



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8**

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**May 31, 2016**

Ref: 8EPR-N

Dennis J. Carpenter, Manager  
Rawlins Field Office  
Bureau of Land Management  
P.O. Box 2407 (1300 North Third Street)  
Rawlins, Wyoming 82301-2407

Re: Continental Divide-Creston Natural Gas  
Development Project Final Environmental Impact  
Statement **CEQ #20160076**

Dear Mr. Carpenter:

The U.S. Environmental Protection Agency (EPA) Region 8 has reviewed the April 7, 2016 Continental Divide-Creston (CD-C) Natural Gas Development Project Final Environmental Impact Statement (FEIS) prepared by the Bureau of Land Management (BLM). Our comments are provided for your consideration pursuant to our responsibilities and authority under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C), and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609.

Thank you for BLM's responses to our scoping comments, preliminary and final draft EIS (DEIS) comments and the EPA's input during preliminary DEIS and FEIS document reviews. Discussions and formal comment activities have allowed us to participate as a Cooperating Agency and work with the BLM through a number of concerns regarding impact mitigation and protection of air, water and land resources from the Project. The CD-C preferred alternative (Alternative F) addresses a substantial development project for up to 8,950 in-fill gas wells to be drilled over 15 years and estimated to be operated for up to 55 years. This development is almost double the existing oil and gas wells in the area and, depending on market conditions, construction could begin immediately after the objection period, once BLM issues a Record of Decision (ROD) and engages in the Application for a Permit to Drill (APD) phase.

**Project Description**

The CD-C project area consists of approximately 1.1 million acres (1,672 square miles) in an existing gas-producing region between Rock Springs and Rawlins bisected by Interstate 80, surrounding the small community of Wamsutter, Wyoming. The project area is located on federal lands (626,932 acres, 58.6 percent), the State of Wyoming lands (48,684 acres, 4.5 percent), and private lands (394,470 acres, 36.9 percent) in Carbon and Sweetwater Counties. The central portion of the CD-C project area has a

checkerboard pattern of mixed land ownership due to grants made by the federal government to the Union Pacific Railroad Company for construction of the transcontinental railroad.

British Petroleum is the lead developer of a group of about 20 developers (the Operators) with lease holdings in the project area. The Operators proposed drilling up to 8,950 infill natural gas wells from an estimated 6,126 well pads with a potential surface disturbance of 47,200 acres (4.4 percent of the project area). The BLM's newly published Alternative F estimates surface disturbance of 43,808 acres (about 4.1 percent of the project area), a 7.2 percent decrease from the Proposed Action. The precise locations of the wells have not been identified at this time but the Operators propose drilling at well densities of up to one well per 40 acres. Wells may be drilled conventionally with a single vertical bore on a well pad or with multiple directional bores from a well pad. An estimated 42 percent of the future wells would be located on multi-well pads. To fully develop the targeted resources, the Operators would collectively drill the new wells at the average rate of approximately 600 wells per year over a period of 15 years. The productive life of each well is estimated to be 30 to 40 years yielding a potential project life of 45 to 55 years. More than 4,700 wells have already been drilled within the CD-C project area under previously authorized drilling programs. Over 500 of those have been plugged and abandoned. Supporting infrastructure associated with the existing development includes access roads, compressor stations, a central gas-processing plant, water management facilities (fresh-water wells and evaporation pits, recycling facilities, and injection wells for produced water disposal), gas and water pipelines, and electric power lines. Total existing surface disturbance in the project area, including that associated with natural gas and other development, is estimated at 60,176 acres (5.6 percent of the project area).

