

MARTIN YATES, III  
1912-1985

FRANK W. YATES  
1936-1986

S.P. YATES  
1914-2008



105 SOUTH FOURTH STREET  
ARTESIA, NEW MEXICO 88210-2118

TELEPHONE (575) 748-1471

[www.yatespetroleum.com](http://www.yatespetroleum.com)

JOHN A. YATES  
CHAIRMAN EMERITUS

JOHN A. YATES JR.  
CHAIRMAN OF THE BOARD

DOUGLAS E. BROOKS  
PRESIDENT  
CHIEF EXECUTIVE OFFICER

JOHN D. PERINI  
CHIEF FINANCIAL OFFICER

April 4, 2016

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

RE: Juniper BIP Federal #5  
30-015-28577  
Section 4, T24S-R29E  
Eddy County, New Mexico

Mr. Bratcher or Ms. Patterson,

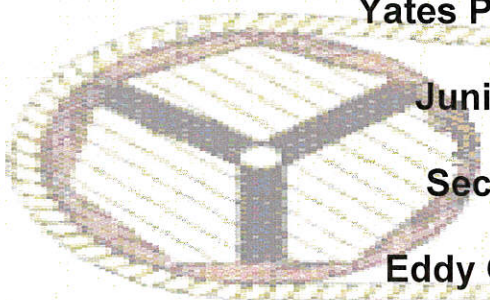
Yates Petroleum Corporation would like to submit the following plan of work to you regarding the release that occurred at the above mentioned facility on January 1, 2016 (2RP-3501). The release was 60 barrels of produced water and 80 barrels of crude oil with 58 barrels of produced water and 78 barrels of crude oil recovered.

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

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

Thank You,

Amber Griffin  
Environmental Regulatory Agent  
Yates Petroleum Corporation



**Yates Petroleum Corporation**

**Juniper BIP Federal #5**

**Section 4, T24S-R29E**

**Eddy County, New Mexico**

**April 4, 2016**

## **I. Location**

The release area is located: East from Malaga on Duarte Road (720) for 1.3 miles. Turn south on McDonald Road (746) and follow for approximately 3.1 miles. Turn northeast on Dogtown Road (788) and follow for approximately 2.9 miles. Turn east and follow lease road for approximately 0.6 miles. Turn north and follow lease road for approximately 1.5 miles. Turn east and follow road for approximately 0.4 miles. Turn south for approximately 0.2 miles. Turn west to Juniper BIP Federal #5.

## **II. Background**

On January 1, 2016, Yates had a release of 60 barrels produced water and 80 barrels of crude oil with 58 barrels produced water and 78 barrels of crude oil recovered. The area affected from this release was within a lined/bermed battery and an area to the northwest of the location in the pasture. At the time of the release, Yates discovered there was an open berm drain valve on the northwest corner of the berm allowing released fluids to flow into the pasture. As a result of the release getting out of the lined/bermed battery, the berm drain valve has been capped in order to prevent a similar incident in the future. An initial Form C-141 was submitted, via e-mail, to the NMOCD District II on January 14, 2016.

On January 27, 2016 Yates visited the site and collected three initial soil samples from the surface of the release area using a shovel; the hard rock/caliche that was encountered prevented further delineation with a shovel. The release area was split into three separate sections for sampling. The surface soil samples were sent to an approved NMOCD laboratory and tested for BTEX 8021B, TPH 8015M, and Chlorides 300.0. Yates received the analytical results on February 5, 2016 (Report 1601B19 attached to this work plan). The analytical results showed that chloride levels were within acceptable levels. The analytical results also showed that both BTEX and TPH were at levels above NMOCD RRAL's, prompting further delineation for BTEX and TPH.

Yates returned to the site on February 9, 2016 and collected soil samples from the depths of 1' - 3' below the surface level with a backhoe for all three sections of the release area. Due to the hardness of the rock/caliche, the backhoe that was used could not successfully sample further than 3'. The soil samples were sent to an approved NMOCD laboratory and tested for BTEX 8021B and TPH 8015M. Yates received the analytical results on February 18, 2016 (Report 1602541 attached to this work plan). The analytical results showed that BTEX and TPH levels had delineated to levels below NMOCD RRAL's in Section 3 of the release. The results also showed that BTEX and TPH levels were still above NMOCD RRAL's for both Sections 1 and 2 of the release area.

