

Rem 9332

FORM  
27  
Rev 6/99State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

Rec. 1/5/2016  
Rem 9332

OGCC Employee:

☐ Spill ☐ Complaint  
☐ Inspection ☐ NOAV

Tracking No:

## SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

## CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☐ Other (describe): \_\_\_\_\_

|   |   |
|---|---|
| OGCC Operator Number: 10428   | Contact Name and Telephone: JASON HAACK |
| Name of Operator: DIVERSIFIED ENERGY LLC  | No: 303-995-0826                        |
| Address: 10940 S PARKER ROAD  | Fax: _____                              |
| City: PARKER State: CO Zip: 80134   |   |
| API Number: 05-081-05284  | County: MOFFAT                          |
| Facility Name: URIE   | Facility Number: 222309 442574          |
| Well Name: URIE   | Well Number: 1                          |
| Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWSW 13 5N 96W 6 PM Latitude: 40.382066 Longitude: -108.131286 |   |

## TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): CRUDE OIL

**Site Conditions:** Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): RANGELAND

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: SANDY LOAM

Potential receptors (water wells within 1/4 mi, surface waters, etc.): NONE

**Description of Impact** (if previously provided, refer to that form or document):

| Impacted Media (check):                   | Extent of Impact:         | How Determined:                      |
|---|---------------------------|--------------------------------------|
| <input checked="" type="checkbox"/> Soils | SEE FIGURE 1 AND FIGURE 2 | SITE ASSESEMENT AND SOIL TEST REVIEW |
| <input type="checkbox"/> Vegetation       | _____                     | _____                                |
| <input type="checkbox"/> Groundwater      | _____                     | _____                                |
| <input type="checkbox"/> Surface Water    | _____                     | _____                                |

## REMEDIALATION WORKPLAN

**Describe initial action taken** (if previously provided, refer to that form or document):

On July 17th 2015 a historical spill occurred, Summarized in Form 19 Initial (doc#400871277) sent via email to Enviromental Director Alex Fischer on July 20th 2015 and uploaded to e-form on July 21st 2015. Clean up effort described and evidence of tampering and vandalism discovered was reported on Form 19 Supplemental (doc# 400878504) SPILL ID# 442574 see Figure 3 map of location

**Describe how source is to be removed:**

See Attached Figure 1 "Spill Pathway Excavation and Soil Sample Locations

**Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:**

The impacted soil shall be removed and sent to a licensed landfill per operator/contractor manifest. See spill calculations figure 2



Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

Page 2  
**REMEDIAL WORKPLAN (Cont.)**

OGCC Employee: \_\_\_\_\_

**If groundwater has been impacted, describe proposed monitoring plan** (# of wells or sample points, sampling schedule, analytical methods, etc.):

No groundwater has been impacted

**Describe reclamation plan.** Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

The impacted area shall be restored to pre-release grade. Diversified Energy LLC facility remains at the site.

**Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.**

**Is further site investigation required?** ☐ Y ☒ N If yes, describe:

Soil impacts were delineated by site assessment activities (see figure 2)

Diversified Energy LLC request no further action be taken.

**Final disposition of E&P waste** (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

The impacted soil shall be transported to a licensed landfill for disposal.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: 7/18/2015 Date Site Investigation Completed: \_\_\_\_\_ Date Remediation Plan Submitted: 10/22/15  
Remediation Start Date: \_\_\_\_\_ Anticipated Completion Date: \_\_\_\_\_ Actual Completion Date: 11/14/2015

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: JASON HADCK

Signed: \_\_\_\_\_

Title: Manager

Date: 11/17/2016

OGCC Approved: [Signature]

Title: EPS STAFF

Date: 1/15/16

Based on Review of information provided, remediation project 9332, it appears that no further action is required at this time. However, should conditions at the site indicate soil concentration exceeding OGCC Table 910-1, further investigation may be required.

## Form 27 Site investigation and Remediation Work Plan Addendum

Soil investigation of spill pathway has been completed both vertically and horizontally to determine excavation plan.

Operator has removed all contaminated soil and disposed of at licensed landfill

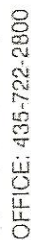
Samples taken per rule 910b(3)b have been analyzed and are within acceptable limits per table in 910-1

Final reclamation has been completed per rule 1004

See attached soil samples report, excavation area map and sample location area

COGCC closure Notes: per meeting with Mr. Thack, it was determined that 2 composite samples were taken.

