FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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Report taken by: Krystal Heibel

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 INFORMATON

Name of Operator: FUNDARE RESOURCES OPERATING COMPANY LLC Operator No: 10773

Address: 5251 DTC PKWY STE 950

City: GREENWOOD VILLAGE State: CO Zip: 80111

Contact Person: Sydney Smith

Phone Numbers

Phone: (303) 910-4511
Mobile: ( )
Email: ssmith@fundareresources.com

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 28776 Initial Form 27 Document #: 403297074

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.
- [X] 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.
- [X] Rule 915.b: Request to leave elevated inorganics in situ.
- [ ] Other:

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE Facility ID: 482767 API #: County Name: WELD

Facility Name: Wildhorse 16-13H Latitude: 40.748350 Longitude: -103.990660

** correct Lat/Long if needed: Latitude: Longitude:

QtrQtr: NWSW Sec: 16 Twp: 9N Range: 59W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Agriculture

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

Other Potential Receptors within 1/4 mile

There are no residence or habitable structures within a quarter mile of the release site. There are no domestic water wells within a quarter mile of the release site, there is a groundwater monitoring well 150' Northeast of the release. There are no marked surface water within a quarter mile of the release, however, there appears to be a dry drainage 1304' to the East of the release. There are no marked county roads within a quarter mile of the release location, however there is a lease road 553' West of the location. This site is within the Mule Deer Severe winter range buffer, and CPW has been notified of the release.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

[X] **E&P Waste**	[ ] **Other E&P Waste**	[ ] **Non-E&P Waste**
[X] 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
Yes	SOILS	1740 SQFT	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.

Upon discovery of the release from the produced water tank, crews were immediately dispatched to the location to isolate and repair the tank, and vac the tank out to eliminate further impacts. Crews then began immediate remedial excavation to eliminate impacts from traveling across site.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

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

Fundare contracted Marcom LLC to conduct a site visit and initial soil sampling on July 29, 2022. Samples were collected in accordance with COGCC 915 guidance, and were analyzed for full table 915-1 constituents. Analytical results indicated that inorganic exceedance remain and additional excavation was necessary. After Multiple excavation events, and multiple Confirmation sampling events, final confirmation samples were collected on March 15,2023, in accordance with COGCC 915 guidance and analyzed for full Table 915-1 constituents. Analytical results indicated that all impacts had been removed COGCC Table 915-1 or site specific background, except for Arsenic in SW-18, and PH in BH-4, and SW-16. SW-18 was scraped further and resampled (SW-21) for its only exceedance arsenic. Analytical results determined arsenic was removed. PH Exceedances are below the 4' reclamation root zone, and Fundare is requesting conditional closure, leaving PH in place following an approved reclamation plan.

Proposed Groundwater Sampling

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

Based on DWR data at a nearby monitoring well, Groundwater is at a depth between 87'-100' bgs. This depth combined with the known lithology of consolidated siltstone, eliminates the pathway to groundwater, and because the pathway to groundwater has been eliminated the default analytical comparison is Residential soil screening limits.

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: 35
Number of soil samples exceeeding 915-1: 35
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet): 1740

NA / ND

-- Highest concentration of TPH (mg/kg): 18
-- Highest concentration of SAR: 13.4
BTEX > 915-1: No
Vertical Extent > 915-1 (in feet): 7

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
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?

Backgrounds were collected on pad sufficiently away from the remedial excavation in areas where there is no evidence of releases. Background sample were collected at 2'. Photographs from the excavation at depth of 2' and 7' are consistent with both UC Davis and the USDA web soil survey data indicating that from surface- 8 bgs 85% of the make up in this area is classified as Epping (shallow siltstone) soil. This is consistent with photos taken at the two different depths, and because the soil horizon is similar across the site at those depths, the backgrounds collected at 2' are sufficient as a background comparison for all depths. Photo doc is attached.

☐ 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?

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.

Upon discovery of the release from the produced water tank, crews were immediately dispatched to the location to isolate and repair the tank, and vac the tank out to eliminate further impacts. Crews then began immediate remedial excavation to eliminate impacts from traveling across site.

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.

