 5'	1 - 4oz.	Not Required
7/29/2015	8:04	Soil	2 - 6'	1 - 4oz.	Not Required
7/29/2015	8:09	Soil	2 - 7'	1 - 4oz.	Not Required
7/29/2015	8:13	Soil	2 - 8'	1 - 4oz.	Not Required
7/29/2015	8:16	Soil	2 - 9'	1 - 4oz.	Not Required
7/29/2015	9:20	Soil	3 - 6'	1 - 4oz.	Not Required
7/29/2015	9:25	Soil	3 - 7'	1 - 4oz.	Not Required
7/29/2015	9:35	Soil	3 - 8'	1 - 4oz.	Not Required
7/29/2015	9:42	Soil	3 - 9'	1 - 4oz.	Not Required
Date: 7/30/15		Relinquished by: Amber Griffin		Received by: [Signature]	
Time: 7:30/15		Relinquished by: Amber Griffin		Date: 07/31/15	
Date: 7/30/15		Time: 7:30/15		Date: 07/31/15	
Time: 7:30/15		Time: 7:30/15		Time: 07/31/15	

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



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

August 10, 2015

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

RE: Union Federal SWD #1

OrderNo.: 1507D95

Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 9 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 www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

CLIENT: Yates Petroleum Corporation

Client Sample ID: 1-1'

Project: Union Federal SWD #1

Collection Date: 7/29/2015 7:21:00 AM

Lab ID: 1507D95-001

Matrix: SOIL

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

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	170	10		mg/Kg	1	8/3/2015 4:11:11 PM	20541
Surr: DNOP	98.0	57.9-140		%REC	1	8/3/2015 4:11:11 PM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/4/2015 1:05:03 AM	20550
Surr: BFB	87.6	75.4-113		%REC	1	8/4/2015 1:05:03 AM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	8/4/2015 1:05:03 AM	20550
Toluene	ND	0.049		mg/Kg	1	8/4/2015 1:05:03 AM	20550
Ethylbenzene	ND	0.049		mg/Kg	1	8/4/2015 1:05:03 AM	20550
Xylenes, Total	ND	0.097		mg/Kg	1	8/4/2015 1:05:03 AM	20550
Surr: 4-Bromofluorobenzene	93.3	80-120		%REC	1	8/4/2015 1:05:03 AM	20550

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
	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		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

CLIENT: Yates Petroleum Corporation

Client Sample ID: 1-2'

Project: Union Federal SWD #1

Collection Date: 7/29/2015 7:23:00 AM

Lab ID: 1507D95-002

Matrix: SOIL

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

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	140	10		mg/Kg	1	8/5/2015 11:19:39 AM	20541
Surr: DNOP	94.4	57.9-140		%REC	1	8/5/2015 11:19:39 AM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/4/2015 1:29:49 AM	20550
Surr: BFB	88.4	75.4-113		%REC	1	8/4/2015 1:29:49 AM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	8/4/2015 1:29:49 AM	20550
Toluene	ND	0.048		mg/Kg	1	8/4/2015 1:29:49 AM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/4/2015 1:29:49 AM	20550
Xylenes, Total	ND	0.096		mg/Kg	1	8/4/2015 1:29:49 AM	20550
Surr: 4-Bromofluorobenzene	94.0	80-120		%REC	1	8/4/2015 1:29:49 AM	20550

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
	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		

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation

Client Sample ID: 1-3'

Project: Union Federal SWD #1

Collection Date: 7/29/2015 7:25:00 AM

Lab ID: 1507D95-003

Matrix: SOIL

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

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	170	100		mg/Kg	10	8/3/2015 5:32:17 PM	20541
Surr: DNOP	0	57.9-140	S	%REC	10	8/3/2015 5:32:17 PM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/4/2015 1:54:34 AM	20550
Surr: BFB	89.8	75.4-113		%REC	1	8/4/2015 1:54:34 AM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	8/4/2015 1:54:34 AM	20550
Toluene	ND	0.048		mg/Kg	1	8/4/2015 1:54:34 AM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/4/2015 1:54:34 AM	20550
Xylenes, Total	ND	0.095		mg/Kg	1	8/4/2015 1:54:34 AM	20550
Surr: 4-Bromofluorobenzene	95.8	80-120		%REC	1	8/4/2015 1:54:34 AM	20550

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
	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		