Yates returned to the site on March 8, 2016 and collected soil samples from the depths of 4' - 6' below the surface level using a different backhoe for Sections 1 and 2 of the release area. The soil samples were sent to an approved NMOCD laboratory and tested for BTEX 8021B and TPH 8015M. Yates received the analytical results on March 15, 2016 (Report 1603548 attached to this work plan). The analytical results showed that BTEX and TPH had delineated to levels below NMOCD RRAL's in both Sections 1 and 2 of the release area.

### **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 75' feet making the site ranking for this site a ten (10). Watercourses in the area are dry except for infrequent flows in response to major precipitation events.

The ranking for this site is ten (10) based on the following:

Depth to ground water	50-99'
Wellhead Protection Area	> 1000'
Distance to surface water body	> 1000'

### **IV. Soils**

The area consists of soils that are caliche and hard rock. Hard rock/caliche was encountered from approximately 6" below the surface level and continued past the 6' level that sampling was stopped at.

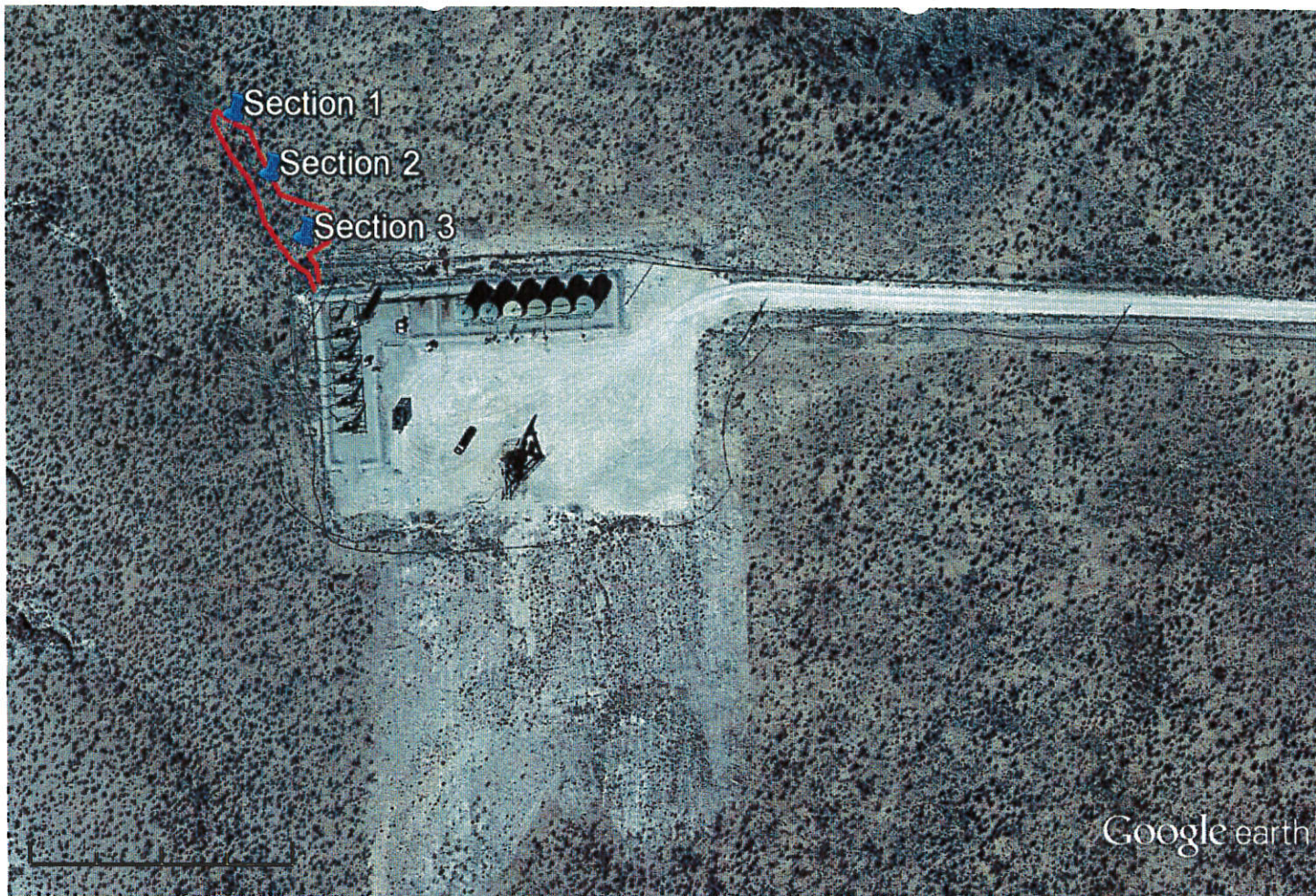
### **V. Scope of Work**

Based off the analytical reports which show complete vertical delineation, Yates proposes to remediate the soils to TPH and BTEX levels below NMOCD RRALs using Micro-Blaze.

- Heavy equipment will be used to break up the hard rock/caliche to allow the Micro-Blaze the ability to penetrate the impacted soils. The soils will be treated in place.
- Yates will mix in a 3% Micro-Blaze solution with the soils. The treated soils will be sampled at various spots/depths and turned every 30 days after the treatment, for a 90 day period. If at any time analytical results show TPH and BTEX levels have dropped below the NMOCD RRALs, Yates will ask for closure approval. If at the end of the 90 day period analytical results show that TPH and BTEX levels are still above the NMOCD RRALs, Yates will mix in a second treatment of 3% Micro-Blaze, sampling and turning the soils for an additional 90 day period.
