

**BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

In re:)	
)	
)	
Shell Offshore, Inc.)	OCS Appeal Nos.
OCS Permit No. R10 OCS030000)	11-05, 11-06 & 11-07
)	
Kulluk Conical Drilling Unit)	
)	
)	
)	

RESPONSE TO PETITIONS FOR REVIEW

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INTRODUCTION

The Board should deny review because Petitioners have not demonstrated clear error in Region 10's October 21, 2011 decision to grant Outer Continental Shelf ("OCS")/Permit to Construct and Title V Air Quality Operating Permit No. R10 OCS030000 ("permit") to Shell Offshore, Inc. ("Shell") for operation of the Kulluk drilling unit ("Kulluk") in the Beaufort Sea under section 328 and Title V of the Clean Air Act ("CAA"). This decision is fully supported by the record, including a detailed Response to Comments ("RTC"). Petitions were filed by: (1) the Iñupiat Community of the Arctic Slope ("ICAS Petitioners"); (2) Earthjustice on behalf of a number of environmental organizations ("Earthjustice Petitioners"); and (3) Daniel Lum.¹

BACKGROUND

The permit authorizes Shell to conduct air pollutant emitting activities for the purpose of oil exploration with the Kulluk on lease blocks in the Beaufort Sea as authorized by the United States Bureau of Ocean Energy Management, Regulation and Enforcement ("BOEMRE"). The permit also provides for the operation of associated support vessels ("Associated Fleet").²

The permit was issued in response to an application submitted by Shell on February 28, 2011. Region 10 proposed a draft permit and accepted public comment from July 22 to September 6, 2011, and held public hearings in Barrow and Anchorage, Alaska on August 23 and 26, 2011. After review and full consideration of the comments received, Region 10 issued the permit on October 21, 2011.

¹ Petitions are identified as "ICAS Pet.," "Earthjustice Pet.," and "Lum Pet."

² The "Associated Fleet" refers to vessels supporting the Kulluk that will be within 25 miles of the Kulluk while it is an "OCS source." *See* CAA § 328(a)(4)(C); 40 C.F.R. § 55.2.

STANDARD OF REVIEW

Petitioners bear the burden of demonstrating that review is warranted. To meet this burden, a petitioner must not only specify objections to the permit, but also explain why the permit issuer's previous response to those objections is clearly erroneous or otherwise warrants review. A "petitioner's burden is particularly heavy in cases where a petitioner seeks review of issues that are fundamentally technical or scientific in nature, as the Board typically defers to the expertise of the permit issuer on such matters if the permit issuer adequately explains its rationale and supports its reasons in the record." *In re Avenal Power Center, LLC*, PSD Appeal Nos. 11-02 through 11-05, slip. op. at 4-5 (EAB Aug. 18, 2011)(internal citations omitted).

ARGUMENT

Considering the full record, Petitioners fail to demonstrate that Region 10's permitting decision constitutes clear error or an abuse of discretion, or involves an important policy consideration that the Board should review. *See* 40 C.F.R. §124.19(a)(1)-(2).

I. Petitioners Have Not Shown Clear Error in Region 10's Determination that the Prevention of Significant Deterioration ("PSD") Increments are not "Applicable Requirements" and Will not be Exceeded in Any Event

Petitioners have not demonstrated that section 504(e) of the Clean Air Act ("CAA") or EPA's Part 71 regulations preclude issuing a Title V permit to a Title V temporary minor source³ unless the record shows that the source will not cause an exceedance of PSD increments. The dispute here centers on competing interpretations of

³ References to "minor source" status in this brief are to a source with emissions below the PSD applicability thresholds.

the phrase “any applicable increment or visibility requirements under Part C of subchapter I of this chapter.” CAA § 504(e). A substantial portion of the Earthjustice Petition (19-37) is focused on proving a point that Region 10 does not contest—that CAA § 504(e) is a unique provision that creates requirements for Title V temporary sources that are in addition to those otherwise applicable to such sources under other provisions of the CAA and EPA regulations. On the point that is disputed, Petitioners have not shown that their preferred reading of the key phrase in the CAA is the better reading, much less that Region 10’s reading of these terms is clearly erroneous.

Generally, Title V does not impose on sources substantive pollution control requirements of its own. Instead, Title V requires that each source have a comprehensive operating permit to ensure compliance with all emissions limits and requirements applicable through other provisions of the CAA. *See In re Peabody Western Coal Company*, 12 E.A.D. 22, 27 (EAB 2005). However, Region 10 agrees with Petitioners that CAA § 504(e) is exceptional in that it imposes additional requirements on Title V temporary sources in many cases. AR-EPA-H-4, H000148-50. In the Statement of Basis (“SB”), Region 10 explains how EPA interprets this provision of the CAA to make the NAAQS an applicable requirement for all Title V temporary sources at all authorized locations, which means that this Title V permit “must contain terms and conditions that ensure compliance with the NAAQS at all relevant locations.” *Id.* at 26. Region 10’s view is based on a prior conclusion EPA reached when adopting its Part 70 Title V regulations in 1992. *Id.* (quoting the same passage that Petitioners rely upon from 57 Fed. Reg. 32,550, 32,276 (July 21, 1992)). EPA’s 1992 rulemaking and Region 10’s reasoning supporting this permit do not contain any discussion of the contrast between

CAA §§ 504(a) and 504(e) emphasized by Petitioners. But Petitioners’ comparison of these provisions serves only to illustrate a point that is not disputed—that section 504(e) adds something beyond what is required for permanent sources under other parts of Title V. The parties diverge only with respect to the extent of the requirements added by section 504(e) and the corresponding regulatory language adopted by EPA in 40 C.F.R. §§ 71.2 and 71.6(e).

In the case of temporary sources, the first sentence of section 504(e) allows a Title V permitting authority to issue a single permit authorizing emissions from similar operations at multiple locations. But this grant of authority is conditioned on meeting the criteria discussed in the second sentence, which reads: “No such permit shall be issued unless it includes conditions that will assure compliance with all the requirements of this chapter at all authorized locations, including, but not limited to, ambient standards and compliance with any applicable increment or visibility requirements under part C of subchapter I of this chapter.” CAA § 504(e). The parties agree on the effect of the first clause of this sentence but disagree about the scope of the CAA requirements that are applicable to this source and must be met at each authorized location.

The operative language at the end of this sentence is “any applicable increment . . . requirement.” Section 504(e) does not specify what the increment is “applicable” to or the nature of the increment “requirements” under Part C, and the legislative history does not shed any light on this issue.⁴ This leaves an ambiguity that is resolved differently by

⁴ Petitioners assert that the “plain language” of section 504(e), together with the structure and underlying purpose of Title V, make plain Congress’s “unambiguously expressed intent” and compels their reading of CAA § 504(e). Petitioners’ statements, however, are generally mere assertions, not supported by citations to case law or legislative history. The few citations to case law or post-enactment statements of legislators are statements about Title V generally and not the difference in treatment for permanent sources versus temporary sources. See *In re Shell Gulf of Mexico, Inc. and Shell Offshore, Inc.*, OCS Appeal Nos. 10-01

Region 10 and Petitioners. Region 10’s reading centers around the applicability of an “increment requirement” to permanent stationary sources under the PSD permitting program and permitting requirements of the applicable State Implementation Plan (“SIP”), depending on the type of source (major or minor) and terms of the SIP. AR-EPA-J-3, J000319-22; AR-EPA-H-4, H000149. Region 10 explained in the RTC that it believes the intent of the Title V temporary source provision is to relieve sources of the burden of applying for a Title V permit for each new location, while at the same time assuring compliance with all requirements to which the source would be subject if it were a new permanent source at each such new location. AR-EPA-J-3, J000325. Petitioners read the clause at the end of the second sentence of section 504(e) to mean that whenever increments are applicable to a baseline area, then all Title V temporary sources that consume increment and seek a Title V permit are subject to a requirement to demonstrate that they will not cause an exceedance of the increment value.

The statutory language supports the reading applied by Region 10 in several respects. First, section 504(e) establishes requirements for sources rather than areas. Therefore, it is reasonable for Region 10 to look to CAA requirements that are applicable to *sources* to guide the interpretation of this provision. Second, this section does not stop at the phrase “any applicable increment” but extends further to describe “requirements under part C of subtitle I.” In its RTC, Region 10 explains that there are two sources of “requirements” that are directly applicable to permit applicants under Part C of Title I of the CAA. These are the requirements in section 165(a)(3)(A) that a major source show it will not cause or contribute to a violation of an increment to obtain a PSD permit, and

through 10-04 (EAB Dec. 30, 2010)(*Shell II*), slip op. at 25 (rejecting Earthjustice Petitioners previous broad assertion that a statute was not ambiguous).

any requirement contained in the SIP adopted in accordance with section 161 of the CAA and 40 C.F.R. § 51.166(a)(1). AR-EPA-J-3, J000320.

Petitioners erroneously contend that Region 10's interpretation would require only large sources to demonstrate that they will not cause a violation of the increment. Earthjustice Pet. 29. Although there may be statements in the SB that could be read to suggest such an approach, the RTC clarifies that a SIP may also require increment demonstrations as a condition of obtaining a minor source permit. AR-EPA-H-4, H000149; AR-EPA-J-3, J000320-21. Petitioners also argue that the "increment requirement" of the PSD program is established in section 163 of the CAA and that Region 10 has overlooked this provision. But it is Petitioners who overlook the specific text of section 163, which provides that "each applicable implementation plan shall contain measures assuring that maximum allowable increases over baseline concentrations ... shall not be exceeded." CAA § 163(a). Likewise, section 161 of the CAA provides that the SIP shall contain "emission limitations and such other measures as may be necessary ... to prevent significant deterioration of air quality." These provisions, not acknowledged by Petitioners, show that the "increment requirements" they refer to are implemented through the SIP, and are not directly applicable to sources. The statute and regulations establishing requirements for the construction of new minor sources require a minor source to demonstrate, as a condition of construction or modification, that it will not cause or contribute to a violation of the NAAQS, but do not require a minor source to demonstrate that it will not cause or contribute to a violation of increment. *Compare* CAA § 110(a)(2)(C) and 40 C.F.R. § 51.161(a)(requiring SIPs to include provisions prohibiting construction or modification of a source that would cause

or contribute to a NAAQS violation) with 42 U.S.C. §§ 110(a)(2)(J) and 161 (requiring SIPs to ensure protection of increment but not tying those requirements to authorizing construction or modification of sources); see also AR-EPA-J-3, J000320-21. Region 10 noted, however, that a state has discretion to impose such a requirement to meet its obligations under CAA §§ 161 and 163(a). AR-EPA-J-3, J000321-22. Thus, it is consistent with the CAA, and not clearly erroneous, for Region 10 to read the term “any applicable increment ... requirements” in section 504(e) as describing requirements applicable to permanent sources under the applicable state or federal implementation plan (or in the case of OCS sources, under CAA § 328 and 40 C.F.R. Part 55), including the major source permitting program, and making sure such requirements would be met for temporary sources at each location.

