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

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| IN THE MATTER OF: | ) | Appeal No. PSD 10- |
| | ) | |
| SHELL OFFSHORE INC. | ) | PSD Approval No. |
| | ) | R10OCS/PSD-AK-2010-01 |
| | ) | |

# PETITION FOR REVIEW

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## INTRODUCTION

Pursuant to 40 C.F.R. sections 55.6(a)(3) and 124.19(a), Alaska Eskimo Whaling Commission (AEWC) and Inupiat Community of the Arctic Slope (ICAS) (Petitioners), petition for review of the conditions of the Outer Continental Shelf (OCS) Prevention of Significant Deterioration (PSD) permit No. R10OCS/PSD-AK-2010-01, which Region 10 of the Environmental Protection Agency (EPA) announced to the public on April 12, 2010 for the proposed operations of Shell Offshore Inc. (hereafter Shell) on lease blocks in the Beaufort Sea. A copy of the final OCS PSD permit is attached as Exhibit 1.

The Beaufort OCS permit authorizes Shell "to construct and operate the Frontier Discoverer drillship and its air emission units" on over 50 lease blocks in the Beaufort Sea along the north coast of Alaska. Exhibit 1 at 1. Because the permit fails to include necessary permit conditions, fails to make certain necessary findings, is based on erroneous legal interpretations, and raises important policy considerations that the Board should address, review is appropriate pursuant to 40 C.F.R. part 124.

## THRESHOLD PROCEDURAL REQUIREMENTS

Petitioners have standing to petition for review of the permit decision because they live in the communities that will be impacted by Shell's emissions and because they participated in the public comment period on the draft permit. 40 C.F.R. § 124.19(a); Petitioners' Beaufort Comment Letter (Exhibit 2); *see also* EPA Beaufort Response to Comments (RTC) at 6 (Exhibit 3) (noting that "EPA received written comments on the proposed permit from . . . the Alaska Eskimo Whaling Commission, the Inupiat Community of the Arctic Slope, and the North Slope Borough (NSB) in a combined comment letter"). As described below, the issues raised by Petitioners in this petition were either raised with EPA during the

public comment period or are directly related to EPA's response to comments. This petition is timely because EPA set May 12, 2010 as the deadline for appeals. EPA Notice (Exhibit 4). Consequently, the Board has jurisdiction to hear Petitioners' timely request for review. 40 C.F.R. § Part 124.

## ISSUES PRESENTED FOR REVIEW

Petitioners respectfully request that the Board review the following issues:

1. Region 10 committed clear error by violating the plain language of its own regulation in determining that the drill ship's propulsion engine, the ice breaker/anchor handler, and the associated fleet are not part of the OCS source.

2. Region 10 committed clear error by failing to apply the statutory definition of OCS source to Shell's operations and by failing to provide a rational explanation for ignoring the statute.

3. Region 10 committed clear error by failing to require compliance with the regulation that requires collocated $PM_{2.5}$ sampling subject to an approved QAPP to establish $PM_{2.5}$ baselines.

4. Region 10 committed clear error by not taking into account secondary $PM_{2.5}$ emissions in issuing the Beaufort air permit.

5. Region 10 committed clear error by failing to distinguish between $PM_{2.5}$ and $PM_{10}$ in applying BACT to Shell's emissions.

6. Region 10 committed a clear error by deciding not to require BACT for the regulated pollutant $CO_2$ and failing to provide a legally defensible position on why $CO_2$ is not a regulated pollutant. Important policy considerations weigh in favor of $CO_2$ controls for Shell's permit that contains no time limits and covers over 50 lease blocks in the Beaufort Sea.

7. Region 10 committed clear error by not requiring compliance with the new NAAQS for $NO_2$ that went into effect the same day that issuance of the Beaufort air permit was announced.

8. Region 10 committed clear error by not requiring the inclusion of emissions from the clean-up of an oil spill, the response to a shallow hazard emergency, or high ice levels in Shell's Potential to Emit even though these events are all well defined, planned for, and are otherwise part of Shell's routine.

9. Region 10 committed a clear legal error by failing to perform an environmental justice analysis on the impacts of the air pollution from the Beaufort air permit on local Inupiat communities.

## FACTUAL BACKGROUND

Due to concerns about the safety of their food and the health of their people, communities along the North Slope successfully sought review of minor source air permits issued to Shell in 2007. *In re Shell Offshore Inc.*, OCS 07-01; OCS 07-02. In 2008, a second petition for review was filed over the second set of minor source permits issued to Shell. *In re Shell Offshore, Inc.*, OCS Appeal Nos. 08-01; 08-02; and 08-03. Those petitions were dismissed when Shell withdrew the permits.

Today, Petitioners seek review of the second major source air permit issued to Shell for substantially the same operations that were at issue in the 2007 and 2008 petitions for review. The Chukchi and Beaufort air permits are the first major source OCS PSD permits in the country. Shell is proposing to explore for hydrocarbons using the Discoverer drillship accompanied by: two ice breakers (one of which also serves as an anchor handler), a supply ship, an Oil Spill Response fleet (consisting of an offshore management ship and accompanying work boats), an oil tanker, a barge, and shallow water landing craft. EPA Beaufort Stmt of Basis at 26 (Exhibit 5). The air permit covers "drilling operations in the Beaufort Sea between July 1 and December 31 each year." Final Beaufort Permit at 23 (Exhibit 1). The permit applies to any of Shell's operations in over 50 lease blocks. *Id.* at 1. The permit has no time limit but Shell will need to apply for a Title V permit within 12 months after starting its operations pursuant to the PSD permit. EPA Beaufort Stmt of Basis at 31 (Exhibit 5).

