



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)

September 30, 2016

Chase Settle

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

RE: Tackitt AOT #2

OrderNo.: 1609E11

Dear Chase Settle:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/23/2016 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 1609E11

Date Reported: 9/30/2016

**CLIENT:** Yates Petroleum Corporation

**Client Sample ID:** Stockpile-3-8"

**Project:** Tackitt AOT #2

**Collection Date:** 9/20/2016 10:09:00 AM

**Lab ID:** 1609E11-001

**Matrix:** SOIL

**Received Date:** 9/23/2016 9:45:00 AM

| Analyses                                         | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch               |
|--------------------------------------------------|--------|--------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>      |        |        |      |       |    |                      | Analyst: <b>AG</b>  |
| Gasoline Range Organics (GRO)                    | ND     | 4.8    |      | mg/Kg | 1  | 9/28/2016 1:45:32 PM | 27716               |
| Surr: BFB                                        | 104    | 70-130 |      | %Rec  | 1  | 9/28/2016 1:45:32 PM | 27716               |
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)                      | 330    | 94     |      | mg/Kg | 10 | 9/29/2016 4:06:24 PM | 27746               |
| Surr: DNOP                                       | 0      | 70-130 | S    | %Rec  | 10 | 9/29/2016 4:06:24 PM | 27746               |
| <b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>    |        |        |      |       |    |                      | Analyst: <b>AG</b>  |
| Methyl tert-butyl ether (MTBE)                   | ND     | 0.048  |      | mg/Kg | 1  | 9/28/2016 1:45:32 PM | 27716               |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 9/28/2016 1:45:32 PM | 27716               |
| Toluene                                          | ND     | 0.048  |      | mg/Kg | 1  | 9/28/2016 1:45:32 PM | 27716               |
| Ethylbenzene                                     | ND     | 0.048  |      | mg/Kg | 1  | 9/28/2016 1:45:32 PM | 27716               |
| Xylenes, Total                                   | ND     | 0.095  |      | mg/Kg | 1  | 9/28/2016 1:45:32 PM | 27716               |
| Surr: 1,2-Dichloroethane-d4                      | 97.5   | 70-130 |      | %Rec  | 1  | 9/28/2016 1:45:32 PM | 27716               |
| Surr: 4-Bromofluorobenzene                       | 80.3   | 70-130 |      | %Rec  | 1  | 9/28/2016 1:45:32 PM | 27716               |
| Surr: Dibromofluoromethane                       | 114    | 70-130 |      | %Rec  | 1  | 9/28/2016 1:45:32 PM | 27716               |
| Surr: Toluene-d8                                 | 87.7   | 70-130 |      | %Rec  | 1  | 9/28/2016 1:45:32 PM | 27716               |

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#: 1609E11

30-Sep-16

Client: Yates Petroleum Corporation

Project: Tackitt AOT #2

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-27705 |     | SampType: LCS            |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | LCSS      |     | Batch ID: 27705          |             | RunNo: 37493                                        |          |             |      |          |      |
| Prep Date: | 9/26/2016 |     | Analysis Date: 9/27/2016 |             | SeqNo: 1166200                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.6       |     | 5.000                    |             | 91.2                                                | 70       | 130         |      |          |      |

|            |           |                          |           |             |                                                     |          |             |      |          |      |
|------------|-----------|--------------------------|-----------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-27705  | SampType: MBLK           |           |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | PBS       | Batch ID: 27705          |           |             | RunNo: 37493                                        |          |             |      |          |      |
| Prep Date: | 9/26/2016 | Analysis Date: 9/27/2016 |           |             | SeqNo: 1166201                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL                      | SPK value | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 9.2       |                          | 10.00     |             | 92.3                                                | 70       | 130         |      |          |      |

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-27685 |     | SampType: LCS            |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | LCSS      |     | Batch ID: 27685          |             | RunNo: 37494                                        |          |             |      |          |      |
| Prep Date: | 9/26/2016 |     | Analysis Date: 9/27/2016 |             | SeqNo: 1166208                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.5       |     | 5.000                    |             | 90.9                                                | 70       | 130         |      |          |      |