Petitioners fall short in their attempt to give meaning to the use of the term “applicable”⁵ by asserting that increments are not applicable to an area until the “minor source baseline date” when the baseline concentration is established. This premise does not hold up because increases in emissions at major stationary sources begin to consume increment at an earlier point called the “major source baseline date.” 42 U.S.C. § 7479(4); 40 C.F.R. §§ 52.21(b)(13)(ii)(a) and (b)(14)-(15); 53 Fed. Reg. 40,656, 40,658 (October 17, 1988); 75 Fed. Reg. 64,864, 64,868 (Oct. 20, 2010); see also *Great Basin Mine Watch v. EPA*, 401 F.3d 1094, 1096 (9th Cir 2005). The fact that minor sources do not consume increment before the minor source baseline date does not necessarily mean that the increment is not applicable to either the area or to sources in that area before that

⁵Although it is true that the term “any” has an expansive meaning, in the CAA provision at issue here, Petitioners overlook the fact that “any” is directly adjacent to the term “applicable.” Eartjustice Pet. 31. The latter term has a limiting rather than expansive effect. When these two terms are combined, the phrase “any applicable” has a far different meaning than when the term “any” is used in isolation.

date. Because major source construction may consume increment in any baseline area before the minor source baseline date, the increments established in section 163 of the CAA actually became “applicable” to every baseline area and certain types of sources in those areas at the inception of the statutory PSD program.

Petitioners assume that if a source consumes increment, then it is axiomatic that the source may not obtain any permit under the CAA unless it demonstrates that it will not cause a violation of the increments. While there may be superficial appeal to this approach, it ignores the fact that increment requirements are applied to sources through the SIP or the major source permitting program. As discussed above and in the RTC, the CAA does not require state new source construction programs to require a minor source to demonstrate it will not cause or contribute to a violation of increments as a condition of obtaining a minor source permit. AR-EPA-J-3, J000321-22.⁶ Petitioners do not point to anything specific in the CAA or EPA regulations that demonstrate Region 10 erred in recognizing a distinction between the fact that certain emissions may consume increment in a baseline area and a requirement that a source must show it will not cause an exceedance of increment before it may begin to construct or operate. *Id.* The former determines air quality management obligations, while the latter is a permitting criterion

⁶ This permit is three separate permits, one of which is a minor source permit under the COA regulations. AR-EPA-H-4, H000127. The COA regulations applicable to issuance of the minor source permit do not require that an applicant demonstrate that it will not cause or contribute to a violation of increments in order to obtain this type of permit. AR-EPA-J-3, J000321; *see* 18 AAC 50.502. Petitioners do not directly dispute this, but suggest that there is a “conflict” between federal and state requirements and that Alaska’s requirements are “more lenient” than federal regulations. In fact, in the inner OCS, both the minor permit and Title V permit are COA requirements and thus “state” requirements. *See* 40 C.F.R. § 55.13(f). Moreover, CAA regulations do not require that a state minor new source review program require compliance with increments as a condition of obtaining a permit. Because a source is not obligated to submit a Title V permit application until 12 months after commencing operation under the COA Title V regulations on the inner OCS, 18 AAC 326(c); AS 46.14.150, and because the COA regulations provide authority to establish limits on potential to emit in a minor permit, 18 AAC 50.225, only a COA minor permit containing limits on potential to emit is needed to initially authorize operations in the Inner OCS.

directly applicable to sources. One does not necessarily equate with the other. Sections 161 and 163 of the CAA illustrate that states have a certain degree of discretion with respect to imposing measures to protect the increment, particularly in the case of minor source permitting programs. *Id.* When Region 10 observed in the RTC that EPA may act to remedy increment exceedances caused by minor source construction, this was simply a recognition that EPA and states have remedies available if the measures to protect increment in the applicable plan fall short.⁷ Region 10 does not contend that an implementation plan is not allowed, when appropriate, to require minor sources to demonstrate they will not cause a violation of increment to obtain a construction permit. Rather, Region 10's contention is that Congress left states discretion to manage potential impacts of minor sources on increment through the planning process rather than *requiring* that such source make an explicit demonstration before obtaining a permit, as Congress has required for PSD major sources.

Nor have Petitioners shown that Region 10's conclusion regarding the applicability of increment requirements to this source is undermined by the terms of EPA's Part 71 regulations. Region 10 explained in the RTC why its conclusion does not render meaningless the thirteenth item in the definition of "applicable requirement" contained in 40 C.F.R. § 71.2. AR-EPA-J-3, J000324. As discussed, the intent of the Title V temporary source provisions is to relieve sources of the burden of applying for Title V permits for each new location, while at the same time assuring compliance with

⁷ Although no SIP or SIP-type requirements apply in the outer OCS, 40 C.F.R. § 55.13(h) gives EPA authority to promulgate into Part 55 additional requirements as necessary to protect federal or state ambient air quality standards or to comply with Part C of Title I of the CAA. AR-EPA-J-3, J000323. In the inner OCS, ADEC's COA regulations apply, which are similar to the Alaska SIP. *See* 40 C.F.R. § 55.14. The question here is whether Title V requires that increment concerns at a Title V temporary minor source be addressed through the Title V permitting process when there is no such requirement in Title V or the applicable SIP or COA regulations that permanent minor sources ensure compliance with increment as a condition of obtaining a minor source construction permit or a Title V operating permit.

all requirements to which the source would be subject to if it were a new permanent source at each such new location. AR-EPA-J-3, J000325. For a Title V temporary source that is also subject to the PSD permitting requirements, this would include ensuring that NAAQS and increment are met at each future location, adding something to requirements applicable to the source under PSD alone. *See* 40 C.F.R. § 52.21(i)(1)(viii)(no affirmative requirement that a source considered “temporary” at multiple locations demonstrate compliance with NAAQS and increment at future locations). For a minor source, this would include ensuring that the NAAQS and, if required under the SIP for minor permanent sources, increment are met at each future location even if the SIP did not require such a demonstration for minor sources that are temporary or portable. Petitioners make no effort to confront this reasoning or demonstrate why it is clearly erroneous. Petitioners suggest the Title V regulations have a more expansive meaning than Region 10 ascribes to the provision in the CAA on which the regulation is based. Although the thirteenth item in the definition of applicable requirement (40 C.F.R. § 71.2) does not use language that is identical to CAA § 504(e) in all respects, it is expressly limited by a reference to the statute itself and therefore cannot expand the meaning of the statute. AR-EPA-J-3, J000322-23.

Even if the Board determines that increment is an applicable requirement for this Title V temporary minor source, Petitioners have not demonstrated that the permit fails to assure compliance with increments for nitrogen dioxide (“NO₂”), sulfur dioxide (“SO₂”) and particulate matter (“PM₁₀”).⁸ As discussed in the RTC (AR-EPA-J-3, J000323), Table 11 in the Technical Support Document (“TSD”), AR-EPA-H-1, H000033, shows

⁸ No petitioner has challenged Region 10’s conclusion in the RTC that the Kulluk does not consume any PM_{2.5} increment. AR-EPA-J-3, J000327.

that increments for NO₂ and SO₂ will not be exceeded because, if one conservatively assumes the baseline concentration is zero, this table shows that the sum of Shell's impacts and background concentrations would cause an increase less than the Class II increments for these pollutants in 40 C.F.R. § 52.21(c). As explained in the RTC, it is appropriate in this particular case to use monitored background levels to represent the total impact of sources in the area, which includes baseline and increment-consuming sources. AR-EPA-J-3, J000317-18.⁹ Region 10's conclusion with respect to PM₁₀ is supported by the fact that modeling analyses for previous permits issued by the Alaska Department of Environmental Conservation ("ADEC") have documented that the contribution to existing PM₁₀ levels by onshore sources along the Beaufort Sea, both baseline and increment consuming, is not significant.¹⁰ For example, in issuing a permit for Endicott located on an island 3.8 miles offshore, ADEC determined that, based on past modeling assessments, off-site sources of PM₁₀ do not have a significant impact at Endicott for purposes of an increment analysis. AR-EPA-B-30, B001111-13.¹¹

Therefore, the addition of Shell's impact shown in Table 11 of the TSD¹² to the PM₁₀

⁹ Although EPA has stated that ambient monitoring has not been used to establish baseline concentrations or to evaluate increment consumption, EPA explained that "ambient measurements reflect emissions from all sources, including those that should be excluded from the measurements." 72 Fed. Reg 31,372, 31,376 (June 6, 2007). Therefore, the use of monitoring data in this case, where the monitor is adequately sited to capture impacts from off-site sources (AR-EPA-J-3, J000317-18)—an issue that was not the subject of a petition with respect to the NAAQS analysis—is a conservative representation of increment that has been consumed in the area because it includes impacts from sources that consume increment as well as sources that do not.

¹⁰ Unlike NO₂ and SO₂, monitored background concentrations of PM₁₀ include a more significant contribution from sources that do not consume increment (*i.e.*, that are part of the baseline), such as windblown dust.

¹¹ If the impact from Prudhoe Bay sources is insignificant at Endicott (AR-EPA-B-31, B001126), it would be insignificant at the Kulluk leases because concentrations decrease with distance and the lease blocks are farther from the Prudhoe Bay sources than Endicott. The impact from the Endicott facility's small PM₁₀ emissions (AR-EPA-B-30, B001095-96), which is farther from the lease blocks than the Prudhoe Bay sources are from Endicott, would also be insignificant at the lease blocks.

¹² Annual PM₁₀ emissions are not shown in Table 11 because there is no longer an annual NAAQS for PM₁₀. As shown in the permit (AR-EPA-J-2, Tables D.2.2 and D.2.1), however, PM₁₀ and PM_{2.5} emissions are the same for all sources except incinerators. For incinerators, PM₁₀ emissions exceed PM_{2.5} emissions

significant impact levels in 40 C.F.R. § 51.165(b) is a conservative demonstration of total increment consumption and show that the PM₁₀ increments will not be exceeded.

Petitioners have not shown clear error in Region 10's technical determination that the increments will not be exceeded if they are deemed to be applicable to this source.

II. Petitioners Do Not Demonstrate Clear Error in Limits Established to Restrict Potential to Emit

Petitioners allege Region 10 committed clear error in establishing limits to restrict the potential to emit ("PTE") nitrogen oxides ("NO_x"), carbon monoxide ("CO"), and SO₂ to below the applicable 250 ton per year ("tpy") major source threshold, and to restrict Greenhouse Gases ("GHG"), measured as carbon dioxide equivalent ("CO₂e"), below the threshold at which GHGs become subject to regulation for a new stationary source under the Tailoring Rule.¹³ The several theories advanced by Petitioners do not demonstrate clear error, especially in light of the heavy burden Petitioners bear in challenging Region 10's technical determinations in establishing PTE limits. *Peabody Western*, 12 E.A.D. at 30.

A. Source-Wide PTE Limits for NO_x and CO are Enforceable as a Practical Matter

Petitioners describe the source-wide emission limits to restrict PTE for NO_x and CO as "blanket emission limits" that are not enforceable as a practical matter. ICAS Pet. 10-13; Earthjustice Pet. 10-11. EPA guidance documents and memoranda "illustrate that the CAA and its implementing regulations allow for a flexible, case-by-case evaluation of

by at most 20%, so annual modeled PM₁₀ concentrations from Shell's operations alone would also be expected to exceed annual modeled PM_{2.5} concentrations by at most 20%, resulting in an annual PM₁₀ concentration of 1.2 ug/m³.