Analytical ReportLab Order **1507D95**

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 2-3'**Project:** Union Federal SWD #1**Collection Date:** 7/29/2015 7:52:00 AM**Lab ID:** 1507D95-004**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 5:59:05 PM	20541
Surr: DNOP	104	57.9-140		%REC	1	8/3/2015 5:59:05 PM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/4/2015 2:19:17 AM	20550
Surr: BFB	91.6	75.4-113		%REC	1	8/4/2015 2:19:17 AM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	8/4/2015 2:19:17 AM	20550
Toluene	ND	0.049		mg/Kg	1	8/4/2015 2:19:17 AM	20550
Ethylbenzene	ND	0.049		mg/Kg	1	8/4/2015 2:19:17 AM	20550
Xylenes, Total	ND	0.098		mg/Kg	1	8/4/2015 2:19:17 AM	20550
Surr: 4-Bromofluorobenzene	98.2	80-120		%REC	1	8/4/2015 2:19:17 AM	20550

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
	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		

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 2-4'**Project:** Union Federal SWD #1**Collection Date:** 7/29/2015 7:55:00 AM**Lab ID:** 1507D95-005**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/3/2015 6:26:29 PM	20541
Surr: DNOP	102	57.9-140		%REC	1	8/3/2015 6:26:29 PM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/4/2015 2:44:04 AM	20550
Surr: BFB	89.9	75.4-113		%REC	1	8/4/2015 2:44:04 AM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	8/4/2015 2:44:04 AM	20550
Toluene	ND	0.048		mg/Kg	1	8/4/2015 2:44:04 AM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/4/2015 2:44:04 AM	20550
Xylenes, Total	ND	0.095		mg/Kg	1	8/4/2015 2:44:04 AM	20550
Surr: 4-Bromofluorobenzene	95.4	80-120		%REC	1	8/4/2015 2:44:04 AM	20550

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
	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		

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation

Client Sample ID: 2-5'

Project: Union Federal SWD #1

Collection Date: 7/29/2015 7:58:00 AM

Lab ID: 1507D95-006

Matrix: SOIL

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

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 6:53:27 PM	20541
Surr: DNOP	102	57.9-140		%REC	1	8/3/2015 6:53:27 PM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/4/2015 10:07:35 AM	20550
Surr: BFB	92.1	75.4-113		%REC	1	8/4/2015 10:07:35 AM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	8/4/2015 10:07:35 AM	20550
Toluene	ND	0.048		mg/Kg	1	8/4/2015 10:07:35 AM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/4/2015 10:07:35 AM	20550
Xylenes, Total	ND	0.096		mg/Kg	1	8/4/2015 10:07:35 AM	20550
Surr: 4-Bromofluorobenzene	99.9	80-120		%REC	1	8/4/2015 10:07:35 AM	20550

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
	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		

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation

Client Sample ID: 3-3'

Project: Union Federal SWD #1

Collection Date: 7/29/2015 9:05:00 AM

Lab ID: 1507D95-007

Matrix: SOIL

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

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 7:20:30 PM	20541
Surr: DNOP	102	57.9-140		%REC	1	8/3/2015 7:20:30 PM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/4/2015 10:32:21 AM	20550
Surr: BFB	89.6	75.4-113		%REC	1	8/4/2015 10:32:21 AM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	8/4/2015 10:32:21 AM	20550
Toluene	ND	0.047		mg/Kg	1	8/4/2015 10:32:21 AM	20550
Ethylbenzene	ND	0.047		mg/Kg	1	8/4/2015 10:32:21 AM	20550
Xylenes, Total	ND	0.094		mg/Kg	1	8/4/2015 10:32:21 AM	20550
Surr: 4-Bromofluorobenzene	97.3	80-120		%REC	1	8/4/2015 10:32:21 AM	20550

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
	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		

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation

Client Sample ID: 3-4'

Project: Union Federal SWD #1

Collection Date: 7/29/2015 9:07:00 AM

Lab ID: 1507D95-008

Matrix: SOIL

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

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 7:47:32 PM	20541
Surr: DNOP	106	57.9-140		%REC	1	8/3/2015 7:47:32 PM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/4/2015 10:57:19 AM	20550
Surr: BFB	91.2	75.4-113		%REC	1	8/4/2015 10:57:19 AM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	8/4/2015 10:57:19 AM	20550
Toluene	ND	0.047		mg/Kg	1	8/4/2015 10:57:19 AM	20550
Ethylbenzene	ND	0.047		mg/Kg	1	8/4/2015 10:57:19 AM	20550
Xylenes, Total	ND	0.095		mg/Kg	1	8/4/2015 10:57:19 AM	20550
Surr: 4-Bromofluorobenzene	98.7	80-120		%REC	1	8/4/2015 10:57:19 AM	20550

