

State of Colorado
Oil and Gas Conservation Commission

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Report taken by:
Candice (Nikki) Graber

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: <u>DCP OPERATING COMPANY LP</u>	Operator No: <u>4680</u>	Phone Numbers
Address: <u>370 17TH STREET - SUITE 2500</u>	Phone: <u>(303) 605-1718</u>	
City: <u>DENVER</u>	State: <u>CO</u>	Mobile: <u>()</u>
Zip: <u>80202</u>	Contact Person: <u>Stephen Weathers</u>	Email: <u>swweathers@dcpmidstream.com</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 12644 Initial Form 27 Document #: 401940170

PURPOSE INFORMATION

- | | |
|--|--|
| <input checked="" type="checkbox"/> 901.e. Sensitive Area Determination | <input checked="" 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 checked="" type="checkbox"/> Other <u>Supplemental investigation and well install activities</u> |

SITE INFORMATION

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

Facility Type: <u>GAS PROCESSING PLANT</u>	Facility ID: <u>255957</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>GREELEY GAS PLANT</u>	Latitude: <u>40.363548</u>	Longitude: <u>-104.728707</u>	
** correct Lat/Long if needed: Latitude: <u>40.363785</u>		Longitude: <u>-104.729330</u>	
QtrQtr: <u>SWSW</u>	Sec: <u>25</u>	Twp: <u>5N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SW Most Sensitive Adjacent Land Use Agricultural land and water treatment plant to the south, residential development to the north

Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

Residential development 0.25 miles to the north; Evans Town Ditch 225' east; floodplain 500' east; public wastewater treatment facility 575' south; freshwater emergent wetland 913' south; two water wells within 1,400 feet (Permits 6012-R-R and 161539); South Platte River 1,500' south, and Ashcroft Draw 2,400' west.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|---|---|
| <input type="checkbox"/> E&P Waste | <input checked="" type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | _____ |
| <input 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 type="checkbox"/> Pit Bottoms | |
| | <input checked="" type="checkbox"/> Other (as described by EPA) | Petroleum hydrocarbon impacted soil and groundwater |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	Unknown	monitoring well installation and groundwater sampling
Yes	SOILS	800 sf	soil sample investigation

INITIAL ACTION SUMMARY

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

A detailed description of the initial response activities was previously provided in the Initial eForm 27, Document #401940170 dated February 22, 2019. The Form 27 was conditionally approved by the COGCC on February 27, 2019. Additional Site investigation activities and remediation alternatives have been provided to the COGCC via approved eForm 27 Document numbers 401964498, 402092441, and 402160136. Continued investigation and remediation alternatives are described herein.

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):

Previously completed soil investigation activities were submitted via the approved eForm 27 documents discussed in the Initial Action Summary. In accordance with the most recent approved eForm 27 and the associated COGCC conditions of approval, additional soil boring and groundwater monitoring well installation activities were performed at the Site at locations MW09 and MW10 (illustrated on attached Figure 2). Soil samples were submitted for laboratory analysis of BTEX and TPH-GRO/DRO. The soil sample analytical data are summarized on Table 1, the laboratory analytical report is attached, and lithologic soil boring logs are provided. Petroleum hydrocarbon impacts to soil above applicable COGCC standards were not encountered at MW09 and MW10.

Proposed Groundwater Sampling

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

Previous groundwater monitoring activities were described in Form 27's (Document # 401940170, #402092441, and #402160136). Based on the COGCC conditions of approval of in F27S (#402160136), two additional groundwater monitoring wells (MW09 and MW10) were installed on September 4, 2019 and sampled on September 6, 2019. These well locations are illustrated on Figure 2. Groundwater samples were submitted for analysis of BTEX by USEPA method. The laboratory analytical results from these locations is shown on Figure 3 and the laboratory reports are included as an attachment. Ongoing site-wide groundwater monitoring will be conducted on a quarterly basis to monitor groundwater conditions at the Site.

Proposed Surface Water Sampling

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

As described in Supplemental Form 27 (#402160136), a surface water sample was collected from the drainage ditch located to the east of the Site on September 4, 2019. The location of the surface water sample (SW01) is presented in Figure 2. The surface water sample was submitted for laboratory analysis of BTEX using USEPA Method 8260B. The laboratory analytical report is attached to this F27 and the results for the surface water sample is presented on Figure 3 and in Table 3. Based on the groundwater flow path and results at the nearest monitoring well location (MW08), future monitoring at this surface water location will be evaluated and presented in subsequent F27 submittals.

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 4
Number of soil samples exceeding 910-1 0
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 800

NA / ND

ND Highest concentration of TPH (mg/kg) _____
NA Highest concentration of SAR _____
BTEX > 910-1 No
Vertical Extent > 910-1 (in feet) 0

Groundwater

Number of groundwater samples collected 2
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 10'
Number of groundwater monitoring wells installed 10
Number of groundwater samples exceeding 910-1 0

ND Highest concentration of Benzene (µg/l) _____
ND Highest concentration of Toluene (µg/l) _____
ND Highest concentration of Ethylbenzene (µg/l) _____
ND Highest concentration of Xylene (µg/l) _____
NA Highest concentration of Methane (mg/l) _____

Surface Water

1 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?

