

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
SEATTLE, WASHINGTON**

**STATEMENT OF BASIS
FOR DRAFT
OUTER CONTINENTAL SHELF
TITLE V AIR QUALITY OPERATING PERMIT
NO. R10OCS020000**

**CONOCOPHILLIPS COMPANY
JACKUP DRILL RIG
CHUKCHI SEA EXPLORATION DRILLING PROGRAM**

Date of Draft Permit: July 22, 2011

Statement of Basis – Permit No. R10OCS020000
ConocoPhillips Jackup Drill Rig – Chukchi Sea Exploration Drilling Program

A small amount of CH₄ may also be emitted by the Drilling Mud System (DR-14). When wells are drilled through porous, hydrocarbon bearing rock, drilling fluids (mud) circulated through the drill bit can carry gaseous hydrocarbons from the well back to Rig. These gases are typically released as fugitive emissions when the mud is processed for reuse on the Rig and stored temporarily on an OSV; however, some of the emissions pass through a vent. Although fugitive emissions are not counted towards determining whether a source is a major source for PSD applicability for exploratory drill rigs (see 40 CFR § 52.21(b)(1)(iii)), the permittee has agreed to include all of these methane emissions when determining compliance with the PTE limit for GHGs.

Based on past drilling experience, the permittee has estimated a conservative amount of methane gas – 8.7 tons per month – that could be released from the circulated mud. To account for this potential methane release while determining compliance with the GHG PTE limit, the permit assumes 183 tons per month CO₂e emissions (8.7 tons per month of methane) will be released from the drilling mud and requires the permittee to include this amount in the monthly calculation of GHGs. To determine compliance with the 39,800 tpy CO₂e limit, actual GHGs from combustion and incineration are added to the assumed mud emissions each month (183 tons CO₂e) and then added to the previous 11 months of GHG emissions. Given that the PTE limit is less than half than the GHG “subject to regulation” threshold of 100,000 tpy CO₂e and the conservative estimate of maximum GHG from the Drilling Mud System, Region 10 is not including additional conditions for monitoring these minimal GHGs from the drilling mud. Region 10 believes this approach is appropriate for the following reasons:

- The permittee’s assumed a drilling rate of 400 feet of 12 inch diameter hole per 24-hour period, and that the entire length would be hydrocarbon bearing. This is conservative, because the hydrocarbon bearing zone is expected to be limited to a portion of the overall drilling depth.
- The permittee’s estimate assumes 100% of the porous space in the rock drilled in the hydrocarbon bearing zone is filled with hydrocarbon gas which is typically not the case.
- The permittee’s estimate assumes 100% of the gas is methane when actual testing of the muds has documented that the gas is a mix of ethane and methane (only methane is a GHG).

Conditions C.5 and C.6: These conditions include provisions necessary to ensure that the project does not cause or contribute to a violation of any NAAQS under authorized operational scenarios. As discussed in Section 2 above, for a Title V temporary source, the NAAQS are an applicable requirement and the Title V permit must include terms and conditions to ensure compliance with the NAAQS at all locations. See 40 CFR §§ 71.2 (definition of applicable requirement), 71.6(a)(1), and 71.6(e). The air quality modeling analysis submitted as part of the permit application demonstrated initial compliance with the NAAQS. The air quality impact analysis is discussed in Section 4. Emission limitations and operational restrictions have been included to ensure compliance with the hourly NO₂ and the 24-hour PM₁₀ and PM_{2.5} NAAQS. These conditions convert key assumptions that were made by the permittee in the modeling analysis into enforceable permit conditions.

The air quality analysis submitted by the permittee modeled emissions from the Rig beginning 500 meters from the center of the Rig and assumes that the Coast Guard will impose a safety zone of this distance around the Rig to exclude the public from the area in which the main operations will be conducted. Region 10 will include in the permit a requirement that the