

State of Colorado  
Energy & Carbon Management Commission

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Report taken by:

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 ECMC 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: FOUNDATION ENERGY MANAGEMENT LLC	Operator No: 10112	Phone Numbers Phone: (972) 707-2523 Mobile: ( )
Address: 5057 KELLER SPRINGS RD STE 650		
City: ADDISON	State: TX Zip: 75001	
Contact Person: Afton Iiams	Email: aiiams@foundationenergy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 36674 Initial Form 27 Document #: 403873092

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: Historic Release

SITE INFORMATION

No Multiple Facilities

Facility Type: WELL	Facility ID:	API #: 017-06403	County Name: CHEYENNE
Facility Name: LAS ANIMAS MINERALS 1-10		Latitude: 38.928640	Longitude: -102.989910
		** correct Lat/Long if needed: Latitude:	Longitude:
QtrQtr: NESW	Sec: 10	Twp: 13S	Range: 50W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications CH Most Sensitive Adjacent Land Use Non Cropland

Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

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## 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) Unknown

**DESCRIPTION OF IMPACT**

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	SOILS	500	Laboratory 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.

ECMC reclamation specialist Ryan Costa inspected the Las Animas Minerals 1-10 location on 2/7/2024 and discovered what appeared to be impacted soils from a historic release at the well site. Foundation was notified on 2/9/2024 via Field Inspection Report, document #713600722.

Initial actions and completed remedial measures have previously been submitted to the ECMC in Form 19I (#403684150), and in Form 19S (#403691980 and #403782744). The site was initially sampled on 2/21/2024, with eight (8) soil samples collected from seven (7) locations, including two (2) background locations. Soil samples were analyzed for the full Table 915-1 except for HA2@5' which was analyzed for SAR only. The results were presented to the ECMC in the approved Supplemental Form 19 document #403782744. An initial Form 27 (#403873092) was conditionally approved by the ECMC and remediation number #36674 was assigned to the project. The spill (#486084) was closed with approval from the ECMC in a Form 19-S (#403894109) for work to proceed under REM# 36674.

**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 ):

Initial site investigation activities were conducted on 2/21/2024, as presented in F19 (#403782744). Additional confirmation soil sampling was conducted on 8/28/2024.

Soil sample analytical results exhibited SAR values greater than the ECMC standard at HA2@1', HA-6@1', HA-6@2', and HA-8@1', but were delineated vertically below the standard at each location at 5', 3', and 2', respectively.

Arsenic at HA-5@3' was greater than 1.25 times the highest background sample but was delineated vertically to be within background concentrations at 5' bgs.

FEM proposes additional soil sampling to delineate SAR laterally to the north of HA-6 and east of HA-8, delineate arsenic laterally at HA5, and add one additional background location, as illustrated on Figure 2.

Sampling has been delayed due to concerns about frozen soil. FEM is evaluating potential remediation options and will present quarterly updates to the ECMC as new data becomes available.

**Proposed Groundwater Sampling**

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

Groundwater has not been encountered at this site. FEM does not anticipate collecting groundwater samples at this site.

**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 0

Number of soil samples exceeding 915-1 0

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 10000

### NA / ND

NA Highest concentration of TPH (mg/kg) \_\_\_\_\_

NA Highest concentration of SAR \_\_\_\_\_

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 total of eight (8) background soil samples have been collected from four locations (Figure 2) and the analytical results for background samples collected on 8/28/2024 are summarized on Table 1 and in the attached laboratory analytical report.

FEM proposes to collect additional background sample(s) from the location illustrated on Figure 2 for laboratory analysis of arsenic.

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

Volume of solid waste (cubic yards) \_\_\_\_\_

Volume of liquid waste (barrels) \_\_\_\_\_

Is further site investigation required?

FEM is proposing additional soil sampling near sample locations HA2, HA-6, and HA-8 to further delineate SAR exceedance laterally, and delineate arsenic around HA5. In addition, one background sample to be analyzed for arsenic is proposed to confirm natural site conditions. Proposed sampling locations are shown on Figure 2.

