

State of Colorado
Oil and Gas Conservation Commission

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



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Kari Oakman

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 Phone: (303) 605-1718 Mobile: (303) 619-3042
Address: 370 17TH STREET - SUITE 2500		
City: DENVER	State: CO	Zip: 80202
Contact Person: Steve Weathers	Email: swweathers@dcpmidstream.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION
Remediation Project #: 13272 Initial Form 27 Document #: 402004215

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: SPILL OR RELEASE	Facility ID: 463819	API #: _____	County Name: WELD
Facility Name: CR42 and CR13	Latitude: 40.292285	Longitude: -104.941832	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESE	Sec: 24	Twp: 4N	Range: 68W
Meridian: 6	Sensitive Area? Yes		

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Private residence located at 20008 Colorado Blvd (CR13), Johnstown, CO

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

Livestock approximately 260 feet east. Agricultural land adjacent to the west and south of the leak location.

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	GROUNDWATER	85000 sq ft	Hydrocarbon condensate material observed at ~12' bgs - 3 MW's & 1 piezometer (destroyed)
Yes	SOILS	94000 sq ft	Laboratory analysis

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 were submitted to the COGCC in the Form 19 Initial (#401997249) dated April 6, 2019 and Form 19 Supplemental (#402004043 and #4020498919) approved on April 26 and May 29, 2019, respectively. The Initial Form 27 Site Investigation and Remediation Work Plan (#402004215) approved April 18, 2019 and COGCC issued Spill and tracking facility ID# 463819 and remediation project #13272 for the Site. A Form 27S (#402051228) approved on June 13, 2019 described the soil vapor intrusion and ambient air investigation. A Form 27S (#402033546) Interim Summary Report and Workplan was approved on July 24, 2019, detailed the Site Investigation and delineation activities from previous remediation efforts completed between April 4 and May 28, 2019 including excavation of impacted soils and installation of 15 monitoring wells. A Form 27S (#402125018) Interim Summary Report was also approved on October 2, 2019, that detailed the Site Investigation and delineation activities from remediation efforts completed between June and September 2019 including the installation of and sample collection from 17 additional soil borings with subsequent monitor well completions (Figure 2). Based on collected samples, the extent of hydrocarbon impacts in soil have been delineated laterally and vertically with the exception for soil borings near the release point and/or at locations that encountered refusal. A defined saturated zone within the subsurface was not observed within the recovered soil cores during drilling activities, however, intermittent layers of moist soil were noted and monitoring wells were constructed. Details of the first quarter 2020 groundwater monitoring activities performed on February 5 and 6, 2020 are provided herein. Groundwater elevation and analytical data are summarized on Tables 1 and 2 respectively, and laboratory reports are provided as an attachment.

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):

Soil samples will be submitted for laboratory analysis of BTEX and TPH-GRO/DRO by USEPA Methods 8260B and 8015, respectively. In accordance with guidelines set forth in the executed license agreements between DCP and the private landowners at the Site, the soil clean-up standards shall be the COGCC Table 910-1 Standards with the added exception relating to TPH and benzene, which will be one order of magnitude more stringent than the Table 910-1 Standards; specifically, TPH will be no greater than 50 mg/kg and benzene will be no greater than 0.017 mg/kg. During excavation and well install activities, soil samples will be collected from the borings and the excavation extents (sidewall and base). Ongoing monitoring and remediation activities are summarized further in this document.

Proposed Groundwater Sampling

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

On 02/05/20 and 02/06/20, a site wide groundwater monitoring event was performed at 32 monitoring well locations. Where applicable, groundwater samples were submitted for analysis of BTEX by Method 8260B. Based on the analytical data collected, the extent of groundwater impacts downgradient and on the east side of CR13 have not been fully delineated. Groundwater impacts on the west side of CR13 have been delineated and the majority of monitoring wells continued to be below COGCC standards during the 1Q20 event except for 3 wells that remained above the standards during the first quarter 2020 event. Clean overburden soil removal northwest of the intersection of County Roads 13 and 42 was initiated in February 2020. Due to the large area of anticipated soil removal and to facilitate excavation activities safely, all monitoring wells in that area were abandoned and removed. Subsequent to excavation remediation activities, monitoring wells will be replaced per COGCC approval.