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
	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		

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation

Client Sample ID: 3-5'

Project: Union Federal SWD #1

Collection Date: 7/29/2015 9:14:00 AM

Lab ID: 1507D95-009

Matrix: SOIL

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

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 8:14:21 PM	20541
Surr: DNOP	101	57.9-140		%REC	1	8/3/2015 8:14:21 PM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/4/2015 11:22:21 AM	20550
Surr: BFB	88.2	75.4-113		%REC	1	8/4/2015 11:22:21 AM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	8/4/2015 11:22:21 AM	20550
Toluene	ND	0.048		mg/Kg	1	8/4/2015 11:22:21 AM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/4/2015 11:22:21 AM	20550
Xylenes, Total	ND	0.096		mg/Kg	1	8/4/2015 11:22:21 AM	20550
Surr: 4-Bromofluorobenzene	94.2	80-120		%REC	1	8/4/2015 11:22:21 AM	20550

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
	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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507D95

10-Aug-15

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

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			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	10		10.00		101	57.9	140			

Sample ID	LCS-20541	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	20541	RunNo:	27904					
Prep Date:	7/31/2015	Analysis Date:	8/3/2015	SeqNo:	839332	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	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
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507D95

10-Aug-15

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

Sample ID	MB-20550	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	20550	RunNo:	27919					
Prep Date:	7/31/2015	Analysis Date:	8/3/2015	SeqNo:	839770	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	910		1000		91.4	75.4	113			

Sample ID	LCS-20550	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	20550	RunNo:	27919					
Prep Date:	7/31/2015	Analysis Date:	8/3/2015	SeqNo:	839772	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	79.6	122			
Surr: BFB	1000		1000		101	75.4	113			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	R27950	RunNo:	27950					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	840981	Units:	%REC			
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:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	R27950	RunNo:	27950					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	840982	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	75.4	113			

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507D95

10-Aug-15

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

Sample ID	MB-20550	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	20550	RunNo:	27919					
Prep Date:	7/31/2015	Analysis Date:	8/3/2015	SeqNo:	839800	Units:	mg/Kg			
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-Bromofluorobenzene	0.99		1.000		99.1	80	120			

Sample ID	LCS-20550	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	20550	RunNo:	27919					
Prep Date:	7/31/2015	Analysis Date:	8/3/2015	SeqNo:	839801	Units:	mg/Kg			
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-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	R27950	RunNo:	27950					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841022	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		99.5	80	120			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	R27950	RunNo:	27950					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841023	Units:	%REC			
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
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.hallenvironmental.com

Sample Log-In Check List

Client Name: Yates Petroleum Corpora

Work Order Number: 1507D95

ReplNo: 1

Received by/date:

JA

07/31/15

Logged By: Lindsay Mangin

7/31/2015 8:00:00 AM

Lindsay Mangin

Completed By: Lindsay Mangin

7/31/2015 9:27:19 AM

Lindsay Mangin

Reviewed By:

CS

07/31/15

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

Special Handling (if applicable)

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

Person Notified:

Date

By Whom

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Not Present			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
7/29/2015	7:21	Soil	1 - 1'	1 - 4oz.	Ice	-001
7/29/2015	7:23	Soil	1 - 2'	1 - 4oz.	Ice	-002
7/29/2015	7:25	Soil	1 - 3'	1 - 4oz.	Ice	-003
7/29/2015	7:52	Soil	2 - 3'	1 - 4oz.	Ice	-004
7/29/2015	7:55	Soil	2 - 4'	1 - 4oz.	Ice	-005
7/29/2015	7:58	Soil	2 - 5'	1 - 4oz.	Ice	-006
7/29/2015	9:05	Soil	3 - 3'	1 - 4oz.	Ice	-007
7/29/2015	9:07	Soil	3 - 4'	1 - 4oz.	Ice	-008
7/29/2015	9:14	Soil	3 - 5'	1 - 4oz.	Ice	-009

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

necessary samples submitted to Hal 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 10, 2015

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

RE: Union Federal SWD #1

OrderNo.: 1507D95

Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 9 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 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", with a stylized flourish at the end.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

