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

In re:	)
Shell Offshore Inc. Permit No. R10OCS030000	)

PETITION FOR REVIEW
SUBMITTED BY RESISTING ENVIRONMENTAL DESTRUCTION OF INDIGENOUS LANDS, ALASKA WILDERNESS LEAGUE, CENTER FOR BIOLOGICAL DIVERSITY, NATURAL RESOURCES DEFENSE COUNCIL, NORTHERN ALASKA ENVIRONMENTAL CENTER, OCEANA, PACIFIC ENVIRONMENT, SIERRA CLUB, and THE WILDERNESS SOCIETY

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INTRODUCTION

Pursuant to 40 C.F.R. §§ 55.6(a)(3), 71.11(l), and 124.19(a), Resisting Environmental Destruction of Indigenous Lands ("REDOIL"), Alaska Wilderness League, Center for Biological Diversity, Natural Resources Defense Council ("NRDC"), Northern Alaska Environmental Center, Oceana, Pacific Environment, Sierra Club, and The Wilderness Society ("Petitioners") petition for review of Outer Continental Shelf Permit to Construct and Title V Operating Permit No. R10OCS030000, Shell Offshore Inc. (Oct. 21, 2011) ("*Kulluk* Permit"), which Region 10 of the United States Environmental Protection Agency ("the Region") issued to Shell Offshore Inc. ("Shell").

Shell plans to use the *Kulluk* drilling unit and associated vessels in the Beaufort Sea for exploratory drilling. The Beaufort Sea is of vital importance to the communities along its coast and to the marine mammals, birds, and other animals that thrive in its waters. There is an acknowledged lack of basic scientific information about the structure and functioning of the Beaufort Sea and the ways in which industrial activities might affect it. Nonetheless, the *Kulluk* Permit, as issued, would allow Shell to emit significant amounts of harmful air pollution beginning in July 2012.[1] Given the increased interest in exploratory drilling in the Arctic, the decisions made by the Region for this permit are particularly important for the future of the region.

The Outer Continental Shelf ("OCS") provisions of the Clean Air Act require that the Environmental Protection Agency ("EPA") control air pollution from OCS sources like the *Kulluk* drilling unit. OCS sources in the Arctic, like their onshore counterparts, are subject to the Act's "Prevention of Significant Deterioration" (PSD) and Title V permit programs. Here, the

[1] *See Kulluk* Permit (Ex. 1); EPA Region 10, Public Notice, Shell Kulluk Air Permit – Beaufort Sea, Final Permit Issued (Oct. 21, 2011) ("*Kulluk* Notice") (Ex. 2).

Region has arbitrarily and unlawfully determined that the *Kulluk* is not required to obtain a PSD permit based on unenforceable emission limits. The Region likewise has erred in its issuance of a Title V permit, failing to undertake the analysis necessary to develop a permit that assures compliance with increment limits designed to keep clean air clean. Additionally, the Region made arbitrary decisions to exclude the air near the drilling unit from Clean Air Act requirements and to accept Shell's emissions estimates that understate the *Kulluk*'s true impact on air quality.

In light of these fundamental deficiencies, the Region's decision to issue the *Kulluk* Permit was clearly erroneous. Petitioners respectfully request that the Environmental Appeals Board ("Board") review the Region's permitting decision and remand the *Kulluk* Permit to the Region for analysis and revision consistent with Title V program requirements.

BACKGROUND

I. FACTUAL BACKGROUND

The Title V operating permit Petitioners challenge here authorizes Shell's *Kulluk* drillship and associated vessels to emit air pollution while operating in the Beaufort Sea. Located off the coast of northern Alaska, the Beaufort Sea stretches from the United States-Canada border to Point Barrow.[2] Several Alaska Native communities, including Barrow, Nuiqsut, and Kaktovik, sit on or near its shores.[3] The residents of communities in the region depend on the large number of marine mammals, birds, and fish that inhabit the Beaufort Sea to support subsistence activities that are central to their way of life.[4] Residents of one of these

[2] *See* Leslie Holland-Bartels & Brenda Pierce, eds., 2011, *An Evaluation of the Science Needs to Inform Decisions on Outer Continental Shelf Energy Development in the Chukchi and Beaufort Seas* ("*Science Needs*") (Ex. 15) at 30 (Fig. 2-6), 41.
[3] EPA Region 10, Environmental Justice Analysis for proposed Outer Continental Shelf Permit No. R10OCS030000, Kulluk Drilling Unit ("Environmental Justice Analysis") (Ex. 11) at 5. (July 19, 2011).
[4] *Id*. at 5-6.

communities have reported traveling as far as 60 miles out to sea to hunt bowhead whales.[5] The three nearest communities to Shell's planned exploratory operations are located within 27 miles of Shell's closest lease block, and Shell's operations will occur within these communities' historic subsistence use areas.[6]

The Beaufort Sea's ecosystems are changing rapidly and coming under enormous strain, and these changes are already adversely affecting Alaska Native people and cultures. Some animals, like bowhead whales, polar bears, and certain species of eider (large sea ducks) are already threatened or endangered.[7] Greenhouse gas emissions are causing the Arctic to heat twice as fast as other locations on Earth, and the rising temperatures have severely diminished the extent and thickness of the region's sea ice coverage on which several species depend for survival.[8] Industrialization of this highly sensitive area is exacerbating the problem by releasing large amounts of harmful pollutants and by introducing noise that disturbs the activities of animals.

The *Kulluk* Permit authorizes Shell's conical drilling unit and fleet of associate vessels to emit large quantities of air pollution between July 1 and November 31 of each year while the company performs exploratory drilling operations. Under the permit, the *Kulluk* may emit, annually, tens of thousands of tons of greenhouse gases and hundreds of tons of nitrogen oxides (NO_x) and carbon monoxide (CO).[9] This pollution will affect ambient air quality on the ocean, the use of which is a critical part of the way of life of people in the region. Nearby communities

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[5] *Id*. at 6.
[6] *Id*. at 5; *see also id*. at 4 (Fig. 1) (showing subsistence use areas mapped over exploration sites).
[7] *Science Needs* (Ex. 15) at 52, 53, 57, 61-62.
[8] *See* Anne E. Gore and Pamela A. Miller, *Broken Promises: The Reality of Oil Development in America's Arctic* (Ex. 18) at 40-41 (2009).
[9] EPA Region 10, Statement of Basis for Draft Outer Continental Shelf Permit to Construct and Title V Air Quality Operating Permit No. R10OCS030000 ("Statement of Basis") (Ex. 10) at 24 (July 22, 2011).

already exhibit markedly higher rates of pulmonary disease than the general population, making them especially vulnerable to morbidity and mortality from air pollution.[10] Further, air pollutants are eventually deposited in aquatic and terrestrial ecosystems, including habitat for rare and endangered species, resulting in acidification and nutrient enrichment that degrades these ecosystems and affects biodiversity. *See* 76 Fed. Reg. 46,084, 46,103-05 (Aug. 1, 2011).

The *Kulluk* Permit also marks the beginning of a wave of offshore industrial activity near Alaska's fragile Arctic coast. In addition to this permit for the *Kulluk*, the Region recently issued two Prevention of Significant Deterioration air permits to Shell and Shell Gulf of Mexico Inc. for exploratory drilling activities in the Beaufort and Chukchi seas using the *Discoverer* drillship, as well as a draft Title V operating permit issued to ConocoPhillips for drilling operations in the Chukchi Sea.[11] On the eve of a potentially massive influx of oil company development in the Beaufort Sea, the decision the Board reaches here will have lasting and far-reaching effects on the Arctic, making it imperative that the Board enforce the Clean Air Act's exacting, protective requirements for the *Kulluk* drilling unit and its associated fleet.

Petitioner REDOIL is an organization of Arctic residents devoted to empowering indigenous peoples to protect health and the environment, and to influencing policies that affect indigenous peoples on a local, tribal, state, regional, national and international level. Petitioners Alaska Wilderness League, Center for Biological Diversity, NRDC, Northern Alaska

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[10] Environmental Justice Analysis (Ex. 11) at 8 (identifying chronic obstructive pulmonary disease as among the leading causes of death among Alaska Natives living in the Arctic Slope); *id*. at 9 ("There is a higher incidence of outpatient visits for upper respiratory problems in the Arctic Slope service area than in the rest of Alaska.").

[11] *See* EPA Region 10, Public Notice, Shell Discoverer Air Permit, Beaufort Sea (Sept. 19, 2011) (Ex. 5); EPA Region 10, Public Notice, Shell Discoverer Air Permit, Chukchi Sea (Sept. 19, 2011) (Ex. 6); EPA Region 10, Public Notice, ConocoPhillips Air Permit, Beaufort Sea (Sept. 26, 2011) (Ex. 4). ConocoPhillips withdrew its permit application following public comments, but indicated its intention to perform a new ambient air quality analysis and submit a revised application.

Environmental Center, Oceana, Pacific Environment, Sierra Club, and The Wilderness Society are conservation groups that work to protect the Arctic environment.

II. STATUTORY AND REGULATORY BACKGROUND

Section 328 of the Clean Air Act directs the Environmental Protection Agency ("EPA") to establish requirements to control air pollution from OCS sources like the *Kulluk* drillship. 42 U.S.C. § 7627(a)(1). OCS sources in the Arctic, like their onshore counterparts, may only operate in compliance with the comprehensive air quality permit program established under Title V of the Act. 42 U.S.C. §§ 7661-7661f.

Although the *Kulluk* is subject to Title V of the Act, it is different from the overwhelming majority of onshore sources in at least one key respect: the drilling unit is mobile, meaning it requires authorization for emissions from similar operations at multiple temporary locations. As such, the *Kulluk* is classified as a "temporary source." 42 U.S.C. § 7661c(e).[12] Section 504(e) of the Act sets forth the Title V permit requirements particular to a temporary source:

> No such permit shall be issued unless it includes conditions that will assure compliance with all the requirements of [the Act] 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.

Id.