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):

Downgradient point of compliance (POC) monitor wells on the east side of CR13 are required. Monitoring wells will be installed using hollow stem augur with continuous core sampling methods. Soil samples will be collected from the soil cores at the location with the highest PID reading and that the groundwater interface (if observed) and submitted for laboratory analysis of BTEX and TPH-GRO/DRO. Additionally, while the extent of soil impacts appears to have been delineated through drilling, soil bore installation and sampling, confirmation soil samples will be collected from excavation extents to confirm that lateral extents of petroleum hydrocarbon impacts have been delineated and remediated.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected <u>0</u>	-- Highest concentration of TPH (mg/kg) <u>2628</u>
Number of soil samples exceeding 910-1 <u>0</u>	NA Highest concentration of SAR <u> </u>
Was the areal and vertical extent of soil contamination delineated? <u>No</u>	BTEX > 910-1 <u>Yes</u>
Approximate areal extent (square feet) <u>22000</u>	Vertical Extent > 910-1 (in feet) <u>18</u>
Groundwater	
Number of groundwater samples collected <u>24</u>	-- Highest concentration of Benzene (µg/l) <u>6120</u>
Was extent of groundwater contaminated delineated? <u>Yes</u>	-- Highest concentration of Toluene (µg/l) <u>1100</u>
Depth to groundwater (below ground surface, in feet) <u>13'</u>	-- Highest concentration of Ethylbenzene (µg/l) <u>21.7</u>
Number of groundwater monitoring wells installed <u>32</u>	-- Highest concentration of Xylene (µg/l) <u>934</u>
Number of groundwater samples exceeding 910-1 <u>8</u>	NA Highest concentration of Methane (mg/l) <u> </u>
Surface Water	
<u>0</u> Number of surface water samples collected	
<u>0</u> 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?

Impacted soils were delineated to approximately 165 feet east, 130 feet west, 50 feet south, and 350 feet north of the DCP pipeline release locations and an average depth of 8 to 14 feet below ground surface. Based on data collected during previous groundwater monitoring events, impacts to groundwater were delineated north, east, and west of the release location. However, based on the recent analytical data, groundwater impacts have migrated north beyond the former POC wells located on the east side of CR13. LNAPL was observed within five groundwater monitoring wells (MW01, MW02, MW14, MW17, and MW24) with thicknesses between 2.20 feet at MW24 and 0.30 feet at MW02 during the first quarter groundwater monitoring event. Additional details are presented in the attachments with this Form 27. Remedial activities at the Site started in February 2020 and periodic progress reports will be presented to COGCC for review.

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) 910 Volume of liquid waste (barrels) 0

Is further site investigation required?

Additional groundwater monitoring well installation and sampling. Two additional proposed monitoring well locations are presented within Figure 5 of the attachments to this document. Site investigation activities conducted through February 2020 are presented within this Form 27S. Based on the first quarter 2020 groundwater data and the migration of dissolved phase and separate phase material to the north of former POC wells, as an emergency action mitigation two interim dewatering trenches with recovery sumps were installed to approximately 23 feet below ground surface and in an east to west and north to south orientation located to the northwest of the private residential structure and east of CR13 (Figure 5). By routinely pumping groundwater from these recovery trenches, groundwater mobility is expected to decrease and mitigate further migration of potential hydrocarbon impacts to the north. Table 4 presents the total gallons of groundwater removed from the trenches to date. Dewatering trenches may be used in other areas of the Site as additional measures if groundwater levels rise during ongoing remedial and excavation activities at the Site.

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.

Per the approved license agreements between DCP and the private landowners at the Site, the preferred remedial method for impacted soil will consist of excavation "dig and haul" methods with subsequent off-Site disposal at an approved landfill and backfilling and compaction with clean fill material. Based on previously reported investigation activities, clean overburden soil has been observed throughout the Site between the surface and a minimum of 8-foot bgs. Prior to accessing impacted soil for dig and haul remediation, the overburden soil will be removed and staged on-Site to be used as backfill material once impacted soil excavation and removal is complete. Clean overburden soil removal to the northwest of the CR42/13 intersection was initiated in February 2020. During installation of the dewatering trenches to the east of CR 13 and adjacent to the residential structure, approximately 400 cubic yards of soil was transported to the North Weld County Landfill in Ault, CO for disposal. Currently, DCP does not have access approval to remediate soil and groundwater beneath CR42 and CR13 from the Weld County Public Works Right-of-Way division. While negotiations are ongoing, DCP anticipates that the preferred remedial alternative for soil impacts will be dig and haul methods with subsequent disposal. Additionally, DCP is evaluating alternatives to prevent contaminate migration into excavated areas from native material that has not been excavated using multiple methods including clay barrier wall installation and dewatering infrastructure, for example. Additional details regarding contaminant migration prevention, chosen remediation alternatives for the adjacent Rights-of-Way and private land, and groundwater treatment will be provided to the COGCC in Supplemental Form 27 documents.

