



July 22, 2020

Mr. Jacob Evans
Noble Energy, Inc.
2115 117th Avenue
Greeley, CO 80631

**Soil Assessment, Remediation System Installation, and Startup Report
Wells Ranch AE 32 Econode
Flow Line Release
40.4440 / -104.3552
SW¼ NW¼ SEC.32 T6N R62W 6PM
Weld County, Colorado
Remediation # 12140**

Dear Mr. Evans:

Eagle Environmental Consulting, Inc. (EAGLE) is pleased to provide Noble Energy, Inc. (Noble) with this Soil Assessment, Remediation System Installation, and Startup Report for the above-referenced site.

1.0 SITE BACKGROUND

1.1 Site Description

The Wells Ranch AE 32 Econode site is located within the southwest quarter of the northwest quarter of Section 32, Township 6 North, Range 62 West, of the 6th Prime Meridian, in Weld County, Colorado. The flow line release associated with the site was located at latitude: 40.4440 and longitude: -104.3552. A topographic site location map is presented as Figure 1.

1.2 Site Hydrogeology

The soil lithology observed beneath the release location consists of road base from the ground surface to approximately 2 feet below ground surface (bgs), underlain by dense to very dense, clayey sand from approximately 2 feet bgs to 17 feet bgs and stiff, sandy clay from approximately 17 feet bgs to 35 feet bgs. Groundwater was not observed during assessment activities. Soil boring logs and well completion diagrams are included in Attachment A.

1.3 Previous Assessment Activities

During production, a produced water dump line unintentionally released at the Wells Ranch AE 32 Econode. On May 9, 2018, EAGLE was requested by Noble to perform subsurface assessment activities in response to potential petroleum hydrocarbon impacts associated with the flow line release. EAGLE collected soil samples around the flow line release area to identify any petroleum hydrocarbon impacts above Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 regulatory limits. Based on soil analytical results, additional assessment activities were coordinated to laterally and vertically define soil impacts at the site. Historical soil analytical results are summarized in Table 1.

Due to health and safety concerns regarding the current infrastructure at the site, additional assessment activities were completed utilizing a hydrovac operated by 1888 and a stainless-steel hand auger. On January 17, 2019, EAGLE and Noble utilized 1888 Industrial Services (1888) to advance eight (8) potholes (PH-01 through PH-08) adjacent to previously identified soil impacts above COGCC Table 910-1 regulatory limits. Hydrovac and/or hand auger refusal was encountered between 10 and 15 feet bgs.

Based on field observations and PID readings, 16 soil samples were submitted for lateral and vertical definition of petroleum hydrocarbon impacts observed during the initial assessment. Based on laboratory analytical results, the vertical extent of petroleum hydrocarbon impacts at the site were not defined. Lateral definition of the soil impacts is limited due to overall health and safety concerns at the site due to ongoing oil and gas operations. Pothole assessment soil analytical results are summarized in Table 1.

2.0 SOIL VAPOR EXTRACTION PILOT TESTING ACTIVITIES

Based on the location of adsorbed petroleum hydrocarbon impacts at the site relative to on-going oil and gas (O&G) operations (above-ground and below-ground utilities and/or infrastructure), EAGLE proposed the installation of soil vapor extraction (SVE) remedial wells to evaluate vapor recovery capabilities at the site. EAGLE proposed the installation of five (5) SVE remedial wells adjacent to the separator containment area and the previous excavation extents. Following approval, EAGLE scheduled soil boring advancement/well installation activities.

2.1 Field Work Preparation and Planning

The Utility Notification Center of Colorado (UNCC) was called at least 48 hours in advance of drilling activities to confirm that no unmarked utilities or other obstacles were present within the proposed drilling locations. Tier II facility owners were also contacted to confirm the necessary buried utility notifications were completed.

2.2 Soil Boring Advancement Activities & SVE Pilot Test Well Installation

On April 18, 2019, five (5) soil borings (SVE-01 through SVE-05) were advanced around the produced water line release area. Following advancement activities, each soil boring was completed as a 2-inch, SVE remedial well to remove adsorbed petroleum hydrocarbon vapors beneath the site. Soil borings were cleared to 7 feet bgs by a hydrovac and advanced by EAGLE using a 7822DT Series Geoprobe track rig.

Each location was logged in the field according to soil description, soil classification, moisture content, staining, and volatile organic compound (VOC) concentrations. SVE remedial wells, SVE-01 through SVE-05, were completed with 2-inch, schedule 40, poly vinyl chloride (PVC) pipe, each to a total depth of approximately 25 to 35 feet bgs. Fifteen to twenty feet of 0.010 slotted, 2-inch, schedule 40 PVC screen was placed at the bottom of each boring followed by 10 to 15 feet of 2-inch, schedule 40 PVC riser. The well annulus of each remedial well was backfilled with 10/20 silica sand to approximately 1-foot above screen, followed by a hydrated bentonite seal to the surface. Based on locations, the remedial wells were completed with 8-inch traffic rated steel flush mounts.

Remedial well locations are presented in Figure 2. Remedial well completion diagrams are included as Attachment A.

2.2.1 Soil Sampling Procedures

During soil boring advancement activities, soil samples were collected continuously within 5-foot, plastic sample liners. The samples within the plastic liners were separated in 2.5-foot intervals for soil identification and analysis. A portion from each interval was placed in a sealable plastic bag, for VOC headspace analysis utilizing a field calibrated photoionization detector (PID). Another portion of the soil sample was placed in a 2-ounce glass jar and packed in an iced cooler.

To confirm each location was vertically defined, terminus soil samples from each soil boring (SVE-01@22.5-25', SVE-02@22.5-25', SVE-03@32.5-35', SVE-04@27.5-30', and SVE-05@22.5-25') were submitted to Origins Laboratory, Inc. (Origins) located in Denver, Colorado following standard chain of custody (COC) procedures, for laboratory analysis. Each soil sample was analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, total petroleum hydrocarbons – gasoline range organics (TPH-GRO), and total petroleum hydrocarbons – diesel range organics (TPH-DRO), following modified Environmental Protection Agency (EPA) Methods 8260 and 8015. The laboratory received the soil samples within the required holding time for each laboratory analysis.

2.2.2 Laboratory Analytical Results

Based on laboratory analytical results, soil samples SVE-01@22.5-25', SVE-02@22.5-25', SVE-03@32.5-35', SVE-04@27.5-30', and SVE-05@22.5-25' did not contain concentrations of BTEX, naphthalene, or total petroleum hydrocarbons (TPH) exceeding applicable COGCC Table 910-1 regulatory limits. SVE remedial well soil analytical results are summarized in Table 1 and included in Figure 2. The soil sample laboratory analytical report is included in Attachment B.

2.3 SVE Pilot Testing Activities

Prior to designing and installing the full-scale remediation system, EAGLE completed pilot testing activities at the site to confirm effective radius of influence.

On July 10, 2019, EAGLE conducted pilot test activities on remedial wells SVE-01, and SVE-03 through SVE-05. SVE-02 was observed destroyed. Initial static data of VOC readings were collected from all SVE wells. Instrumentation including Dwyer magnehelic gauges, a TSI VelociCalc 8360 flow meter, and a Rae Systems MiniRAE 3000 PID were utilized in data collection. EAGLE tested each well individually for approximately 1.5 hours.

The initial applied well head vacuum was set at approximately 20 inches of water (“H₂O”). The initial PID reading measured at the effluent stack was 0.0 parts per million by volume (ppm-v). Following approximately 15 minutes of operation, the applied vacuum at the well head was increased to approximately 40 “H₂O, followed by 60 “H₂O. As the applied vacuum was increased, PID readings from the effluent stack minimally increased while PID readings at the well head increased significantly. Additionally, radius of influence (ROI) readings were collected from adjacent remedial wells. Following approximately 1.25 hours of operation, effluent vapor samples were collected for each individual session.

Based on field observations and effluent air analytical results, SVE remedial technology appeared feasible at the site. SVE effluent analytical results are summarized in Table 2 and included in Attachment B. SVE pilot test data is included in Attachment C.

3.0 ADDITIONAL SOIL ASSESSMENT & SVE WELL INSTALLATION

3.1 Vertical Definition Soil Assessment

During previous soil assessment activities, pothole assessment locations PH-01@14-15', PH-02@14-15', PH-03@14-15', and PH-04@12-13' were not vertically defined. From November 2019 through December 2019, EAGLE returned to the site to vertically define adsorbed petroleum hydrocarbon impacts adjacent to these locations. Due to health and safety concerns regarding the current infrastructure at the site, assessment activities were completed utilizing a hydrovac operated by 1888 and a stainless-steel hand auger.

On November 18, 2019 and December 23, 2019, EAGLE and Noble utilized 1888 to advance four (4) potholes (PH-09 through PH-12) adjacent to previously identified soil impacts above COGCC Table 910-1 regulatory limits. Based on location and PID readings, EAGLE submitted four (4) confirmation soil samples (PH-09@17', PH-10@20', PH-11@20', and PH-12@20') for laboratory analysis. Soil samples were analyzed for BTEX, naphthalene, TPH-GRO, and TPH-DRO following modified EPA Methods 8260 and 8015. The soil samples were received within the required holding time for each laboratory analysis. Spatial location of each pothole soil sample location was recorded using a Trimble GeoXT 6000 series instrument.

3.1.1 Laboratory Analytical Results

Based on laboratory analytical results, soil samples PH-09@17', PH-10@20', PH-11@20', and PH-12@20' did not contain concentrations of BTEX, naphthalene, or total petroleum hydrocarbons (TPH) exceeding applicable COGCC Table 910-1 regulatory limits.

Vertical definition soil analytical results are presented in Figure 3 and summarized in Table 1. The soil sample laboratory analytical reports are included in Attachment B.

3.2 Additional SVE Well Installation

Based on SVE pilot testing and soil assessment activities, EAGLE installed additional SVE remedial wells at the site. On December 23, 2019, EAGLE advanced three (3) soil borings (SVE-02R, SVE-07 and SVE-08) around the produced water line release area. Each location was cleared to approximately 5 feet bgs with a hydrovac. Following advancement activities, each soil boring was completed as a 2-inch, SVE remedial well to remove adsorbed petroleum hydrocarbon vapors beneath the site. Soil boring advancement/remedial well installation activities were completed by EAGLE using a 7822DT Series Geoprobe track rig. Prior to backfill, pothole soil locations PH-10, PH-11 and PH-12 were converted to SVE-06, SVE-09 and SVE-10, respectively.

Each location was logged in the field according to soil description, soil classification, moisture content, staining, and VOC concentrations. SVE remedial wells, SVE-02R, SVE-07 and SVE-08, were completed with 2-inch, schedule 40, poly vinyl chloride (PVC) pipe, each to a total depth of approximately 25 to 30 feet bgs. Fifteen to twenty feet of 0.010 slotted, 2-inch, schedule 40 PVC screen was placed at the bottom of each boring followed by 10-feet of 2-inch, schedule 40 PVC riser. SVE remedial wells SVE-06, SVE-09, and SVE-10 were completed with 2-inch, schedule 40, poly vinyl chloride (PVC) pipe, each to a total depth of approximately 20 feet bgs with 15-feet of 0.010 slotted, 2-inch, schedule 40 PVC screen placed at the bottom and 5-feet of 2-inch, schedule 40 PVC riser. The well annulus of each remedial well was backfilled with 10/20 silica sand to approximately 1-foot above screen, followed by a hydrated bentonite seal to the surface. Based on locations, the remedial wells were completed with 8-inch traffic rated steel flush mounts.

Remedial well locations are presented in Figure 2. Remedial well completion diagrams are included as Attachment A.

3.2.1 Soil Sampling Procedures

During soil boring advancement activities, soil samples were collected continuously within 5-foot, plastic sample liners. The samples within the plastic liners were separated in 2.5-foot intervals for soil identification and analysis. A portion from each interval was placed in a sealable plastic bag, for VOC headspace analysis utilizing a field calibrated PID. Another portion of the soil sample was placed in a 2-ounce glass jar and packed in an iced cooler.

Soil samples from each soil boring (SVE-07@20-22.5' and SVE-08@22.5-24.5') were submitted to Origins following standard COC procedures, for laboratory analysis. Each soil sample was analyzed for BTEX, naphthalene, TPH-GRO, and TPH-DRO, following modified EPA Methods 8260 and 8015. The laboratory received the soil samples within the required holding time for each laboratory analysis.

3.2.2 Laboratory Analytical Results

Based on laboratory analytical results, soil samples SVE-07@20-22.5' and SVE-08@22.5-24.5' did not contain concentrations of BTEX, naphthalene, or total petroleum hydrocarbons (TPH) exceeding applicable COGCC Table 910-1 regulatory limits. SVE remedial well soil analytical results are summarized in Table 1 and included in Figure 2. The soil sample laboratory analytical report is included in Attachment B.

4.0 SVE REMEDIAL SYSTEM INSTALLATION AND START-UP ACTIVITIES

4.1 Soil Vapor Extraction Remedial Well Conveyance Line Installation

On March 6, 2020 and April 3, 2020, EAGLE completed SVE conveyance line installation activities. Based on the site location, conveyance lines from all remedial wells, SVE-01 through SVE-10, were installed above ground surface.

The ten (10) SVE remedial wells were tied into two groups based on location:

- SVE-01, SVE-06, SVE-09, SVE-10
- SVE-02R, SVE-03, SVE-04, SVE-05, SVE-07, SVE-08

The ten (10), 2-inch diameter, SVE wells (SVE-01 through SVE-10) were connected to 2-inch diameter, PVC conveyance lines. The two main SVE conveyance line segments were each connected to a 2-inch diameter, male end cam-lock, then connected to the remedial trailer by a 2-inch, clear urethane flex hose. The layout of the SVE remedial system is presented in Figure 4.

4.2 Soil Vapor Extraction Remedial Trailer

On January 21, 2020, a pre-fabricated SVE remedial trailer was transported to the site. The SVE remedial trailer is equipped with a natural gas field generator supplied by the oil and gas separators located on site. On March 16, 2020, natural gas was connected to the remedial trailer.

Equipment within the trailer includes a Root 10 horse power (HP) positive displacement (PD) blower to operate the SVE portion of the system. A knockout tank is installed on the air influent from the SVE wells for collection of residual condensation within the SVE remedial wells.