¹³ 75 Fed. Reg. 31,514 (June 3, 2010).

appropriate methods for ensuring practical enforceability of PTE limits. The key consideration throughout these policy and guidance documents is whether the terms and conditions that limit the potential emissions are, in fact, enforceable as a practical matter.” *In the Matter of Orange Recycling and Ethanol Production Facility, Pencor-Masada Oxynol, LLC*, Pet. No. II-2001-05 (Adm’r Apr. 8, 2002)(“*Masada II*”), 4-5 (AR-EPA-B-17, B000642-43). EPA has explained that to establish a limit that is enforceable as a practical matter a permit must specify: (1) a technically-accurate limitation and the portions of the source subject to the limitation, (2) the time period of the limitation, and (3) the method to determine compliance. *Peabody Western*, 12 E.A.D. at 32 (quoting Options for Limiting PTE Guidance, AR-EPA-B-9, B000214).

The permit establishes source-wide emission limits for NO_x (240 tpy) and CO (200 tpy) covering all emission units on the Kulluk and Associated Fleet. AR-EPA-J-2, Conditions D.4.1 and D.4.2. To ensure practical enforceability, these emission limits are rolled on a 365-day basis¹⁴ with compliance determined by calculating daily emissions of NO_x and CO to add to the calculated emissions from the previous 364 days. *Id.* In addition, the permit establishes a method of compliance based on continuous monitoring and recording of fuel usage and the application of source-test derived or specified emission factors. AR-EPA-J-2, Conditions D.1., D.4.1., D.4.2., E.2, and F.2; AR-EPA-J-3, AR-EPA-J-3, J000245-47. The practical effect of the emission limits and source-test derived or specified emission factors functions to constrain fuel use, which Shell must continuously monitor and manage to ensure compliance with the PTE limits. AR-EPA-J-3, J000247.

¹⁴ Region 10 determined a 365-day rolling limit was appropriate in light of the annual variations in Shell’s operations and the fact operations occur only part of the year. AR-EPA-B-4, B000181-82; AR-EPA-J-3, J000242-43.

To derive emission factors for the units responsible for approximately 91% of NO_x emissions and 97% of CO emissions, the permit requires multiple stack tests of engines at a wide-range of operating loads (40%, 65% and 95%), and stack tests of incinerators while operating within 10% of maximum capacity. AR-EPA-J-2, Condition E.2.1 and E.2.3; AR-EPA-J-3, J000245-46. To account for operational variability, the worst-case emission factor observed at any of the tested loads is applied to calculate emissions under all operating loads. AR-EPA-J-2, Conditions D.1.5, E.2.2, and E.2.4. In other words, for purposes of calculating emissions for comparison to the PTE limits, the permit requires Shell to assume that source-tested emission units operate at the test load that resulted in the highest emissions rate even when the units operate at loads that result in lower emissions. AR-EPA-J-3, J000245-46. For the emission units not subject to testing, which consist of heaters/boilers and “small and/or infrequently operated sources,”¹⁵ the permit specifies emission factors that reflect AP-42 values or the 90th percentile value or higher of stack tests conducted for comparable units associated with Shell’s Discoverer drillship operations. AR-EPA-J-2, Tables D.2.1-2; AR-EPA-J-3, J000245-46 and J000249; *infra* section II.A.1.

The permit further requires that Shell continuously monitor and record the hourly, daily, and monthly fuel combusted in each emission unit using a fuel flow meter, except that for the small and/or infrequently operated sources the permit specifies three alternatives to measure and record fuel usage before and after operation. AR-EPA-J-2, Conditions F.2.2; AR-EPA-J-3, J000245. For incinerators, the permit requires that Shell

¹⁵ The “small and/or infrequently operated sources” are the Kulluk emergency generator (operated two hours every 30 days, AR-EPA-J-2, Condition D.5.3), seldom-used sources (lifeboats and other emergency equipment, AR-EPA-A-7, Supplemental Information pp. 10 and 16), and Oil Spill Response (OSR) workboats (operated for exercises six hours a day, five days a week, AR-EPA-A-7, Appendix G, p. 2).

either record the hours of operation each day (for the Kulluk incinerator)¹⁶ or assume that the incinerators operate continuously throughout the day (for incinerators on the Associated Fleet). AR-EPA-J-2, Conditions D.4.1.2-3, D.4.2.2-3. The continuously monitored fuel usage, incinerator operation rate, and source-test derived or specified emission factors are used to calculate daily emissions of NO_x and CO to determine compliance with the rolling 365-day source-wide limits. AR-EPA-J-2, Conditions D.1.1-2 and D.4.1-2; AR-EPA-J-3, J000246.

As explained above, the NO_x and CO source-wide limits are not, as Petitioners assert, mere blanket limitations, and meet the criteria for enforcement as a practical matter. *Peabody Western* 12 E.A.D. at 32. EPA has previously found that rolling emission limits accompanied by prescribed emission factors and appropriate monitoring and recordkeeping sufficiently restricts PTE. *See, e.g., In the Matter of Pope and Talbot, Inc.*, Petition No. VIII-2006-04 (Adm'r 2007)(AR-EPA-B-24). Petitioners do not explain why the PTE limits for NO_x and CO are not actually enforceable as a practical matter, nor do they demonstrate clear error in Region 10's technical decisions.

Petitioners allege that the PTE limits for NO_x and CO conflict with EPA's 1989 Guidance on Limiting Potential to Emit in New Source Permitting ("1989 PTE Guidance", AR-EPA-B-4). ICAS Pet. 12. This is not the case. Region 10 explained in its RTC that while sources like the Kulluk and Associated Fleet were not contemplated by the 1989 PTE Guidance, which was written prior to the enactment of CAA § 328, the circumstances here are analogous to the Guidance's discussion of VOC surface coating operations. AR-EPA-J-3, J000246-47; AR-EPA-B-4, B000180. The 1989 PTE Guidance recognized that due to the wide variety of coatings and unpredictable nature of

¹⁶ Kulluk incinerator operation is restricted to 12 hours a day. AR-EPA-J-2, Condition D.5.4.

operations, an emission limit supported by monitoring the VOC content of coatings and the quantity of coatings used, coupled with a requirement to calculate daily emissions, would provide for “emission limits that are more easily enforceable than operating or production limits.” AR-EPA-B-4, B000180. Similarly, the Kulluk and Associated Fleet contain numerous small and large sources (more than 50 engines) spread across the drillship and a mobile fleet of vessels. Emissions from these units will vary by source, the type of activity being conducted, and due to the unpredictable conditions in the Beaufort Sea. Furthermore, the lack in uniformity of NO_x and CO emission factors for the units comprising nearly the entire emissions inventory precludes the creation of a source-wide fuel limit that can accurately restrict these pollutants,¹⁷ and establishing unit-by-unit fuel limits would require Region 10 to prophetically distribute fuel allowances such that the unit-specific fuel supply perfectly aligns with forecasted demand. AR-EPA-J-3, J000244-45. In consideration of these realities, and consistent with the VOC coating discussion in the 1989 PTE Guidance, Region 10 determined that an effective way to readily restrict PTE for NO_x and CO was through source-wide emissions limits supported by test-derived or specified emission factors, akin to the VOC content of coatings, and continuous monitoring and recording of operational parameters, akin to tracking the quantity of VOC coatings used. AR-EPA-J-3, J000247.

In an unpersuasive attempt to discredit the analogy to VOC coating operations, Petitioners describe the VOC coating discussion as a “limited circumstance,” which they interpret to mean that it does not apply to other operations. Earthjustice Pet. 13-14.

However, the Guidance’s discussion of VOC coating operations has been applied “in

¹⁷ In contrast, uniformity of SO₂ and CO₂e emission factors enable Region 10 to establish a 12-month rolling limit on fuel usage to limit emissions of these pollutants from sources that combust fuel. AR-EPA-B-55; AR-EPA-J-3, J000252.

principle” to other sources. AR-EPA-B-6, B000200. Alternatively, Petitioners argue that the VOC coating discussion is not applicable because fuel use and operational duration are parameters that are easily tracked. This argument misses the point. The use of an emission limit for VOC coating operations was predicated on the notion that emissions limitations may be more easily enforceable than operating or production limits for certain sources with variable emissions and unpredictable operations, as is the case here.

Petitioners also misconstrue the VOC analogy by focusing on the permit conditions that limit aggregate fuel use and hours of drilling. ICAS Pet. 20-21. As explained above, the relevant comparisons are to the permit conditions that establish the method for calculating emissions using unit-specific emission factors and provide for continuous monitoring and recording of fuel combustion. AR-EPA-B-4, B000180; AR-EPA-J-3, J000247. Petitioners’ claim that the permit requirement to calculate daily emissions each week means that emissions are not calculated on a daily basis is also unavailing. The VOC discussion in the 1989 PTE Guidance specifies “a requirement to calculate daily emissions,” but does not suggest that such calculation must be made each day, especially when the data necessary for the daily calculations is collected on a continuous basis and compliance can therefore be assessed at a given point in time, as is the case here. *Id.*, *see infra* section II.A.2. Petitioners have not demonstrated that the permit is inconsistent with the 1989 PTE Guidance, particularly when read in conjunction with subsequent EPA guidance and memoranda.

1. Emission Factors for NO_x and CO Provide for Reliable Emission Calculations

Petitioners raise several technical claims regarding alleged deficiencies with the emission factors used to calculate NO_x and CO emissions, and frame their arguments by

citing to the Board's discussion of generic AP-42 factors in *Peabody Western* for the proposition that all emission factors are unreliable estimates. ICAS Pet. 15-19; Earthjustice Pet. 11-13. In this sense, Petitioners ignore the distinction between the generic AP-42 factors discussed in *Peabody Western*, 12 E.A.D. at 38-39, and the approach in the permit which relies on worst-case emission factors derived from multiple source tests of the actual emission units.

Petitioners first argue that Region 10 erred by not requiring source testing for all emission units. The sources not subject to testing are the heaters/boilers and small and/or infrequently operated sources, which together constitute around 9% of NO_x and 3% of CO emissions. For these sources the permit specifies emission factors based on either the 90th percentile value of the distribution of stack-test results from comparable Discoverer sources or AP-42 factors. AR-EPA-J-3, J000245-46. Region 10 carefully reviewed the Discoverer test data and AP-42 factors and made a technical determination that they provide a conservative assessment of emissions for the units Shell is not required to test. AR-EPA-J-3, J000249-50. Based on its review, and in light of the small emissions contribution from these sources, Region 10 determined that adding these units to the already numerous stack tests Shell is required to conduct in a short time period was unnecessary to ensure reliability in source-wide emission calculations. AR-EPA-J-3, J00050, and J000259-60.

Petitioners allege internal inconsistency because the Region recognized uncertainty in Shell's application that necessitated source testing but did not require testing of all units. Earthjustice Pet. 12. However, Region 10 addressed the uncertainty it saw in the application through a combined approach of source testing nearly all units

and the application of specified emission factors it determined were appropriate for a limited number of sources with a small overall emissions contribution. This is reasonable and not internally inconsistent.

Petitioners assert that the Discoverer stack tests used to calculate the 90th percentile value and assess the appropriateness of AP-42 factors included the application of BACT and are therefore not comparable to Kulluk emission units. ICAS Pet 18-19. The Discoverer stack tests on which Region 10 relied were not subject to post-combustion controls limiting NO_x or CO and therefore provided an appropriate comparison for purposes of deriving emission factors for the Kulluk. AR-EPA-B-55; AR-EPA-B-63; AR-EPA-C-406; AR-EPA-C-489. Petitioners single out the only Discoverer emission factor that is higher than what is being used for the Kulluk—the NO_x factor for heaters/boilers (representing 1% of source-wide NO_x emissions). AR-EPA-J-3, J000249. The 0.026 factor for Discoverer boilers cited by Petitioners is based on the manufacturer's predicted emissions, but actual stack tests of these boilers revealed a range of 0.011 to 0.015, and an average factor of 0.013. Region 10 determined that the AP-42 factor of 0.020 was appropriate in comparison with the average factor of 0.013 derived from testing. *Id.*; AR-EPA-J-3, J000263.