Following multiple excavation, and confirmation sampling events, Final confirmation soil samples were collected in accordance with the COGCC 915 guidance, and analyzed for full table 915-1 constituents. Analytical results indicated all impacts had been removed and were below COGCC Table 915-1 residential, or site specific background limits, except for PH in BH-4, and SW-16, which were both below the 4' reclamation root zone. Although PH in these locations exceed the background they are still low and are consistent with the background. Fundare is requesting backfill, and conditional closure of the site following the attached interim reclamation plan, required for leaving inorganics related to reclamation in place below the 4' reclamation root zone. The extent of PH requesting to be left in-situ is mapped and attached. Background samples and surrounding Confirmation samples have allowed us to identify the vertical (8') and horizontal extent of the in-situ PH and map its extents. Background samples collected were sufficient for for comparison, refer to Background sample section under site investigation tab.

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) 451
  - Name of Licensed Disposal Facility or COGCC Facility ID # ____
- No 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.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

[X] 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

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.

Fundare has the required sufficient insurance to fully address the anticipated costs of Remediation, including the remaining estimated costs for this project. Fundare has general liability insurance and financial assurance as required by COGCC rules.

Operator anticipates the remaining cost for this project to be: $ 6200

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:

There is no beneficial use of the derived E&P waste.

Volume of E&P Waste (solid) in cubic yards 451

E&P waste (solid) description Hydrocarbon Impacted soil

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Pawnee Landfill

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:

[X] 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.

Following backfill, the site will be reclaimed following the attached interim reclamation plan, and the 1003 series reclamation rules.

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? No

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

Did the local soil conservation district provide the seed mix? No

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 12/11/2023

Proposed date of completion of Reclamation. 12/22/2023

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. 07/20/2022

Actual Spill or Release date, or date of discovery. 07/19/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/19/2022

Proposed site investigation commencement. 07/29/2022

Proposed completion of site investigation. 01/24/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/08/2022

Proposed date of completion of Remediation. 03/30/2023

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

Following multiple excavation, and confirmation sampling events, Final confirmation soil samples were collected in accordance with the COGCC 915 guidance, and analyzed for full table 915-1 constituents. Analytical results indicated all impacts had been removed and were below COGCC Table 915- 1 residential, or site specific background limits, except for PH in BH-4, and SW-16, which were both below the 4' reclamation root zone. Although PH in these locations exceed the background they are still low and are consistent with the background. Fundare is requesting backfill, and conditional closure of the site following the attached interim reclamation plan, required for leaving inorganics related to reclamation in place below the 4' reclamation root zone. The extent of PH requesting to be left in-situ is mapped and attached. Backgrounds were collected on pad sufficiently away from the remedial excavation in areas where there is no evidence of releases. Background sample were collected at 2'. Photographs from the excavation at depth of 2' and 7' are consistent with both UC Davis and the USDA web soil survey data indicating that from surface- 8 bgs 85% of the make up in this area is classified as Epping (shallow siltstone) soil. This is consistent with photos taken at the two different depths, and because the soil horizon is similar across the site at those depths, the backgrounds collected at 2' are sufficient as a background comparison for all depths. Two different soil sample location maps have been attached to help reduce clutter on one map alone.

Based on DWR data at a nearby monitoring well, Groundwater is at a depth between 87'-100' bgs. This depth combined with the known lithology of consolidated siltstone, eliminates the pathway to groundwater, and because the pathway to groundwater has been eliminated the default analytical comparison is Residential soil screening limits.

All analytical was submitted and analyzed by a NELAP and NELAC accredited lab. Analytical submitted to ALS (ALS is a NELAC, and NELAP accredited lab for all analytes submitted.

Analytical summary table has been modified addressing COAs to only include required constituents, and multiple background concentrations by 1.25 for metals in soil only.

All COAs from previous form 27s have been addressed, an updated analytical summary table has been attached, and proposed reclamation figures for review. All remedial concerns and COAs have been addressed and Fundare is requesting backfill and closure under the proposed reclamation plan once it approved.

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

Signed: Sydney Smith Title: Director EHSR

Submit Date: 11/16/2023 Email: ssmith@fundareresources.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: Krystal Heibel Date: 01/16/2024

Remediation Project Number: 28776

COA Type	Description
0 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
403598016	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403598245	ANALYTICAL RESULTS
403598246	RECLAMATION PLAN
403598249	RECLAMATION FIGURE
403656384	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 5 Files

General Comments

User Group	Comment	Comment Date
Environmental	Based on the information presented, it appears the elevated pH sample from the wellhead area appears to be de minimis in quantity or within the range of background pH; therefore, elevated pH may not be associated with E&P activities. It appears that no further remedial action is necessary at this time and the ECMC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding ECMC standards or background levels or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required.	01/16/2024
Environmental	"SW-18 was scraped further and resampled (SW-21) for its only exceedance arsenic."	01/16/2024

Total: 2 comment(s)