

State of Colorado
Oil and Gas Conservation Commission

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Report taken by:
Candice (Nikki) Graber

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>MAGPIE OPERATING INC</u>	Operator No: <u>52530</u>	Phone Numbers
Address: <u>2707 SOUTH COUNTY RD 11</u>		
City: <u>LOVELAND</u>	State: <u>CO</u>	Zip: <u>80537</u>
Contact Person: <u>Ross Warner</u>	Email: <u>ross.magpieoil@gmail.com</u>	
		Phone: <u>(970) 669-6038</u>
		Mobile: <u>()</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 11196 Initial Form 27 Document #: 401585806

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

No Multiple Facilities

Facility Type: <u>LOCATION</u>	Facility ID: <u>451505</u>	API #: _____	County Name: <u>WASHINGTON</u>
Facility Name: <u>Little Beaver Unit Injection Plant</u>	Latitude: <u>39.911967</u>	Longitude: <u>-103.686176</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWNW</u>	Sec: <u>5</u>	Twp: <u>2S</u>	Range: <u>56W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications CL Most Sensitive Adjacent Land Use non-crop land
 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? Yes

Other Potential Receptors within 1/4 mile

Unidentified aqueduct located ~630' east of produced water tank battery reports to Badger Creek.

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
Yes	GROUNDWATER	80'x70'	Lab Analytical Results
Yes	SOILS	47'x140'x10'	Lab Analytical Results

INITIAL ACTION SUMMARY

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

Hub injection pump broke and pump failed. Produced water with some trace emulsion/bs&w overflowed from water tank and into berm. Field was immediately shut in. Free fluid was vacuumed and placed into tank. Impacted soil was dug out and placed on plastic and bermed. Hauled off location on 12/2/14. Pump was repaired. Another tank was placed on location to provide additional emergency capacity.

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):

Twenty-nine (29) soil samples were collected via direct push as part of monitoring well installation/soil boring assessment activities. Eleven (11) grab soil samples were collected via shovel. Forty-one (41) grab confirmation soil samples were collected during source excavation activities. Forty-four (44) composite samples were collected following soil treatment activities. All soil samples were analyzed for BTEX, naphthalene, TPH-GRO, and TPH-DRO following EPA Methods 8260c and 8015. In addition, select soil samples were analyzed for EC, SAR, and pH following UDSA Method 3, USDA Method 20B, and EPA Method 9045D, respectively.

Proposed Groundwater Sampling

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

Seventeen (17) groundwater samples (MW-01 through MW-17) were collected following monitoring well installation activities. All groundwater samples were/will be analyzed for BTEX following EPA Method 8260. Additionally, seventeen (17) groundwater samples were collected from MW-01 through MW-17 for analysis of chloride and sulfate by EPA Method 300.0, and total dissolved solids by 160.1. Replacement monitoring wells were installed to replace wells destroyed during excavation activities. Groundwater samples will be collected from monitoring wells MW-01R, MW-02R, MW-05, MW-14R, MW-18R through MW-21R, and MW-22 through MW-31. Additional monitoring wells will be installed to obtain point of compliance, and will be added to the groundwater sampling plan, if necessary.

Proposed Surface Water Sampling

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

[Empty box for surface water sampling details]

Additional Investigative Actions

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

[Empty box for additional investigative actions]

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 81
Number of soil samples exceeding 915-1 14
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 5640

NA / ND

-- Highest concentration of TPH (mg/kg) 10268
-- Highest concentration of SAR 20.37
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 10

Groundwater

Number of groundwater samples collected 210
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 15
Number of groundwater monitoring wells installed 31
Number of groundwater samples exceeding 915-1 1

-- Highest concentration of Benzene (µg/l) 6790
-- Highest concentration of Toluene (µg/l) 47.1
-- Highest concentration of Ethylbenzene (µg/l) 472
-- Highest concentration of Xylene (µg/l) 435
NA 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?

Soil sample SS-08 was collected for background inorganic soil analysis of EC, SAR, and pH. Monitoring well MW-17 was installed and soil/groundwater samples were collected for background BTEX, naphthalene, TPH-GRO, and TPH-DRO analysis.

