



March 22, 2010

Shell Beaufort Sea Exploration Drilling Program OCS PSD Permit  
EPA Region 10  
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Re: OCS PSD Permit Number: R10OCS/PSD-AK-2010-01 (Shell Offshore Inc.)

Anadarko Petroleum Corporation (Anadarko) appreciates the opportunity to submit these comments on the proposed Shell Beaufort Sea Exploration Drilling Program OCS PSD Permit referenced above. Anadarko conducts exploratory drilling operations in the OCS, and, as such, we are concerned with many of the legal interpretations that EPA advances in its proposed permit for Shell. We believe that, for the issues set forth below, EPA is setting forth unlawful interpretations of the Clean Air Act and its regulations. It appears that this permit may be the first PSD permit issued by the EPA for a major stationary source located in the "outer OCS," *i.e.*, more than 25 miles beyond the nearest seaward boundary. As such, we support the EPA's expeditious issuance of the permit; however, we respectfully submit that it should not be issued with the existing errors. We set forth a brief summary below of the errors that we have identified in this permit.

1. EPA is requiring Shell to demonstrate compliance with national ambient air quality standards ("NAAQS") and PSD increments at the rail of the Frontier Discoverer drillship instead of at the nearest shoreline point along the coast of Alaska. We contend that this is an incorrect interpretation and application of the CAA. Instead, because EPA has not followed the procedures set forth in 42 U.S.C. § 7407 to properly designate any portion of the OCS as an air quality control region or to classify the level of attainment for each NAAQS on the OCS, Shell is only required to show compliance at the nearest onshore point along the coast of Alaska. With respect to NAAQS modeling, the CAA explicitly requires the demonstration of NAAQS compliance "in any air quality control region." 42 U.S.C. § 7475(a)(3). With respect to increment modeling, the applicable increment depends on a designated area's classification as a Class I or Class II area. *See* 42 U.S.C. § 7473. Both modeling demonstrations require EPA to have formally designated the applicable air quality control region, which EPA has not done. To designate air quality control regions, EPA must consult with the state. *Id.* § 7407(b)-(d). In addition, after promulgating a NAAQS, EPA must designate the areas "in the State" as either "attainment" or "nonattainment" or "unclassifiable" with respect to each NAAQS. *See id.* § 7407(d). EPA has not undertaken either task with respect to the OCS. EPA has apparently attempted to establish a baseline area for the purposes of PSD permitting of

OCS sources through its Region 10 internal memorandum dated 07/02/09,<sup>1</sup> but this memorandum does not comply with EPA's statutory requirement as described above. In addition, as set forth in detail in the comments filed by ConocoPhillips on OCS PSD Permit Number: R10OCS/PSD-AK-09-0 at 3-7,<sup>2</sup> even if EPA were to properly classify such areas in the OCS, the legislative history of Section 328 and the CAA implementing regulations dictate that NAAQS modeling should analyze onshore air impacts.<sup>3</sup> Finally, as a practical matter, requiring the air modeling demonstration compliance with national ambient air quality standards ("NAAQS") and PSD increments at the rail of the Frontier Discoverer drillship will lead to an overstatement of the impacts to ambient air quality by Shell. This will severely and unnecessarily limit oil and gas exploration and production in offshore Alaska.

2. To the extent that EPA contends that it has established an OCS Air Quality Region or baseline area through its Region 10 internal memo dated 07/02/09<sup>4</sup> and has sought to apply this standard to Shell through this permit, it has done so without proper notice. *See* 42 U.S.C. § 7407(d)(2) (requiring EPA to publish designations in the Federal Register).
3. EPA has erroneously required Shell to impose stationary source control strategies (PSD and BACT) on marine vessels and nonroad engines that are not stationary sources, such as deck cranes, cementing units, logging winch engines and HPU engines. This is an unlawful interpretation of the CAA. These are all non-road engines that are not regulated by Section 165 of the CAA. *See* 40 C.F.R. 52.21(b) (requiring PSD permitting for major "stationary sources"); 42 U.S.C. § 7602(z) (excluding nonroad engines from the definition of "stationary source"); *In re Cardinal FG Company*, PSD Appeal No. 04-04, 2005 EPA APP. LEXIS 6 (March 22, 2005) ("the statute expressly excludes from the PSD permitting requirements emissions resulting directly from a nonroad engine or a nonroad vehicle"). CAA Section 328, which defines emissions from certain engines as "potential emissions" from the OCS source for the purposes of calculating the source's "potential to emit," does not override the principle that nonroad engines are not subject to regulation as stationary sources.<sup>5</sup>
4. EPA makes numerous errors in its BACT determinations, ranging from failing to conduct a complete BACT analysis, including a cost effectiveness determination, to setting

<sup>1</sup> See Statement of Basis, page 14 of 141.