Ongoing quarterly site-wide groundwater monitoring will continue to be performed to identify any potential changes in Site conditions. Based on the third quarter results and the groundwater and surface water results presented herein, additional delineation activities at the site may be warranted. Available methods required to remediate remaining impacts to soil in the vicinity of the Sump are currently being evaluated and will be presented in a subsequent Form 27S.

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.

A description of initial source removal was provided in the previously submitted Form 27 (Document # 401940170) approved February 27, 2019 and following completion of the additional soil investigation activities, performed April 24 to 26, 2019, remaining soil impacts were delineated to within a small area in close proximity to the original sump replacement location. Form 27 Supplemental (#402092441), was conditionally approved by the COGCC on July 18, 2019 and two additional monitoring well locations were installed in September 2019 in order to establish the horizontal extent of impact to groundwater on the northwest side of the impacted area. The recent groundwater monitoring activities are further described in the following Groundwater Monitoring section. Additional source removal is not recommended at this time due to the limited area of impacted soils being located in close proximity to active gas plant operations, resulting in an unreasonable risk to human health and safety and the environment. However, available methods required to remediate remaining TPH impacts to soil in the vicinity of the Sump are currently being evaluated and will be presented in a subsequent Form 27S submittal.

REMIEDIATION 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.

Based on the COGCC conditional approval of the Form 27 (#401940170 and #402160136), additional soil and groundwater delineation activities were completed between April 24 and 26, and September 4 and 6, 2019. Following completion of the soil delineation activities, it was determined that a limited volume of impacted soil remains in place in areas that are currently considered inaccessible to remediation, due to existing gas plant operations and infrastructure resulting in an unreasonable risk to human health and safety and the environment. DCP is currently evaluating available methods required to remediate remaining TPH impacts to soil in the vicinity of the Sump, which will be presented in a subsequent Form 27S submittal. Groundwater conditions at the Site will continue to be monitored on a quarterly basis to evaluate current Site conditions and identify any change in conditions over time that may warrant additional subsurface investigations at the Site. Once groundwater is fully delineated at the Site, appropriate groundwater remediation activities will be evaluated and presented for COGCC approval in a supplemental eForm 27. In the interim, vacuum enhanced fluid recovery remediation may be performed at existing monitoring wells with elevated BTEX concentrations.

Soil Remediation Summary

In Situ

- _____ Bioremediation (or enhanced bioremediation)
- _____ Chemical oxidation
- _____ 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
- _____ Air sparge / Soil vapor extraction
- _____ Natural Attenuation
- Yes _____ Other _____ Interim vacuum enhanced fluid recovery and additional monitoring well installation.

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.

Site-wide groundwater sampling will continue to be conducted on a quarterly basis at the eight ten Site monitoring well locations MW01 through MW10, illustrated on the attached Figure 2. Third quarter 2019 monitoring activities were detailed in F27S (#402160136). During the September 4 and 6, 2019 additional groundwater well installation and investigation, groundwater levels and samples were collected from the newly installed well locations (MW09 and MW10) using standard hand-bailing sampling methods and were submitted to Origins Laboratory Inc. (Origins) for BTEX analysis using USEPA method 8260B. The September 2019 groundwater levels are presented in Table 2, the laboratory analytical data for BTEX constituents are summarized on Table 3 and the laboratory analytical reports are also provided in an attachment to this F27. Laboratory results from monitoring wells MW09 and MW10 as well as the surface water location indicated BTEX concentrations were reported below the laboratory detection limit and the COGCC Table 910-1 standards.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other _____

Report Type: Groundwater Monitoring Land Treatment Progress Report O&M Report

Other Well installation information _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No _____

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: _____

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No _____

Do all soils meet Table 910-1 standards? No _____

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? No _____

Does Groundwater meet Table 910-1 standards? No _____

Is additional groundwater monitoring to be conducted? Yes _____

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 Site is currently located within an active DCP gas plant. No plans for reclamation are necessary at this time.

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. 11/03/2015

Actual Spill or Release date, if known. 11/03/2015

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/03/2015

Date of commencement of Site Investigation. 11/03/2015

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. _____

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

In addition to this progress report and based on the COGCC conditional approval of the Form 27 (#402092441 and #402160136), the following items were incorporated to this submittal: Changed Sensitive Area under Facility Information from "No" to "Yes" ; Selected 901.e Sensitive area Determination; and updated potential nearby receptors were included on this Form 27.

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

Signed: Stephen Weathers _____

Title: Environmental Specialist _____

Submit Date: 11/04/2019 _____

Email: swweathers@dcpmidstream.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: Candice (Nikki) Graber _____

Date: 11/06/2019 _____

Remediation Project Number: 12644 _____

COA Type**Description**

	Submit reports of site investigation and progress of remediation including results of sampling and analysis at a minimum on a quarterly basis until remediation is closed.
	In accordance with Rule 910.b(4) an additional monitoring well is required to down gradient of MO08 to establish the horizontal extent of impacts to groundwater. More than one well may be required to obtain point of compliance. The monitoring well(s) shall be installed within 45 days. Operator shall notify COGCC EPS personnel no less than 72 hours prior to soil boring installation. An extension of the deadline may be considered due to access restrictions.

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**

402187024	FORM 27-SUPPLEMENTAL-SUBMITTED
402229299	OTHER

Total Attach: 2 Files

General Comments**User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)