

State of Colorado Oil and Gas Conservation Commission

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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: DCP OPERATING COMPANY LP	Operator No: 4680	Phone Numbers
Address: 370 17TH STREET - SUITE 2500		Phone: (970) 3786373
City: DENVER State: CO Zip: 80202		Mobile: (970) 9390329
Contact Person: Chandler Cole	Email: cecole@dcpmidstream.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 14902

Initial Form 27 Document #: 402283396

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 checked="" type="checkbox"/> Other Site investigation and progress summary |

SITE INFORMATION

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

Facility Type: SPILL OR RELEASE	Facility ID: 469067	API #:	County Name: WELD
Facility Name: O'Connor CND Pump Release	Latitude: 40.353450	Longitude: -104.586763	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NESE	Sec: 31	Twp: 5N	Range: 64W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications GW

Most Sensitive Adjacent Land Use farming crop land

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

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
Yes	SOILS	17' x 17'	soil 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.

Initial actions and completed remedial measures have been previously submitted to the COGCC in various forms including the Form 19I (#402231261), Form 19S (#402238395, Form 19S (#402288114), Form 27I (#402283396) and Form 27S (#402324804 and #402353521). COGCC previously issued Spill Tracking Facility ID #469067 and Remediation Project #14902 for the Site. On November 6, 2019 DCP Operations initially removed standing liquid condensate and impacted soils, and on December 11, 12 and 20th, 2019 additional impacted soils were removed. Between February 5 and March 19, 2020, additional site investigation activities were conducted by advancing multiple soils borings to further delineate impacted soils at the site. Boring locations are illustrated on Figure 2. The February investigation indicated 2 locations that exhibited soils with benzene concentrations above COGCC standards, therefore additional soil investigation and soil removal activities were conducted in March and additional impacted soils were identified in the area to the west of the condensate tank. The extent of impacted soils was successfully delineated, however, due to the conflicts with densely constructed gas plant piping and instrumentation as well as critical concrete support structures in the area west of the condensate tank, further excavation of impacted soils was postponed to evaluate best practice options and obtain COGCC approval for a future remediation plan.

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):

The February remedial investigation indicated that impacted soils remained, and additional soil removal and delineation activities were conducted in March 2020, which delineated the horizontal extent of the soil impacts and the results were presented to COGCC in F27S (#402353521). Due to the conflicts with densely constructed gas plant piping, infrastructure around the condensate tank, further excavation of impacted soils was suspended to evaluate best options and discuss a future remediation plan with the COGCC. An additional investigation was completed on June 18, 2020 to determine the vertical extent of soil impacts at BH06. The results and remedial alternative were presented in within the approved F27S report (#402431078). DCP completed the approved remedial activities and plans to collect soil samples following an activation period of at least 60-90 days and the confirmation soil results will be presented to COGCC in a subsequent F27S report.

Proposed Groundwater Sampling

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

Groundwater has not been encountered during the subsurface investigation activities completed in March or June 2020 at the site. At BH06A, a low-moisture, stiff clay was encountered at 11-feet bgs, beyond which point, soils immediately transitioned to a more competent material incapable of sample collection with hand augers, indicating a likely confining layer to the downward migration of soil impacts. Additionally, as detailed in the Groundwater Monitoring section in the approved F27S (#402353521) and discussed with COGCC during an April 2020 meeting, based on review of regional groundwater level records from groundwater level measuring points and from area permitted water wells within 1-mile of the site, groundwater at the Site is anticipated to be more than 25-feet below the extent of observed soil impacts at the site, therefore groundwater monitoring is not recommended at this time.

Proposed Surface Water Sampling

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

Surface water has not been impacted.

Additional Investigative Actions

☐ Additional alternative investigative actions described in attached Site Investigation Plan (summary):

Analytical results from the soil investigations successfully delineated the horizontal extent of impacts at the site, however, some impacted soils that were identified within the area of the condensate tank as remained in place as presented in the approved F27S (#402353521). Soil impacts were identified around 5 locations (BH01, BH06, BH06A, BH11 and BH18B) and a stiff 'hard-pan' low-moisture clay was identified around 11 feet bgs. Further delineation was completed on June 18, 2020 and two soil samples were collected from BH06B (adjacent to BH06) at 6 and 7 feet bgs to determine vertical impacts and the results are presented in Table 1. Due to the conflicts with densely constructed gas plant piping, instrumentation, and critical concrete support structures on the west end of the condensate tank, further excavation of impacted soils were not completed, and remedial alternatives were implemented as described above with COGCC approval.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 0

Number of soil samples exceeding 910-1 0

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

Approximate areal extent (square feet) 435

NA / ND

NA Highest concentration of TPH (mg/kg)

NA Highest concentration of SAR

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 7

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 910-1

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 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? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

