

State of Colorado
Oil and Gas Conservation Commission

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Document Number:
402814175
Receive Date:
11/01/2021
Report taken by:
ROB YOUNG

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 Phone: <u>(970) 669-6308</u> Mobile: <u>()</u> |
| 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>magpieoil@yahoo.com</u> | |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 13484 Initial Form 27 Document #: 402026653

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: <u>PIT</u> | Facility ID: <u>111980</u> | API #: _____ | County Name: <u>LOGAN</u> |
| Facility Name: <u>WARNECKE LEASE</u> | Latitude: <u>40.624978</u> | Longitude: <u>-103.334998</u> | |
| ** correct Lat/Long if needed: Latitude: <u>40.625044</u> | | Longitude: <u>-103.335102</u> | |
| QtrQtr: <u>SESE</u> | Sec: <u>30</u> | Twp: <u>8N</u> | Range: <u>53W</u> Meridian: <u>6</u> Sensitive Area? <u>No</u> |
| Facility Type: <u>LOCATION</u> | Facility ID: <u>312143</u> | API #: _____ | County Name: <u>LOGAN</u> |
| Facility Name: <u>WARNECKE-68N53W 30SESE</u> | Latitude: <u>40.625638</u> | Longitude: <u>-103.337188</u> | |
| ** correct Lat/Long if needed: Latitude: <u>40.625285</u> | | Longitude: <u>-103.335214</u> | |
| QtrQtr: <u>SESE</u> | Sec: <u>30</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 CL

Most Sensitive Adjacent Land Use Non-crop land

Is domestic water well within 1/4 mile? Yes

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

Domestic Well - Permit #36326 - 1300' SSW

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 checked="" 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 |
|-----------|----------------|------------------|-----------------------|
| Yes | SOILS | 150' x 140' x 3' | Inorganics Only - Lab |

INITIAL ACTION SUMMARY

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

Prior to decommissioning the entire facility, site assessment activities must be completed. Soil samples will be collected from beneath a produced water vessel AST and within a produced water pit onsite (Facility ID 111980). Produced water vessel sampling will be completed per COGCC Rule 905b. Additionally, during a field inspection (Doc. # 688000311), oil stained soil was identified adjacent to the separator onsite, and will need to be removed/soil sampled to confirm below COGCC table 910-1.

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):

Nine soil samples were collected following excavation of top 3' of inorganic impacted soil and backfilling with topsoil and organic matter to confirm inorganic concentrations meet Table 910-1 on 8/25/20. Soil samples will be submitted for analysis of EC, SAR, and pH following Modified 9050A, 20B Saturated Paste, and EPA Method 9045D, respectively.

An additional eight confirmation soil samples were collected on 8/16/21 submitted for analysis of EC, SAR, and pH following Modified 9050A, 20B Saturated Paste, and EPA Method 9045D, respectively.

Additional confirmation soil samples will be collected if needed following further discussions with the COGCC.

Proposed Groundwater Sampling

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

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

NA / ND

Number of soil samples collected 31 -- Highest concentration of TPH (mg/kg) 82.4
 Number of soil samples exceeding 915-1 29 -- Highest concentration of SAR 90.2
 Was the areal and vertical extent of soil contamination delineated? No BTEX > 915-1 No
 Approximate areal extent (square feet) 21000 Vertical Extent > 915-1 (in feet) 0

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?
 Additional confirmation samples for inorganic analysis and background samples will be collected if required following further discussions with the COGCC.

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.

Soils with elevated inorganic readings were removed and disposed of at Pawnee Waste Landfill located in Grover. In addition, the concrete separator foundation and imported roadbase/tank battery berm material (outside of areas desired to remain in place by the landowner) were removed. Following excavation activities, the excavation area (former pit) was backfilled with topsoil and landowner provided "organic material" to grade. This remediation decreased the inorganic concentrations, however levels are still above COGCC Table 910-1. Additional soil remediation was completed (200lbs of gypsum application, topsoil application, soil mixing and regrade) to address residual soils with elevated inorganic readings.

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.

Based on previous soil analytical data, soil with inorganic impacts (SAR, EC) within the root-zone was excavated and disposed of offsite. The excavation was backfilled with topsoil and "organic material" to allow for successful reclamation. Confirmation soil samples (SAR, EC, and pH analysis) were collected from the root-zone of the former pit areas following backfilling activities to confirm inorganic impacts had been removed. Based on confirmation samples collected in August 2021, concentrations have remain above COGCC Table 910-1. Additional soil remediation (gypsum application, topsoil application, soil mixing, and regrading) will be completed and additional confirmation samples will be collected for inorganic analysis if required following further discussions with the COGCC.

Soil Remediation Summary

In Situ Ex Situ

Yes Bioremediation (or enhanced bioremediation)
 No Chemical oxidation
 No Air sparge / Soil vapor extraction
 No Natural Attenuation
 No Other _____

Yes Excavate and offsite disposal
If Yes: Estimated Volume (Cubic Yards) _____ 165
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

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 Source Removal and Confirmation Sample Report

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:

Volume of E&P Waste (solid) in cubic yards 165

E&P waste (solid) description Inorganic impacted soil

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Pawnee Waste Landfill - Grover, Colorado

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? 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.

Reclamation will be in accordance with COGCC 1000 series rules.
Soil remediation (gypsum application, topsoil application, soil mixing and regrade) will be completed to address residual soils with elevated inorganic readings. Additionally, the site will be cropped by the landowner in an attempt to further remediate elevated inorganic readings at the site. Confirmation samples will be collected following soil amending, and after harvest in 2021, to monitor progress.

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. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/13/2019

Proposed site investigation commencement. 06/13/2019

Proposed completion of site investigation. 11/19/2019

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/03/2020

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

| |
|--|
| |
|--|

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: ` 11/01/2021 _____

Email: magpieoil@yahoo.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: ROB YOUNG _____

Date: 11/01/2021 _____

Remediation Project Number: 13484 _____

Condition of Approval**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**

| | |
|-----------|--------------------------------|
| 402814175 | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 402814400 | SITE INVESTIGATION REPORT |

Total Attach: 2 Files

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

| | | |
|---------------|--|------------|
| Environmental | Provide the following on a supplemental Form 27 by November 12, 2021: 1. A narrative description of the soil sampling work performed on 8/16/2021. 2. A summary of all soil amendments (date of application and amounts of amendments) that have been incorporated into the soils at the pit area. 3. A plan describing the amendments to be added this month (November) and/or other plans that will be implemented to drive the inorganics concentrations down in a reasonable timeframe. | 11/01/2021 |
|---------------|--|------------|

Total: 1 comment(s)