

State of Colorado  
Energy & Carbon Management Commission

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403904950  
Receive Date:  
08/29/2024  
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 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: <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>ross.magpieoil@gmail.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:

- 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	SOILS	180' x 200'	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.

On 8/30/23 Jody Kost of Magpie met with the landowner to discuss next steps of surface excavation and sampling to address inorganic soils that still remain. On 9/13/23 Sunstate Equipment delivered an excavator to the location. On 9/14/23 a track was thrown from the excavator and Sunstate sent out maintenance to repair. On 9/15/23 Washington County Landfill was closed half day, work ceased at noon. On 9/18/23 Jody Kost had a phone conversation with Krystal Heibel of ECOM to discuss remediation report and status of ongoing remedial activities. On 9/19/23 a front loader was delivered to location to assist with loading trucks to haul the removed top 3' of inorganic impacted soil from the area of the former pit to Washington County Landfill. Manifests can be found in document number 403625692 that was submitted with approved SF27 document number 403612100. Approximately 2,800 cubic yards of material was removed. From 10/4/23 to 10/6/23, further horizontal and vertical delineation took place using a hand auger. Results show further horizontal and vertical delineation of Table 915-1 Soil Suitability for Reclamation impacts is needed in certain areas. See below proposed sampling plan and Figure 5 in the attached site investigation report for proposed additional delineation. On 11/9/23, the site was visited to sample the pit bottom (Pit-SS@4'), a landowner manure stockpile (Manure) and a dirt stockpile (Stockpile). The samples were submitted to Origins for full Table 915-1 analysis, however the Manure sample did not have Table 915-1 Metals run. Results confirmed no organics impacts in any of the 3 samples. See attached site investigation report for all figures, tables, photo log, boring logs, manifests, and laboratory analytical reports.

## 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 ):

On 7/1/24 and 7/2/24, a total of 31 soil borings were advanced to 7' bgs around the perimeter and 20' bgs within the interior of the former pit location per approved SF27 document number 403660489. Soil samples were collected from 4' and 7' bgs from the perimeter soil borings, and 15' and 20' bgs from the interior soil borings. All soil samples were submitted to Origins Laboratory for full ECOM Table 915-1 analysis.

### 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**

Number of soil samples collected 198  
Number of soil samples exceeding 915-1 140  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 28000

**NA / ND**

-- Highest concentration of TPH (mg/kg) 29.46  
-- Highest concentration of SAR 215  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 20

**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?

On 10/11/22, 3 background samples were collected from 0-3' and submitted to Origins for analysis of EC, pH, and SAR. On 1/12/23, an additional 13 background samples were collected from 3', 6', and 10' bgs and submitted to Origins for analysis of ECMC Table 915-1 Soil Suitability for Reclamation and Metals.

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.

Well is plugged and abandoned, equipment has been removed, pit has been excavated to approximately 3' bgs.

**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.

On 9/19/23 a front loader was delivered to location to assist with loading trucks to haul the removed top 3' of inorganic impacted soil from the area of the former pit to Washington County Landfill. Approximately 2,800 cubic yards of material was removed.

**Soil Remediation Summary**

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Yes Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) 2800

\_\_\_\_\_ Air sparge / Soil vapor extraction  
\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ 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? Yes

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 will be in accordance with COGCC 1000 series rules and in coordination with the Surface Owner land use plans. In July and August 2024, Magpie completed final reclamation of the wellhead and access road per the attached reclamation summary. The former pit excavation will be backfilled with clean material and topsoil brought in per landowner direction.

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? No

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? No

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 05/31/2024

Proposed date of completion of Reclamation. 12/31/2024

## 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. 04/08/2019

Actual Spill or Release date, or date of discovery. 07/11/2019

### 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. 07/02/2024

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/03/2020

Proposed date of completion of Remediation. 12/31/2024

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**

Magpie would like to request ECMC approval to apply Residential Soil screening Level limits at this site. Water well receipt number 9044653, permit number 36326, is approximately 1,300' away. Colorado Division of Water Resources documents show that static groundwater level is 200' below ground surface. July 2024 soil borings to 20' bgs found no evidence of groundwater.

The farmer plans to plant Millet, which has a very shallow root zone of only 2" - 6" bgs, per the attached University of Nebraska document on the species.

In July and August 2024, Magpie completed final reclamation of the wellhead and access road per the attached reclamation summary.

Magpie is requesting ECMC approval to leave elevated inorganics in situ. The farmer is aware of the inorganic analytical results below 3' bgs and wants his land back for growing Millet as mentioned above.

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

Signed: David Castro

Title: Senior Project Scientist

Submit Date: 08/29/2024

Email: dcastro@eagle-enviro.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: Krystal Heibel

Date: 10/16/2024

Remediation Project Number: 13484

**COA Type**

**Description**

	<p>ECMC does not approve backfilling at this time. If Operator proceeds with backfilling they do so at their own risk of possibly having to re-excavate the impacted area.</p> <p>"The former pit excavation will be backfilled with clean material and topsoil brought in per landowner direction."</p>
	<p>Operator shall provide a detailed Remediation Plan (along with a timeline) that details when the Proposed Soil Boring Locations (illustrated on Fig. 4) will be drilled.</p>
	<p>ECMC denies the operator's request for Residential Soil Screening levels at this time.</p> <p>Water well (Permit No. 35744) is less than a mile away illustrates that depth to water is between 19 and 67 feet.</p> <p>Per Rule 915.a Soil Concentrations - Determination of Pathway to Groundwater guidance document: "As part of reporting a Spill or Release, the Operator will present site specific information and data for Staff to consider in making a determination if a pathway to Groundwater is present.". On the subsequent Form 27 Supplemental Operator shall provide a detailed evaluation of site specific information as outlined in the aforementioned guidance document for ECMC review in determination of whether the Residential SSL or Protection of Groundwater SSLs will be applied to the spill. Operator shall abide by protection of groundwater soil screening levels until such determination can be made.</p>
	<p>Closure request removed. Operator has not fully delineated Table 915-1 exceedances at this location.</p> <p>Per CA on Doc #s 696105548, 403227439 &amp; 403400235: "Operator shall comply with 900 Series Rules. Determine vertical and horizontal extent of spill to establish points of compliance and conduct soil analysis with discrete sampling and photo documentation to provide in future Supplemental Form 27s and FIRR."</p> <p>A Reclamation Plan will not be reviewed until the impacts are fully vertically and horizontally delineated.</p>
4 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.

<u>Att Doc Num</u>	<u>Name</u>
403904950	FORM 27-SUPPLEMENTAL-SUBMITTED
403904955	SITE INVESTIGATION REPORT
403905115	OTHER
403905190	RECLAMATION PLAN

Total Attach: 4 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	Pit Facility ID 111980, Location ID 312143; Active Pit Facility ID 111979; Closed 2014; Rem Project #7677 (Circular, skim pit) Pit Facility ID 111981; Active	10/16/2024

Total: 1 comment(s)