EPA has developed regulations to implement the requirements of the Act that are applicable to OCS sources, including the Title V operating permit program. *See generally* 40 C.F.R. part 55. According to those regulations, sources located on the "outer" OCS—*i.e.*, more than 25 miles from a state's seaward boundary—must comply with federal Title V regulations set forth at 40 C.F.R. part 71. 40 C.F.R. § 55.13(f)(2).[13] "Inner" OCS sources, *i.e.*, those located

[12] *See also* Statement of Basis (Ex. 10) at 25-26.
[13] *See also id*. at 4, 16.

within 25 miles of a state's seaward boundary, must comply with both federal OCS requirements and the requirements of the "corresponding onshore area" ("COA"), including state requirements adopted to implement Title V adopted pursuant to 40 C.F.R. § part 70. 40 C.F.R. §§ 55.3(b), 55.14.[14] The *Kulluk* Permit authorizes Shell to operate and pollute on both the inner and outer OCS.[15]

THRESHOLD PROCEDURAL REQUIREMENTS

Petitioners satisfy the threshold requirements for filing a petition for review under 40 C.F.R. § 124.19(a):

1. Petitioners filed comments on the draft permits and, in some cases, participated in the public hearings.[16]

2. The issues raised herein by Petitioners were raised during the public comment period.[17] The Region—although it did so inadequately, as discussed herein—responded to each of the Petitioners' issues.[18] Because the issues raised herein were presented to the Region "during the

[14] *See also* Technical Support Document, Review of Shell's Ambient Air Quality Impact Analysis for the Kulluk OCS Permit Application, Permit No. R10OCS030000 (July 18, 2011) ("Technical Support Document") (Ex. 12) at 4; Statement of Basis (Ex. 10) at 4, 16-17.
[15] Statement of Basis (Ex. 10) at 4, 7.
[16] *See* Alaska Wilderness League, *et al.*, Comments on Draft Air Permit No. R10OCS030000 for Shell's Proposed *Kulluk* Drilling Operations in the Beaufort Sea, Alaska (Ex. 7) (Sept. 6, 2011) ("AWL Comments"); EPA, Public Hearing, Shell Kulluk air permit for oil and gas exploration in the Beaufort Sea, Anchorage, Alaska (Aug. 6, 2011) (Ex. 9) at 9-13 (testimony of Betsy Beardsley, Alaska Wilderness League); *id*. at 20-22 (testimony of Carole Holley, Pacific Environment); *id*. at 25-28 (testimony of Lindsey Hajduk, Sierra Club).
[17] AWL Comments at 2-9, 11; *see also* North Slope Borough, *et al*., Comments on Draft OCS Title V Clean Air Act Permit for Shell Offshore Inc.'s Exploratory Drilling in the Beaufort Sea with the Kulluk drill rig ("North Slope Borough Comments") (Ex. 8) at 8, 9-18, 22, 34-35 (Sept. 6, 2011). The North Slope Borough's comments are relevant to Petitioners in the following respect: "To preserve an issue for review, it is not necessary that petitioners have personally raised the issue, only that the issue have (sic) been raised by someone during the public comment period." *In re Kawaihae Cogeneration Project*, 7 E.A.D. 127, n.27 (EAB 1997) (emphasis in original).
[18] *See* EPA Region 10, Response to Comments for Outer Continental Shelf Permit to Construct and Title V Operating Permit, Conical Drilling Unit Kulluk, Shell Offshore Inc. Beaufort Sea

public comment period with sufficient clarity to enable a meaningful response," they have been preserved for Board review. *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 230 (EAB 2000).[19]

3. This petition is timely filed pursuant to the Regional Administrator's notice of decision, which established November 28, 2011, as the filing deadline.[20]

STANDARD OF REVIEW

Pursuant to 40 C.F.R. § 71.11(l)(1), Title V permitting decisions are subject to review by the Board. *See In re Peabody W. Coal Company*, 12 E.A.D. 22, 32 (EAB 2005). The Board will review a permitting authority's decision to issue a Title V permit "if it appears from the petition that the permitting authority's decision involved a clearly erroneous finding of fact or conclusion of law, or that the decision involves an important policy consideration which the Board, in its discretion, should review." *Id*.

Neither the Region's interpretation of the Clean Air Act nor its interpretation of regulatory requirements is entitled to deference. *In re Lazarus, Inc.*, 7 E.A.D. 318, 351 n.55

Exploration Drilling Program Permit No. R10OCS030000 (Oct. 21, 2011) ("Response to Comments") (Ex. 3) at 20-23, 25-38, 42-43, 45-48 (discussing comments on emission limits and other issues relevant to potential to emit), 51-55 (ambient air boundary), 74-83 (1-hour NO2 modeling approach, including the use of background data), 102-109 (applicability of increments).

[19] In response to a petition for review of the *Discoverer*'s PSD permits, the Region argued that a challenge similar to one raised here—that the Region arbitrarily accepted Shell's modeling of 1-hour nitrogen dioxide (NO_2) impacts that departs from guidance—was not preserved for appeal. While reserving the right to request leave for a reply brief if the Region asserts likewise in response to this petition, Petitioners note that the issue was adequately raised here. Public comments on the *Kulluk*'s draft permit objected to the Region's use of 98th percentile background data to model 1-hour NO_2 impacts. *See* AWL Comments (Ex. 7) at 11; North Slope Borough Comments (Ex. 8) at 29-30. In this petition, Petitioners have refined the argument presented in public comments—as required by the Board—based on guidance that the Region cited, and professed compliance with, in the response to comments. *See* Response to Comments (Ex. 3) at 75 (stating that Shell's modeling analysis is consistent with the June 2010 Guidance and March 2011 Guidance); *id*. at 76 (reiterating that Shell's modeling is consistent with "EPA guidance for implementing the 1-hour NO2 NAAQS"); *id*. at 75-78, 80-83 (addressing arguments regarding Shell's use of 98th percentile background data).

[20] *See Kulluk* Notice (Ex. 2).

(EAB 1997). As the final decision maker for EPA, the Board performs its own "'independent review and analysis of the issue.'" *In re Ocean State Asbestos Removal, Inc.*, 7 E.A.D. 522, 543 n.22 (EAB 1998) (quoting *In re Mobil Oil Corp.*, 5 E.A.D. 490, 508-09 & n.30 (EAB 1994)). Where a Region has based a permit decision on an erroneous interpretation of the Clean Air Act, the permit must be remanded. *See In re Hadson Power 14—Buena Vista*, 4 E.A.D. 258, 273-75 (EAB 1992).

When interpreting a statute, the Board begins by reviewing the plain meaning of the statutory language, in order to "'give effect to the unambiguously expressed intent of Congress.'" *In re Ocean*, 7 E.A.D at 542 (quoting *Chevron U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837, 843 (1984)). "[A]n agency is given no deference at all on the question whether a statute is ambiguous . . . ." *Old Dominion Elec. Coop. Inc. v. FERC*, 518 F.3d 43, 48 (D.C. Cir. 2008) (citation and internal quotation omitted). To determine Congress's intent, the Board uses "traditional tools of statutory construction, which include examination of the statute's text, legislative history, and structure." *In re Ocean*, 7 E.A.D at 542 (citing *Southern Cal. Edison Co. v. FERC*, 116 F.3d 507, 515 (D.C. Cir. 1997)). "If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Chevron*, 467 U.S. at 842-43.

"When construing an administrative regulation, the normal tenets of statutory construction are generally applied," including the rule that "[t]he plain meaning of words is ordinarily the guide." *In re Bil-Dry Corp.*, 9 E.A.D. 575, 595 (EAB 2001) (citations omitted). In addition, a "regulation must . . . be 'interpreted so as to harmonize with and further and not to conflict with the objective of the statute it implements.'" *Id.* (quoting *Sec'y of Labor v. W. Fuels-Utah, Inc.*, 900 F.2d 318, 320 (D.C. Cir. 1990)).

Agency action is arbitrary and capricious if, *inter alia*, "the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, [or] offered an explanation for its decision that runs counter to the evidence before the agency." *Motor Vehicle Mfrs. Ass'n of the U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). Further, an agency "must cogently explain why it has exercised its discretion in a given manner" or its actions will be deemed arbitrary. *Id.* at 48; *see also In re Port Auth. of N.Y. and N.J.*, 10 E.A.D. 61, 91 (EAB 2001) (agency must provide a "a reasoned explanation of the basis for the conclusion").

ARGUMENT

I. THE PERMIT'S LIMITS ON SHELL'S EMISSIONS OF NO_X AND CO ARE UNLAWFUL BECAUSE THEY ARE NOT PRACTICABLY ENFORCEABLE; ACCORDINGLY, THE *KULLUK* SHOULD BE SUBJECT TO "MAJOR" SOURCE REQUIREMENTS.

The Region arbitrarily determined the *Kulluk*'s "potential to emit" air pollution and unlawfully exempted the drilling unit and associated fleet from the Clean Air Act's "Prevention of Significant Deterioration" ("PSD") program requirements. A source that emits less than 250 tons per year of any regulated pollutant is not considered a "major emitting facility" pursuant to the PSD program. 42 U.S.C. § 7479(1).[21] The Region maintains that the *Kulluk* only has the potential to emit 240 tons per year of NO_x and 200 tons per year of CO.[22] Based on these determinations, the Region has declined to subject the *Kulluk* to PSD permitting requirements,

[21] By rule, EPA has adopted separate major source thresholds for greenhouse gases. A source is major if it has the potential to emit 100,000 tons of CO_2 equivalent (CO_2e); a source that is otherwise subject to the PSD program because it is major for another pollutant also will be major for greenhouse gases if it has the potential to emit 75,000 tons of CO_2e. 40 C.F.R. § 52.21(b)(49)(iv)-(v). The Region maintains that the *Kulluk*'s operations will not emit more than 80,000 tons per year of CO_2e. Statement of Basis (Ex. 10) at 39. Because the Region has found that the *Kulluk* is not otherwise subject to PSD, it has not subjected the *Kulluk* to PSD for greenhouse gases.

[22] Response to comments (Ex. 3) at 28.

most notably the strict obligation to control air pollution through the application of "Best Available Control Technology." 42 U.S.C. § 7475(a)(4). The Region's potential to emit calculation, however, is based on blanket emission limitations that arbitrarily have been incorporated into the permit despite EPA's near prohibition against such limits.

A source's "potential to emit" is the source's "maximum capacity . . . to emit a pollutant under its physical and operational design." 40 C.F.R. § 52.21(b)(4). In other words, potential to emit is the source's "inherent capacity to emit air pollutants." *In re Peabody W. Coal Co.*, 12 E.A.D. at 30. In order to avoid imposition of PSD or other regulatory requirements, a source may "synthetically" reduce its potential to emit by adopting pollution controls or other capacity-limiting restrictions like operational limits established in an air permit. 40 C.F.R. § 52.21(b)(4); *see also In re Peabody W. Coal Co.*, 12 E.A.D. at 31.