### **Preferred Alternative**

The BLM developed Alternative F in response to comments received during the DEIS public comment period. Alternative F is designed to incorporate directional drilling to reduce surface impacts while still allowing for resource recovery and its specific principal elements are:

- Implementing a monitoring plan for Muddy Creek and Bitter Creek (Appendix O).
- Forming a CD-C discussion group consisting of the BLM, CD-C cooperators, local landowners, and permittees that would respond to evolving energy issues and concerns related to the project, and who would discuss and influence opportunities for off-site mitigation.
- Minimizing surface disturbance to reduce impacts to vegetation, range, wildlife, and wild horse resources. The estimated surface disturbance for Alternative F is 43,808 acres (about 4.1 percent of the project area), a 7.2-percent decrease from the Proposed Action.
- Limiting operators to no more than eight well pads per square mile on BLM administered lands with exceptions granted on a case-by-case basis.
- Transportation planning to minimize air pollution and road degradation as outlined in Appendix N, "Transportation Plan".
- Road and pipeline networks and well pad placement carefully sited to avoid critical habitat such as big game winter range and/or migration corridors.
- A fugitive dust control plan (Appendix P).

### **The EPA's Comments and Recommendations**

The following comments and recommendations focus on air quality and water impacts and mitigation of those impacts. Given the size of the Proposed Action, combined with the high levels of existing development in the area, the EPA is expressly interested in the BLM's approach to ensuring protection and reclamation of these resources. We include an explanation of these comments and offer

recommendations on how the BLM might address our remaining concerns at the ROD stage.

## **Air Quality Impacts**

### *Mitigation Measures*

The FEIS identifies air quality impacts and available mitigation. Specifically, the FEIS identifies general air quality mitigation measures in Section 4.5.9, and considerations to minimize the risk of toxic air pollutant exposure in the summary of impacts in Section 4.5.8.1. The document indicates that the ROD will include a more specific set of air impact mitigation commitments.

The air toxics impact analysis included in Chapter 4 of the FEIS and Section 3.6 of the Air Quality Technical Support Document (TSD) assesses the potential for air quality impacts associated with evaporation ponds. The FEIS predicts that discharge of produced and flow-back water to evaporation ponds will result in the volatilization of constituents known to be hazardous. We recognize the constituents in produced and flow-back water will vary over time in every pond, and will vary from well to well and we understand that the modeling has associated limitations. Given there will be some level of hazardous air pollutants volatilizing from evaporation ponds, we recommend that ponds be located away from residences and other frequently occupied areas. If such locations are unavailable, BLM may consider for the ROD other options to reduce emissions from evaporation ponds or other water disposal methods. One example may be to reduce the number of planned evaporation ponds in the project area and site remaining ponds with appropriate buffers.

As the BLM finalizes the mitigation suite for inclusion in the ROD, we recommend considering the following, in addition to the mitigation outlined in the FEIS in Section 4.5, noted above. (1) The use of closed and/or semi closed loop drilling technology to avoid pits in addition to the sensitive areas already requiring this (*i.e.* drilling operations located within ½ mile of Muddy Creek, Red Wash, and/or Bitter Creek, and within a ¼ mile of playas within the Chain Lakes Wildlife Habitat Management Area (WHMA); (2) engineered flares rather than pit flares, and the prohibition of the use of pit flares; (3) the option to achieve engine emission reductions by use of add-on controls, or engine testing conducted during representative operation; (4) a minimum percentage of electrification for the project area; (5) generator set driven drilling and completion equipment; (6) design principles that favor profitable development without uncontrolled sources of air pollution (*i.e.* tanks, glycol dehydrators, etc); (7) further considerations for a robust Directed Inspection and Maintenance program; and (8) surfacing of roads in a more environmentally friendly manner than applying chemical dust suppressants. We note this may be more effective for dust prevention and for more effective mitigation of water quality impacts from runoff. Since the ROD will include a more complete and committed set of specific air impact mitigation measures, we would like to work ahead of the ROD with the BLM and the multi-agency NEPA Oil and Gas Air Quality Memorandum of Understanding signatory agencies, in cooperation with the Wyoming Department of Environmental Quality (WDEQ), so that the eventual mitigation commitments in the ROD effectively address the impacts identified in the document.

The EPA notes the BLM's commitment to install an air monitoring station in the project area in the summer of 2016 and understands that BLM will consult with WDEQ on the location and further details of that monitoring site. EPA requests to be included in that effort to assist BLM and WDEQ if appropriate.