4.3 SVE Remedial System Startup

On April 13, 2020, EAGLE personnel commenced startup activities of the SVE remedial system. Observation wells are not present onsite; therefore, no field startup data was collected. All startup data was collected off the SVE manifold, blower and effluent stack. Instrumentation including Dwyer magnehelic gauges, a TSI VelociCalc 8360 flow meter, and a Rae Systems MiniRAE 3000 PID were utilized in data collection

The initial well head vacuum was approximately 65 “H₂O. The PID reading measured at the effluent stack was 785 ppm-v. EAGLE returned to site the following two days, though operational status was intermittent due to a blown fuse. Once the generator operational status was maintained, EAGLE returned to the site weekly to collect readings and ensure the site remained under vacuum.

During site visits on April 17, 2020, April 24, 2020, May 1, 2020, May 8, 2020, May 27, 2020, and June 12, 2020, EAGLE collected effluent vapor samples for laboratory analysis. The effluent vapor samples were delivered to Origins for analysis of BTEX and TPH-GRO following EPA Method Total Organics (TO)-15. During the startup system operations, the average applied well head vacuum was approximately 50 “H₂O. Through June 12, 2020, the remedial system has removed approximately 863 pounds of VOCs and 4.52 pounds of benzene (based on effluent laboratory analytical results).

A summary of the SVE Remedial System Data is included in Table 2. SVE Remedial System Layout is presented in Figure 4. SVE effluent analytical reports are included in Attachment B.

4.4 Air Pollution Emissions Notice Determination

During SVE system startup activities, EAGLE collected effluent air samples to monitor the mass of VOCs emitted by the SVE system, as well as to calculate emissions estimates. SVE emissions to date indicate that an Air Pollutant Emissions Notice (APEN) will be necessary due to emissions being expected to exceed the APEN threshold of 1 ton per year. EAGLE will continue to monitor the system and submit an APEN for the SVE system.

5.0 CONCLUSION

Based on the information presented in the report, EAGLE concluded the following:

- On April 18, 2019, EAGLE installed SVE remedial wells SVE-01 through SVE-05.
- Soil samples collected from SVE-01 through SVE-05 did not contain concentrations of BTEX, naphthalene, or TPH exceeding applicable COGCC Table 910-1 regulatory limits.
- On July 10, 2019, EAGLE completed SVE pilot testing activities at the site. Based on field observations and effluent air analytical results, SVE remedial technology appeared feasible at the site.
- On November 18, 2019 and December 23, 2019, EAGLE collected confirmation soil samples to vertically define previously assessed locations (PH-01@14-15’, PH-02@14-15’, PH-03@14-15’, and PH-04@12-13’). Confirmation soil samples PH-09@17’, PH-10@20’, PH-11@20’, and PH-

12@20' did not contain concentrations of BTEX, naphthalene, or total petroleum hydrocarbons (TPH) exceeding applicable COGCC Table 910-1 regulatory limits.

- Following confirmation soil sampling activities, potholes locations PH-10, PH-11, and PH-12 were converted to SVE-06, SVE-09, and SVE-10, respectively.
- On November 18, 2019 and December 23, 2019, EAGLE installed additional SVE wells SVE-02R, and SVE-06 through SVE-10.
- Soil samples collected from SVE-07 and SVE-08 did not contain concentrations of BTEX, naphthalene, or TPH exceeding applicable COGCC Table 910-1 regulatory limits.
- From November 18, 2019 through April 3, 2020, EAGLE completed system installation activities at the site. An SVE remedial trailer became available to utilize at the site in January 2020. The oil and gas separators were connected to the generator on March 16, 2020 and field gas is utilized to fuel the generator for the remedial system.
- From April 13, 2020 through June 12, 2020, EAGLE completed SVE remedial system startup activities.
- Based on effluent laboratory analytical results, the remediation system removed approximately 863 pounds of VOCs and 4.52 pounds of benzene through June 12, 2020.

5.0 RECOMMENDATIONS

Based on the information presented in this report, EAGLE recommends the following:

- Continued operation of the SVE remedial system at the site, with monthly O&M activities on the system.

EAGLE sincerely appreciates the opportunity to provide our services. If you have any questions or require further information, please contact us at (303) 433-0479.

Sincerely,

EAGLE ENVIRONMENTAL CONSULTING, INC.



Kevin Peterson
Staff Geologist



Andrew Newberry
Project Geologist

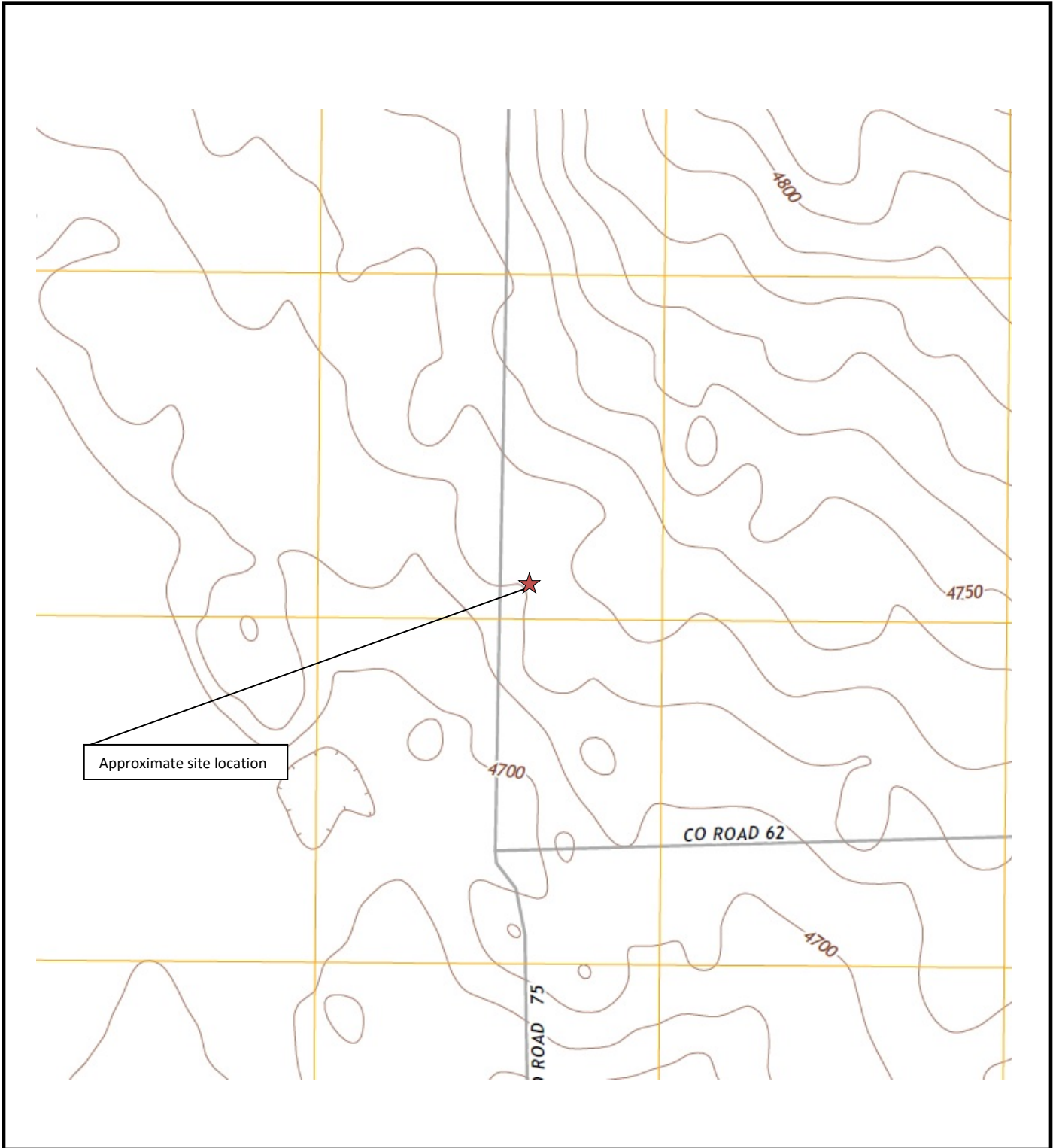
FIGURES

Figure 1: Topographic Site Location Map

Figure 2: SVE Soil Analytical Map

Figure 3: Pothole Assessment Map

Figure 4: SVE System Layout Map



	<p align="center"><u>Topographic Site Location Map</u> Wells Ranch AE32 Econode Flow Line Release 40.4440 / -104.3552 SW¼ NW¼ SEC.32 T6N R62W 6PM Weld County, Colorado Remediation # 12140</p>	<p>EAGLE ENVIRONMENTAL CONSULTING, INC.</p>
<p>Source: USGS 7.5 Minute Topographic Map, Point of Rocks, CO Quadrangle 2013</p>	<p align="center">Figure 1</p>	

LEGEND

- X APPROXIMATE RELEASE LOCATION
- ABOVEGROUND INFRASTRUCTURE
- APPROXIMATE UNDERGROUND (ABANDONED) LINE
- APPROXIMATE ABOVE GROUND FLOWLINE LOCATIONS
- - - APPROXIMATE SURFACING/EXCAVATION BOUNDARIES 05/09/18
- ⊕ APPROXIMATE SOIL VAPOR EXTRACTION (SVE) WELL LOCATIONS
- ⊕ DESTROYED (DES) SVE WELL LOCATION

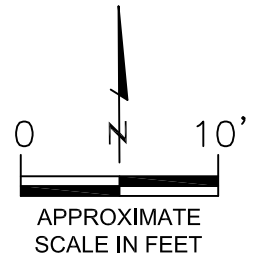
PARAMETERS

SOIL SAMPLE LOCATION	DATE	DEPTH (FEET)
B = BENZENE (mg/kg)		
T = TOLUENE (mg/kg)		
E = ETHYLBENZENE (mg/kg)		
X = TOTAL XYLENES (mg/kg)		
N = NAPHTHALENE (mg/kg)		
G = TPH-GRO (mg/kg)		
D = TPH-DRO (mg/kg)		

mg/kg = MILLIGRAMS PER KILOGRAM
 TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS
 TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS

NOTE: VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

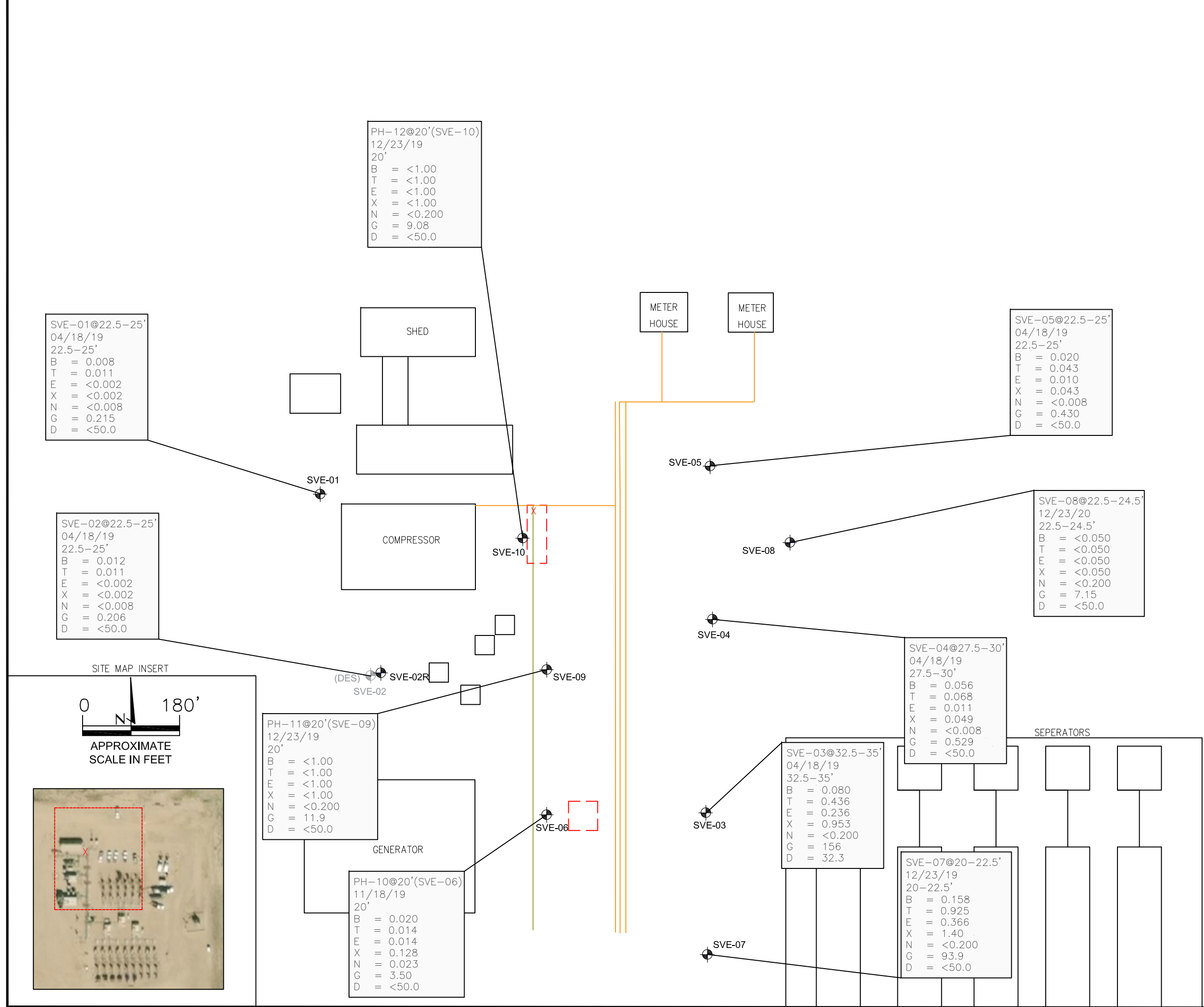
NOTE: CLEAR AERIAL IMAGE NOT AVAILABLE FOR LOCATION. DRAWING BASED ON FIELD OBSERVATIONS AND MEASUREMENTS



SVE SOIL ANALYTICAL MAP
 WELLS RANCH AE32 ECONODE
 FLOW LINE RELEASE
 40.4440 / -104.3552
 SW1/4 NW1/4 SEC.32 T6N R62W 6PM
 WELD COUNTY, COLORADO
 REMEDIATION # 12140

DATE	07/20/20
FIG. NO.	2
DRAWN BY	amn

EAGLE ENVIRONMENTAL CONSULTING, INC.
 8000 W 44th Ave, Wheat Ridge, CO 80033
 Ph: 303-433-0479 • F: 303-325-5449