In 2010, Shell is proposing to drill up to three wells in the Chukchi Sea and – during the same timeframe – two wells in the vicinity of Camden Bay in the Beaufort Sea. *See* Excerpts of

Exploration Plans submitted by Shell to MMS for operations in the Chukchi and Beaufort Seas (Exhibit 6). The Mineral Management Service's (MMS) approval of these Exploration Plans is currently being reviewed by the Court of Appeal for the Ninth Circuit. *See AEWC v. Salazar*, Case Nos. 09-73944, No. 10-70368; *Native Village of Point Hope v. Salazar*, Case Nos. 09-73942, 10-70166. Argument in the consolidated cases was held on May 6, 2010. Shell must also obtain incidental harassment authorizations (IHAs) from the National Marine Fisheries Service (NMFS) pursuant to the Marine Mammal Protection Act. Public notice and the opportunity to comment on Shell's IHA for its Beaufort Sea operations is currently on-going.

The draft Beaufort air permit and Statement of Basis were released for public comment from February 17, 2010 until March 22, 2010. EPA Website, Beaufort Air Permit (Exhibit 7). Petitioners submitted comments during the comment period. Petitioners Comments (Exhibit 2). According to Shell's calculations, its operations would result in:

| **Pollutant** | **Beaufort Potential To Emit (tons per year)** | **Chukchi Potential To Emit (tons per year)** | **Significant Emission Rate (tons per year)[1]** |
|---|---|---|---|
| CO | 464 | 449 | 100 |
| $NO_x$ | 1371 | 1,188 | 40 |
| PM | 81 | 260 | 25 |
| $PM_{2.5}$ | 57 | 52 | 10 (40 for NOx or $SO_2$) |
| $PM_{10}$ | 65 | 58 | 15 |
| $SO_2$ | 2* | 2* | 40 |
| VOC | 96 | 87 | 40 |
| Lead | 0.111 | 0.11 | 0.6 |
| Ozone | See VOC and NOx | See VOC and $NO_x$ | (40 for VOC or NOx) |

* This sum was reduced after Shell agreed to use ultra-low sulfur fuel in the Revised Chukchi Permit, but originally was calculated at 181 tons per year of $SO_2$. EPA, Original Chukchi Stmt of Basis at 15 (Exhibit 8).

These potential to emit calculations only take into account the emissions from the engines on board the drill ship, but not its propulsion engine, and those vessels in the associated fleet that

[1] Pursuant to 40 C.F.R. § 52.21(b)(23)(i) a permit applicant must apply BACT for each pollutant for which the potential to emit exceeds the significant emission rate or SER.

will operate within 25 miles of the Discoverer during the normal course of their operations. EPA Beaufort Stmt of Basis at 26 (Exhibit 5).

Shell's "associated fleet" includes "the ice breaker, the anchor handler/icebreaker, the supply ship, and the [oil spill response] OSR fleet," EPA Beaufort Stmt of Basis at 26 (Exhibit 5), as well as other vessels that will remain more than 25 miles from the Discoverer. Petitioners Comments at 24 (Exhibit 2). Region 10 has calculated that these vessels will emit at least 95 percent of Shell's total emissions of the five criteria pollutants. Appendix A, EPA Beaufort Stmt of Basis at A-1 (Exhibit 5) (summarizing the annual emissions from the Discoverer and from the Associated Fleet). The permit only controls the emissions from the engines on board the drill ship the Discoverer (except for its propulsion engine) and the engines on board the supply ship (except for its propulsion engine) when it is attached to the Discoverer. *See generally* EPA Beaufort RTC at 14-15 (Exhibit 3) (describing vessel emissions that are not regulated under the permit). Indeed, EPA explains that the "permit does not impose BACT on emission units that comprise the Associated Fleet." *Id.* at 14-15.

After applying emission limitations to the Discoverer and the supply ship, Region 10 had to impose additional restrictions on Shell's emissions to "ensure attainment of the NAAQS and compliance with increment for some pollutants." EPA Beaufort Stmt of Basis at 33 (Exhibit 5). These additional restrictions include operational limitations for the time and location of the certain vessels. *See e.g.*, Beaufort Final Permit at 65 (Exhibit 1) (requiring the supply ship to limit use of its propulsion engine).

**A. Petitioners' Interests.**

The Inupiat people have lived along the North Slope of Alaska and relied upon the abundant marine life in this area to feed their people since time immemorial. Their subsistence

lifestyle is the basis of their culture, which is centered around bowhead whales and the whale hunt, but also other marine life such as fish and walrus as well as migratory waterfowl and other species that are critical to the Inupiat diet. With the advent of modern technologies, the Inupiat have learned that those operations that pollute the air and water also contaminate their food sources and threaten their health.

With the onset of global warming, the ice in this Arctic region once thought to be impermeable is now subsiding and the rush to discover marketable oil and gas resources, develop new shipping routes, and otherwise access this once rarely accessible area will have an untold impact on Inupiat culture and the fragile environment upon which the culture is based. Put another way, Inupiats are experiencing the effects of global climate change well before most other U.S. populations.

The Inupiat people who will be affected by Shell's air emissions live in isolated areas and enjoy a lifestyle and diet that is radically different from other populations in the United States. Communities along the North Slope of Alaska have markedly higher rates of pulmonary disease than the general U.S. population, and may have genetic predispositions to disease that differ from other U.S. populations. *See* Exhibit 9 (collection of statistics and scientific publications). As abundant public health data has demonstrated, Inupiats are substantially more vulnerable to morbidity and mortality from air pollution than are other Americans. *Id.* For example, rates of chronic lung disease on the North Slope are dramatically higher than in the general U.S. population. *Id.*; Excerpts MMS, Beaufort Sea and Chukchi Sea Planning Areas, Oil and Gas Lease Sales 209, 212, 217, and 221 OCS EIS/EA MMS 2008-0055, Draft Environmental Impact Statement, at 3-232 (Exhibit 10).