## **Greenhouse Gases and Climate Change Impacts and Adaptation**

Chapter 4 of the FEIS includes information on greenhouse gas emissions and climate change impacts for the project area. That chapter misunderstands the nature of GHG emission contributions to climate change, by stating that, "... it is not possible to attribute emissions of GHGs from any particular source as having a specific climate impact, globally or regionally, due to the longevity of GHGs in the atmosphere." Climate change is a global problem resulting from the emissions of many individual sources whose impacts are cumulative. For the purposes of NEPA, the environmental impacts are best considered by using emissions as a proxy when comparing the proposal, alternatives and potential mitigation.

The BLM's response to recommendations to consider and include downstream or end use GHG emissions estimates and analysis included in Chapter 4 of the FEIS confuses direct and indirect impacts. BLM does characterize the GHG emissions direct impacts from the project, but fails to describe the indirect impacts of GHG emissions from end use of the oil and gas. The EPA recommends BLM consider indirect GHG emissions associated with the end use of oil and gas due to the reasonably close causal relationship between this project and those emissions, the standard NEPA criterion for analyzing indirect impacts.

Chapter 4 also includes a comparison of the Proposed Action's GHG emissions, to place them into perspective.

"The maximum greenhouse gas emissions resulting from the Proposed Action source emissions are estimated at 5.2 million metric tons (MMT)/yr of CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>e). The CD-C project's peak CO<sub>2</sub> e emissions year is 2022, in which the combined emissions from new Proposed Action sources and existing sources would be approximately 8.6 MMT/yr. To place the CD-C project's GHG emissions in context, the GHG emissions from the top four emitting coal-fired power plants in Wyoming range from 3-114 MMT/yr (data from <http://epa.gov/-climatechange/emissions/ghgdata/2010data.html>). CD-C project GHGs would be comparable to the total GHG emissions from the City of San Francisco (10 MMT/year; <http://www.sfenvironment.org/-downloads/library/climateactionplan.pdf>) during the year 2000."

This comparison is useful in highlighting the magnitude of the project's GHG emissions. As BLM finalizes the air quality mitigation plan in the ROD, we recommend that measures with potential co-benefits in GHG emission reduction be identified and included. Such measures may include VOC control technologies, energy efficiency, a directed inspection and maintenance program, and use of renewable energy resources to address energy needs for compressor stations and other facilities.

The EPA acknowledges the BLM's inclusion of the Wyoming Basin Rapid Ecological Assessment (REA) program, which identifies the reasonably foreseeable range of projected change in temperature, precipitation and hydroclimate variables for the Basin. Climate has the potential to either positively or negatively impact the success of surface reclamation and revegetation efforts. Higher temperatures and lower moisture conditions in particular would pose challenges to reclamation efforts that are important to protecting soils, water and wildlife habitat of the Project Area. We therefore recommend that the decision for this project consider available measures to minimize surface disturbance and to assure that reclamation will be successful under potentially challenging climatic conditions.

## **Surface Water Resources**

The FEIS clarifies existing protection requirements and Alternative F includes additional measures for protecting surface water resources. Specifically, the EPA recognizes that Alternative F includes

additional protection requirements for minimizing (not prohibiting, as the FEIS states) pollutants from entering into water bodies. These protections include reducing (not precluding as the FEIS states) salt and sediment contributions to the Muddy Creek and Bitter Creek watersheds. Alternative F also includes specific resource protection requirements for well pads and related facilities that are to be located within ½ mile of Muddy Creek, Red Wash, and/or Bitter Creek, and within a ¼ mile of playas within the Chain Lakes WHMA. These sensitive water body areas are subject to the following surface use conditions.

- Submission of a bi-annual BMP monitoring report by the Operators to the BLM
- Boring of all pipeline crossings of perennial drainages and riparian areas
- Soil stabilization of all disturbances within 30 days of well completion
- Closed or semi-closed loop drilling (closed loop only within ¼ mile); and
- Yearly site visits by the CD-C discussion group.
- A monitoring plan for Muddy Creek and Bitter Creek.