PH-12@20'(SVE-10)
 12/23/19
 20'
 B = <1.00
 T = <1.00
 E = <1.00
 X = <1.00
 N = <0.200
 G = 9.08
 D = <50.0

SVE-01@22.5-25'
 04/18/19
 22.5-25'
 B = 0.008
 T = 0.011
 E = <0.002
 X = <0.002
 N = <0.008
 G = 0.215
 D = <50.0

SVE-02@22.5-25'
 04/18/19
 22.5-25'
 B = 0.012
 T = 0.011
 E = <0.002
 X = <0.002
 N = <0.008
 G = 0.206
 D = <50.0

SVE-05@22.5-25'
 04/18/19
 22.5-25'
 B = 0.020
 T = 0.043
 E = 0.010
 X = 0.043
 N = <0.008
 G = 0.430
 D = <50.0

SVE-08@22.5-24.5'
 12/23/20
 22.5-24.5'
 B = <0.050
 T = <0.050
 E = <0.050
 X = <0.050
 N = <0.200
 G = 7.15
 D = <50.0

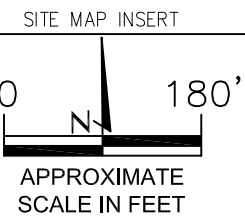
SVE-04@27.5-30'
 04/18/19
 27.5-30'
 B = 0.056
 T = 0.068
 E = 0.011
 X = 0.049
 N = <0.008
 G = 0.529
 D = <50.0

SVE-03@32.5-35'
 04/18/19
 32.5-35'
 B = 0.080
 T = 0.436
 E = 0.236
 X = 0.953
 N = <0.200
 G = 156
 D = 32.3

SVE-07@20-22.5'
 12/23/19
 20-22.5'
 B = 0.158
 T = 0.925
 E = 0.366
 X = 1.40
 N = <0.200
 G = 93.9
 D = <50.0

PH-11@20'(SVE-09)
 12/23/19
 20'
 B = <1.00
 T = <1.00
 E = <1.00
 X = <1.00
 N = <0.200
 G = 11.9
 D = <50.0

PH-10@20'(SVE-06)
 11/18/19
 20'
 B = 0.020
 T = 0.014
 E = 0.014
 X = 0.128
 N = 0.023
 G = 3.50
 D = <50.0



LEGEND

- X APPROXIMATE RELEASE LOCATION
- ABOVEGROUND INFRASTRUCTURE
- APPROXIMATE UNDERGROUND (ABANDONED) LINE
- APPROXIMATE ABOVE GROUND FLOWLINE LOCATIONS
- - - APPROXIMATE SURFACING/EXCAVATION BOUNDARIES 05/09/18
- APPROXIMATE POTHOLE ASSESSMENT LOCATIONS (01/17/19)
- APPROXIMATE VERTICAL DEFINITION ASSESSMENT LOCATIONS (11/18/19 & 12/23/19)

PARAMETERS

SOIL SAMPLE LOCATION	
DATE	
DEPTH (FEET)	
B =	BENZENE (mg/kg)
T =	TOLUENE (mg/kg)
E =	ETHYLBENZENE (mg/kg)
X =	TOTAL XYLENES (mg/kg)
N =	NAPHTHALENE (mg/kg)
G =	TPH-GRO (mg/kg)
D =	TPH-DRO (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS – GASOLINE RANGE ORGANICS

TPH-DRO = TOTAL PETROLEUM HYDROCARBONS – DIESEL RANGE ORGANICS

NOTE: VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

VALUES IN **BOLD** EXCEED COGCC TABLE 910-1 REGULATORY LIMITS.

COGCC – COLORADO OIL AND GAS CONSERVATION COMMISSION

POTHOLED SOIL SAMPLES PH-10, PH-11, AND PH-12 WERE CONVERTED TO REMEDIAL WELLS SVE-06, SVE-09, AND SVE-10, RESPECTIVELY

NOTE: CLEAR AERIAL IMAGE NOT AVAILABLE FOR LOCATION. DRAWING BASED ON FIELD OBSERVATIONS AND MEASUREMENTS

PH-08@12-13' 01/17/19 12-13'	PH-08@14-15' 01/17/19 14-15'
B = <0.002	B = <0.002
T = <0.002	T = <0.002
E = <0.002	E = <0.002
X = <0.002	X = <0.002
N = <0.008	N = <0.008
G = 0.216	G = 0.212
D = <50.0	D = <50.0

PH-12@20' 12/23/19 20'
B = <1.00
T = <1.00
E = <1.00
X = <1.00
N = <0.200
G = 9.08
D = <50.0

PH-01@10-11' 01/17/19 10-11'	PH-01@14-15' 01/17/19 14-15'
B = 4.20	B = 18.5
T = 20.2	T = 53.1
E = 9.70	E = 26.1
X = 39.9	X = 95.6
N = 4.04	N = 6.31
G = 1460	G = 3650
D = 3900	D = 5140

PH-03@10-11' 01/17/19 10-11'	PH-03@14-15' 01/17/19 14-15'
B = 0.675	B = 0.890
T = 5.48	T = 5.64
E = 3.05	E = 4.08
X = 12.9	X = 16.4
N = 1.15	N = 1.16
G = 509	G = 621
D = 1160	D = 1360

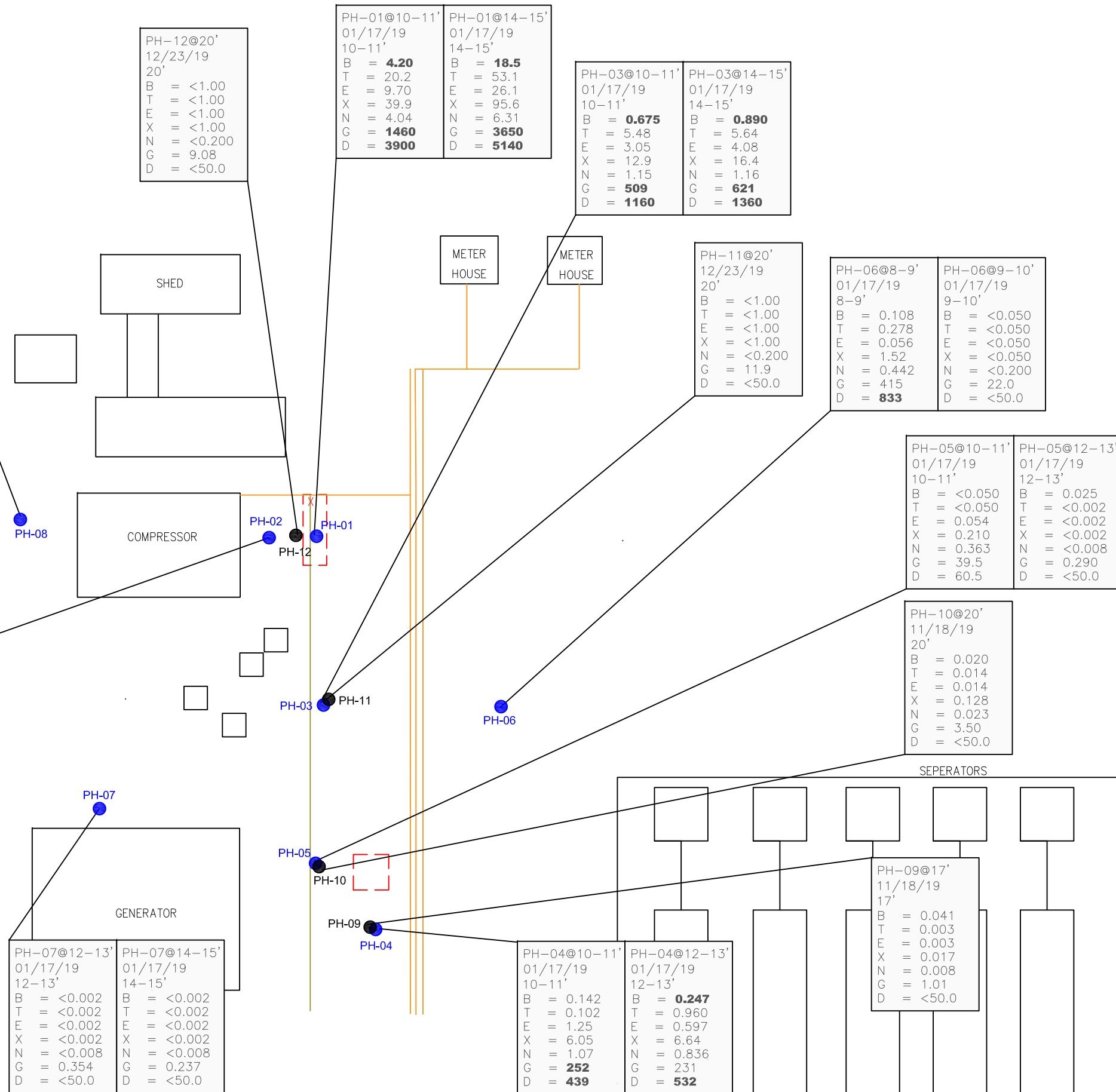
PH-11@20' 12/23/19 20'
B = <1.00
T = <1.00
E = <1.00
X = <1.00
N = <0.200
G = 11.9
D = <50.0

PH-06@8-9' 01/17/19 8-9'	PH-06@9-10' 01/17/19 9-10'
B = 0.108	B = <0.050
T = 0.278	T = <0.050
E = 0.056	E = <0.050
X = 1.52	X = <0.050
N = 0.442	N = <0.200
G = 415	G = 22.0
D = 833	D = <50.0

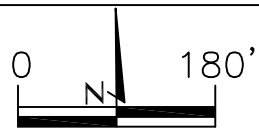
PH-05@10-11' 01/17/19 10-11'	PH-05@12-13' 01/17/19 12-13'
B = <0.050	B = 0.025
T = <0.050	T = <0.002
E = 0.054	E = <0.002
X = 0.210	X = <0.002
N = 0.363	N = <0.008
G = 39.5	G = 0.290
D = 60.5	D = <50.0

PH-10@20' 11/18/19 20'
B = 0.020
T = 0.014
E = 0.014
X = 0.128
N = 0.023
G = 3.50
D = <50.0

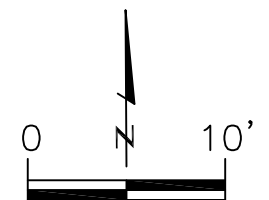
PH-02@8-9' 01/17/19 8-9'	PH-02@14-15' 01/17/19 14-15'
B = 0.293	B = 6.42
T = 0.972	T = 27.6
E = 0.828	E = 12.7
X = 3.55	X = 48.0
N = 0.536	N = 3.82
G = 123	G = 1790
D = 501	D = 2670



SITE MAP INSERT



APPROXIMATE SCALE IN FEET



APPROXIMATE SCALE IN FEET

POTHOLE ASSESSMENT MAP
WELLS RANCH AE32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140

DATE
07/20/20

FIG. NO.
3

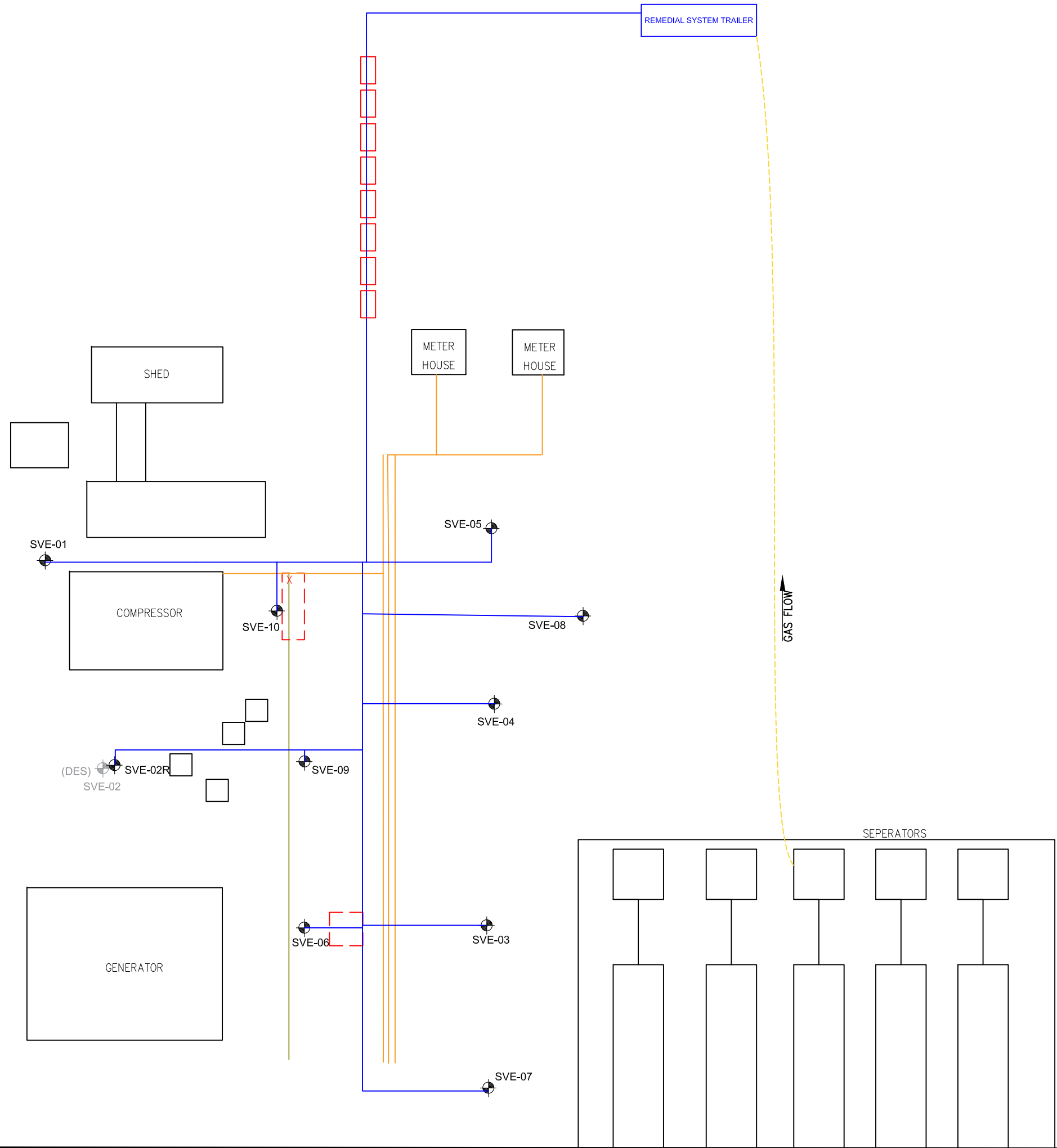
DRAWN BY
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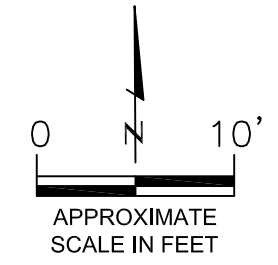
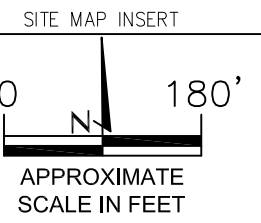
LEGEND