## 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.

ECMC reclamation specialist Ryan Costa inspected the Las Animas Minerals 1-10 location on 2/7/2024 and discovered what appeared to be impacted soils from a historic release at the well site. Foundation was notified on 2/9/2024 via Field Inspection Report, document #713600722. An initial round of soil sampling was completed on 2/21/24, a subsequent round of soil sampling was conducted on 8/28/2024, and evaluation of potential remediation is ongoing, contingent on additional investigation activities proposed herein.

### REMEDICATION 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.

FEM is proposing additional soil sampling to define the SAR laterally near HA2, HA-6, and HA-8 and to define arsenic concentrations onsite. The results of additional investigation will be presented to the ECMC in a subsequent Form 27-S report with proposed remediation alternatives, if warranted.

## Soil Remediation Summary

In Situ

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

Ex Situ

\_\_\_\_\_ Excavate and offsite disposal  
\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_  
\_\_\_\_\_ Name of Licensed Disposal Facility or ECMC 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.

Groundwater has not been encountered at this site. FEM does not anticipate performing groundwater monitoring at this site.

# 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 Site Progress Update

## 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.

FEM carries both pollution liability insurance and an umbrella policy over that for a total of \$11,000,000. Cost provided below is an estimate and may be adjusted based on the site observations.

Operator anticipates the remaining cost for this project to be: \$ 10000

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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

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

E&P waste (solid) description \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_

E&P waste (liquid) description \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_

# REMEDIATION COMPLETION REPORT

## REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

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? \_\_\_\_\_

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

Does Groundwater meet Table 915-1 standards? \_\_\_\_\_

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

Operator shall comply with the ECMC 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.

Sites will be regraded and reclaimed in accordance with ECMC 1000 series rules. Sites will be reseeded with a seed mix approved by the surface owner. If applicable, FEM will discuss remedial options with the landowner and evaluate alternatives, including but not limited to providing a reclamation plan for ECMC approval.

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 provide the seed mix? \_\_\_\_\_

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

Did the local soil conservation district provide the seed mix? \_\_\_\_\_

### **SITE RECLAMATION DATES**

Proposed date of commencement of Reclamation. 10/01/2024

Proposed date of completion of Reclamation. 12/31/2024

## 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. 02/09/2024

Actual Spill or Release date, or date of discovery. 03/18/2024

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 02/21/2024

Proposed site investigation commencement. 02/21/2024

Proposed completion of site investigation. 08/31/2024

### **REMEDIAL ACTION DATES**

Proposed start date of Remediation. 10/01/2024

Proposed date of completion of Remediation. 12/31/2024

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**

ECMC reclamation specialist Ryan Costa inspected the Las Animas Minerals 1-10 location on 2/7/2024 and discovered what appeared to be impacted soils from a historic release at the well site. Foundation was notified on 2/9/2024 via Field Inspection Report, document #713600722. The date of discovery has been populated as 3/18/2024, when laboratory results from the initial sampling event were received with samples above ECMC soil standards.

A topographic map is included as Figure 1, and a site overview map with existing and proposed soil sample locations is included as Figure 2. Soil samples collected during the initial 2/21/2024 event were analyzed for the full Table 915-1 list of analytes except for HA2@5' which was analyzed for SAR only. All samples analyzed from that event were below laboratory detection limits for all volatile organic compounds (VOC) and polycyclic aromatic hydrocarbon (PAH) analytes. VOC and PAH results were presented in previous Form 27 Initial report #403873092. Soil suitability and metals analytical results are presented in Table 1.

FEM proposes additional soil sampling to delineate SAR laterally to the north of HA-6 and east of HA-8, delineate arsenic laterally at HA5, and add one additional background location, as illustrated on Figure 2.

Sampling has been delayed due to concerns about frozen soil. FEM is evaluating potential remediation options and will present quarterly updates to the ECMC in future Form 27S reports as new data becomes available.

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

Signed: Afton Iiams

Title: HSE/Regulatory Specialist

Submit Date: \_\_\_\_\_

Email: regulatory@foundationenergy.com

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

ECMC Approved: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 36674

**COA Type**

**Description**

0 COA	

**ATTACHMENT 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**

404100434	OTHER
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Total Attach: 1 Files

**General Comments**

**User Group**

**Comment**

**Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)