

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
403744846  
Receive Date:  
04/05/2024  
Report taken by:  
Krystal Heibel

Site Investigation and Remediation Workplan (Initial 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: PEASE OIL & GAS COMPANY | Operator No: 68050           | Phone Numbers<br>Phone: (303) 894-2100<br>Mobile: (303) 905-5341 |
| Address: 751 HORIZON CT, STE 203          |                              |  |
| City: GRAND JUNCTION                      | State: CO                    | Zip: 81506   |
| Contact Person: James Hix - East OWP EPS  | Email: james.hix@state.co.us |  |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 34966 Initial Form 27 Document #: 403744846

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: PIT                             | Facility ID: 116299 | API #: _____           | County Name: LOGAN                         |
| Facility Name: WHITTIER "A"                    | Latitude: 40.743977 | Longitude: -103.293248 |  |
| ** correct Lat/Long if needed: Latitude: _____ |                     | Longitude: _____       |  |
| QtrQtr: NWNE                                   | Sec: 21             | Twp: 9N                | Range: 53W Meridian: 6 Sensitive Area? Yes |
| Facility Type: LOCATION                        | Facility ID: 388480 | API #: _____           | County Name: LOGAN                         |
| Facility Name: WHITTIER-69N53W 21NWNE (OWP)    | Latitude: 40.743067 | Longitude: -103.292138 |  |
| ** correct Lat/Long if needed: Latitude: _____ |                     | Longitude: _____       |  |
| QtrQtr: NWNE                                   | Sec: 21             | Twp: 9N                | Range: 53W Meridian: 6 Sensitive Area? Yes |

## SITE CONDITIONS

General soil type - USCS Classifications CL

Most Sensitive Adjacent Land Use Cropland

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**

No DWR permitted domestic water wells within 1/4-mile. On-location NOI = Permit #40000991-MH (ECMC) submitted. Proposed depth = 10 ft bgs. Surface Waters: No surface waters w/in 1/4-mile of the location. There is a drainage swale ~550 ft NW of the former pit which historically received produced water. No NWI mapped wetlands within 1/4-mile. Location is 1230 ft south of State Wildlife Area, and is located within CPW Mapped HPH: Mule Deer Winter Concentration Area. Point of Rocks Reservoir ~1 mile northwest

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste      | <input checked="" 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 checked="" 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          | VISUALLY, FIELD SCREENING, ANALYTICAL |
| UNDETERMINED | SOILS          | UNKNOWN          | VISUALLY, FIELD SCREENING, 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.

The PEASE OIL & GAS COMPANY - 68050 WHITTIER "A" PIT (Pit # 116299) oil and gas Location (Location ID #388480) is in the Colorado EPMC (f.k.a. Colorado Oil and Gas Conservation Commission "COGCC") Orphaned Well Program (OWP). This initial Form 27 is submitted for site investigation activities to investigate for evidence of E&P Waste impacts. A subsurface investigation will be performed in accordance with Colorado EPMC 900 Series Rules. Soil borings will be advanced within the footprint of the suspected pit, as well as downgradient of the former pit location in the drainage swale northwest of the pit. Soil samples will be submitted to an accredited environmental laboratory for analysis of Table 915-1 parameters.

## 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 ):

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). Soil borings will be completed as temporary groundwater monitoring wells.

### 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**

Number of soil samples collected 0  
Number of soil samples exceeding 915-1 \_\_\_\_\_  
Was the areal and vertical extent of soil contamination delineated? \_\_\_\_\_  
Approximate areal extent (square feet) \_\_\_\_\_

**NA / ND**

Highest concentration of TPH (mg/kg) \_\_\_\_\_  
Highest concentration of SAR \_\_\_\_\_  
BTEX > 915-1 \_\_\_\_\_  
Vertical Extent > 915-1 (in feet) \_\_\_\_\_

**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) \_\_\_\_\_ Volume of liquid waste (barrels) \_\_\_\_\_

Is further site investigation required?