On future spills and releases, operator should work with COGCC, EPS staff to assure proper compliance and reporting



403535

**ALL FIELDS MUST BE COMPLETED ENTIRELY.** TICKETS MISSING INFORMATION WILL BE BILLED BACK TO THE HAULING COMPANY. APPROVAL FOR BILLING THE HAULING COMPANY WILL COME FROM THE SIGNATURE OF THE DRIVER DELIVERING THE LOAD. DRIVERS; IF YOU ARE NOT GIVEN ALL THE INFORMATION ABOVE, PLEASE CONTACT YOUR DISPATCHER. DO NOT LEAVE FIELDS BLANK.



# WATER DISPOSAL TICKET

RN INDUSTRIES

P.O. BOX 98 • ROOSEVELT, UT 84066

OFFICE: 435-722-2800

403537

| DISPOSAL SITES   |   | VOLUME | FOR OFFICE USE ONLY |       |
|--|---|--------|---------------------|-------|
|  |   |        | UNIT PRICE          | TOTAL |
| <input checked="" type="checkbox"/> PIPEANCE<br><input type="checkbox"/> RANGELY<br><input type="checkbox"/> ACE<br><input type="checkbox"/> WONSIT<br><input type="checkbox"/> SEEP RIDGE | <input type="checkbox"/> GLEN BENCH-NORTH<br><input type="checkbox"/> GLEN BENCH-SOUTH<br><input type="checkbox"/> CHAPITA<br><input type="checkbox"/> BLUEBELL<br><input type="checkbox"/> PLEASANT VALLEY |        |                     |       |
| CATEGORY 1 (BBLs)  |   |        |                     |       |
| <input type="checkbox"/> PRODUCTION WATER<br><input type="checkbox"/> FLOWBACK<br><input type="checkbox"/> OTHER   |   |        |                     |       |
| CATEGORY 2 (BBLs)  |   |        |                     |       |
| <input type="checkbox"/> FLUSH LOADS<br><input type="checkbox"/> CEMENT WATER<br><input type="checkbox"/> CELLARS<br><input type="checkbox"/> OTHER  |   |        |                     |       |
| CATEGORY 3 (BBLs)  |   |        |                     |       |
| <input type="checkbox"/> LANDFARM/LAND FILL LIQUIDS<br><input type="checkbox"/> DRILLING MUD BBLs<br><input type="checkbox"/> OTHER  |   |        |                     |       |
| CATEGORY 4 (SOLIDS IN YARDS)   |   |        |                     |       |
| <input checked="" type="checkbox"/> SOLIDS (IN YARDS)<br><input type="checkbox"/> DRILL CUTTINGS<br><input type="checkbox"/> SOIL<br><input type="checkbox"/> OTHER                        |   | 4      |                     |       |
| Total:   |   |        | 4                   |       |

IF OTHER PLEASE SPECIFY:

COMMENTS:

DRIVER SIGNATURE: X [Signature]

CUSTOMER SIGNATURE: [Signature]

ALL FIELDS MUST BE COMPLETED ENTIRELY. TICKETS MISSING INFORMATION WILL BE BILLED BACK TO THE HAULING COMPANY. APPROVAL FOR BILLING THE HAULING COMPANY WILL COME FROM THE SIGNATURE OF THE DRIVER DELIVERING THE LOAD. DRIVERS: IF YOU ARE NOT GIVEN ALL THE INFORMATION ABOVE, PLEASE CONTACT YOUR DISPATCHER. DO NOT LEAVE FIELDS BLANK.

AFE/NO#

USER #

CODE #



# Excavation Area Map



January 05, 2016

## Report to:

Jason Haack  
Diversified Energy LLC  
PO Box 1685  
Parker, CO 80134

## Bill to:

Jason Haack  
Diversified Energy  
P O Box 1685  
Parker, CO 80134

Project ID: 2015-4879

ACZ Project ID: L28349

Jason Haack:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 29, 2015. This project has been assigned to ACZ's project number, L28349. Please reference this number in all future inquiries.

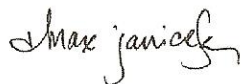
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L28349. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after February 04, 2016. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Max Janicek has reviewed and  
approved this report.



