

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

Remed #4489

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.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

GENERAL INFORMATION

OGCC Operator Number: 69175 Name of Operator: Petroleum Development Corporation Address: 1775 Sherman Street, Suite 3000 City: Denver State: CO Zip: 80203		Contact Name and Telephone Name: Randall Ferguson No: 303-860-5800 Fax: 303-860-5838	
API/Facility No: 05-123-20341 Facility Name: Leclerg 31-22 Well Name: Leclerg Location (QtrQtr, Sec, Twp, Rng, Meridian): NWNE Sec 22 T3N R68W 6 PM		County: Weld Facility Number: _____ Well Number: 31-22 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)? ☒ Y ☐ N If yes, attach evaluation. Groundwater < 20 feet bgs.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Irrigated cropland, residential, lake

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Nunn clay loam, 0 to 1 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Surface water is located 246' southwest of the site; a residence is located 900 ft south of the site; depth to ground groundwater is between 2.5 ft and 6.5 ft below ground surface (bgs).

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	23' E-W x 20' N-S x 6' bgs	Field screening and laboratory analysis of soil samples
<input type="checkbox"/> Vegetation	_____	_____
<input checked="" type="checkbox"/> Groundwater	See attached data	Laboratory analysis of groundwater samples
<input type="checkbox"/> Surface water	_____	_____

REMEDIALATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Form 19 submitted on September 25, 2008 (Spill# 1943894). An initial Form 27 submitted on June 12, 2009 (Remediation# 4489).

Describe how source is to be removed:

During routine tank battery upgrade activities, PDC discovered a leak in the dump line from the production tank to the separator. The production tank and earthen berm were removed and impacted soil above the COGCC sensitive area standard was excavated during September 2008. Soil samples were collected from the base and sidewalls of the excavation and submitted for analysis of TPH by EPA Modified Method 8015. Laboratory results indicate TPH concentrations (C6-C36) in samples collected along the excavation perimeter and excavation base were in compliance with the COGCC sensitive area standard of 1,000 mg/kg (Table 910-1 prior to 4/1/09). A groundwater sample was collected from the open excavation and was submitted for analysis of BTEX by EPA Method 8260B. Laboratory results indicate benzene, toluene, and total xylenes concentrations exceeded the CDPHE Water Quality Control Commission Regulation 41 (Reg.41) standards. Before backfilling the excavation, activated carbon was applied to the groundwater and exposed smear zone soils. A topographic site location map and site map are provided as Figures 1 and 2. Soil and groundwater analytical results are summarized in Tables 1 and 2, respectively.

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.:

Approximately 90 cubic yards of impacted soil above the COGCC sensitive area standard (Table 910-1 prior to 4/1/09) were transported to the Waste Management Landfill in Ault, Colorado for disposal.

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Tracking Number: _____
Name of Operator: Petroleum Development Corporation
OGCC Operator No: 69175
Received Date: _____
Well Name & No: Leclerg 31-22
Facility Name & No.: Leclerg 31-22

REMEDIAL WORKPLAN (CONT.)

OGCC Employee: _____

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 on 9/24/08. These wells were later removed as groundwater flow direction was determined to be to the northeast. Three additional monitoring wells (MW04 through MW06) were installed at the site on 3/3/09. Groundwater samples were collected from the wells and submitted for laboratory analysis of BTEX by EPA Method 8260B on 3/4/09. Following the initial sampling event well MW05 was destroyed. A replacement well (MW05R) was installed in the same location as it was a necessary point of compliance. Groundwater samples were collected from well MW05R on 7/24/09, 9/24/09, and 12/8/09. Groundwater samples were collected from wells MW04 and MW06 on 6/18/09, 9/24/09, and 12/8/09. Including the initial 3/4/09 sampling event, analytical results indicated non-detectable BTEX concentrations in the groundwater samples collected from monitoring wells MW04, MW05, MW05R, and MW06 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:

Analytical results indicate BTEX concentrations in the groundwater samples collected from each of the wells have remained in compliance with Reg. 41 standards for four consecutive quarters. Analytical results indicate the former groundwater impacts have been remediated. Based on the laboratory results, PDC is requesting a No Further Action status for the site.

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

Approximately 90 cubic yards of impacted soil that exceeded the COGCC sensitive area standard for TPH (Table 910-1 prior to 4/1/09) were transported to the Waste Management Landfill in Ault, Colorado for disposal.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: <u>9/10/08</u>	Date Site Investigation Completed: <u>12/8/09</u>	Remediation Plan Submitted: <u>4/1/10</u>
Remediation Start Date: <u>9/10/08</u>	Anticipated Completion Date: <u>3/10/10</u>	Actual Completion Date: _____

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

Print Name: Randall Ferguson

Signed: *Randall Ferguson* Title: Environmental Supervisor Date: 4/2/10

OGCC Approved: _____ Title: EPS Date: 4/14/10