\_\_\_\_\_

**REMEDIAL ACTION PLAN**

**SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

This Form 27 presents a Subsurface Site Investigation Workplan for assessing E&P waste impacts resulting from operation of a former production pit and historic produced water discharge to an adjacent swale northwest of the pit. Source removal will depend on the results of this investigation and remediation will be performed 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 and groundwater are encountered during the investigation, the OWP will remediate impacts to bring the location into compliance. The intent of this initial Form 27 Site Investigation and Remediation Workplan is to define the horizontal and vertical extent of the E&P Waste impacts. If the extent cannot be defined 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. Installation of temporary groundwater monitoring holes is included in this scope of work if groundwater is encountered.

**Soil Remediation Summary**

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation ) \_\_\_\_\_ Excavate and offsite disposal

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

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_  
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.

# 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? \_\_\_\_\_

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 \_\_\_\_\_

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

Non-ECMC Disposal Facility: \_\_\_\_\_

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

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

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

Non-ECMC Disposal Facility: \_\_\_\_\_

# 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 Colorado ECMC OWP will reclaim this oil and gas location in accordance with 1000 Series Rules including grading/recontouring of disturbed areas. The reclamation plan will include development of a reseeding program in consultation with the surface owner, tenant farmer, and Timka Resources that describes preparation of a new seed bed, seed mix, and noxious weed prevention within the drainage swale. This will be performed under a separate scope of work. Final reclamation will be conducted per ECMC 1000 Series Rules and prioritized based on OWP ranking, project 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. 02/22/2024

Actual Spill or Release date, or date of discovery. 06/28/1989

## SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/08/2024

Proposed site investigation commencement. 04/17/2024

Proposed completion of site investigation. 04/18/2024

## 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 former PEASE OIL & GAS COMPANY - 68050 WHITTIER "A" Pit (PIT #116299) is in the ECMC Orphaned Well Program (OWP). This initial Form 27 presents the Site Investigation Workplan for a subsurface investigation to delineate the lateral and vertical extent of impacts from the former production pit. According to information in the file, there was a 15' x 15' x 5' skim pit and a 75' by 100' by 5' bgs production pit (Form 15 Doc #684622) November 1971. The Operator obtained authorization to discharge produced water to the drainage swale. A complaint was received in 1989 and the pit was subsequently closed. The Commission found Pease Oil & Gas Company in violation for failure to remediate and reclaim the produced water spill area (Order 1v-253). Pease closed the pit but was unable to fully remediate and reclaim the location. The OWP will direct an MSA Contractor to perform a site investigation of this location to assess impacts and evaluate future site remediation. A total of ten (10) soil borings will be advanced to a total depth of 10 feet bgs. Four of the borings will be completed as temporary groundwater monitoring holes/wells to assess potential groundwater impacts.

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: 04/05/2024

Email: james.hix@state.co.us

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: 04/12/2024

Remediation Project Number: 34966

**COA Type****Description**

|  |   |
|--|---|
|  | OWP shall provide a photolog of the soil boring locations within the next form submittal.   |
|  | If groundwater is encountered, OWP will analyze groundwater samples for Table 915-1 Groundwater Inorganic Parameters (total dissolved solids, sulfate, chloride) and organic compounds in groundwater.  |
|  | 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)).                          |
|  | If a spill/release of produced fluids or E&P waste causes an impact from inorganic constituents to soil, OWP should perform sampling and analysis to fully delineate the lateral and vertical extent of those impacts.<br><br>It appears from Figure 3: Site Map, OWP may need to add soil boring locations to the southwest portion of the produced water spill to laterally delineate impacted soils. |

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.

**Att Doc Num****Name**

|           |   |
|-----------|---|
| 403744846 | INVESTIGATION/REMEDATION WORKPLAN (INITIAL) |
| 403744939 | MAP   |
| 403744940 | SITE MAP                                    |
| 403744941 | SITE INVESTIGATION PLAN                     |
| 403744942 | GROUND WATER SAMPLE LOCATION                |
| 403744988 | OTHER                                       |
| 403752774 | FORM 27-INITIAL-SUBMITTED                   |

Total Attach: 7 Files

**General Comments**

| <u>User Group</u> | <u>Comment</u>  | <u>Comment Date</u> |
|-------------------|---|---------------------|
| Environmental     | OWP shall conduct a closure investigation in accordance with Rule 911.c. Pit Closure Guidance Document. | 04/12/2024          |

Total: 1 comment(s)