Compared to many areas in the United States, the communities along the North Slope of Alaska have fewer combustion sources. Although they are recipients of air pollution from other areas, North Slope communities are still relatively pristine. Oil and gas operations will impact air quality on the North Slope. For example, as EPA has noted, "[o]zone levels" and the levels of "ozone precursors (*i.e.*, $NO_x$ and VOC)" in areas where "oil and gas operations are currently located" in Alaska are "higher than the levels that have been collected" on the North Slope. EPA Original Chukchi Stmt of Basis at 76 (Exhibit 8).

## LEGAL BACKGROUND

In response to concerns about air pollution from sources on the outer continental shelf (OCS), Congress amended the Clean Air Act in 1990 to include a new provision, section 328, which mandates the development of "requirements to control air pollution from Outer Continental Shelf sources located offshore of the" United States. 42 U.S.C. § 7627(a)(1). OCS sources include equipment and activities that emit any air pollutant, are regulated under the Outer Continental Shelf Lands Act, and are located on waters above the outer continental shelf, specifically including drill ship exploration. 42 U.S.C. § 7627(a)(4)(C). Section 328 requires EPA to promulgate regulations to ensure that outer continental shelf or "OCS sources" comply with the Prevent of Significant Deterioration (PSD) provisions of the Clean Air Act. *Id.* § 7627(a)(1) (requiring compliance with "part C of subchapter I" of the Act).

As its name suggests, the PSD program is intended to prevent existing air quality levels from deteriorating. Its provisions, therefore, seek to protect public health and welfare from the adverse effects of air pollution and "to insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources." 42 U.S.C. §§ 7470(1), (3). Motivated by a concern that air pollutants could have serious harmful effects to health even at

concentrations below primary ambient air quality standards, *see* H.R. Rep. 95-294, at 105-127 (1978) *reprinted in* 1978 U.S.C.C.A.N. 1077, 1183-1205, Congress adopted the PSD provisions, which embody "a policy of maximum practicable protection of health," *id.* at 127 *reprinted in* 1978 U.S.C.C.A.N. at 1206. When adopting the PSD provisions, Congress made clear that practices that "squander[) finite air resources, thereby limiting the potential for long-term economic growth" are contrary to the national interest as reflected in the PSD program. *Id.* at 152 *in* 1978 U.S.C.C.A.N. at 1231. Thus, the PSD provisions also "assure that any decision to permit increased air pollution ... is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process." 42 U.S.C. § 7470(5).

A central provision of the PSD program is the requirement that, prior to constructing any "major emitting facility," an applicant must obtain a permit from EPA. *Id.* § 7475(a)(1). To obtain a PSD permit, the owner or operator of a proposed major emitting facility must demonstrate that emissions from construction or operation of the facility will not cause or contribute to a violation of any National Ambient Air Quality Standard (NAAQS) or other applicable emission standard and must conduct monitoring as necessary to determine the effect of emissions on air quality. *Id.* §§ 7475(a)(3), (a)(7). The proposed facility also will be "subject to the best available control technology for each pollutant subject to regulation . . . emitted from, or which results from, such facility." *Id.* § 7475(a)(4). EPA has defined "best available control technology" or BACT to mean "an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation . . . ." 40 C.F.R. § 52.21(b)(12).

Pursuant to Clean Air Act section 328, an OCS source includes "any equipment, activity, or facility which— (i) emits or has the potential to emit any air pollutant, (ii) is regulated or authorized under the Outer Continental Shelf Lands Act [], and (iii) is located on the Outer Continental Shelf or in or on waters above the Outer Continental Shelf." 42 U.S.C. § 7627 (a)(4)(C).

To determine whether an OCS source exceeds the 250-ton limit and is a major source, EPA calculates its "potential to emit," which is defined as "the maximum emissions of a pollutant from an OCS source operating at its design capacity." 40 C.F.R. § 55.2. The Clean Air Act is clear that "emissions from any vessel servicing or associated with an OCS source, including emissions while at the OCS source or en route to or from the OCS source within 25 miles of the OCS source, shall be considered direct emissions from the OCS source." 42 U.S.C. § 7627 (a)(4)(C).

## STANDARD OF REVIEW

The Board reviews a permitting authority's final permit decision if the decision is based on "a clearly erroneous finding of fact or conclusion of law, or involves an important matter of policy or exercise of discretion that warrants review." *In re Northern Michigan University*, PSD Appeal No. 08-02, slip op. at 10 (Feb. 18, 2009), 14 E.A.D. __ (citing 40 C.F.R. § 124.19(a)). As part of its review, the Board is to determine "whether the permit issuer 'duly considered' the issues raised in the comments and whether the approach ultimately adopted by the [permit issuer] is rational in light of all information in the record." *In re Shell*, slip op. at 41 (quoting *In Re Gov't of D.C. Mun. Separate Storm Sewer.*, 10 E.A.D. 323, 342 (EAB 2002)). The rationale for the decision must be "adequately explained and supported in the record." *In re Shell*, slip op. at 41 (citing *In re City of Moscow, Idaho*, 10 E.A.D. 135, 142 (EAB 2001); *In re NE Hub Partners*,

*L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998)). Furthermore, "two differing explanations" render the rationale for the permit determination unclear and subject to remand. *In re Austin Powder Co.,* 6 E.A.D. 713, 719-20 (EAB 1997) (citing *In re GSX Servs. of* s. c., *Inc.,* 4 E.A.D. 451, 454 (EAB 1992) (holding that the administrative record must reflect the "considered judgment" necessary to the support the permit determination)).