- x APPROXIMATE RELEASE LOCATION
- ABOVEGROUND INFRASTRUCTURE
- APPROXIMATE UNDERGROUND (ABANDONED) LINE
- APPROXIMATE ABOVE GROUND FLOWLINE LOCATIONS
- APPROXIMATE SURFACING/EXCAVATION BOUNDARIES 05/09/18
- APPROXIMATE SOIL VAPOR EXTRACTION (SVE) WELL LOCATIONS
- DESTROYED (DES) SVE WELL LOCATION
- ABOVE-GROUND CONVEYANCE LINE LAYOUT
- SEPARATOR GAS LINE LAYOUT
- LINE CROSSING RAMPS
- REMEDIAL TRAILER LOCATION



GAS FLOW

NOTE: CLEAR AERIAL IMAGE NOT AVAILABLE FOR LOCATION.
DRAWING BASED ON FIELD OBSERVATIONS AND MEASUREMENTS



SVE REMEDIAL SYSTEM LAYOUT
WELLS RANCH AE32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMIATION # 12140

DATE	07/20/20
FIG. NO.	4
DRAWN BY	amn

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TABLES

Table 1: Soil Analytical Results Summary

Table 2: Soil Vapor Extraction Data Summary

**TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
WELLS RANCH AE 32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
COGCC Table 910-1 Regulatory Limits (mg/kg)			0.17	85	100	175	23	500	
SS-01 @ 9' (40.443805782 / -104.355188906)	05/09/18	9	10.1	50.5	9.35	65.6	5.27	3540	6320
SS-02 @ 7' (40.443773212 / -104.355184696)	05/09/18	7	9.80	79.0	30.3	113	5.08	3530	8080
SS-03 @ 6' (40.443814348 / -104.355200477)	05/09/18	6	19.6	90.0	30.0	115	5.97	3520	6090
SS-04 @ 6' (40.443824696 / -104.355188227)	05/09/18	6	0.006	<0.002	<0.002	<0.002	<0.007	<0.200	<50.0
SS-05 @ 6' (40.443805372 / -104.355171177)	05/09/18	6	0.005	0.002	<0.002	<0.002	<0.007	0.235	<50.0
SS-06 @ 8' (40.443726401 / -104.355189284)	05/09/18	8	<0.050	<0.050	<0.050	<0.050	<0.175	14.0	<50.0
SS-07 @ 7' (40.433725717 / -104.355170263)	05/09/18	7	<0.050	<0.050	<0.050	<0.050	<0.175	<5.00	<50.0
SS-08 @ 6' (40.44372107 / -104.355188625)	05/09/18	6	18.8	64.9	20.4	71.2	4.05	3130	5150
SS-09 @ 6' (40.443726389 / -104.35520129)	05/09/18	6	3.91	26.2	9.79	35.7	2.31	1710	2280
PH-01 @ 10-11' (40.443805782 / -104.355188906)	01/17/19	10-11.0	4.20	20.2	9.70	39.9	4.04	1460	3900
PH-01 @ 14-15' (40.443805782 / -104.355188906)	01/17/19	14-15.0	18.5	53.1	26.1	95.6	6.31	3650	5140
PH-02 @ 8-9' (40.443814348 / -104.355200477)	01/17/19	8-9.0	0.293	0.972	0.828	3.55	0.536	123	501
PH-02 @ 14-15' (40.443814348 / -104.355200477)	01/17/19	14-15.0	6.42	27.6	12.7	48.0	3.82	1790	2670
PH-03 @ 10-11' (40.443773212 / -104.355184696)	01/17/19	10-11.0	0.675	5.48	3.05	12.9	1.15	509	1160



**TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
WELLS RANCH AE 32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
COGCC Table 910-1 Regulatory Limits (mg/kg)			0.17	85	100	175	23	500	
PH-03 @ 14-15' (40.443773212 / -104.355184696)	01/17/19	14-15.0	0.890	5.64	4.08	16.4	1.16	621	1360
PH-04 @ 10-11' (40.44372107 / -104.355188625)	01/17/19	10-11.0	0.142	0.102	1.25	6.05	1.07	252	439
PH-04 @ 12-13' (40.44372107 / -104.355188625)	01/17/19	12-13.0	0.247	0.960	0.597	6.64	0.836	231	532
PH-05 @ 10-11' (40.443726389 / -104.35520129)	01/17/19	10-11.0	<0.050	<0.050	0.054	0.210	0.363	39.5	60.5
PH-05 @ 12-13' (40.443726389 / -104.35520129)	01/17/19	12-13.0	0.025	<0.002	<0.002	<0.002	<0.008	0.290	<50.0
PH-06 @ 8-9' (40.443770362 / -104.355141909)	01/17/19	8-9.0	0.108	0.278	0.056	1.52	0.442	415	833
PH-06 @ 9-10' (40.443770362 / -104.355141909)	01/17/19	9-10.0	<0.050	<0.050	<0.050	<0.050	<0.200	22.0	<50.0
PH-07 @ 12-13' (40.443700479 / -104.355307349)	01/17/19	12-13.0	<0.002	<0.002	<0.002	<0.002	<0.008	0.354	<50.0
PH-07 @ 14-15' (40.443700479 / -104.355307349)	01/17/19	14-15.0	<0.002	<0.002	<0.002	<0.002	<0.008	0.237	<50.0
PH-08 @ 12-13' (40.443807778 / -104.355334288)	01/17/19	12-13.0	<0.002	<0.002	<0.002	<0.002	<0.008	0.216	<50.0
PH-08 @ 14-15' (40.443807778 / -104.355334288)	01/17/19	14-15.0	<0.002	<0.002	<0.002	<0.002	<0.008	0.212	<50.0



**TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
WELLS RANCH AE 32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
COGCC Table 910-1 Regulatory Limits (mg/kg)			0.17	85	100	175	23	500	
SVE-01 @ 22.5-25' (40.443818606 / -104.355400044)	04/18/19	22.5-25	0.008	0.011	<0.002	<0.002	<0.008	0.215	<50.0
SVE-02 @ 22.5-25' (40.44378147 / -104.355358707)	04/18/19	22.5-25	0.012	0.011	<0.002	<0.002	<0.008	0.206	<50.0
SVE-03 @ 32.5-35' (40.44372223 / -104.35511743)	04/18/19	32.5-35	0.080	0.436	0.236	0.953	<0.200	156	32.3
SVE-04 @ 27.5-30' (40.443775392 / -104.355115091)	04/18/19	27.5-30	0.056	0.068	0.011	0.049	<0.008	0.529	<50.0
SVE-05 @ 22.5-25' (40.443845101 / -104.355110051)	04/18/19	22.5-25	0.020	0.043	0.010	0.043	<0.008	0.430	<50.0
PH-09 @ 17' (40.44372107 / -104.355188625)	11/18/19	17	0.041	0.003	0.003	0.017	0.008	1.01	<50.0
PH-10 @ 20' (SVE-06) (40.443726389 / -104.35520129)	11/18/19	20	0.020	0.014	0.014	0.128	0.023	3.50	<50.0
PH-11 @ 20' (SVE-09) (40.443773212 / -104.355184696)	12/23/19	20	<0.050	<0.050	<0.050	<0.050	<0.200	11.9	<0.50
PH-12 @ 20' (SVE-10) (40.443805780 / -104.355188918)	12/23/19	20	<0.050	<0.050	<0.050	<0.050	<0.200	9.08	<0.50
SVE-07 @ 20-22.5' (40.443717487 / -104.35511743)	12/23/19	20-22.5	0.158	0.925	0.366	1.40	<0.200	93.9	<50.0
SVE-08 @ 22.5-24.5' (40.443805776 / -104.3551871011)	12/23/19	22.5-24.5	<0.050	<0.050	<0.050	<0.050	<0.200	7.15	<50.0
COGCC = Colorado Oil and Gas Conservation Commission mg/kg = milligrams per kilogram TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics Note: Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit. Note: Values presented in BOLD contained concentrations exceeding COGCC Table 910-1 Regulatory Limits									



TABLE 2
SOIL VAPOR EXTRACTION DATA SUMMARY
WELLS RANCH AE 32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140

Date	Soil Vapor Extraction Unit Performance						Lab Analyses			Mass Removal			Notes
	Operation Time During Period (hours)	Operation Time During Period (%)	Induced Vacuum at Unit (in. H2O)	Effluent Temperature (F)	System Air Flow Rate (scfm)	VOC's (ppm-v)	Benzene (ug/m ³)	Total VOC's (ug/m ³)	VOC Emissions for Period from PID (lbs)	VOC Emissions for Period from Lab (lbs)	Benzene Emissions for Period from Lab (lbs)		
07/10/19	1.4	100%	60	144.3	500	21.4	163	363000	0.171	0.984	0.00044	SVE-01 Effluent only	
07/10/19	1.5	100%	60	134.9	506	4.5	114	45600	0.031	0.119	0.00030	SVE-03 Effluent only	
07/10/19	1.25	100%	60	125.9	512	82.3	5610	1360000	0.578	3.253	0.01342	SVE-04 Effluent only	
07/10/19	1.25	100%	60	120.2	512	28.8	2040	383000	0.572	35.164	0.18730	SVE-05 Effluent only	
PT TOTALS	5.4								1.35	39.52	0.20	Pilot test totals only	
04/13/20	3.5	NA	65	50.6	110	785			22.492			Full SVE System Start-up	
04/14/20	20.7	86%	50	65.3	120	835			27.821				
04/15/20	22.7	95%	50	74.5	120	923			63.642				
04/17/20	47.8	100%	45	59.2	125	696	32600	2860000	178.720	142.846	1.62825		
04/24/20	166	99%	50	60.4	120	390	6920	995000	96.727	74.397	0.51741		
05/01/20	167.4	100%	50	93.2	106	343	12500	2240000	70.605	148.479	0.82856		
05/08/20	167.2	100%	50	63.2	112	297	9530	2640000	130.106	268.395	0.96887		
05/27/20	318.5	70%	40	97.1	121	179	3980	1460000	29.576	144.246	0.39322		
06/12/20	118.4	31%	40	83	118	396	3490	1620000	65.465	84.599	0.18225		
TOTALS	1032.2								685.15	862.96	4.52		

Notes:

Calculations - calculated average
Calculation for Total VOC (PID):
Operations time (hrs) (average of current and forward date) x [(P x V x C)/(R x T)](lb/day) x day/24 hrs = Total Emissions in pounds

Where: P = 1742.28 lbs/ft² = discharge pressure, based on atmospheric pressure of 12.12 lbs/ft² at 5,300 feet above mean sea level
V = System air flow rate in ft³/min x 1440 min/day = ft³/day
C = Fractional quantity of gas = VOC by PID/1E6
R = 16.27 lb-ft/lb-mole - °R = specific gas constant of gasoline = universal gas constant (1545.33 lbf-ft/lb-mole-°R)/molecular weight of gasoline (95 lb/lb-mole)
T = Discharge temperature °F = 460 = °R

*Please note: Calculations presented in this table are not utilized for APEN emissions estimates. APEN emissions are calculated with an exponential decay rate (per CDPHE APCD request). Values in this table are time-weighted averages.

Calculation for Total VOC Emissions (Lab analyses):
Operation time(hrs) (average of current and forward date(s)) x (60 min/1hr) x (concentration of VOCs (ug/m³)) x (1 g/1E6 ug) x (2.2 lb/1000 g) x (system air flow rate (ft³/min)) x (1m³/35.315 ft³) = Total Emissions in pounds

scfm = standard cubic feet per minute
in. H2O = inches of water

F = degrees Fahrenheit
ppm-v = parts per million by volume
ug/m³ = micrograms per cubic meter

lbs = pounds
VOC = volatile organic compounds

APEN = Air Pollution Emissions Notice

CDPHE = Colorado Department of Public Health and Environment



ATTACHMENT A

Soil Boring Logs/Well Completion Diagrams – SVE-01 through SVE-10

Boring Log/Well Completion Diagram: SVE-01

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-7') Potholed							Concrete/Steel Casing		
5	(7-17') SAND - light brown, moderately moist, medium dense, rounded, very fine grained, poorly graded, N/O, N/S	PH	DP	1	50	18.8	N/A	Bentonite Chips	2" Dia. Sch. 40 PVC Riser	
10						10.3				
15		SP	DP	2	100	19.2	N/A	10/20 Silica Sand Pack	2" Dia. Sch. 40 Slotted PVC (0.010")	
20						10.7				
25	(17-25') sandy CLAY - dark brown, dry, stiff to very stiff, low plasticity, moderately graded with <10% fine sand, N/O, N/S	CL	DP	3	100	2.5	N/A	2" End Cap		
25						7.1				
30	BoB @ 25'									

DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 04/18/2019	SAND PACK INTERVAL (FEET): 9-25
PROJECT: WELLS RANCH AE 32 ECONODE	BENTONITE/GROUT INTERVAL (FEET): 0.5-9
LOGGED BY: L. GATES	WELL SCREEN INTERVAL (FEET): 10-25
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE	WELL DIAMETER (INCHES): 2
BORING DEPTH (FEET): 25'	WELL DEPTH (FEET): 25'
PID INSTRUMENT: MiniRAE 3000 - PID #9	
TIME STARTED/COMPLETED: 1130/1230	
SAMPLE COLLECTION DEPTH (FEET)/TIME: 22.5-25' / 1200	



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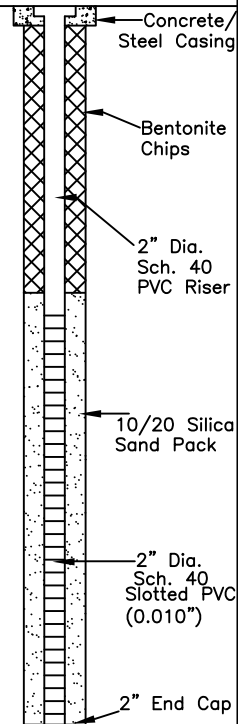
Boring Log/Well Completion Diagram: SVE-02