The tenuous comparison Petitioners draw to *Peabody Western* (ICAS Pet. 19) is clearly distinguishable from the permit here. In *Peabody Western* the Board upheld Region 9's technical determination that the proposed PTE limit for fugitive emissions was not enforceable because it relied exclusively on AP-42 factors for a different type of operation, unverified control assumptions, and inadequate monitoring. 12 E.A.D. at 37-40. In declining the source's requested PTE limit, Region 9 acknowledged that for the

limit to be enforceable “either source testing or the use of a continuous emissions monitoring system” would be necessary, but the fugitive nature of emissions precluded such options. *Id.* at fn. 35. Here, the permit establishes a clear and enforceable compliance regimen based on source-testing, continuous parameter monitoring, and a continuous monitoring system to verify the controls that limit NO_x and CO emissions. AR-EPA-J-2, Conditions F.3-4; AR-EPA-J-3, J000253-54.

Petitioners misinterpret the permit as requiring source tests “once a year for one or two years depending on the source.” ICAS Pet. 16. What the permit actually requires is that source-tested units¹⁸ be tested prior to each of the first two drilling seasons, and subsequently every two or five years depending on any variability observed between the initial two tests. AR-EPA-J-2, Condition E.2.1. This approach establishes a testing schedule based on the consistency of results, requiring more frequent testing if variability is observed. AR-EPA-J-3, J000262-63. Contrary to Petitioners’ assertion that only a “single annual test” will be performed, the permit requires three 1-hour test runs at each tested operating load (for engines, nine total). AR-EPA-J-2, Conditions E.2.3.1. and E.2.2.1.3.

Citing a statement from Shell’s comments on the 2010 Discoverer draft permit that “the uncertainty in stack test data is upwards of 15%,” Petitioners reach the broad conclusion that the test-derived NO_x and CO emission factors must be inadequate because they do not account for 15% variability. ICAS Pet. 17. The technical literature referenced in Shell’s comments, however, addresses uncertainty in determining front-half PM emission rates and does not squarely address the procedures for deriving NO_x and

¹⁸ One exception is the Kulluk deck cranes which are tested before the first drilling season and subsequently every five years due to the fact they must be physically removed and transported for testing. AR-EPA-J-2, Condition E.3.1; AR-EPA-C-406, D-15 p. 2.

CO emission factors specified in the permit. More importantly, Petitioners have not demonstrated that the worst-case stack-test results will be biased low and under-report emissions. To improve test reliability, Shell must submit a test plan, follow the EPA-approved test methods, and Region 10 can require additional stack tests if necessary. AR-EPA-J-2, Conditions E.1.2, E.1.7 and E.1.14.

Petitioners have not met their heavy burden in challenging Region 10's technical decisions concerning the emission factors.

2. Monitoring Requirements Adequately Determine Compliance with NO_x and CO Limits

Petitioners contend that the permit requirement to calculate daily NO_x and CO emissions once a week does not provide for compliance assessment or enforcement at a given point in time. ICAS Pet. 13-15. This narrow focus on when the daily calculations are conducted overlooks the permit requirements to continuously monitor and record the data necessary to conduct daily emissions calculations which allows Shell or a Region 10 inspector to readily determine and verify compliance at a given point in time between required weekly calculations. AR-EPA-J-2, Conditions F.2.2 and F.2.6; AR-EPA-J-3, J000261. Furthermore, the weekly requirement to calculate daily emissions provides a sufficiently frequent assessment of where emission levels are vis-à-vis the PTE limits. AR-EPA-J-3, J000238. Petitioners do not demonstrate error in the requirement to calculate daily emissions weekly.

Petitioners raise a baseless theory that a buffer of 5-10% of the major source threshold must be applied to PTE emission limits. ICAS Pet. 15. The closest Petitioners come to authority for this claim is citing to Region 9 comments on two state permits that "encouraged" a buffer of 5-10% where the PTE limits were 1 and 1.5 tpy below the

applicable threshold. Region 10 explained in the RTC that Congress established specific thresholds to determine when a source would be considered major for purposes of PSD review, and that the permit buffers for NO_x (10 tpy) and CO (50 tpy) provide a sufficient measure of confidence with respect to the major source threshold. AR-EPA-J-3, J000247-48. Petitioners do not demonstrate error in the Region’s decision not to establish a larger buffer than already exists in the permit.

B. Petitioners Do Not Demonstrate Clear Error in Permit Conditions Limiting GHG Emissions

Petitioners allege that the limits which restrict source-wide GHGs to below the Tailoring Rule “subject to regulation” threshold of 100,000 tpy CO₂e are not enforceable as a practical matter. The permit establishes a 12-month rolling limit for CO₂e (80,000 tpy) supported by independently enforceable operational limitations restricting aggregate fuel use on a 12-month rolling basis and a capacity limitation on incinerators. AR-EPA-J-2, Conditions D.4.4, D.4.6, and D.4.7.

Consistent with EPA guidance, Region 10 determined that 12-month rolling limits for CO₂e emissions and total fuel use were appropriate in light of the annual variations in operations and the fact that the source operates during only part of the year. AR-EPA-J-3, J000243; AR-EPA-B-4, B000181. Thus, Petitioners’ argument for “day-to-day enforceability” (ICAS Pet. 21-22) would do little to assure compliance with these monthly limits. Nevertheless, continuous monitoring and recording of fuel usage assures that compliance can be assessed at a given point in time.

Petitioners’ main argument why the CO₂e limit is unenforceable involves Region 10’s technical determination that methane emissions from the drilling mud system (DMS) represent the full PTE of this unit on a monthly basis. ICAS Pet 22-26. The majority of

GHG emissions authorized under the permit (99.89%) come from the combustion of diesel fuel in engines and boilers/heaters, and the combustion of waste in incinerators. AR-EPA-J-3, J000251-53. A tiny portion (0.11%) of all permitted GHG emissions is emitted as methane from the DMS, which Region 10 determined (based on several conservative assumptions) has an unrestricted PTE of 1,596 pounds of methane on a monthly basis.¹⁹ To determine compliance with the source-wide CO₂e limit, the permit accounts for methane emissions by requiring that the maximum potential emissions from the DMS (17 tons CO₂e) for each month of operation be added to the monthly monitored emissions of CO₂e from the combustion sources. AR-EPA-J-2, Condition D.4.4.5.

Petitioners allege internal inconsistency in Region 10's determination that methane emissions from the DMS are subject to an inherent physical limitation because the Region also makes reference to operational restrictions limiting the drilling season and hours of drilling activity. ICAS Pet. 22-23. The inherent limitation is based on the finite amount of methane present in the hydrocarbon-bearing zones into which Shell will drill. This inherent limitation is further strengthened by permit conditions that restrict drilling to 1,632 hours. AR-EPA-J-2, Condition D.3.3; AR-EPA-J-3, J000251.

Petitioners apparently do not dispute that inherent limitations can restrict the potential emissions of individual emission units, or that where these inherent limitations can be documented by the source and confirmed by the agency it is appropriate to factor such judgments into estimates of PTE. AR-EPA-B-9, B000216. Instead, they argue that the DMS is not permitted at its full PTE on a monthly basis because the air permit application submitted by ConocoPhillips provided a higher methane estimate. ICAS Pet.

¹⁹ Region 10 agrees with Petitioner that the 1,596 pounds of methane per month is not an emission limit on the DMS. ICAS Pet. at 22. It is the unrestricted PTE of the DMS on a monthly basis.

24-26. Region 10 requested and reviewed additional information concerning Shell and ConocoPhillips' methane calculations and assumptions, and determined that Shell had a sound basis for its calculations. AR-EPA-J-3, J000251; AR-EPA-C-574; AR-EPA-C-575; AR-EPA-C-577.

The main difference between the estimates is ConocoPhillips' assumption that it would drill through a hydrocarbon-bearing zone everyday for the entire 100-day drilling season, whereas Shell assumed it would reach a hydrocarbon-bearing zone a maximum of four times, which corresponds to the total number of wells it could drill in a season under the permit. *Id.* AR-EPA-C-577. This alone caused ConocoPhillips' predicted emissions to be 25 times higher than Shell's.²⁰ To a lesser extent, the different estimates also reflect differences in well data relied upon by the companies. Shell based its calculations on data from actual Arctic wells, whereas ConocoPhillips' relied on a 1977 EPA report based on drilling throughout the United States and particularly the Gulf of Mexico. *Id.*

For this project, Region 10 determined that the Arctic well data was more appropriate. AR-EPA-J-3, J000251-52. To account for the possibility that Shell could encounter a deeper hydrocarbon-bearing zone than indicated by past Arctic well data, Region 10 added several layers of conservatism to Shell's calculations. First, Region 10 assumed all methane emissions would be point source emissions when, in actuality, a significant amount will be fugitive emissions that are not counted in determining the PTE of this source.²¹ AR-EPA-H-4, H000161-62; AR-EPA-J-3, J000252. Next, Shell's

²⁰ That ConocoPhillips may prefer to use this extremely conservative assumption does not mean it is appropriate to require another source to adopt such an approach.

²¹ Petitioners argue that 40 C.F.R. § 71.3(d) requires that fugitive emissions be included in determining PTE. ICAS Pet. 24. This provision does not address inclusion of fugitive emissions in determining whether a source is a major source. The definitions of major source in 40 C.F.R. §§ 52.21(b)(1)(iii) and 71.2 clearly state that fugitive emissions are not considered in determining whether this source is a major source. This

methane estimates are based on the four wells it could conceivably drill in a single season, even though it is unlikely Shell will be able to drill this many wells. Finally, Region 10 assumed that the total methane emissions during the drilling season would be generated each month, and increased the methane emissions accordingly to obtain a conservative value for methane emitted during each month of operation. AR-EPA-J-3, J000252-53. Due to the conservatism applied to the methane emissions, and their insignificant contribution to overall GHG emissions, Region 10 determined that adding the full monthly PTE of the DMS to the calculated monthly emissions from combustion sources provides a reliable assessment of source-wide GHG emissions. *Id.*

Region 10's approach is consistent with EPA's guidance for grain handling terminals which applies a safety factor of 1.2 to the highest previous five years of throughput to constitute a reasonable upper-bound PTE. AR-EPA-B-10. Other than the unconvincing attempt to attribute ConocoPhillips' estimates to Shell, Petitioners provide no information to show that Shell's underlying estimates are inaccurate or that Region 10's conservative adjustments do not provide a reasonable upper bound on emissions.

The amount of methane emitted by the DMS involves a technical dispute and Region 10's determination is reasonable and supported in the record. Petitioners have not met the showing required for the Board to set aside this determination.