**Diversified Energy LLC**

Project ID: 2015-4879

Sample ID: URIE 1-NO 1

ACZ Sample ID: **L28349-01**

Date Sampled: 12/19/15 15:44

Date Received: 12/29/15

Sample Matrix: Soil

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **5035A****Workgroup:** WG396500

Analyst: wfg

Extract Date: 12/30/15 16:51

Analysis Date: 12/30/15 16:51

| Compound             | CAS       | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|-----------|------------|------|----------|----|-------|-----|-----|
| Benzene              | 71-43-2   |            | U    | 1        | *  | ug/Kg | 1   | 1   |
| Ethylbenzene         | 100-41-4  | 2          |      | 1        | *  | ug/Kg | 1   | 1   |
| m p Xylene           | 1330-20-7 | 9          |      | 1        | *  | ug/Kg | 2   | 2   |
| o Xylene             | 95-47-6   | 4          |      | 1        | *  | ug/Kg | 1   | 1   |
| Toluene              | 108-88-3  | 2          |      | 1        | *  | ug/Kg | 1   | 1   |
| Surrogate Recoveries | CAS       | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| Bromofluorobenzene   | 460-00-4  | 78.1       |      | 1        |    | %     | 70  | 130 |

Arizona license number: **AZ0102**

**Diversified Energy LLC**

Project ID: 2015-4879

Sample ID: URIE 1-NO 1

ACZ Sample ID: **L28349-01**

Date Sampled: 12/19/15 15:44

Date Received: 12/29/15

Sample Matrix: Soil

**Diesel Range Organics (C10-C28)**Analysis Method: **M8015D GC/FID**Extract Method: **M3540****Workgroup:** WG396597

Analyst: mmn

Extract Date: 12/30/15 12:40

Analysis Date: 12/31/15 19:54

| Compound             | CAS     | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-----|-----|
| TPH C10 to C28       |         | 300        | J    | 836      | *  | mg/Kg | 80  | 400 |
| Surrogate Recoveries | CAS     | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| OTP                  | 84-15-1 | 95.9       |      | 836      | *  | %     | 70  | 130 |

Arizona license number: **AZ0102**

**Diversified Energy LLC**

Project ID: 2015-4879

Sample ID: URIE 1-NO 2

ACZ Sample ID: **L28349-02**

Date Sampled: 12/19/15 15:44

Date Received: 12/29/15

Sample Matrix: Soil

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **5035A****Workgroup:** WG396500

Analyst: wfg

Extract Date: 12/30/15 18:19

Analysis Date: 12/30/15 18:19

| Compound             | CAS       | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|-----------|------------|------|----------|----|-------|-----|-----|
| Benzene              | 71-43-2   |            | U    | 1        | *  | ug/Kg | 1   | 1   |
| Ethylbenzene         | 100-41-4  | 2          |      | 1        | *  | ug/Kg | 1   | 1   |
| m p Xylene           | 1330-20-7 | 9          |      | 1        | *  | ug/Kg | 2   | 2   |
| o Xylene             | 95-47-6   | 4          |      | 1        | *  | ug/Kg | 1   | 1   |
| Toluene              | 108-88-3  | 2          |      | 1        | *  | ug/Kg | 1   | 1   |
| Surrogate Recoveries | CAS       | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| Bromofluorobenzene   | 460-00-4  | 76.7       |      | 1        |    | %     | 70  | 130 |

Arizona license number: AZ0102

**Diversified Energy LLC**

Project ID: 2015-4879

Sample ID: URIE 1-NO 2

ACZ Sample ID: **L28349-02**

Date Sampled: 12/19/15 15:44

Date Received: 12/29/15

Sample Matrix: Soil

**Diesel Range Organics (C10-C28)**Analysis Method: **M8015D GC/FID**Extract Method: **M3540****Workgroup:** WG396597

Analyst: mmn

Extract Date: 12/30/15 12:50

Analysis Date: 12/31/15 20:49

| Compound             | CAS     | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-----|-----|
| TPH C10 to C28       |         | 300        | J    | 833      | *  | mg/Kg | 80  | 400 |
| Surrogate Recoveries | CAS     | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| OTP                  | 84-15-1 | 94.4       |      | 833      | *  | %     | 70  | 130 |

