

January 27, 2012

Mr. John Axelson
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Ste. 801
Denver, CO 80203-2136

RE: Notice of Alleged Violation #200328171
Spaur Land Application Site – Facility #425114
NE Section 31 – T7N – R63W / Weld County, Colorado

Mr. Axelson:

Many thanks for meeting with the environmental staff of Petroleum Development Corporation (PDC) on January 9, 2012 to discuss the subject Notice of Alleged Violation (NOAV) regarding the Spaur property. As discussed at the meeting, PDC proposes to remediate all impacted soils in-situ. Please refer to the *Response to NOAV #200328171* dated December 29, 2011 for additional information. During January and February 2012, the landowner will spread approximately 25 tons per acre of manure and 25 tons per acre of straw bedding over the entire site. During March 2012, the manure and straw bedding material will be plowed thoroughly into the underlying soils to a depth of 15" to build a suitable seed bed. During April 2012, the entire site will be seeded with wheat, triplicate and millet. A Sampling and Analysis Plan (SAP) will be developed and the site will be re-sampled during May 2012. Please find attached a Form 27 – Site Investigation and Remediation Workplan that reflects the above.

In conclusion, PDC performed the required corrective action in an expeditious manner and provided the Colorado Oil and Gas Conservation Commission (COGCC) with all requested documents. Furthermore, PDC satisfied all the requirements set forth in the NOAV by December 31, 2011. As such, PDC requests that the COGCC resolve the subject NOAV. PDC will strive to complete this in-situ workplan by May 2012 and bring closure to this project.

If there are any additional questions, please call me at (303)831-3904.

Respectfully Submitted,

Randall H. Ferguson
Environmental Compliance Specialist

Attachments

Cc: Dan Amidon – PDC General Counsel
Scott Reasoner – PDC Vice President Western Operations
Adell Heneghan – PDC Director Environmental
Steve Trippett – PDC Asset Director
Hayden Truscott – PDC EHS Manager / Environmental
Jason Miller – PDC District Manager
Roger Freeman – Davis Graham & Stubbs LLP



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FORM
27
Rev 6/99State of Colorado
Oil and Gas Conservation Commission

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

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FOR OGCC USE ONLY
JAN 27 2012
COGCC

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: 1761327

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:

RANDALL FERGUSON

No: 303-860-5800

Fax: 303-831-8575

API Number: County: Weld

Facility Name: Spaur Land Application Site Facility Number: 425114

Well Name: Well Number:

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NE Section 31 - T7N - R63W Latitude: Longitude:

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Water-based bentonitic drilling fluids & associated drill cuttings

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Agricultural and oil/gas production

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Olney fine sandy loam and Vona sandy loam

Potential receptors (water wells within 1/4 mi, surface waters, etc.):

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

Impacted Media (check):

- ☒
- Soils
-
- ☐
- Vegetation
-
- ☐
- Groundwater
-
- ☐
- Surface Water

Extent of Impact:

Confined to drlg mud and cuttings application area

How Determined:

Soil samples

REMEDIALATION WORKPLAN

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

Please refer to the PDC response to NOAV #200328171 dated 12/29/2011. Land application of water-based bentonitic fluids and associated drill cuttings was discontinued upon verbal notification by COGCC of landowner complaint (#200327803) on 11/8/2011.

Describe how source is to be removed:

Lab results of post-application sampling indicated arsenic concentrations that exceeded the baseline sampling results. Additionally, lab results of soil samples collected as a result of the NOAV indicated organic soil standards (Table 910-1) were slightly exceeded in three samples (SS01, SS05 and SS06). On 1/25/2012, LT Environmental collected additional baseline samples for arsenic and re-sampled soil sample locations SS01, SS05 and SS06 to confirm that subsequent incorporation of drilling fluids and cuttings at the site were successful in mitigating the slight exceedence of the organic standards. Lab results of these samples will be provided to the COGCC under separate cover.

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.:

PDC discussed the following in-situ remediation of impacted soils at a meeting with COGCC staff on 1/9/2012. During January and February 2012, the landowner will spread manure at approx. 25 tons per acre and straw bedding at approx. 25 tons per acre over the entire site. During March 2012, the manure and straw bedding material will be plowed into the underlying soils to a depth of 15" to build a suitable seed bed. During April 2012, the entire site will be seeded with wheat, triplicate and millet. A Sampling and Analysis Plan (SAP) will be developed and the site will be re-sampled during May 2012. If lab results indicate compliance with Table 910-1 standards, PDC will request No Further Action. If lab results indicate otherwise, PDC will consult with the COGCC regarding additional corrective action.

Submit Page 2 with Page 1



Tracking Number: Spill 2221367/Rem 1761327
Name of Operator: Petroleum Development Corp
OGCC Operator No: 69175
Received Date: 1/27/12
Well Name & No: _____
Facility Name & No: 425114

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REMEDIAL WORKPLAN (Cont.)