In order for a source to rely on such capacity-reducing limitations, however, whether they be pollution controls or permit-established operating restrictions, there must be both "legally and practicably enforceable mechanisms in place "to make certain that the emissions remain below the relevant levels." *Weiler v. Chatham Forest Prods.*, 392 F.3d 532, 535 (2nd Cir. 2004). To be "legally enforceable," limitations must be set forth in a "permit issued pursuant to an EPA-approved permitting program or a permit directly issued by EPA . . . ."[23] To be "practicably enforceable," the limitations written into the permit must be sufficiently definite and supported by a method to determine compliance that includes appropriate monitoring, recordkeeping, and

[23] *See* Memorandum from Terrell Hunt, Associate Enforcement Counsel, Re: Guidance on Limiting Potential to Emit in New Source Permitting (Ex. 22) at 2 (June 13, 1989) ("1989 Guidance on Limiting PTE"); *see also* Memorandum from John S. Seitz, Director, Office of Air Quality Planning and Standards, Options for Limiting the Potential to Emit of a Stationary Source under Section 112 and Title V of the Clean Air Act (Ex. 21) at 2 (Jan. 25, 1995) ("Options for Limiting PTE") (discussing federal enforceability).

reporting. *In re Peabody W. Coal Co.*, 12 E.A.D. at 32 (citing Options for Limiting PTE (Ex. 21) at 6).[24]

Consistent with the requirement that permit limits be both legally and practicably enforceable, it is well-established that blanket emission limitations—*i.e.*, bald declarations that actual emissions will not exceed a particular quantity—generally cannot be used to limit a source's potential to emit, as such limits are "virtually impossible to verify or enforce." *United States v. La.-Pac. Corp.*, 682 F. Supp. 1122, 1133 (D. Colo. 1987). Outside of two limited exceptions—neither of which is applicable here—this prohibition on blanket emission limitations is "absolute."[25]

The *Kulluk* Permit is unlawful because it relies on two improper blanket emission limits to reduce to "minor" source levels the drilling unit's potential to emit, requiring Shell to emit no more than 240 tons per year of NO_x and 200 tons per year of CO.[26] The Region defends its use of the two blanket emission limitations, arguing that compliance will be determined by monitoring fuel use and applying "emission factors."[27] An emission factor is a representative value used to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant (*i.e.*, fuel use). *In re Peabody W. Coal Co.*, 12 E.A.D. at 35 n. 31. For the various emission units on the *Kulluk*, the Region has allowed Shell to use notoriously inaccurate default factors "until unit-specific emission factors are determined

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[24] Some authorities refer to the requirement as "practicably" enforceable. *See, e.g., Weiler*, 392 F.3d at 535. Other authorities refer to "practically" enforceable. *See, e.g. In re Peabody W. Coal Co.*, 12 E.A.D. at 32. The terms appear to be used interchangeably.

[25] *See* 1989 Guidance on Limiting PTE (Ex. 22) at 7. The two exceptions are discussed *infra* at 13-14.

[26] *Kulluk* Permit (Ex. 1) at 40 ("Nitrogen oxides (NO_X) emissions from the Kulluk and Associated Fleet shall not exceed 240 tpy as determined on a rolling 365-day basis."); *id.* ("Carbon monoxide (CO) emissions from the Kulluk and Associated Fleet shall not exceed 200 tpy as determined on a rolling 365-day basis."); *see also* Response to Comments (Ex. 3) at 28.

[27] Response to Comments (Ex. 3) at 32-33.

through testing."[28] However, for several emission units—such as the heaters, boilers, emergency generators, so-called seldom-used sources, and oil spill response vessels—the agency will never obtain unit-specific factors because it does not plan to test all units.[29]

This failure to obtain unit-specific data for all units is inconsistent with the agency's admission that default emission factors, including those relied upon by the Region for the *Kulluk* Permit, "are specifically not intended for use in establishing emission limits or for measuring compliance with such limits."[30] Moreover, the Region's decision to allow Shell to forgo testing all units is particularly egregious as Shell has not yet identified all of the equipment it intends to use, creating an "inherent uncertainty" with respect to the accuracy of the default factors that the agency itself has said necessitates "thorough source testing."[31] Accordingly, application of emission factors to the *Kulluk*'s fuel use is not a valid basis to establish limits in the first instance, nor is it an appropriate method for monitoring compliance. Lacking both a "technically-accurate limitation" on the source as well as "appropriate monitoring" to determine compliance, the blanket limitations on NO_x and CO fail to meet the minimum criteria for limiting the *Kulluk*'s potential to emit. *In re Peabody W. Coal Co.*, 12 E.A.D. at 32.[32] Moreover, the Region's recognition that Shell's approach involves "inherent uncertainty" that requires "thorough source testing," coupled with the agency's refusal to require such testing for all equipment, is "internally inconsistent" and therefore both arbitrary and unlawful. *See Air*

[28] Statement of Basis (Ex. 10) at 38.
[29] Response to Comments (Ex. 3) at 32.
[30] *In re Peabody W. Coal Co.*, 12 E.A.D. at 38 (citing EPA, Compilation of Air Pollutant Emission Factors, AP-42, Stationary Point and Area Sources (5th ed., vol. 1, 1995), Introduction at 2).
[31] Statement of Basis (Ex. 10) at 43.
[32] *See also* 1989 Guidance on Limiting PTE (Ex. 22) at 4-7.

Transp. Ass'n of Am. v. DOT, 119 F.3d 38, 43 (D.C. Cir. 1997) (finding arbitrary and capricious a rule promulgated based on inconsistencies).

While the Region acknowledges that "emission limits alone are not generally sufficiently enforceable as a practical matter," it attempts to minimize its error here offering that "this situation is sufficiently analogous" to an exception to the otherwise absolute bar on blanket limits established by EPA's longstanding guidance.[33] But the Region is mistaken. Guidance issued by EPA in 1989 on determining potential to emit, upon which the Region itself relies here,[34] establishes only two exceptions to the "absolute" ban on using emissions limits to establish a source's potential to emit, and the *Kulluk* Permit does not qualify for either.[35] First, "[i]f the permitting agency determines that setting operating parameters for control equipment is infeasible in a particular situation," blanket limits may be used so long as the permit includes requirements "to operate a continuous emission monitoring" system.[36] The *Kulluk* Permit lacks a system to continuously monitor emissions and does not qualify for this first exception.[37]

The second exception to the bar on the use of blanket permit limits to lower a source's potential to emit is specific to "volatile organic compound (VOC) surface coating operations" where "operating and production parameters . . . are not readily limited due to the wide variety of coatings and products and due to the unpredictable nature of the operation[s]."[38] VOC surface coating operations are not at issue here. Nonetheless, the Region claims that the permit is "sufficiently analogous" to the operations EPA was considering in establishing the VOC surface

[33] Response to Comments (Ex. 2) at 34 (citing 1989 Guidance on Limiting PTE).
[34] *See id*. at 22, 23, 25, 26, 29, 30, 36 (citing 1989 Guidance on Limiting PTE).
[35] 1989 Guidance on Limiting PTE (Ex. 22) at 7-8.
[36] *Id*.
[37] Response to Comments (Ex. 3) at 36.
[38] 1989 Guidance on Limiting PTE (Ex. 22) at 8.

coating exception.[39] But the 1989 guidance identifies the VOC surface coating exception as a "limited circumstance" and makes no suggestion that it may be applied to other types of operations.[40] Even if it did, operation of the *Kulluk* and associated fleet is not analogous to VOC surface coating operations: fuel use and operational duration are straightforward operating parameters that are easily tracked for combustion engines, especially when the permit requires all of the engines to use the same kind of fuel.[41] Although the Region observes that the *Kulluk* includes "a wide variety of emission units and varying emission factors,"[42] this is true of almost any large industrial facility and it does not excuse the fact that the Region is requiring Shell to test some units but not others.

Without testing or any other way of identifying whether the default emission factors are accurate, the permit's blanket limitations on the *Kulluk*'s CO and NO_x emissions are practicably unenforceable and therefore arbitrary unlawful.[43] Lacking enforceable permit limits on the drilling unit's potential to emit, the Region has clearly erred in its reliance on those permit limits to determine the *Kulluk*'s potential to emit. The *Kulluk* Permit must therefore be remanded to the Region for either establishment of enforceable permits or reclassification of the *Kulluk* as a major source, subject to PSD permitting requirements including BACT.

[39] Response to Comments (Ex. 3) at 30.
[40] 1989 Guidance on Limiting PTE (Ex. 22) at 8
[41] *See e.g., Kulluk* Permit (Ex. 1) at 42 ("The permittee shall not combust any liquid fuel with sulfur content greater than 0.01 percent by weight.")
[42] Response to Comments (Ex. 3) at 30.
[43] *See* 1989 Guidance on Limiting PTE (Ex. 22) at 5-6 (stating that some system of verification of compliance is necessary to track compliance with production or operational limits); *see also* 18 A.A.C. 50.225(b)(5) (a request for an owner requested limit shall include "a description of a verifiable method to attain and maintain the limit, including monitoring and recordkeeping requirements").

II. THE REGION CLEARLY ERRED IN ITS DECISION TO EXCLUDE FROM "AMBIENT AIR" THE AREA WITHIN A 500 METER RADIUS FROM *KULLUK*.

The Clean Air Act regulates the concentration of air pollution in the "ambient air." *See* 42 U.S.C. § 7409. Because areas not included within the definition of "ambient air" are not protected by provisions of the Act, the Region's delineation of where the ambient air begins in relation to Shell's planned operations is of great importance. If ambient air—and, therefore, the point of Clean Air Act compliance—is determined to begin at a point far away from the *Kulluk*, Shell will be authorized to emit more pollution, likely with fewer controls, than would be lawful otherwise.

The *Kulluk* Permit excludes air within a radius of 500 meters from the hull of the *Kulluk* from the definition of "ambient air."[44] In other words, a circular area with a diameter of over one kilometer will become an unregulated pollution zone. This delineation is based upon an assumption that Shell will request, and the United States Coast Guard will establish, a safety zone restricting the passage of other vessels within this radius.[45] As a consequence, Shell has not undertaken—nor has the Region required—any analysis of air quality impacts within this radius.[46] This omission is significant, as both Shell and the Region acknowledge that maximum air quality impacts from the *Kulluk*'s proposed operations are likely to occur within the 500 meter boundary.[47] Given that Shell's proposed operations barely comply with other applicable

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[44] *Kulluk* Permit (Ex. 1) at 42-43; Statement of Basis (Ex. 10) at 40.
[45] The *Kulluk* Permit requires, as a condition for operating the *Kulluk*, that the safety zone be established. *Kulluk* Permit at (Ex. 1) at 42-43; *see also* Statement of Basis (Ex. 10) at 40 (ambient air quality analysis assumes that Shell's request for a safety zone will be granted).
[46] Statement of Basis (Ex. 10) at 27 n.14.
[47] *See* 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 (Ex. 12) at 36 (Jul. 18, 2011) ("on average there is a rapid decrease in concentrations as the distance from the Kulluk increases"); Memorandum from Tim Martin, Air Sciences Inc., to Pauline Ruddy, Shell, Updates to Air Quality Impact Analysis—Kulluk Drillship (Ex. 13) at 20 (May 4, 2011) ("Note that all maximum impacts are located on or near the ambient

standards at a radius of 500 meters, violations are possible if not likely within the 500 meter radius.[48]

The Region's decision to establish the ambient air boundary at a radius of 500 meters from the *Kulluk* is clearly erroneous because it contravenes both EPA's definition of "ambient air" as well as EPA's longstanding interpretation of that regulation. As defined at 40 C.F.R. § 50.1(e), "ambient air" is "that portion of the atmosphere, external to buildings, to which the general public has access." 40 C.F.R. § 50.1(e). The Region "agrees" that "EPA's longstanding interpretation" of this regulation affords an "exemption from ambient air . . . only for the atmosphere over land owned or controlled by the source and to which public access is precluded by a fence or physical barrier."[49] The *Kulluk*'s 500 meter ambient air boundary is arbitrary and unlawful because Shell does not own or control the area within the 500 meter boundary and public access is not precluded.