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-27685  |     | SampType: MBLK           |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | PBS       |     | Batch ID: 27685          |             | RunNo: 37494                                        |          |             |      |          |      |
| Prep Date: | 9/26/2016 |     | Analysis Date: 9/27/2016 |             | SeqNo: 1166209                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 9.0       |     | 10.00                    |             | 90.1                                                | 70       | 130         |      |          |      |

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-27707  |     | SampType: MBLK           |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | PBS       |     | Batch ID: 27707          |             | RunNo: 37494                                        |          |             |      |          |      |
| Prep Date: | 9/26/2016 |     | Analysis Date: 9/27/2016 |             | SeqNo: 1166802                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 8.7       |     | 10.00                    |             | 87.3                                                | 70       | 130         |      |          |      |

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-27707 |     | SampType: LCS            |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | LCSS      |     | Batch ID: 27707          |             | RunNo: 37494                                        |          |             |      |          |      |
| Prep Date: | 9/26/2016 |     | Analysis Date: 9/27/2016 |             | SeqNo: 1166803                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.9       |     | 5.000                    |             | 98.9                                                | 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#: 1609E11

30-Sep-16

**Client:** Yates Petroleum Corporation

**Project:** Tackitt AOT #2

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-27706  |     | SampType: MBLK           |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | PBS       |     | Batch ID: 27706          |             | RunNo: 37493                                        |          |             |      |          |      |
| Prep Date: | 9/26/2016 |     | Analysis Date: 9/27/2016 |             | SeqNo: 1166914                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 9.4       |     | 10.00                    |             | 94.4                                                | 70       | 130         |      |          |      |

|                             |           |     |                          |             |                                                     |          |              |      |          |      |
|-----------------------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|--------------|------|----------|------|
| Sample ID                   | MB-27746  |     | SampType: MBLK           |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |              |      |          |      |
| Client ID:                  | PBS       |     | Batch ID: 27746          |             | RunNo: 37493                                        |          |              |      |          |      |
| Prep Date:                  | 9/27/2016 |     | Analysis Date: 9/28/2016 |             | SeqNo: 1166916                                      |          | Units: mg/Kg |      |          |      |
| Analyte                     | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit    | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND        | 10  |                          |             |                                                     |          |              |      |          |      |
| Surr: DNOP                  | 9.7       |     | 10.00                    |             | 96.8                                                | 70       | 130          |      |          |      |

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-27706 |     | SampType: LCS            |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | LCSS      |     | Batch ID: 27706          |             | RunNo: 37493                                        |          |             |      |          |      |
| Prep Date: | 9/26/2016 |     | Analysis Date: 9/27/2016 |             | SeqNo: 1166917                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 5.2       |     | 5.000                    |             | 104                                                 | 70       | 130         |      |          |      |

|                             |           |     |                          |             |                                                     |          |              |      |          |      |
|-----------------------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|--------------|------|----------|------|
| Sample ID                   | LCS-27746 |     | SampType: LCS            |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |              |      |          |      |
| Client ID:                  | LCSS      |     | Batch ID: 27746          |             | RunNo: 37493                                        |          |              |      |          |      |
| Prep Date:                  | 9/27/2016 |     | Analysis Date: 9/28/2016 |             | SeqNo: 1166919                                      |          | Units: mg/Kg |      |          |      |
| Analyte                     | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit    | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 54        | 10  | 50.00                    | 0           | 108                                                 | 62.6     | 124          |      |          |      |
| Surr: DNOP                  | 4.8       |     | 5.000                    |             | 96.9                                                | 70       | 130          |      |          |      |

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-27738  |     | SampType: MBLK           |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | PBS       |     | Batch ID: 27738          |             | RunNo: 37494                                        |          |             |      |          |      |
| Prep Date: | 9/27/2016 |     | Analysis Date: 9/28/2016 |             | SeqNo: 1167146                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 8.7       |     | 10.00                    |             | 87.1                                                | 70       | 130         |      |          |      |

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-27738 |     | SampType: LCS            |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | LCSS      |     | Batch ID: 27738          |             | RunNo: 37494                                        |          |             |      |          |      |
| Prep Date: | 9/27/2016 |     | Analysis Date: 9/28/2016 |             | SeqNo: 1167147                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.6       |     | 5.000                    |             | 91.2                                                | 70       | 130         |      |          |      |