- Anytime the stockpiled soils are turned, water will be added to the soils to reactivate the Micro-Blaze.

Once all soils are within NMOCD RRAL's, Yates will submit a Final Form C-141 to NMOCD requesting closure of this release.





Google earth

feet 500  
meters 100





# Juniper BIP Federal #5

	Sample Area	Sample Date	Analytical Report	Sample Type	Depth	B	T	E	X	BTEX	GRO	DRO	TOTAL	Chloride
1 - Surface	Release Area	1/27/2016	1601B19	Grab/Shovel	Surface	ND	15	12	63	90	1,200	19,000	20,200	ND
1 - 1'	Release Area	2/9/2016	1602541	Grab/Backhoe	1'	10	120	37	170	337	3,100	7,300	10,400	-
1 - 2'	Release Area	2/9/2016	1602541	Grab/Backhoe	2'	0.4	8.7	5.6	28	42.7	530	900	1,430	-
1 - 3'	Release Area	2/9/2016	1602541	Grab/Backhoe	3'	0.33	8.4	5.7	28	42.43	630	860	1,490	-
1 - 4'	Release Area	3/8/2016	1603548	Grab/Backhoe	4'	ND	ND	ND	ND	ND	ND	ND	ND	-
1 - 5'	Release Area	3/8/2016	1603548	Grab/Backhoe	5'	ND	ND	ND	ND	ND	ND	ND	ND	-
1 - 6'	Release Area	3/8/2016	1603548	Grab/Backhoe	6'	ND	ND	ND	ND	ND	ND	ND	ND	-
2 - Surface	Release Area	1/27/2016	1601B19	Grab/Shovel	Surface	ND	7.7	5.1	29	41.8	650	23,000	23,650	ND
2 - 1'	Release Area	2/9/2016	1602541	Grab/Backhoe	1'	33	210	52	240	535	5,100	5,400	10,500	-
2 - 2'	Release Area	2/9/2016	1602541	Grab/Backhoe	2'	0.058	0.52	0.52	2.9	3.998	67	76	143	-
2 - 3'	Release Area	2/9/2016	1602541	Grab/Backhoe	3'	0.25	6.5	3.4	16	26.15	320	1,100	1,420	-
2 - 4'	Release Area	3/8/2016	1603548	Grab/Backhoe	4'	ND	ND	ND	ND	ND	ND	ND	ND	-
2 - 5'	Release Area	3/8/2016	1603548	Grab/Backhoe	5'	ND	ND	ND	ND	ND	ND	ND	ND	-
2 - 6'	Release Area	3/8/2016	1603548	Grab/Backhoe	6'	ND	ND	ND	ND	ND	ND	ND	ND	-
3 - Surface	Release Area	1/27/2016	1601B19	Grab/Shovel	Surface	ND	35	25	84	144	1,900	29,000	30,900	170
3 - 1'	Release Area	2/9/2016	1602541	Grab/Backhoe	1'	85	360	80	350	875	6,800	11,000	17,800	-
3 - 2'	Release Area	2/9/2016	1602541	Grab/Backhoe	2'	0.054	0.27	0.22	1.2	1.744	29	28	57	-
3 - 3'	Release Area	2/9/2016	1602541	Grab/Backhoe	3'	ND	0.087	0.090	0.56	0.7	17	50	67	-

**Site Ranking is TEN (10).** Depth to Ground Water 50'-99' (approx. 50-75'), per ChevronTexaco Trend Map).

All results are ppm.