In front of the Board, Region 10 is not entitled to deference for any of its interpretations of statutory or regulatory provisions that it has advanced. *See, e.g., In re Lazarus, Inc.*, 7 E.A.D. 318, 351 n.55 (EAB 1997) (noting the general rule that agencies may not advance "the doctrine of administrative deference . . . because the Board serves as the final decisionmaker for EPA in cases within the Board's jurisdiction").

## ARGUMENT

### I. REGION 10 ERRED BY EXCLUDING THE DISCOVERER'S PROPULSION ENGINE AND THE ASSOCIATED VESSELS FROM THE DEFINITION OF OCS SOURCE.

EPA committed clear legal error in issuing the Beaufort OCS permit to Shell. Region 10 misapplied its regulatory definition of OCS source in determining that the drillship the Discoverer is only regulated once secure and stable at the well site – thus excluding regulation of the drillship's propulsion engine and the ice breaker that attaches to the drillship for the purpose of dropping its anchors. More importantly, Region 10's decision that only the engines on the drillship (except the propulsion engine) and the supply ship while attached to the drillship are OCS sources directly conflicts with the statutory definition of OCS source. EPA failed to provide a reasoned explanation for its failure to comply with the plain language of the Clean Air Act in delineating the vessels and engines that would be regulated under the permit.

### A. Region 10 Committed Clear Legal Error In Determining That The Drill Ship's Propulsion Engine, The Icebreaker /Anchor Handler, And The Associated Fleet Do Not Meet The Regulatory Definition Of OCS Source.

By failing to regulate the Discoverer's propulsion engine and the associated fleet, Region 10 ignored Congress's intent to regulate the emissions from these sources, violating the definition of OCS source in EPA's regulations. None of the arguments that Region 10 advances in its response to comments can justify its failure to follow its own regulation. To correct these errors, the Board should review Region 10's permitting decision and remand the permit to the agency.

#### 1. Legal authority demonstrating how Region 10 misinterpreted the regulatory definition of OCS source.

Under section 328 of the Clean Air Act, EPA is required to regulate "Outer Continental Shelf Sources" for the purpose of controlling air pollution, attaining and maintaining ambient air quality standards, and complying with the PSD program. 42 U.S.C. § 7627(a); s*ee, e.g.*, Conference Report 136 Cong. Rec. S16895-01 (Oct. 27, 1990). The regulatory definition of "OCS Source" provides:

> [t]his definition shall include vessels only when they are:
>
> (1) Permanently or temporarily attached to the seabed and erected thereon and used for the purpose of exploring, developing or producing resources therefrom, within the meaning of section 4(a)(1) of OCSLA (43 U.S.C. Sec. 1331 et seq.); or
>
> (2) Physically attached to an OCS facility, in which case only the stationary sources aspects of the vessels will be regulated.

40 C.F.R. § 55.2.

#### 2. Factual background regarding EPA's application of the regulatory definition of OCS source.

Shell's exploration plans for the Beaufort and Chukchi Seas require the first major source OCS PSD permits in the country. Throughout the process of permitting Shell's operations,

Region 10 has struggled to apply the regulatory definition of "OCS source" ultimately changing its interpretation of when the drillship, the Discoverer, becomes an OCS source. Region 10 initially took the position that the Discoverer becomes an OCS source as soon as the first anchor is attached to the seabed. EPA Letter of Incompleteness to Shell Attachment A at 3 (Jan. 16, 2009) (Exhibit 11) ("[w]hen the first anchor is laid, the Discoverer is considered a stationary source").

In the original draft permit for Shell's Chukchi operations, Region 10 defined the Discoverer as an OCS source "during all times between placement of the first anchor on the seabed to removal of the last anchor from the seabed at a drill site." Excerpt Chukchi Original Draft Permit at 5 (Exhibit 12). Several commenters, including Shell and petitioners, questioned Region 10's interpretation and proposed alternative interpretations. Shell suggested that the Discoverer does not become an OCS source until it is "stabilized and the anchoring process is complete." EPA Revised Chukchi Stmt of Basis at 20 (Exhibit 13). Petitioners argued that the Discoverer's propulsion engine and the associated vessels must be regulated as part of the OCS source. Excerpt Petitioners' Comments on the Original Draft Chukchi Permit at 8 (Exhibit 14).

When Region 10 proposed the draft air permit for Shell's Beaufort operations, it included two alternative options for the definition of OCS source. EPA Beaufort Stmt of Basis at 10-11 (Exhibit 5). Option 1 was the definition of OCS source Region 10 was using starting in January 2009. Option 2 reflected Shell's suggestion that the Discoverer is an OCS source "from the time the Discoverer is declared by the Discoverer's on-site company representative to be "secure and stable in a position to commence exploratory activity at the drill site." EPA Beaufort Stmt of Basis at 24 (Exhibit 5). In support of this option, Region 10 explained that after the Discoverer becomes secure and stable:

> the Discoverer is clearly both attached to and erected on the seabed 'for the purpose of exploring, developing or producing resources therefrom' within the meaning of EPA's OCS implementing regulations. EPA does not agree with Shell that the Discoverer is not an OCS source until all eight anchors are attached, since available information shows that the Discoverer is at that location for the purpose of exploring, developing, or producing resources and that there are some circumstances in which the Discoverer can safely drill when secured by fewer than eight anchors.

*Id.* Neither option addressed the petitioners' concerns that the Discoverer becomes an OCS source well before the placement of the first anchor or that the associated fleet is included within the definition of OCS source.

