

State of Colorado Oil and Gas Conservation Commission

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FOR OGCC USE ONLY

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

OGCC Employee:

Spill Complaint Inspection NOAV

Tracking No:

Produced Water Vault Closure

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe): Produced Water Vault Closure

GENERAL INFORMATION

OGCC Operator Number: 69175 Name of Operator: PDC Energy, Inc. Address: 1775 Sherman Street, Suite 3000 City: Denver State: CO Zip: 80203 Contact Name and Telephone Name: Zack Lisenfeld No: (970) 506-9273 Fax: (970) 373-6581

API/Facility No: Facility Name: Succo GU 4, 43-20 Well Name: Succo GU 4, 43-20 Location (QtrQtr, Sec, Twp, Rng, Meridian): NWSE S20 T2N R66W County: Weld Facility Number: 327274 Well Number: Succo GU 4, 43-20 Latitude: 40.120918 Longitude: -104.7977

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Oil / Produced Water Site Conditions: Is location within a sensitive area (according to Rule 901e)? [X] Y [] N If yes, attach evaluation. ** Please see 'Potential Receptors' section below. Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Rangeland Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Shingle loam, 3 to 9 percent slopes Potential receptors (water wells within 1/4 mi, surface waters, etc): A residential building is located 630' northwest and surface water is located 105' east of the facility. The nearest water well is located 245' northwest and 11 water wells are located in a 1/4-mile radius.

Description of Impact (if previously provided, refer to that form or document): Impacted Media (check): [X] Soils [] Vegetation [] Groundwater [] Surface water Extent of Impact: Refer to the attached Figure 2 and Table 1 How Determined: Excavation and soil sampling

REMEDIALTION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document): On July 6, 2015, a historic release was discovered during dump line replacement and produced water tank removal activities. An Initial Form 19 was submitted to the COGCC on July 8, 2015 (Doc# 400864427). A topographic map of the site is included on Figure 1.

Describe how source is to be removed: Approximately 2,530 cubic yards of impacted material were removed and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal under PDC waste manifests. Soil encountered in the excavation area was field screened for (VOC) concentrations using a photoionization detector (PID). Soil samples were collected from the sidewalls and base of the excavation area at depths ranging between 6 feet and 11 feet below ground surface (bgs). Soil samples were submitted to Summit Scientific Laboratories in Golden, Colorado for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, and total petroleum hydrocarbons (TPH) - gasoline range organics (GRO) by USEPA Method 8260B, and TPH - diesel range organics (DRO) by USEPA Method 8015. The soil sample (SS01) collected from the base of the final excavation extent below the former produced water vessel was also submitted for analysis of pH, electrical conductivity (EC), and sodium adsorption ratio (SAR). Analytical results indicated soil samples collected from the final extent of the excavation area exhibited constituent concentrations below COGCC Table 910-1 soil standards. Soil analytical data is summarized in Table 1 and the laboratory analytical reports are included as Attachment A.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.: Soil analytical results received on July 20, 2015, indicated hydrocarbon impacts above regulatory standards were successfully removed by excavation activities. The produced water tank will not be replaced. Consequently, PDC is requesting a produced water vessel closure for this location and a No Further Action (NFA) for this release.



REMEDIATION WORKPLAN (CONT.)

OGCC Employee: _____

Tracking Number: _____
Name of Operator: PDC Energy, Inc.
OGCC Operator No: 69175
Received Date: _____
Well Name & No: Succo 4, 43-20
Facility Name & No.: Succo 4, 43-20

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):
Groundwater was not encountered during excavation activities.

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. Use additional sheet for description if required.
The excavation was backfilled and compacted with clean material and the ground surface was re-contoured to match pre-existing conditions.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.
Is further site investigation required? [] Y [X] N If yes, describe:
Based on the soil laboratory analytical results, PDC feels that no further site investigation activities are required. The excavation extent and soil sample locations are illustrated on Figure 2. Soil analytical results are summarized in Table 1 and the laboratory analytical reports are included as Attachment A.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):
Waste was disposed of at the Buffalo Ridge Landfill in Keenesburg, Colorado under PDC waste manifests.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 7/6/2015 Date Site Investigation Completed: 7/20/2015 Remediation Plan Submitted: _____
Remediation Start Date: N/A Anticipated Completion Date: N/A Actual Completion Date: N/A

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

Print Name: Zack Liesenfeld

Signed: _____ Title: EHS Professional Date: _____

OGCC Approved: _____ Title: _____ Date: _____