



December 10, 2017

Mr. Ben Huggins
Great Western Operating Company, LLC
1801 Broadway, Suite 500
Denver, Colorado 80202

**RE: Closure Request: Confirmation Soil Sampling Report
Dittmer KE 29-032HN Production Facility Surface Release
Weld County, Colorado - Olsson Project #017-2902**

Dear Mr. Huggins,

Great Western Operating Company, LLC (GWOC) retained Olsson Associates (Olsson) to perform confirmation soil sampling at the Dittmer KE 29-032HN Production Facility (Site) following initial cleanup of an October 12, 2017 surface release that occurred beneath the separator units and within secondary containment. Olsson collected confirmation soil samples following removal of petroleum hydrocarbon impacted soils and submitted the samples for laboratory analysis. Olsson compared the laboratory results to the Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 concentrations levels.

This letter summarizes the project activities, presents the analytical results, and serves as the Closure Request for the October 12, 2017 release. An initial Form 19 Spill/Release Report (document number 401429897) was submitted to the COGCC on October 16, 2017. A copy of the initial Form 19 is included in Attachment A.

Site Location and Description

The Site is an active well pad and production facility located on the south side of Weld County Road 4, 0.9 miles east of U.S. Highway 85, in Weld County, Colorado. The Site is located in an agricultural area in the northeast quarter of the northwest quarter of Section 32, Township 1 North, Range 66 West of the 6th Principle Meridian. The ground surface in the vicinity of the Site slopes to the west. Two irrigation ponds are located approximately 860 feet to the west / southwest (topographically down-gradient). According to records at the Colorado Division of Water Resources, the nearest groundwater well is used for irrigation purposes and is located 590 feet to the northwest (topographically cross-gradient). Based on a review of permitted water wells in the area, depth to groundwater is approximately 20 feet below ground surface (bgs). The nearest residential structure is located approximately 950 feet to the north (topographically up-gradient). Figure 1 illustrates the general location of the Site.

Incident Description and Initial Response

A fire occurred at the separators on October 12, 2017. Approximately 30 barrels (bbls) of produced water and 10 bbls of oil were released within secondary containment as a result of the fire. Between 3 inches and 6 inches of soil was excavated and removed from the release area, and approximately 12 cubic yards (yd³) of impacted soil was transported to Waste Management's Buffalo Ridge Landfill in Kennesburg, Colorado.

A supplemental Form 19 Spill/Release Report was submitted to the COGCC on October 30, 2017 (document number 401443897), requesting that confirmation/closure soil sampling be postponed until construction and roustabout crews had departed the site. A copy of the supplemental Form 19 is included in Attachment A.

Olsson conducted soil sampling activities and the required release reporting in accordance with the COGCC 900 Series Rules. During this project, Olsson followed sampling procedures, equipment decontamination methods, and chain-of-custody procedures in accordance with U.S. Environmental Protection Agency (EPA) guidelines and COGCC 900 Series Rules.

Confirmation/Closure Soil Sampling Activities – November 1, 2017

Olsson visited the Site on November 1, 2017 and observed the release area within secondary containment, beneath the separators. Prior to Olsson personnel arriving onsite, GWOC had removed the damaged separators from the release area, excavated impacted soil beneath the separators, and installed new separators after the area beneath the new separators had been backfilled with 6 inches to 8 inches of clean base material. The dimensions of the impacted area measured approximately 52.5 feet by 32.5 feet.

Olsson collected four confirmation soil samples (DKEHN-5 through DKEHN-8) from beneath the backfill in the release area for field screening and laboratory analysis. The sample locations were recorded on a Trimble GeoExplorer 6000 series handheld global positioning system (Trimble) and are depicted on Figure 2. All soil samples were collected from 8 inches to 12 inches bgs in native brown, sandy, moist clay and placed into laboratory supplied glass jars, sealed, labeled, and placed into a cooler with ice. Olsson personnel observed a slight hydrocarbon odor in soil sample, DKEHN-7, that was collected from the release area, between the separator housings for separators 6 and 7.

The field soil screening consisted of placing a representative portion of each soil sample into a new re-sealable plastic bag, allowing the bag contents to equilibrate to the ambient air temperature, and volatile organic compounds to desorb from the soil. The air intake nozzle of a Mini Rae 3000 photo-ionization detector (PID) was introduced into the individual sample bags to measure the volatile organic vapors in the bags in parts per million (ppm). The soil sample PID field screening readings ranged from 3.8 ppm to 101.1 ppm and are included on Table 1.

Soil Analytical Methods and Results – November 1, 2017

On the day of collection, Olsson delivered the four soil samples to Origins Laboratory, Inc. (Origins) in Denver, Colorado for analysis. Origins analyzed each soil sample for benzene, toluene, ethylbenzene, total xylene (BTEX) and gasoline-range organics (GRO) by EPA Method 8260C and diesel-range organics (DRO) by EPA Method 8015C. The soil analytical results are illustrated on Figure 2 and included on Table 1. A copy of the laboratory report is included in Attachment B.

The laboratory reported that concentrations of BTEX were not detected at or above laboratory reporting limits in the four confirmation soil samples. In addition, concentrations of GRO and DRO were not detected at or above laboratory reporting limits in soil samples DKEHN-5 and DKEHN-6. The laboratory reported concentrations of GRO in soil samples DKEHN-7 (112 milligrams per kilogram (mg/kg)) and DKEHN-8 (29.5 mg/kg), but these concentrations were

below the COGCC Table 910-1 concentration level of 500 mg/kg. Concentrations of DRO were reported below the COGCC Table 910-1 concentration level of 500 mg/kg in soil sample DKEHN-8 (179 mg/kg). Concentrations of DRO were reported above the COGCC Table 910-1 concentration level in soil sample DKEHN-7 (1,180 mg/kg).

In accordance with COGCC requirements, GRO and DRO values were added together to obtain the total petroleum hydrocarbon (TPH) concentration. TPH concentrations were not detected at or above laboratory reporting limits in samples DKEHN-5 and DKEHN-6 and were reported below the COGCC Table 910-1 concentration level of 500 mg/kg in soil sample DKEHN-8 (208.5 mg/kg). Concentrations of TPH were reported above the COGCC Table 910-1 concentration level in soil sample DKEHN-7 (1,292 mg/kg).

Additional Soil Removal Confirmation/Closure Soil Sampling – November 21, 2017

The vertical extent of impact following the October 12, 2017 surface release was not determined during initial confirmation soil sampling activities and limited hydrocarbon impacted soil remained at the Site. Consequently, Olsson returned to the Site on November 21, 2017 to re-sample the soil in the release area in the containment. Prior to arrival, a hydro-vac truck was used to excavate an area measuring 5 feet wide by 4 feet long by 20 inches deep (1.25 yd³) between the separator housings for separators 6 and 7. The impacted soil was transported to Waste Management's Buffalo Ridge Landfill.

One confirmation/closure soil re-sample (DKEHN-7R) was collected from the excavation for field screening and laboratory analysis of GRO and DRO. The sample was collected directly below the initial sample location in native brown, moist clay from 20 inches to 24 inches bgs and placed into laboratory supplied glass jar, sealed, labeled, and placed into a cooler with ice. No soil staining or hydrocarbon odors were observed in the sample.

Field soil screening was performed by the same methods described above. The soil sample PID field screening reading was 1.0 ppm and is included on Table 1.

Confirmation/Closure Soil Analytical Results – November 21, 2017

On the day of collection, Olsson personnel hand delivered the sample to Origins. The confirmation/closure soil sample was submitted to Origins for analysis of GRO and DRO by the same methods described above. The soil analytical results are illustrated on Figure 2 and included on Table 1. A copy of the laboratory report is included in Attachment B.

Origins reported that GRO and DRO concentrations were not detected at or above laboratory reporting limits in the confirmation/closure soil sample DKEHN-7R.

Conclusions

Olsson conducted soil sampling activities at the Dittmer KE 29-032HN Production Facility on November 1, 2017 and November 21, 2017. The intent of the project was to collect confirmation/closure soil samples to assess the presence of petroleum hydrocarbon impacts, following excavation and removal of impacted soil as a result of a separator fire and subsequent surface release, above the COGCC Table 910-1 concentrations levels, and confirm that impacted soil had been excavated and disposed of properly.