In the final permit, Region 10 decided to apply Option 2 to define when Shell's operations become an OCS source. Concluding that:

> the Discoverer is an "OCS Source" between the time the Discoverer is declared by the Discoverer's on-site company representative to be secure and stable in a position to commence exploratory activity at the drill site until the Discoverer's on-site company representative declares that, due to retrieval of anchors or disconnection of its anchors, it is no longer sufficiently stable to conduct exploratory activity at the drill site, as documented by the records maintained pursuant to Condition B.2.2.

Final Beaufort OCS Permit at 14 (Exhibit 1). In explaining this definition, Region 10 interpreted the regulatory definition to mean that "the Discoverer will be an 'OCS source' from the time the Discoverer is sufficiently secure and stable to commence exploratory activity at the drill site." EPA Beaufort RTC at 12 (Exhibit 3).

### 3. Preservation of error and subject of this petition.

Petitioners preserved this issue for appeal in their comments of February 17, 2010. Petitioners Comments at 12-21 (Exhibit 2).

This issue is properly subject to appeal because EPA committed a clear legal error by not applying its regulatory definition of OCS source to Shell's proposed operations.

#### 4. EPA's regulatory definition of OCS source applies to the Discoverer's propulsion engine, the anchor handler, and the associated fleet.

Region 10 erred by narrowly interpreting "OCS source" to allow Shell to escape regulation of a significant source of its emissions: the Discoverer's propulsion engine, the icebreaker/ anchor handler and the rest of the associated fleet. Region 10 ignores the plain language of the regulatory definition and instead offers its own factual and legal interpretations that conflict with the regulation. In so doing, Region 10 ensured that the propulsion engine of the drill ship would not be regulated by the permit. It also foreclosed any regulation of the ice breaker/ anchor handler, which attaches to the Discoverer to place the anchors once the drill ship is at the well site. Finally, EPA ignored language in the regulation calling for control of the emissions from the associated fleet – *i.e.*, the fleet of other vessels accompanying the drill ship including: two ice breakers, a supply ship, an Oil Spill Response fleet, an oil tanker, a barge, and shallow water landing craft. EPA Beaufort Stmt of Basis at 26 (Exhibit 5).

##### *a. EPA's determination of when the Discoverer becomes an OCS source violates the plain language of the regulatory definition of OCS source.*

In the final permit, Region 10 determined that the Discoverer does not become an OCS source until an on-site Shell representative announces that the Discoverer is ready to commence exploratory activities. Beaufort Final OCS Permit at 14 (Exhibit 1). By adopting the argument that the Discoverer does not become an "OCS source" until it is secure and stable at the drill site, Region 10 violated its own regulatory definition of OCS source.

The regulation provides that any equipment that has the potential to emit air pollutants, is authorized under OCSLA, is located on the OCS, and that is also "[p]ermanently or temporarily attached to the seabed and erected thereon and used for the purpose of exploring . . . resources" is an OCS source. 40 C.F.R. § 55.2. After dropping a single anchor, the Discoverer meets all

three regulatory requirements it is: 1) attached to the seabed; 2) erected thereon; and 3) used for the purpose of exploring for resources. 40 C.F.R. § 55.2. This is demonstrated by the Record which makes it clear that the Discoverer does not have to have all of its anchors set to engage in actual exploration related activities. *See* EPA Beaufort RTC at 24 (Exhibit 3) ("there are some circumstances in which the Discoverer can safely drill when secured by fewer than eight anchors"); Petitioners Beaufort Comments at 20-21 (Exhibit 2). Moreover, the entire purpose for bringing the drill ship to the OCS is to explore for hydrocarbons. EPA RTC at 24 (Exhibit 3) ("EPA does not agree with Shell that the Discoverer is not an OCS source until all eight anchors are attached, since available information shows that the Discoverer is at that location for the purpose of exploring, developing, or producing resources").

Dating back to January 16, 2009, Region 10 took the position that the Discoverer becomes an OCS source when it was attached by a single anchor to the seabed. EPA Letter of Incompleteness to Shell, Attachment A at 3 (Jan. 16, 2009) (Exhibit 11) ("[w]hen the first anchor is laid, the Discoverer is considered a stationary source"). The agency maintained this position when it initially issued the draft Chukchi permit. Chukchi Original Proposed Permit at 5 (Exhibit 12). When EPA issued the draft Beaufort permit in February of 2010, the agency included this position as "Option 1." EPA Beaufort Stmt of Basis at 23-24 (Exhibit 5). But when the agency issued the final permit, the agency rejected Option 1. Beaufort Final Permit at 14 (Exhibit 1). This change in position was never adequately explained by the agency and certainly is not supported by the record and therefore, should not be upheld by the board. *Kulluk*, slip op. at 48 (remanding Shell's minor source permit because Region 10 had failed to adequately provide record support for or adequately explain its permitting decision); *see also In re: Deseret Power Electric Cooperative*, PSD Appeal No. 07-03, slip op. at 62 (EAB Nov. 13, 2008), 14

E.A.D. __ ("an agency changing its course . . . is obligated to supply a reasoned analysis for the change beyond that which may be required when an agency does not act in the first instance." (quoting *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 42 (1983))).[2]

Region 10's first response is that defining when a particular vessel becomes an OCS source is a factual determination. *See, e.g.*, EPA Beaufort RTC at 12 (referring to Chukchi response to comments); EPA Chukchi RTC at 19 (Exhibit 15) (stating "the point in time at which a particular vessel or drilling rig becomes an OCS source within the meaning of the OCS regulations is a fact specific determination"). However, this assertion is faulty because the agency is actually offering a new legal interpretation of the regulatory definition that requires the source be "secure and stable" to determine when the Discoverer becomes an OCS source.

