

State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

402534776

Receive Date:

11/20/2020

Report taken by:

BOB CHESSON

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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATION

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 7928 Initial Form 27 Document #: 2145828

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste | <input type="checkbox"/> Rule 906.c.: Director request |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____ |

SITE INFORMATION

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: LOCATION	Facility ID: 319672	API #: _____	County Name: ADAMS
Facility Name: GREAT WESTERN HARTNAGLE 1		Latitude: 39.899942	Longitude: -104.524620
		** correct Lat/Long if needed: Latitude: 39.900196	Longitude: -104.524759
QtrQtr: SWSW	Sec: 2	Twp: 2S	Range: 64W
		Meridian: 6	Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications SC 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

None identified

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 type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input checked="" 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	GROUNDWATER	90' x 90'	Groundwater Monitoring
Yes	SOILS	80' x 80' x 45' deep	Excavation and Borehole Sampling

INITIAL ACTION SUMMARY

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

Soil impacts were identified below the water vault at the location during facility abandonment activities in July 2013. A water vault, where the impacts were thought to have originated, was removed along with a limited amount of impacted soil. Initial soil samples were collected for laboratory analysis from beneath the location of the former produced water vault and from test pits surrounding the water vault excavation. See related documents for COGCC Spill #2145530 and Remediation #7928. A site investigation was conducted between November 2013 and October 2018. A total of 23 monitoring wells have been installed at the Site, although four of the initial monitoring wells were destroyed in 2016 due to local farming operations. Soil impacts above the COGCC Table 910-1 limits were generally observed only near the suspected source area (near MW-1 and MW-10).

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):

Proposed Groundwater Sampling

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

Please refer to the Groundwater Monitoring section under the Remedial Action Plan tab of this Form 27 and the attached Fremont Environmental Remediation and Groundwater Sampling Report for a summary of quarterly groundwater sampling activities at the Site.

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 910-1

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet)

NA / ND

-- Highest concentration of TPH (mg/kg)

-- Highest concentration of SAR

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet)

Groundwater

Number of groundwater samples collected 14

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 53'

Number of groundwater monitoring wells installed 19

Number of groundwater samples exceeding 910-1 7

-- Highest concentration of Benzene (µg/l) 3270

-- Highest concentration of Toluene (µg/l) 12100

-- Highest concentration of Ethylbenzene (µg/l) 3440

-- Highest concentration of Xylene (µg/l) 23100
0

NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

0 Number of surface water samples exceeding 910-1

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

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes _____

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

To address the LNAPL encountered in monitoring well MW-1, in July 2017, Great Western installed a solar-powered Soil Vapor Extraction (SVE) bubbler unit at the well. The unit operated 24/7 until its removal in January 2019. In February 2019, a propane-powered SVE bubbler system with a 3 HP Rotron EN656 regenerative blower was installed at the Site to remove LNAPL from seven affected monitoring wells. In addition, monitoring wells that contain LNAPL are typically pumped or hand-bailed on a weekly basis. Please refer to the attached Fremont Environmental Remediation and Groundwater Sampling Report.

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.

Please refer to the Source Removal Summary above and to the attached Fremont Environmental Remediation and Groundwater Sampling Report.

Soil Remediation Summary

☒ In Situ

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
Yes _____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

☐ Ex Situ

_____ Excavate and offsite disposal
_____ 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
Yes _____ 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.

Groundwater monitoring for BTEX compound concentrations will continue at the Site on a semi-annual schedule until all LNAPL has been removed. Once all LNAPL has been removed, groundwater monitoring will increase to a quarterly schedule until four consecutive quarters of analytical results below COGCC Table 910-1 concentration levels for BTEX are obtained. The next semi-annual sampling event is scheduled to occur in March 2021. Please refer to the attached Fremont Environmental Remediation and Groundwater Sampling Report.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☒ Semi-Annually ☐ Annually ☐ Other _____

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 _____

Do all soils meet Table 910-1 standards? _____

Does the previous reply indicate consideration of background concentrations? _____

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? _____

Does Groundwater meet Table 910-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

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 the COGCC 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 approve the seed mix? _____

If NO, does the seed mix comply with local soil conservation district recommendations? _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/03/2013

Date of commencement of Site Investigation. 11/19/2013

Date of completion of Site Investigation. 10/31/2018

REMEDIAL ACTION DATES

Date of commencement of Remediation. 07/01/2017

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

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: 11/20/2020

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: BOB CHESSON

Date: 11/23/2020

Remediation Project Number: 7928

COA Type

Description

--	--

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

402534776	FORM 27-SUPPLEMENTAL-SUBMITTED
402537314	REMEDATION PROGRESS REPORT

Total Attach: 2 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
--	--	---------------------

Total: 0 comment(s)