CLIENT: Yates Petroleum Corporation

Client Sample ID: 1-1'

Project: Union Federal SWD #1

Collection Date: 7/29/2015 7:21:00 AM

Lab ID: 1507D95-001

Matrix: SOIL

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

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	690	30		mg/Kg	20	8/4/2015 9:59:21 PM	20603

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
	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		

Analytical ReportLab Order **1507D95**Date Reported: **8/10/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 1-2'**Project:** Union Federal SWD #1**Collection Date:** 7/29/2015 7:23:00 AM**Lab ID:** 1507D95-002**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	83	30		mg/Kg	20	8/4/2015 10:11:45 PM	20603

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
	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		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

CLIENT: Yates Petroleum Corporation

Client Sample ID: 1-3'

Project: Union Federal SWD #1

Collection Date: 7/29/2015 7:25:00 AM

Lab ID: 1507D95-003

Matrix: SOIL

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

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	8/4/2015 10:24:09 PM	20603

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
	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		

Analytical ReportLab Order **1507D95**

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 2-3'**Project:** Union Federal SWD #1**Collection Date:** 7/29/2015 7:52:00 AM**Lab ID:** 1507D95-004**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	1600	75		mg/Kg	50	8/5/2015 6:22:49 PM	20603

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
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		

Analytical Report

Lab Order 1507D95

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 2-4'**Project:** Union Federal SWD #1**Collection Date:** 7/29/2015 7:55:00 AM**Lab ID:** 1507D95-005**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	5700	300		mg/Kg	200	8/5/2015 6:35:14 PM	20603

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
	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		

Analytical ReportLab Order **1507D95**

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 2-5'**Project:** Union Federal SWD #1**Collection Date:** 7/29/2015 7:58:00 AM**Lab ID:** 1507D95-006**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	2500	150		mg/Kg	100	8/5/2015 6:47:39 PM	20603

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
	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		

Analytical ReportLab Order **1507D95**

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 3-3'**Project:** Union Federal SWD #1**Collection Date:** 7/29/2015 9:05:00 AM**Lab ID:** 1507D95-007**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	5600	300		mg/Kg	200	8/5/2015 7:00:04 PM	20603

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
	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		

Analytical ReportLab Order **1507D95**Date Reported: **8/10/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 3-4'**Project:** Union Federal SWD #1**Collection Date:** 7/29/2015 9:07:00 AM**Lab ID:** 1507D95-008**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	430	30		mg/Kg	20	8/4/2015 11:51:01 PM	20603

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
	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		

Analytical ReportLab Order **1507D95**

Date Reported: 8/10/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 3-5'**Project:** Union Federal SWD #1**Collection Date:** 7/29/2015 9:14:00 AM**Lab ID:** 1507D95-009**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	2500	75		mg/Kg	50	8/5/2015 7:12:29 PM	20603

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
	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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507D95

10-Aug-15

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

Sample ID	MB-20603	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	20603	RunNo:	27959					
Prep Date:	8/4/2015	Analysis Date:	8/4/2015	SeqNo:	841213	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-20603	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	20603	RunNo:	27959					
Prep Date:	8/4/2015	Analysis Date:	8/4/2015	SeqNo:	841214	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.4	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 | |



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 Petroleum Corpora

Work Order Number: 1507D95

ReplNo: 1

Received by/date:

JA

07/31/15

Logged By: Lindsay Mangin

7/31/2015 8:00:00 AM

Completed By: Lindsay Mangin

7/31/2015 9:27:19 AM

Reviewed By:

CS

07/31/15

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°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 ☒

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

Adjusted?

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

Checked by:

(If no, notify customer for authorization.)