C. Petitioners Do Not Demonstrate Clear Error in Permit Conditions Limiting SO₂ Emissions

Petitioners raise several unpersuasive arguments challenging the PTE limit for SO₂. ICAS Pet. 26-28. The permit establishes a 12-month rolling SO₂ emission limit (10

approach was retained by the Tailoring Rule in determining when a source becomes subject to regulation. 75 Fed. Reg. at 31,591.

tpy) supported by independently enforceable operational limitations to combust fuel with a sulfur content less than 100 parts per million (“ppm”) and a 12-month rolling limit on total fuel usage. AR-EPA-J-2, Conditions D.4.3 and D.4.5-6; AR-EPA-J-3, J000245. Together, these operational limits restrict SO₂ emissions to 4.9 tpy. AR-EPA-J-3, J000235-36. As explained in EPA guidance, this approach provides for enforcement as a practical matter. *See* AR-EPA-B-9, B000224. Accordingly, Petitioners’ baseless suggestion to establish operational limits for each emission unit is unnecessary.

Petitioners argue the SO₂ limit is unenforceable because fuel flow monitors are not required for the small and/or infrequently operated sources, but do not explain why the specified fuel measurement alternatives, in conjunction with the requirement to record fuel usage before and after operation, do not provide for a reliable assessment of fuel usage. *See* AR-EPA-J-2, Condition F.2.2.2. Petitioners do not demonstrate clear error in the permit conditions that restrict the PTE for SO₂.

D. Region 10 Responded to Petitioners’ Concern that the Permit is a Sham

Petitioners claim an alleged discrepancy between the 78 days of drilling in Shell’s Incidental Harassment Authorization and the permit’s 1,632-hour operational limit on drilling, which they describe as 68 days, suggests Shell may operate in a manner not represented to Region 10. ICAS Pet. 28-29. Region 10 explained in the RTC that the permit’s operational limit on drilling is expressed in terms of hours, not days, and Shell could conduct 1,632 hours of drilling over a 78-day period. AR-EPA-J-3, J000239. Furthermore, the determination of whether a permit is a sham is based on the intent and objective indicia of a source’s planned mode of operation, and there is no evidence in the record that Shell intends to operate as a major source. AR-EPA-B-4, B000182-83.

Petitioners have not demonstrated that the permit is a sham or that Region 10 failed to respond to their comments.

III. Petitioners Do Not Demonstrate Clear Error in Region 10's Determination of the Ambient Air Boundary

Region 10 determined that the area within 540 meters of the center of the Kulluk is not ambient air if the permit conditions are met. AR-EPA-H-4, H000163 fn. 18; AR-EPA-J-3, J000268-69. This determination is consistent with the regulatory definition of ambient air and an appropriate application of EPA guidance to the specific over-water situation at issue in this permit. Petitioners have not demonstrated clear error in Region 10's determination.

A. The USCG Safety Zone Will Legally Preclude Public Access

Ambient air is defined as "...[t]hat portion of the atmosphere, external to buildings, to which the general public has access." 40 C.F.R. § 50.1(e). The permit requires that the Kulluk be subject to a United States Coast Guard (USCG) safety zone that encompasses an area of at least 540 meters from the center of the Kulluk. The safety zone must also prohibit members of the public from entering except for attending vessels²² or vessels authorized by the USCG. AR-EPA-J-2, p. 8. This, coupled with implementation of the access control program and other factors discussed below, ensures that public access is precluded. As such, it is fully consistent with the definition of ambient air in 40 C.F.R. § 50.1(e).

The longstanding interpretation of the definition of ambient air referred to by Petitioners (Earthjustice Pet. 16) is an interpretation that, by its terms, applies over land.

²² An attending vessel is any vessel "operated by the owner or operator of an OCS facility located in the safety zone..." 33 C.F.R. § 147.20.

See AR-EPA-BB-1. Region 10 explained in the RTC that the criteria previously laid out by EPA for application over land must be adapted to some extent because the permitted activities in this case occur over open-water in the Arctic and Shell does not and cannot “own” the areas of the Beaufort Sea on which the Kulluk will operate as might be the case for a stationary source on land.²³ Region 10 also noted that EPA has previously recognized a USCG safety zone as evidence of sufficient control for establishing the ambient air boundary over-water where the safety zone is monitored to pose a barrier to public access, citing as an example a 2007 determination from EPA Region 2 (Broadwater Letter).²⁴ Petitioners contend there is insufficient information in the record to address possible distinctions between the Broadwater example and the Kulluk, and that one unlawful decision does not justify another. Earthjustice Pet. 18 n. 37. But Petitioners do not suggest any facts that might make the Broadwater Letter not relevant for the Kulluk, nor do they address Region 10’s acknowledgement of, and explanation why EPA guidance for determining the ambient air boundary on land must be adapted to some extent to address the unique circumstances involved in a source operating over-water.

EPA guidance for determining ambient air boundaries in the context of lessor-lessee relationships must also be adapted to some extent to the over water situation involved in this permit. Indeed, a key EPA guidance document on this issue applies to “land” by its title and terms.²⁵

Petitioners are correct that the USCG ultimately controls access within a prescribed area around the drilling activities through its promulgation of the safety zone.

²³ AR-EPA-J-3, J000269.

²⁴ AR-EPA-BB-19

²⁵ AR-EPA-B-26.

See 33 C.F.R. § 147.10. The permit, however, authorizes “attending vessels” to enter the safety zone.²⁶ Given that “attending vessels” are defined to include vessels operated by the owner or operator of the OCS source in the safety zone, see 33 C.F.R. § 147.20, Shell will exercise considerable control over the vessels that are allowed to enter the USCG safety zone.

B. Conditions in this Case Are Tantamount to a Physical Barrier

Petitioners are correct that legal authority to exclude the public is not alone sufficient to exclude an area from ambient air. Public access must also be precluded by a fence or physical barrier. EPA has previously recognized, however, that an access control program, in conjunction with facts specific to the particular situation, can serve as a barrier on par with a fence or a physical boundary.

Depending on the facts of a particular situation natural physical features such as rivers or rugged terrain, coupled with a program of signage and patrol designed to warn and intercept members of the public, may be sufficient to preclude public access. See 50 Fed. Reg. 7056, 7057 (Feb. 20, 1985)(“Kenecot’s man-made barriers, and other security measures, together with the inherently rugged nature of the mountainous terrain involved here, combine to effectively preclude public access.”); AR-EPA-B-3 (river coupled with posting and regular patrols could be adequate to preclude public access).²⁷ In the RTC,²⁸

²⁶ This is based on the safety zone established for Shell’s Discoverer drillship in 2010. See 33 U.S.C. § 147.T001(b)(1); 75 Fed. Reg. 18,404, 18,407 (April 12, 2010).

²⁷ Petitioners contend that reliance on the harsh, remote environment should be disallowed as *post hoc* rationale because in the RTC Region 10 did not cite or discuss EPA guidance documents that rely on these factors for concluding public access is precluded. Earthjustice Pet. 19. The RTC specifically states that “for the overwater locations in the arctic environment at issue in this permitting action, such a program of monitoring and notification is sufficiently similar to a fence or physical barrier on land...” AR-EPA-J-3, J000269. That subsistence activities occur in the Beaufort Sea does not undermine the fact that the overwater location and harsh conditions obviously pose some barriers to public access, which in this case is accompanied by a monitoring and patrol program.

²⁸ AR-EPA-J-3, J000269.

Region 10 cited to the Broadwater Letter as an example of a situation where a radar detection system in combination with a radio warning system accompanying a USCG safety zone was deemed sufficient to preclude public access.²⁹ Alaska, whose COA regulations apply in the Inner OCS, has also recognized that an access control program can, depending on the circumstances, serve the same function as a fence or physical boundary. *See* AR-EPA-B-60, B001806 (“In these rare cases, ADEC has allowed applicants to establish an access control plan for their ambient air boundary.”).

In this case, the permitted operations will be miles offshore in harsh and rugged seas. The permit requires Shell to develop in writing and implement a public access control program to locate, identify, and intercept by radio, physical contact, or other reasonable measures to inform the public that they are prohibited by USCG regulations from entering the safety zone. The permit also requires Shell to communicate to the North Slope communities on a periodic basis when exploration activities are expected to occur, where they will be located, and any restrictions on activities in the vicinity of Shell’s exploration operations. AR-EPA-J-2, Condition D.5.1. Petitioners have not demonstrated clear error in Region 10’s determination that the permit conditions adequately ensure that public access will be precluded within the meaning of the definition of ambient air and EPA guidance, as applied to the unique facts underlying this permit.

²⁹ Petitioners suggest a USCG safety zone established for safety considerations cannot be relied on to determine the ambient air boundary. Earthjustice Pet. 17-18. This suggestion is unfounded. Fences are typically erected for reasons that relate to safety and business considerations, not just to establish a facility’s ambient air boundary.

IV. Petitioners May not Raise and the Board Should Reject Petitioners' Argument that the Agency has Changed its Position on the Modeling Demonstration Required for the 1-Hour NO₂ NAAQS

Petitioners assert for the first time on appeal that Region 10 improperly accepted Shell's modeling for the 1-hour NO₂ NAAQS because Region 10 relied on a March 1, 2011 guidance document³⁰ regarding the use of background data that they contend takes a different position on this issue than an earlier June 29, 2010 guidance document,³¹ with no explanation for this change in position. Earthjustice Pet. 37-41. Petitioners did raise several legal and technical issues regarding the 1-hour NO₂ modeling analysis, but none of these comments raised the alleged discrepancy between the approaches in the two guidance documents that Petitioners now ask the Board to consider. *See* AR-EPA-I-53, I002169-74 and I002176-77. The Board should reject Petitioners' attempt to raise this issue for the first time on appeal. *See* 40 C.F.R. § 124.19(a).

The new issue raised by Petitioners here is based on a clear misreading of the June 2010 Guidance in particular and a clear misunderstanding of the nature of such guidance in general. Petitioners cite language that relates to the 24-hour PM_{2.5} NAAQS, not the 1-hour NO₂ NAAQS. The June 2010 Guidance explains that “[a]s noted in the March 23, 2010 memorandum regarding ‘Modeling Procedures for Demonstrating Compliance with the PM_{2.5} NAAQS’ [], combining the 98th percentile monitored value with the 98th percentile modeled concentrations for a cumulative impact assessment could result in a value that is below the 98th percentile of the combined cumulative distribution and would, therefore, not be protective of the [PM_{2.5}] NAAQS.” It then states that a different approach is appropriate for the 1-hour NO₂ NAAQS. *See* AR-EPA-

³⁰ AR-EPA-BB-83 (“March 2011 Guidance”).

³¹ AR-EPA-BB-62 (“June 2010 Guidance”).

BB-62, BB005105 This is clear from the next sentence stating “*However, unlike the recommendations presented for PM_{2.5}...*” and is explained in more detail in the March 2011 Guidance. *Id.* (emphasis added).³²

The June 2010 Guidance discusses a very conservative “first tier” approach:

A “first tier” assumption that may be applied without further justification is to add the overall highest hourly background NO₂ concentration from a representative monitor to the modeled design value, based on the form of the standard, for comparison to the NAAQS.

Id. But the June 2010 Guidance then makes clear that “[a]dditional refinements to this ‘first tier’ approach based on some level of temporal pairing of modeled and monitored values may be considered on a case-by-case basis, with adequate justification and documentation,” *Id.*, and thus would not be using the highest monitored 1-hour NO₂ background value.