Arizona license number: **AZ0102**

**Report Header Explanations**

|                |   |
|----------------|---|
| <i>Batch</i>   | A distinct set of samples analyzed at a specific time   |
| <i>Found</i>   | Value of the QC Type of interest  |
| <i>Limit</i>   | Upper limit for RPD, in %.  |
| <i>Lower</i>   | Lower Recovery Limit, in % (except for LCSS, mg/Kg)   |
| <i>LCL</i>     | Lower Control Limit   |
| <i>MDL</i>     | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4)<br>Allows for instrument and annual fluctuations. |
| <i>PCN/SCN</i> | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis  |
| <i>PQL</i>     | Practical Quantitation Limit. Synonymous with the EPA term "minimum level".   |
| <i>QC</i>      | True Value of the Control Sample or the amount added to the Spike   |
| <i>Rec</i>     | Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)  |
| <i>RPD</i>     | Relative Percent Difference, calculation used for Duplicate QC Types  |
| <i>Upper</i>   | Upper Recovery Limit, in % (except for LCSS, mg/Kg)   |
| <i>UCL</i>     | Upper Control Limit   |
| <i>Sample</i>  | Value of the Sample of interest   |

**QC Sample Types**

|             |                                   |               |                                       |
|-------------|-----------------------------------|---------------|---------------------------------------|
| <i>SURR</i> | Surrogate                         | <i>LFM</i>    | Laboratory Fortified Matrix           |
| <i>INTS</i> | Internal Standard                 | <i>LFMD</i>   | Laboratory Fortified Matrix Duplicate |
| <i>DUP</i>  | Sample Duplicate                  | <i>LRB</i>    | Laboratory Reagent Blank              |
| <i>LCSS</i> | Laboratory Control Sample - Soil  | <i>MS/MSD</i> | Matrix Spike/Matrix Spike Duplicate   |
| <i>LCSW</i> | Laboratory Control Sample - Water | <i>PBS</i>    | Prep Blank - Soil                     |
| <i>LFB</i>  | Laboratory Fortified Blank        | <i>PBW</i>    | Prep Blank - Water                    |

**QC Sample Type Explanations**

|                         |   |
|-------------------------|---|
| Blanks                  | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples         | Verifies the accuracy of the method, including the prep procedure.                              |
| Duplicates              | Verifies the precision of the instrument and/or method.   |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any.   |

**ACZ Qualifiers (Qual)**

|   |   |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.   |
| O | Analyte concentration is estimated due to result exceeding calibration range.   |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time.   |
| J | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.   |
| L | Target analyte response was below the laboratory defined negative threshold.  |
| U | The material was analyzed for, but was not detected above the level of the associated value.<br>The associated value is either the sample quantitation limit or the sample detection limit. |

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Diversified Energy LLC

ACZ Project ID: L28349

Benzene, Toluene, Ethylbenzene &amp; Xylenes

M8021B GC/PID

WG396500

| AS                        | Sample ID: L28349-01AS |        |       | PCN/SCN: B151217-1-ICV |      |       | Analyzed: 12/30/15 17:20 |     |       |      |
|---------------------------|------------------------|--------|-------|------------------------|------|-------|--------------------------|-----|-------|------|
| Compound                  | QC                     | Sample | Found | Units                  | Rec  | Lower | Upper                    | RPD | Limit | Qual |
| BENZENE                   | 25.1                   | U      | 23.8  | ug/Kg                  | 95.0 | 70    | 130                      |     |       |      |
| ETHYLBENZENE              | 25                     | 2      | 21.5  | ug/Kg                  | 78.0 | 70    | 130                      |     |       |      |
| M P XYLENE                | 50.4                   | 9      | 48.8  | ug/Kg                  | 79.0 | 70    | 130                      |     |       |      |
| O XYLENE                  | 50.3                   | 4      | 42.3  | ug/Kg                  | 76.0 | 70    | 130                      |     |       |      |
| TOLUENE                   | 75.3                   | 2      | 68.4  | ug/Kg                  | 88.0 | 70    | 130                      |     |       |      |
| BROMOFLUOROBENZENE (surr) |                        |        |       | %                      | 77.7 | 70    | 130                      |     |       |      |