Shell plainly does not "own or control" the surface of the ocean within 500 meters of the *Kulluk*. The Region concedes that "Shell does not 'own' the areas of the Beaufort Seas on which the Kulluk will be operating" but maintains that the Coast Guard safety zone amounts to a form of control.[50] Critically, EPA's interpretation of 40 C.F.R. § 50.1(e)—accepted by the Region as controlling—does not merely require that an area be under control of some authority generally; rather, it requires that the "source" control the area.[51] Here, it is undisputed that authority to

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air boundary.").

[48] The *Kulluk*'s 24-hour PM2.5 impact constitutes 97% of the maximum concentration allowed by the national ambient air quality standard; its maximum 1-hour NO_2 impact is 81% of national ambient air quality standard's allowable level. Technical Support Document (Ex. 12) at 33.

[49] Response to Comments (Ex. 3) at 51 (citing Letter from Douglas Costle, EPA Administrator to The Honorable Jennings Randolf, Chairman, Environment and Public Works Committee, Re: Ambient Air (Dec. 19, 1980) ("Costle Letter") (Ex. 23)).

[50] Response to Comments (Ex. 3) at 52.

[51] Costle Letter (Ex. 23); Response to Comments (Ex. 3) at 51-52.

establish and enforce the safety zone does not rest with Shell (the "source"), but with a third party, the Coast Guard. 43 U.S.C. § 1333(d). The Region has determined previously that where a lessee does not control access to its leased property and must rely upon a third party to limit public access, as is the case with the safety zone here, the leased area must be considered ambient air.[52] An agency decision is arbitrary when, as here, its explanation "runs counter to the evidence," *State Farm,* 463 U.S. at 43, and "the agency offer[s] insufficient reasons for treating similar situations differently." *Transactive Corp. v. United States*, 91 F.3d 232, 237 (D.C. Cir. 1996).

The area within the 500 meter ambient air boundary also fails to satisfy the second criterion for an exemption from "ambient air," namely, that "public access is precluded."[53] According to the Region, the Coast Guard safety zone "establishes legal authority for excluding the general public from the area inside the zone."[54] Notably, in the onshore context, this criterion is unrelated to "legal authority to exclude the public," as property owners generally have authority to determine who enters their property; rather, the question is whether barriers exist that actually preclude access. Whether viewed from a legal or practical standpoint, the safety zone fails to effectuate a barrier that "precludes" public access. The authority both to establish and enforce the safety zone entirely belongs to the Coast Guard, which in any case retains discretion over whether vessels may enter and leave the zone. *See* 33 C.F.R. § 147.5; *id.* § 147.T001; 75 Fed. Reg. 18,404, 18,407 (Apr. 12, 2010). Under the governing statute and regulations, the Coast Guard must base its decisions—with respect to both establishing and

[52] *See* Letter from Nancy Helm, EPA, to John Kuterbach, Re: Determining the Ambient Air Boundary for Potential Permit Application in Support of Alaska Industrial Development and Export Authority's Restart of Healy Clean Coal Project (Ex. 20) at 2-3 (Sept. 11, 2007).
[53] *See* Costle Letter (Ex. 23) (stating that exemption from ambient air is available only where "public access is precluded by a fence or other physical barriers.")
[54] Response to Comments (Ex. 3) at 52.

enforcing a safety zone—solely upon factors "relating to the promotion of safety of life and property," 43 U.S.C. § 1333(d); 33 C.F.R. § 147.1, and not upon "air quality considerations."[55] The *Kulluk* Permit itself recognizes that the Coast Guard will be able to authorize non-Shell vessels to enter the safety zone.[56]

Because Shell does not "own or control" the area within the 500 meter ambient air boundary, it must rely upon the Coast Guard to preclude public access. But the Coast Guard safety zone merely limits access, and for reasons other than air quality. Accordingly, neither Shell nor the Region can be certain that the Coast Guard will, in fact, preclude access and protect people from exposure to pollution. As the safety zone limits but does not "preclude" public access, the Region's exemption of this area from the "ambient air" is contrary to 40 C.F.R. § 50.1(e) and EPA's longstanding interpretation of that regulation.[57] Having offered an explanation that "runs counter to the evidence" and departs from previous application of the law, the Region has clearly erred. *State Farm,* 463 U.S. at 43; *see also Transactive Corp.*, 91 F.3d at 237.

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[55] Response to Comments (Ex. 3) at 54 ("Safety zones are established by the Coast Guard based on safety considerations, not air quality considerations.").

[56] *Kulluk* Permit (Ex. 1) at 43 (stating that safety zone "prohibits members of the public from entering this area except for . . . vessels authorized by the [Coast Guard]").

[57] Citing a previous decision of Region 2 regarding the "Offshore LNG Broadwater Project," the Region notes that "EPA has previously recognized a safety zone established by the Coast Guard . . . as a boundary for defining ambient air." Response to Comments (Ex. 3) at 52. The fact that the Region can cite one instance where an ambient air boundary was based, in part, upon establishment of a Coast Guard safety zone does not demonstrate that it has met the requirements of its own regulation or policy here. Ambient air decisions are made "on a case-by-case basis to ensure that the public is adequately protected," *see* Costle Letter (Ex. 23), and the Region does not assert here that the Broadwater decision articulates a general policy like the Costle Letter that it agrees is authoritative. Response to Comments (Ex. 3) at 51. The record contains insufficient information on the Broadwater Project to address distinctions between it and the *Kulluk*, but to the extent the facts may be similar, one unlawful ambient air decision does not justify another. *See New Jersey v. EPA*, 517 F.3d 574, 583 (D.C. Cir. 2008) (an unlawful interpretation does not become reasonable because it is applied more than once).

In response to a petition for review of the PSD permits issued for operation of Shell's *Discoverer* drillship in the Beaufort and Chukchi seas, the Region offered a *post hoc* rationalization for its delineation of the 500 meter ambient air boundary: harsh and rugged seas will preclude public access to the area of Shell's proposed operations. While reserving the right to request leave for a reply brief if the Region makes a similar argument in response to this petition, Petitioners note that a "natural physical feature" argument—if offered here—would likewise constitute a disallowed *post hoc* rationalization because the agency's ambient air boundary decision for the *Kulluk* was premised exclusively on the establishment of a safety zone by the United States Coast Guard and permit conditions requiring Shell to develop and implement a program to control access within the safety zone.[58] *See Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168-69 (1962) (agency decision "[must] be upheld, if at all, on the same basis articulated in the [decision] by the agency itself."). Further, to the extent it already contains some relevant information, the administrative record belies any assertion that geography establishes a barrier here. As discussed above, Shell's planned *Kulluk* operations lie within areas traditionally used by Alaska Native communities for subsistence. *See* Factual Background *supra* at 2-3.

III. THE PERMIT FAILS TO ASSURE COMPLIANCE WITH APPLICABLE INCREMENTS, IN VIOLATION OF CLEAN AIR ACT SECTION 504(e).

Section 504(e) of the Clean Air Act, applicable only to temporary sources, establishes heightened Title V permitting requirements. While Title V permits for typical, non-temporary sources—issued pursuant to section 504(a)—focus upon emission limits and standards intended to assure compliance with the relevant implementation plan, such implementation plans do not readily address pollution from temporary sources. Accordingly, Congress established more

[58] Statement of Basis (Ex. 10) at 40; Response to Comments (Ex. 3) at 51-55.

rigorous requirements in section 504(e), stating that a Title V permit may not be issued for a temporary source unless the permit assures compliance with ambient standards and applicable increment and visibility requirements. That temporary sources are subject to stricter permitting requirements, including the mandate to assure compliance with increment requirements, where triggered, is made plain by the statutory language, structure, and purpose. Here, the Region unlawfully disregarded section 504(e)'s mandate that the *Kulluk* Permit assure compliance with applicable increment requirements.

A. Title V permits issued for temporary sources like the *Kulluk* must assure compliance with any applicable increment.

OCS sources like the *Kulluk* must comply with the Clean Air Act's operating permit program. 40 C.F.R. §§ 55.3(b), (c); 55.13(f); 55.14. Requirements for this program are established in Title V of the Act and in implementing regulations set forth at parts 70 (state-issued permits) and 71 (federally-issued permits) of Title 40 of the Code of Federal Regulations. *See generally* 42 U.S.C. §§7661-7661f; 40 C.F.R. §§ 70, 71. Pursuant to both Title V and the implementing regulations, an operating permit must include emission limits and other conditions necessary to "assure compliance" with relevant requirements of the Act. 42 U.S.C. §§ 7661c(a), (e); 40 C.F.R. §§ 71.6(a)(1), (e)(1).[59]

Title V establishes distinct permit requirements and conditions for "temporary" and non-temporary sources. According to the statute, a temporary source conducts "similar operations at multiple temporary locations." 42 U.S.C. § 7661c(e); *see also* 40 C.F.R. § 71.6(e) (temporary source makes "at least one change of location during the term of the permit"). Most industrial sources—onshore sources especially—are not temporary sources. However, because Shell has applied for an air permit authorizing operations and emissions at multiple lease blocks and plans

[59] As the *Kulluk* Permit is a federally issued permit subject to 40 C.F.R. part 71, this petition will cite to the part 71 regulations without providing parallel citations for part 70.

to move the *Kulluk* both within a drilling season and from one season to the next, EPA has classified the drilling unit and associate fleet as a temporary source.[60]

1. The plain language of section 504(e) requires EPA to assure compliance with increments once they have been triggered for an area.

For a temporary source like the *Kulluk*, Clean Air Act section 504(e) requires that an operating permit "include[] conditions that will assure compliance with all the requirements of [the Act] 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. 42 U.S.C. § 7661c(e) (emphasis added).

