

State of Colorado
Oil and Gas Conservation Commission

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



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:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe):

GENERAL INFORMATION

OGCC Operator Number: 69175		Contact Name and Telephone	
Name of Operator: Petroleum Development Corporation		Name: Randall Ferguson	
Address: 1775 Sherman Street, Suite 3000		No: (303) 860-5800	
City: Denver State: CO Zip: 80203		Fax: (303) 860-5838	
API/Facility No: 05-123-20391		County: Weld	
Facility Name: Millage 13-3D		Facility Number:	
Well Name: Millage		Well Number: 13-3D	
Location (QtrQtr, Sec, Twp, Rng, Meridian): NWSW Sec 3 T5N R64W 6th Principal Meridian		Latitude: Longitude:	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Condensate	
Site Conditions: Is location within a sensitive area (according to Rule 901e)? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, attach evaluation. Groundwater < 20 feet bgs.	
Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Irrigated cropland	
Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Aquolls and Aquepts, flooded	
Potential receptors (water wells within 1/4 mi, surface waters, etc.): Surface water is located 250' south of the site; a building is located 1.837' northeast of the site; a water well is located 586' south of the site; and depth to groundwater is 5' below ground surface (bgs).	
Description of Impact (if previously provided, refer to that form or document):	
Impacted Media (check):	Extent of Impact:
<input checked="" type="checkbox"/> Soils	85' E-W x 30' N-S x 5' bgs
<input type="checkbox"/> Vegetation	
<input checked="" type="checkbox"/> Groundwater	See attached data
<input type="checkbox"/> Surface water	
How Determined:	
Laboratory analysis and field screening of soil samples	
Laboratory analysis of groundwater samples	

REMEDIALATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document): Form 19 was submitted on 6/8/2009 (Spill #1943787). Form 27 was submitted on 8/18/2009 (Remediation #4510).
Describe how source is to be removed: During a routine tank battery upgrade, a leak in the dump lines from the separator was observed to have released an unknown volume of condensate to the subsurface. Once the dump line was removed, impacted soil was excavated. Soil samples were collected from the sidewalls of the excavation and were submitted for analysis of BTEX and GRO by EPA Method 8260B, and DRO by EPA Modified Method 8015. Laboratory results indicate BTEX, GRO, and DRO concentrations along the excavation perimeter are in compliance with COGCC Table 910-1 Concentration Levels. A groundwater sample was collected from the excavation and was analyzed for BTEX by EPA Method 8260B. Laboratory results indicate the benzene concentration exceeds the CDPHE Water Quality Control Commission Regulation 41 (Reg. 41) standard. Before backfilling the excavation, activated carbon was applied to the groundwater and exposed smear zone soils. A topographic map and a site map are provided as Figures 1 and 2, respectively. Soil and groundwater analytical results are provided in Tables 1 and 2.
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.: A total of 216 cubic yards of soil exceeding COGCC Table 910-1 Concentration Levels was transported to the Waste Management landfill in Ault, CO for disposal.

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REMEDIATION WORKPLAN (CONT.)

OGCC Employee: _____

Tracking Number: _____
Name of Operator: Petroleum Development Corporation
OGCC Operator No.: 69175
Received Date: _____
Well Name & No.: Millage 13-3D
Facility Name & No.: Millage 13-3D

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Monitoring wells MW01 through MW03 were installed at the site on August 6, 2009. Following installation, each well was developed and purged. Groundwater samples were collected from the wells and submitted for laboratory analysis of BTEX by EPA Method 8260B on August 7, 2009, November 13, 2009, February 19, 2010, and May 18, 2010. Laboratory analytical results indicated non-detectable BTEX levels in all well for four consecutive quarters.

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 site was restored to pre-release grade. PDC's production facility remains at the site.

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 ☒ N If yes, describe:

Laboratory analytical results indicated non-detectable BTEX levels in groundwater for four consecutive quarters. Laboratory analytical results indicate the former groundwater impacts have been remediated. Based on the laboratory analytical results, PDC is requesting a No Further Action determination for this site.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

A total of 216 cubic yards of soil exceeding COGCC Table 910-1 Concentration Levels was transported to the Waste Management landfill in Ault, CO for disposal.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began:	<u>6/1/2009</u>	Date Site Investigation Completed:	<u>5/26/2010</u>	Remediation Plan Submitted:	<u>9/7/2010</u>
Remediation Start Date:	<u>6/4/2009</u>	Anticipated Completion Date:	<u>8/7/2010</u>	Actual Completion Date:	<u>5/26/2010</u>

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

Print Name: Randall FergusonSigned:  Title: Environmental Supervisor Date: 9/7/2010

OGCC Approved: _____ Title: _____ Date: _____