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-7') Potholed							<p>Concrete/Steel Casing Bentonite Chips 2" Dia. Sch. 40 PVC Riser 10/20 Silica Sand Pack 2" Dia. Sch. 40 Slotted PVC (0.010") 2" End Cap</p>		
5	(7-17') SAND - light brown, moderately moist, medium dense, rounded, very fine grained, poorly graded, N/O, N/S	PH	DP	1	50	2.3	N/A			
10						3.2				
10		SP	DP	2	100	27.7	N/A			
15						24.0				
15	(17-25') CLAY - brown, dry, hard, low plasticity, poorly graded, N/O, N/S	DP	3	100		45.0	N/A			
20						112.4				
20		CL	DP	4	100	100.3	N/A			
25						59.1				
25	BoB @ 25'							<p>DP - Direct Push HC - Hydrocarbon BoB - Bottom of Boring N/O - no odor N/S - no staining TOC - top of casing bgs - below ground surface</p>		
30										

START/COMPLETION DATE: 04/18/2019		SAND PACK INTERVAL (FEET): 9-25	
PROJECT: WELLS RANCH AE32 ECONODE		BENTONITE/GROUT INTERVAL (FEET): 0.5-9	
LOGGED BY: L. GATES		WELL SCREEN INTERVAL (FEET): 10-25	
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE		WELL DIAMETER (INCHES): 2	
BORING DEPTH (FEET): 25'	WELL DEPTH (FEET): 25'	<p>EAGLE ENVIRONMENTAL CONSULTING, INC. 8000 W 44th Ave, Wheat Ridge, CO 80033 Ph: 303-433-0479 • F: 303-325-5449</p>	
PID INSTRUMENT: MiniRAE 3000 - PID #9			
TIME STARTED/COMPLETED: 1020/1130			
SAMPLE COLLECTION DEPTH (FEET)/TIME: 22.5-25' / 1107			

Boring Log/Well Completion Diagram: SVE-03

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-7') Potholed									
7-10	(7-13') silty SAND - brown, moderately moist, medium dense to dense, sub-angular, fine grained, moderately graded with ~10-15% silt, N/O, N/S	SM	DP	1	100	28.8 25.1	N/A			
10-13	(13-18') silty CLAY - brown, moderately moist to moist, stiff, low to moderate plasticity, moderately graded with ~20-30% silt, N/O, N/S	CL	DP	2	100	29.8 88.4	N/A			
13-20	(18-30') SAND - yellow/brown, moist, loose to very loose, sub-angular, fine grained, poorly graded, no staining, strong hydrocarbon odor @24-25' - CLAY lens	SP	DP	3	100	66.4 635.3	N/A			
20-24			DP	4	100	930.4	N/A			
24-25			DP	5	100	546.9	N/A			
25-28			DP	6	100	848.1	N/A			
28-30			DP	7	100	721.2	N/A			
30-33	(30-35') silty CLAY - brown, dry, hard, low plasticity, moderately graded with ~20-30% silt, slight odor, no staining @33' - N/O, N/S	CL	DP	8	100	488.0	N/A			
33-35			DP	9	100	32.9	N/A			
35	BoB @ 35'									



DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 04/18/2019	SAND PACK INTERVAL (FEET): 14-35
PROJECT: WELLS RANCH AE32 ECONODE	BENTONITE/GROUT INTERVAL (FEET): 1-14
LOGGED BY: L. GATES	WELL SCREEN INTERVAL (FEET): 15-35
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE	WELL DIAMETER (INCHES): 2
BORING DEPTH (FEET): 35'	WELL DEPTH (FEET): 35'
PID INSTRUMENT: MiniRAE 3000 - PID #9	
TIME STARTED/COMPLETED: 1300/1445	
SAMPLE COLLECTION DEPTH (FEET)/TIME: 32.5-35' / 1415	



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Boring Log/Well Completion Diagram: SVE-04

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-7') Potholed							Concrete/Steel Casing		
5			PH					Bentonite Chips		
7-14'	SAND - light brown, moderately moist, medium dense, rounded, very fine grained, poorly graded, N/O, N/S		SP					2" Dia. Sch. 40 PVC Riser		
10			DP	1	50	13.7	N/A	10/20 Silica Sand Pack		
14-30'	silty CLAY - dark brown, dry, very stiff, low plasticity, moderately graded with ~15-30% silt, N/S					40.2	N/A			
15			DP	2	100	863.8	N/A	2" Dia. Sch. 40 Slotted PVC (0.010")		
18-25'	strong odor					765.2	N/A			
20			DP	3	100	641.4	N/A			
25	slight odor					445.1	N/A			
27'	N/O, N/S		CL			1215	N/A			
30'	BoB @ 30'		DP	5	100		N/A			
			DP	6	100	120.7	N/A			
			DP	7	100	12.1	N/A	2" End Cap		

DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 04/18/2019	SAND PACK INTERVAL (FEET): 9-30
PROJECT: WELLS RANCH AE32 ECONODE	BENTONITE/GROUT INTERVAL (FEET): 0.5-9
LOGGED BY: L. GATES	WELL SCREEN INTERVAL (FEET): 10-30
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE	WELL DIAMETER (INCHES): 2
BORING DEPTH (FEET): 30'	WELL DEPTH (FEET): 30'
PID INSTRUMENT: MiniRAE 3000 - PID #9	
TIME STARTED/COMPLETED: 1445/1540	
SAMPLE COLLECTION DEPTH (FEET)/TIME: 27.5-30' / 1525	



Boring Log/Well Completion Diagram: SVE-05

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-7') Potholed							<p>Concrete/Steel Casing Bentonite Chips 2" Dia. Sch. 40 PVC Riser 10/20 Silica Sand Pack 2" Dia. Sch. 40 Slotted PVC (0.010") 2" End Cap</p>		
5	(7-13') SAND - light brown, moderately moist, medium dense, rounded, fine to very fine grained, poorly graded, N/O, N/S	PH								
10										
10	(13-25') silty CLAY - dark brown, dry, very stiff, low plasticity, moderately graded ~with 15-30% silt, N/O, N/S	SP				12.1	N/A			
15		DP	2	100		34.4	N/A			
15		CL				55.0	N/A			
20						DP				3
20										123.0
20						97.2	N/A			
25						DP		4	100	
25						55.9	N/A			
25						DP		5	100	
25	BoB @ 25'									

DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 04/18/2019		SAND PACK INTERVAL (FEET): 9-25
PROJECT: WELLS RANCH AE32 ECONODE		BENTONITE/GROUT INTERVAL (FEET): 0.5-9
LOGGED BY: L. GATES		WELL SCREEN INTERVAL (FEET): 10-25
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE		WELL DIAMETER (INCHES): 2
BORING DEPTH (FEET): 25'	WELL DEPTH (FEET): 25'	<p>EAGLE ENVIRONMENTAL CONSULTING, INC. 8000 W 44th Ave, Wheat Ridge, CO 80033 Ph: 303-433-0479 • F: 303-325-5449</p>
PID INSTRUMENT: MiniRAE 3000 - PID #9		
TIME STARTED/COMPLETED: 1540/1615		
SAMPLE COLLECTION DEPTH (FEET)/TIME: 22.5-25' / 1610		

Boring Log/Well Completion Diagram: PH-10/SVE-06

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-20') Potholed							<p>Concrete/Steel Casing Bentonite Chips 2" Dia. Sch. 40 PVC Riser 10/20 Silica Sand Pack 2" Dia. Sch. 40 Slotted PVC (0.010") 2" End Cap</p>	Unable to direct push and log well due to well location within facility infrastructure DP - Direct Push HC - Hydrocarbon BoB - Bottom of Boring N/O - no odor N/S - no staining TOC - top of casing bgs - below ground surface	
20	BoB @ 20'	PH	HA	1	100	114.7	N/A			

START/COMPLETION DATE: 12/23/2019	SAND PACK INTERVAL (FEET): 4-20
PROJECT: WELLS RANCH AE32 ECONODE	BENTONITE/GROUT INTERVAL (FEET): 0.5-4
LOGGED BY: L. KLEINHEKSEL	WELL SCREEN INTERVAL (FEET): 5-20
DRILLING COMPANY/EQUIPMENT: EAGLE/1888 - Hydrovac/hand auger	WELL DIAMETER (INCHES): 2
BORING DEPTH (FEET): 20'	WELL DEPTH (FEET): 20'
PID INSTRUMENT: MiniRAE 3000 - PID #7	
TIME STARTED/COMPLETED: NA	
SAMPLE COLLECTION DEPTH (FEET)/TIME: 20' @ 1400	



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Boring Log/Well Completion Diagram: SVE-07

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-5') Potholed		PH					Concrete/Steel Casing		
5	(5-15') sandy silty CLAY - gray, moist, medium stiff, low plasticity, moderately graded with ~20% silt and ~10% fine sand, N/O, N/S		DP	1	100	0.0	N/A	Bentonite Chips		
10			DP	2	100	0.0	N/A	2" Dia. Sch. 40 PVC Riser		
15	@15-16.5 - fine to medium grained sand lens		CL			3.4		10/20 Silica Sand Pack		
16.5	(16.5-27') silty CLAY - dark brown, moist, medium stiff to stiff, medium plasticity, poorly graded with ~15-30% silt		DP	3	100	354.4	N/A	2" Dia. Sch. 40 Slotted PVC (0.010")		
20	@16.5-26' - black staining, strong HC odor		DP	4	100	471.5	N/A			
25			DP	5	100	412.7	N/A			
27	(27-28') Weathered CLAYSTONE - gray, moist, orange mottle, N/O, N/S		DP	5	100	120.5	N/A			
28	Refusal @ 28'					38.1		2" End Cap		

DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 12/23/2019	SAND PACK INTERVAL (FEET): 9-28
PROJECT: WELLS RANCH AE32 ECONODE	BENTONITE/GROUT INTERVAL (FEET): 0.5-9
LOGGED BY: L. KLEINHEKSEL	WELL SCREEN INTERVAL (FEET): 10-28
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE	WELL DIAMETER (INCHES): 2
BORING DEPTH (FEET): 28'	WELL DEPTH (FEET): 28'
PID INSTRUMENT: MiniRAE 3000 - PID #7	
TIME STARTED/COMPLETED: 1034/1129	
SAMPLE COLLECTION DEPTH (FEET)/TIME: 20-22.5/1105	



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DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-5') Potholed									
5	(5-15') sandy silty CLAY - gray, moist, medium stiff, low plasticity, moderately graded with ~20% silt and ~10% fine sand, N/O, N/S		PH							
10	(15-25') silty CLAY - dark brown, moist, medium stiff to stiff, medium plasticity, poorly graded with ~15-30% silt, N/O, N/S	CL	DP	1	100	3.1	N/A			
15						5.4				
20						4.2	N/A			
25						9.3				
25	Refusal @ 25'					19.1	N/A			
30						20.2				
						26.7	N/A			
						2.9				

DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 12/23/2019	SAND PACK INTERVAL (FEET): 9-25
PROJECT: WELLS RANCH AE32 ECONODE	BENTONITE/GROUT INTERVAL (FEET): 0.5-9
LOGGED BY: L. KLEINHEKSEL	WELL SCREEN INTERVAL (FEET): 10-25
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE	WELL DIAMETER (INCHES): 2
BORING DEPTH (FEET): 25'	WELL DEPTH (FEET): 25'
PID INSTRUMENT: MiniRAE 3000 - PID #7	
TIME STARTED/COMPLETED: 1137/1210	
SAMPLE COLLECTION DEPTH (FEET)/TIME: 22.5-24.5/1205	



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Boring Log/Well Completion Diagram: PH-11/SVE-09

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-20') Potholed							<p>Concrete/Steel Casing Bentonite Chips 2" Dia. Sch. 40 PVC Riser 10/20 Silica Sand Pack 2" Dia. Sch. 40 Slotted PVC (0.010") 2" End Cap</p>	Unable to direct push and log well due to well location within facility infrastructure DP - Direct Push HC - Hydrocarbon BoB - Bottom of Boring N/O - no odor N/S - no staining TOC - top of casing bgs - below ground surface	
20	BoB @ 20'	PH	HA	1	100	0.9	N/A			

START/COMPLETION DATE: 12/23/2019	SAND PACK INTERVAL (FEET): 4-20
PROJECT: WELLS RANCH AE32 ECONODE	BENTONITE/GROUT INTERVAL (FEET): 0.5-4
LOGGED BY: L. KLEINHEKSEL	WELL SCREEN INTERVAL (FEET): 5-20
DRILLING COMPANY/EQUIPMENT: EAGLE/1888 - Hydrovac/hand auger	WELL DIAMETER (INCHES): 2
BORING DEPTH (FEET): 20'	WELL DEPTH (FEET): 20'
PID INSTRUMENT: MiniRAE 3000 - PID #7	
TIME STARTED/COMPLETED: NA	
SAMPLE COLLECTION DEPTH (FEET)/TIME: 20' @ 1155	



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Boring Log/Well Completion Diagram: PH-12/SVE-10

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-20') Potholed							<p>Concrete/Steel Casing Bentonite Chips 2" Dia. Sch. 40 PVC Riser 10/20 Silica Sand Pack 2" Dia. Sch. 40 Slotted PVC (0.010") 2" End Cap</p>	Unable to direct push and log well due to well location within facility infrastructure DP - Direct Push HC - Hydrocarbon BoB - Bottom of Boring N/O - no odor N/S - no staining TOC - top of casing bgs - below ground surface	
20	BoB @ 20'	PH	HA	1	100	311.2	N/A			

START/COMPLETION DATE: 12/23/2019	SAND PACK INTERVAL (FEET): 4-20
PROJECT: WELLS RANCH AE32 ECONODE	BENTONITE/GROUT INTERVAL (FEET): 0.5-4
LOGGED BY: L. KLEINHEKSEL	WELL SCREEN INTERVAL (FEET): 5-20
DRILLING COMPANY/EQUIPMENT: EAGLE/1888 - Hydrovac/hand auger	WELL DIAMETER (INCHES): 2
BORING DEPTH (FEET): 20'	WELL DEPTH (FEET): 20'
PID INSTRUMENT: MiniRAE 3000 - PID #7	
TIME STARTED/COMPLETED: NA	
SAMPLE COLLECTION DEPTH (FEET)/TIME: 20' @ 1250	



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ATTACHMENT B

Laboratory Analytical Results



April 23, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

4101 Inca Street

Denver

CO 80211

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. April 19, 2019. This project is associated with Origins project number Y904341-01.