Olsson recommends that GWOC request closure from COGCC for the separator fire release at this Site based on the following:

- No sensitive receptors were identified within 500 feet of the Site.
- Approximately 12 yd³ of soil inside secondary containment was excavated and disposed of at Waste Management's Buffalo Ridge Landfill.
- A hydro-vac truck was utilized to excavate an additional 1.25 yd³ of soil from the release area inside secondary containment. This soil was also disposed offsite.
- BTEX concentrations were not detected at or above laboratory reporting limits in the four confirmation/closure soil samples collected on November 1, 2017.
- TPH concentrations were not detected at or above laboratory reporting limits in soil samples DKEHN-5, and DKEHN-6 and were reported below the COGCC Table 910-1 concentration level in soil sample DKEHN-8 (208.5 mg/kg). Results for soil sample DKEHN-7 showed that DRO concentrations were above the Table 910-1 concentration level of 500 mg/kg.
- An additional confirmation soil sample, DKEHN-7R, was collected on November 21, 2017 following additional excavation. Analytical results showed that concentrations of GRO and DRO were not detected at or above the laboratory reporting limits.
- Groundwater was not encountered during this project and is expected to lie at a depth of 20 feet bgs.

Olsson Associates appreciates the opportunity to assist GWOC on this project. If you have any questions or require further information, please call us at 303-237-2072.

Sincerely,

Olsson Associates, Inc.



Jason E. Davidson, PG
Senior Geologist



James W. Hix, PG
Senior Geologist

TABLE

Table 1
Dittmer KE 29-032HN Production Facility Surface Release
Soil Analytical Summary
November 2017
Weld County, Colorado

| Sample Number | Sample Date | Sample Depth (in-bgs) | PID (ppm) | BTEX (mg/kg) | | | | TPH (mg/kg) | | | Sample Location |
|--|-------------|-----------------------|-----------|--------------|-----------|--------------|---------------|--------------------|---------------------|--------------|--|
| | | | | Benzene | Toluene | Ethylbenzene | Total Xylenes | GRO (C6-C10 Range) | DRO (C10-C28 Range) | TPH=GRO+DRO | |
| *COGCC Table 910-1 Concentration Levels | | | | 0.17 | 85 | 100 | 175 | 500 | 500 | 500 | |
| DKEHN-5 | 11/1/2017 | 8-12 | 4.4 | <0.002 | <0.002 | <0.002 | <0.002 | <0.200 | <50 | <50 | Between separators 8 and 9, center, west end |
| DKEHN-6 | 11/1/2017 | 8-12 | 3.8 | <0.002 | <0.002 | <0.002 | <0.002 | <0.200 | <50 | <50 | Between separators 7 and 8, center |
| DKEHN-7 | 11/1/2017 | 8-12 | 101.1 | <0.050 | <0.050 | <0.050 | <0.050 | 112 | 1,180 | 1,292 | Between separators 6 and 7, center, east end |
| DKEHN-8 | 11/1/2017 | 8-12 | 50.8 | <0.050 | <0.050 | <0.050 | <0.050 | 29.5 | 179 | 208.5 | Between separators 5 and 6, center |
| DKEHN-7R | 11/21/2017 | 20-24 | 1.0 | NA | NA | NA | NA | <0.100 | <50 | <50 | Between separators 6 and 7, center, east end |

*Colorado Oil and Gas Conservation Commission (COGCC), 900 Series, Exploration and Production Waste Management, Table 910-1, Concentration Levels, January 30, 2015