Significantly, the language of section 504(e) refers differently to different types of standards. The national ambient air quality standards ("NAAQS") limit pollution levels at all times and in all locations, and, as such, section 504(e) requires, without qualification, that all temporary source Title V permits must assure compliance with such standards. *Id*. (permits for temporary sources must "assure compliance with all the requirements of the [the Act] at all locations, including, but not limited to, ambient standards . . ."). Increment and visibility requirements, in contrast, are not universally applicable to all areas. Increments, for example, only apply after a major source permit application triggers increment requirements in a particular baseline area. 42 U.S.C. §§ 7473, 7479(4); 40 C.F.R. § 52.21(b)(14)(ii), (15)(i). Likewise, part C of subchapter I also limits the applicability of visibility requirements: they only apply when a proposed source is located nearby a designated "class I areas" (*e.g.*, national parks and wilderness areas). 42 U.S.C. §§ 7475(d)(2), 7491(a); 40 C.F.R. § 52.21(b)(29). Thus, section 504(e) imposes an obligation on the Region to include in a temporary source permit conditions that assure compliance with any increment standard that has been triggered by a major source

[60] Statement of Basis (Ex. 10) at 25-26.

application in a given area, and is, therefore, "applicable". 42 U.S.C. § 7661c(e) (permits for temporary sources must "assure compliance . . . with any applicable increment or visibility requirements . . .").

In addition, the plain language of section 504(e) requires a permitting authority like the Region to make a determination before it issues a Title V permit that the source's emissions will not cause or contribute to increment violations. The section states that a permit issuer shall "include conditions that will assure compliance" with increment requirements. *Id.* Thus, once increments are triggered for the area in which the source will operate (or in an adjacent area that will be affected by the source's pollution), the Region must conduct a sufficient analysis to determine whether the source will comply with these standards and develop permit conditions as necessary to "assure compliance."

2. The structure and purpose of Title V's permit provisions confirm the Region's obligation to assure compliance with increments in a temporary source permit.

The distinct Title V permit requirements for temporary and non-temporary sources reinforce the plain language obligation in section 504(e) for EPA to review and assure compliance with increment standards for temporary sources.

Congress imposed requirements that differ from section 504(e) for the vast majority of sources subject to permits under Title V (*i.e.*, non-temporary sources) because they are presumed to be adequately controlled by implementation plans instituted under the Act. *See generally* 42 U.S.C. § 7661c(a). In contrast to temporary sources, for which Title V permit conditions must assure compliance with "all the requirements" of the Act, including NAAQS, increments, and visibility requirements, 42 U.S.C. § 7661c(e), the requirements for all other sources are more narrowly circumscribed. Pursuant to section 504(a), a Title V permit for a non-temporary source must set forth "enforceable emission limitations and standards . . . to assure compliance with

applicable requirements . . . including the requirements of the applicable implementation plan." *Id*. § 7661c(a).

The language of section 504(a) is quite different than the provisions of section 504(e). *Compare id*. § 7661c(a) *with id*. § 7661c(e). Rather than specify compliance with "all the requirements" of the Act, Congress instead referred in section 505(a) to "enforceable limitations and standards." *Id*. § 7661c(a). And rather than refer directly to NAAQS and increments as it did in section 504(e), Congress specified that for non-temporary sources, permit conditions are necessary to assure compliance with "requirements of the applicable implementation plan." *Id*. § 7661c(a).

These differences in language reflect differences in intent. At the time that Congress adopted Title V provisions in 1990, the phrase "emission limitations and standards," a Clean Air Act term of art, had already been interpreted to exclude the NAAQS. *See, e.g., League to Save Lake Tahoe v. Trounday*, 598 F.2d 1164, 1173 (9th Cir. 1979) (discussing "established distinction between an 'emission standard or limitation' and the ambient air quality standards" and stating that "such air quality standards are not emissions limitations"); *Wilder v. Thomas*, 854 F.2d 605, 614 (2d Cir. 1988) ("The CAA and the regulations promulgate thereunder . . . emphasize the distinction between the attainment of the NAAQS . . . and the specific provisions of a SIP . . . ."). Moreover, NAAQS as well as increment and visibility requirements were recognized to apply to individual non-temporary sources through state implementation plans. *See* 42 U.S.C. § 7410(a)(2)(J); *see also Connecticut v. EPA*, 696 F.2d 147, 166 (2nd Cir. 1982) ("Each state is required to include in its SIP 'measures to assure that' . . . [PSD increments] are not exceeded.") (citing 42 U.S.C. § 7473(a)). Congress's choice of language in section 504(a) thus makes clear that Title V permits for non-temporary sources should include conditions to

assure compliance with the enforceable requirements of the relevant implementation plans, which in turn would ensure areas would remain in compliance with NAAQS, increments, and visibility standards. Congress intentionally did not impose a separate obligation to assure compliance with NAAQS, increments, or visibility standards in Title V permits for the vast majority of sources Title V would regulate —the non-temporary sources regulated effectively by implementation plans.

Congress's decision to use different in language in 504(e) from 504(a) underscores the broader requirements applicable to temporary sources, imposed because they are not otherwise well-regulated under the implementation plans that govern typical, non-temporary sources. Thus Title V permits issued under section 504(e) for temporary sources like the *Kulluk* are intended to do more: "assure compliance with all the requirements of [the Act]," including NAAQS, increments, and visibility requirements. 42 U.S.C. § 7661c(e).

In its rulemaking to develop part 70 requirements, EPA explained both why it was necessary to apply NAAQS, increments, and visibility requirements directly to temporary sources and why it was not "anomalous for Congress to impose more comprehensive permit requirements for temporary sources than for permanent sources." 57 Fed. Reg. 32,250, 32,276 (July 21, 1992). According to the agency:

> Temporary sources must comply with these requirements because the SIP is unlikely to have performed an attainment demonstration on a temporary source. . . . In its final rule, EPA clarifies that the NAAQS and the increment and visibility requirements under part C of title I of the Act are applicable requirements for temporary sources only.

Id. The heightened requirements for temporary source Title V permits are consistent with Congress's intent behind the Title V program, namely "to apply the substantive requirements of the CAA to individual sources" even "[i]n cases where there are no relevant EPA guidelines or

SIP requirements." Rep. Henry A. Waxman, *An Overview of the Clean Air Act Amendments of 1990*, 21 Envtl. L. 1721, 1807-08 (1991). In such an instance—compliance with NAAQS, increments, and visibility requirements by temporary sources, for example—Congress required that "the permitting authority must use the permitting process to determine the required level of emissions control." *Id*. at 1808.

A statute must be read to "give effect to the unambiguously expressed intent of Congress." *In re Ocean*, 7 E.A.D at 542 (citation omitted). Congress's intent is illuminated by "the statute's text, legislative history, and structure." *Id*. Here, the plain language of section 504(e), along with the structure of Title V and the purpose underlying its provisions, make plain Congress's "unambiguously expressed intent" that the Region may not issue a permit to a temporary source like the *Kulluk* without undertaking an analysis—and developing necessary permit conditions—to assure that the *Kulluk* will comply with NAAQS and applicable increments and visibility requirements. *Chevron*, 467 U.S. at 843.

B. The *Kulluk* Permit unlawfully fails to assure compliance with applicable increment requirements.

Although air quality increments are not applicable at all times or in all places, several increments apply to the area within which the *Kulluk* has been authorized to operate. To date, EPA has both identified an offshore "baseline area" to assess increments in the Beaufort and Chukchi seas and identified a "minor source baseline date" for the following pollutants: NO_2, sulfur dioxide (SO_2), and particulate (PM).[61] Now that the minor source baseline date has

[61] For the *Kulluk*'s inner OCS operations, the minor source baseline dates are: February 8, 1988 for NO_x; June 1, 1979 for SO_x, and November 13, 1978 for PM. EPA Region 10, Statement of Basis for Proposed OCS PSD Permit No. R10OCS/PSD-AK-2010-01, Shell Offshore Inc., Frontier Discoverer Drillship, Beaufort Sea Exploration Drilling Program ("Discoverer Beaufort Statement of Basis") (Ex. 17) at 97 (Feb. 17, 2010). For the *Kulluk*'s outer OCS operations, the minor source baseline date is July 31, 2009, for all three pollutants. *Id*.; *see also* Memorandum

passed, the Clean Air Act "places strict limits on aggregate increases in pollution within the baseline area whether the increases come from minor or major *sources*." *Great Basin Mine Watch v. EPA*, 401 F.3d 1094, 1096 (9th Cir. 2005); *see also Reno-Sparks Indian Colony v. EPA*, 336 F.3d 899, 903 (9th Cir. 2003); 75 Fed. Reg. 64,864, 64,868 (Oct. 20, 2010) ("After the minor source baseline date, any increase in actual emissions (from both major and minor sources) consumes the PSD increment for that area."). Increment limits for three pollutants are therefore "applicable" within the meaning of 504(e) in the area where Shell intends to operate the *Kulluk.*

Despite the plain language of section 504(e), the Region arbitrarily and unlawfully neglected to analyze—much less develop permit conditions to assure compliance with—increments applicable to the *Kulluk.* The Region required Shell to demonstrate compliance with NAAQS and developed permit terms and conditions based on Shell's demonstration.[62] However, the Region declined to conduct a similar analysis or institute permit conditions for increments, based on a flawed conclusion that increments "are not 'applicable' in this instance."[63] The Region declined to undertake such analysis despite acknowledging both that the *Kulluk*'s emissions will consume the increment and that the Region has authority "to adopt additional requirements" if the *Kulluk*'s emissions "cause or contribute to an increment violation."[64]

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from D. Bray, Senior-Policy Advisor, U.S. EPA, to R. Albright, Director, Office of Air, Waste, and Toxics, U.S. EPA ("Bray Memorandum") (Ex. 19) at 3 (July 2, 2009).

[62] Statement of Basis (Ex. 10) at 26.

[63] *Id*.

[64] Response to Comments (Ex. 3) at102 ("EPA agrees with the commenters that all emission increases and decreases from both major and minor sources . . . will consume or expand available increment."); *id*. at 106 ("If, at any time after the Kulluk begins operation . . . , Region 10 determines that the actual emissions increases from the permitted OCS source cause or

Having issued a Title V permit without undertaking any analysis to assess whether the *Kulluk* will comply with applicable increments, and having failed to establish permit conditions based on this analysis, the Region plainly has failed to adhere to section 504(e)'s requirement that a Title V permit shall not be issued to a temporary source unless it "includes conditions that will assure compliance with . . . any applicable increment." 42 U.S.C. § 7661c(e). Where, as here, an agency has "neglected to consider a statutorily mandated factor," the agency's decision is arbitrary and unlawful and must be set aside. *Pub. Citizen v. Fed. Motor Carrier Safety Admin.*, 374 F.3d 1209, 1216 (D.C. Cir. 2004); *see also Natural Res. Def. Council v. EPA*, 638 F.3d 1183, 1190 (9th Cir. 2011) ("[W]e must set aside an agency's action where it failed to consider mandatory factors set forth by statute or in a regulation.")