The March 2011 Guidance references the June 2010 Guidance regarding a conservative “first tier” approach and the specific provision for “additional refinements” before stating, “[g]iven the importance of this aspect of the analysis and the challenges that have arisen in application of the guidance to date, we feel compelled to offer additional guidance on this issue.” AR-EPA-BB-83, BB008780. The March 2011

³² The conservative “first tier” modeling approach recommended in the March 2010 Guidance is to combine the 98th percentile 24-hour monitored PM_{2.5} background concentration with the highest average of the maximum modeled 24-hour averages across 5 years of NWS meteorological data or the maximum modeled 24-hour average for one-year of site-specific meteorological data. AR-EPA-BB-48, BB004117-18. In contrast, the conservative “first tier” approach recommended in the June 2010 Guidance is to combine the highest monitored 1-hour NO₂ concentration with the 98th percentile modeled concentration following the form of the 1-hour NO₂ standard. AR-EPA-BB-62, BB005105. Two factors account for differences in the “first tier” approaches recommended for the 24-hour PM_{2.5} NAAQS and the 1-hour NO₂ NAAQS. First, although both are “probabilistic” standards, the 24-hour PM_{2.5} standard is based on the distribution of 24-hour averages, whereas the NO₂ standard is based on the distribution of daily maximum 1-hour values. *Compare* 40 C.F.R. § 50.13(c) *with* 40 C.F.R. § 50.11(f). There is thus a greater probability of high modeled and monitored values occurring at the same time for the 24-hour PM_{2.5} NAAQS than for the 1-hour NO₂ NAAQS. Second, monitored background concentrations of PM_{2.5} play an important role in accounting for the contribution of secondary PM_{2.5} formation in the cumulative impact assessment. AR-EPA-BB-48, BB004115 and BB004119.

Guidance explains that, although the approach in the June 2010 Guidance “should be acceptable without further justification in most cases,” it “could be overly conservative in many cases..., increasing the potential for double-counting of modeled and monitored contributions.” *Id.* (emphasis added). EPA then described several possible refinements, including the use of the monitored NO₂ design value or the pairing of modeled and monitored concentrations based on hour of day. *Id.* Shell’s approach for combining modeled concentrations with monitored background concentrations is consistent with the March 2011 Guidance. Petitioners do not contend otherwise. But it is also consistent with the June 2010 Guidance because it is “based on some level of temporal pairing of modeled and monitored values” and Region 10 “considered on a case-by-case basis, with adequate justification and documentation” that such an approach was appropriate. AR-EPA-BB-62, BB005105. Although this approach may be less conservative than using the highest monitored background value, there is no requirement that a permit be based on the most conservative approach.

Shell’s modeling is also consistent with the other aspects of the June 2010 and the March 2011 Guidance, as explained at length in the TSD and RTC.³³ Petitioners do not attempt to directly challenge the 1-hour NO₂ analysis based on the issues they raised in comments, presumably because of the strong technical analysis underlying the permit. Petitioners instead offer a new, specious argument regarding an alleged change in EPA’s position. The Board should decline on procedural grounds to consider Petitioners’ attempt to raise this specific issue for the first time on appeal. Alternatively, the Board should reject the substance of Petitioners’ argument because it is contradicted by the language of the June 2010 and March 2011 Guidance. Petitioners have not demonstrated

³³ AR-EPA-H-1, H000019 and H000031; AR-EPA-J-3, J000291-307.

clear error on this issue, and have certainly not met their high burden for obtaining review of a technical disagreement with the Region.

V. Region 10 Took Appropriate Action in the Context of These Permitting Decisions to Identify and Address Potential Disproportionately High and Adverse Human Health or Environmental Effects

Petitioners argue that Region 10 failed to put forth a valid basis for concluding that Alaska Natives will not be disproportionately impacted by emissions from Shell's operations and that there are substantive and procedural problems with the Region's environmental justice analysis. None of the arguments, however, demonstrate clear error in Region 10's permitting decision or involve an exercise of discretion or important policy consideration which the Board in its discretion should review. The Board recently noted that the language of Executive Order 12898, 59 Fed. Reg. 7,629 (Feb. 11, 1994) ("EO 12898," AR-EPA-FF-1), directing federal agencies to identify and address impacts "as appropriate," and "[t]o the greatest extent practicable and permitted by law" imparts considerable leeway to agencies in determining how to comply with the spirit and letter of the Executive Order. *Avenal*, slip op. at 24.

In accordance with EO 12898, Region 10 thoroughly considered and appropriately addressed environmental justice concerns associated with this permitting action, as detailed in the 15-page Environmental Justice Analysis (AR-EPA-F-1) ("EJ Analysis") and a 6-page summary of the analysis in the SB (AR-EPA-H-4, H000176-81). *See Shell II*, slip op. at 71 (the Region must provide "some analysis or record evidence to demonstrate compliance with" EO 12898).³⁴

³⁴ This permit is a minor source construction permit under the COA regulations and a Title V permit, not a PSD permit. EPA has recognized that its discretion to address environmental justice concerns in PSD and Title V permits may differ. *See* AR-EPA-FF-7, F000201-02.

A. Region 10 Complied with Applicable Public Participation Requirements and Provided Meaningful Public Process for North Slope Communities

Petitioners raise several challenges to the public process and argue that Region 10 did not provide meaningful process for North Slope communities. Petitioners' arguments concerning public participation for North Slope communities under EO 12898 (ICAS Pet. 38-39) refer back to and incorporate each argument raised in challenging the public process under the applicable regulations (ICAS Pet. 6-9). Accordingly, Region 10 addresses all of Petitioners' public process arguments here.

The public process provided by Region 10 fully complied with applicable requirements at 40 C.F.R. Parts 124 and 71.³⁵ The Kulluk draft permit was subject to a 46-day comment period that exceeded the minimum 30-day period required under 40 C.F.R. §§ 124.10(b) and 71.11(d)(2)(i). AR-EPA-J-3, J000222-24; AR-EPA-HH-16; *see In re Knauf Fiber Glass, GmbH*, 9 E.A.D. 1, 17 (EAB 2000)(permit issuer need not go beyond regulatory requirements in providing for public participation). In addition to complying with the regulatory requirements, Region 10 implemented several affirmative measures to engage North Slope communities and provide for meaningful involvement that fulfill its responsibilities under EO 12898.³⁶

Petitioners advance a contrived argument that because the 46-day comment period overlapped with comment periods for other draft permits, the comment periods for each permit should be summed and averaged, and thus the 46-day comment period was actually only 16 days. ICAS Pet. 7-8. Petitioners implicitly ask the Board to rewrite the regulations by finding clear error in Region 10's compliance with regulatory requirements. The Board should decline this invitation.

³⁵ Part 124 and 71 procedures both apply to this permit. *See* AR-EPA-J-3, J000223, fn. 3.

³⁶ *See* AR-EPA-J-3, J000223-24 and J000335 (describing Region 10's outreach efforts)

Due to their alleged inability to hire an air modeler, Petitioners argue that they were denied a meaningful opportunity to comment. ICAS Pet. 8. Accepting Petitioners' claim would place the Region in a difficult predicament as it would need to account for what is essentially a contractual agreement between external parties in determining the adequacy of a comment period. Furthermore, Petitioners have previously challenged air permits for OCS sources and are certainly aware of the technical complexities inherent in such permits. *See, e.g., Shell II*. As part of its outreach efforts to North Slope communities, Region 10 notified Petitioners on May 25, 2011 that the comment period would begin in late July, providing nearly two months to plan for public comment and retain technical assistance. AR-EPA-HH-1. Even assuming Petitioners had no foreknowledge of the technical issues in the permit, their claimed inability to hire a technical consultant does not mean that the 46-day comment period was inadequate.

Petitioners also contend that their June 15, 2011 letter to Region 10 demonstrated a need for additional time pursuant to 40 C.F.R. § 71.11(g). ICAS Pet. 8-9. In denying this request Region 10 described some of the affirmative steps implemented to assist North Slope communities with public participation and explained the need to balance the competing interests of providing for meaningful participation and issuing timely permits. AR-EPA-C-532. Rather than explaining how Region 10 erred in not granting its request, Petitioners' brief merely reiterates statements made in their June 2011 letter. Furthermore, the detailed and substantive comments Petitioners submitted undercut their claim that it was infeasible to provide meaningful written comments. *See* AR-EPA-I-54.

Petitioners claim that the Barrow public hearing was inadequate because there were problems with the teleconference connection, a Powerpoint presentation was not

made available to teleconference participants, and Region 10 provided insufficient notice that an interpreter was available. At the start of the Barrow public hearing there were sound difficulties with the teleconference system which were resolved quickly.

Nevertheless, Region 10 was able to transcribe all oral testimony using redundant teleconference recordings and the court reporter transcript. AR-EPA-J-3, J000226.

Petitioners' argument concerning the presentation is misplaced. The presentation was not for the hearing, the purpose of which is to receive oral comment, but for an informational meeting on the permit held before the hearing. With respect to the interpreter, Region 10 contacted ICAS prior to the hearing to arrange for an Iñupiaq interpreter. AR-EPA-J-3, J000227-28. Providing an interpreter is not a legal requirement, yet Region 10 did arrange for an interpreter to be available.

Petitioners raise two additional arguments in the context of public participation under EO 12898. First, Petitioners selectively cite to language in Region 10's North Slope Communications Protocol ("Protocol") to create the false impression that it is a binding document setting forth the Region's obligations. AR-EPA-GG-4. Specifically, they quote a statement that the Region "will routinely plan for a 60-day window for public comment opportunity," to argue that the 46-day comment period was inadequate, but omit the following sentence which states "[t]his does not mean we will routinely offer 60-day comment periods." AR-EPA-GG-4, GG000023. The purpose of the 60-day planning window is to provide flexibility in the public process; it does not extend all comment periods on the North Slope to 60 days.

Petitioners also argue that the public process for North Slope communities was inadequate because Region 10 did not travel to Kaktovik and Nuiqsut. Region 10 did

travel to Kaktovik for an informational meeting in June 2011, and therefore interprets this argument to mean that it should have held public hearings in Kaktovik and Nuiqsut.

Region 10 explained in the RTC that it is not able to travel to each North Slope community, but recognizes that many communities have an interest in the permit. AR-EPA-J-3, J000226-27. Barrow was selected as the appropriate hearing location because it has a teleconference system that enables many North Slope communities to participate and thus allows for a more inclusive hearing. *Id.*

In sum, Petitioners do not show clear error in Region 10's public process or in its efforts to provide for meaningful involvement of North Slope communities under EO 12898.

B. Region 10 Adequately and Appropriately Considered Comments Regarding Ozone

Petitioners contend Region 10 committed legal error in relying on compliance with the existing 8-hour ozone NAAQS. ICAS Pet. 30. Their petition on this issue raises issues that are largely technical, rests on a series of inaccuracies and mischaracterizations, and does not demonstrate clear error in Region 10's decision.

Most importantly, EPA has not, as Petitioners assert, "itself determined that the 8-hour ozone NAAQS is inadequate to protect human health and the environment." ICAS Pet. at 31. EPA proposed a revision to the 8-hour ozone NAAQS, 75 Fed. Reg. 2938, (Jan. 9, 2010), but did not take final action on the proposal. What Petitioners refer to as the "outdated" 8-hour ozone standard (ICAS Pet. 32) is in fact the Agency's current legal standard—0.075 ppm. Petitioners' argument is really a back-door suggestion that the Board second-guess the Agency's decision not to issue a revised NAAQS at the present time.