Released: 60 B/PW, 80 B/O; Recovered: 58 B/PW, 78 B/O. Release Date: 1/1/2016. 2RP-3501



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

February 05, 2016

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

RE: Juniper BIP Federal #5

OrderNo.: 1601B19

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/29/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1601B19

Date Reported: 2/5/2016

**CLIENT:** Yates Petroleum Corporation  
**Project:** Juniper BIP Federal #5

**Lab Order:** 1601B19

**Lab ID:** 1601B19-001

**Collection Date:** 1/27/2016 11:58:00 AM

**Client Sample ID:** 1-Surface

**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: LGT
Chloride	ND	30		mg/Kg	20	2/1/2016 9:53:06 PM	23515

**Lab ID:** 1601B19-002

**Collection Date:** 1/27/2016 12:00:00 PM

**Client Sample ID:** 2-Surface

**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: LGT
Chloride	ND	30		mg/Kg	20	2/1/2016 10:05:32 PM	23515

**Lab ID:** 1601B19-003

**Collection Date:** 1/27/2016 12:02:00 PM

**Client Sample ID:** 3-Surface

**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: LGT
Chloride	170	30		mg/Kg	20	2/1/2016 10:42:47 PM	23515

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

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



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1601B19

05-Feb-16

Client: Yates Petroleum Corporation

Project: Juniper BIP Federal #5

Sample ID	MB-23515	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	23515	RunNo:	31841					
Prep Date:	2/1/2016	Analysis Date:	2/1/2016	SeqNo:	974435	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-23515	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	23515	RunNo:	31841					
Prep Date:	2/1/2016	Analysis Date:	2/1/2016	SeqNo:	974436	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

### Qualifiers:

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



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4167  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Yates Petroleum Corpora

Work Order Number: 1601B19

ReptNo: 1

Received by/date:

Logged By: Lindsay Mangin

1/29/2016 9:00:00 AM

Completed By: Lindsay Mangin

1/29/2016 1:47:06 PM

Reviewed By:

### Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☒

No ☐

Not Present ☐

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

### Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

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



# Chain-of-Custody Record

Client: Yates Petroleum Corporation

Mailing Address:

05 South 4th Street Artesia, NM 88210

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

Email or Fax#: [agriffin@yatespetroleum.com](mailto:agriffin@yatespetroleum.com)

A/QC Package: ☐ Level 4 (Full Validation)

Standard: ☐ NELAP ☐ Other

Accreditation: ☐ EDD (Type)

Turn-Around Time:

X Standard ☐ Rush

Project Name:

Juniper BIP Federal #5

Project #:

2RP-3501

Project Manager:

Amber Griffin

PO # 205-2020

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 7.0

Date Time Matrix Sample Request ID

Container Type and #

Preservative Type

HEAL No.

1601B19

1 - 4oz. Ice

1 - 4oz. Ice

1 - 4oz. Ice

Date Time

Relinquished by:

Received by:

Date Time

01/29/16 0900

Received by:

Amber Griffin

28116

Time

Relinquished by:

Amber Griffin

28116

Time

Relinquished by:

Amber Griffin

28116

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Relinquished by:

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

February 05, 2016

Amber Griffin

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

RE: Juniper BIP Federal #5

OrderNo.: 1601B19

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/29/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Analytical Report**