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 above, the preferred remediation alternative for subsurface soil is excavation and disposal. Site preparation activities were initiated on January 6, 2020. Excavation activities to the northwest of CR42 and CR13 began in February 2020 and are anticipated to begin on the east side of CR13 in March 2020. Currently, DCP does not have access approval to remediate soil and groundwater beneath CR42 and CR13 from the Weld County Public Works Right-of-Way division. For more information, see the approved Form 27 and Remediation Workplan Letter dated January 31, 2020. Additional details regarding contaminant migration prevention, chosen remediation alternatives for the adjacent Rights-of-Way and private land, groundwater treatment and progress reports will be provided to the COGCC in Supplemental Form 27 documents. Based on the first quarter 2020 groundwater data from the northern POC wells on east side of CR13, as an emergency action mitigation, two interim dewatering trenches with collection sumps were installed adjacent to the residential structure, east of CR13 (Figure 5) to decrease groundwater mobility and further potential impact migration to the north. Table 4 presents the total gallons of groundwater removed since dewatering started.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)	Yes	Excavate and offsite disposal
_____ Chemical oxidation	_____	If Yes: Estimated Volume (Cubic Yards) _____ 910
_____ Air sparge / Soil vapor extraction	_____	Name of Licensed Disposal Facility or COGCC Facility ID # _____
_____ Natural Attenuation	_____	Excavate and onsite remediation
_____ Other _____	_____	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

Yes _____ Other _____ Removal and disposal _____

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.

A total of 32 monitoring wells have been installed at the Site (Figure 2). Groundwater gauging and monitoring activities were conducted on February 5 and 6 at all 32 monitoring well locations (MW01 – MW32). Groundwater levels were measured to evaluate hydraulic characteristics and seasonal fluctuations at the Site. Groundwater samples were collected using hand-bailing sampling methods and submitted to Origins Laboratory Inc. for analysis using USEPA Method 8260B. Analytical results indicated BTEX concentrations were reported below applicable COGCC Table 910-1 standards and/or laboratory detection limits at 16 of 32 well locations. Three locations were dry or had insufficient volume for sample collection, five locations had LNAPL and eight locations had benzene concentrations that exceeded the Table 910-1 standard of 5 µg/L during the recent monitoring event. Groundwater elevations are presented in Table 1 and Figure 3, laboratory data is summarized in Table 2 and 3, and presented on Figure 4. First Quarter 2020 laboratory reports are included in Appendix A. While previous groundwater results indicated the dissolved phase hydrocarbon plume was delineated, the 1Q20 groundwater lab results indicate the lateral extent of impacted groundwater is not fully defined on the east side of CR13. Based on this data, additional wells are required north beyond the former POC wells located on the east side of CR13. As described above, 12 monitoring wells to the northwest of CR42/13 were removed in February 2020 to facilitate excavation activities. Subsequent to excavation and backfilling, groundwater monitoring wells will be installed accordingly and with COGCC approval.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other Reporting requirements will be determined following completion of Site investigation

Report Type: Groundwater Monitoring Land Treatment Progress Report O&M Report Other Form 27 Remediation Workplan and 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:

Impacted soils have been disposed of at the Waste Management North Weld County Landfill. Approximately 337 barrels of groundwater has been recovered via the recovery trenches discussed herein.

Volume of E&P Waste (solid) in cubic yards 910

E&P waste (solid) description Petroleum hydrocarbon impacted soils

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Waste Managment North Weld County Landfill

Volume of E&P Waste (liquid) in barrels 337

E&P waste (liquid) description Petroleum hydrocarbon impacted groundwater

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Pawnee Waste

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? _____

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.

Investigation and delineation of impacted soils and groundwater are on-going at the Site. Subsequent to implementation of an approved Site remediation work plan, a reclamation plan will be issued to the COGCC.

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. 04/02/2019

Actual Spill or Release date, if known. 04/02/2019

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/02/2019

Date of commencement of Site Investigation. 04/04/2019

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 04/04/2019

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: Steve Weathers

Title: Environmental Specialist

Submit Date: 03/18/2020

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: Kari Oakman

Date: 03/20/2020

Remediation Project Number: 13272

COA Type

Description

	In addition to the proposed monitoring wells on the east side of CR13, additional wells are required to define the horizontal extent of impacts to groundwater to the south and west of MW03, MW07, and MW26. More than one well may be required to obtain point of compliance.
	Operator shall field log soil borings during monitoring well installation and provide boring logs/well construction diagrams for any new monitoring well installation.

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

402325959	FORM 27-SUPPLEMENTAL-SUBMITTED
402346564	REMEDATION PROGRESS REPORT

Total Attach: 2 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)