| ASD                       | Sample ID: L28349-01ASD |        | PCN/SCN: B151217-1-ICV |       |      | Analyzed: 12/30/15 17:50 |       |     |       |      |
|---------------------------|-------------------------|--------|------------------------|-------|------|--------------------------|-------|-----|-------|------|
| Compound                  | QC                      | Sample | Found                  | Units | Rec  | Lower                    | Upper | RPD | Limit | Qual |
| BENZENE                   | 25.1                    | U      | 23.2                   | ug/Kg | 92.0 | 70                       | 130   | 3   | 20    |      |
| ETHYLBENZENE              | 25                      | 2      | 20.8                   | ug/Kg | 75.0 | 70                       | 130   | 3   | 20    |      |
| M P XYLENE                | 50.4                    | 9      | 47.1                   | ug/Kg | 76.0 | 70                       | 130   | 4   | 20    |      |
| O XYLENE                  | 50.3                    | 4      | 41                     | ug/Kg | 74.0 | 70                       | 130   | 3   | 20    |      |
| TOLUENE                   | 75.3                    | 2      | 66.1                   | ug/Kg | 85.0 | 70                       | 130   | 3   | 20    |      |
| BROMOFLUOROBENZENE (surr) |                         |        |                        | %     | 77.4 | 70                       | 130   |     |       |      |

| LCSS                      | Sample ID: WG396500LCSS |        | PCN/SCN: B151217-1-ICV |       |      | Analyzed: 12/30/15 15:01 |       |     |       |      |
|---------------------------|-------------------------|--------|------------------------|-------|------|--------------------------|-------|-----|-------|------|
| Compound                  | QC                      | Sample | Found                  | Units | Rec  | Lower                    | Upper | RPD | Limit | Qual |
| BENZENE                   | 25.1                    |        | 24.4                   | ug/Kg | 97.0 | 70                       | 130   |     |       |      |
| ETHYLBENZENE              | 25                      |        | 23.5                   | ug/Kg | 94.0 | 70                       | 130   |     |       |      |
| M P XYLENE                | 50.4                    |        | 48.1                   | ug/Kg | 96.0 | 70                       | 130   |     |       |      |
| O XYLENE                  | 50.3                    |        | 46.7                   | ug/Kg | 93.0 | 70                       | 130   |     |       |      |
| TOLUENE                   | 75.3                    |        | 71.6                   | ug/Kg | 95.0 | 70                       | 130   |     |       |      |
| BROMOFLUOROBENZENE (surr) |                         |        |                        | %     | 91.1 | 70                       | 130   |     |       |      |

| LCSSD                     | Sample ID: WG396500LCSSD |        |       | PCN/SCN: B151217-1-ICV |       |       | Analyzed: 12/30/15 15:30 |     |       |      |
|---------------------------|--------------------------|--------|-------|------------------------|-------|-------|--------------------------|-----|-------|------|
| Compound                  | QC                       | Sample | Found | Units                  | Rec   | Lower | Upper                    | RPD | Limit | Qual |
| BENZENE                   | 25.1                     |        | 27.8  | ug/Kg                  | 111.0 | 70    | 130                      | 13  | 20    |      |
| ETHYLBENZENE              | 25                       |        | 27.5  | ug/Kg                  | 110.0 | 70    | 130                      | 16  | 20    |      |
| M P XYLENE                | 50.4                     |        | 56    | ug/Kg                  | 111.0 | 70    | 130                      | 15  | 20    |      |
| O XYLENE                  | 50.3                     |        | 53.3  | ug/Kg                  | 106.0 | 70    | 130                      | 13  | 20    |      |
| TOLUENE                   | 75.3                     |        | 82.3  | ug/Kg                  | 109.0 | 70    | 130                      | 14  | 20    |      |
| BROMOFLUOROBENZENE (surr) |                          |        |       | %                      | 91.8  | 70    | 130                      |     |       |      |