<sup>2</sup> ConocoPhillips on OCS PSD Permit Number: R10OCS/PSD-AK-09-0 ("CP Comments"), available at [http://www.epa.gov/region10/pdf/permits/shell/chukchi/brad\\_thomas\\_for\\_conoco\\_phillips\\_021710.pdf](http://www.epa.gov/region10/pdf/permits/shell/chukchi/brad_thomas_for_conoco_phillips_021710.pdf).

<sup>3</sup> *E.g.*, Report of the Senate Committee on Environment and Public Works on S. 1630, S. Rep. No. 228, 101st Cong., 1st Sess. at 77 (1989) ("Of primary concern is the fact that OCS air pollution is causing or contributing to the violation of Federal and State ambient air quality in coast regions . . . . This section of the bill is intended to ensure that air pollution from OCS activities does not degrade the air quality in coastal regions of the United States."); 56 Fed. Reg. 63,774, 63,775 (December 5, 1991) ("The intent of Congress in adding Section 328 was to protect ambient air quality standards onshore and ensure compliance with the PSD requirements. EPA is to accomplish this by controlling emissions of pollutants for which ambient standards have been set and their precursors (criteria pollutants) from the OCS that can be transported onshore and affect ambient air quality.") (emphasis added).

<sup>4</sup> Memorandum of July 2, 2009 from David C. Bray to Rick Albright (attachment 2 to the CP Comments).

<sup>5</sup> *See* Shell Offshore Inc., Kulluk Drilling Unit and Frontier Discoverer Drilling Unit, Order Denying Review In Part and Remanding In Part, 13 E.A.D. \_ (September 14, 2007), Slip Opinion at 31-32; *see also* CP Comments at 7-11.

emission limits and then unlawfully adding on to those limits requirements for the use of specific technologies. Anadarko's specific concerns are as follows:

- a. It appears that EPA has applied BACT to support and supply vessels (such as Icebreakers #1 and #2, Cuttings/Mud Disposal Barge, Supply Ship/Barge and Tug) even when they are not attached to the OCS source. This runs afoul of EPA's regulations, which only requires the BACT analysis for vessels when they are attached to the OCS Source. See 40 C.F.R. § 55.2 (providing that vessels shall only be OCS sources when attached to the seabed or "[p]hysically attached to an OCS facility, in which case only the stationary sources aspects of the vessels will be regulated"). If the BACT analysis is done properly here, the emissions contribution of these vessels would be so small that no additional controls would be justified on a dollar per ton basis.
- b. In its application,<sup>6</sup> Shell volunteers to use ultra-low sulfur fuel ("ULSF") as BACT for SO<sub>2</sub> for Diesel IC Engines, Boilers and Incinerators. EPA accepts this, but does not do a complete BACT analysis, because the Agency never gets to the economic analysis part of the process in Step 4 of the Top Down method. Based on Shell's voluntary action, EPA declares that ULSF is BACT; however, we contend that this is an erroneous characterization. While ULSF may be BACT for Shell in this permit, it is not precedent setting for subsequent permittees. Only BACT that has undergone complete BACT analysis, including the dollar per ton cost analysis, can be determined to be BACT for all subsequent permittees. EPA compounds its error when it applies this same incorrect reasoning to bootstrap its conclusion regarding BACT for PM in Generator Diesel IC Engines and PM for Smaller Diesel IC Engines.<sup>7</sup>
- c. EPA errs when it declares that BACT for PM in Diesel Fired Boiler and BACT for CO and VOCs for Diesel Fired Boiler and the Incinerator is "good combustion practices" and then proceeds to specify the practices and set an emission limit, and an opacity limit, without having conducted the required economic analysis on this compounded BACT.<sup>8</sup> First, EPA can only set an emission limit, which the source is free to meet in any manner it wishes. EPA cannot require a particular technology ("good combustion practices"), and then in addition set an emission limit.<sup>9</sup> Second, if EPA believes that a surrogate (such as visual opacity monitoring) is as effective as other approaches to monitoring compliance, EPA should only require the surrogate. Here EPA requires the surrogate and an

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<sup>6</sup> See Statement of Basis, page 62 of 141, Section 4.2

<sup>7</sup> See Statement of Basis, page 78 of 141, Section 4.4.1 and page 82 of 141, Section 4.4.2

<sup>8</sup> See Statement of Basis, page 83 of 141, Section 4.4.4 and page 93 of 141, Section 4.5

<sup>9</sup> See 40 U.S.C. § 7602 ("The term 'best available control technology' means an *emission limitation* . . .") (emphasis added); 40 C.F.R. § 52.21(b)(12) ("Best available control technology means an emissions limitation (including a visible emission standard) based on the maximum degree of reduction . . . . If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology.")

emissions limit, weekly inspections, a full time maintenance specialist onboard at all times, and the list goes on. And finally, all of this is done without the required economic analysis.