Lab Order 1601B19

Date Reported: 2/5/2016

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 1-Surface**Project:** Juniper BIP Federal #5**Collection Date:** 1/27/2016 11:58:00 AM**Lab ID:** 1601B19-001**Matrix:** SOIL**Received Date:** 1/29/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	19000	980		mg/Kg	100	2/4/2016 9:50:55 AM	23511
Surr: DNOP	0	70-130	S	%Rec	100	2/4/2016 9:50:55 AM	23511
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	1200	240		mg/Kg	50	2/2/2016 9:53:43 PM	23477
Surr: BFB	185	66.2-112	S	%Rec	50	2/2/2016 9:53:43 PM	23477
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	4.7		mg/Kg	50	2/2/2016 9:53:43 PM	23477
Benzene	ND	1.2		mg/Kg	50	2/2/2016 9:53:43 PM	23477
Toluene	15	2.4		mg/Kg	50	2/2/2016 9:53:43 PM	23477
Ethylbenzene	12	2.4		mg/Kg	50	2/2/2016 9:53:43 PM	23477
Xylenes, Total	63	4.7		mg/Kg	50	2/2/2016 9:53:43 PM	23477
Surr: 4-Bromofluorobenzene	117	80-120		%Rec	50	2/2/2016 9:53:43 PM	23477

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

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

**Analytical Report**

Lab Order 1601B19

Date Reported: 2/5/2016

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Yates Petroleum Corporation**Client Sample ID:** 2-Surface**Project:** Juniper BIP Federal #5**Collection Date:** 1/27/2016 12:00:00 PM**Lab ID:** 1601B19-002**Matrix:** SOIL**Received Date:** 1/29/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	23000	930		mg/Kg	100	2/4/2016 10:18:07 AM	23511
Surr: DNOP	0	70-130	S	%Rec	100	2/4/2016 10:18:07 AM	23511
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	650	230		mg/Kg	50	2/1/2016 10:49:08 PM	23477
Surr: BFB	151	66.2-112	S	%Rec	50	2/1/2016 10:49:08 PM	23477
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	4.7		mg/Kg	50	2/2/2016 10:17:00 PM	23477
Benzene	ND	1.2		mg/Kg	50	2/2/2016 10:17:00 PM	23477
Toluene	7.7	2.3		mg/Kg	50	2/2/2016 10:17:00 PM	23477
Ethylbenzene	5.1	2.3		mg/Kg	50	2/2/2016 10:17:00 PM	23477
Xylenes, Total	29	4.7		mg/Kg	50	2/2/2016 10:17:00 PM	23477
Surr: 4-Bromofluorobenzene	119	80-120		%Rec	50	2/2/2016 10:17:00 PM	23477

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

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



# Analytical Report

Lab Order 1601B19

Date Reported: 2/5/2016

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation

Client Sample ID: 3-Surface

Project: Juniper BIP Federal #5

Collection Date: 1/27/2016 12:02:00 PM

Lab ID: 1601B19-003

Matrix: SOIL

Received Date: 1/29/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	29000	990		mg/Kg	100	2/4/2016 10:45:25 AM	23511
Surr: DNOP	0	70-130	S	%Rec	100	2/4/2016 10:45:25 AM	23511
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	1900	480		mg/Kg	100	2/1/2016 11:12:32 PM	23477
Surr: BFB	170	66.2-112	S	%Rec	100	2/1/2016 11:12:32 PM	23477
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	9.6		mg/Kg	100	2/2/2016 10:40:15 PM	23477
Benzene	ND	2.4		mg/Kg	100	2/2/2016 10:40:15 PM	23477
Toluene	35	4.8		mg/Kg	100	2/2/2016 10:40:15 PM	23477
Ethylbenzene	25	4.8		mg/Kg	100	2/2/2016 10:40:15 PM	23477
Xylenes, Total	84	9.6		mg/Kg	100	2/2/2016 10:40:15 PM	23477
Surr: 4-Bromofluorobenzene	123	80-120	S	%Rec	100	2/2/2016 10:40:15 PM	23477

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	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1601B19

05-Feb-16

Client: Yates Petroleum Corporation

Project: Juniper BIP Federal #5

Sample ID	MB-23551	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	23551	RunNo:	31874					
Prep Date:	2/3/2016	Analysis Date:	2/3/2016	SeqNo:	975374	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.8		10.00		98.0	70	130			

Sample ID	LCS-23551	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	23551	RunNo:	31874					
Prep Date:	2/3/2016	Analysis Date:	2/3/2016	SeqNo:	975375	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.8		5.000		95.3	70	130			

Sample ID	MB-23511	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	23511	RunNo:	31874					
Prep Date:	2/1/2016	Analysis Date:	2/3/2016	SeqNo:	975961	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		104	70	130			