| PBS                       |    |        |       |       |      | Sample ID: WG396500PBS |       | Analyzed: 12/30/15 16:00 |       |      |  |
|---------------------------|----|--------|-------|-------|------|------------------------|-------|--------------------------|-------|------|--|
| Compound                  | QC | Sample | Found | Units | Rec  | Lower                  | Upper | RPD                      | Limit | Qual |  |
| BENZENE                   |    |        | U     | ug/Kg |      | -1                     | 1     |                          |       |      |  |
| ETHYLBENZENE              |    |        | U     | ug/Kg |      | -1                     | 1     |                          |       |      |  |
| M P XYLENE                |    |        | U     | ug/Kg |      | -2                     | 2     |                          |       |      |  |
| O XYLENE                  |    |        | U     | ug/Kg |      | -1                     | 1     |                          |       |      |  |
| TOLUENE                   |    |        | U     | ug/Kg |      | -1                     | 1     |                          |       |      |  |
| BROMOFLUOROBENZENE (surr) |    |        |       | %     | 89.9 | 70                     | 130   |                          |       |      |  |

Diversified Energy LLC

ACZ Project ID: **L28349****Diesel Range Organics (C10-C28)**

M8015D GC/FID

**WG396597**

| MS             | Sample ID: L28349-01MS |        |       | PCN/SCN: OPTPH151111-2 |       |       | Analyzed: |     | 12/31/15 20:21 |      |
|----------------|------------------------|--------|-------|------------------------|-------|-------|-----------|-----|----------------|------|
| Compound       | QC                     | Sample | Found | Units                  | Rec   | Lower | Upper     | RPD | Limit          | Qual |
| TPH C10 TO C28 | 2500.8                 | 300    | 401   | mg/Kg                  | 122.0 | 70    | 130       |     |                |      |
| OTP (surr)     |                        |        |       | %                      | 95.4  | 70    | 130       |     |                |      |

| DUP            |    |        |       |       |      |       | Sample ID: L28349-02DUP |     | Analyzed: 12/31/15 21:17 |      |  |
|----------------|----|--------|-------|-------|------|-------|-------------------------|-----|--------------------------|------|--|
| Compound       | QC | Sample | Found | Units | Rec  | Lower | Upper                   | RPD | Limit                    | Qual |  |
| TPH C10 TO C28 |    | 300    | 305   | mg/Kg |      |       |                         | 2   | 20                       | RA   |  |
| OTP (surr)     |    |        |       | %     | 92.9 | 70    | 130                     |     |                          |      |  |

| LCSS           |        | Sample ID: WG396491LCSS |       | PCN/SCN: OPTPH151111-2 |      |       | Analyzed: 12/31/15 18:31 |     |       |      |
|----------------|--------|-------------------------|-------|------------------------|------|-------|--------------------------|-----|-------|------|
| Compound       | QC     | Sample                  | Found | Units                  | Rec  | Lower | Upper                    | RPD | Limit | Qual |
| TPH C10 TO C28 | 2500.8 |                         | 74.8  | mg/Kg                  | 89.0 | 70    | 130                      |     |       |      |
| OTP (surr)     |        |                         |       | %                      | 91.4 | 70    | 130                      |     |       |      |

| LCSSD          |        | Sample ID: WG396491LCSSD |       | PCN/SCN: OPTPH151111-2 |      |       | Analyzed: 12/31/15 18:58 |     |       |      |
|----------------|--------|--------------------------|-------|------------------------|------|-------|--------------------------|-----|-------|------|
| Compound       | QC     | Sample                   | Found | Units                  | Rec  | Lower | Upper                    | RPD | Limit | Qual |
| TPH C10 TO C28 | 2500.8 |                          | 72.7  | mg/Kg                  | 88.0 | 70    | 130                      | 3   | 20    |      |
| OTP (surr)     |        |                          |       | %                      | 90.1 | 70    | 130                      |     |       |      |

| PBS            |    |        |       |       |      | Sample ID: WG396491PBS |       |     |       |      |  | Analyzed: 12/31/15 18:03 |  |
|----------------|----|--------|-------|-------|------|------------------------|-------|-----|-------|------|--|--------------------------|--|
| Compound       | QC | Sample | Found | Units | Rec  | Lower                  | Upper | RPD | Limit | Qual |  |                          |  |
| TPH C10 TO C28 |    |        | U     | mg/Kg |      | -20                    | 20    |     |       |      |  |                          |  |
| OTP (surr)     |    |        |       | %     | 88.8 | 70                     | 130   |     |       |      |  |                          |  |