Region 10 next explains that:

> the Discoverer will be an "OCS source" from the time the Discoverer is sufficiently secure and stable to commence exploratory activity at the drill site, which in the case of the Discoverer, is a determination made for other operational purposes by the Shell on-site representative and is an event that is recorded in the Discoverer's logs. In reaching this conclusion, EPA relies on the fact that the regulatory definition of OCS source requires more than just attachment to the seabed. Specifically, the definition provides, in part, that vessels are OCS sources only when they are "[p]ermanently or temporarily attached to the seabed and erected thereon *and* used for the purpose of exploring, developing or producing resources therefrom, within the meaning of section 4(a)(1) of OCSLA (43 U.S.C. § 1331 et seq.)." 40 C.F.R. 55.2 (defining "OCS source") (emphasis added). The Agency interprets this provision to require that vessels be permanently or temporarily attached to the seabed and in a position to begin exploring, developing or producing resources from the OCS.

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[2] Under this interpretation, the Discoverer would most likely have to use the propulsion engine after the first anchor is dropped, as several commenters, including MMS and Shell, pointed out on the original draft permit. Petitioners Beaufort Comments at 20-21 (Exhibit 2); *see also* Letter from John Goll, MMS to EPA at 3 (noting that restricting the use of the propulsion engine "when one anchor has been set, could significantly interfere with the safety of personnel and *Discoverer*").

EPA Chukchi RTC at 16 (Exhibit 15). This explanation is not supported by the record, which clearly establishes that the entire purpose for the drillship being in the OCS is "for the purpose of exploring, developing, or producing resources." EPA Beaufort Stmt of Basis at 24 (Exhibit 5); *see also Kulluk* Slip op. at 18 (remanding a permit because Region 10 provided "no record foundation . . .other than a brief statement in its Response to Comments that [was] unsupported by facts or analysis in the record").

Region 10 next relies on a quotation from the preamble to the regulatory definition. EPA Chukchi RTC at 16-17 (Exhibit 15). However, this quotation merely restates the language in the regulatory definition providing that

> [v]essels therefore will be included in the definition of 'OCS source' when they are 'permanently or temporarily attached to the seabed' and are being used 'for the purpose of exploring, developing or producing resources therefrom. This would include, for example, drill ships on the OCS.

*Id.* (citing 57 Fed. Reg. 40,792, 40,793 (September 4, 1992)). First of all, this quote does not support Region 10's conclusion that vessels must be "in a position to begin exploring" to be "erected thereon and used for the purposes of exploring" within the meaning of the regulatory definition. As explained, a vessel can be "erected thereon and used for the purposes of exploring" before it is "in a position to begin exploring." Thus, Region 10 simply made up a legal requirement that does not exist in the regulation, making the agency's decision erroneous. *See In re: Arecibo & Aguadilla Regional Wastewater Treatment Plants* 12 E.A.D. 97, n.60, 130 NPDES Appeal Nos. 02-09 & 03-05 (March 10, 2005) ("if language is plain and unambiguous it must be given effect").

Region 10 further argues that because it is possible that the Discoverer could be located somewhere other than the drill site when attached by only one anchor, it should not be considered an OCS source at that point in time. EPA Chukchi RTC at 17 (Exhibit 15).

However, the regulatory language only requires that the equipment be "used for the purpose of exploring," 40 C.F.R. § 55.2, not that the equipment actually be engaged in exploration activities – as Region 10 has admitted. EPA Chukchi RTC at 17 (Exhibit 15) (rejecting a commenter's argument that the Discoverer must actually be engaged in exploratory operations to be "used for the purpose of exploring"). Aside from transporting the drill ship through the OCS for purposes of repair, a majority of the time the drill ship is in the OCS it is there *for the purpose of exploring* for or producing hydrocarbons as authorized under OCSLA. EPA RTC at 24 (Exhibit 3). There is no support in the regulatory definition of OCS source for Region 10's effort to draw a distinction between when the drill ship is a "ship" and when it is drilling. Thus, the Board should remand the permit. *Kulluk,* slip op. at 18 (remanding a permit because Region 10 provided "no record foundation . . .other than a brief statement in its Response to Comments that [was] unsupported by facts or analysis in the record").

*b. Region 10 committed clear error in determining that its regulatory definition of OCS source does not apply to the anchor handler or any of the associated fleet.*

Had Region 10 properly applied its regulation to the Discoverer, then it would have concluded that the ice breaker/anchor handler is also part of the OCS source, because it is attached to the Discoverer while dropping the anchors. The second prong of the regulatory definition of OCS source provides that equipment that is "[p]hysically attached to an OCS facility" is considered to be part of the OCS source "in which case only the stationary sources aspects of the vessels will be regulated." 40 C.F.R. § 55.2. Thus, once attached to the Discoverer for the purpose of dropping its anchors, the ice breaker/anchor handler is subject to regulation as part of the OCS source.

In response to this point, Region 10 argues that "although there is an anchor line running between the Discoverer and Icebreaker # 2" the Icebreaker "can not be considered in any way to be physically attached to the Discoverer during this time . . . ." EPA Beaufort Stmt of Basis at 24 n. 8 (Exhibit 5). The reason is that the cable connecting the Discoverer and the icebreaker/ anchor handler during anchoring does not fall within the regulation's meaning of "temporarily attached." To be temporarily attached, Region 10 explains that the "purpose" of attachment must be to "prevent or minimize relative movement between two vessels." EPA Chukchi RTC at 25 (Exhibit 15) (citing preamble to the regulatory definition); *see also* EPA, Beaufort RTC at 12 (Exhibit 3) (citing to Chukchi response to comments). This is clearly contrary to the plain language of the regulation, which contains no such requirement. 40 C.F.R. §§ 55.2. Region 10's citation to the preamble to the final regulatory definition fails to support its argument. Nothing in the preamble suggests that there must be a specific "purpose" to the attachment.