Nor is this permitting action “analogous” to the “unusual” circumstances in *Shell II* (slip op. at 71), as Petitioners’ contend. In contrast to *Shell II*, EPA has not made a final determination that the current 8-hour ozone standard is inadequate. Region 10 therefore appropriately based its consideration of ozone impacts on local communities on the ozone NAAQS currently in effect, including the 8-hour ozone NAAQS of 0.075 ppm. Region 10’s technical determination that Shell’s emissions will not cause or contribute to a violation of the currently effective 8-hour ozone NAAQS is therefore “emblematic of achieving a level of public health protection that...demonstrates that minority or low-income populations will not experience disproportionately high and adverse human health or environmental effects due to exposure to relevant criteria pollutants.” *Shell II*, slip op. at 73.

Petitioners have not demonstrated that the Region’s technical analysis with respect to the 8-hour ozone standard is inconsistent with EO 12898, as interpreted by the Board.³⁷ Importantly, Petitioners do not appear to directly challenge Region 10’s conclusion that emissions from the Kulluk will not cause or contribute to a violation of the *current* 8-hour ozone NAAQS. Rather, they allege that Region 10 “Ignored Petitioner’s Comments and EPA’s Scientific Findings On The Need For A New Ozone Standard.” ICAS Pet. at 30. Even if there were a requirement to consider a standard that EPA has proposed but not finalized, the RTC shows that Region 10 appropriately considered and responded to all comments regarding the proposed 8-hour ozone standard. Region 10 explained that EPA had not finalized a previous proposal to establish a revised

³⁷ Petitioners are correct that the discussion of ozone in the EJ Analysis accompanying the draft permit was brief. ICAS Pet. at 30-31. The record, however, also contains the TSD and RTC which provide a more detailed discussion of Region 10’s determination with respect to ozone. AR-EPA-H-1, H000020 and H000033-34; AR-EPA-J-3, J000313-15 and J000335-36.

8-hour ozone standard and that EPA will instead consider revisions to the ozone NAAQS in connection with the 5-year mandated review in 2013. AR-EPA-J-3, J000315 and J000336-37; AR-EPA-B-58.

Region 10 then stated that it did not believe ozone levels would be expected to exceed even the lowest level that EPA had proposed for consideration (0.060 ppm). AR-EPA-J-3, J000313. Region 10 explained the technical basis for that statement: (1) existing regional ozone levels for the 8-hour ozone NAAQS are a maximum of 0.32 ppm (barely half of the lowest range proposed by EPA) in the Beaufort Sea and a maximum of 0.40 ppm (2/3rds of the lowest range proposed by EPA) in the Chukchi Sea, and (2) the contribution of ozone precursors under this permit and other sources permitted and currently proposed to be permitted on the Alaska OCS is small in proportion to precursor emissions from other sources in the area. AR-EPA-J-3, J000313-14, J000317, and J000336-37.³⁸ Region 10 also responded to all comments specifically raising concerns with cumulative impacts from other proposed OCS operations. *Id.*³⁹

Region 10 appropriately considered and responded to all “superficially plausible” claims of disproportionately high and adverse impacts from ozone precursors on low-income and minority populations. Petitioners’ request for review on this issue should be denied.

³⁸ It is important to note that in the “draft final” ozone rule referred to in the petition (ICAS Pet. 31 n. 28), the “draft final” standard is 0.070 ppm, 0.010 ppm higher than the 0.060 ppm level Region 10 considered in issuing this permit.

³⁹ Region 10 explained that permit conditions prohibit the Kulluk from operating in the Beaufort Sea if the Discoverer drillship operates in the Beaufort Sea during the same drilling season, and that Conoco-Phillips had withdrawn its application for operation in the Chukchi Sea. AR-EPA-J-3, J000317; AR-EPA-J-2, Condition D.8. Potential OCS operations in the Chukchi Sea and the Beaufort Sea are over 200 miles apart at the closest point.

C. Region 10 Adequately and Appropriately Considered Comments Regarding the 1-Hour NO₂ NAAQS

Petitioners challenge Region 10's reliance on the 1-hour NO₂ NAAQS in the EJ Analysis as insufficient and ignoring salient evidence in the record. The record and petition fail to demonstrate clear error.

The permit is supported by a robust analysis demonstrating that permitted emissions comply with the 1-hour NO₂ NAAQS. The record shows that the maximum modeled impact together with background concentrations is 81% of the 1-hour NO₂ NAAQS, occurs 540 meters from the center of the Kulluk (*i.e.*, in the Beaufort Sea), and declines rapidly with distance. AR-EPA-H-1, H000033-34. Onshore impacts from Shell's operations are just 0.16% of the NAAQS. Total concentrations in onshore communities (Shell's impact plus background) are at most 50% of the NAAQS, almost all of which is due to background concentrations and not emissions from Shell's operations. *Id.* The RTC also explains the many conservative assumptions underlying the 1-hour NO₂ NAAQS analysis. AR-EPA-J-3, J000273, J000294, J000296, J000299, J000307, and J000345-46. Even with these conservative assumptions Region 10 found no NAAQS violation.

Petitioners ask the Board to consider what they claim are "significant questions" over whether permitted emissions will comply with the 1-hour NO₂ NAAQS. ICAS Pet. 35 n.31, 37-38. As support, Petitioners point to several technical issues they raised during the public comment period relating to how pollution controls for NO₂ will function in the Arctic, NO_x/NO₂ ratios used in modeling, the use of diurnal pairing, the number of stack tests required, the need for additional tracer experiments to establish the accuracy of the model, and their request for continuous emission monitors. Region 10

responded to each of these comments. AR-EPA-J-3, J000249-50, J000253-56, J000259-65, J000276-77, and J000297-305. Importantly, Petitioners do not directly challenge Region 10's responses by demonstrating legal or factual errors in Region 10's analysis. Instead, Petitioners point to these issues collectively as evidence of the inadequacies in Region 10's EJ Analysis, in an apparent attempt to avoid the need to demonstrate legal or factual error or carry the especially heavy burden a petitioner bears in challenging a fundamentally technical decision. The Board should reject this thinly veiled attempt to avoid the demonstrations a petitioner must make to justify review by the Board.

As part of their argument, Petitioners assert that Region 10 failed "to *analyze* the impacts of Shell's emissions on subsistence hunters and fishers while offshore" and "never discusses whether subsistence hunters and fishers could be adversely impacted by this pollution [from Shell's operations]." ICAS Pet.36-37 & n. 19 (emphasis in original). This is not accurate. The modeling demonstrated, and Region 10 explained, that the NAAQS would be met in all areas that constitute ambient air (*i.e.*, more than 540 meters from the Kulluk), including in areas where subsistence activities are regularly conducted. AR-EPA-H-4, H000176 and H000180-81; AR-EPA-F-1, F000002, F000011, and F000012-14; AR-EPA-J-3, J000333-34 and J000342-44. A map showing where subsistence activities are regularly conducted is included in both the SB and the EJ Analysis.⁴⁰ Petitioners' statements relating to consideration of NO₂ emissions on subsistence hunters and fishers are flatly contradicted by the record.

As a final argument, Petitioners contend that Region 10 should have considered emissions from vessels related to Shell's operations before the Kulluk becomes an OCS source or that occur more than 25 miles from the Kulluk when it is an OCS source.

⁴⁰ AR-EPA-H-4, H000179; AR-EPA-F-1, F000004.

Petitioners' acknowledge that these emissions are not emissions of the "OCS source" and are not required to be considered under applicable permitting regulations. AR-EPA-I-54, I002225. As explained in the RTC, EPA specifically excluded mobile source emissions that occur as a result of the construction or operation of a stationary source from the definition of secondary emissions considered in the modeling analysis required by the PSD regulations, which Region 10 used as a guide for the analysis in this permit. AR-EPA-J-3, J000316-17. Region 10 also explained that when vessels are moving the impact of emissions at any one location would be reduced, and when not moving the vessels would likely be anchored and thus not using the emission units with the highest impact. AR-EPA-J-3, J000331-32; AR-EPA-J-3, J000286. Elsewhere in the RTC, Region 10 noted the vast areas over which operations would be occurring and the many conservative assumptions underlying the 1-hour NO₂ NAAQS analysis of the emissions from vessels required to be considered under the applicable permitting program. AR-EPA-J-3, J000229, J000273, J000281, J000283, J000293, J000295, J000298, J000306, and J000345-46. Based on the information before it, Region 10 found that it had insufficient information to determine with certainty whether or not emissions from these different vessels and activities that are not required to be considered in the NAAQS analysis would, in conjunction with permitted emissions, cause or contribute to a violation of the 1-hour NO₂ NAAQS. Region 10 also stated it had no reason to believe that emissions from these Shell mobile/"non-OCS" sources would change Region 10's conclusion that the 1-hour NO₂ NAAQS is not expected to be exceeded. AR-EPA-J-3, J000331-32.

Petitioners note that after issuance of the permit, Shell provided to BOEMRE, in response to its request, an inventory of emissions from similar Shell mobile/“non-OCS” sources supporting operations of the Discoverer in the Chukchi Sea. ICAS Pet. 35. Petitioners assert that Region 10 should have requested this type of information from Shell, but they provide no basis for finding that it was clear error not to do so. Petitioners also appear to suggest the Board should grant review and remand the permit so that Region 10 can reopen the record, assess the accuracy of the inventory, and then use the information to conduct an EJ analysis that accounts for all of the impacts from Shells’ operations. *Id.* The Board should decline Petitioners’ invitation to further delay decision in this case and, by extension, to treat the record of a permit decision as continually open to accommodate post-permit information as it becomes available.

Furthermore, a review of the information provided by Petitioners does not suggest to Region 10 that a violation of the 1-hour NO₂ standard is likely to occur. These additional Shell mobile/“non-OCS” source emissions would be emitted at least 25 miles from the Kulluk. It is unlikely that these vessels would all operate at the same location or even at the same time, or that their plumes would simultaneously travel to the Kulluk’s point of maximum impact on the day and hour that the maximum 1-hour NO₂ impact occurs. However, even if all of this did occur, the resulting concentration would likely be so diluted that it would not substantively influence Shell’s modeling analysis which shows that the maximum modeled impact occurs near the source and rapidly declines with distance. In Shell’s case, the maximum impact occurred 540 meters from the center of the Kulluk—which is an eightieth of the distance from where these other mobile/“non-OCS” source vessels would be located if they were continuously located just beyond 25

miles from the Kulluk. Shell’s conclusion regarding emissions from these mobile source/“non-OCS” sources is consistent with Region 10’s tentative conclusions in issuing the permit—that they will be dispersed over a large area and are therefore expected to have a minimal impact on ambient levels of NO₂. ICAS Pet. Ex. 15, p.2; AR-EPA-J-3, J000332.

In sum, Region 10 considered the best data available while the permit was under consideration that are germane in light of the scope and nature of the action before the agency in analyzing the technical issues of likely concentrations of pollutants, and thus whether there may be disproportionate and adverse impacts on minority and low-income communities. Petitioners do not demonstrate otherwise, especially given the heavy burden they bear on technical issues. *Avenal*, slip op. at 24. EO 12898 does not require EPA to reach a determinative outcome prior to issuing a permit, particularly when the available data is inconclusive. *Id.*

VI. Concerns Relating to Oil Spill Response and Toxins in the Food Chain are Outside the Scope of these Permit Proceedings

Petitioner Lum contends Region 10 failed to consider all of the health, cultural, and environmental impacts in issuing the permit, including Shell’s ability to respond to oil spills and the potential impact of toxins on subsistence resources. Such considerations are outside the scope of this permitting action and other programs are in place to consider and address these concerns. *In re Shell Offshore, Inc.*, 13 E.A.D. 357, 405-406 (EAB Sept. 17, 2007); AR-EPA-J-3, J000222 and J000342. The Lum Petition should therefore be denied.