### 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#: 1609E11

30-Sep-16

Client: Yates Petroleum Corporation

Project: Tackitt AOT #2

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-27783 |     | SampType: LCS            |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | LCSS      |     | Batch ID: 27783          |             | RunNo: 37554                                        |          |             |      |          |      |
| Prep Date: | 9/29/2016 |     | Analysis Date: 9/29/2016 |             | SeqNo: 1168526                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.8       |     | 5.000                    |             | 95.4                                                | 70       | 130         |      |          |      |

|            |           |     |                          |             |                                                     |          |             |      |          |      |
|------------|-----------|-----|--------------------------|-------------|-----------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-27783  |     | SampType: MBLK           |             | TestCode: EPA Method 8015M/D: Diesel Range Organics |          |             |      |          |      |
| Client ID: | PBS       |     | Batch ID: 27783          |             | RunNo: 37554                                        |          |             |      |          |      |
| Prep Date: | 9/29/2016 |     | Analysis Date: 9/29/2016 |             | SeqNo: 1168527                                      |          | Units: %Rec |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                                | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: DNOP | 10        |     | 10.00                    |             | 100                                                 | 70       | 130         |      |          |      |

### 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#: 1609E11

30-Sep-16

**Client:** Yates Petroleum Corporation

**Project:** Tackitt AOT #2

|                                |           |       |                          |             |                                                  |          |              |      |          |      |
|--------------------------------|-----------|-------|--------------------------|-------------|--------------------------------------------------|----------|--------------|------|----------|------|
| Sample ID                      | lcs-27716 |       | SampType: LCS            |             | TestCode: EPA Method 8260B: Volatiles Short List |          |              |      |          |      |
| Client ID:                     | LCSS      |       | Batch ID: 27716          |             | RunNo: 37515                                     |          |              |      |          |      |
| Prep Date:                     | 9/26/2016 |       | Analysis Date: 9/28/2016 |             | SeqNo: 1166848                                   |          | Units: mg/Kg |      |          |      |
| Analyte                        | Result    | PQL   | SPK value                | SPK Ref Val | %REC                                             | LowLimit | HighLimit    | %RPD | RPDLimit | Qual |
| Methyl tert-butyl ether (MTBE) | 1.1       | 0.050 | 1.000                    | 0           | 111                                              | 70       | 130          |      |          |      |
| Benzene                        | 1.1       | 0.025 | 1.000                    | 0           | 111                                              | 49.2     | 155          |      |          |      |
| Toluene                        | 0.89      | 0.050 | 1.000                    | 0           | 88.7                                             | 52       | 154          |      |          |      |
| Ethylbenzene                   | 0.96      | 0.050 | 1.000                    | 0           | 96.0                                             | 70       | 130          |      |          |      |
| Xylenes, Total                 | 2.8       | 0.10  | 3.000                    | 0           | 94.9                                             | 70       | 130          |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 0.47      |       | 0.5000                   |             | 94.4                                             | 70       | 130          |      |          |      |
| Surr: 4-Bromofluorobenzene     | 0.47      |       | 0.5000                   |             | 93.8                                             | 70       | 130          |      |          |      |
| Surr: Dibromofluoromethane     | 0.55      |       | 0.5000                   |             | 111                                              | 70       | 130          |      |          |      |
| Surr: Toluene-d8               | 0.43      |       | 0.5000                   |             | 86.0                                             | 70       | 130          |      |          |      |