in-bgs - Inches below ground surface

mg/kg - Milligrams per kilogram

PID - Photo-ionization detector

ppm - Parts per million

BTEX - Benzene, toluene, ethylbenzene, total xylenes

TPH - Total petroleum hydrocarbons

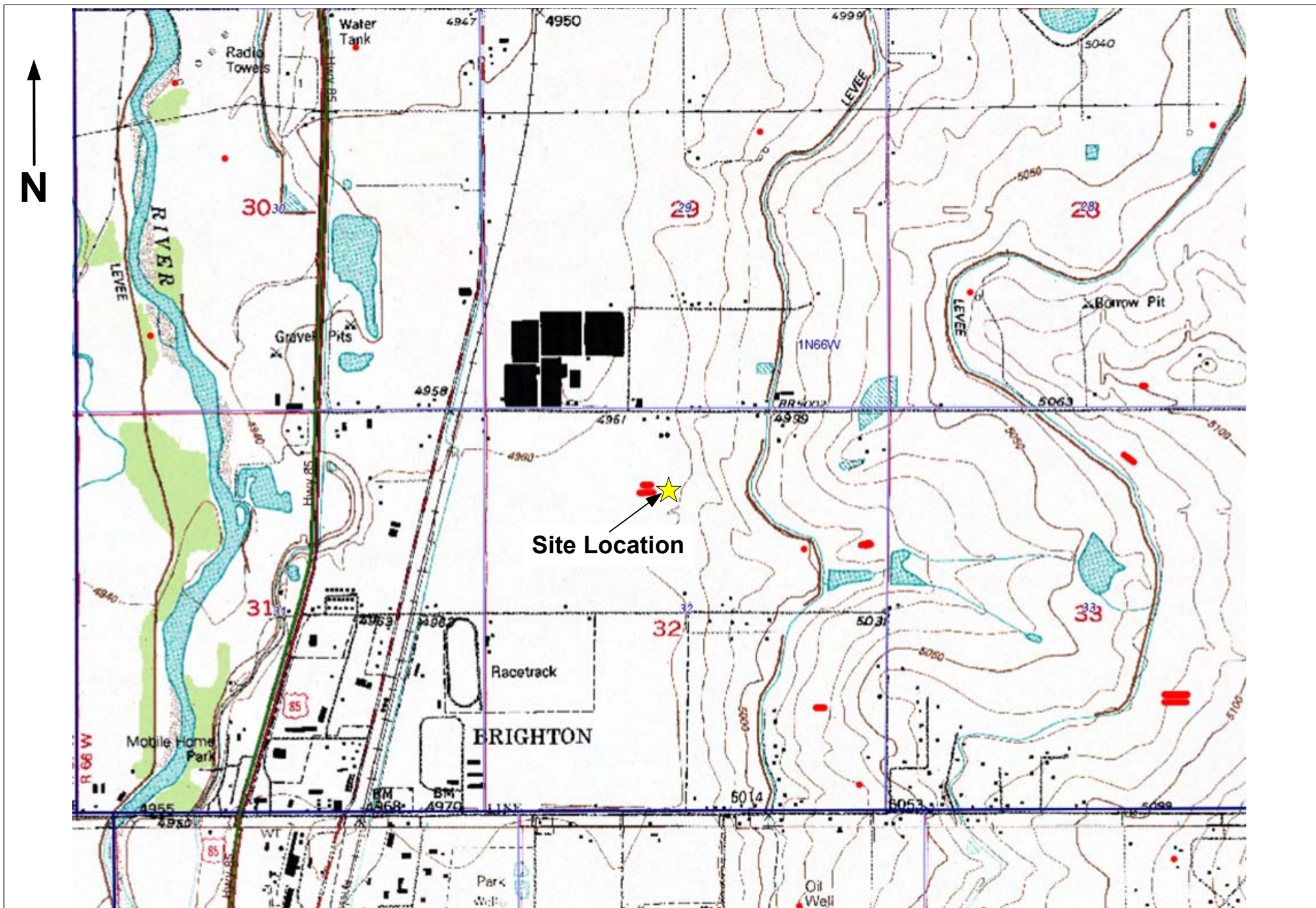
GRO - Gasoline range organics

DRO - Diesel range organics

NA - Not analyzed

Bold - Above COGCC Table 910-1 concentration level

FIGURES



PROJECT NO: 017-2902

DRAWN BY: JED

DATE: 10/16/2017

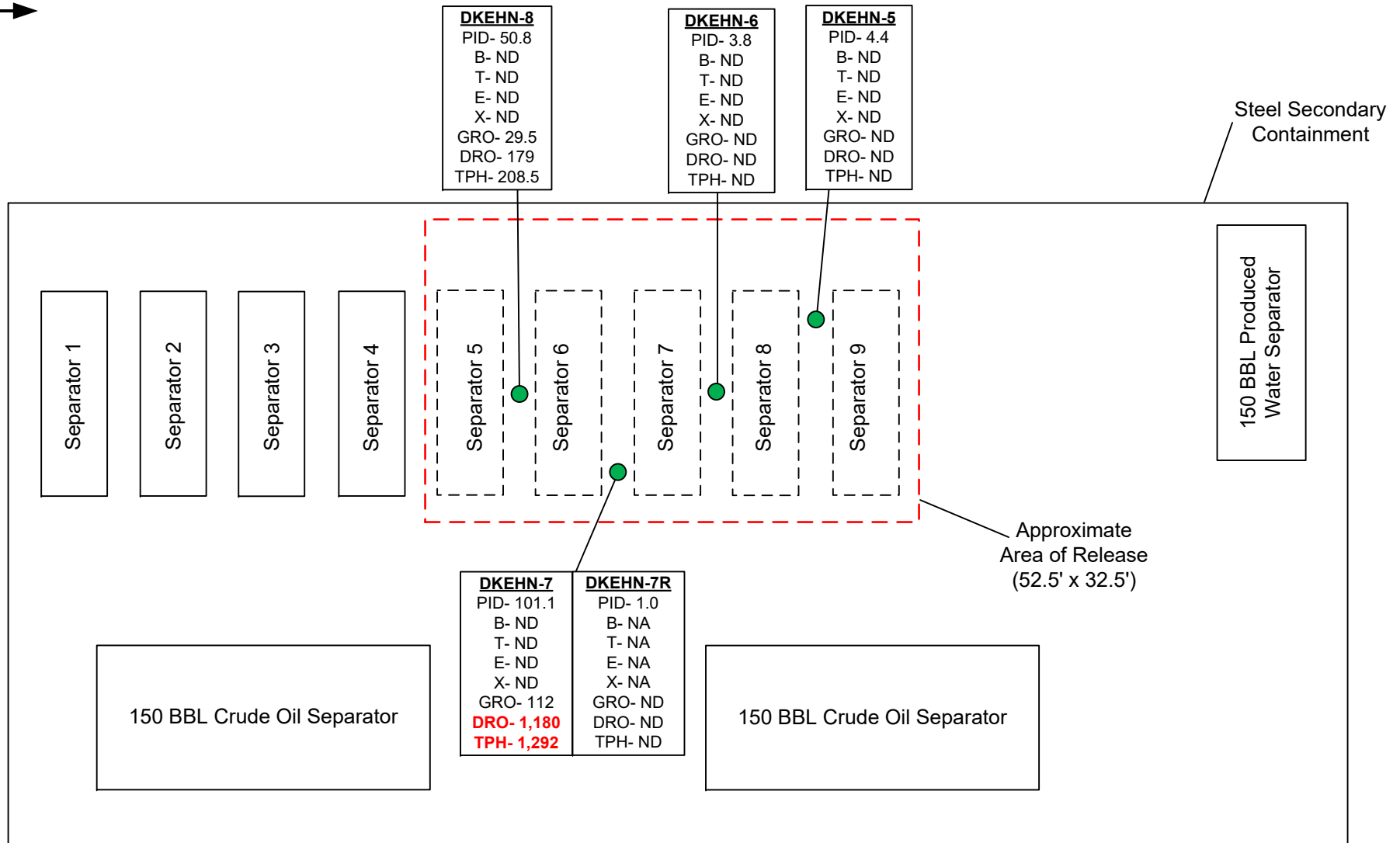
General Location Map
Dittmer KE 29-032HN Production Facility
NENW S32 T1N R66W
Weld County, Colorado

OLSSON
ASSOCIATES

4690 Table Mountain Drive
Suite 200
Golden, CO 80403
TEL 303-237-2072
FAX 303-237-2659

FIGURE

1



● Soil Sample Location
PID - Photoionization Detector reported in parts per million (ppm)
ND - Not detected above laboratory detection limits
NA - Not analyzed
BTEX - Benzene, toluene, ethylbenzene, total xylenes
GRO - Gasoline Range Organics
DRO - Diesel Range Organics
TPH - Total Petroleum Hydrocarbons
BTEX/GRO/DRO/TPH reported in milligrams per kilogram (mg/kg)
Bold - Above COGCC Table 910-1 concentration level

PROJECT NO: 017-2902

DRAWN BY: JED

DATE: 11/22/2017

Sample Location and Analytical Results Map
Dittmer KE 29-032HN Production Facility
NENW S32 T1N R66W
Weld County, Colorado



4690 Table Mountain Drive
Suite 200
Golden, CO 80403
TEL 303-237-2072
FAX 303-237-2659

FIGURE

2

**ATTACHMENT A
COGCC INITIAL AND
SUPPLEMENTAL FORM 19**

State of Colorado
Oil and Gas Conservation Commission

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



Document Number:

401429897

Date Received:

10/16/2017

Spill report taken by:

CANFIELD, CHRIS

Spill/Release Point ID:

453130

SPILL/RELEASE REPORT (INITIAL)

This form is to be submitted by the party responsible for the oil and gas spill or release. Refer to COGCC Rule 906.b. for reporting requirements of spills or releases of E&P Waste or produced fluids. Submit a Site Investigation and Remediation Workplan (Form 27) when requested by the Director.

OPERATOR INFORMATION

| | | |
|--|---------------------------|-----------------------------------|
| Name of Operator: <u>GREAT WESTERN OPERATING COMPANY LLC</u> | Operator No: <u>10110</u> | Phone Numbers |
| Address: <u>1801 BROADWAY #500</u> | | Phone: <u>(303) 398-0478</u> |
| City: <u>DENVER</u> | State: <u>CO</u> | Zip: <u>80202</u> |
| Contact Person: <u>Ben Huggins</u> | | Email: <u>bhuggins@gwogco.com</u> |

INITIAL SPILL/RELEASE REPORT

Initial Spill/Release Report Doc# 401429897

Initial Report Date: 10/16/2017 Date of Discovery: 10/12/2017 Spill Type: Recent Spill

Spill/Release Point Location:

Location of Spill/Release: QTRQTR NENW SEC 32 TWP 1N RNG 66W MERIDIAN 6Latitude: 40.012016 Longitude: -104.801556Municipality (if within municipal boundaries): _____ County: WELD

Reference Location:

Facility Type: TANK BATTERY ☒ Facility/Location ID No 447013☐ No Existing Facility or Location ID No.☐ Well API No. (Only if the reference facility is well) 05- -

Fluid(s) Spilled/Released (please answer Yes/No):

Was one (1) barrel or more spilled outside of berms or secondary containment? No

Secondary containment, including walls & floor regardless of construction material, must be sufficiently impervious to contain any discharge from primary containment until cleanup occurs.

Were Five (5) barrels or more spilled? Yes

Estimated Total Spill Volume: use same ranges as others for values

Estimated Oil Spill Volume(bbl): >=5 and <100Estimated Condensate Spill Volume(bbl): 0Estimated Flow Back Fluid Spill Volume(bbl): 0Estimated Produced Water Spill Volume(bbl): >=5 and <100Estimated Other E&P Waste Spill Volume(bbl): 0Estimated Drilling Fluid Spill Volume(bbl): 0Specify: 40 bbls total: 30 bbls produced water and 10 bbls oil released w/in containment

Land Use:

Current Land Use: CROP LAND

Other(Specify): _____

Weather Condition: Clear, 75 degrees FSurface Owner: FEEOther(Specify): Tim Dittmer

Check if impacted or threatened by spill/Release (please answer Yes/No to all that apply):

Waters of the State ☐ Residence/Occupied Structure ☐ Livestock ☐ Public Byway ☐ Surface Water Supply Area ☐

As defined in COGCC 100-Series Rules

Describe what is known about the spill/release event (what happened -- including how it was stopped, contained, and recovered):

A fire occurred at the separators. Subsequently, thirty (30) bbls of produced water and ten (10) bbls of oil were released within containment.

List Agencies and Other Parties Notified:

OTHER NOTIFICATIONS

| <u>Date</u> | <u>Agency/Party</u> | <u>Contact</u> | <u>Phone</u> | <u>Response</u> |
|-------------|---------------------|----------------|--------------|---|
| 10/13/2017 | Weld County | Tom Parko | -- | Email- tparko@co.weld.co.us |
| 10/13/2017 | Weld County | Roy Rudisill | -- | Email- rrudisill@weldgov.com |
| 10/13/2017 | Weld County | Troy Swain | -- | Email- tswain@weldgov.com |
| 10/13/2017 | Weld County | Gracie Marquez | -- | Email- gmarquez@weldgov.com |
| 10/13/2017 | Weld County | Jay McDonald | -- | Email- jmcdonald@weldgov.com |
| 10/13/2017 | COGCC | Chris Canfield | 303-894-2100 | Verbal- Left voicemail 10/13/17 at 2:45 pm |
| 10/13/2017 | Landowner | Tim Dittmer | 303-548-4974 | Verbal by Great Western 10/13/17 at 1:50 pm |

OPERATOR COMMENTS:

| |
|--|
| |
|--|

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

Signed: _____ Print Name: Jason Davidson
Title: Senior Geologist Date: 10/16/2017 Email: j davidson@olssonassociates.com

COA Type

Description

| | |
|--|--|
| | |
|--|--|

Attachment Check List

| <u>Att Doc Num</u> | <u>Name</u> |
|--------------------|-------------------------------|
| 401429897 | SPILL/RELEASE REPORT(INITIAL) |
| 401430494 | TOPOGRAPHIC MAP |
| 401430497 | AERIAL PHOTOGRAPH |
| 401468524 | FORM 19 SUBMITTED |

Total Attach: 4 Files

General Comments

| <u>User Group</u> | <u>Comment</u> | <u>Comment Date</u> |
|-------------------|----------------|---------------------|
| | | Stamp Upon Approval |

Total: 0 comment(s)

State of Colorado Oil and Gas Conservation Commission

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



Document Number:

401443897

Date Received:

10/30/2017

Spill report taken by:

Spill/Release Point ID:

SPILL/RELEASE REPORT (SUPPLEMENTAL)

This form is to be submitted by the party responsible for the oil and gas spill or release. Refer to COGCC Rule 906.b. for reporting requirements of spills or releases of E&P Waste or produced fluids. Submit a Site Investigation and Remediation Workplan (Form 27) when requested by the Director.