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	1.2	Good	Not Present			

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Chain-of-Custody Record				Turn-Around Time:		
Client: Yates Petroleum Corporation		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush		Project Name:		
Mailing Address:				Union Federal SWD #1		
105 South 4th Street Artesia, NM 88210		Project #:		1RP-3568		
Phone #: 575-513-8799 or 575-748-4111		Project Manager:		Amber Griffin		
email or Fax#: acannon@yatespetroleum.com		PO # 205-2020		Amber Griffin AG		
QA/QC Package:				Sampler:		
<input type="checkbox"/> Standard		<input type="checkbox"/> Level 4 (Full Validation)		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Accreditation:				Sample Temperature: 1.2		
<input type="checkbox"/> NELAP		<input type="checkbox"/> Other		HEAL No. 1507D95		
<input type="checkbox"/> EDD (Type)						
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
7/29/2015	7:21	Soil	1 - 1'	1 - 4oz.	Ice	-001
7/29/2015	7:23	Soil	1 - 2'	1 - 4oz.	Ice	-002
7/29/2015	7:25	Soil	1 - 3'	1 - 4oz.	Ice	-003
7/29/2015	7:52	Soil	2 - 3'	1 - 4oz.	Ice	-004
7/29/2015	7:55	Soil	2 - 4'	1 - 4oz.	Ice	-005
7/29/2015	7:58	Soil	2 - 5'	1 - 4oz.	Ice	-006
7/29/2015	9:05	Soil	3 - 3'	1 - 4oz.	Ice	-007
7/29/2015	9:07	Soil	3 - 4'	1 - 4oz.	Ice	-008
7/29/2015	9:14	Soil	3 - 5'	1 - 4oz.	Ice	-009
Date: 7/30/15	Time:	Relinquished by: Amber Griffin	Received by: J.E. Ovelly	Date: 07/31/15	Time: 0800	
Date:	Time:	Relinquished by:	Received by:	Date:	Time:	

If necessary, samples submitted to Hal 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

January 06, 2016

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

RE: Union Federal SWD #1

OrderNo.: 1512A71

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 8 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 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order: 1512A71

Date Reported: 1/6/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1

Lab Order: 1512A71

Lab ID: 1512A71-001

Collection Date: 12/15/2015 8:32:00 AM

Client Sample ID: 2-15'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	5500	300		mg/Kg	200	12/31/2015 9:09:41 PM	23002

Analyst: LGT

Lab ID: 1512A71-002

Collection Date: 12/15/2015 8:43:00 AM

Client Sample ID: 2-20'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	1700	75		mg/Kg	50	12/31/2015 9:22:05 PM	23002

Analyst: LGT

Lab ID: 1512A71-003

Collection Date: 12/15/2015 8:54:00 AM

Client Sample ID: 2-25'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	1800	75		mg/Kg	50	12/31/2015 9:34:30 PM	23002

Analyst: LGT

Lab ID: 1512A71-004

Collection Date: 12/15/2015 9:05:00 AM

Client Sample ID: 2-30'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	1600	75		mg/Kg	50	12/31/2015 9:46:55 PM	23002

Analyst: LGT

Lab ID: 1512A71-005

Collection Date: 12/15/2015 9:34:00 AM

Client Sample ID: 2-35'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	2000	75		mg/Kg	50	12/31/2015 9:59:19 PM	23002

Analyst: LGT

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
	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	

Analytical Report

Lab Order: 1512A71

Date Reported: 1/6/2016

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation
Project: Union Federal SWD #1**Lab Order:** 1512A71**Lab ID:** 1512A71-006**Collection Date:** 12/15/2015 9:55:00 AM**Client Sample ID:** 2-40'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
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EPA METHOD 300.0: ANIONS

Analyst: LGT

Chloride	1800	75		mg/Kg	50	12/31/2015 10:36:34 PM	23002
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Lab ID: 1512A71-007**Collection Date:** 12/15/2015 10:25:00 AM**Client Sample ID:** 2-45'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
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EPA METHOD 300.0: ANIONS

Analyst: LGT

Chloride	700	30		mg/Kg	20	12/30/2015 3:13:10 PM	23002
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Lab ID: 1512A71-008**Collection Date:** 12/15/2015 10:56:00 AM**Client Sample ID:** 2-50'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
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EPA METHOD 300.0: ANIONS

Analyst: LGT

Chloride	230	30		mg/Kg	20	12/30/2015 1:06:47 AM	23001
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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
	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	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512A71

06-Jan-16

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

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	Analysis Date:	12/30/2015	SeqNo:	953296	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-23001	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	23001	RunNo:	31145					
Prep Date:	12/29/2015	Analysis Date:	12/30/2015	SeqNo:	953297	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	90	110			

Sample ID	MB-23002	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	23002	RunNo:	31168					
Prep Date:	12/29/2015	Analysis Date:	12/30/2015	SeqNo:	954140	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-23002	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	23002	RunNo:	31168					
Prep Date:	12/29/2015	Analysis Date:	12/30/2015	SeqNo:	954141	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.4	90	110			

Qualifiers:

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

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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 Petroleum Corporat

Work Order Number: 1512A71

RcptNo: 1

Received by/date:

[Signature]

12/23/15

Logged By: Lindsay Mangin

12/23/2015 9:40:00 AM

[Signature]

Completed By: Lindsay Mangin

12/23/2015 10:25:55 AM

[Signature]

Reviewed By:

CS

12/23/15

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°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? Yes ☒ No ☐
(Note discrepancies on chain of custody) # of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met? Yes ☒ No ☐ Checked by:
(If no, notify customer for authorization.)