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

Volume of solid waste (cubic yards) 17 Volume of liquid waste (barrels) 3

Is further site investigation required?

Replacement wells MW-01R, MW-02R, MW-12R, MW-14R, MW-15R, MW-16R, and MW-18R through MW-21R were installed to replace those destroyed during excavation activities. Monitoring wells MW-22 and MW-23 were installed in June 2019. Monitoring wells MW-24 through MW-27 were installed in August 2019. Monitoring wells MW-28 through MW-31 were installed in June 2020. Quarterly groundwater sampling will be completed and additional monitoring wells will be installed, as needed, to maintain Point of Compliance.

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.

Free fluid was vacuumed and placed into onsite produced water tanks. Initial spill response impacted soil was dug out and placed on plastic and bermed. Soil was removed 12/2/14 for disposal at Buffalo Ridge Landfill. During source excavation activities from Septemebr 25, 2018 through October 4, 2018, approximately 4300 cubic yards of soil were removed and treated ex-situ with a soil shredder and hydrogen peroxide.

Additional source removal activities will be completed adjacent to soil impacts observed during point of compliance monitoring well installation activities. Any monitoring wells destroyed during excavation activities will be replaced.

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.

Additional source removal activities will be completed to remove any residual adsorbed petroleum hydrocarbon impacts. Any monitoring wells destroyed during excavation activities will be replaced. Source excavation activities and groundwater monitoring will continue. Source removal data and additional groundwater sampling data will be provided in a subsequent form 27.

Groundwater will be monitored for natural attenuation until no further action can be recommended.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 17

_____ Air sparge / Soil vapor extraction

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

_____ Natural Attenuation

Yes _____ Excavate and onsite remediation

_____ Other _____

No _____ Land Treatment

No _____ Bioremediation (or enhanced bioremediation)

Yes _____ Chemical oxidation

No _____ Other _____

Groundwater Remediation Summary

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

Yes _____ 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.

Quarterly groundwater monitoring will continue at MW-1R, 2R, 5 through 13R, 15R through 21R, 23 through 31. Groundwater samples will be submitted for Table 915-1 organic compounds.

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

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.

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

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:

No beneficial use.

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

E&P waste (solid) description impacted soil above COGCC Table 910-1

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Waste Management Buffalo Ridge

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description Produced water

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Magpie produced water tank

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? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

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 site is currently an active facility. Reclamation is not needed at this time.

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. _____

Actual Spill or Release date, or date of discovery. 10/26/2014

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/26/2014

Proposed site investigation commencement. 04/05/2018

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/26/2014

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

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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: Ross Warner

Title: Compliance

Submit Date: 11/22/2022

Email: ross.magpieoil@gmail.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: Candice (Nikki) Graber

Date: 02/28/2023

Remediation Project Number: 11196

COA Type**Description**

	Per previous Form 27 additional excavation was to be completed 1Q2021 through 3Q2021. This work has not been reported to date. Operator shall conduct remedial action within 45 days of approval of this Form 27 or provide a detailed, stand alone, implementation schedule to the COGCC detailing remedial plan and path to closure.
	In accordance with 913.d.(1), Operator will investigate impacts to soil, Groundwater, and surface water as soon as the impacts are discovered.
	Operator shall fully populate the implementation schedule and reclamation plan in accordance with Rule 913.d on the next Form 27.
	Operator shall collect confirmation soil samples as described in the Rule 915.e.(2) Guidance Document. Operator 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)).
	In accordance with Rule 913.e.(3), Operator will adopt a quarterly reporting schedule. COGCC removed annually under Remediation Progress Update.
	This Form 27 Supplemental is being approved as submitted. However, the next Form 27 Supplemental must be populated with the Adequacy of Operator's General Liability Insurance and Financial Assurance data field under the Remediation Progress Update tab as required by Rules 703.b and 705.b.
6 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**

403083918	FORM 27-SUPPLEMENTAL-SUBMITTED
403237521	ANALYTICAL RESULTS

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)