OPERATOR INFORMATION

| | | |
|---|--------------------|----------------------------|
| Name of Operator: GREAT WESTERN OPERATING COMPANY LLC | Operator No: 10110 | Phone Numbers |
| Address: 1801 BROADWAY #500 | | Phone: (303) 398-0537 |
| City: DENVER | State: CO | Zip: 80202 |
| Contact Person: Ben Huggins | | Mobile: () |
| | | Email: bhuggins@gwogco.com |

INITIAL SPILL/RELEASE REPORT

Initial Spill/Release Report Doc# 401429897

Initial Report Date: 10/16/2017 Date of Discovery: 10/12/2017 Spill Type: Recent Spill

Spill/Release Point Location:

Location of Spill/Release: QTRQTR NENW SEC 32 TWP 1N RNG 66W MERIDIAN 6

Latitude: 40.012016 Longitude: -104.801556

Municipality (if within municipal boundaries): County: WELD

Reference Location:

Facility Type: TANK BATTERY ☒ Facility/Location ID No 447013
☐ No Existing Facility or Location ID No.
☐ Well API No. (Only if the reference facility is well) 05- -

Fluid(s) Spilled/Released (please answer Yes/No):

Was one (1) barrel or more spilled outside of berms or secondary containment? No

Secondary containment, including walls & floor regardless of construction material, must be sufficiently impervious to contain any discharge from primary containment until cleanup occurs.

Were Five (5) barrels or more spilled? Yes

Estimated Total Spill Volume: use same ranges as others for values

Estimated Oil Spill Volume(bbl): >=5 and <100

Estimated Condensate Spill Volume(bbl): 0

Estimated Flow Back Fluid Spill Volume(bbl): 0

Estimated Produced Water Spill Volume(bbl): >=5 and <100

Estimated Other E&P Waste Spill Volume(bbl): 0

Estimated Drilling Fluid Spill Volume(bbl): 0

Specify: 40 bbls total: 30 bbls produced water and 10 bbls oil released w/in containment

Land Use:

Current Land Use: CROP LAND Other(Specify):

Weather Condition: Clear, 75 degrees F

Surface Owner: FEE Other(Specify): Tim Dittmer

Check if impacted or threatened by spill/Release (please answer Yes/No to all that apply):

Waters of the State ☐ Residence/Occupied Structure ☐ Livestock ☐ Public Byway ☐ Surface Water Supply Area ☐

As defined in COGCC 100-Series Rules

Describe what is known about the spill/release event (what happened -- including how it was stopped, contained, and recovered):

A fire occurred at the separators. Subsequently, thirty (30) bbls of produced water and ten (10) bbls of oil were released within containment.

List Agencies and Other Parties Notified:

OTHER NOTIFICATIONS

| <u>Date</u> | <u>Agency/Party</u> | <u>Contact</u> | <u>Phone</u> | <u>Response</u> |
|-------------|---------------------|----------------|--------------|---|
| 10/13/2017 | Weld County | Tom Parko | -- | Email- tparko@co.weld.co.us |
| 10/13/2017 | Weld County | Roy Rudisill | -- | Email- rrudisill@weldgov.com |
| 10/13/2017 | Weld County | Troy Swain | -- | Email- tswain@weldgov.com |
| 10/13/2017 | Weld County | Gracie Marquez | -- | Email- gmarquez@weldgov.com |
| 10/13/2017 | Weld County | Jay McDonald | -- | Email- jmcdonald@weldgov.com |
| 10/13/2017 | COGCC | Chris Canfield | 303-894-2100 | Verbal- Left voicemail 10/13/17 at 2:45 pm |
| 10/13/2017 | Landowner | Tim Dittmer | 303-548-4974 | Verbal by Great Western 10/13/17 at 1:50 pm |

REQUEST FOR CLOSURE

Spill/Release Reports should be closed when impacts have been remediated or when further investigation and corrective actions will take place under an approved Form 27.

Basis for Closure: ☐ Corrective Actions Completed (documentation attached)

☐ Work proceeding under an approved Form 27

Form 27 Remediation Project No: _____

OPERATOR COMMENTS:

Additional assessment and confirmation sampling of the soil in the vicinity of the separators cannot occur until the construction/roustabout crew has departed the site. It is anticipated that confirmation soil sampling activities will ensue, as is necessary to meet COGCC standards, before the end of November 2017. The additional soil sampling activities will be documented on a follow-up Form 19 Supplemental.

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

Signed: _____ Print Name: Jason Davidson

Title: Senior Geologist Date: 10/30/2017 Email: jdavidson@olssonassociates.com

COA Type

Description

| | |
|--|--|
| | |
|--|--|

Attachment Check List

Att Doc Num

Name

| | |
|-----------|-------------------|
| 401443897 | FORM 19 SUBMITTED |
|-----------|-------------------|

Total Attach: 1 Files

General Comments

| <u>User Group</u> | <u>Comment</u> | <u>Comment Date</u> |
|-------------------|----------------|---------------------|
| | | Stamp Upon Approval |

Total: 0 comment(s)

ATTACHMENT B
SOIL CONFIRMATION SAMPLES
LABORATORY REPORTS



November 07, 2017

Olsson Associates

Jason Davidson

4690 Table Mountain Drive

Golden

CO 80403

Project Name - Dittmer KE 29-032HN Release

Project Number - 017-2902

Attached are your analytical results for Dittmer KE 29-032HN Release received by Origins Laboratory, Inc. November 01, 2017. This project is associated with Origins project number Y711020-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Olsson Associates

4690 Table Mountain Drive

Golden CO 80403

Jason Davidson

Project Number: 017-2902

Project: Dittmer KE 29-032HN Release

CROSS REFERENCE REPORT

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|------------------------|------------------|
| DKEHN-5 | Y711020-01 | Soil | November 1, 2017 15:00 | 11/01/2017 17:50 |
| DKEHN-6 | Y711020-02 | Soil | November 1, 2017 15:10 | 11/01/2017 17:50 |
| DKEHN-7 | Y711020-03 | Soil | November 1, 2017 15:15 | 11/01/2017 17:50 |
| DKEHN-8 | Y711020-04 | Soil | November 1, 2017 15:20 | 11/01/2017 17:50 |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

www.originslaboratory.com

4711020

page | of |

ORIGINS
LABORATORY, INC

Client: Olsson Associates
Address: 4690 Table Mountain Dr, Ste 200
Golden, CO 80403
Telephone Number: 303-331-2012
Email Address: jason.davidson@olssonassociates.com

Project Manager: Jason Davidson
Project Name: Dittmer KE 29-032HN Release
Project Number: 017-2902
Samples Collected By: Jason Davidson

| Sample ID Description | Date Sampled | Time Sampled | # of Containers | Preservative | | | | Matrix | | | Analysis | | Sample Instructions |
|-----------------------|--------------|--------------|-----------------|--------------|-----|------------------|-------|-------------|------|-------------|----------|-----------------|---------------------|
| | | | | Unpreserved | HCl | HNO ₃ | Other | Groundwater | Soil | Air Summa # | Other | Other (Specify) | |
| DKEN-5 | 11/11/10 | 15:00 | 2 | X | | | | X | | | | | 1 |
| DKEN-6 | | 15:10 | | | | | | | | | | | 2 |
| DKEN-7 | | 15:15 | | | | | | | | | | | 3 |
| DKEN-8 | | 15:20 | | | | | | | | | | | 4 |
| | | | | | | | | | | | | | 5 |
| | | | | | | | | | | | | | 6 |
| | | | | | | | | | | | | | 7 |
| | | | | | | | | | | | | | 8 |
| | | | | | | | | | | | | | 9 |
| | | | | | | | | | | | | | 10 |

| | | | | | | |
|--|----------------|-------------|------------------------------------|-------------|-------------|---|
| Relinquished By: <i>Jason Davidson</i> | Date: 11/11/10 | Time: 17:50 | Received By: <i>Jason Davidson</i> | Date: 11-17 | Time: 17:50 | Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard |
| Relinquished By: <i>Jason Davidson</i> | Date: | Time: | Received By: | Date: | Time: | |

Date Results Needed

8-1

Temp Received-

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 4711020

Client: OLSSON ASSC.

