

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 INFORMATION

Name of Operator: <u>BENCHMARK ENERGY LLC</u>	Operator No: <u>10380</u>	Phone Numbers
Address: <u>PO BOX 8747</u>		
City: <u>PRATT</u>	State: <u>KS</u>	Zip: <u>67124</u>
Contact Person: <u>James Hix - East OWP EPS</u>	Email: <u>james.hix@state.co.us</u>	Phone: <u>(303) 894-2100</u>
		Mobile: <u>(303) 905-5341</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 3250 Initial Form 27 Document #: 1175375

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: Remediation Project #3250 produced water spills/releases multiple locations.

SITE INFORMATION

Yes Multiple Facilities

Facility Type: <u>PIT</u>	Facility ID: <u>116315</u>	API #: _____	County Name: <u>LOGAN</u>
Facility Name: <u>NW GRAYLIN UNIT MONROE "A"</u>	Latitude: <u>40.672888</u>	Longitude: <u>-103.351039</u>	
	** correct Lat/Long if needed: Latitude: <u>40.671041</u>	Longitude: <u>-103.348950</u>	
QtrQtr: <u>NWSW</u>	Sec: <u>7</u>	Twp: <u>8N</u>	Range: <u>53W</u> Meridian: <u>6</u> Sensitive Area? <u>No</u>
Facility Type: <u>WELL</u>	Facility ID: _____	API #: <u>075-05908</u>	County Name: <u>LOGAN</u>
Facility Name: <u>NW GRAYLIN D SAND UNIT (OWP) 33</u>	Latitude: <u>40.669254</u>	Longitude: <u>-103.351114</u>	
	** correct Lat/Long if needed: Latitude: _____	Longitude: _____	
QtrQtr: <u>SWSW</u>	Sec: <u>7</u>	Twp: <u>8N</u>	Range: <u>53W</u> Meridian: <u>6</u> Sensitive Area? <u>No</u>

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use PASTURE

Is domestic water well within 1/4 mile? Yes

Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

The location is not within CPW mapped HPH. DWR permitted water wells (DWR Permit #250865) replacement for livestock windmill approximately 550 ft SW of the location. DTW = 20 ft; TD = 50 ft. There is a domestic/livestock water well (DWR Permit #287947) DTW = 16 ft; TD = 60 ft ~1000 ft SW of the location. There is a permitted water well (DWR 29941, Receipt 904454) ~1290 ft south of the location. The DTW = 30 ft, TD = 63 ft (1967). There is an intermittent drainage located ~1230 ft South of the location; the permitted water wells appear to lie crossgradient to downgradient of the location.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input 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 type="checkbox"/> Oil | <input 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 type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | _____ |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	GROUNDWATER	UNKNOWN	VISUAL, FIELD SCREENING, LAB ANALYSES
Yes	SOILS	VISUAL	LAB ANALYSES

INITIAL ACTION SUMMARY

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

REMEDICATION PROJECT #3250: SPILL SITE IDENTIFIED ON AERIAL PHOTO. SOIL SAMPLE COLLECTED BY COGCC 5/04. SITE MEASUREMENTS AND SPECIFIC LOCATION WERE DETERMINED BY CONSULTANT IN 6/04. SOIL SCIENTIST AT USDA-NRCS OFFICE IN GREELEY RECOMMENDED REMEDIATION PLAN. UPDATE: THE BENCHMARK ENERGY LLC - NW GRAYLIN D SAND UNIT #33 IS IN THE ECMC ORPHANED WELL PROGRAM (OWP). PLANNED WELL PA - CUT AND CAP SAMPLING WILL BE PERFORMED IN AUGUST 2023.

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):

Grab soil samples will be collected from areas most likely to exhibit E&P Waste impacts. Soil samples will be submitted for analysis of Table 915-1 parameters including organic compounds (TPH ranges C6-C36; BTEX; 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Naphthalene, PAH) and inorganic compounds (metals, soil suitability for reclamation).

Proposed Groundwater Sampling

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

Groundwater samples are not expected to be collected as part of this investigation. If encountered in sufficient quantity to enable sample collection, a grab groundwater sample or samples will be collected and submitted for analysis of organic compounds (BTEX; Naphthalene; 1,2,4-Trimethylbenzene; 1,3,5-Trimethylbenzene) and inorganic parameters (total dissolved solids (TDS), chloride ion, sulfate ion).

Proposed Surface Water Sampling

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

Surface water samples are not expected to be collected as part of this investigation.

Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan (summary):

No additional alternative investigative actions are expected to be conducted as part of this site investigation.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 0

Highest concentration of TPH (mg/kg)

Number of soil samples exceeding 915-1 _____

Highest concentration of SAR _____

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

BTEX > 915-1 _____

Approximate areal extent (square feet) _____

Vertical Extent > 915-1 (in feet) _____

Groundwater

Number of groundwater samples collected _____ 0

Highest concentration of Benzene (µg/l) _____

Was extent of groundwater contaminated delineated? No _____

Highest concentration of Toluene (µg/l) _____

Depth to groundwater (below ground surface, in feet) _____

Highest concentration of Ethylbenzene (µg/l) _____

Number of groundwater monitoring wells installed _____

Highest concentration of Xylene (µg/l) _____

Number of groundwater samples exceeding 915-1 _____

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?

