

# State of Colorado Oil and Gas Conservation Commission

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Report taken by:

RICK ALLISON

## 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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

### 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>	Email: <u>abeard@foundationenergy.com</u>	Mobile: <u>(720) 257-2302</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 11274Initial Form 27 Document #: 401623219

#### PURPOSE INFORMATION

- |  |  |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination                                       | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water                   |
| <input checked="" type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure                  | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation                            | <input checked="" type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project                       |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste                      | <input type="checkbox"/> Rule 906.c.: Director request   |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____   |

#### SITE INFORMATION

N Multiple Facilities ( in accordance with Rule 909.c. )

Facility Type: <u>PIT</u>	Facility ID: <u>274748</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>DOC SHOWERS</u>		Latitude: <u>40.611664</u>	Longitude: <u>-104.124194</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>SWSW</u>	Sec: <u>32</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 SMMost Sensitive Adjacent Land Use RangelandIs domestic water well within 1/4 mile? YesIs surface water within 1/4 mile? NoIs groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

☒ E&P Waste

☐ Other E&P Waste

☐ Non-E&P Waste

☒ Produced Water

☐ Workover Fluids

☐ Oil

☐ Tank Bottoms

☐ Condensate

☐ Pigging Waste

☐ Drilling Fluids

☐ Rig Wash

☐ Drill Cuttings

☐ Spent Filters

☐ Pit Bottoms

☐ Other (as described by EPA)

## DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	SOILS	Unknown	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.

Foundation is planning to collect soil samples at the Showers CTB pit location from the proposed sample locations on the attached map, with a hand auger decontaminated between each sample location.

## 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 ):

Foundation proposed to collect 5 soil samples by hand auger for the pit closure investigation - 1 base sample, and 4 sidewall samples. The sidewall samples will be collected from within the berm footprint and analyzed for pH, EC, and SAR in addition to GBTEX and TPH. The inorganic concentrations will be used to evaluate potential reclamation success.

### 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 ):

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 9

Number of soil samples exceeding 910-1 0

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 0

### NA / ND

NA Highest concentration of TPH (mg/kg)

NA Highest concentration of SAR

BTEX > 910-1

Vertical Extent > 910-1 (in feet) 0

### 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 910-1

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 910-1

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?

☒ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) 296

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.

Soil samples will be collected from the locations proposed on the attached mpa, and analyzed for BTEX, TPH, EC, SAR, and pH (with the exception of the base soil sample, which will not be run for EC, SAR, and pH due to the sample depth). Based on the analytical results, soil will be removed as necessary and disposed of at the Waste Management Ault facility.  
\*\*Updated 3/22/21 - The remediation of the Doc Showers pit was carried out in 2018. Impacted material was encountered and removed with heavy equipment, then transported to Waste Management's Ault facility.

## 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.

Since soil samples have not been collected, Foundation will require additional data in order to develop the remediation plan. However, should be samples in the pit base and sidewalls exceed the Table 910-1 standard, soil will be removed with heavy equipment during pit closure activities and transported to the Waste Management landfill until the excavation extents are below the Table 910-1 standard.  
\*\*Updated 3/22/21 - After approximately 296 tons of impacted material was removed from the pit, confirmation samples were collected by Tasman Geosciences at the excavation extents. Sample results indicated that hydrocarbon impacts had been removed. Waste manifests are attached. Soil samples collected from the surface at the time of the excavation and analyzed for inorganics showed exceedances for SAR, pH and EC. This material was buried greater than three feet bgs and clean fill was brought in. Supplemental soil sampling performed in January, 2019 showed that the surface impacts identified in the 2018 surface sampling had been mitigated with burial at greater than three feet.