C. The Region's assertion that it need not undertake an analysis or develop permit conditions to assure compliance with applicable increments is wrong.

The Region offers several arguments in defense of its refusal to assess whether the *Kulluk* Permit will assure compliance with increments, none of them persuasive.

1. Alaska regulations do not excuse the Region's failure to assure compliance with applicable increments.

First, the Region observes that the *Kulluk*'s operations will straddle the boundary between the inner OCS and outer OCS and avers that the "Alaska regulations . . . do not require that a minor source permit applicant demonstrate that it will not cause or contribute to a violation of the PSD increment in order to obtain this type of permit."[65] The fact that Alaska requirements—applicable only to the inner OCS—may be more lenient than federal regulations is irrelevant. EPA's OCS air regulations state that federal OCS regulations apply on both the inner and outer OCS and that, where there is a conflict between state and federal regulations,

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contribute to an increment violation, Region 10 has authority to adopt additional requirements to ensure that increments are not violated.").

[65] Response to Comments (Ex. 3) at 103.

stricter requirements control. 40 C.F.R. §§ 55.3(b)-(c), 55.13.[66] Moreover, whatever the applicable Alaska requirements for operation on the inner OCS, the permit includes "an OCS/Title V permit under Parts 55 and 71 for operations beyond 25 miles of Alaska's seaward boundary."[67] Federal regulations require that a Title V permit for a temporary source assure compliance with any "national ambient air quality standard or increment." 40 C.F.R. §§ 71.2 (definition of "Applicable requirement" at (13)), 71.6(e). Thus, even if more lenient regulations are applicable to the *Kulluk*'s operations within the inner OCS, the permit authorizes the drilling vessel to operate within the outer OCS as well, and the Region has failed to meet statutory requirements for such outer OCS operations.

2. The Region's interpretation of Clean Air Act section 504(e) is impermissible and unlawful in light of the plain language of the statute.

Second, the Region defends its decision based on an impermissible and unlawful interpretation of section 504(e) that defies the plain language of the statute.

According to the Region, a Title V source need only demonstrate compliance with increments "where the source is otherwise required to show it will not cause a violation of increments under" the PSD program.[68] The Region bases this conclusion on the observation that in section 504(e) the word "applicable" precedes "increment" but "ambient standards" are referenced without qualification. According to EPA, "[b]ased on this distinction," the agency reads 504(e) "to require that all Title V temporary sources demonstrate that the source will not violate ambient standards (NAAQS) . . . but that such a source need only assure compliance with increment (sic) at all locations where the source is otherwise required to show it will not cause of

[66] *See also* Technical Support Document (Ex. 12) at 4 ("OCS sources located within 25 miles of a State's seaward boundary are subject to the Federal, and to the State and local requirements of the Corresponding Onshore Area.")
[67] Statement of Basis (Ex. 10) at 4.
[68] Response to Comments (Ex. 3) at 104; *see also* Statement of Basis (Ex. 10) at 25-26.

violation of increments under part C of subchapter I of this chapter, such as through section 165(a)(3) of the CAA and the applicable PSD permitting program."[69] In other words, the Region construes the word "applicable" to mean that only large sources otherwise required to obtain preconstruction permits under section 165 of the Act are subject to section 504(e)'s requirement to assure compliance with increments. Unlike the straightforward interpretation of section 504(e) described by Petitioners above—that section 504(e) is written as it is because increments, unlike NAAQS, are only "applicable" to an area once triggered by a major source application[70]—the Region's convoluted construction is inconsistent with the language of the statute.

The Region's interpretation is untenable because it wholly misconstrues the reference in section 504(e) to "increment . . . requirements under part C of subchapter I" of the Act. 42 U.S.C. § 7661c(e). "Part C of subchapter I" refers to the Act's program for the "Prevention of Significant Deterioration of Air Quality," set forth in section 160 through 169 of the Act. *See generally id*. at §§ 7470-7492. Under the Region's interpretation, however, section 504(e)'s reference to "increment . . . requirements under part C of subchapter I" is shorthand for only two components of the PSD program: the preconstruction review requirements of section 165(a)(3)(A), applicability of which is determined by section 169(1).[71] Because sections 165 and 169 only require certain large sources to undertake a preconstruction compliance demonstration for increments the Region argues that Title V's separate and distinct requirement

[69] Response to Comments (Ex. 3) at 104.
[70] *See supra* at 21-25.
[71] Response to Comments (Ex. 3) at 103.

that temporary sources "assure compliance . . . with any applicable increment" must be limited to the same universe of large sources.[72]

The Region's argument is not faithful to the language of the statute. Section 504(e)'s broad reference to "any applicable increment . . . requirements under part C" cannot be narrowed to refer only to the preconstruction requirements of section 165. Section 165 is not concerned only with increments nor is it the exclusive mechanism for achieving increment compliance. *See* 42 U.S.C. § 7475(a)(3) (requiring PSD applicant to demonstrate compliance with "maximum allowable concentration[s]," NAAQS, and "any other applicable emission standard or standard of performance"); *Ala. Power Co. v. Costle*, 636 F.2d 323, 361-62 (D.C. Cir. 1979) ("[W]e cannot agree with industry's contention that section 165 provides the exclusive mechanism for protection of the increments.").

The actual "increment requirement" of the PSD program is found not in section 165 but in section 163 ("Increments and ceilings"), which establishes increments as limits on pollution increases in areas where pollution levels are below the NAAQS. 42 U.S.C. § 7473; *Ala. Power*, 636 F.2d at 361-62 ("[T]he emphatic goal of the PSD provisions is to prevent those thresholds from being exceeded."); *see also* discussion *supra* at 21-25. The Region's interpretation of section 504(e), however, ignores section 163—the only provision of "part C of subchapter I" that is denominated in the statute as an "increment" requirement. Instead, the Region reads section 504(e) as though Congress required that EPA assure temporary sources would comply not with the "increment requirements" of Part C, but with the preconstruction review requirements of section 165. The plain language of section 504(e) does not sustain such a reading.

[72] Response to Comments (Ex. 3) at 103-04.

Recognition that an "increment requirement" is set forth in section 163 independent of section 165's preconstruction requirements highlights another reason why the Region's interpretation is unsupported by the plain language of section 504(e). Section 504(e) is written in especially broad terms, requiring compliance with "all" the requirements of the Act, "including, but not limited to" compliance with "any" applicable increment requirement. 42 U.S.C. § 7661c(e). Congress's use of "any" to modify "increment . . . requirements" is especially meaningful. "Read naturally, the word 'any' has an expansive meaning, that is, 'one or some indiscriminately of whatever kind.'" *United States v. Gonzales*, 520 U.S. 1, 5 (1997) (citation omitted); *see also New York v. EPA*, 443 F.3d 880, 885 (D.C. Cir. 2006) (noting that the Supreme Court "has read the word 'any' to signal expansive reach when construing the Clean Air Act.").[73] The expansive reading that must be applied to this word choice, and that is compelled by the fact that "any" modifies "increment requirements" leaves no doubt that the Region may not issue Title V permits designed to assure compliance with some part C requirements (section 165) but not others (section 163).

The Region's interpretation of section 504(e) also must be rejected because the agency's position is inherently inconsistent and fails to respect the requirement that a Title V permit shall not be issued to a temporary source unless it "assures compliance" with increments. Although the Region has refused to analyze the *Kulluk*'s impact on increments on the basis that it is not a major source for purposes of the PSD program, the Region does not deny that the *Kulluk* is nonetheless subject to increments as a minor source. First, the Region "agrees . . . that all emission increases and decreases from both major and minor sources . . . occurring after the

[73] The terms "all" and "including, but not limited to" also communicate broad applicability. *See Indep. Ins. Agents of Am., Inc. v. Hawke*, 211 F.3d 638, 640 (D.C. Cir. 2000); *United States v. Migi*, 329 F.3d 1085, 1089 (9th Cir. 2003).

minor source baseline date is triggered, will consume or expand available increment."[74] Second, not only does the Region agree that the *Kulluk* will "consume" the increment, the Region acknowledges that it may be necessary to impose requirements on the *Kulluk* to address increment violations if its operations cause or contribute to an increment violation. As the Region stated in its response to comments: "[i]f, at any time after the Kulluk begins operation under its Title V/OCS permit, Region 10 determines that the actual emissions increases from the permitted OCS source cause or contribute to an increment violation, Region 10 has authority to adopt additional requirements to ensure that increments are not violated."[75]

In light of these admissions, the Region's interpretation of section 504(e) cannot be sustained. EPA cannot, on the one hand, acknowledge both that the *Kulluk* is subject to increment requirements and that limits may have to be imposed later if the *Kulluk* causes the increment standards to be exceeded, and, on the other, assert that section 504(e)'s requirement to "assure compliance" with such "increment requirements" does not apply. While the Region might prefer to delay enforcement of the requirement of the Act, section 504(e) demands that a permit may not be issued until compliance can be assured through development of appropriate permit conditions. 42 U.S.C. § 7661c(e); *see also Sierra Club v. EPA*, 536 F.3d 673, 675, 678 (D.C. Cir. 2008) (rejecting, based on Title V requirement that "[e]ach permit must assure compliance," EPA's "vague promises to act in the future").

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[74] Response to Comments (Ex. 3) at 102.

[75] *Id*. at 106. The Region's conclusion that all sources must comply with increments, including a non-major PSD source like the *Kulluk*, is consistent with other authority. *See Ala. Power*, 636 F.2d at 362 ("[S]ections 161 and 163(a) . . . establish the thresholds as limitations that are not to be exceeded . . . ."); *Great Basin Mine Watch*, 401 F.3d at 1096 (increments "place[] strict limits on aggregate increases in pollution"). Presumably, it is because the Region is unable to contradict this settled requirement that it is forced into the awkward position of having to argue that though the *Kulluk* is subject to increment requirements, those requirements are not "applicable" within the meaning of section 504(e).

3. EPA's regulations establishing Title V requirements are consistent with the plain language requirements of the statute.

EPA's regulations closely parallel the language of section 504(e), requiring that a Title V permit for a temporary include "[c]onditions that will assure compliance with all applicable requirements," including "[a]ny national ambient air quality standard or increment or visibility requirement under part C of title I of the Act, but only as it would apply to temporary sources permitted pursuant to section 504(e) of the Act." 40 C.F.R. §§ 71.6(e)(1), 71.2. Neither the regulations themselves nor the accompanying preamble suggest the position the Region advances here, namely, that the command to "assure compliance" with increment requirements only applies to the largest temporary sources that are otherwise subject to PSD preconstruction requirements. The regulations, therefore, are consistent with the plain meaning interpretation of the statute described by Petitioners and do not support the Region's narrow interpretation of section 504(e).