Client Project ID: Dittmer KE 29

Checklist Completed by: JD

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 11-2-17 1131

Airbill #: N/A

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: _____

Cooler Number/Temperature: 1 / 8.1 °C 1 / _____ °C 1 / _____ °C (Describe)

Thermometer ID: TC03

| Requirement Description | Yes | No | N/A | Comments (if any) |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------|
| If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ? | | <input checked="" type="checkbox"/> | | <u>Sampled same day</u> |
| Is there ice present (document if blue ice is used) | <input checked="" type="checkbox"/> | | | |
| Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact) | | <input checked="" type="checkbox"/> | | |
| Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact) | | <input checked="" type="checkbox"/> | | |
| Were all samples received intact ⁽¹⁾ ? | <input checked="" type="checkbox"/> | | | |
| Was adequate sample volume provided ⁽¹⁾ ? | <input checked="" type="checkbox"/> | | | |
| Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ? | | <input checked="" type="checkbox"/> | | |
| Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ? | <input checked="" type="checkbox"/> | | | |
| Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ? | <input checked="" type="checkbox"/> | | | |
| Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ? | <input checked="" type="checkbox"/> | | | |
| Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ? | <input checked="" type="checkbox"/> | | | |
| For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative. | | | <input checked="" type="checkbox"/> | |
| Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH) | | <input checked="" type="checkbox"/> | | |
| Additional Comments (if any): | | | | |

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) [Signature]

11-2-17 1131
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

DKEHN-5
11/1/2017 3:00:00PM

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|-------|

Origins Laboratory, Inc.
Y711020-01 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

| | | | | | | | | |
|------------------|----|------|-------|---|---------|------------|------------|---|
| Diesel (C10-C28) | ND | 50.0 | mg/kg | 1 | B7K0204 | 11/02/2017 | 11/04/2017 | U |
|------------------|----|------|-------|---|---------|------------|------------|---|

| | | | | | | | | |
|------------------------|--------|--------|--|--|---|---|---|--|
| Surrogate: o-Terphenyl | 69.6 % | 59-131 | | | " | " | " | |
|------------------------|--------|--------|--|--|---|---|---|--|

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|----|-------|-------|---|---------|------------|------------|---|
| Gasoline Range Hydrocarbons | ND | 0.200 | mg/kg | 1 | B7K0203 | 11/02/2017 | 11/03/2017 | U |
| Benzene | ND | 0.002 | " | " | " | " | " | U |
| Toluene | ND | 0.002 | " | " | " | " | " | U |
| Ethylbenzene | ND | 0.002 | " | " | " | " | " | U |
| Xylenes, total | ND | 0.002 | " | " | " | " | " | U |

| | | | | | | | | |
|----------------------------------|--------|--------|--|--|---|---|---|--|
| Surrogate: 1,2-Dichloroethane-d4 | 123 % | 70-130 | | | " | " | " | |
| Surrogate: Toluene-d8 | 81.3 % | 70-130 | | | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | 96.6 % | 70-130 | | | " | " | " | |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

DKEHN-6
11/1/2017 3:10:00PM

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|-------|

Origins Laboratory, Inc.
Y711020-02 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

| | | | | | | | | |
|------------------|----|------|-------|---|---------|------------|------------|---|
| Diesel (C10-C28) | ND | 50.0 | mg/kg | 1 | B7K0204 | 11/02/2017 | 11/04/2017 | U |
|------------------|----|------|-------|---|---------|------------|------------|---|

| | | | | | | | | |
|------------------------|--------|--------|--|--|---|---|---|--|
| Surrogate: o-Terphenyl | 71.4 % | 59-131 | | | " | " | " | |
|------------------------|--------|--------|--|--|---|---|---|--|

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|----|-------|-------|---|---------|------------|------------|---|
| Gasoline Range Hydrocarbons | ND | 0.200 | mg/kg | 1 | B7K0203 | 11/02/2017 | 11/03/2017 | U |
| Benzene | ND | 0.002 | " | " | " | " | " | U |
| Toluene | ND | 0.002 | " | " | " | " | " | U |
| Ethylbenzene | ND | 0.002 | " | " | " | " | " | U |
| Xylenes, total | ND | 0.002 | " | " | " | " | " | U |

| | | | | | | | | |
|----------------------------------|--------|--------|--|--|---|---|---|--|
| Surrogate: 1,2-Dichloroethane-d4 | 127 % | 70-130 | | | " | " | " | |
| Surrogate: Toluene-d8 | 79.3 % | 70-130 | | | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | 99.2 % | 70-130 | | | " | " | " | |

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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

DKEHN-7
11/1/2017 3:15:00PM

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|--------------------|-------|----------|-------|----------|----------|-------|
|---------|--------|--------------------|-------|----------|-------|----------|----------|-------|

Origins Laboratory, Inc.
Y711020-03 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

| | | | | | | | |
|------------------|------|------|-------|---|---------|------------|------------|
| Diesel (C10-C28) | 1180 | 50.0 | mg/kg | 1 | B7K0204 | 11/02/2017 | 11/04/2017 |
|------------------|------|------|-------|---|---------|------------|------------|

| | | | | | | | |
|------------------------|-------|--------|--|--|---|---|---|
| Surrogate: o-Terphenyl | 120 % | 59-131 | | | " | " | " |
|------------------------|-------|--------|--|--|---|---|---|

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|-----|-------|-------|----|---------|------------|------------|---|
| Gasoline Range Hydrocarbons | 112 | 5.00 | mg/kg | 25 | B7K0203 | 11/02/2017 | 11/04/2017 | |
| Benzene | ND | 0.050 | " | " | " | " | " | U |
| Toluene | ND | 0.050 | " | " | " | " | " | U |
| Ethylbenzene | ND | 0.050 | " | " | " | " | " | U |
| Xylenes, total | ND | 0.050 | " | " | " | " | " | U |

| | | | | | | | |
|----------------------------------|-------|--------|--|--|---|---|---|
| Surrogate: 1,2-Dichloroethane-d4 | 101 % | 70-130 | | | " | " | " |
| Surrogate: Toluene-d8 | 101 % | 70-130 | | | " | " | " |
| Surrogate: 4-Bromofluorobenzene | 100 % | 70-130 | | | " | " | " |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

DKEHN-8
11/1/2017 3:20:00PM

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|--------------------|-------|----------|-------|----------|----------|-------|
|---------|--------|--------------------|-------|----------|-------|----------|----------|-------|

Origins Laboratory, Inc.
Y711020-04 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

| | | | | | | | |
|------------------|-----|------|-------|---|---------|------------|------------|
| Diesel (C10-C28) | 179 | 50.0 | mg/kg | 1 | B7K0204 | 11/02/2017 | 11/04/2017 |
|------------------|-----|------|-------|---|---------|------------|------------|

| | | | | | | | |
|------------------------|--------|--------|--|--|---|---|---|
| Surrogate: o-Terphenyl | 83.4 % | 59-131 | | | " | " | " |
|------------------------|--------|--------|--|--|---|---|---|

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|------|-------|-------|----|---------|------------|------------|---|
| Gasoline Range Hydrocarbons | 29.5 | 5.00 | mg/kg | 25 | B7K0203 | 11/02/2017 | 11/04/2017 | |
| Benzene | ND | 0.050 | " | " | " | " | " | U |
| Toluene | ND | 0.050 | " | " | " | " | " | U |
| Ethylbenzene | ND | 0.050 | " | " | " | " | " | U |
| Xylenes, total | ND | 0.050 | " | " | " | " | " | U |