|                                |           |       |                          |             |                                                  |          |              |      |          |      |
|--------------------------------|-----------|-------|--------------------------|-------------|--------------------------------------------------|----------|--------------|------|----------|------|
| Sample ID                      | mb-27716  |       | SampType: MBLK           |             | TestCode: EPA Method 8260B: Volatiles Short List |          |              |      |          |      |
| Client ID:                     | PBS       |       | Batch ID: 27716          |             | RunNo: 37515                                     |          |              |      |          |      |
| Prep Date:                     | 9/26/2016 |       | Analysis Date: 9/27/2016 |             | SeqNo: 1166849                                   |          | Units: mg/Kg |      |          |      |
| Analyte                        | Result    | PQL   | SPK value                | SPK Ref Val | %REC                                             | LowLimit | HighLimit    | %RPD | RPDLimit | Qual |
| Methyl tert-butyl ether (MTBE) | ND        | 0.050 |                          |             |                                                  |          |              |      |          |      |
| Benzene                        | ND        | 0.025 |                          |             |                                                  |          |              |      |          |      |
| Toluene                        | ND        | 0.050 |                          |             |                                                  |          |              |      |          |      |
| Ethylbenzene                   | ND        | 0.050 |                          |             |                                                  |          |              |      |          |      |
| Xylenes, Total                 | ND        | 0.10  |                          |             |                                                  |          |              |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 0.54      |       | 0.5000                   |             | 107                                              | 70       | 130          |      |          |      |
| Surr: 4-Bromofluorobenzene     | 0.46      |       | 0.5000                   |             | 92.1                                             | 70       | 130          |      |          |      |
| Surr: Dibromofluoromethane     | 0.61      |       | 0.5000                   |             | 121                                              | 70       | 130          |      |          |      |
| Surr: Toluene-d8               | 0.45      |       | 0.5000                   |             | 89.2                                             | 70       | 130          |      |          |      |

### 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#: 1609E11

30-Sep-16

Client: Yates Petroleum Corporation

Project: Tackitt AOT #2

|                               |           |     |                          |             |      |                                                |           |              |          |      |
|-------------------------------|-----------|-----|--------------------------|-------------|------|------------------------------------------------|-----------|--------------|----------|------|
| Sample ID                     | lcs-27716 |     | SampType: LCS            |             |      | TestCode: EPA Method 8015D Mod: Gasoline Range |           |              |          |      |
| Client ID:                    | LCSS      |     | Batch ID: 27716          |             |      | RunNo: 37515                                   |           |              |          |      |
| Prep Date:                    | 9/26/2016 |     | Analysis Date: 9/27/2016 |             |      | SeqNo: 1166751                                 |           | Units: mg/Kg |          |      |
| Analyte                       | Result    | PQL | SPK value                | SPK Ref Val | %REC | LowLimit                                       | HighLimit | %RPD         | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 23        | 5.0 | 25.00                    | 0           | 90.2 | 62.9                                           | 123       |              |          |      |
| Surr: BFB                     | 520       |     | 500.0                    |             | 105  | 70                                             | 130       |              |          |      |

|                               |           |     |                          |             |      |                                                |           |              |          |      |
|-------------------------------|-----------|-----|--------------------------|-------------|------|------------------------------------------------|-----------|--------------|----------|------|
| Sample ID                     | mb-27716  |     | SampType: MBLK           |             |      | TestCode: EPA Method 8015D Mod: Gasoline Range |           |              |          |      |
| Client ID:                    | PBS       |     | Batch ID: 27716          |             |      | RunNo: 37515                                   |           |              |          |      |
| Prep Date:                    | 9/26/2016 |     | Analysis Date: 9/27/2016 |             |      | SeqNo: 1166753                                 |           | 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                     | 550       |     | 500.0                    |             | 110  | 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

## Sample Log-In Check List

Client Name: Yates Petroleum Corporat

Work Order Number: 1609E11

RcptNo: 1

Received by/date:

AS

09/23/16

Logged By: Lindsay Mangin

9/23/2016 9:45:00 AM

*Lindsay Mangin*

Completed By: Lindsay Mangin

9/25/2016 12:35:28 PM

*Lindsay Mangin*

Reviewed By:

JR 09/26/16

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
(<2 or >12 unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

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

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

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         | 2.1     | Good      | Yes         |         |           |           |

**I UPI-AROUND THREE:**

X standard

☐ Rush

Project Name:

Tackitt AOT #2

Phone #: 575-703-6537

**A/QC Package:**

☐ Standard  
☐ Level 4 (Full Validation)☐ NELAP ☐ Other

Sample Temperature:

| Container<br>Type and # | Preservative<br>Type |
|-------------------------|----------------------|
|-------------------------|----------------------|

1 - 4oz. ICE

**X**

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---

1

Relinquished by:

Date Time

Remarks:

Relinquished by:

Date \_\_\_\_\_ Time \_\_\_\_\_

10

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