Lacking textual support in the regulations, the Region adopts a different tack, arguing that "there is no indication in EPA's promulgation of the regulations implementing Section 504(e) that EPA interpreted that section of the CAA to impose on Title V temporary sources that are not also PSD major sources a direct requirement to demonstrate compliance with increment in the Title V permitting process."[76] But as discussed above, because the regulations generally parallel the statute and do not directly address the issue in dispute here, they are fully consistent with the obligation to assure compliance with increments. Moreover, there are provisions within the regulations that at least imply a separate obligation to assure compliance with increments. For example, in defining "applicable requirements" for Title V sources, the part 71 regulations separately identify "[a]ny term or condition of any preconstruction permits" issued pursuant to

[76] Response to comments (Ex. 3) at 105.

the PSD program and "[a]ny . . . increment or visibility requirement under part C." 40 C.F.R. 71.2. If, at the time EPA promulgated the regulation, EPA understood the reference to "increment requirements" in section 504(e) to mean nothing more than PSD preconstruction requirements, as the Region now asserts, there would be no reason to separately enumerate increments and preconstruction requirements as the regulations do.[77] Further, the regulations explicitly contemplate a non-PSD, source-specific compliance demonstration associated with issuance of a Title V permit. *See* 40 C.F.R. § 71.7(e)(i)(A) (providing that minor permit revision procedures may be used except where a permit modification requires "a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis."). This provision would be rendered meaningless surplusage if source-specific increment compliance determinations were limited to sources required to demonstrate compliance through PSD preconstruction requirements.

In any event, because EPA's Title V regulations plainly do not bar an increment compliance demonstration prior to issuance of a Title V permit, the regulations must be applied in a manner consistent with the requirements of the statute. *See Hazardous Waste Treatment Council v. Reilly*, 938 F.2d 1390, 1395 (D.C. Cir. 1991) (explaining that an agency's interpretation of its regulations must "meet the test of consistency with the underlying statute"); *see also In re Bil-Dry Corp.*, 9 E.A.D. at 595 (holding that a "regulation must . . . be interpreted

[77] "When construing an administrative regulation, the normal tenets of statutory construction are generally applied." *In re Bil-Dry Corp.*, 9 E.A.D. at 595 (citations omitted). It is "an endlessly reiterated principle of statutory construction . . . that all words in a statute are to be assigned meaning, and that nothing therein is to be construed as surplusage." *Qi-Zhuo v. Meissner*, 70 F.3d 136, 139 (D.C. Cir. 1995). The Region's interpretation of section 504(e) would render surplusage the reference to "increment . . . requirement" in clause 13 of the part 71 definition of "applicable requirement." *See* 40 C.F.R. § 71.2.

so as to harmonize with and further and not to conflict with the objective of the statute it implements.") (citation and internal quotation omitted).

4. The Region's air quality analysis is insufficient to establish that the Kulluk Permit assures compliance with applicable increments.

In the event its construction of the statute is rejected, the Region also offers the alternative defense that the record shows that the *Kulluk* will not violate increments.[78] In fact, the Region can identify no place in the record where it has done the analysis required to support this assertion.

As explained above, increments are "allowable numerical increases in the concentration" of NO_2, SO_2, and PM in areas where ambient pollution levels are lower than those mandated by the NAAQS. *Ala. Power*, 636 F.2d at 347. Increment consumption is "calculated by a reference to a 'baseline' level of air quality." *Id*. Once the minor source baseline date is established in an area, as is the case for NO_2, SO_2, and PM in the Beaufort Sea,[79] the increment is consumed by "any subsequent emissions increases that occur from any source in the area." 72 Fed. Reg. 31,372, 31,376 (June 6, 2007); *see also Great Basin Mine Watch*, 401 F.3d at 1096; 75 Fed. Reg. at 64,868. As increments place "strict limits on aggregate increases in pollution within the baseline area" regardless of source, *see Great Basin Mine Watch*, 401 F.3d at 1096 (emphasis added), an analysis of a source's impact on increments necessarily requires an accounting of all other sources that may affect the same area. Consistent with this requirement, EPA has determined an increment compliance demonstration requires analyzing "the source's proposed emissions increase, along with other emissions increases or decreases of the particular pollutant from other sources that would consume [the] increment." 72 Fed. Reg. at 31,377. "Thus, an

[78] Response to Comments (Ex. 3) at 106.
[79] *See* Bray Memorandum (Ex. 19) at 3; Discoverer Beaufort Statement of Basis (Ex. 17) at 96-97.

emission inventory of sources whose emissions consume or expand the available increment in the area must be compiled." *Id*.

Despite its insistence in the Statement of Basis that the agency need not, and would not, perform analysis of the extent to which the *Kulluk*'s operations comply with increments,[80] the Region nonetheless asserts in its response to comments that "the modeling analysis for this project shows that the allowable emissions would not cause or contribute to a violation of any increment . . . ."[81] The Region cites a single page of its Technical Support Document in support of this sweeping conclusion.[82] The page cited by the Region, however, merely compares the *Kulluk*'s modeled impacts at the location of maximum impact with the national ambient air quality standards; it does not refer directly to any analysis of increment compliance.[83] This description of the *Kulluk*'s maximum projected impacts, standing alone, does not demonstrate compliance with the increments because it does not account for the consumption of the increment by any other nearby sources that may affect the relevant air quality control area.[84] There is no indication in the record that the Region has done such an analysis. Given the

[80] *See* Response to Comments (Ex. 3) at 106; Statement of Basis (Ex. 10) at 26.
[81] Response to Comments at (Ex. 3) at 106.
[82] *Id*. (citing Technical Support Document (Ex. 12) at 33). The Region also cites one page of the North Slope's comments. However, the North Slope did not undertake modeling or other independent analysis to assess increment compliance. Rather, it listed the maximum modeled concentration of various pollutants resulting from the *Kulluk*—without accounting for background or other sources—and observed that the *Kulluk*'s emissions, standing alone, are expected to violate the recently promulgated increment for fine particulate matter. *See* North Slope Borough Comments (Ex. 8) at 13.
[83] Technical Support Document (Ex. 12) at 33.
[84] The background concentrations used in the Region's NAAQS analysis are no substitute for compiling an inventory of other nearby sources and modeling cumulative consumption of the increment. "Ambient monitoring has not been used to establish baseline concentrations or to evaluate increment consumption . . . ." 72 Fed. Reg. 31,376. Further, the background data here would not be useful for analyzing increment consumption. It was derived from a number of sources, none of which necessary reflects the relevant increment impact areas. See Technical Support Document (Ex. 12) at 28-31.

Region's consistent refusal to acknowledge the requirement to do so, the absence of such an analysis is hardly surprising.

Significantly, other nearby sources could affect the same areas as the *Kulluk*. For example, there are at least 22 large, industrial sources of pollution located onshore but in proximity to Shell's leases.[85] The largest among these emit thousands of tons of pollution per year,[86] raising the prospect that these sources affect the same area as the *Kulluk* and requiring an analysis to assure increment compliance. Further, increment analysis must address mobile source emissions. 72 Fed. Reg. 31,380. The Region has not, however, in any way accounted for impacts from any vessels other than the *Kulluk*'s associated fleet, and only then when such vessels are operating within 25 miles of the drilling unit.[87]

Because the Region did not assess whether the *Kulluk* will comply with increments or develop permit conditions to assure such compliance, and the record does not otherwise include sufficient information to determine that the *Kulluk* will not violate applicable increments, the *Kulluk* Permit must be remanded to the agency so that Shell's operations may be reevaluated—and the permit revised as necessary—in accordance with section 504(e) of the Act.

IV. THE REGION CLEARLY ERRED BY ACCEPTING AIR MODELING THAT ARBITRARILY AND UNLAWFULLY UNDERSTATES THE *KULLUK*'S MAXIMUM 1-HOUR NO_2 IMPACTS.

The Region clearly erred by accepting air modeling from Shell that understates the *Kulluk*'s cumulative impacts on 1-hour concentrations of NO_2 in violation of the Clean Air Act. Despite section 504(e)'s requirement that no Title V permit shall be issued unless it will "assure compliance . . . with ambient standards," 42 U.S.C. § 7661c(e), the Region arbitrarily and unlawfully allowed Shell to utilize a modeling approach that combines projected source impacts

[85] Discoverer Beaufort Statement of Basis (Ex. 17) at 107-109.
[86] *Id*. at 108 (Table 5-8).
[87] Statement of Basis (Ex. 10) at 24-25.

and monitored background levels in a manner that EPA itself has acknowledged is not protective of the 1-hour national ambient air quality standard for NO_2.

Published on February 9, 2010, and made effective on April 12, 2010, the revised national ambient air quality standard for NO_2 limits 1-hour concentrations of the pollutant to 100 parts per billion ("ppb"). 40 C.F.R § 50.11(b); 75 Fed. Reg. at 6,474 (Feb. 9, 2010). This standard is intended to reduce short-term spikes in NO_2 concentrations that are associated with a range of negative human health effects, including breathing problems and even death. 75 Fed. Reg. at 6,480-81. According to EPA, an area meets the 1-hour standard "when the three-year average of the annual 98th percentile of the daily maximum 1-hour average concentration is less than or equal to 100 ppb." 40 C.F.R § 50.11(f).

In identifying the *Kulluk*'s 98th percentile cumulative impact—*i.e.*, the *Kulluk*'s impact added to background levels of pollution—for comparison to the 1-hour NO_2 standard, Shell used an approach that the Region admits is "less conservative."[88] More specifically, Shell used background values that were already adjusted to the 98th percentile, instead of basing its calculations on the full distribution of background values.[89] The Region clearly erred by accepting these calculations because not only is this approach "less conservative" than other approaches, EPA determined previously that Shell's method fails to demonstrate compliance.

