

State of Colorado  
Energy & Carbon Management Commission

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403742658  
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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 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>IMPETRO RESOURCES LLC</u>	Operator No: <u>10690</u>	Phone Numbers Phone: <u>(361) 935-5633</u> Mobile: <u>( )</u>
Address: <u>558 CASTLE PINES PKWY UNIT B-4</u>		
City: <u>CASTLE PINES</u>	State: <u>CO</u>	Zip: <u>80108</u>
Contact Person: <u>Brent Bongers</u>	Email: <u>bbongers@impetroresources.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9053 Initial Form 27 Document #: 2086929

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: Skim Pit Closure

SITE INFORMATION

No  Multiple Facilities

Facility Type: <u>PIT</u>	Facility ID: <u>107591</u>	API #: _____	County Name: <u>WASHINGTON</u>
Facility Name: <u>COWLES 1</u>	Latitude: <u>39.767648</u>	Longitude: <u>-103.151830</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSE</u>	Sec: <u>25</u>	Twp: <u>3S</u>	Range: <u>52W</u> Meridian: <u>6</u> Sensitive Area? <u>No</u>

SITE CONDITIONS

General soil type - USCS Classifications ML Most Sensitive Adjacent Land Use CULTIVATED  
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**

A receptors map has been attached to this Form 27 (#403742658)

**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	N/A	Historic 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.

Pit Facility ID 107591 (former oil skim pit) is no longer in active use, but TPH impacted soil remains in the north wall. Pit Facility ID 107592 is the active production pit. It shares a south wall with the former oil skim pit. Closure of the unlined skim pit was conducted on June 25th, 2015. First, the metal cage covering the pit was removed and dismantled. The scrap metal was transported off-site for recycling. About 555 cy of soil was excavated, about 255 cy sent to the landfill and 300 cy placed in the on-site cell for treatment. Per the COAs on the Form 27-S submitted on June 25, 2018, no further action is necessary for the land treatment of oily waste (landfarm) portion of the project. Impetro Resources is submitting this Form 27-S to request that high TPH soil remains in place in the shared sidewall of pit facilities 107591 and 107592 in order to not affect the integrity of the current pit. Impetro is in the process of permitting an EOR unit and injecting into Cowles #4. Once operational and can take 100% of the produced water, Impetro will work to and assess the pit per Rule 909.c.(2) addressing any historical contamination that may be present.

**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 ):

Impetro will conduct soil sampling at a future date to be determined once the Cowles injection well is able to take produced water. When the injection well is fully operational Impetro plans is to minimize the footprint of the current produced water pit and address any residual contamination left from the previous remediation efforts, verified by analytical lab results. Impetro will sample the soil per Rule 909.c.(2). Samples will be analyzed by a NELAP approved lab for the Table 915-1 list of analytes.

**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 5  
Number of soil samples exceeding 915-1 5  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 1250

### NA / ND

-- Highest concentration of TPH (mg/kg) 12483  
-- Highest concentration of SAR 4.7  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 24

### 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?

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

Volume of solid waste (cubic yards) 555      Volume of liquid waste (barrels) 0

Is further site investigation required?

Impetro is in the process of permitting an EOR unit and injecting into Cowles #4. Once the injection well is operational and can take 100% of the produced water, Impetro will work to and assess the pit per Rule 909.c.(2) addressing any historical contamination that may be present.

## 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 will be assessed and samples will be analyzed at an approved lab, any identified contamination will be excavated and disposed of at an approved disposal facility. Previous waste disposal manifests were included in Doc #2087015 submitted in 2015.

### 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.

Skim pit was closed by previous operator; residual soil contamination (Doc# 2087015) was left in south sidewall of current operation pit in order to not affect the integrity of the current pit. Impetro is in the process of permitting an EOR unit and injecting into Cowles #4. Once operational and can take 100% of the produced water, Impetro will work to minimize the existing pit and conduct assessment of the pit per Rule 909.c.(2) addressing any historical contamination that may be present.

### Soil Remediation Summary

In Situ

Ex Situ

- \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )
- \_\_\_\_\_ Chemical oxidation
- \_\_\_\_\_ Air sparge / Soil vapor extraction
- \_\_\_\_\_ Natural Attenuation
- \_\_\_\_\_ Other \_\_\_\_\_

- Yes \_\_\_\_\_ Excavate and offsite disposal
- \_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 555
- \_\_\_\_\_ 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.

Impacts to groundwater have not been identified at the site.

# 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 Skim Pit Closure Report

## 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:

300 cys of soil was placed in the on-site cell for treatment.

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 555

E&P waste (solid) description hydrocarbon impacted soils

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: Denver Arapahoe Disposal Landfill

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_ 0

E&P waste (liquid) description \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC 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? No

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

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 conducted at the time of facility closure per 1000 Series rules.

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. \_\_\_\_\_

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). 06/25/2025

Proposed site investigation commencement. 10/01/2015

Proposed completion of site investigation. 01/01/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/20/2025

Proposed date of completion of Remediation. 07/20/2025

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**

For sample Cowles-C-3 (the north wall which is shared with the adjacent evaporation pit), the combined TPH exceeded the COGCC standard at 12,483 mg/kg. This wall cannot be excavated further without undermining the adjacent evaporation pit. Impetro is in the process of permitting an EOR unit and injecting into Cowles #4. Once the injection well is operational and can take 100% of the produced water, Impetro will work to minimize the existing pit and conduct assessment of the pit per Rule 909.c.(2) addressing any historical contamination that may be present.

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

Signed: Drezden Kinnaird

Title: Consultant

Submit Date: 04/08/2024

Email: dkinnaird@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: Krystal Heibel

Date: 06/18/2024

Remediation Project Number: 9053

**COA Type****Description**

	Operator shall provide all historic analytical data in table-format, within the next submittal, comparing each analyte value to Table 915-1 Protection of Groundwater Soil Screening Level Concentrations. As additional soil confirmation samples are analyzed, Operator shall update the analytics table.
	Operator shall submit reports of site investigation including all laboratory analytical results for all samples collected, per Rule 913.h.(4).A.. Per the 900 Series rules 915.e "... Analyses of samples will be performed by laboratories that maintain state or national accreditation programs.." The main accreditation programs are National Environmental Laboratory Accreditation Program (NELAP) and National Environmental Laboratories Accreditation Conference (NELAC). Not only is this accreditation required the lab has to be accredited for each specific analyte.
	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)).
	Operator shall clarify the remediation plan associated with this facility.  "Impetro is in the process of permitting an EOR unit and injecting into Cowles #4."
	Operator shall provide a "Proposed Soil Sample Location Map" that illustrates the locations of all proposed confirmation soil samples at the pit and the historic "landfarm treatment" areas, along with the location(s) of any background samples, within 30 days of the review of this form (July 18, 2024).
	"For sample Cowles-C-3 (the north wall which is shared with the adjacent evaporation pit), the combined TPH exceeded the COGCC standard at 12,483 mg/kg. This wall cannot be excavated further without undermining the adjacent evaporation pit."
	Operator shall fully populate the implementation schedule in accordance with Rule 913.d on the subsequent Supplemental Form 27.
7 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**

403742658	FORM 27-SUPPLEMENTAL-SUBMITTED
403742765	SITE MAP
403742766	ANALYTICAL RESULTS

Total Attach: 3 Files

## General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)