Petroleum Development Corporation

February 17, 2010

Ms. Nicole Rollo
CDPHE – WQCD, Engineering Section
4300 Cherry Creek Drive South
Denver, CO 80246-1530

RE: CDPHE Spill #2010-0058
SWNW Section 18 – T6N – R64W
Weld County, Colorado

Dear Ms. Rollo:

This letter responds to your facsimile received by Petroleum Development Corporation ("PDC") on February 5, 2010, relating to the above matter. PDC appreciates the extension provided by the Colorado Department of Public Health and Environment ("CDPHE") until February 17, 2010, to submit this response. The following information regarding the subject spill is provided to the Water Quality Control Division ("WQCD") as requested:

a. *The name of the responsible person and, if not reported by that person, the name of the person reporting the spill and the name of the responsible person if known:*
Responsible Party - Petroleum Development Corporation ("PDC")
Person Reporting the Spill - Brian Dodek with LT Environmental Inc. on behalf of PDC

b. *An estimate of the date and time that the spill began or the actual date and time, if known:*
Response – The exact date and time that the spill began is unknown, but an informal interview with Bill Heldt (landowner) indicated that he first noticed a possible sheen on 2/3/2010 at approx. 5:00 pm. Mr. Heldt reported the situation to PDC the next day on 2/4/2010 at approx. 12:00 pm. Mr. Heldt had previously observed the drain tile outfall on 1/27/2010 and did not observe anything abnormal.

c. *The location of the spill, its source, and identification of the type of material spilled:*
Location of the Spill - Point of surface water impact was approx. 50 feet southwest of the Heldt 12-18 tank battery located in the SW/4 NW/4 Section 18, T6N, R64W in Weld County. The surface water feature where the impact was first noticed is a side ditch of an unnamed tributary to Lone Tree Creek. The point of surface water impact is an adjoining side ditch which is approx. 20 feet from the confluence with the unnamed tributary and 600 feet upstream from the confluence with Lone Tree Creek.
Source of the Spill - Heldt 12-18 tank battery; steel produced water vault
Type of Material Spilled - Produced water & condensate

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Petroleum Development Corporation
1775 Sherman Street, Suite 3000
Denver, CO 80203
303-860-5800

BRIDGEPORT OFFCE:
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Bridgeport, WV 26330
304-842-3597

Conveyance Path of Spilled Material – A network of subsurface drain tiles (perforated piping) had been installed by the landowner across adjacent cropland, which extended beneath subject tank battery. The purpose of tiles is to drain excess water from cropland area. Fluids released from leaking produced water vault migrated downward through soils and shallow groundwater to depth of drain tiles and then flowed south along the tile pathway to the outfall which is approx. 20 feet from the confluence with the nearby tributary of Lone Tree Creek.
Stream Classification - According to WQCC Regulation #38, the Middle South Platte River Stream Segment 5a. is described as: Mainstem of Lone Tree Creek from the source to the confluence with the South Platte River. Stream classifications for this stream segment are: Aquatic Life Warm 2, Recreation N, and Agriculture. The subject spill impacted an unnamed tributary of Lone Tree Creek which is not included in Stream Segment 5a. and therefore is not a classified stream segment.
WQCC Stream Standards - BTEX standards are based on WQCC Regulation #31 – Basic Standards for Inorganic Chemicals as follows:

Benzene: Fish Ingestion – 51 µg/l; Acute Aquatic Life – 5,300 µg/l

Toluene: Fish Ingestion – 5,900 µg/l; Acute Aquatic Life – 17,300 µg/l

Ethylbenzene: Fish Ingestion – 2,100 µ/l; Acute Aquatic Life - 32,000 µg/l

Xylenes: no standards for Fish Ingestion or Aquatic Life

d. *The estimated volume of the spill and, if known, the actual date and time the spill was fully controlled/stopped:*
Estimated Volume of the Spill - Unknown

e. *Whether the spill is ongoing and, if it is, the rate of flow and an estimate of the time that the spill will be fully controlled/stopped:*
Response – The spill is not ongoing as detailed in (f) below. Immediate responsive action included but not limited to: 1) shutting in the oil/gas well producing into this tank battery, 2) deployment of absorbent pads and booms, 3) removal of fluids from the leaking produced water vault to prevent further impacts, and 4) restriction of flow from the drain tile system to the effluent drain tile outfall.
Sample Results - Four (4) sample points were selected to monitor corrective action progress: Source 1 – outfall sample; SW01 – 50' downstream; SW02 – 100' downstream; SW03 – 50' upstream
2/4/2010 Source 1 – benzene 48 µg/l, toluene 170 µg/l, ethylbenzene 55 µg/l, xylenes 860 µg/l; SW01 – benzene 1.8 µg/l, toluene 7.3 µg/l, ethylbenzene non-detectable (ND), xylenes 10 µg/l; SW02 – benzene 1.7 µg/l, toluene 6.8 µg/l, ethylbenzene ND, xylenes 6.4 µg/l; SW03 – BTEX ND
2/5/2010 Source 1 – benzene 15 µg/l, toluene 770 µg/l, ethylbenzene 240 µg/l, xylenes 2,800 µg/l; SW01 – benzene 2.6 µg/l, toluene 11 µg/l, ethylbenzene ND, xylenes

