

State of Colorado  
Oil and Gas Conservation Commission

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Report taken by:  
ROB YOUNG

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27. This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: <u>FOUNDATION ENERGY MANAGEMENT LLC</u>	Operator No: <u>10112</u>	<b>Phone Numbers</b>
Address: <u>5057 KELLER SPRINGS RD STE 650</u>		Phone: <u>(303) 244-8114</u>
City: <u>ADDISON</u>	State: <u>TX</u>	Zip: <u>75001</u>
Contact Person: <u>Alyssa Beard</u>		Mobile: <u>( )</u>
		Email: <u>abeard@foundationenergy.com</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 11222 Initial Form 27 Document #: 401607069

PURPOSE INFORMATION

- Rule 913.c.(1): Pit or Cuttings Trench closure.
- Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- Rule 913.g: Changes of Operator.
- Rule 915.b: Request to leave elevated inorganics in situ.
- Other: \_\_\_\_\_

SITE INFORMATION

No Multiple Facilities

Facility Type: <u>PIT</u>	Facility ID: <u>275725</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>HILL 31-15-8</u>		Latitude: <u>40.611682</u>	Longitude: <u>-104.130966</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>SWSE</u>	Sec: <u>31</u>	Twp: <u>8N</u>	Range: <u>60W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use rangeland  
Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? No  
Is groundwater less than 20 feet below ground surface? No

## SITE INVESTIGATION PLAN

### TYPE OF WASTE:

- |                                                    |                                                      |                                        |
|----------------------------------------------------|------------------------------------------------------|----------------------------------------|
| <input checked="" type="checkbox"/> E&P Waste      | <input type="checkbox"/> Other E&P Waste             | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids             | _____                                  |
| <input type="checkbox"/> Oil                       | <input type="checkbox"/> Tank Bottoms                |                                        |
| <input type="checkbox"/> Condensate                | <input type="checkbox"/> Pigging Waste               |                                        |
| <input type="checkbox"/> Drilling Fluids           | <input type="checkbox"/> Rig Wash                    |                                        |
| <input type="checkbox"/> Drill Cuttings            | <input type="checkbox"/> Spent Filters               |                                        |
|                                                    | <input type="checkbox"/> Pit Bottoms                 |                                        |
|                                                    | <input type="checkbox"/> Other (as described by EPA) | _____                                  |

### DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	200 sq ft	Soil sampling

### INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

The pit at the Hill Central Tank Battery were initially sampled in April 2018 and impacted material was excavated on 7/2/2018 and additional confirmation samples were collected on 1/22/2019 from the corners of the excavation. Results from this excavation were presented in the approved Form 27-S #401844383. However, COAs were provided in that approval requesting: 1) lab reports for January 2019 inorganic data; 2) soil analysis of BTEX, TPH-GRO, and TPH-DRO beneath the skim tank; and 3) confirmation EC and SAR at the east wall of the pit.

### PROPOSED SAMPLING PLAN

#### Proposed Soil Sampling

Will soil samples be collected as part of this investigation? ( Number, type (grab/composite), analyses, and locations of samples ):

Soil samples were collected from beneath the skim tank for Table 915-1 VOCs and TPH and from the east wall of the pit for EC an SAR. Laboratory results are presented on Tables 1 and 2 and illustrated on Figure 3.

#### Proposed Groundwater Sampling

Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

#### Proposed Surface Water Sampling

Will surface water samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

### Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

The SAR value of 10.1 at the east wall of the pit confirmation sample is above the Table 915-1 standard of 6. However, since the excavation was performed and the COA was provided prior to the implementation of Table 915-1, Foundation Energy requests approval for no further action (NFA) site closure under the Table 910-1 SAR standard of 12.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

**Soil**

Number of soil samples collected 2  
Number of soil samples exceeding 915-1 1  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 200

**NA / ND**

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 10.1  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 2

**Groundwater**

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) \_\_\_\_\_  
Number of groundwater monitoring wells installed \_\_\_\_\_  
Number of groundwater samples exceeding 915-1 \_\_\_\_\_

Highest concentration of Benzene (µg/l) \_\_\_\_\_  
Highest concentration of Toluene (µg/l) \_\_\_\_\_  
Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_  
Highest concentration of Xylene (µg/l) \_\_\_\_\_  
Highest concentration of Methane (mg/l) \_\_\_\_\_

**Surface Water**

0 Number of surface water samples collected  
0 Number of surface water samples exceeding 915-1  
If surface water is impacted, other agency notification may be required.

**OTHER INVESTIGATION INFORMATION**

Were impacts to adjacent property or offsite impacts identified?  
\_\_\_\_\_

Were background samples collected as part of this site investigation?  
A background sample was collected and placed on hold at the laboratory.

