

State of Colorado
Oil and Gas Conservation Commission

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Report taken by:
Candice (Nikki) Graber

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 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>(970) 379-6389</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>(970) 373-8905</u>
Contact Person: <u>Branden Hayes</u>	Email: <u>bshayes@dcpmidstream.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

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

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: <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>No</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? No 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.

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) Petroleum hydrocarbon impacted soil

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	unknown	monitoring well installation and groundwater sampling
Yes	SOILS	minimal	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.

On November 3, 2015, a condensate release occurred at the Site as a result of human error associated with operation of a condensate tank drain valve. The incident resulted in overfilling of a buried produced water sump (sump) and associated secondary containment. Upon discovery of the release, the DCP operator closed the valve and initiated clean-up activities. During initial remediation activities on November 3, 2015, impacted soils within the secondary containment area, with approximate dimensions of 25-feet by 25-feet, were removed to 4-feet below ground surface (bgs). A small amount of impacted soils were also identified immediately outside of the secondary containment but were observed to extend less than 6-inches bgs. On December 2, 2015, three confirmation soil samples (Greeley G.P. #1, #2, #3) were collected from the base of excavation and submitted to Origins Laboratory, Inc. (Origins) in Denver, Colorado for benzene, toluene, ethylbenzene, total xylenes (BTEX) analysis using United States Environmental Protection Agency (USEPA) method 8260C. All three soil samples were returned with analytical results below the COGCC Table 910-1 standards (COGCC standards) for soil. Following review of the release incident, DCP Operations determined that the existing sump did not meet updated standard safety equipment requirements necessary to prevent a similar event from re-occurring, therefore new equipment design and procurement activities were initiated to replace the sump and secondary containment structure. During sump removal activities performed during August 2017, the integrity of the old sump was observed to be compromised and leaking. Therefore, DCP planned additional soil investigation and delineation activities to be conducted at the Site subsequent to installation and testing of the new sump and ancillary equipment. A summary of recent soil and groundwater investigation activities in provided below and further detailed in the attached Form 27 Summary Letter.

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):

On November 29, 2018, four soil borings were advanced to approximate depths of 16-feet bgs at the locations illustrated on Figure 2 using a combination of hydro-excavation (hydrovac), hand auguring, and direct push drilling methods. Recovered soils were field screened with a handheld PID and standard headspace soil sampling techniques. Laboratory soil samples were collected from each soil boring at representative depths within the vadose zone slightly above the presumed groundwater interface and at locations with elevated PID detections. Soil samples were analyzed for BTEX and TPH-GRO by USEPA Method 8260C, and TPH-DRO by USEPA method 8015C. The laboratory analytical data are summarized in Table 1, illustrated on Figure 2, and the laboratory analytical report is provided in Appendix A of the attached Form 27 Summary Report (Report). As described in the Report, DCP proposes advancing two additional soil borings and monitoring wells at locations illustrated on Figure 5.

Proposed Groundwater Sampling

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

During the November 29, 2018 Site investigation, groundwater monitoring wells were installed at the four soil boring locations illustrated on Figure 2 to delineate groundwater conditions and hydraulic characteristics. Groundwater samples were collected from these four locations on December 9, 2018 and February 1, 2019 and submitted for laboratory analysis of BTEX by USEPA method 8260C. The attached Figures 3 and 4 illustrate the hydraulic gradient observed at the Site. Table 3 summarizes BTEX concentrations in groundwater and the analytical reports are included in Appendix C. Analytical results are also displayed on Figure 5. Based on the groundwater monitoring activities described in the attached Form 27 Summary Letter, additional investigation and delineation activities at the Site are required. Two additional downgradient groundwater monitoring wells are proposed to be installed at the locations illustrated on Figure 5 and will be sampled for BTEX by USEPA 8260C.

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 8
Number of soil samples exceeding 910-1 1
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 625

NA / ND

-- Highest concentration of TPH (mg/kg) 4705
NA Highest concentration of SAR
BTEX > 910-1 Yes
Vertical Extent > 910-1 (in feet) 2

Groundwater

Number of groundwater samples collected 8
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 10`
Number of groundwater monitoring wells installed 4
Number of groundwater samples exceeding 910-1 7

-- Highest concentration of Benzene (µg/l) 6290
-- Highest concentration of Toluene (µg/l) 1050
-- Highest concentration of Ethylbenzene (µg/l) 648
-- Highest concentration of Xylene (µg/l) 4800
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?