6.9 µg/l; SW02 – benzene 2.2 µg/l, toluene 9.2 µg/l, ethylbenzene ND, xylenes 5.8 µg/l; SW03 – BTEX ND
2/8/2010 Source 1 – benzene 16 µg/l, toluene 47 µg/l, ethylbenzene 4.7 µg/l, xylenes ND; SW01, SW02, SW03 – BTEX ND
2/11/2010 Source 1 – benzene 430 µg/l, toluene 1,800 µg/l, ethylbenzene 140 µg/l, xylenes 2,100 µg/l; SW01, SW02, SW03 – BTEX ND
2/12/2010 Source 1 – benzene 16 µg/l, toluene 77 µg/l, ethylbenzene 12 µg/l, xylenes 140 µg/l; SW01, SW02, SW03 – BTEX ND
Date and Time the Spill was Fully Controlled/Stopped – The day after the spill was reported to PDC, BTEX levels within the unnamed tributary had dropped well below WQCC standards. This remained consistent until the 2/11/2010 sample results. This exceeding of standards on 2/11/2010 is believed to be the result of the disturbance of impacted soils due to corrective action and remediation activity described below,which may have caused a temporary upset of subsurface flow conditions. As described below, a vacuum truck was deployed to the site to mitigate any impact to surface water caused by the excavation of impacted soil. Subsequent sampling on 2/12/2010 indicated BTEX results had returned to well below WQCC standards. The source for the produced water/condensate release was identified and contained by 2/5/2010.

f. *Measures that are being or have been taken to contain, reduce, and/or clean up the spill:*
Responsive Actions -

2/4/2010 The Heldt 12-18 well was shut-in immediately upon verification of spill. Absorbent pads and 5 sets of absorbent booms were deployed at three separate locations: at the drain tile outfall, within the adjoining side ditch, and within the unnamed tributary to Lone Tree Creek. These were deployed approx. 1 hour after initial notification by landowner. The drain tile was disconnected near the outfall to restrict further effluent discharge. A vacuum truck was dispatched to recover impacted surface water from the drain tile outfall area and from the adjoining side ditch. Initial surface water samples were collected for laboratory analyses. Lab results are described above.

2/5/2010 Surface piping from the well and at the tank battery was pressure tested for potential leaks. Source of spill was determined to be corrosion of the steel produced water vault bottom which was subsequently removed the same day. Restriction of flow from drain tile resulted in minimal or no continuous effluent flow at outfall. Drain tile and pea gravel base removal between the drain tile outfall and the tank battery commenced. A vacuum truck was dispatched to recover potentially impacted surface water from the drain tile outfall area and from the adjoining side ditch. Absorbent pads placed at drain tile outfall were replaced. Additional surface water samples were collected for laboratory analyses. Lab results are described above.

2/6– 2/7/2010 Visual checks were conducted by PDC staff to monitor effluent flow from drain tile outfall which was observed to be minimal.

2/8/2010 Removal of tank battery equipment completed to facilitate removal of impacted soils. Excavation of source material commenced. Impacted soils were transported to an offsite facility for disposal. As a precautionary measure, a vacuum

truck was dispatched to recover potentially impacted surface water from the drain tile outfall area and from the adjoining side ditch. Additional surface water samples were collected for laboratory analyses. Lab results are described above.

2/9/2010 Excavation of impacted soils at tank battery continued. Excavated material was transported to an offsite facility for disposal. As a precautionary measure, a vacuum truck was dispatched to recover potentially impacted surface water from the drain tile outfall area and from the adjoining side ditch.

2/10/2010 A passive remediation system containing activated carbon was installed to intercept effluent water from drain tile outfall. Excavation of impacted soils at tank battery continued. Excavated material was transported to an offsite facility for disposal. As a precautionary measure, a vacuum truck was dispatched to recover potentially impacted surface water from the drain tile outfall area and from the adjoining side ditch.

2/11/2010 Excavation of impacted soils at tank battery continued. Excavated material was transported to an offsite facility for disposal. As a precautionary measure, a vacuum truck was dispatched to recover potentially impacted surface water from the drain tile outfall area and from the adjoining side ditch. Additional surface water samples were collected for laboratory analyses. Lab results are described above.

2/12/2010 Excavation of impacted soils at tank battery completed. Confirmation soil samples collected to evaluate successful removal of pollutant source material. Additional surface water samples were collected for laboratory analyses. Lab results are described above.

g. *A list of any potentially affected area and any known downstream water uses that will be or have been notified:*
Response – The potentially affected localized area is described above and in the attached COGCC Form 19 report. Based on responsive actions by PDC and sample data collected to date, PDC does not anticipate any need to contact any known downstream water users. Should any subsequent data warrant, PDC will implement such notification.

h. *A phone number and e-mail to contact a representative of the responsible person that is in charge of the response:*
PDC Contact Information

Randall Ferguson
PDC Environmental Supervisor
Office: (303)831-3904
Cell: (303)570-8575

i. *Steps taken or planned to prevent reoccurrence of the event:*
Response – The steel produced water vault will be replaced with a vessel constructed of non-corrosive material such as a concrete vault or polyurethane tank. Additionally, the reconstruction of the drain tile beneath the tank battery will be with solid PVC piping

instead of perforated piping. This will prevent any future spilled materials from migrating along the drain tile flow path and potentially impacting surface water.

j. *If the spill is not from a permitted activity, attach MSDS's for any chemicals involved in the spill or release:*
Response - See attached

The Colorado Oil and Gas Conservation Commission ("COGCC") was notified on 2/4/2010 as per COGCC Rule 906. Additionally, the National Response Center ("NRC") was notified on 2/4/2010 (NRC Incident Report #930522). A Form 19 – Spill/Release Report was subsequently submitted electronically to the Colorado Oil and Gas Conservation Commission ("COGCC") on 2/12/2010. A copy of this form and supporting documentation is provided with this submittal.

If there are any questions, please do not hesitate to contact me at (303)831-3904.

Respectfully Submitted,

Randall H. Ferguson
PDC Environmental Supervisor

Attachments
Cc: John Nussbaumer – PDC Director EH&S
Dan Amidon – PDC General Counsel
Roger Freeman – DG&S/Attorney for PDC