Was investigation derived waste (IDW) generated as part of this investigation?  
Volume of solid waste (cubic yards) 23 Volume of liquid waste (barrels) 0

Is further site investigation required?  
\_\_\_\_\_

**REMEDIAL ACTION PLAN**

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

**SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

Initial soil sampling performed April 2018 on the pit base and sidewalls indicated DRO concentrations over the Table 910-1 standard on the North sidewall, as well as high EC and SAR on the east sidewall. Soil staining was not observed during the initial pit sampling. Foundation then contracted Tasman Geosciences to perform excavation on the impacted areas and excavation oversight, and 23 tons of soil were removed from the Hill CTB pit. Tasman collected a confirmation sample from the north sidewall at 4' bgs on July 2, 2018 which met the Table 910-1 standard. In excavating the north sidewall, the pit footprint was enlarged to the north approximately 5 feet and to the east by 2 feet. Further details of the source removal are presented in the approved Form 27-S #401844383.

**REMEDIATION SUMMARY**

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

Initial soil sampling performed April 2018 on the pit base and sidewalls indicated DRO concentrations over the Table 910-1 standard on the North sidewall, as well as high EC and SAR on the east sidewall. Soil staining was not observed during the initial pit sampling. Foundation then contracted Tasman Geosciences to perform excavation on the impacted areas and excavation oversight, and 23 tons of soil were removed from the Hill CTB pit. Tasman collected a confirmation sample from the north sidewall at 4' bgs on July 2, 2018 which met the Table 910-1 standard. In excavating the north sidewall, the pit footprint was enlarged to the north approximately 5 feet and to the east by 2 feet. Clean backfill was placed into the pit after the confirmation sample confirmed that the soil containing DRO had been removed. Samples were collected on 1/22/19 to confirm that soil on reclaimed area of the pit (at each corner) does not contain high inorganic constituents and can support reclamation. Results of the initial remediation are presented in the approved Form 27-S #401844383.

## Soil Remediation Summary

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

Yes \_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 15

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Land Treatment

\_\_\_\_\_ Bioremediation (or enhanced bioremediation)

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Other \_\_\_\_\_

## Groundwater Remediation Summary

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Other \_\_\_\_\_

## GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

NA

# REMEDIATION PROGRESS UPDATE

## PERIODIC REPORTING

### Approved Reporting Schedule:

Quarterly  Semi-Annually  Annually  Other

### Request Alternative Reporting Schedule:

Semi-Annually  Annually  Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

Report Type:  Groundwater Monitoring  Land Treatment Progress Report  O&M Report

Other Soil confirmation sampling of 2018 excavation

## Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Foundation carries both pollution liability insurance and an umbrella policy over that for a total of 11M, so it goes without saying that this is sufficient for this project. Cost provided below is a placeholder for reseeded if necessary.

Operator anticipates the remaining cost for this project to be: \$ 4000

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

None

Volume of E&P Waste (solid) in cubic yards 15

E&P waste (solid) description Soil from former produced water pit

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Waste Management Ault CO

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

## REMEDIATION COMPLETION REPORT

### REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

If YES:

Compliant with Rule 913.h.(1).

Compliant with Rule 913.h.(2).

Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? No

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Does Groundwater meet Table 915-1 standards? Yes

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

## RECLAMATION PLAN

### RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

The pit has been reclaimed in accordance with 1000 series rules. The reclamation hasn't taken particularly well, so Foundation will continue to monitor this location and will reseed as necessary and when conditions are best per the local soil conservation district.

Is the described reclamation complete? Yes

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

Interim  Final

Did the Surface Owner provide the seed mix? No

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? Yes

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 10/30/2018

Proposed date of completion of Reclamation. 10/14/2020

## IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

### PRIOR DATES

Date of Surface Owner notification/consultation, if required. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/18/2018

Proposed site investigation commencement. 04/18/2018

Proposed completion of site investigation. 04/18/2018

### REMEDIAL ACTION DATES

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. \_\_\_\_\_

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

\_\_\_\_\_

**OPERATOR COMMENT**

The soil investigation presented herein is in response to COAs provided on Form 27-S #401844383 and inspection #688000641. The conditions outlined in those documents have been met by providing January 2019 laboratory reports for inorganic data in Appendix A; confirmation sampling beneath the skim tank; and confirmation sampling at the east wall of the pit. Due to the timing of the original excavation in 2018 and the corresponding COA in 2019, Foundation Energy requests closure of the Site under Table 910 standards with respect to the SAR value at the east wall of the pit.  
 \*Foundation was unable to submit this Form 27 last week due to glitches in the new FA fields added to the Form 27. Thanks

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

Signed: Alyssa Beard

Title: EHSR Manager

Submit Date: 06/13/2022

Email: regulatory@foundationenergy.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: ROB YOUNG

Date: 07/07/2022

Remediation Project Number: 11222

**Condition of Approval****COA Type****Description**

	Based on the information presented, it appears that no further action is necessary at this time and the COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if ground water is found to be impacted, then further investigation and/or remediation activities may be required. In addition, the surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules
1 COA	

**Attachment Check List**

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

**Att Doc Num****Name**

403067791	FORM 27-SUPPLEMENTAL-SUBMITTED
403067868	ANALYTICAL RESULTS

Total Attach: 2 Files

**General Comments****User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)