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**Corporate Office**

1775 Sherman Street, #3000  
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July 18, 2016

Robert Chesson  
Environmental Protection Specialist  
Colorado Oil & Gas Conservation Commission  
1120 Lincoln St., Suite 801  
Denver, Colorado 80203

RE: Closure Request for Easton #2 Land Application Site – Facility ID # 429629

Mr. Chesson

PDC Energy, Inc. (PDC) has utilized the above mentioned properties for land application of water-based bentonitic drilling fluids and associated drill cuttings in accordance with Rule 907.d.(3). The facility first accepted drilling fluids on June 27, 2012 and after the Form 4 was approved by the COGCC on July 19, 2012, associated drill cuttings were applied to the site. The facility last accepted drilling fluids and cuttings on March 12, 2015, prior to the 3 year timeline.

Prior first acceptance of drilling fluids and cuttings, LTE Environmental Inc. (LTE), performed baseline sample collection on July 2, 2012. The results are summarized in the report titled, *Baseline Sampling Results – PDC Drill Cuttings Spreadfield – Easton #2 Property*, dated July 8, 2012. The report was submitted to the COGCC along with the original Form 4 – Sundry Notice for the subject facility that was approved by the COGCC on July 19, 2012. A copy of the original report is attached to this letter.

On August 28, 2015, LTE performed post-incorporation soil sample collection to ensure the facility meets the requirements in rule 907.d.(3) and are in compliance with Table 910-1 limits. All samples were collected at the same original baseline sample locations, including collecting samples at arsenic background sample locations. The laboratory results demonstrated arsenic, Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR) exceedances and one sample



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exceeded the benzo (a) pyrene limit. The exceedances were reported directly to you, via email, on December 18, 2015. PDC committed in the email to amend the soil with imported manure re-conduct the sampling event.

On April 26 and 27, 2016, LTE collected samples at all locations for specific constituents that exceeded their respective Table 910-1 limit in the August 2015 sampling event and did not recollect samples for locations and constituents that were below their respective limits in the August 2015 sampling event. The April 2016 post-incorporation samples that were analyzed for SAR, EC and benzo (a) pyrene exhibited detections all below their respective Table 910-1 limits, or were non-detect with the exception of one sample, SS06, which exhibited a slight increase for EC from 4.32 mmhos/cm to 5.90 mmhos/cm. In early June 2016, PDC discussed with you regarding the slightly elevated EC result. You stated that since SAR was with acceptable limits, that the EC is acceptable, thus recommending PDC submit the closure request letter. A complete report that includes both the August 2015 and April 2016 sample events can be found as an attachment to this document.

Baseline arsenic concentrations ranged from 1.51 mg/kg to 4.40 mg/kg. The August 2015 post-incorporation arsenic concentrations ranged from 6.61 mg/kg to 8.81 mg/kg and April 2016 post-incorporation arsenic concentrations ranged from 4.77 mg/kg to 8.31 mg/kg. Although arsenic concentrations in post-incorporation soil samples were higher than baseline concentrations, all post-incorporation sample concentrations were below the 3-14 mg/kg concentration range (for native grassland, rangeland, or agriculture) listed in the Background Soil Arsenic Concentrations in Colorado table found in the *Risk Management Guidance for Evaluation Arsenic Concentrations in Soil* from the Hazardous Materials and Waste Management Division of Colorado Department of Public Health and Environment – Second Addition, dated June 2011.



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The National Resource Conservation Service reports indicate the first three to six inches of soils at the site are characterized as Nelson fine sandy loam. Baseline samples were classified as sandy loam and the post-incorporation samples were classified as clay loam. This change in classification was due to the increase in percentage clay material, which is anticipated to enhance the field to ability to retain water. Increased water retention will decrease the frequency of irrigation, thus conserving overall water usage, as well as the leaching of valuable nutrients, thus increasing the productiveness of the field.

Based on this information, the post-incorporation sample results demonstrate compliance with Table 910-1 concentrations, below expected background concentrations for arsenic typically found in Colorado, and will be conducive to future land use. Therefore, PDC requests that this facility be closed.

If you have any questions regarding this request or require any additional information, feel free to contact me at 303-831-3965 or email me at [phillip.porter@pdce.com](mailto:phillip.porter@pdce.com).

Respectively,

A handwritten signature in blue ink, appearing to read "Ph Porter".

Phillip Porter, CHMM  
EHS Compliance Specialist

Attachments: Baseline Soil Sample Report  
Post-Incorporation Soil Sample Report

Cc: Randall Ferguson – PDC EHS Senior Compliance Specialist  
Aaron Clyncke – PDC Excavation Supervisor