| | | | | | | | |
|----------------------------------|--------|--------|--|--|---|---|---|
| Surrogate: 1,2-Dichloroethane-d4 | 101 % | 70-130 | | | " | " | " |
| Surrogate: Toluene-d8 | 101 % | 70-130 | | | " | " | " |
| Surrogate: 4-Bromofluorobenzene | 98.8 % | 70-130 | | | " | " | " |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---|------|-------------|-----|-----------|-------|
| Batch B7K0203 - EPA 5030 (soil) | | | | | | | | | | |
| Blank (B7K0203-BLK1) | | | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
| Gasoline Range Hydrocarbons | ND | 0.200 | mg/kg | | | | | | | U |
| Benzene | ND | 0.002 | " | | | | | | | U |
| Toluene | ND | 0.002 | " | | | | | | | U |
| Ethylbenzene | ND | 0.002 | " | | | | | | | U |
| Xylenes, total | ND | 0.002 | " | | | | | | | U |
| Surrogate: 1,2-Dichloroethane-d4 | 80 | | ug/kg | 62.5 | | 127 | 70-130 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | | 100 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 70 | | " | 62.5 | | 112 | 70-130 | | | |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---|------|-------------|-----|-----------|-------|
| Batch B7K0203 - EPA 5030 (soil) | | | | | | | | | | |
| Blank (B7K0203-BLK2) | | | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
| Gasoline Range Hydrocarbons | ND | 0.200 | mg/kg | | | | | | | U |
| Benzene | ND | 0.002 | " | | | | | | | U |
| Toluene | 0.002 | 0.002 | " | | | | | | | |
| Ethylbenzene | ND | 0.002 | " | | | | | | | U |
| Xylenes, total | ND | 0.002 | " | | | | | | | U |
| Surrogate: 1,2-Dichloroethane-d4 | 70 | | ug/kg | 62.5 | | 113 | 70-130 | | | |
| Surrogate: Toluene-d8 | 64 | | " | 62.5 | | 103 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 66 | | " | 62.5 | | 106 | 70-130 | | | |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---|------|-------------|-----|-----------|-------|
| Batch B7K0203 - EPA 5030 (soil) | | | | | | | | | | |
| Blank (B7K0203-BLK3) | | | | | Prepared: 11/02/2017 Analyzed: 11/03/2017 | | | | | |
| Gasoline Range Hydrocarbons | ND | 0.200 | mg/kg | | | | | | | U |
| Benzene | ND | 0.002 | " | | | | | | | U |
| Toluene | ND | 0.002 | " | | | | | | | U |
| Ethylbenzene | ND | 0.002 | " | | | | | | | U |
| Xylenes, total | ND | 0.002 | " | | | | | | | U |
| Surrogate: 1,2-Dichloroethane-d4 | 72 | | ug/kg | 62.5 | | 115 | 70-130 | | | |
| Surrogate: Toluene-d8 | 64 | | " | 62.5 | | 103 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 69 | | " | 62.5 | | 110 | 70-130 | | | |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---|------|-------------|-----|-----------|-------|
| Batch B7K0203 - EPA 5030 (soil) | | | | | | | | | | |
| LCS (B7K0203-BS1) | | | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
| Benzene | 0.093 | 0.002 | mg/kg | 0.100 | | 93.4 | 77.1-124 | | | |
| Toluene | 0.097 | 0.002 | " | 0.100 | | 96.8 | 74.5-128 | | | |
| Ethylbenzene | 0.115 | 0.002 | " | 0.100 | | 115 | 66.4-127 | | | |
| m,p-Xylene | 0.236 | 0.004 | " | 0.200 | | 118 | 76.6-124 | | | |
| o-Xylene | 0.117 | 0.002 | " | 0.100 | | 117 | 76.6-124 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 73 | | ug/kg | 62.5 | | 117 | 70-130 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | | 101 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 63 | | " | 62.5 | | 101 | 70-130 | | | |

Origins Laboratory, Inc.



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Olsson Associates
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Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---|------|-------------|-----|-----------|-------|
| Batch B7K0203 - EPA 5030 (soil) | | | | | | | | | | |
| LCS (B7K0203-BS2) | | | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
| Benzene | 0.092 | 0.002 | mg/kg | 0.100 | | 91.9 | 77.1-124 | | | |
| Toluene | 0.097 | 0.002 | " | 0.100 | | 97.2 | 74.5-128 | | | |
| Ethylbenzene | 0.110 | 0.002 | " | 0.100 | | 110 | 66.4-127 | | | |
| m,p-Xylene | 0.223 | 0.004 | " | 0.200 | | 112 | 76.6-124 | | | |
| o-Xylene | 0.110 | 0.002 | " | 0.100 | | 110 | 76.6-124 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 65 | | ug/kg | 62.5 | | 104 | 70-130 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | | 101 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 62 | | " | 62.5 | | 98.5 | 70-130 | | | |

Origins Laboratory, Inc.



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Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7K0203 - EPA 5030 (soil)

LCS (B7K0203-BS3)

Prepared: 11/02/2017 Analyzed: 11/02/2017

| | | | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|--|------|----------|--|--|--|
| Benzene | 0.089 | 0.002 | mg/kg | 0.100 | | 89.0 | 77.1-124 | | | |
| Toluene | 0.095 | 0.002 | " | 0.100 | | 94.9 | 74.5-128 | | | |
| Ethylbenzene | 0.094 | 0.002 | " | 0.100 | | 94.2 | 66.4-127 | | | |
| m,p-Xylene | 0.191 | 0.004 | " | 0.200 | | 95.4 | 76.6-124 | | | |
| o-Xylene | 0.094 | 0.002 | " | 0.100 | | 94.0 | 76.6-124 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 65 | | ug/kg | 62.5 | | 105 | 70-130 | | | |
| Surrogate: Toluene-d8 | 64 | | " | 62.5 | | 103 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 54 | | " | 62.5 | | 87.0 | 70-130 | | | |

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Olsson Associates
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Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7K0203 - EPA 5030 (soil)

| Matrix Spike (B7K0203-MS1) | | Source: Y711037-03 | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
|----------------------------------|-------|--------------------|-------|-------|---|------|----------|--|--|--|
| Benzene | 0.095 | 0.002 | mg/kg | 0.100 | ND | 94.6 | 71.8-126 | | | |
| Toluene | 0.098 | 0.002 | " | 0.100 | ND | 97.8 | 65.1-130 | | | |
| Ethylbenzene | 0.111 | 0.002 | " | 0.100 | ND | 111 | 62.2-130 | | | |
| m,p-Xylene | 0.223 | 0.004 | " | 0.200 | ND | 112 | 46.5-137 | | | |
| o-Xylene | 0.112 | 0.002 | " | 0.100 | ND | 112 | 54.2-134 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 69 | | ug/kg | 62.5 | | 110 | 70-130 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | | 102 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 63 | | " | 62.5 | | 101 | 70-130 | | | |

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Olsson Associates
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Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7K0203 - EPA 5030 (soil)

| Matrix Spike (B7K0203-MS2) | | Source: Y711037-05 | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
|----------------------------------|-------|--------------------|-------|-------|---|------|----------|--|--|--|
| Benzene | 0.079 | 0.002 | mg/kg | 0.100 | ND | 78.5 | 71.8-126 | | | |
| Toluene | 0.080 | 0.002 | " | 0.100 | ND | 80.5 | 65.1-130 | | | |
| Ethylbenzene | 0.090 | 0.002 | " | 0.100 | ND | 89.9 | 62.2-130 | | | |
| m,p-Xylene | 0.181 | 0.004 | " | 0.200 | ND | 90.6 | 46.5-137 | | | |
| o-Xylene | 0.091 | 0.002 | " | 0.100 | ND | 90.7 | 54.2-134 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 65 | | ug/kg | 62.5 | | 105 | 70-130 | | | |
| Surrogate: Toluene-d8 | 65 | | " | 62.5 | | 104 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 63 | | " | 62.5 | | 101 | 70-130 | | | |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7K0203 - EPA 5030 (soil)

| Matrix Spike (B7K0203-MS3) | | Source: Y711037-01 | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
|----------------------------------|-------|--------------------|-------|-------|---|------|----------|--|--|--|
| Benzene | 0.093 | 0.002 | mg/kg | 0.100 | ND | 92.6 | 71.8-126 | | | |
| Toluene | 0.099 | 0.002 | " | 0.100 | ND | 98.8 | 65.1-130 | | | |
| Ethylbenzene | 0.108 | 0.002 | " | 0.100 | ND | 108 | 62.2-130 | | | |
| m,p-Xylene | 0.218 | 0.004 | " | 0.200 | ND | 109 | 46.5-137 | | | |
| o-Xylene | 0.108 | 0.002 | " | 0.100 | ND | 108 | 54.2-134 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 67 | | ug/kg | 62.5 | | 107 | 70-130 | | | |
| Surrogate: Toluene-d8 | 64 | | " | 62.5 | | 103 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 63 | | " | 62.5 | | 100 | 70-130 | | | |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---------------------------|------|-------------|------|-----------|---|
| Batch B7K0203 - EPA 5030 (soil) | | | | | | | | | | |
| Matrix Spike Dup (B7K0203-MSD1) | | | | | Source: Y711037-03 | | | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 |
| Benzene | 0.090 | 0.002 | mg/kg | 0.100 | ND | 90.3 | 71.8-126 | 4.65 | 11.3 | |
| Toluene | 0.092 | 0.002 | " | 0.100 | ND | 91.6 | 65.1-130 | 6.55 | 15.4 | |
| Ethylbenzene | 0.106 | 0.002 | " | 0.100 | ND | 106 | 62.2-130 | 4.78 | 19.6 | |
| m,p-Xylene | 0.217 | 0.004 | " | 0.200 | ND | 108 | 46.5-137 | 3.06 | 19.2 | |
| o-Xylene | 0.108 | 0.002 | " | 0.100 | ND | 108 | 54.2-134 | 3.57 | 17.9 | |
| Surrogate: 1,2-Dichloroethane-d4 | 67 | | ug/kg | 62.5 | | 108 | 70-130 | | | |
| Surrogate: Toluene-d8 | 65 | | " | 62.5 | | 104 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 62 | | " | 62.5 | | 98.9 | 70-130 | | | |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7K0203 - EPA 5030 (soil)