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

Eagle Environmental Consulting, Inc.
4101 Inca Street
Denver CO 80211

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVE-01@22.5-25'	Y904341-01	Soil	April 18, 2019 12:00	04/19/2019 10:00
SVE-02@22.5-25'	Y904341-02	Soil	April 18, 2019 11:07	04/19/2019 10:00
SVE-03@32.5-35'	Y904341-03	Soil	April 18, 2019 14:15	04/19/2019 10:00
SVE-04@27.5-30'	Y904341-04	Soil	April 18, 2019 15:24	04/19/2019 10:00
SVE-05@22.5-25'	Y904341-05	Soil	April 18, 2019 16:10	04/19/2019 10:00

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.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y904341

Client: Eagle

Client Project ID: Wells Ranch AE32 Econode

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 4/19/2019

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid

Water

Other:

(Describe)

Cooler Number/Temperature: 1 / 13.3°C

/ °C

/ °C

/ °C

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"/>		
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 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"/>		
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 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) JG

Date/Time Reviewed 4/22/19

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.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-01@22.5-25'
4/18/2019 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904341-01 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9D1902	JTD	04/19/2019	04/19/2019	U
Surrogate: o-Terphenyl	83.7 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	0.215	0.200	mg/kg	1	B9D1901	KDK	"	04/19/2019	
Benzene	0.008	0.002	"	"	"	KDK	"	"	
Toluene	0.011	0.002	"	"	"	KDK	"	"	
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	120 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	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.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-02@22.5-25'
4/18/2019 11:07:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904341-02 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9D1902	JTD	04/19/2019	04/19/2019	U
Surrogate: <i>o</i> -Terphenyl	78.2 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	0.206	0.200	mg/kg	1	B9D1901	KDK	"	04/19/2019	
Benzene	0.012	0.002	"	"	"	KDK	"	"	
Toluene	0.011	0.002	"	"	"	KDK	"	"	
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	120 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.9 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	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.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-03@32.5-35'
4/18/2019 2:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904341-03 (Soil)

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

Diesel (C10-C28)	92.3	50.0	mg/kg	1	B9D1902	JTD	04/19/2019	04/19/2019	
Surrogate: <i>o</i> -Terphenyl	92.1 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	156	50.0	mg/kg	250	B9D1901	KDK	"	04/19/2019	
Benzene	0.080	0.050	"	25	"	KDK	"	04/19/2019	
Toluene	0.436	0.050	"	"	"	KDK	"	"	
Ethylbenzene	0.236	0.050	"	"	"	KDK	"	"	
Xylenes, total	0.953	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	120 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	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.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-04@27.5-30'
4/18/2019 3:24:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904341-04 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9D1902	JTD	04/19/2019	04/19/2019	U
Surrogate: o-Terphenyl	89.6 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	0.529	0.200	mg/kg	1	B9D1901	KDK	"	04/19/2019	
Benzene	0.056	0.002	"	"	"	KDK	"	"	
Toluene	0.068	0.002	"	"	"	KDK	"	"	
Ethylbenzene	0.011	0.002	"	"	"	KDK	"	"	
Xylenes, total	0.049	0.002	"	"	"	KDK	"	"	
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	121 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.9 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	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.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-05@22.5-25'
4/18/2019 4:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904341-05 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9D1902	JTD	04/19/2019	04/19/2019	U
Surrogate: o-Terphenyl	82.3 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	0.430	0.200	mg/kg	1	B9D1901	KDK	"	04/19/2019	
Benzene	0.020	0.002	"	"	"	KDK	"	"	
Toluene	0.043	0.002	"	"	"	KDK	"	"	
Ethylbenzene	0.010	0.002	"	"	"	KDK	"	"	
Xylenes, total	0.043	0.002	"	"	"	KDK	"	"	
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	124 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	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.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1901 - EPA 5030 (soil)

Blank (B9D1901-BLK1)

Prepared: 04/19/2019 Analyzed: 04/19/2019

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
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125	119		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	96.4		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	101		70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1901 - EPA 5030 (soil)

LCS (B9D1901-BS1)

Prepared: 04/19/2019 Analyzed: 04/19/2019

Benzene	0.098	0.002	mg/kg	0.100		97.8	70-130			
Toluene	0.100	0.002	"	0.100		100	70-130			
Ethylbenzene	0.102	0.002	"	0.100		102	70-130			
m,p-Xylene	0.204	0.004	"	0.200		102	70-130			
o-Xylene	0.101	0.002	"	0.100		101	70-130			
Naphthalene	0.091	0.008	"	0.100		91.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		111	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1901 - EPA 5030 (soil)

Matrix Spike (B9D1901-MS1)	Source: Y904329-04			Prepared: 04/19/2019 Analyzed: 04/19/2019						
Benzene	0.088	0.002	mg/kg	0.100	ND	88.1	70-130			
Toluene	0.089	0.002	"	0.100	ND	89.3	70-130			
Ethylbenzene	0.092	0.002	"	0.100	ND	91.6	70-130			
m,p-Xylene	0.182	0.004	"	0.200	ND	91.2	70-130			
o-Xylene	0.090	0.002	"	0.100	ND	90.3	70-130			
Naphthalene	0.078	0.008	"	0.100	0.003	74.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		111	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1901 - EPA 5030 (soil)

Matrix Spike Dup (B9D1901-MSD1)	Source: Y904329-04			Prepared: 04/19/2019 Analyzed: 04/19/2019						
Benzene	0.095	0.002	mg/kg	0.100	ND	94.7	70-130	7.29	20	
Toluene	0.096	0.002	"	0.100	ND	96.2	70-130	7.48	20	
Ethylbenzene	0.097	0.002	"	0.100	ND	96.8	70-130	5.50	20	
m,p-Xylene	0.194	0.004	"	0.200	ND	97.0	70-130	6.19	20	
o-Xylene	0.097	0.002	"	0.100	ND	97.3	70-130	7.53	20	
Naphthalene	0.094	0.008	"	0.100	0.003	91.1	70-130	19.2	20	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		112	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1902 - EPA 3580										
Blank (B9D1902-BLK1)					Prepared: 04/19/2019 Analyzed: 04/19/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	43		"	50.0		85.1	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1902 - EPA 3580

LCS (B9D1902-BS1)

Prepared: 04/19/2019 Analyzed: 04/19/2019

Diesel (C10-C28)	965	50.0	mg/kg	1000		96.5	70-130			
Surrogate: o-Terphenyl	49		"	50.0		97.7	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1902 - EPA 3580

Matrix Spike (B9D1902-MS1)	Source: Y904329-01			Prepared: 04/19/2019 Analyzed: 04/19/2019						
Diesel (C10-C28)	961	50.0	mg/kg	1000	112	84.9	70-130			
Surrogate: o-Terphenyl	48		"	50.0		96.9	50-150			

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Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1902 - EPA 3580

Matrix Spike Dup (B9D1902-MSD1)	Source: Y904329-01			Prepared: 04/19/2019 Analyzed: 04/19/2019						
Diesel (C10-C28)	991	50.0	mg/kg	1000	112	87.9	70-130	3.07	35	
Surrogate: o-Terphenyl	50		"	50.0		100	50-150			

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Eagle Environmental Consulting, Inc.
4101 Inca Street
Denver CO 80211

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

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.



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



November 22, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. November 19, 2019. This project is associated with Origins project number Y911325-01.

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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PH-09@17'	Y911325-01	Soil	November 18, 2019 11:20	11/19/2019 15:55
PH-10@20'	Y911325-02	Soil	November 18, 2019 14:00	11/19/2019 15:55

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.

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Sample Receipt Checklist

Origins Work Order: 4911325 Client: Eagle
 Client Project ID: Noble - Wells Ranch
 Checklist Completed by: JG Shipped Via: HD
 Date/time completed: 11/19/19 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: NA
 Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____
 Cooler Number/Temperature: 1 / 2.1 °C _____ °C _____ °C _____ °C (Describe)
 Thermometer ID: 7003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ^{(1)?}	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		Y		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ^{(1)?}	X			
Was adequate sample volume provided ^{(1)?}	X			
Are short holding time analytes or samples with HTs due within 48 hours present ^{(1)?}		X		
Is a chain-of-custody (COC) present and filled out completely ^{(1)?}	X			
Does the COC agree with the number and type of sample bottles received ^{(1)?}	X			
Do the sample IDs on the bottle labels match the COC ^{(1)?}	X			
Is the COC properly relinquished by the client with date and time recorded ^{(1)?}	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	
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)			X	
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: [Signature] (Project Manager) Date/Time Reviewed: 11/21/19

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

PH-09@17'

11/18/2019 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y911325-01 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9K2008	TEM	11/20/2019	11/20/2019	U
Surrogate: o-Terphenyl	81.2 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	1.01	0.200	mg/kg	1	B9K2007	KDK	11/20/2019	11/21/2019	
Benzene	0.041	0.002	"	"	"	KDK	"	"	
Toluene	0.003	0.002	"	"	"	KDK	"	"	
Ethylbenzene	0.003	0.002	"	"	"	KDK	"	"	
Xylenes, total	0.017	0.002	"	"	"	KDK	"	"	
Naphthalene	0.008	0.008	"	"	"	KDK	"	"	
Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.9 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

PH-10@20'

11/18/2019 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y911325-02 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9K2008	TEM	11/20/2019	11/20/2019	U
Surrogate: o-Terphenyl	88.6 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	3.50	0.200	mg/kg	1	B9K2007	KDK	11/20/2019	11/21/2019	
Benzene	0.020	0.002	"	"	"	KDK	"	"	
Toluene	0.014	0.002	"	"	"	KDK	"	"	
Ethylbenzene	0.014	0.002	"	"	"	KDK	"	"	
Xylenes, total	0.128	0.002	"	"	"	KDK	"	"	
Naphthalene	0.023	0.008	"	"	"	KDK	"	"	
Surrogate: 1,2-Dichloroethane-d4	107 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	94.5 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9K2007 - EPA 5030 (soil)

Blank (B9K2007-BLK1)

Prepared: 11/20/2019 Analyzed: 11/20/2019

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
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9K2007 - EPA 5030 (soil)

LCS (B9K2007-BS1)

Prepared: 11/20/2019 Analyzed: 11/20/2019

Benzene	0.119	0.002	mg/kg	0.100		119	70-130			
Toluene	0.111	0.002	"	0.100		111	70-130			
Ethylbenzene	0.114	0.002	"	0.100		114	70-130			
m,p-Xylene	0.221	0.004	"	0.200		111	70-130			
o-Xylene	0.105	0.002	"	0.100		105	70-130			
Naphthalene	0.098	0.008	"	0.100		97.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9K2007 - EPA 5030 (soil)

Matrix Spike (B9K2007-MS1)	Source: Y911312-01			Prepared: 11/20/2019 Analyzed: 11/20/2019						
Benzene	0.109	0.002	mg/kg	0.100	ND	109	70-130			
Toluene	0.099	0.002	"	0.100	ND	98.7	70-130			
Ethylbenzene	0.097	0.002	"	0.100	ND	96.9	70-130			
m,p-Xylene	0.185	0.004	"	0.200	ND	92.5	70-130			
o-Xylene	0.091	0.002	"	0.100	ND	90.8	70-130			
Naphthalene	0.087	0.008	"	0.100	ND	86.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9K2007 - EPA 5030 (soil)

Matrix Spike Dup (B9K2007-MSD1)	Source: Y911312-01			Prepared: 11/20/2019 Analyzed: 11/20/2019						
Benzene	0.159	0.002	mg/kg	0.100	ND	159	70-130	37.4	20	QM-07, QR-03
Toluene	0.150	0.002	"	0.100	ND	150	70-130	41.6	20	QM-07, QR-03
Ethylbenzene	0.163	0.002	"	0.100	ND	163	70-130	50.8	20	QM-07, QR-03
m,p-Xylene	0.331	0.004	"	0.200	ND	165	70-130	56.5	20	QM-07, QR-03
o-Xylene	0.151	0.002	"	0.100	ND	151	70-130	49.9	20	QM-07, QR-03
Naphthalene	0.127	0.008	"	0.100	ND	127	70-130	38.2	20	QR-03
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9K2008 - EPA 3580										
Blank (B9K2008-BLK1)										
					Prepared: 11/20/2019 Analyzed: 11/20/2019					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Surrogate: o-Terphenyl	23		"	25.0		93.9	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9K2008 - EPA 3580

LCS (B9K2008-BS1)

Prepared: 11/20/2019 Analyzed: 11/20/2019

Diesel (C10-C28)	928	50.0	mg/kg	1000		92.8	70-130			
Surrogate: o-Terphenyl	51		"	50.0		103	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9K2008 - EPA 3580

Matrix Spike (B9K2008-MS1)	Source: Y911323-01			Prepared: 11/20/2019 Analyzed: 11/20/2019						
Diesel (C10-C28)	923	50.0	mg/kg	1000	14.9	90.8	70-130			
Surrogate: o-Terphenyl	46		"	50.0		92.6	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9K2008 - EPA 3580

Matrix Spike Dup (B9K2008-MSD1)	Source: Y911323-01			Prepared: 11/20/2019 Analyzed: 11/20/2019						
Diesel (C10-C28)	944	50.0	mg/kg	1000	14.9	92.9	70-130	2.25	35	
Surrogate: o-Terphenyl	47		"	50.0		93.5	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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.



December 27, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. December 24, 2019. This project is associated with Origins project number Y912415-01.