Based on the groundwater monitoring activities described in the attached Form 27 Summary Letter, additional investigation and delineation activities at the Site are required. Two additional downgradient groundwater monitoring wells are proposed to be installed at the locations illustrated on Figure 5 to further delineate groundwater impacts.

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

As referenced in the attached Form 27 Summary Letter, during August 2017 the old produced water sump (sump) and secondary containment was removed, at which time the integrity of the sump was observed to be compromised and leaking. Subsequent to removing the old sump, a new secondary containment was constructed, and a new buried sump was installed. By removing the old sump, the original source of contamination was removed, however residual impacts to soil and groundwater remain in place and require further field investigations to fully delineate the extent of soil and groundwater impacts at the Site.

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.

Based on the groundwater monitoring activities described in the attached Form 27 Summary Letter, additional investigation and delineation activities at the Site are required. Two additional downgradient groundwater monitoring wells are proposed to be installed at the locations illustrated on the attached Figure 5. Proposed monitoring well locations are positioned to be hydraulically down-gradient from the previously installed source area wells and positioned just beyond the facilities fenced boundary. Subsequent to groundwater monitoring well installation, standard groundwater sampling activities will be conducted. Groundwater samples will be submitted for laboratory analysis of BTEX using USEPA Method 8260C. The groundwater monitoring results of the proposed well locations will be issued to the COGCC via a Form 27 submittal.

Soil Remediation Summary

In Situ

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

Ex Situ

Yes _____ Excavate and offsite disposal
If Yes: Estimated Volume (Cubic Yards) _____ 30
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 _____ Ongoing Monitoring. 2 additional monitoring wells are proposed to be installed and sampled.

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.

Based on the groundwater monitoring activities described in the attached Form 27 Summary Letter, additional investigation and delineation activities at the Site are required. Two additional downgradient groundwater monitoring wells are proposed to be installed at the locations illustrated on Figure 5. Groundwater samples will be submitted for laboratory analysis of BTEX using USEPA Method 8260C. The groundwater monitoring results of the proposed well locations will be issued to the COGCC via a Form 27 submittal.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other To be determined

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? 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: _____

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

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

Signed: Brian Humphrey for DCP

Title: Project Manager

Submit Date: 02/22/2019

Email: bhumphrey@tasman-geo.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: 02/27/2019

Remediation Project Number: 12644

COA Type**Description**

	<p>The following conditions of approval apply to this remediation:</p> <ul style="list-style-type: none"> •Operator shall submit a Supplemental Form 27 within 10 days of the approval of this plan proposing the location of additional monitoring wells to comply with Rules 909.b and 910. The two proposed monitoring wells in Figure 5 are insufficient to properly characterize this release. •Operator shall establish horizontal and vertical extent of both groundwater and soil impacts in accordance with 909.b within 45 days of the approval of this Form 27. •All monitoring wells shall be surveyed and gauged to determine the depth to product (if present) and static water level. Groundwater gradient and flow direction must be included with all characterization and monitoring reports. •Operator shall investigate area that was backfilled, adjacent to BH04, to determine the extent of impacts caused by utilizing impacted soil as fill. Operator shall treat all impacted material in accordance with 907.e. •Soil samples collected during initial spill response were sampled for BTEX only. Operator shall collect samples from the same locations and sample for BTEX and TPH in accordance with 910.b. •Per Rule 910.b(3).B: Samples shall be collected from areas most likely to have been impacted and the horizontal and vertical extent of contamination shall be determined. This includes characterizing soil impacts within the saturated interval and capillary fringe. •Soil samples shall be collected from the bottom of each bore hole to establish vertical extent of soil impacts. •On the next Supplemental Form 27 Operator shall update the purpose information to include remediation of impacted ground water per rule 909.c.(5).
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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
401940170	FORM 27-INITIAL-SUBMITTED
401948795	RECLAMATION PLAN

Total Attach: 2 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)