| Matrix Spike Dup (B7K0203-MSD2) | | Source: Y711037-05 | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
|----------------------------------|-------|--------------------|-------|-------|---|------|----------|------|------|-------|
| Benzene | 0.089 | 0.002 | mg/kg | 0.100 | ND | 88.6 | 71.8-126 | 12.1 | 11.3 | QR-02 |
| Toluene | 0.090 | 0.002 | " | 0.100 | ND | 90.0 | 65.1-130 | 11.1 | 15.4 | |
| Ethylbenzene | 0.101 | 0.002 | " | 0.100 | ND | 101 | 62.2-130 | 11.7 | 19.6 | |
| m,p-Xylene | 0.206 | 0.004 | " | 0.200 | ND | 103 | 46.5-137 | 12.7 | 19.2 | |
| o-Xylene | 0.104 | 0.002 | " | 0.100 | ND | 104 | 54.2-134 | 13.6 | 17.9 | |
| Surrogate: 1,2-Dichloroethane-d4 | 63 | | ug/kg | 62.5 | | 101 | 70-130 | | | |
| Surrogate: Toluene-d8 | 62 | | " | 62.5 | | 99.5 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 63 | | " | 62.5 | | 101 | 70-130 | | | |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7K0203 - EPA 5030 (soil)

| Matrix Spike Dup (B7K0203-MSD3) | | Source: Y711037-01 | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
|----------------------------------|-------|--------------------|-------|-------|---|------|----------|------|------|-------|
| Benzene | 0.089 | 0.002 | mg/kg | 0.100 | ND | 89.3 | 71.8-126 | 3.65 | 11.3 | |
| Toluene | 0.094 | 0.002 | " | 0.100 | ND | 93.9 | 65.1-130 | 5.02 | 15.4 | |
| Ethylbenzene | 0.081 | 0.002 | " | 0.100 | ND | 80.9 | 62.2-130 | 28.7 | 19.6 | QR-02 |
| m,p-Xylene | 0.164 | 0.004 | " | 0.200 | ND | 81.8 | 46.5-137 | 28.3 | 19.2 | QR-02 |
| o-Xylene | 0.082 | 0.002 | " | 0.100 | ND | 82.2 | 54.2-134 | 26.9 | 17.9 | QR-02 |
| Surrogate: 1,2-Dichloroethane-d4 | 65 | | ug/kg | 62.5 | | 103 | 70-130 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | | 101 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 49 | | " | 62.5 | | 78.8 | 70-130 | | | |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Extractable Petroleum Hydrocarbons by 8015C - Quality Control

Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7K0204 - EPA 3550B

| | | | | | | | | | | |
|-----------------------------|-----|------|-------|---|--|------|--------|--|--|---|
| Blank (B7K0204-BLK1) | | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | | |
| Diesel (C10-C28) | ND | 50.0 | mg/kg | | | | | | | U |
| Surrogate: o-Terphenyl | 46 | | " | 50.0 | | 92.7 | 59-131 | | | |
| Blank (B7K0204-BLK2) | | | | Prepared: 11/02/2017 Analyzed: 11/03/2017 | | | | | | |
| Diesel (C10-C28) | ND | 50.0 | mg/kg | | | | | | | U |
| Surrogate: o-Terphenyl | 43 | | " | 50.0 | | 85.4 | 59-131 | | | |
| Blank (B7K0204-BLK3) | | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | | |
| Diesel (C10-C28) | ND | 50.0 | mg/kg | | | | | | | U |
| Surrogate: o-Terphenyl | 40 | | " | 50.0 | | 80.9 | 59-131 | | | |
| LCS (B7K0204-BS1) | | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | | |
| Diesel (C10-C28) | 892 | 50.0 | mg/kg | 1000 | | 89.2 | 64-121 | | | |
| Surrogate: o-Terphenyl | 49 | | " | 50.0 | | 98.4 | 59-131 | | | |
| LCS (B7K0204-BS2) | | | | Prepared: 11/02/2017 Analyzed: 11/03/2017 | | | | | | |
| Diesel (C10-C28) | 768 | 50.0 | mg/kg | 1000 | | 76.8 | 64-121 | | | |
| Surrogate: o-Terphenyl | 48 | | " | 50.0 | | 96.5 | 59-131 | | | |
| LCS (B7K0204-BS3) | | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | | |
| Diesel (C10-C28) | 818 | 50.0 | mg/kg | 1000 | | 81.8 | 64-121 | | | |
| Surrogate: o-Terphenyl | 50 | | " | 50.0 | | 99.2 | 59-131 | | | |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Extractable Petroleum Hydrocarbons by 8015C - Quality Control Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|---------------------------|-------|-------------|---|------|-------------|-------|-----------|-------|
| Batch B7K0204 - EPA 3550B | | | | | | | | | | |
| Matrix Spike (B7K0204-MS1) | | Source: Y710457-01 | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
| Diesel (C10-C28) | 784 | 50.0 | mg/kg | 1000 | ND | 78.4 | 53-125 | | | |
| Surrogate: o-Terphenyl | 43 | | " | 50.0 | | 86.8 | 59-131 | | | |
| Matrix Spike (B7K0204-MS2) | | Source: Y710457-02 | | | Prepared: 11/02/2017 Analyzed: 11/03/2017 | | | | | |
| Diesel (C10-C28) | 685 | 50.0 | mg/kg | 1000 | ND | 68.5 | 53-125 | | | |
| Surrogate: o-Terphenyl | 42 | | " | 50.0 | | 83.2 | 59-131 | | | |
| Matrix Spike (B7K0204-MS3) | | Source: Y711037-01 | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
| Diesel (C10-C28) | 751 | 50.0 | mg/kg | 1000 | ND | 75.1 | 53-125 | | | |
| Surrogate: o-Terphenyl | 44 | | " | 50.0 | | 87.1 | 59-131 | | | |
| Matrix Spike Dup (B7K0204-MSD1) | | Source: Y710457-01 | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
| Diesel (C10-C28) | 774 | 50.0 | mg/kg | 1000 | ND | 77.4 | 53-125 | 1.25 | 20 | |
| Surrogate: o-Terphenyl | 44 | | " | 50.0 | | 87.4 | 59-131 | | | |
| Matrix Spike Dup (B7K0204-MSD2) | | Source: Y710457-02 | | | Prepared: 11/02/2017 Analyzed: 11/03/2017 | | | | | |
| Diesel (C10-C28) | 761 | 50.0 | mg/kg | 1000 | ND | 76.1 | 53-125 | 10.5 | 20 | |
| Surrogate: o-Terphenyl | 45 | | " | 50.0 | | 90.6 | 59-131 | | | |
| Matrix Spike Dup (B7K0204-MSD3) | | Source: Y711037-01 | | | Prepared: 11/02/2017 Analyzed: 11/02/2017 | | | | | |
| Diesel (C10-C28) | 755 | 50.0 | mg/kg | 1000 | ND | 75.5 | 53-125 | 0.473 | 20 | |
| Surrogate: o-Terphenyl | 46 | | " | 50.0 | | 91.2 | 59-131 | | | |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Notes and Definitions

U Sample is Non-Detect.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President



December 01, 2017

Olsson Associates

Jason Davidson

4690 Table Mountain Drive

Golden

CO 80403

Project Name - Dittmer KE 29-032HN Release

Project Number - 017-2902

Attached are your analytical results for Dittmer KE 29-032HN Release received by Origins Laboratory, Inc. November 21, 2017. This project is associated with Origins project number Y711345-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Olsson Associates

4690 Table Mountain Drive

Golden CO 80403

Jason Davidson

Project Number: 017-2902

Project: Dittmer KE 29-032HN Release

CROSS REFERENCE REPORT

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|------------------------|------------------|
| DKEHN-7R | Y711345-01 | Soil | November 21, 2017 8:45 | 11/21/2017 11:55 |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

www.originslaboratory.com



page 1 of 1

711345

ORIGINS
LABORATORY, INC

Client: Olsson Associates
Address: 4690 Table Mountain Dr., Ste. 200
Telephone Number: 303-237-2072
Email Address: jidavidson@olssonassociates.com

