

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109

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Report taken by:

CHRIS CANFIELD

Site Investigation and Remediation Workplan (Initial 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: CARBON SHIELD LLC	Operator No: 10830	Phone Numbers
Address: 5200 DTC PARKWAY STE 530		Phone: (720) 531-1848
City: GREENWOOD VILLAGE	State: CO	Zip: 80111
Contact Person: Taylor Heffner	Email: theffner@carbon-shield.com	Mobile: (281) 460-1517

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 36108 Initial Form 27 Document #: 403803706

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

Yes Multiple Facilities

Facility Type: PIT	Facility ID: 114392	API #: _____	County Name: ADAMS
Facility Name: LINNEBUR 41-19	Latitude: 39.867794	Longitude: -104.244832	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENE	Sec: 19	Twp: 2S	Range: 61W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 001-06721	County Name: ADAMS
Facility Name: LINNEBUR 41-19 (2-61) 1 (OWP)	Latitude: 39.867762	Longitude: -104.246811	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENE	Sec: 19	Twp: 2S	Range: 61W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION	Facility ID: 319774	API #:	County Name: ADAMS
Facility Name: LINNEBUR 41-19 (2-61)-62S61W 19NENE (OWP)		Latitude: 39.867762	Longitude: -104.246811
		** correct Lat/Long if needed: Latitude:	Longitude:
QtrQtr: NENE	Sec: 19	Twp: 2S	Range: 61W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Rangeland/Crops

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

Surface water is within 1/4 of a mile. Mule Creek runs through this section. The well is situated approximately 382' to the north of the creek.
No water wells within 1/4 of a mile.
Groundwater less than 20 ft is not expected at the disturbance location.
Well is not in an HPH and there are no nearby RBUs.

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	N/A	Laboratory Analytical

INITIAL ACTION SUMMARY

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

This form has been prepared to provide prior notice of the P&A of the Linnebur 41-19 (2-61) #1, as well as decommissioning the facilities. The Linnebur 41-19 (2-61) #1 (OWP) is in the ECMC Orphaned Well Program and will be plugged per Carbon Shield's Agreement for Plugging and Abandonment Operations, dated 5/8/2024. In accordance with Rull 911, soil and groundwater (if present) samples will be collected and submitted for laboratory analysis to determine if concentrations and values are in compliance with Table 915-1. Visual inspection and filed screening will be conducted during sampling activities.

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):

Sampling and investigation will be completed in two stages. First, soil will be field screened at the wellhead following cut and cap operations. In the absence of apparent impacts, a soil sample will be collected from the base of the excavation next to the wellhead. Second, grab soil samples will be collected for screening from the following areas 1) beneath applicable facility equipment 2) from various depths and locations in each quadrant of the footprint of the historic pit, and 3) In the areas most likely to have been impacted during the operation life of the flowline(s), if any are discovered. If impacted soils are encountered, a waste characterization soil sample will be collected from the areas exhibiting the highest degree of impact based on field screening (PID) observations. In the absence of apparent impacts, discrete soil samples will be collected as indicated on the proposed sample map. One discrete sample will be collected from each quadrant of the pit footprint.

Proposed Groundwater Sampling

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

If groundwater is encountered during decommissioning and/or abandonment activities, a grab sample will be collected as soon as practical and submitted to a NELAP-accredited laboratory for the applicable Table 915-1 analysis.

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):

All samples will be submitted to a NELAP-accredited lab for the full Table 915-1 analysis. Based on the inferred depth to groundwater, Carbon Shield, LLC is requesting the use of residential soil screening levels. The ECMC Wellhead and Tank Battery closure checklists will be utilized during the abandonment process. If a flowline is encountered during decommissioning of the orphan well, the flowline closure checklist will be used. A photolog will be submitted with the Form 27-S within 90 days of submitting this report. Any historic Spill or Release discovered beyond the excavation required to safely cut and cap, will be reported on a Form 19, Spill/Release Report.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected _____ 0
Number of soil samples exceeding 915-1 _____
Was the areal and vertical extent of soil contamination delineated? _____
Approximate areal extent (square feet) _____

NA / ND

_____ Highest concentration of TPH (mg/kg) _____
_____ Highest concentration of SAR _____
_____ BTEX > 915-1 _____
_____ Vertical Extent > 915-1 (in feet) _____

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?

Background samples obtained from similar depths and soil horizons or lithologic materials for comparison to confirmation soil samples will be collected as part of this investigation. Background samples will be analyzed for Table 915-1 metals, pH, EC, boron, and SAR.

☐ 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**SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

Any hydrocarbon-impacted material will be transported off-site to a licensed disposal facility in accordance with Rules 905 and 906. Due to proximity to surface water, Operator will review the stormwater program and implement stormwater BMPs and erosion control measures as needed to prevent fine-grained sediment and impacted stormwater runoff from entering surface water.

REMEDIAL 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.

Any historic Spill or Release discovered beyond the excavation required to safely cut and cap, will be reported on a Form 19, Spill/Release Report. If appropriate, a site-specific remediation plan will be developed and submitted via a Supplemental Form 27. If r impacts are not encountered, a Supplemental Form 27 closure request will be submitted within 90 days of completion of all abandonment and/or decommissioning activities.

Soil Remediation Summary

☐ In Situ

☐ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ Natural Attenuation
_____ Other _____

_____ 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:

☐ Quarterly

☐ Semi-Annually

☐ Annually

☒ Other

Closure Report

☐ **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.

The General Liability coverage within the Carbon Shield insurance program includes coverage for personal injury and pollution clean-up costs arising from qualifying pollution events of a sudden and accidental nature subject to a \$1,000,000 per occurrence limit and \$2,000,000 aggregate limit. The Carbon Shield insurance program includes Excess Liability coverage of \$25,000,000 per occurrence and in the aggregate which sits over the sudden accidental pollution within the General Liability coverage. It is the opinion of Carbon Shield that this total tower of limit is adequate to address the costs of remediation associated with any qualifying pollution event.

Operator anticipates the remaining cost for this project to be: \$ 50000

WASTE DISPOSAL INFORMATION

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

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: _____

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.

Reclamation and/or interim reclamation activities will be evaluated and presented to the CECMC for approval subsequent to additional investigation activities or successful remediation.

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. _____

Proposed date of completion of Reclamation. _____

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. 11/06/2023

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/08/2024

Proposed site investigation commencement. 08/05/2024

Proposed completion of site investigation. 08/30/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/02/2024

Proposed date of completion of Remediation. 09/27/2024

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

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

Signed: Taylor Heffner

Title: VP of Operations

Submit Date: 06/28/2024

Email: theffner@carbon-shield.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: CHRIS CANFIELD

Date: 07/03/2024

Remediation Project Number: 36108

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**

403803706	FORM 27-INITIAL-SUBMITTED
403840661	SOIL SAMPLE LOCATION MAP
403840662	MAP
403840663	SITE MAP

Total Attach: 4 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)