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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PH-11@20'	Y912415-01	Soil	December 23, 2019 11:55	12/24/2019 12:40
PH-12@20'	Y912415-02	Soil	December 23, 2019 12:50	12/24/2019 12:40
SVE-07@20-22.5'	Y912415-03	Soil	December 23, 2019 11:05	12/24/2019 12:40
SVE-08@22.5-24.5'	Y912415-04	Soil	December 23, 2019 12:05	12/24/2019 12:40

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: y912415

Client: Eagle
 Client Project ID: Wells Ranch AE32

Checklist Completed by: JG

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A

Date/time completed: 12/24/2019

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

Cooler Number/Temperature: 1 / 5.1 °C / _____ °C / _____ °C (Describe) _____ °C

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"/>			
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 HNO3, HCL, H2SO4 / (pH >10 for samples preserved with NaAsO2+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]

Date/Time Reviewed 12/26/19

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

PH-11@20'
 12/23/2019 11:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y912415-01 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9L2604	TEM	12/26/2019	12/26/2019	U
Surrogate: o-Terphenyl	75.9 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	11.9	5.00	mg/kg	25	B9L2605	KDK	12/26/2019	12/26/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.7 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

PH-12@20'
12/23/2019 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y912415-02 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9L2604	TEM	12/26/2019	12/26/2019	U
Surrogate: o-Terphenyl	71.3 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	9.08	5.00	mg/kg	25	B9L2605	KDK	12/26/2019	12/26/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.0 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	117 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-07@20-22.5'
12/23/2019 11:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y912415-03 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9L2604	TEM	12/26/2019	12/26/2019	U
Surrogate: o-Terphenyl	70.7 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	93.9	5.00	mg/kg	25	B9L2605	KDK	12/26/2019	12/26/2019	
Benzene	0.158	0.050	"	"	"	KDK	"	"	
Toluene	0.925	0.050	"	"	"	KDK	"	"	
Ethylbenzene	0.366	0.050	"	"	"	KDK	"	"	
Xylenes, total	1.40	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.4 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-08@22.5-24.5'
12/23/2019 12:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y912415-04 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9L2604	TEM	12/26/2019	12/26/2019	U
Surrogate: o-Terphenyl	69.3 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	7.15	5.00	mg/kg	25	B9L2605	KDK	12/26/2019	12/26/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	106 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	110 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9L2604 - EPA 3580										
Blank (B9L2604-BLK1)					Prepared: 12/26/2019 Analyzed: 12/26/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	38		"	50.0		76.7	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9L2604 - EPA 3580

LCS (B9L2604-BS1)

Prepared: 12/26/2019 Analyzed: 12/26/2019

Diesel (C10-C28)	901	50.0	mg/kg	1000		90.1	70-130			
Surrogate: o-Terphenyl	47		"	50.0		94.9	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9L2604 - EPA 3580

Matrix Spike (B9L2604-MS1)	Source: Y912331-01		Prepared: 12/26/2019 Analyzed: 12/26/2019							
Diesel (C10-C28)	854	50.0	mg/kg	1000	ND	85.4	70-130			
Surrogate: o-Terphenyl	42		"	50.0		84.1	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9L2604 - EPA 3580

Matrix Spike Dup (B9L2604-MSD1)	Source: Y912331-01		Prepared: 12/26/2019 Analyzed: 12/26/2019							
Diesel (C10-C28)	848	50.0	mg/kg	1000	ND	84.8	70-130	0.679	35	
Surrogate: o-Terphenyl	42		"	50.0		84.3	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9L2605 - EPA 5030 (soil)

Blank (B9L2605-BLK1)

Prepared: 12/26/2019 Analyzed: 12/26/2019

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
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		116	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9L2605 - EPA 5030 (soil)

LCS (B9L2605-BS1)

Prepared: 12/26/2019 Analyzed: 12/26/2019

Benzene	0.101	0.002	mg/kg	0.100		101	70-130			
Toluene	0.109	0.002	"	0.100		109	70-130			
Ethylbenzene	0.106	0.002	"	0.100		106	70-130			
m,p-Xylene	0.210	0.004	"	0.200		105	70-130			
o-Xylene	0.102	0.002	"	0.100		102	70-130			
Naphthalene	0.099	0.008	"	0.100		98.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.5	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		116	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9L2605 - EPA 5030 (soil)

Matrix Spike (B9L2605-MS1)	Source: Y912374-02			Prepared: 12/26/2019 Analyzed: 12/26/2019						
Benzene	0.111	0.002	mg/kg	0.100	ND	111	70-130			
Toluene	0.123	0.002	"	0.100	ND	123	70-130			
Ethylbenzene	0.111	0.002	"	0.100	ND	111	70-130			
m,p-Xylene	0.220	0.004	"	0.200	ND	110	70-130			
o-Xylene	0.102	0.002	"	0.100	ND	102	70-130			
Naphthalene	0.101	0.008	"	0.100	0.020	81.5	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.0	70-130			
Surrogate: Toluene-d8	0.14		"	0.125		109	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		111	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9L2605 - EPA 5030 (soil)

Matrix Spike Dup (B9L2605-MSD1)	Source: Y912374-02			Prepared: 12/26/2019 Analyzed: 12/26/2019						
Benzene	0.121	0.002	mg/kg	0.100	ND	121	70-130	7.98	20	
Toluene	0.123	0.002	"	0.100	ND	123	70-130	0.0163	20	
Ethylbenzene	0.120	0.002	"	0.100	ND	120	70-130	8.00	20	
m,p-Xylene	0.240	0.004	"	0.200	ND	120	70-130	8.89	20	
o-Xylene	0.116	0.002	"	0.100	ND	116	70-130	13.3	20	
Naphthalene	0.123	0.008	"	0.100	0.020	103	70-130	19.4	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		107	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.

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

Notes and Definitions

U Sample is Non-Detect.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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.



April 24, 2020

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. April 17, 2020. This project is associated with Origins project number Y004245-01.

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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Effluent	Y004245-01	Air	April 17, 2020 12:45	04/17/2020 15:20

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y004245

Client: Eagle

Client Project ID: Noble-Wells Ranch AE

Checklist Completed by: JG KDK

Shipped Via: HD

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

Date/time completed: 04/17/2020

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: Air

Cooler Number/Temperature: 1 / ✓ °C / / °C / / °C (Describe) °C

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⁾ ?			✓	
Is there ice present (document if blue ice is used)			✓	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			✓	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			✓	
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?			✓	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			✓	
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 Na ₂ SO ₂ +NaOH, ZnAc+NaOH)			✓	
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.

Jm
 Reviewed by (Project Manager)

4-20-20
 Date/Time Reviewed

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Effluent

4/17/2020 12:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y004245-01 (Air)

GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	2860000	209000	ug/m ³ Air	1046.3	B0D1704	DJL	04/17/2020	04/21/2020	
Benzene	32600	2930	"	"	"	DJL	"	"	
Toluene	36700	5230	"	"	"	DJL	"	"	
Ethylbenzene	7950	5230	"	"	"	DJL	"	"	
m,p-Xylene	46200	19900	"	"	"	DJL	"	"	
o-Xylene	12700	4920	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	106 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B0D1704 - Default Prep - Air										
Blank (B0D1704-BLK1)										
					Prepared: 04/17/2020 Analyzed: 04/17/2020					T
Gasoline Range Hydrocarbons	ND	200	ug/m ³ Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.8		ppbv	10.0		108	70-130			
Surrogate: Toluene-d8	10.3		"	10.0		103	70-130			
Surrogate: 4-Bromofluorobenzene	10.4		"	10.0		104	70-130			
LCS (B0D1704-BS1)										
					Prepared: 04/17/2020 Analyzed: 04/17/2020					T
Benzene	34.9	2.80	ug/m ³ Air	31.9		109	70-130			
Toluene	42.1	5.00	"	37.7		112	70-130			
Ethylbenzene	49.0	5.00	"	43.4		113	70-130			
m,p-Xylene	210	19.0	"	174		121	70-130			
o-Xylene	54.1	4.70	"	43.4		125	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.77		ppbv	10.0		97.7	70-130			
Surrogate: Toluene-d8	9.73		"	10.0		97.3	70-130			
Surrogate: 4-Bromofluorobenzene	10.9		"	10.0		109	70-130			
LCS Dup (B0D1704-BSD1)										
					Prepared: 04/17/2020 Analyzed: 04/17/2020					T
Benzene	34.9	2.80	ug/m ³ Air	31.9		109	70-130	0.275	25	
Toluene	42.0	5.00	"	37.7		111	70-130	0.269	25	
Ethylbenzene	48.5	5.00	"	43.4		112	70-130	1.07	25	
m,p-Xylene	211	19.0	"	174		121	70-130	0.206	25	
o-Xylene	55.5	4.70	"	43.4		128	70-130	2.53	25	
Surrogate: 1,2-Dichloroethane-d4	9.81		ppbv	10.0		98.1	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0D1704 - Default Prep - Air

LCS Dup (B0D1704-BSD1)

Prepared: 04/17/2020 Analyzed: 04/17/2020

T

Surrogate: Toluene-d8	9.81		ppbv	10.0		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	10.6		"	10.0		106	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.

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

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



May 04, 2020

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. April 27, 2020. This project is associated with Origins project number Y004366-01.

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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Effluent	Y004366-01	Air	April 24, 2020 10:45	04/27/2020 16:00

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y004366

Client: Eagle

Client Project ID: Wells Ranch AE32

Checklist Completed by: JG

Shipped Via: HD

Date/time completed: 4/28/20

(UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: A-1

Cooler Number/Temperature: -7 °C / 1 °C / 1 °C (Describe) °C

Thermometer ID: N/A

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"/>	
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.

JM
 Reviewed by (Project Manager)

4-29-20
 Date/Time Reviewed

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Effluent

4/24/2020 10:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y004366-01 (Air)

GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	995000	83300	ug/m ³ Air	416.4	B0D2901	DJL	04/29/2020	05/01/2020	
Benzene	6920	1170	"	"	"	DJL	"	"	
Toluene	13300	2080	"	"	"	DJL	"	"	
Ethylbenzene	3600	2080	"	"	"	DJL	"	"	
m,p-Xylene	19200	7910	"	"	"	DJL	"	"	
o-Xylene	4470	1960	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	94.4 %		70-130			"	"	"	
Surrogate: Toluene-d8	108 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	114 %		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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B0D2901 - Default Prep - Air										
Blank (B0D2901-BLK1)										
					Prepared: 04/29/2020 Analyzed: 04/30/2020					T
Gasoline Range Hydrocarbons	ND	200	ug/m ³ Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.3		ppbv	10.0		103	70-130			
Surrogate: Toluene-d8	9.97		"	10.0		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	9.71		"	10.0		97.1	70-130			
LCS (B0D2901-BS1)										
					Prepared: 04/29/2020 Analyzed: 04/30/2020					T
Benzene	29.8	2.80	ug/m ³ Air	31.9		93.4	70-130			
Toluene	31.5	5.00	"	37.7		83.6	70-130			
Ethylbenzene	37.4	5.00	"	43.4		86.2	70-130			
m,p-Xylene	158	19.0	"	174		90.8	70-130			
o-Xylene	37.3	4.70	"	43.4		86.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.26		ppbv	10.0		92.6	70-130			
Surrogate: Toluene-d8	9.47		"	10.0		94.7	70-130			
Surrogate: 4-Bromofluorobenzene	10.8		"	10.0		108	70-130			
LCS Dup (B0D2901-BSD1)										
					Prepared: 04/29/2020 Analyzed: 04/30/2020					T
Benzene	30.4	2.80	ug/m ³ Air	31.9		95.3	70-130	2.01	25	
Toluene	31.8	5.00	"	37.7		84.4	70-130	0.952	25	
Ethylbenzene	38.7	5.00	"	43.4		89.1	70-130	3.31	25	
m,p-Xylene	165	19.0	"	174		94.8	70-130	4.36	25	
o-Xylene	39.6	4.70	"	43.4		91.2	70-130	5.87	25	
Surrogate: 1,2-Dichloroethane-d4	9.41		ppbv	10.0		94.1	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0D2901 - Default Prep - Air

LCS Dup (B0D2901-BSD1)

Prepared: 04/29/2020 Analyzed: 04/30/2020

T

Surrogate: Toluene-d8	9.39		ppbv	10.0		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	10.8		"	10.0		108	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.

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

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.



May 08, 2020

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. May 01, 2020. This project is associated with Origins project number Y005010-01.

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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Effluent Stack	Y005010-01	Air	May 1, 2020 10:40	05/01/2020 12:37

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 11005010

Client: Eagle

Client Project ID: Wells Ranch AE32

Checklist Completed by: SG

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

Date/time completed: 5/1/12

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: Air


Cooler Number/Temperature: 1 / 1 °C 1 / 1 °C 1 / 1 °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"/>	
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) jm Date/Time Reviewed 5/4/12

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Effluent Stack
5/1/2020 10:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y005010-01 (Air)

GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	2240000	80700	ug/m ³ Air	403.7	B0E0414	DJL	05/04/2020	05/05/2020	
Benzene	12500	1130	"	"	"	DJL	"	"	
Toluene	24400	2020	"	"	"	DJL	"	"	
Ethylbenzene	7890	2020	"	"	"	DJL	"	"	
m,p-Xylene	44000	7670	"	"	"	DJL	"	"	
o-Xylene	11600	1900	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	97.7 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	120 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	115 %	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0E0414 - Default Prep - Air

Blank (B0E0414-BLK1)

Prepared: 05/04/2020 Analyzed: 05/04/2020

T

Gasoline Range Hydrocarbons	ND	200	ug/m ³ Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U

Surrogate: 1,2-Dichloroethane-d4	10.2		ppbv	10.0		102	70-130			
Surrogate: Toluene-d8	10.2		"	10.0		102	70-130			
Surrogate: 4-Bromofluorobenzene	10.2		"	10.0		102	70-130			

LCS (B0E0414-BS1)

Prepared: 05/04/2020 Analyzed: 05/04/2020

T

Benzene	30.7	2.80	ug/m ³ Air	31.9		96.2	70-130			
Toluene	34.0	5.00	"	37.7		90.1	70-130			
Ethylbenzene	40.4	5.00	"	43.4		93.1	70-130			
m,p-Xylene	170	19.0	"	174		97.7	70-130			
o-Xylene	38.9	4.70	"	43.4		89.6	70-130			

Surrogate: 1,2-Dichloroethane-d4	9.17		ppbv	10.0		91.7	70-130			
Surrogate: Toluene-d8	9.88		"	10.0		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	11.3		"	10.0		113	70-130			

LCS Dup (B0E0414-BSD1)

Prepared: 05/04/2020 Analyzed: 05/04/2020

T

Benzene	30.9	2.80	ug/m ³ Air	31.9		96.7	70-130	0.518	25	
Toluene	33.4	5.00	"	37.7		88.7	70-130	1.57	25	
Ethylbenzene	40.8	5.00	"	43.4		94.0	70-130	0.962	25	
m,p-Xylene	172	19.0	"	174		98.9	70-130	1.27	25	
o-Xylene	41.3	4.70	"	43.4		95.0	70-130	5.85	25	

Surrogate: 1,2-Dichloroethane-d4	9.29		ppbv	10.0		92.9	70-130			
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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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0E0414 - Default Prep - Air

LCS Dup (B0E0414-BSD1)

Prepared: 05/04/2020 Analyzed: 05/04/2020

T

Surrogate: Toluene-d8	9.83		ppbv	10.0		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	10.9		"	10.0		109	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.

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

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.



May 15, 2020

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. May 08, 2020. This project is associated with Origins project number Y005109-01.