## Soil Remediation Summary

☐ In Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )  
\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Air sparge / Soil vapor extraction  
\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

☒ Ex Situ

Yes \_\_\_\_\_ Excavate and offsite disposal  
If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 296  
Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
\_\_\_\_\_ Excavate and onsite remediation  
\_\_\_\_\_ 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

**Frequency:** ☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other Pit Closure Reporting

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

☐ Other \_\_\_\_\_

### 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 - transported to landfill

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 296

E&P waste (solid) description \_\_\_\_\_ Petroleum impacted soil

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 \_\_\_\_\_

Do all soils meet Table 910-1 standards? Yes \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? No \_\_\_\_\_

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? \_\_\_\_\_

Does Groundwater meet Table 910-1 standards? Yes \_\_\_\_\_

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

## 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.

Once soil samples collected from the base and sidewalls of the pit show concentrations less than Table 910, the berms will be pushed into the base of the pit. Additional topsoil will be brought in and compacted to bring the pit area to surface, and prepared for seeding with dryland pasture seed mix. If soil amendments are necessary to increase the chance of success at seeding, Foundation will add amendments based on soil results.

**\*\*Updated 3/22/21 - The final well feeding into the Showers tank battery is planned for plugging in 2021. As such, the entire battery will be recontoured and reclaimed. The pit area has already been reseeded subsequent to the pit closure work. The seeding in the former pit area will be evaluated this spring to see how the seeding took. If the pit area needs to be entirely or partially reseeded, that will be undertaken during decommissioning and reclamation of the Showers Battery in accordance with COGCC Series 1000 Rules. A photo of the pit area after seeding is attached.**

Is the described reclamation complete? No \_\_\_\_\_

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

☐ Interim? ☐ Final?

Did the Surface Owner approve the seed mix? Yes \_\_\_\_\_

If NO, does the seed mix comply with local soil conservation district recommendations? Yes \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

### **PRIOR DATES**

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

Actual Spill or Release date, if known. \_\_\_\_\_

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 04/09/2018

Date of commencement of Site Investigation. 04/09/2018

Date of completion of Site Investigation. 04/09/2018

### **REMEDIAL ACTION DATES**

Date of commencement of Remediation. 06/04/2018

Date of completion of Remediation. 06/28/2018

### **SITE RECLAMATION DATES**

Date of commencement of Reclamation. 10/01/2018

Date of completion of Reclamation. 10/19/2018

**OPERATOR COMMENT**

Pit closure activities were conducted in July 2018 under the oversight of Tasman Geosciences. Approximately 296 tons of impacted soil was removed and transported to the Waste Management Ault facility. Clean backfill was brought in to bring the former area to grade. The former pit location has been reseeded.

The Form 27 requesting closure of the pit was drafted in 2018/2019, but was not submitted due to an oversight. Thank you.

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

Signed: Alyssa Beard

Title: EHS Manager

Submit Date: 03/22/2021

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: RICK ALLISON

Date: 05/10/2021

Remediation Project Number: 11274

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

	1. Operator will perform an assessment at the former skim tank location. Operator will collect a soil sample from native soil from beneath the former skim tank and analyze the soil sample for Table 915-1 Soil TPH (C6-C36), Organics in soil, and soil suitability parameters. 2. Operator will either confirm locations of soil samples SS07 - SS10 or perform an assessment of Table 915-1 soil suitability parameters in the reclaimed pit area.
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**

401828226	FORM 27-SUPPLEMENTAL-SUBMITTED
401828235	SOIL SAMPLE LOCATION MAP
401828261	MAP
401828265	ANALYTICAL RESULTS
401828267	ANALYTICAL RESULTS
401846201	DISPOSAL MANIFESTS
402635079	ANALYTICAL RESULTS
402635080	ANALYTICAL RESULTS
402635267	SOIL SAMPLE LOCATION MAP
402635379	PHOTOS

Total Attach: 10 Files

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

Environmental	emailed Operator 4/2/2018 for more information as originally requested.	04/07/2021
Environmental	1. Provide sample locations and depths for the samples SS-7 through SS-10 analyzed for pH, EC and SAR. All four samples exceed the Table 910-1 level of 12 for SAR. 2. Provide data for the assessment of the skim tank as directed in the approved Initial Form 27. 3. Provide information for the assessment of inorganic parameters for the pit berms, or clarify that the berm material was removed for disposal.	12/03/2018

Total: 2 comment(s)