OGCC Employee: Axelsson

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

Not Applicable

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.

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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:

A Sampling and Analysis Plan (SAP) will be developed and the site will be re-sampled during May 2012.

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

Impacted soils will be remediated in-situ.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: <u>11/18/2011</u>	Date Site Investigation Completed: _____	Date Remediation Plan Submitted: <u>1/27/2012</u>
Remediation Start Date: _____	Anticipated Completion Date: <u>May 2012</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

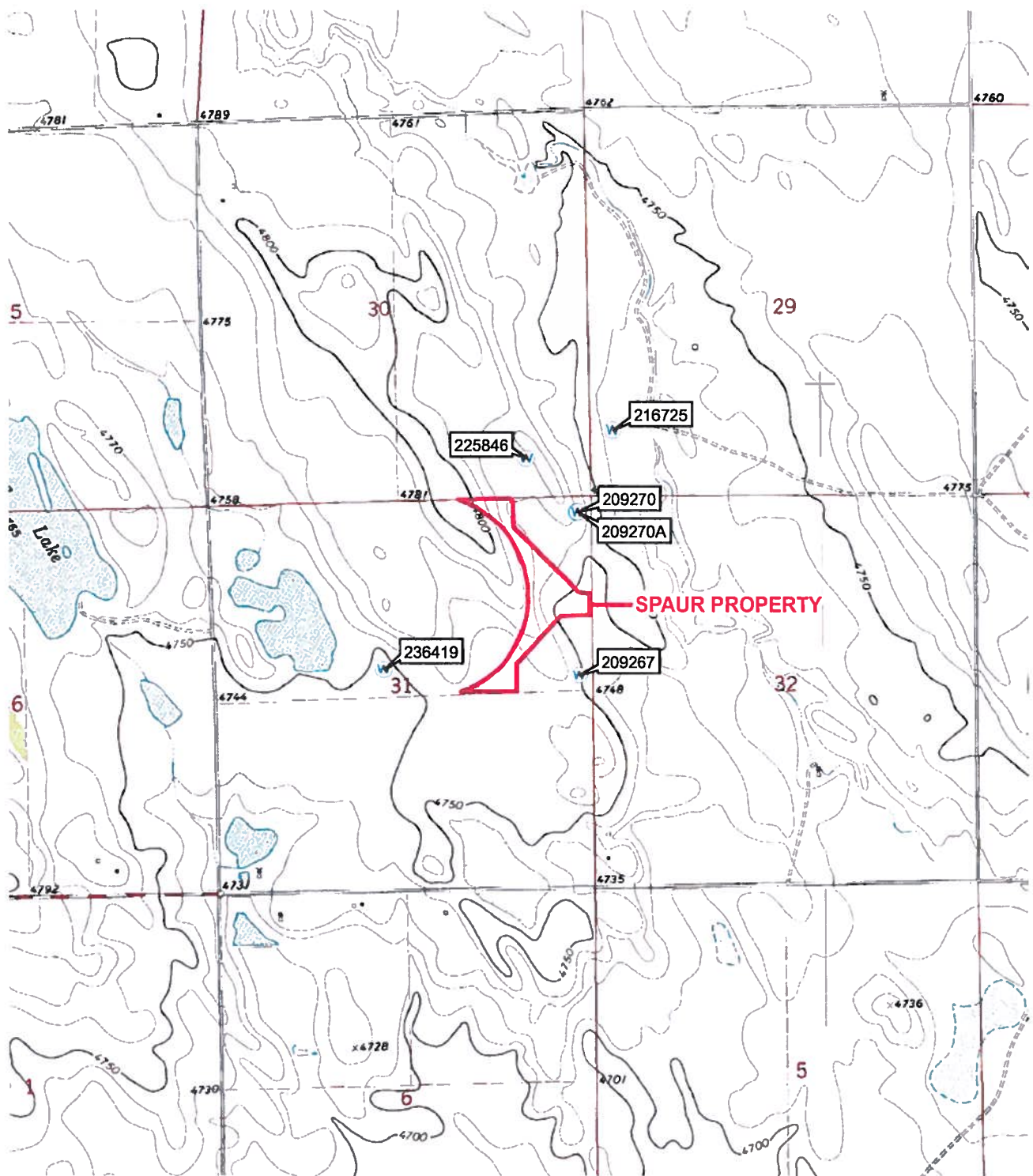
Title: Environmental Compliance Specialist

Date: 1/27/2012

OGCC Approved: [Signature]