As described in the previous Form 19 and Form 27 submittals, source remediation efforts were conducted November 6, 2019, where DCP Operations initially removed standing liquid condensate and impacted soils, and on December 11, 12 and 20th, 2019 additional impacted soils were removed. On February 5 and 18, March 17 and 18, and again on June 18, 2020, additional site investigation activities were conducted to further delineate and remove impacted soils at the site. Based on investigation results, most of the release occurred around the major western concrete support column (support column) of the Condensate Storage Tank. The extent of impacts has been delineated in all directions extending out from the support column. Areas south and east of the support column have been effectively remediated via hydrovac excavation methods to depths ranging from 1 to 3-feet bgs, to within COGCC soil standards. Areas of identified soil impacts north and west of the support column have been delineated, however, due to the conflicts with densely constructed gas plant piping and instrumentation, critical concrete support structures in the area west of the support column, further excavation of impacted soils was suspended to evaluate remedial alternatives. With COGCC approval, DCP completed in-situ chemical oxidation (ISCO) gravity feed injections via 'potholes' to treat any remaining impacted soils around the condensate tank. Each injection point was subsequently backfilled and compacted with a native material mixture of sands and gravels. The locations of the injection points are illustrated on Figure 2 and a summary of the amounts of oxidant is provided on Table 1. Following the initial injections and reaction period, confirmation soil samples will be collected, and the results will be provided in a subsequent Form 27 Supplemental report.

REMEDICATION 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.

As described in the previous Form 19 and Form 27 submittals, source remediation efforts were conducted November 6, 2019, where DCP Operations initially removed standing liquid condensate and impacted soils, and on December 11, 12 and 20th, 2019 additional impacted soils were removed. On February 5 and 18, 2020, March 17 and 18, and June 18, 2020, additional site investigation activities were conducted to further delineate and remove impacted soils at the site. To date, approximately 25 cubic yards of impacted soils have been removed from the release location. Based on investigation results, the majority of the release occurred around the major western concrete support column (support column) of the Condensate Storage Tank. The extent of impacts has been delineated in all directions extending out from the support column. Areas south and east of the support column have been effectively remediated via hydrovac excavation methods to depths ranging from 1 to 3-feet bgs, to within COGCC soil standards. Areas of identified soils impacts north and west of the support column have been delineated, however due to the conflicts with densely constructed gas plant piping and instrumentation, critical concrete support structures in the area west of the support column, and restrictive gas plant protocols for the use of heavy excavation equipment, further excavation of impacted soils has not been completed. As a remedial alternative to excavation, DCP proposed to use ISCO to treat the remaining impacts and complete confirmation soil sampling following remediation activities to ensure impacts have been mitigated. On September 28-29, 2020, approximately 275 gallons of 18% Hydrogen Peroxide was introduced to 22 temporary injection points (Figure 2) and were backfilled with a mixture of sand and native material. A summary of the injection amounts is presented on Table 1. DCP intends to present the remedial progress and results to COGCC in subsequent Form 27S reports.

Soil Remediation Summary

☒ In Situ

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

☒ Ex Situ

Yes _____ Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) _____ 25
_____ 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

No _____ Bioremediation (or enhanced bioremediation)
No _____ Chemical oxidation
No _____ Air sparge / Soil vapor extraction
No _____ Natural Attenuation
No _____ 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 has not been encountered during any of the subsurface investigation activities completed at the site. As described in F27S (#402353521), shallow moisture observed within the sample borings was assumed to be associated with precipitation events and at BH06A, a low-moisture, stiff clay material was encountered at 11-feet bgs, and beyond 11-feet bgs soils immediately transitioned to a more competent material incapable of advancement or sampling with hand-auger methods, indicating a potential confining layer to the downward migration of soil impacts. Based on review of regional groundwater level records from groundwater level measuring points and from area permitted water wells within 1-mile of the site, it is anticipated that groundwater at the site is likely greater than 40-feet bgs, further supporting that current soil impacts at the site are not in proximity to area groundwater. Based on the above evaluation, groundwater at the Site is anticipated to be greater than 25-feet below the extent of observed soil impacts at the site, therefore groundwater monitoring is not recommended at this time.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other Soil Investigation and Remediation Summary

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

☒ Other Soil impact remedial activities summary and investigation update

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Soils were transported for off-site disposal

Volume of E&P Waste (solid) in cubic yards 25

E&P waste (solid) description TPH impacted soils

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Pawnee Waste Facility: USR15-0048

Volume of E&P Waste (liquid) in barrels 0

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? 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? _____

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.

Spill location is an active gas processing plant. Grading will be returned to that prior to excavation and remediation activities and gravel will be added as required.

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. 11/04/2019

Actual Spill or Release date, if known. 11/04/2019

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/06/2019

Date of commencement of Site Investigation. _____

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 11/06/2019

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

DCP acknowledges that soil impacts were temporarily left in place in isolated area due to conflicts with various gas plant process components within the affected area and to review remedial alternatives other than excavation. Based on the soil investigation results, discussions with the gas plant engineers and approval from COGCC, DCP implemented ISCO as the remedial alternative to treat the remaining impacts to subsurface soils on September 28 and 29, 2020. DCP proposes to allow a 60-90-day activation period until confirmation soil samples can be collected from the treated areas to determine the effectiveness of the ISCO amendment and whether additional remediation is needed. Based on the soil confirmation results, DCP will propose additional confirmation sampling or remedial activities and if the soil confirmation results are below the COGCC standards a no further action determination will be requested for approval from COGCC. DCP will continue to present updates and investigative results to the COGCC in subsequent Form 27S reports until closure.

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

Signed: Chandler Cole

Title: Compliance Coordinator

Submit Date: _____

Email: COGCCnotification@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: _____

Date: _____

Remediation Project Number: 14902

COA Type

Description

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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

402505502	REMEDATION PROGRESS REPORT
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Total Attach: 1 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)