In a memorandum dated June 29, 2010, EPA rejected the method Shell used here.[90] In that memorandum, EPA stated that use of 98th percentile background measurements "could result in a value that is below the 98th percentile of the combined cumulative distribution and

[88] Response to Comments (Ex. 3) at 82.
[89] *Id*. at 75-78.
[90] Memorandum from Stephen D. Page, Director, Office of Air Quality Planning and Standards, Re: Guidance Concerning the Implementation of the 1-hour NO_2 NAAQS for the Prevention of Significant Deterioration Program (Ex. 16) at 18 (June 29, 2010) ("June 2010 Guidance").

would, therefore, not be protective of the [national ambient air quality standard]."[91] Instead, this June 2010 Guidance recommended use of the unadjusted, "overall highest hourly background NO_2 concentration" to demonstrate compliance.[92]

In subsequent guidance, issued March 1, 2011, EPA stated that the approach it recommended in June 2010—namely, using the overall highest background concentration—might be too conservative in some circumstances and recommended that this too-conservative approach should not be used.[93] The March 2011 Guidance did not, however, recommend a new approach. Rather, it advised that permitting authorities could adopt the 98th percentile background approach even though the agency previously rejected it in June 2010 as insufficient to protect the 1-hour NO_2 standard. EPA provided no analysis or explanation for this choice in

[91] *Id*. (emphasis added). In response to a petition for review of the PSD permits for Shell's *Discoverer* drillship, the Region argued that the June 2010 Guidance's conclusion that use of 98th percentile background measurements would not be protective of the NAAQS applied to modeling fine particulate matter concentrations ($PM_{2.5}$) but not to 1-hour concentrations of NO_2. The Region is mistaken. Citing previous guidance on $PM_{2.5}$ for a general mathematical principle, the June 2010 Guidance notes generally that "combining the 98th percentile monitored value with the 98th percentile modeled concentrations for 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 NAAQS." June 2010 Guidance (Ex. 16) at 18. The guidance memorandum then states that "unlike the recommendations presented for $PM_{2.5}$," which disallow the use of both 98th percentile background values and 98th percentile modeled values for the 24-hour averaging period, *see* Memorandum from Stephen D. Page, EPA, Re: Modeling Procedures for Demonstrating Compliance with $PM_{2.5}$ NAAQS (Ex. 24) at 7-8 (Mar. 23, 2010), "the modeled contribution . . . for the 1-hour NO_2 standard should . . . [be] based on the 98th percentile" impact. June 2010 Guidance (Ex. 16) at 18. Although the June 2010 Guidance allows use of 98th percentile modeled impacts, it still advised use of "the highest hourly background NO_2 concentration" to maintain full protection of the NAAQS. *Id*.

[92] June 2010 Guidance (Ex. 16) at 18. The memo also stated that "with adequate justification and documentation," additional refinements could be made based on the temporal pairing of monitored background and modeled levels, but it never indicated that the use of 98th percentile monitored background values would be justified. *Id*.

[93] Memorandum from Tyler Fox, Leader, Air Quality Modeling Group, Re: Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard (Ex. 14) at 17-20 (Mar. 1, 2011) ("March 2011 Guidance").

light of its previous finding; EPA's new guidance simply asserted the method rejected in its June 2010 Guidance could be used under certain circumstances.[94]

In reliance on the March 2011 guidance from EPA headquarters, the Region allowed Shell to demonstrate compliance with the form of the 1-hour NO_2 standard by combining the 98th percentile monitored background values with Shell's modeled impacts.[95] But the Region likewise failed to offer any analysis to refute EPA's initial conclusion that this approach does not ensure compliance with the national ambient air quality standard.[96]

Because neither EPA nor the Region provided any explanation about whether and, if so, how, its earlier conclusion that the use of 98th percentile background values is "not protective" of the NAAQS was incorrect, EPA's new guidance and the approach taken by the Region here in reliance on it are arbitrary.[97] Section 504(e) of the Clean Air Act states that no Title V permit shall be issued "unless it includes conditions that will assure compliance with . . . ambient standards." 42 U.S.C. § 7661c(e). Having accepted a modeling approach that "is not protective" of the 1-hour NO_2 standard, and having developed permit conditions based on that faulty modeling, the Region has issued the permit in contravention of section 504(e). *Id.*

While an agency is entitled to change course, "an agency changing its course by rescinding" a prior action or determination "is obligated to supply a reasoned analysis." *State Farm*, 463 U.S. at 42. But "an agency may not . . . depart from a prior policy *sub silentio*." *FCC v. Fox Television Stations, Inc.*, 129 S. Ct. 1800, 1811 (2009). Further, "a more detailed

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[94] *Id.* at 19.
[95] Response to Comments (Ex. 3) at 75-78.
[96] According to the Region, Shell's modeling includes "several conservative assumptions." *Id.* at 77-78. This may be true but it is beside the point, as the Region does not argue—let alone establish with analysis—that the conservative elements of Shell's approach are sufficient to overcome EPA's previous finding that the use of 98th percentile background values does not protect the standard.
[97] *See* March 2011 Guidance (Ex. 14) at 17-20.

justification than what would suffice for a new policy created on a blank slate" is required where an agency's "new policy rests upon factual findings that contradict those which underlay its prior policy." *Id.* Here, EPA has failed even to make new factual findings to explain its departure from its prior analysis. The Board "cannot gloss over the absence of a cogent explanation by the agency," *Humane Soc. of the U.S. v. Locke*, 626 F.3d 1040, 1049 (9th Cir. 2010), and the *Kulluk* Permit must be remanded.

CONCLUSION

For the foregoing reasons, Petitioners respectfully request that the Board grant review of the *Kulluk* Permit and remand the decision to the Region.

Respectfully submitted,

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DATED: November 28, 2011

STATEMENT OF COMPLIANCE WITH WORD LIMITATION

Pursuant to the Environmental Appeals Board's Order Governing Petitions for Review of Clean Air Act New Source Review Permits, dated April 19, 2011, I certify that the foregoing PETITION FOR REVIEW does not exceed 14,000 words. As calculated by Petitioners' word processing software, this petition contains 13,851 words, excluding the parts of the petition exempted by the Board's Order.

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CERTIFICATE OF SERVICE

I hereby certify that on November 28, 2011, copies of the foregoing PETITION FOR REVIEW in the matter of *Shell Offshore Inc., Permit No. R10OCS030000,* were served by U.S. First Class Mail on the following persons:

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Regional Administrator's Office
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Courtesy copies were emailed to the following persons:

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TABLE OF EXHIBITS

Exhibit No.	Description
1	U.S. Environmental Protection Agency (EPA) Region 10, Outer Continental Shelf Permit to Construct and Title V Air Quality Operating Permit No. R10OCS030000, Shell Offshore Inc. (Oct. 21, 2011)
2	EPA Region 10, Public Notice, Shell Kulluk Air Permit – Beaufort Sea, Final Permit Issued (Oct. 21, 2011)
3	EPA Region 10, Response to Comments for Outer Continental Shelf Permit to Construct and Title V Operating Permit, Conical Drilling Unit Kulluk, Shell Offshore Inc. Beaufort Sea Exploration Drilling Program Permit No. R10OCS030000 (Oct. 21, 2011) (excerpts)
4	EPA Region 10, Public Notice, ConocoPhillips Air Permit, Chukchi Sea (last updated Sept. 26, 2011)
5	EPA Region 10, Public Notice, Shell Discoverer Air Permit, Beaufort Sea, Final air permit issued (Sept. 19, 2011)
6	EPA Region 10, Public Notice, Shell Discoverer Air Permit, Chukchi Sea, Final Air permit issued (Sept. 19, 2011)
7	Alaska Wilderness League, *et al.*, Comments on Draft Air Permit No. R10OCS030000 for Shell's Proposed *Kulluk* Drilling Operations in the Beaufort Sea (Sept. 6, 2011)
8	North Slope Borough, et al., Comments on 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 (Sept. 6, 2011) (excerpts)
9	EPA, Public Hearing, Shell Kulluk air permit for oil and gas exploration in the Beaufort Sea, Anchorage, Alaska (Aug. 6, 2011)
10	EPA Region 10, Statement of Basis for the Draft Outer Continental Shelf Permit to Construct and Title V Air Quality Operating Permit No. R10OCS030000, Shell Offshore Inc., Beaufort Sea Exploration Drilling Program (July 22, 2011) (excerpts)
11	EPA Region 10, Environmental Justice Analysis for proposed Outer Continental Shelf Permit No. R10OCS030000, Kulluk Drilling Unit (July 19, 2011)

12 EPA Region 10, Technical Support Document, Review of Shell's Ambient Air Quality Impact Analysis for the Kulluk OCS Permit Application, Permit No. R10OCS030000 (July 18, 2011) (excerpts)

13 Memorandum from Tim Martin, Air Sciences Inc., to Pauline Ruddy, Shell, Updates to Air Quality Impact Analysis—Kulluk Drillship (May 4, 2011)

14 Memorandum from Tyler Fox, Leader, Air Quality Modeling Group, Re: Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard (Mar. 1, 2011)

15 Holland-Bartels, Leslie & Brenda Pierce, eds., *An Evaluation of the Science Needs to Inform Decisions on Outer Continental Shelf Energy Development in the Chukchi and Beaufort Seas, Alaska*: U.S. Geological Survey Circular 1370 (2011) (excerpts)

16 Memorandum from Stephen D. Page, Director, Office of Air Quality Planning and Standards, Re: Guidance Concerning the Implementation of the 1-hour NO_2 NAAQS for the PSD Program (June 29, 2010) (excerpts)

17 EPA Region 10, Statement of Basis for Proposed OCS PSD Permit No. R10OCS/PSD-AK-2010-01, Shell Offshore Inc., Frontier Discoverer Drillship, Beaufort Sea Exploration Drilling Program (Feb. 17, 2010) (excerpts)

18 Anne E. Gore & Pamela A. Miller, *Broken Promises: The Reality of Oil Development in America's Arctic* (Sept. 2009) (excerpts)

19 Memorandum from D. Bray, Senior-Policy Advisor, U.S. EPA, to R. Albright, Director, Office of Air, Waste, and Toxics, U.S. EPA (July 2, 2009)

20 Letter from Nancy Helm, EPA, to John Kuterbach, Re: Determining the Ambient Air Boundary for Potential Permit Application in Support of Alaska Industrial Development and Export Authority's Restart of Healy Clean Coal Project (Sept. 11, 2007)

21 Memorandum from John S. Seitz, Director, Office of Air Quality Planning and Standards, and Robert I. Van Heuvelen, Director, Office of Regulatory Enforcement, Re: Options for Limiting the Potential to Emit of a Stationary Source under Section 112 and Title V of the Clean Air Act (Jan. 25, 1995) (excerpts)

22 Memorandum from Terrell E. Hunt, Associate Enforcement Counsel, Air Enforcement Division, Office of Enforcement and Compliance Monitoring, and John S. Seitz, Director, Stationary Source Compliance Division, Office of Air Quality Planning and Standards Guidance, Re: Limiting Potential to Emit in New Source Permitting (June 13, 1989) (excerpts)

23 Letter from Douglas M. Costle, EPA Administrator, to Honorable Jennings Randolph, Re: Ambient Air (Dec. 19, 1980)

24 Memorandum from Stephen D. Page, Director, Office of Air Quality Planning Standards, EPA, Re: Modeling Procedures for Demonstrating Compliance with $PM_{2.5}$ NAAQS (March 23, 2010)