Title: EPS

Date: 2/8/12



LEGEND

-  WATER WELL
-  SITE LOCATION

IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

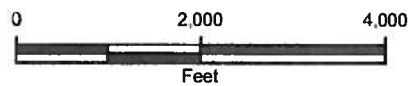


FIGURE 1
SITE LOCATION MAP
SPAUR PROPERTY
NE 1/4 SEC 31 T7N R63W
WELD COUNTY, COLORADO
PETROLEUM DEVELOPMENT CORPORATION



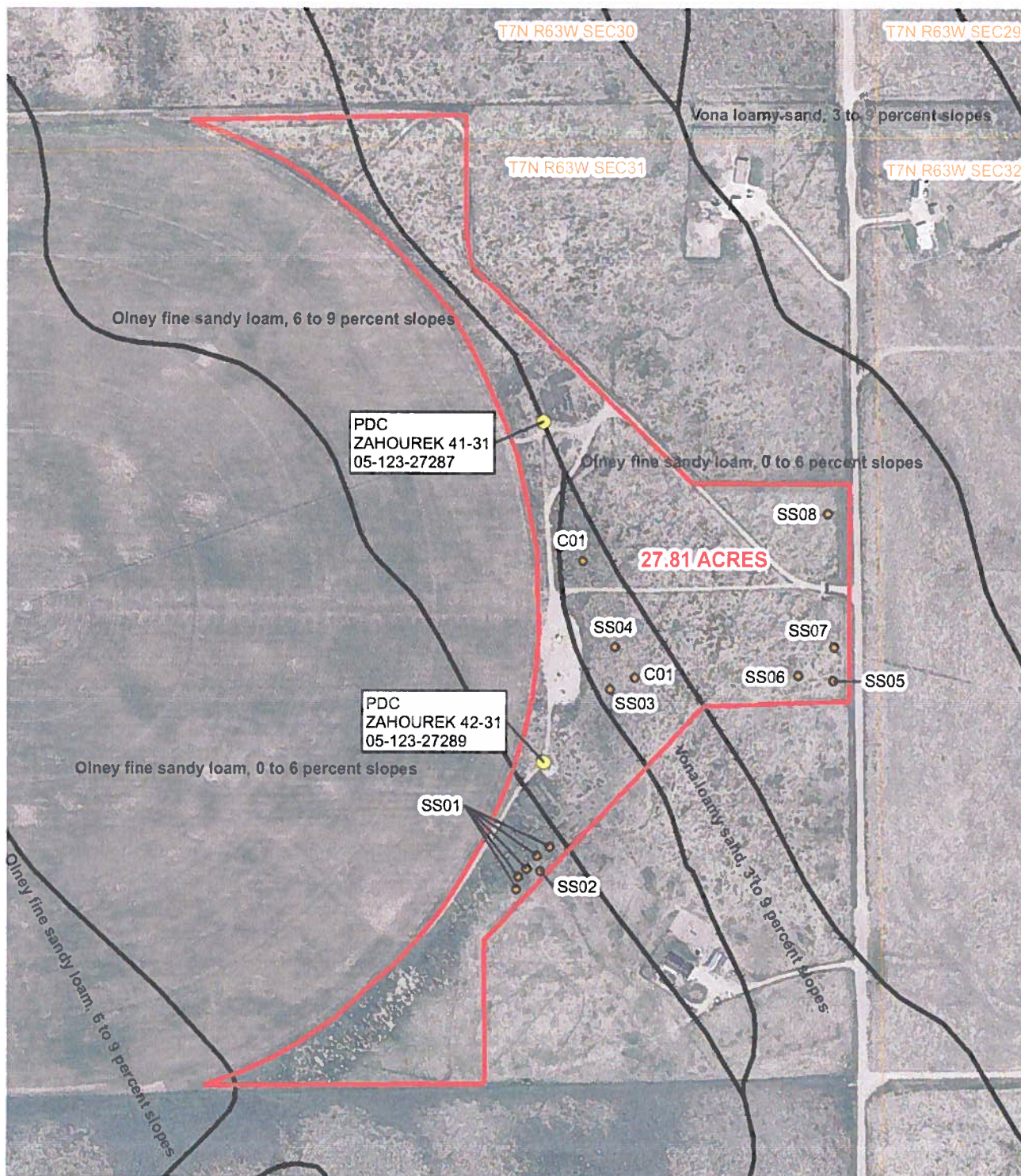


IMAGE COURTESY OF USDA/NRCS, 2009

LEGEND

- SOIL SAMPLE
- PRODUCTION WELL
- SPREADFIELD
- SOIL TYPE
- SECTION

OPERATOR
WELL NAME & NUMBER
API NUMBER



FIGURE 2
SITE MAP
SPAUR PROPERTY
NE 1/4 SEC 31 T7N R63W
WELD COUNTY, COLORADO
PETROLEUM DEVELOPMENT CORPORATION