ACZ Project ID: **L28349**

| ACZ ID    | WORKNUM  | PARAMETER      | METHOD                         | QUAL     | DESCRIPTION  |
|-----------|----------|----------------|--------------------------------|----------|--|
| L28349-01 | WG396500 | Benzene        | M8021B GC/PID                  | ZM       | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.   |
|           |          | Ethylbenzene   | M8021B GC/PID                  | ZM       | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.   |
|           |          | m p Xylene     | M8021B GC/PID                  | ZM       | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.   |
|           |          | o Xylene       | M8021B GC/PID                  | ZM       | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.   |
|           |          | Toluene        | M8021B GC/PID                  | ZM       | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.   |
|           | WG396597 | OTP            | M8015D GC/FID                  | S8       | The sample required a dilution such that the surrogate recovery calculation does not provide useful information. The recovery for the associated control sample was acceptable.                |
|           |          | TPH C10 to C28 | M8015D GC/FID<br>M8015D GC/FID | D1<br>RA | Sample required dilution due to matrix.<br>Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |
| L28349-02 | WG396500 | Benzene        | M8021B GC/PID                  | ZM       | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.   |
|           |          | Ethylbenzene   | M8021B GC/PID                  | ZM       | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.   |
|           |          | m p Xylene     | M8021B GC/PID                  | ZM       | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.   |
|           |          | o Xylene       | M8021B GC/PID                  | ZM       | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.   |
|           |          | Toluene        | M8021B GC/PID                  | ZM       | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.   |
|           | WG396597 | OTP            | M8015D GC/FID                  | S8       | The sample required a dilution such that the surrogate recovery calculation does not provide useful information. The recovery for the associated control sample was acceptable.                |
|           |          | TPH C10 to C28 | M8015D GC/FID<br>M8015D GC/FID | D1<br>RA | Sample required dilution due to matrix.<br>Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |

**Diversified Energy LLC**

ACZ Project ID: **L28349**

No certification qualifiers associated with this analysis

**Diversified Energy LLC**  
2015-4879

ACZ Project ID: L28349

Date Received: 12/29/2015 11:14

Received By: ddp

Date Printed: 1/5/2016

**Receipt Verification**

- 1) Is a foreign soil permit included for applicable samples?
- 2) Is the Chain of Custody form or other directive shipping papers present?
- 3) Does this project require special handling procedures such as CLP protocol?
- 4) Are any samples NRC licensable material?
- 5) If samples are received past hold time, proceed with requested short hold time analyses?
- 6) Is the Chain of Custody form complete and accurate?  
The date/time was entered on the COC per the information present on the sample containers for sample(s) 1-2 and verified by the client.
- 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?

| YES | NO | NA |
|-----|----|----|
|     |    | X  |
| X   |    |    |
|     |    | X  |
|     |    | X  |
| X   |    |    |
|     | X  |    |
|     | X  |    |

**Samples/Containers**

- 8) Are all containers intact and with no leaks?
- 9) Are all labels on containers and are they intact and legible?
- 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?
- 11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup>
- 12) Is there sufficient sample volume to perform all requested work?
- 13) Is the custody seal intact on all containers?
- 14) Are samples that require zero headspace acceptable?
- 15) Are all sample containers appropriate for analytical requirements?
- 16) Is there an Hg-1631 trip blank present?
- 17) Is there a VOA trip blank present?
- 18) Were all samples received within hold time?

| YES | NO | NA |
|-----|----|----|
| X   |    |    |
| X   |    |    |
| X   |    |    |
|     |    | X  |
| X   |    |    |
|     |    | X  |
|     |    | X  |
| X   |    |    |
|     |    | X  |
|     | X  |    |
| X   |    |    |

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

| Cooler Id | Temp (°C) | Temp Criteria (°C) | Rad (μR/Hr) | Custody Seal Intact? |
|-----------|-----------|--------------------|-------------|----------------------|
| 4402      | 1.8       | <=6.0              | 13          | Yes                  |

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

**Diversified Energy LLC**  
2015-4879

ACZ Project ID: L28349

Date Received: 12/29/2015 11:14

Received By: ddp

Date Printed: 1/5/2016

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

# ACZ

2773 Downhill Drive Ste

Report to:

Name: JASON

Company: Diversi

E-mail: jhaac

Copy of Report to:

Name: JASON

Company: Diversi