CONCLUSION

WHEREFORE, for the reasons set forth above, Region 10 requests that the Board deny the Petitions for Review.

Dated: December 21, 2011

Respectfully submitted,

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STATEMENT OF COMPLIANCE WITH WORD LIMITATION

I hereby certify that this Response to Petitions for Review by EPA Region 10 contains 13,999 words, as calculated using Microsoft Word word processing software. This excludes parts of the brief exempted from the EAB's PSD Review Order.

/s/ _____
Alexander Fidis

EXHIBITS

(Documents in the Administrative Record Cited in Region 10's Response to Petitions for Review, OCS Appeal Nos. 11-05, 11-06, and 11-07)

Shell Kulluk Administrative Record Documents Cited by Region 10

Section A. Application Materials

EPA Exhibit Number	Date	Document Description
A-7	6/29/2011	Final Application Supplements: – Final_Kulluk_Applications_Part1 – Final_Kulluk_Applications_Part2 – Kulluk_Submittals_20110629-ReducedSize – KullukOCSApplication_20110629 – KullukOCSAppLtr_20110629 – Shell_Kulluk_app_and_supp_cover_ltr_20110629

Section B. Guidance, Background Information, and Technical Analysis

EPA Exhibit Number	Date	Document Description
B-3	4/30/1987	United States Environmental Protection Agency Office of Air Quality Planning and Standards Research Triangle Park, Memorandum, RE: Ambient Air
B-4	6/13/1989	Memorandum from Terrel Hunt, EPA, to John Seitz, EPA, RE: Guidance on Limiting Potential to Emit in New Source Permitting, transmitting "Limited Potential to Emit in New Source Permitting," dated June 13, 1989
B-6	3/13/1992	Memorandum from John B. Rasnic, EPA, David Kee, Air and Radiation Division, Subject: Policy Determination on Limiting Potential to Emit for Koch Refining Company's Clean Fuels Project
B-9	1/25/1995	Memorandum from John Seitz, EPA, to Director, Air, Pesticides and Toxics Management Division, Regions I and IV, RE: Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Act)
B-10	11/14/1995	Memorandum from John Seitz, EPA, to Director, Office of Ecosystem Protection, Region I, RE: Calculating Potential to Emit (PTE) and Other Guidance for Grain Handling Facilities
B-17	10/1/2001	In the Matter of Orange Recycling and Ethanol Production Facility, Pencor-Masada Oxynol, LLC, Order Responding to Petitioner's Request that the Administrator Object to Issuance of a State Operating Permit, Petition No.: II-2001-05
B-24	4/11/2006	In the Matter of Pope and Talbot, Inc., Lumber Mill 1 Spearfish, Order Responding to Petitioner's Request that the Administrator Object to Issuance of a State Operating Permit, Petition Number: VIII-2006-04

EPA Exhibit Number	Date	Document Description
B-26	6/22/2007	Memorandum from Stephen Page, EPA, to Regional Air Division Directors, EPA, RE: Interpretation of "Ambient Air" in Situations Involving Leased Land Under the Regulations for Prevention of Significant Deterioration (PSD)
B-30	3/3/2009	Alaska Department of Environmental Conservation Air Permits Program, Technical Analysis Report For Air Quality Control Minor Permit No. AQO181MSSO4, BP Exploration (Alaska) Inc. (BPXA) Endicott Production Facility
B-31	10/13/2009	Alaska Department of Environmental Conservation, Technical Analysis Report, Air Quality Control Minor Permit AQO166CPT04 and Air Quality Control Construction Permit AQO270CPT04, Prepared by Zeena Siddeek
B-55	7/20/2011	Memorandum, from Dan Meyer, Office of Air, Waste and Toxics, to Permit File, Subject: Calculation of No. 2 Diesel Fuel Usage Restriction for Condition D.4.6 in Draft Permit to Shell for Operation of Conical Drilling Unit Kulluk in Beaufort Sea
B-58	9/2/2011	Statement by the President on the Ozone National Ambient Air Quality Standards, Prepared by The White House Office of the Press Secretary
B-60	9/14/2011	ADEC Modeling Review Procedures Manual
B-63	10/21/2011	"Memorandum, Subject: Revisions to Emission Factors in Tables D.2.1 and D.2.2 of Draft Permit to Shell for Operation of Conical Drilling Unit Kulluk in Beaufort Sea"

Section BB. Other Guidance, Background Information, and Technical Analysis

EPA Exhibit Number	Date	Document Description
BB-1	12/19/1980	Letter from Douglas Costle, EPA, to Jennings Randolph, Committee on Environment and Public Works, RE: Ambient Air Definition
BB-19	10/9/2007	Letter from Steven Riva, EPA, to Leon Sedefian, DEC, RE: Ambient Air for the Offshore LNG Broadwater Project
BB-48	3/23/2010	Memorandum from Stephen D. Page, EPA, RE: Modeling Procedures for Demonstrating Compliance with PM _{2.5} NAAQS
BB-62	6/28/2010	Memorandum from Tyler Fox, EPA, to Regional Air Division Directors, EPA, RE: Applicability of Appendix W Modeling Guidance for the 1-hour NO ₂ National Ambient Air Quality Standard
BB-83	3/1/2011	Memorandum from Tyler Fox, EPA, to Regional Air Division Directors, EPA, RE: Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO ₂ National Ambient Air Quality Standard

Section C. Correspondence and Communication

EPA Exhibit Number	Date	Document Description
C-406	5/6/2011	Disco Stack Test Reports
C-532	7/21/2011	Letter from Richard Albright, EPA, to Harry Brower, AEWG, RE: Letter requesting that the U.S. Environmental Protection Agency not hold overlapping comment periods as planned for the Outer Continental Shelf exploratory drilling air projects
C-574	9/15/2011	Email from Dave Newsad, to Doug Hardesty, EPA, RE: Mud degassing emissions factor info (Attachment: image6afc46.JPG, API- Table 5-17.pdf)
C-575	9/16/2011	Email from Doug Hardesty, EPA, to Susan Childs, Shell, RE: Information Regarding Methane Emissions (Attachments: Methane calc_20101022, Shell Arctic well gas volumes KC, methane emissions DS R3)
C-577	9/20/2011	Email from Susan Childs, Shell, to EPA Region 10, RE: "ConocoPhillips Jackup Drill Rig - Chukchi Sea Exploration Drilling Program" (Permit No.R10OCS020000)

Section F. Environmental Justice

EPA Exhibit Number	Date	Document Description
F-1	7/19/2011	Environmental Justice Analysis for Proposed Outer Continental Shelf Permit No. R10OCS030000, Kulluk Drilling Unit

Section FF. Other Environmental Justice

EPA Exhibit Number	Date	Document Description
FF-1	2/16/1994	Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7629
FF-7	12/1/2000	Memorandum from Gary S. Guzy, General Counsel, Office of General Counsel, RE: EPA Statutory and Regulatory Authorities Under Which Environmental Justice Issues May Be Addressed in Permitting

Section GG. Other Government-to-Government Consultation

EPA Exhibit Number	Date	Document Description
GG-4	5/1/2009	North Slope Communication Protocol: Communications Guidelines to Support Meaningful Involvement of the North Slope Communities in EPA Decision-Making, EPA Region 10, May 2009

Section H. Draft Title V Permit

EPA Exhibit Number	Date	Document Description
H-1	7/18/2011	U.S. EPA, Region 10, Technical Support Document, Review of Shell's Ambient Air Quality Impact Analysis for the Kulluk OCS Permit Application, Permit No. R10OCS030000
H-4	7/22/2011	U.S. EPA, Region 10, Statement of Basis for Draft OCS Permit to Construct and Title V Air Quality Operating Permit No.R10OCS030000 Shell Offshore, Inc. Conical Drilling

Section HH. Other Draft Title V Permit

EPA Exhibit Number	Date	Document Description
HH-1	5/25/2011	Letter from Doug Hardesty, EPA, to North Slope Borough, RE: Invitation to attend informational meetings on EPA air and water permits for oil and gas exploration
HH-16	7/22/2011	Final Public Notice for Air Permits Proposed for Public Comment: Shell Kulluk Oil and Gas Exploration, Beaufort Sea, Alaska and ConocoPhillips Oil and Gas Exploration, Chukchi Sea, Alaska

Section I. Public Comments on 2011 Revised Draft Permits

EPA Exhibit Number	Date	Document Description
I-53	9/6/2011	Letter, via email, to EPA Region 10, RE: Draft Air Permit No. R10OCS030000 for Shell's Proposed Kulluk Drilling Operations in the Beaufort Sea, Alaska
I-54	9/6/2011	Letter from NSB, AEW, and ICAS, to Doug Hardesty, EPA, RE: Draft Outer Continental Shelf Title V Clean Air Act Permit for Shell Offshore Inc.'s Exploratory Drilling in the Beaufort Sea with the Kulluk drill rig

Section J. Final Title V Permit

EPA Exhibit Number	Date	Document Description
J-2	10/21/2011	Shell Kulluk Final OCS Title V Air Permit
J-3	10/21/2011	U.S. EPA, Region 10, Response to Comments for OCS Permit to Construct and Title V Air Quality Operating Permit, Conical Drilling Unit Kulluk, Shell Offshore, Inc.

**CERTIFICATE OF SERVICE AND
CERTIFICATE FOR RESPONSE TO PETITION FOR REVIEW
IN PAPER FORMAT**

I hereby certify that I caused a copy of the above Region 10's Response to Petitions for Review, OCS Appeal Nos. 11-05, 11-06 & 11-07, to be filed with the Clerk of the Environmental Appeals Board electronically through CDX, and four identical copies of the Response to be delivered to the Board at the hand delivery address below.

I further certify that I have caused to be delivered to the Board at the hand delivery address below four copies of the Exhibits in the Administrative Record that are cited in Region 10's Response to Petitions for Review, OCS Appeal Nos. 11-05, 11-06 & 11-07.

I further certify that an electronic copy of the Response to Petitions for Review, OCS Appeal Nos. 11-05, 11-06 & 11-07, with accompanying Exhibits, was sent to each of the persons identified below via email.

I further certify that copies of all of the documents in the Administrative Record, which include the Exhibits cited in Region 10's Response to Petitions for Review, OCS Appeal Nos. 11-05, 11-06 & 11-07, were caused to be delivered to the Board (four DVDs) and mailed to the persons identified below on December 21, 2011 (one DVD to each address).

Pursuant to the Environmental Appeals Board Order Authorizing Electronic Filing in Proceedings before the Environmental Appeals Board not Governed by 40 C.F.R. Part 22, dated January 28, 2010, I further certify that the paper copies of Region 10's Response to Petitions for Review, OCS Appeal Nos. 11-05, 11-06 & 11-07, with accompanying Exhibits, are identical copies of the documents electronically filed with the Board on December 21, 2011.

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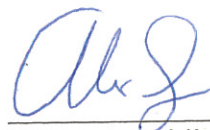
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