In Chapter 3 and Appendix F, the FEIS includes a water quality trends analysis of surface water samples taken in and near the project area. The FEIS documents the current baseline existing condition of surface waters, and identifies whether or not the water body has been assessed and compared to current WDEQ water quality standards. The FEIS also includes the Water Erosion Prediction Project (WEPP) model analysis for each alternative.

The EPA notes that based on EPA's recommendation for setbacks of .25 miles from springs, domestic wells, wetlands, and 0.5 mi. for perennial springs, the BLM attempted to obtain set back agreements from the Operators and private land owners adjacent to Muddy Creek. While this was not agreed to by the Operators, and not feasible for BLM to implement independently due to the private land status (not enforceable), the EPA recognizes Alternative F setback conditions for limiting ponds and pits near sensitive water bodies listed above.

### **Ground Water and Source Water Protection Resources**

The EPA acknowledges that following additional ground water and source water information was added to the FEIS:

- Inclusion of more information that accurately identifies source water protection zones, sensitive aquifers and recharge areas in Chapter 4 of the FEIS.
- Identifying which aquifers in the project area qualify as U.S. Drinking waters (USDW), even though they may not be used due to depth and low population density now and in the future.
- Providing more information for the Almond and Wasatch formations and the confining layers between them.
- Including the 2013 Wyoming Oil and Gas Conservation Commission rule requiring groundwater monitoring of water sources 0.5 mi. from a well and the 2014 requirement for all developers to submit a baseline groundwater sampling and analysis monitoring plan with an APD.

With regard to the over 1000 ground water wells in the CD-C project area and six drinking water supply wells for the Town of Wamsutter, the EPA continues to recommend that the ROD include a minimum 0.5 mile setback for the Wamsutter wells, and a 500 foot setback from all other domestic water wells. The EPA notes that BLM's FEIS response to this recommendation is that groundwater well protection considerations and decisions for protection measures are made at the APD stage of development.

The EPA acknowledges the clarification provided in the FEIS regarding the Rawlins Field Office's

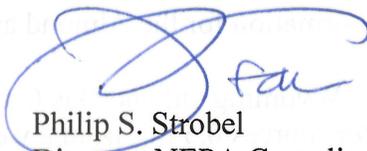
commitment to enforce well casing design, construction, cement placement and casing evaluation logs requirements that conform to Onshore Order #2 that help protect groundwater resources. The FEIS also includes a useful comparison of how those well construction practices also align with BLM's proposed hydrofracking rule. For clarity in future project analysis, and to assist the decision maker, EPA's standard comment on this topic is intended to work with the BLM to help provide certainty to the industry on well casing and cementing design, construction and operation improvements. Our recommendation is an approach that the EPA considers provides greater assurance that requirements of Onshore Order #2 will effectively result in even more protection of USDWs. To help meet that purpose, EPA continues to recommend being specific at the project level rather than implementing a general, less certain requirement until final well installations at the individual well APD stage.

The EPA acknowledges that Alternative F specifically identifies sensitive areas in Muddy and Bitter Creek watersheds where closed loop, or pitless drilling would be required, and continues to recommend BLM to limit any exclusions for implementing this requirement.

**Water Use Conservation and Use Plan Between CD-C and the Atlantic Rim Oil and Gas Project**  
CD-C meetings with the BLM identified potential opportunities to use water generated from the neighboring Atlantic Rim project as drilling water in C-DC. If feasible, this program could significantly reduce the amount of fresh water needed by the CD-C project. EPA and BLM, along with State of Wyoming partners pursued initial reactions from the Operators on the matter. There was positive support for the concept and the EPA would like to continue to add any useful information or technical assistance as the development proceeds.

We have appreciated working with the dedicated staff of the Rawlins Field Office as a Cooperating Agency on this project and participating in a tour of the project area hosted by BLM. We would be happy to meet to discuss these comments and our continued recommendations. If you have any questions or comments, please feel free to contact me at 303-312-6704, or Lead NEPA Reviewer, Nat Miullo, at 303-312-6233 or [miullo.nat@epa.gov](mailto:miullo.nat@epa.gov).

Sincerely,



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