

State of Colorado
Oil and Gas Conservation Commission

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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: GREAT WESTERN OPERATING COMPANY LLC	Operator No: 10110	Phone Numbers Phone: (720) 595-2132 Mobile: ()
Address: 1001 17TH STREET #2000		
City: DENVER	State: CO Zip: 80202	
Contact Person: Jason Davidson	Email: jdavidson@gwp.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 21791 Initial Form 27 Document #: 402935094

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: LOCATION	Facility ID: 417318	API #: _____	County Name: WELD
Facility Name: HEINZE TANK BATTERY 1	Latitude: 40.524730	Longitude: -104.475220	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 31	Twp: 7N	Range: 63W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Dairy farm and agriculture
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

The Heinze #1 tank battery is surrounded by a dairy farm and agricultural land in all directions. The nearest occupied structure is a residential home located approximately 0.3 miles to the east-southeast. The nearest surface water feature is an un named 2.2-acre pond located approximately 0.6 miles to the west. There are no DWR permitted groundwater wells within 0.25 miles of the Site. Depth to water is unknown but expected to be encountered at a depth greater than 20 feet below ground surface (ft-bgs) based on DWR records of the nearest permitted well (permit receipt #0302696A with reported DTW of 50 ft-bgs), 0.32 miles east southeast of the Site). The site is located within the CPW's high priority habitat "Pronghorn Winter Concentration" mapped extent. There are no additional sensitive areas or wildlife habitats identified within a quarter mile of the facility. See the attached Figure 1 for an illustration of the location of the Site.

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
UNDETERMINED	GROUNDWATER	Unknown	Not yet determined
UNDETERMINED	SOILS	Unknown	Not yet determined

INITIAL ACTION SUMMARY

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

Great Western proposes to conduct closure of the Heinze #1 Tank battery. There is one partially buried water vessel, one above ground storage tank, two separators, and four emission combustion devices associated with the site. Tank battery closure activities are planned to commence on 2/7/22 and be completed by 3/31/22. Great Western will conduct site investigation activities, field screening, and confirmation soil sampling activities during closure in accordance with COGCC 900 Series Rules. Discrete soil samples will be collected and analyzed pursuant to Rule 915, following the general sample collection guidance in Rule 915.e.(2). All waste generated during the closure activities will be managed and disposed of at a licensed disposal facility in accordance with Rules 905 and 906.

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):

During tank battery closure, at least 13 discrete soil samples will be collected for field screening only and at least 7 discrete soil samples will be collected for laboratory analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB and gasoline range organics (GRO) [C6-C10] by EPA Method 8260 and for diesel range organics (DRO) [C10-C28] and residual range organics (RRO) [C28-C40] by EPA Method 8015. Analytical results for GRO, DRO, and RRO will be added together to calculate total petroleum hydrocarbons (TPH). In addition, a soil sample will be collected from the base of the partially buried produced water vessel and analyzed for the Soil Suitability for Reclamation Parameters; Electrical Conductivity (EC), Sodium Absorption Ratio (SAR), and pH by Saturated Paste Method, and boron by Hot Water-Soluble Soil Extract Method. See the attached Figure 2 for an illustration of the Site layout and proposed soil sample locations.

Proposed Groundwater Sampling

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

Depth to groundwater is unknown but is expected to be encountered at a depth greater than 20 ft-bgs based the static water levels reported in the nearest DWR permitted wells. Up to two test pits will be excavated to a depth of approximately 10 feet adjacent to the water vault and separators. If groundwater is encountered within the test pits or a pathway to groundwater is observed, ground water samples will be collected in accordance with COGCC Rule 915.e.(3), and will be submitted to an accredited laboratory for analysis of BTEX, naphthalene, 1,2,4-TMB, and 1,3,5-TMB by EPA Method 8260. See the attached Figure 2 for a presentation of potential grab groundwater sample locations.

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 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?

[Empty text box for impact details]

Were background samples collected as part of this site investigation?

[Empty text box for background samples]

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?

[Empty text box for further investigation]

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.

If impacted soil is encountered, Great Western will either dig and haul impacted soils to a commercial landfill or treat impacted soils above COGCC Table 915-1 concentration levels onsite.

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.

A remediation or closure plan will be developed based on the analytical results of the confirmation soil samples collected during facility closure activities.

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 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 _____

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 _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

REMEDATION COMPLETION REPORT

REMEDATION 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.

If necessary, the site will be reclaimed in accordance with COGCC 1000-Series Rules.

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. 12/20/2021

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/07/2022

Proposed site investigation commencement. 02/07/2022

Proposed completion of site investigation. _____

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

On February 25, 2022, field observations during facility closure investigation activities indicated potential hydrocarbon impact in one soil sample (WC01-3) located beneath an above storage tank. Based on the potential presence of impact, the sample was submitted for laboratory analysis of the full COGCC Table 915-1 list. Laboratory analytical results reported detections of benzene, ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, fluoranthene, fluorene, 1-methylnaphtalene, 2-methylnaphtalene, naphthalene, and pyrene. Arsenic, barium, and selenium were reported above the Table 915-1 Protection of Groundwater Soil Screening Levels (GWSSLs). The arsenic concentration in WC01-3 was below the maximum background of nearby background sample BG2-3. All soil suitability for reclamation parameters and other Table 915-1 metals in WC01-3 were compliant with the Table 915-1 GWSSLs. The sample location map, analytical results summary table, and laboratory analytical report are attached.

On March 11, 2022, Great Western began excavation to remove the impacted material identified in soil sample WC01-3. Confirmation samples have been collected from the final extent of excavation to verify the impact is adequately removed. Per COGCC Rule 915.e.(2).C, based on the results of sample WC01-3, Great Western Operating Company respectfully requests that the COGCC modify the list of contaminants of concern in soil to Table 915-1's Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil, barium, and selenium.

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

Signed: Jason Davidson _____

Title: Senior EHS Specialist _____

Submit Date: 03/16/2022 _____

Email: jdavidson@gwp.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: 03/18/2022 _____

Remediation Project Number: 21791 _____

Condition of Approval

COA Type

Description

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

402985978	FORM 27-SUPPLEMENTAL-SUBMITTED
402985998	SOIL SAMPLE LOCATION MAP
402985999	ANALYTICAL RESULTS
402986000	ANALYTICAL RESULTS
402986001	ANALYTICAL RESULTS

Total Attach: 5 Files

General Comments

User Group

Comment

Comment Date

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

Total: 0 comment(s)