Region 10's alternative argument, that even if the Icebreaker #2 is attached to the Discoverer it is not conducting "stationary source activities" that may be regulated, is also clearly erroneous. EPA Chukchi RTC at 25 (Exhibit 15). Again, the regulation contains no such requirement. The regulation clarifies only that when a vessel is "physically attached" to an OCS facility, "only the stationary source aspects of the vessels will be regulated" under the Clean Air Act. 40 C.F.R. § 55.2. But it does not specify that only "stationary source activities" are regulated. Nor does EPA explain what it means by "stationary source activities" or offer any record support for this argument. EPA Chukchi RTC at 25 (Exhibit 15).

In deciding whether the regulation requires control of the emissions from the Icebreaker and the other associated vessels, Region 10 should have considered: 1) Congress's intent to regulate associated vessels; 2) section 328's goals, all of which require Region 10 to conduct a

BACT determination for the associated fleet; and 3) EPA's definition of "stationary source" under the PSD program. *Northern Michigan University*, slip op. at 46 (rejecting Sierra Club's "plain language" argument based upon other factors that showed Congress's intent supported the agency's decision) ((citing *In re Rochester Pub. Utils.*, 11 E.A.D. 593, 603-08 (EAB 2004) (Board generally will give effect to unambiguous regulatory language, but where the meaning of a regulation is unclear, the Board must construe the regulation in light of its context and purpose), *appeal dismissed by stip. sub nom. Minn. Ctr. for Envtl. Advocacy v. EPA*, No. 05-1113 (8th Cir. Jan. 12, 2005)). [3]

Under section 328, Congress clearly intended for EPA to regulate vessels associated with OCS sources in the same manner as OCS sources. S. Conf. Rep. No. 136, 101st Cong., 2d Sess. at S16983 (1990) (stating that "the cruising emissions from marine vessels are controlled and offset as if they were part of the OCS facility's emissions" and considering emissions from vessels associated with an OCS source "including those from crew and supply boats, construction barges, tugboats, and tankers," to be "part of the OCS facility emissions *for the purposes of regulation*") (emphasis added). Congress's express goal for section 328 was to control air pollution on the OCS. 42 U.S.C. § 4627(a). As Shell's operations demonstrate, vessels associated with a drill ship represent the overwhelming majority of drill ship exploration emissions.[4] Exempting vessels associated with drill ship exploration, an activity that Congress expressly included within the definition of OCS source, will seriously undermine section 328's goal of controlling air pollution on the OCS by allowing the vast majority of the emissions from

[3] Petitioners note that nothing in the regulatory definition expressly prohibits Region 10 from applying BACT to vessels associated with an OCS source that are not actually defined as being part of an OCS source. 40 C.F.R. § 55.2.

[4] Region 10 has calculated that these vessels will emit at least 95 percent of Shell's total emissions of the five criteria pollutants. Appendix A, EPA Beaufort Stmt of Basis at A-1 (Exhibit 5).

drill-ship exploration to escape regulation.[5] By failing to regulate the emissions from the associated fleet in the same manner as the Discoverer, Region 10 has interpreted the regulatory definition in a way that conflicts with Congress's intent.

Applying BACT to the associated fleet is the only way that Region 10 can interpret the regulation consistently with the EPA's definition of stationary source under the PSD program. EPA requires a BACT determination for all stationary sources, including all of a facility's "pollutant emitting activities." 40 C.F.R. § 52.21(b)(5) (defining "any building, structure, facility, or installation," part of the definition of "stationary source," as "all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control"). As an integral part of the Discoverer's operations, all of the vessels in the associated fleet are a part of the Discoverer's "pollutant-emitting activities" because they are grouped together for the purposes of the permit, are located within the same lease block area, and are all controlled by Shell. *See* EPA RTC at 21 (Exhibit 3) (describing how Icebreaker #2 is required to set the anchors before the Discoverer can drill); EPA Chukchi RTC at 98 (Exhibit 15) (explaining how the oil spill response fleet's daily on-water training exercises were included in the primary operating scenario).

Underlying EPA's response to comments and the preamble to the regulatory definition of OCS source, seems to be an assumption that EPA is prohibited from regulating vessels under the

[5] As the first major source OCS PSD permit, the Board's approval of Region 10's decision to exempt the associated vessels from a BACT determination will significantly narrow section 328's reach in future permits for currently pending and imminent exploration plans. At the very least, Petitioners urge the Board to review this important policy consideration. 40 C.F.R.§ 124.19(a)(2) (allowing the Board to review an important policy consideration); *In re Chem. Waste Mgmt.*, 2 E.A.D. 575, 577 (EAB 1988) (relying upon policy considerations to remand a permit).

CAA. Of course such an assumption is faulty. EPA has now exercised its authority under the CAA to regulate emissions from marine vessels by promulgating a final rule that includes emissions limitations for marine vessels. EPA Final Rule: Control of Emissions of Air Pollution From Locomotive Engines and Marine Compression-Ignition Engines Less than 30 Liters per Cylinder; Republication, 73 Fed. Reg. 37096, 37102 (June 30, 2008) (discussing EPA's authority under the CAA to issue these standards). Thus, any previous concerns over the regulation of air emissions from marine vessels that may have existed are now irrelevant in light of the fact these emissions are now being regulated under the statute.

### B. Region 10 Committed Clear Legal Error By Failing To Apply The Statutory Definition of OCS Source Or Even Rectify Its New Definition Of The OCS Source With The Statutory Definition.

