

State of Colorado
Energy & Carbon Management Commission

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12/18/2024
Report taken by:
Grace Rollins

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 ECOM 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 Phone: (720) 531-1848 Mobile: ()
Address: 5200 DTC PARKWAY STE 530		
City: GREENWOOD VILLAGE	State: CO	Zip: 80111
Contact Person: Taylor Heffner	Email: theffner@carbon-shield.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 36106 Initial Form 27 Document #: 403802236

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: 114219	API #: _____	County Name: ADAMS
Facility Name: ABBOTT 43-10 & 33-10	Latitude: 39.975700	Longitude: -104.529514	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 10	Twp: 1S	Range: 64W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 001-07719	County Name: ADAMS
Facility Name: ABBOTT 43-10 (OWP)	Latitude: 39.976160	Longitude: -104.529880	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 10	Twp: 1S	Range: 64W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION Facility ID: 320029 API #: County Name: ADAMS
Facility Name: ABBOTT-61S64W 10NESE (OWP) Latitude: 39.976160 Longitude: -104.529880
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NESE Sec: 10 Twp: 1S Range: 64W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC 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

Other Potential Receptors within 1/4 mile

No surface water within 1/4 mile.
No water wells within 1/4 mile.
Groundwater less than 20 ft is not expected at the disturbance location.
Well is not in a HPH, not near surface waters or wetlands, and no nearby RBUs.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input checked="" 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 checked="" type="checkbox"/> Oil | <input checked="" 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 checked="" type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> 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.

The Abbott #43-10 (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 Rule 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 field screening will be conducted during sampling activities. This Form is being submitted to meet quarterly reporting requirements.

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 was field screened at the wellhead following cut and cap operations. A soil sample was collected from the base of the excavation next to the wellhead, results of which were attached to the previous Form submittal. Additional grab soil samples will be collected for screening from the following areas 1) beneath applicable facility equipment 2) from the floor of each quadrant of the skim pit, and 3) In the areas most likely to have been impacted during the operation life of the flowline, 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 submitted with Form 27 #403802236. One discrete sample will be collected from each quadrant of the skim 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 the site investigation a grab groundwater sample will be collected and analyzed for all organic compounds per ECMC Table 915-1.

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 1
Number of soil samples exceeding 915-1 1
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 0

NA / ND

ND Highest concentration of TPH (mg/kg) _____
Highest concentration of SAR _____
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 6

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?

Grab soil samples will be collected for screening from the following areas 1) beneath applicable facility equipment 2) from the floor of each quadrant of the skim pit, and 3) In the areas most likely to have been impacted during the operation life of the flowline, 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.

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.

Any hydrocarbon-impacted material will be transported off-site to a licensed disposal facility in accordance with Rules 905 and 906

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.

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 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
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

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.

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.

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. 12/01/2023

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. 08/30/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/30/2025

Proposed date of completion of Remediation. 12/31/2025

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

This Form is being submitted to meet quarterly reporting requirements.

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

Signed: Lauren Glazier

Title: Consultant

Submit Date: 12/18/2024

Email: lglazier@cgrs.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: Grace Rollins

Date: 03/12/2025

Remediation Project Number: 36106

COA Type**Description**

	ECMC has processed this form as an update; no analytical was attached thus approval of this form does not imply any agreement with comments on completion of site investigation. All ongoing/unaddressed comments/COAs from previous Forms remain applicable.
	Per the COA on Form 27 Doc. # "Operator shall report annually. Operator had selected "Closure Report", however the Pit has not been remediated. ECMC has selected 'Annually' under the Approved Reporting Schedule." This COA remains applicable. ECMC has re-selected 'Annually' under the Approved Reporting Schedule
2 COAs	

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**

404034056	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404124386	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)