- d. EPA properly sets BACT for the Supply Vessel at “no additional add-on controls” and then acknowledges that Shell has agreed to use ULSF.<sup>10</sup> We contend that this is the correct approach to acknowledging that the permittee has elected to employ “controls” that are more stringent than BACT.
5. To the extent EPA is requiring Shell to comply with New Source Performance Standards (NSPS) for emission sources that are not stationary, we contend this is incorrect. 40 C.F.R. § 55.13(c) provides that NSPS applies to OCS sources “in the same manner” as in the Corresponding Offshore Area (“COA”). NSPS only apply to stationary sources. 42 U.S.C. § 7411(b). NSPS do not apply to nonroad engines, marine engines or mobile sources regulated under Title II of the Clean Air Act. *See, e.g.*, 40 C.F.R. §§ 60.4219 (excluding nonroad and mobile engines from the definition of stationary internal combustion engine for NSPS applicability); 1068.30 (excluding engines that are subject to an NSPS from the definition of “nonroad engine”). Therefore, EPA must evaluate each “source” on the Frontier Discoverer to determine whether it is subject to a particular NSPS or to a nonroad, marine or mobile source standard, in which case it would be specifically exempt from consideration as an NSPS source. Accordingly, EPA’s inclusion of emission units on the Frontier Discoverer as NSPS sources such as the crane engines, cementing units, logging winch engines, and HPU engines is unlawful.
  6. EPA requested comments on its two options for determining when a drillship becomes an OCS Source, as defined by 40 CFR §55.2.<sup>11</sup> Under Option 1, the Discoverer would be considered an “OCS source” from the time between the placement of the first anchor on the seabed to the removal of the last anchor from the seabed at a drill site. Under Option 2, the Discoverer would be considered an “OCS source” from the time the Discoverer is declared by the Discoverer’s on-site company representative to be “secure and stable in a position to commence exploratory activity at the drill site,” an event which is recorded in the Discoverer’s logs). EPA states that it supports Option 1 and seems to focus on the terms “attached” to the seabed floor to support its contention that as soon as one anchor is in place the drillship becomes an OCS Source. To focus on those words is to ignore the other requirement found in the remainder of the definition, which states “and used for the purpose of exploring, developing or producing resources therefrom.” The inclusion of the word “and” makes the requirement two-fold. The drillship must be “attached” *and* “used for the purpose of ...” which the drill ship cannot do until it is completely secured in its location. Thus, Option 2 is the correct interpretation because a drillship does not become an OCS source until it is declared “secure” by the vessel representative (in this case Shell) because while it might be partially anchored it cannot be used for exploratory, development or production purposes until it is “secured.”

<sup>10</sup> See Statement of Basis, page 93 of 141, Section 4.7

<sup>11</sup> See Statement of Basis, page 23 of 141, Section 2.1

7. Anadarko has concerns regarding EPA's requirement for stack testing to the exclusion of other well-tested approaches (such as fuel use limits and operational limits) to determine compliance with emission limitations. EPA itself acknowledges that there are challenges to stack testing; however,<sup>12</sup> yet inexplicably chooses not to adopt alternative methods that do not have these challenges. As EPA may be aware, there is no industry-standardized equipment for stack testing. Currently each operator has to develop their own. There are also concerns regarding the operation and calibration of the equipment (which go to the reliability of the data), not to mention the format that the data is generated in, and the difficulty in translating that data into a useable format for reporting. By contrast, well accepted practices such as fuel consumption monitoring and placing limits on the number of hours of operation will produce data that is of equal quality to stack testing without all of the issues associated with stack testing. Therefore, EPA should allow the operator to select the monitoring approach that it prefers (e.g. stack testing, fuel use or operational limits) and not mandate stack testing to determine compliance with emission limits.

In addition to our comments above, we fully incorporate by reference the comments filed by ConocoPhillips on OCS PSD Permit Number: R10OCS/PSD-AK-09-0 as they apply to this permit.

We thank you for your consideration of these comments.

Sincerely,



Todd Durkee, Manager   
Drilling & Completions  
Anadarko Petroleum Corporation

cc: Katie Maness, EH&S, APC  
Linda S. Kuhn, Legal, APC 

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<sup>12</sup> E.g., Statement of Basis, page 33 of 141, Section 3.1 ("While EPA understands that there may be practical challenges to testing the Deck Cranes (Units FD-14 and FD-15) emission units, EPA has insufficient information at this time to eliminate testing for these units.").