Project Manager: Jason Davidson
Project Name: Dittmer KE 29-032HN Release
Project Number: 017-2902
Samples Collected By: jidavidson@olssonassociates.com

| Sample ID Description | Date Sampled | Time Sampled | # of Containers | Preservative | | | | | | Matrix | | | Analysis | Sample Instructions |
|--|---------------|--------------|--|----------------|-------------|--|--------------------------------|-------------|------|----------------------|-------|--|------------------------|---------------------|
| | | | | Unpreserved | HCl | HNO ₃ | Other | Groundwater | Soil | Air Summa Canister # | Other | | | |
| DKEHN-7R | 11/4/17 | 8:45 | 2 | 2 | | | | | | X | | | GRO (8260), DRO (8015) | 1 |
| | | | | | | | | | | | | | | 2 |
| | | | | | | | | | | | | | | 3 |
| | | | | | | | | | | | | | | 4 |
| | | | | | | | | | | | | | | 5 |
| | | | | | | | | | | | | | | 6 |
| | | | | | | | | | | | | | | 7 |
| | | | | | | | | | | | | | | 8 |
| | | | | | | | | | | | | | | 9 |
| | | | | | | | | | | | | | | 10 |
| Relinquished By:  | Date: 11/4/17 | Time: 11:55 | Received By:  | Date: 11-21-17 | Time: 11:55 | Turnaround Time: | | | | | | | | |
| | | | | | | Same Day <input type="checkbox"/> | 24 Hr <input type="checkbox"/> | | | | | | | |
| Relinquished By: | Date: | Time: | Received By: | Date: | Time: | Standard <input checked="" type="checkbox"/> | | | | | | | | |

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 4711345

Client: Olsson Assoc

Client Project ID: Dittmer KE

Checklist Completed by: JD

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 11/22/17

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: _____

Cooler Number/Temperature: 1 / 5.8 °C _____ / _____ °C _____ / _____ °C (Describe)

Thermometer ID: T003

| Requirement Description | Yes | No | N/A | Comments (if any) |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------|
| If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Is there ice present (document if blue ice is used) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| Were all samples received intact ⁽¹⁾ ? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Was adequate sample volume provided ⁽¹⁾ ? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH) | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| Additional Comments (if any): | | | | |

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) _____

11/22/17
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

DKEHN-7R

11/21/2017 8:45:00AM

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|--------------------|-------|----------|-------|----------|----------|-------|
|---------|--------|--------------------|-------|----------|-------|----------|----------|-------|

Origins Laboratory, Inc.
Y711345-01 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

| | | | | | | | | |
|------------------|----|------|-------|---|---------|------------|------------|---|
| Diesel (C10-C28) | ND | 50.0 | mg/kg | 1 | B7K2803 | 11/28/2017 | 11/30/2017 | U |
|------------------|----|------|-------|---|---------|------------|------------|---|

| | | | | | | | | |
|------------------------|--------|--------|--|--|---|---|---|--|
| Surrogate: o-Terphenyl | 79.6 % | 59-131 | | | " | " | " | |
|------------------------|--------|--------|--|--|---|---|---|--|

GRO/TVPH by EPA 8260C

| | | | | | | | | |
|-----------------------------|----|-------|-------|---|---------|------------|------------|---|
| Gasoline Range Hydrocarbons | ND | 0.100 | mg/kg | 1 | B7K2802 | 11/28/2017 | 11/29/2017 | U |
|-----------------------------|----|-------|-------|---|---------|------------|------------|---|

| | | | | | | | | |
|----------------------------------|--------|--------|--|--|---|---|---|--|
| Surrogate: 1,2-Dichloroethane-d4 | 95.9 % | 70-130 | | | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | 101 % | 70-130 | | | " | " | " | |
| Surrogate: Toluene-d8 | 97.2 % | 70-130 | | | " | " | " | |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Extractable Petroleum Hydrocarbons by 8015C - Quality Control Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---|------|---|------|-----------|-------|
| Batch B7K2803 - EPA 3550B | | | | | | | | | | |
| Blank (B7K2803-BLK1) | | | | | Prepared: 11/28/2017 Analyzed: 11/29/2017 | | | | | |
| Diesel (C10-C28) | ND | 50.0 | mg/kg | | | | | | | U |
| Surrogate: o-Terphenyl | 41 | | " | 50.0 | | 81.0 | 59-131 | | | |
| Blank (B7K2803-BLK2) | | | | | Prepared: 11/28/2017 Analyzed: 11/30/2017 | | | | | |
| Diesel (C10-C28) | ND | 50.0 | mg/kg | | | | | | | U |
| Surrogate: o-Terphenyl | 46 | | " | 50.0 | | 91.6 | 59-131 | | | |
| LCS (B7K2803-BS1) | | | | | Prepared: 11/28/2017 Analyzed: 11/29/2017 | | | | | |
| Diesel (C10-C28) | 1000 | 50.0 | mg/kg | 1000 | | 100 | 64-121 | | | |
| Surrogate: o-Terphenyl | 52 | | " | 50.0 | | 104 | 59-131 | | | |
| LCS (B7K2803-BS2) | | | | | Prepared: 11/28/2017 Analyzed: 11/30/2017 | | | | | |
| Diesel (C10-C28) | 958 | 50.0 | mg/kg | 1000 | | 95.8 | 64-121 | | | |
| Surrogate: o-Terphenyl | 50 | | " | 50.0 | | 100 | 59-131 | | | |
| Matrix Spike (B7K2803-MS1) | | | | | Source: Y711344-01 | | Prepared: 11/28/2017 Analyzed: 11/29/2017 | | | |
| Diesel (C10-C28) | 938 | 50.0 | mg/kg | 1000 | ND | 93.8 | 53-125 | | | |
| Surrogate: o-Terphenyl | 48 | | " | 50.0 | | 96.4 | 59-131 | | | |
| Matrix Spike (B7K2803-MS2) | | | | | Source: Y711345-01 | | Prepared: 11/28/2017 Analyzed: 11/30/2017 | | | |
| Diesel (C10-C28) | 945 | 50.0 | mg/kg | 1000 | ND | 94.5 | 53-125 | | | |
| Surrogate: o-Terphenyl | 54 | | " | 50.0 | | 107 | 59-131 | | | |
| Matrix Spike Dup (B7K2803-MSD1) | | | | | Source: Y711344-01 | | Prepared: 11/28/2017 Analyzed: 11/29/2017 | | | |
| Diesel (C10-C28) | 880 | 50.0 | mg/kg | 1000 | ND | 88.0 | 53-125 | 6.46 | 20 | |
| Surrogate: o-Terphenyl | 50 | | " | 50.0 | | 101 | 59-131 | | | |
| Matrix Spike Dup (B7K2803-MSD2) | | | | | Source: Y711345-01 | | Prepared: 11/28/2017 Analyzed: 11/30/2017 | | | |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Extractable Petroleum Hydrocarbons by 8015C - Quality Control
Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7K2803 - EPA 3550B

| | | | | | | | | | | |
|---------------------------------|-----|--------------------|-------|------|---|------|--------|------|----|--|
| Matrix Spike Dup (B7K2803-MSD2) | | Source: Y711345-01 | | | Prepared: 11/28/2017 Analyzed: 11/30/2017 | | | | | |
| Diesel (C10-C28) | 969 | 50.0 | mg/kg | 1000 | ND | 96.9 | 53-125 | 2.50 | 20 | |
| Surrogate: o-Terphenyl | 50 | | " | 50.0 | | 99.7 | 59-131 | | | |

Origins Laboratory, Inc.



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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

Jason Davidson
Project Number: 017-2902
Project: Dittmer KE 29-032HN Release

Volatile Organic Compounds by EPA Method 8260B - Quality Control Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---|------|-------------|-------|-----------|-------|
| Batch B7K2802 - EPA 5030 (soil) | | | | | | | | | | |
| Blank (B7K2802-BLK3) | | | | | Prepared: 11/28/2017 Analyzed: 11/28/2017 | | | | | |
| Gasoline Range Hydrocarbons | ND | 0.100 | mg/kg | | | | | | | U |
| Surrogate: 1,2-Dichloroethane-d4 | 76 | | ug/kg | 62.5 | | 122 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 62 | | " | 62.5 | | 99.5 | 70-130 | | | |
| Surrogate: Toluene-d8 | 60 | | " | 62.5 | | 96.0 | 70-130 | | | |
| LCS (B7K2802-BS3) | | | | | Prepared: 11/28/2017 Analyzed: 11/28/2017 | | | | | |
| Gasoline Range Hydrocarbons | 4.03 | 0.100 | mg/kg | 4.00 | | 101 | 70-130 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 63 | | ug/kg | 62.5 | | 101 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 62 | | " | 62.5 | | 99.2 | 70-130 | | | |
| Surrogate: Toluene-d8 | 61 | | " | 62.5 | | 97.7 | 70-130 | | | |
| LCS Dup (B7K2802-BSD3) | | | | | Prepared: 11/28/2017 Analyzed: 11/28/2017 | | | | | |
| Gasoline Range Hydrocarbons | 4.01 | 0.100 | mg/kg | 4.00 | | 100 | 70-130 | 0.327 | 20 | |
| Surrogate: 1,2-Dichloroethane-d4 | 62 | | ug/kg | 62.5 | | 99.0 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 62 | | " | 62.5 | | 98.8 | 70-130 | | | |
| Surrogate: Toluene-d8 | 60 | | " | 62.5 | | 96.2 | 70-130 | | | |

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Jason Davidson
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Project: Dittmer KE 29-032HN Release

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President