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.

If E&P Waste impacts are encountered during decommissioning of Oil and Gas Facilities, impacted soils will be excavated, temporarily stockpiled on location, and hauled to a commercial disposal facility. Battery site and pit(s) that released produced water have been dormant for over 20 years and are not capable of receiving produced water from wells. This OWP project is for well plugging only. Off-location flowline abandonment/removal will be addressed under a separate scope of work.

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.

If E&P Waste impacted soils are encountered, the soils will be excavated and removed. If the horizontal and vertical extent of the E&P Waste impacts cannot be defined or removed during this initial action, then additional site investigation and remediation will be performed at a later date under an approved supplemental Form 27. Site data will be evaluated and remediation technologies implemented to meet Table 915-1 soil residential screening levels, protection of groundwater screening levels, or Table 915-1 groundwater and WQCC Regulation 41 numeric and narrative levels as applicable to site conditions.

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

_____ Natural Attenuation

_____ Other _____

_____ 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.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

Quarterly Semi-Annually Annually Other

Results provided on supplemental Form 27 within 90 days of receipt.

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 BENCHMARK ENERGY LLC - NW GRAYLIN D SAND UNIT #33 WELL AND NW GRAYLIN D SAND UNIT -68N53W 7SW SW (Location ID# 312152) are in the CECMC Orphaned Well Program (OWP).

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

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 _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

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? 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 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.

The ECMC OWP will reclaim this oil and gas location in accordance with 1000 Series Rules including grading/recontouring of disturbed areas, the method and testing of compaction alleviation, and development of a reseeding program that describes new seed, seed mix, and noxious weed prevention. This will be performed under a separate scope of work following disposition of the off-location flowlines. Final reclamation will be conducted per COGCC reclamation rules (Rule 1004) and prioritized based on OWP funding and staff availability. The reclamation scope will include a plan to address and avoid any effect on reclamation from Table 915-1 inorganic and soil suitability for reclamation parameters.

Is the described reclamation complete? _____

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. _____

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

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/22/2022

Proposed site investigation commencement. 04/20/2023

Proposed completion of site investigation. 08/10/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. _____

Proposed date of completion of Remediation. _____

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

The BENCHMARK ENERGY LLC - 10380 NW GRAYLIN D SAND UNIT 33 (OWP) (API #-075-05908) and NW GRAYLIN D SAND UNIT-68N53W 7SWSW (Location ID#312152) are in the CECMC Orphaned Well Program (OWP). Remediation Project #3250 was opened for historic produced water spills/releases at multiple locations including the NW GRAYLIN D SAND UNIT #33 (OWP) wellhead. A site investigation performed on April 20, 2023 did not observed evidence to indicate historic spills/releases at the wellhead. The OWP has scheduled this well for plugging and abandonment (PA) in August 2023. This OWP project is for plugging only - flowlines will be addressed under a separate scope of work. Results from the April 2023 site investigation, wellhead cut and cap soil samples, and background soil samples will be submitted in a supplemental Form 27 site investigation/remediation report.

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

Signed: James Hix

Title: East OWP EPS

Submit Date: 08/07/2023

Email: james.hix@state.co.us

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: 09/18/2023

Remediation Project Number: 3250

COA Type**Description**

	OWP shall fully populate the implementation schedule in accordance with Rule 913.d on the next Form 27.
	OWP shall field screen the four sidewalls of the wellhead excavation and wellhead sample in addition to the proposed screening locations at the base of the wellhead excavation.
	OWP shall submit a revised "Soil Sampling Location Map" that includes: a scale, an aerial photograph that shows the location of field screenings (sidewall and bottom hole), sample(s) of the wellhead, and background sample(s), per Rule 913.h.(4).A..
	OWP shall collect confirmation soil samples as described in the Rule 915.e.(2) Guidance Document. OWP will analyze soil samples for TPH (C6-C36), Table 915-1 Organic Compounds in Soil, Table 915-1 metals, and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, boron (hot water soluble)).
4 COAs	

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
403488767	FORM 27-SUPPLEMENTAL-SUBMITTED
403488840	MAP
403488843	SITE MAP

Total Attach: 3 Files

General Comments

User Group	Comment	Comment Date
Environmental	"The OWP has scheduled this well for plugging and abandonment (PA) in August 2023. This OWP project is for plugging only - flowlines will be addressed under a separate scope of work. Results from the April 2023 site investigation, wellhead cut and cap soil samples, and background soil samples will be submitted in a supplemental Form 27 site investigation/remediation report."	09/15/2023

Total: 1 comment(s)