Sample ID	LCS-23511	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	23511	RunNo:	31874					
Prep Date:	2/1/2016	Analysis Date:	2/3/2016	SeqNo:	975962	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	113	65.8	136			
Surr: DNOP	6.0		5.000		120	70	130			

### Qualifiers:

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

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1601B19

05-Feb-16

Client: Yates Petroleum Corporation

Project: Juniper BIP Federal #5

Sample ID	MB-23477	SampType	MBLK	TestCode	EPA Method 8015D: Gasoline Range					
Client ID	PBS	Batch ID	23477	RunNo	31822					
Prep Date	1/29/2016	Analysis Date	2/1/2016	SeqNo	974200	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

91.1

66.2

112

Sample ID	LCS-23477	SampType	LCS	TestCode	EPA Method 8015D: Gasoline Range					
Client ID	LCSS	Batch ID	23477	RunNo	31822					
Prep Date	1/29/2016	Analysis Date	2/1/2016	SeqNo	974202	Units	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Gasoline Range Organics (GRO)

24

5.0

25.00

0

95.9

79.6

122

Surr: BFB

1000

1000

99.8

66.2

112

Sample ID	MB-23504	SampType	MBLK	TestCode	EPA Method 8015D: Gasoline Range					
Client ID	PBS	Batch ID	23504	RunNo	31851					
Prep Date	2/1/2016	Analysis Date	2/2/2016	SeqNo	974988	Units	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Surr: BFB

930

1000

93.2

66.2

112

Sample ID	LCS-23504	SampType	LCS	TestCode	EPA Method 8015D: Gasoline Range					
Client ID	LCSS	Batch ID	23504	RunNo	31851					
Prep Date	2/1/2016	Analysis Date	2/2/2016	SeqNo	974989	Units	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Surr: BFB

980

1000

98.0

66.2

112

### Qualifiers:

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

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



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1601B19

05-Feb-16

Client: Yates Petroleum Corporation

Project: Juniper BIP Federal #5

Sample ID	MB-23477		SampType: MBLK	TestCode: EPA Method 8021B: Volatiles						
Client ID:	PBS		Batch ID: 23477	RunNo: 31822						
Prep Date:	1/29/2016		Analysis Date: 2/1/2016	SeqNo: 974231		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		109	80	120			

Sample ID	LCS-23477		SampType: LCS	TestCode: EPA Method 8021B: Volatiles						
Client ID:	LCSS		Batch ID: 23477	RunNo: 31822						
Prep Date:	1/29/2016		Analysis Date: 2/1/2016	SeqNo: 974232		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.3	0.10	1.000	0	126	67.2	121			S
Benzene	1.1	0.050	1.000	0	113	80	120			
Toluene	1.1	0.050	1.000	0	114	80	120			
Ethylbenzene	1.1	0.050	1.000	0	111	80	120			
Xylenes, Total	3.4	0.10	3.000	0	113	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		118	80	120			

Sample ID	MB-23504		SampType: MBLK	TestCode: EPA Method 8021B: Volatiles						
Client ID:	PBS		Batch ID: 23504	RunNo: 31851						
Prep Date:	2/1/2016		Analysis Date: 2/2/2016	SeqNo: 975028		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		113	80	120			

Sample ID	LCS-23504		SampType: LCS	TestCode: EPA Method 8021B: Volatiles						
Client ID:	LCSS		Batch ID: 23504	RunNo: 31851						
Prep Date:	2/1/2016		Analysis Date: 2/2/2016	SeqNo: 975029		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.2		1.000		117	80	120			

### Qualifiers:

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



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4167  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Yates Petroleum Corpora

Work Order Number: 1601B19

RepIDNo: 1

Received by/date:

SA

akali

Logged By: Lindsay Mangin

1/29/2016 9:00:00 AM

*Lindsay Mangin*

Completed By: Lindsay Mangin

1/29/2016 1:47:06 PM

*Lindsay Mangin*

Reviewed By:

SA

01/29/16

### Chain of Custody

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

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
6. Sample(s) in proper container(s)? Yes ☒ No ☐  
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒  
11. Were any sample containers received broken? Yes ☐ No ☒  
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐ # of preserved bottles checked for pH: \_\_\_\_\_  
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	1.0	Good	Yes			