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	9.8	Good	Yes			

www.hallenvironmental.com

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

Analysis Request

[illegible][illegible][illegible]

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[illegible][illegible][illegible]

Received by	Date	Time

10/15/19

Time	Date
12:00	12/12/17

Received by: _____ Date: _____

10

1

contracted to other accredited laboratories. This serves as notice of

Age Group	2006	2007	2008
18-29	~75	~78	~82
30-49	~65	~68	~72
50-69	~55	~58	~62
70+	~45	~48	~52

[illegible]

If necessary, samples submitted to Hall Environmental may be sub-

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



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

August 24, 2015

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

RE: Union Federal SWD #1

OrderNo.: 1508707

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 6 sample(s) on 8/14/2015 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 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: 1508707

Date Reported: 8/24/2015

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1

Lab Order: 1508707

Lab ID: 1508707-001

Collection Date: 7/29/2015 8:20:00 AM

Client Sample ID: 2-10'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	4800	150		mg/Kg	100	8/20/2015 8:01:16 PM	20871

Analyst: LGT

Lab ID: 1508707-002

Collection Date: 7/29/2015 8:24:00 AM

Client Sample ID: 2-11'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	6600	300		mg/Kg	200	8/20/2015 8:13:41 PM	20871

Analyst: LGT

Lab ID: 1508707-003

Collection Date: 7/29/2015 8:28:00 AM

Client Sample ID: 2-12'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	14000	750		mg/Kg	500	8/20/2015 8:26:05 PM	20871

Analyst: LGT

Lab ID: 1508707-004

Collection Date: 7/29/2015 8:32:00 AM

Client Sample ID: 2-13'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	15000	750		mg/Kg	500	8/20/2015 8:38:30 PM	20871

Analyst: LGT

Lab ID: 1508707-005

Collection Date: 7/29/2015 9:47:00 AM

Client Sample ID: 3-10'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	480	30		mg/Kg	20	8/19/2015 1:50:55 PM	20871

Analyst: LGT

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 1 of 2
	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		

Analytical Report

Lab Order: 1508707

Date Reported: 8/24/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation**Lab Order:** 1508707**Project:** Union Federal SWD #1**Lab ID:** 1508707-006**Collection Date:** 7/29/2015 9:53:00 AM**Client Sample ID:** 3-11'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
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EPA METHOD 300.0: ANIONS

Analyst: LGT

Chloride	630	30		mg/Kg	20	8/19/2015 2:03:20 PM	20871
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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
	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		

Sample Log-In Check List

Client Name: Yates Petroleum Corpora

Work Order Number: 1508707

ReptNo: 1

Received by/date:

CS

08/14/15

Logged By: Ashley Gallegos

8/14/2015 9:18:00 AM

Ag

Completed By: Ashley Gallegos

8/14/2015 1:48:59 PM

Ag

Reviewed By:

Ja

08/14/15

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

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Yes			

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.taienvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (6021)	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	Arsenic (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (" or N)
7/29/2015	8:20	Soil	2 - 10'	1 - 4oz.	Not Required	1508707								X				
7/29/2015	8:24	Soil	2 - 11'	1 - 4oz.	Not Required	-002								X				
7/29/2015	8:28	Soil	2 - 12'	1 - 4oz.	Not Required	-003								X				
7/29/2015	8:32	Soil	2 - 13'	1 - 4oz.	Not Required	-004								X				
7/29/2015	9:47	Soil	3 - 10'	1 - 4oz.	Not Required	-005								X				
7/29/2015	9:53	Soil	3 - 11'	1 - 4oz.	Not Required	-006								X				

Remarks:	Anions: Chloride only.
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Date:	Time	Relinquished by:	Received by:	Date	Time
8/12/15		Amber Griffin	Celine Jones	08/14/15	0918

Any sub-contracted data will be clearly notated on the analytical report. This serves as notice of this possibility. Any sub-contracted laboratories may be sub-contracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.