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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Effluent Stack	Y005109-01	Air	May 8, 2020 10:15	05/08/2020 11:42

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y005109

Client: Eagle

Client Project ID: Wells Ranch AE 32

Checklist Completed by: SG

Shipped Via: HD

Date/time completed: 5/8/20

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

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: Air

Cooler Number/Temperature: 1 / 1 °C 1 / 1 °C 1 / 1 °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"/>	
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 HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+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) am

Date/Time Reviewed 5-11-20

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Effluent Stack
5/8/2020 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y005109-01 (Air)

GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	2640000	50000	ug/m ³ Air	250	B0E1201	ZZZ	05/12/2020	05/12/2020	
Benzene	9530	700	"	"	"	ZZZ	"	"	
Toluene	22700	1250	"	"	"	ZZZ	"	"	
Ethylbenzene	9570	1250	"	"	"	ZZZ	"	"	
m,p-Xylene	50000	4750	"	"	"	ZZZ	"	"	
o-Xylene	16100	1180	"	"	"	ZZZ	"	"	
Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"			
Surrogate: Toluene-d8	145 %	70-130			"	"			S-04
Surrogate: 4-Bromofluorobenzene	102 %	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B0E1201 - Default Prep - Air										
Blank (B0E1201-BLK1)										
										Prepared: 05/12/2020 Analyzed: 05/12/2020
T										
Gasoline Range Hydrocarbons	ND	200	ug/m ³ Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.5		ppbv	10.0		105	70-130			
Surrogate: Toluene-d8	10.1		"	10.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	10.1		"	10.0		101	70-130			
LCS (B0E1201-BS1)										
										Prepared: 05/12/2020 Analyzed: 05/12/2020
T										
Benzene	31.7	2.80	ug/m ³ Air	31.9		99.3	70-130			
Toluene	32.7	5.00	"	37.7		86.7	70-130			
Ethylbenzene	40.4	5.00	"	43.4		93.1	70-130			
m,p-Xylene	169	19.0	"	174		97.6	70-130			
o-Xylene	40.2	4.70	"	43.4		92.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.67		ppbv	10.0		96.7	70-130			
Surrogate: Toluene-d8	9.59		"	10.0		95.9	70-130			
Surrogate: 4-Bromofluorobenzene	10.9		"	10.0		109	70-130			
LCS Dup (B0E1201-BSD1)										
										Prepared: 05/12/2020 Analyzed: 05/12/2020
T										
Benzene	31.9	2.80	ug/m ³ Air	31.9		100	70-130	0.702	25	
Toluene	33.9	5.00	"	37.7		89.9	70-130	3.62	25	
Ethylbenzene	42.2	5.00	"	43.4		97.2	70-130	4.31	25	
m,p-Xylene	180	19.0	"	174		103	70-130	5.82	25	
o-Xylene	42.1	4.70	"	43.4		96.9	70-130	4.54	25	
Surrogate: 1,2-Dichloroethane-d4	9.74		ppbv	10.0		97.4	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0E1201 - Default Prep - Air

LCS Dup (B0E1201-BSD1)

Prepared: 05/12/2020 Analyzed: 05/12/2020

T

Surrogate: Toluene-d8	9.39		ppbv	10.0		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	10.8		"	10.0		108	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.

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

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.



June 05, 2020

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. May 27, 2020. This project is associated with Origins project number Y005356-01.

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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Effluent	Y005356-01	Air	May 27, 2020 12:00	05/27/2020 16:33

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y005356

Client: Eagle

Client Project ID: Noble - Wells Ranch

Checklist Completed by: SETKDK

Shipped Via: HD

AE32 Encode

Date/time completed: 05/27/20

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

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid

Water Other: Air

Cooler Number/Temperature: 1 / °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"/>	
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: Jm (Project Manager)

5-28-20
 Date/Time Reviewed

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Effluent

5/27/2020 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y005356-01 (Air)

GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	1460000	50000	ug/m ³ Air	250	B0F0107	DJL	06/01/2020	06/01/2020	
Benzene	3980	700	"	"	"	DJL	"	"	
Toluene	8120	1250	"	"	"	DJL	"	"	
Ethylbenzene	3520	1250	"	"	"	DJL	"	"	
m,p-Xylene	25500	4750	"	"	"	DJL	"	"	
o-Xylene	8290	1180	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	120 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0F0107 - Default Prep - Air

Blank (B0F0107-BLK1)

Prepared: 06/01/2020 Analyzed: 06/01/2020

T

Gasoline Range Hydrocarbons	ND	200	ug/m ³ Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U

Surrogate: 1,2-Dichloroethane-d4	11.5		ppbv	10.0		115	70-130			
Surrogate: Toluene-d8	10.2		"	10.0		102	70-130			
Surrogate: 4-Bromofluorobenzene	10.5		"	10.0		105	70-130			

LCS (B0F0107-BS1)

Prepared: 06/01/2020 Analyzed: 06/01/2020

T

Benzene	31.4	2.80	ug/m ³ Air	31.9		98.2	70-130			
Toluene	34.2	5.00	"	37.7		90.8	70-130			
Ethylbenzene	41.6	5.00	"	43.4		95.7	70-130			
m,p-Xylene	181	19.0	"	174		104	70-130			
o-Xylene	42.1	4.70	"	43.4		96.9	70-130			

Surrogate: 1,2-Dichloroethane-d4	10.2		ppbv	10.0		102	70-130			
Surrogate: Toluene-d8	9.90		"	10.0		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	11.7		"	10.0		117	70-130			

LCS Dup (B0F0107-BSD1)

Prepared: 06/01/2020 Analyzed: 06/01/2020

T

Benzene	32.5	2.80	ug/m ³ Air	31.9		102	70-130	3.50	25	
Toluene	32.7	5.00	"	37.7		86.9	70-130	4.39	25	
Ethylbenzene	39.8	5.00	"	43.4		91.6	70-130	4.38	25	
m,p-Xylene	173	19.0	"	174		99.4	70-130	4.72	25	
o-Xylene	40.2	4.70	"	43.4		92.5	70-130	4.65	25	

Surrogate: 1,2-Dichloroethane-d4	10.6		ppbv	10.0		106	70-130			
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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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0F0107 - Default Prep - Air

LCS Dup (B0F0107-BSD1)

Prepared: 06/01/2020 Analyzed: 06/01/2020

T

Surrogate: Toluene-d8	9.46		ppbv	10.0		94.6	70-130			
Surrogate: 4-Bromofluorobenzene	11.6		"	10.0		116	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

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.



June 19, 2020

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. June 12, 2020. This project is associated with Origins project number Y006237-01.

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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Effluent Stack	Y006237-01	Air	June 12, 2020 9:16	06/12/2020 11:10

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 7006237

Client: Eagle Env.

Client Project ID: Noble-wells Ranch AE 32 Econode

Checklist Completed by: Daba

Shipped Via: 140
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 3/6-12-20

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water / Other: Air

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

Thermometer ID: 1

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?			✓	Air
Is there ice present (document if blue ice is used)			✓	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		✓		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		✓		
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		✓		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			✓	
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)			✓	
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.

DM
 Reviewed by (Project Manager)

6-15-20
 Date/Time Reviewed

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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Effluent Stack
6/12/2020 9:16:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y006237-01 (Air)

GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	1620000	50000	ug/m ³ Air	250	B0F1510	DJL	06/15/2020	06/16/2020	
Benzene	3490	700	"	"	"	DJL	"	"	
Toluene	7720	1250	"	"	"	DJL	"	"	
Ethylbenzene	3820	1250	"	"	"	DJL	"	"	
m,p-Xylene	26500	4750	"	"	"	DJL	"	"	
o-Xylene	8350	1180	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	93.4 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	119 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B0F1510 - Default Prep - Air										
Blank (B0F1510-BLK1)										
					Prepared: 06/15/2020 Analyzed: 06/15/2020					T
Gasoline Range Hydrocarbons	ND	200	ug/m ³ Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.4		ppbv	10.0		104	70-130			
Surrogate: Toluene-d8	9.77		"	10.0		97.7	70-130			
Surrogate: 4-Bromofluorobenzene	10.3		"	10.0		103	70-130			
LCS (B0F1510-BS1)										
					Prepared: 06/15/2020 Analyzed: 06/15/2020					T
Benzene	33.0	2.80	ug/m ³ Air	31.9		103	70-130			
Toluene	31.6	5.00	"	37.7		83.9	70-130			
Ethylbenzene	40.3	5.00	"	43.4		92.9	70-130			
m,p-Xylene	171	19.0	"	174		98.2	70-130			
o-Xylene	39.9	4.70	"	43.4		92.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.84		ppbv	10.0		98.4	70-130			
Surrogate: Toluene-d8	9.26		"	10.0		92.6	70-130			
Surrogate: 4-Bromofluorobenzene	11.6		"	10.0		116	70-130			
LCS Dup (B0F1510-BSD1)										
					Prepared: 06/15/2020 Analyzed: 06/15/2020					T
Benzene	32.8	2.80	ug/m ³ Air	31.9		103	70-130	0.679	25	
Toluene	32.0	5.00	"	37.7		85.0	70-130	1.30	25	
Ethylbenzene	41.2	5.00	"	43.4		94.8	70-130	2.02	25	
m,p-Xylene	174	19.0	"	174		100	70-130	1.92	25	
o-Xylene	40.9	4.70	"	43.4		94.1	70-130	2.26	25	
Surrogate: 1,2-Dichloroethane-d4	9.75		ppbv	10.0		97.5	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.

Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0F1510 - Default Prep - Air

LCS Dup (B0F1510-BSD1)

Prepared: 06/15/2020 Analyzed: 06/15/2020

T

Surrogate: Toluene-d8	9.39		ppbv	10.0		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	11.1		"	10.0		111	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

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.

ATTACHMENT C

Soil Vapor Extraction Pilot Test Data

SOIL VAPOR EXTRACTION PILOT TEST DATA
WELLS RANCH AE 32 ECONODE
40.443511 / -104.355116
WELLS RANCH, COLORADO

DATE PILOT TEST PERFORMED:		TEST WELLS: SVE-01, SVE-03 through SVE-05								
Time	SVE-01		SVE-02		SVE-03		SVE-04		SVE-05	
	VOC (ppm-v)		VOC (ppm-v)		VOC (ppm-v)		VOC (ppm-v)		VOC (ppm-v)	
Initial	800	0.0	DES		58.6		36.2		391.5	
Final	1455	32.8	DES		66.8		48.1		212.0	

SVE ONLY

Started: 815

Initial PID at stack:

- 1=0
- 3=0
- 4=0.9
- 5=4.3

Initial PID at manifold:

- 1=0
- 3=0
- 4=0
- 5=0

Time	Test Well Vacuum Applied (" H ₂ O)	Effluent Stack Velocity (ft/min)	Effluent Stack Flow (scfm)	Effluent Stack Temp (°F)	Effluent 4" VOC (ppm-v)	Well Head VOC (ppm-v)
815	20	NA	NA	91.3	0.8	17.9
830	40	NA	NA	108.2	21.1	152.9
845	40	NA	NA	111.7	21.7	139.2
900	60	NA	NA	112.9	20.3	NA
915	60	NA	497	129.7	22.8	NA
930	60	NA	488	134.6	20.6	NA
940	60	NA	500	144.3	21.4	NA
1000	20	NA	NA	99.6	1.7	51.6
1015	40	NA	NA	108.9	3.4	91.3
1030	40	NA	NA	125.7	7.1	154
1045	60	NA	439	127.9	5.4	114
1100	60	NA	NA	131.2	3.9	117
1115	60	NA	NA	131.8	4.7	112
1130	60	5813	506	134.9	4.5	77.0
1145	20	NA	502	98.3	40.9	461
1200	30	NA	NA	112.6	56.4	457.1
1215	40	5700	504	119.2	61.1	431.8
1230	50	5600	502	121.9	73.3	407.7
1245	60	5860	512	124.3	85.1	396
1300	60	NA	512	125.9	82.3	345
1315	20	NA	NA	87.1	7.8	145
1330	40	NA	NA	94.7	11.2	197
1345	40	NA	NA	118.8	14.9	241
1400	60	NA	NA	118.7	19.2	229
1415	60	5600	486	119.2	21.6	237
1430	60	5713	512	120.2	28.8	241

Well ID	SVE-01		SVE-03		SVE-04		SVE-05		
	Time	Vacuum ("H ₂ O)	VOC (ppm-v)	Vacuum ("H ₂ O)	VOC (ppm-v)	Vacuum ("H ₂ O)	VOC (ppm-v)	Vacuum ("H ₂ O)	VOC (ppm-v)
X	815			0.0	57.2	0.0	40.3	0.0	401.7
	830			0.0	57.8	0.0	52.8	0.0	389.2
	845			0.0	60.3	0.0	38.9	0.0	397.7
	900			0.0	59.1	0.0	43.3	0.0	411
	915			0.0	57.7	0.0	49.7	0.0	403
	930			0.0	58.8	0.0	54.1	0.0	482
	940			0.0	51.8	0.0	48.8	0.0	477
	1000	0.0	52.7			0.02	56.4	0.0	465
	1015	0.0	46.1			0.02	56.4	0.0	457
	1030	0.0	34.5			0.03	76.9	0.0	102
1045	0.0	48.8			0.05	71.1	0.0	94.5	
1100	0.0	49.7			0.03	88.7	0.0	104	
1115	0.0	51.1			0.03	91.2	0.0	1003	
1130	0.0	52.3			0.03	105.7	0.0	97.9	
1145	0.0	47.5	0.01	28.1			0.08	72.4	
1200	0.0	25.6	0.01	24.1			0.08	23.8	
1215	0.0	24.9	0.01	29.2			0.1	29.7	
1230	0.0	26.1	0.02	37.7			0.1	31.1	
1245	0.0	38.8	0.02	54.7			0.1	16.6	
1300	0.0	26.3	0.02	45.6			0.1	14.2	
1315	0.0	19.2	0.01	52.3	0.06	7.8			
1330	0.0	27.9	0.01	50.3	0.06	29.2			
1345	0.0	36.5	0.01	53.1	0.08	38.7			
1400	0.0	37.7	0.01	68.2	0.08	33.7			
1415	0.0	39.8	0.01	71.4	0.08	29.3			
1430	0.0	38.4	0.01	81.1	0.08	28.3			

PID = Photoionization detector

VOC = Volatile Organic Compound

SVE = soil vapor extraction

> = greater than

°F = degrees fahrenheit

NA = Not available

" H₂O = inches of water

ft/min = feet per minute

scfm = standard cubic feet per minute

ppm-v = parts per million by volume

' = feet

" = inches

* = Unable to obtain PID reading due to increased flow rate at the well-head manifold

Note: Soil vapor extraction well SVE-02 was observed destroyed. The surrounding area appears regraded and resurfaced

Pilot Test Equipment:
 SVE Blower: Tuthill 15 HP Positive Displacement Blower