Region 10 erred because its interpretation of OCS source ignores the statutory definition of OCS source provided by Congress, which is much broader than the regulatory definition. As the application of the regulatory definition to this permitting situation demonstrates, the regulatory definition ignores Congress's intent to regulate emissions from OCS sources in transit and emissions from some of the vessels associated with OCS sources. Thus, Region 10 erred in relying upon the regulatory definition to justify its permitting decision while ignoring the broader statutory definition. Because this permit is the first major source OSD PSD permit, it will set significant precedent for Region 10 and other permitting agencies to follow when issuing similar permits for other operations in the OCS.

#### 1. The legal requirements for what constitutes the OCS source under the Clean Air Act.

Congress provided EPA with an expansive definition of "Outer Continental Shelf source" or "OCS source" that includes "any equipment, activity, or facility which:"

(i) emits or has the potential to emit any air pollutant,

> (ii) is regulated or authorized under the Outer Continental Shelf Lands Act [], and
>
> (iii) is located on the Outer Continental Shelf or in or on waters above the Outer Continental Shelf."
>
> Such activities include, but are not limited to, platform and drill ship exploration, construction, development, production, processing, and transportation. For purposes of this subsection, emissions from any vessel servicing or associated with an OCS source, including emissions while at the OCS source or en route to or from the OCS source within 25 miles of the OCS source, shall be considered direct emissions from the OCS source.

42 U.S.C. § 7627(a)(4)(C). Through this definition, Congress intended to regulate the emissions from the in transit activities of an OCS source and the emissions from vessels associated with an OCS source. *See, e.g.,* S. Conf. Rep. No. 136, 101st Cong., 2d Sess. at S16983 (1990) (considering emissions from vessels associated with an OCS source "including those from crew and supply boats, construction barges, tugboats, and tankers," to be "part of the OCS facility emissions *for the purposes of regulation*") (emphasis added); *see also* S. Rep. No. 228, 101st Cong., 1st Sess. 70 (1989) reprinted in 1990 U.S.C.C.A.N. 3385, 3463-64 ("[a]ll emissions from marine vessels (including engine emissions) which service or are associated with an OCS source, are subject to the same permitting, enforcement, monitoring, reporting, and offset requirements which would apply if these vessels were located in the corresponding onshore (State waters) area. This is intended to include emissions generated while vessels are traveling within the same air basin. These requirements should apply to vessel emissions occurring while at the OCS source, or when en route to or from the OCS source and to or from the corresponding onshore area.").

Under the Clean Air Act, Congress required that EPA regulate OCS sources to control air pollution on the OCS. 42 U.S.C. § 6727(a). OCS sources, just like other stationary sources, are subject to requirements of the PSD program, including BACT. 42 U.S.C. § 7627(a)(1)

(requiring OCS sources to comply with the PSD program); 40 C.F.R. § 55. 13(d) (requiring that OCS sources comply with the PSD regulations). EPA cannot provide a blanket exemption from the requirements of the Act for a stationary source. *Whitman v. American Trucking Associations*, 531 U.S. 457, 485 (2001) ("EPA may not construe [a] statute in a way that completely nullifies textually applicable provisions meant to limit its discretion."); *see also Sierra Club v. E.P.A.*, 551 F.3d 1019 (D.C. Cir. 2008) (rejecting EPA's startup, shutdown, and malfunction exemption under the CAA); *Alabama Power v. Costle*, 636 F.2d 323, 358 (D.C. Cir. 1979) (noting the general principle that an agency cannot provide categorical exemptions from a statute) (citing *American Iron & Steel Institute v. EPA*, 568 F.2d 284, 306-08 (3d Cir. 1977) ("reject[ing] EPA's blanket exemption of steel plants in the Mahoning Valley from BACT requirements")).

**2. Factual background demonstrating the EPA violated the statutory definition of OCS source and never rectified its permit determination with the statute.**

As described previously, Region 10 put forth several different interpretations of when the Discoverer becomes an OCS source. *See supra* at 15-16. Region 10 also issued a final permit that allows Shell to use a whole fleet of vessels that are necessary for its exploration activities, but that are not subject to regulation under the Clean Air Act. EPA RTC at 14-15 (Exhibit 3) ("this permit does not impose BACT on emission units that comprise the Associated Fleet"). Shell's "associated fleet" includes two icebreakers, a resupply ship, an oil response fleet (including an offshore management ship and three 34-foot work boats), and other vessels that will remain more than 25 miles from the Discoverer. Petitioners Comments at 13 (Exhibit 2).

Region 10 has calculated that these vessels will emit at least ***95 percent*** of Shell's total emissions of the five criteria pollutants. Appendix A, EPA Beaufort Stmt of Basis at A-1 (Exhibit 5). These vessels are associated with, and are an integral part of, Shell's exploratory

operations. *See, e.g.*, EPA Stmt of Basis at 13-14, 24 n.8 (explaining that "Anchors are run and set by the ice breaker," "icebreakers' role is to protect the Discoverer from ice movement," and the Discoverer will be "replenished by a supply ship, or a tug and barge"). Throughout the permitting process, Region 10 maintained the position that the associated fleet does not fall within the definition of OCS source and thus are not subject to regulation. EPA RTC at 12 (Exhibit 3) (referring to the Chukchi RTC); EPA Chukchi RTC at 22-23 (Exhibit 15).

**3. Preservation of error and subject of this petition.**

Petitioners preserved this issue for appeal in their comments of February 17, 2010. Petitioners Comments at 12-22 (Exhibit 2).

This issue is properly subject to appeal because Region 10 committed a clear legal error in failing to apply the statutory definition of OCS source or rectify it with the Region's permitting decision.

**4. EPA's failure to address the statutory definition of OCS source was a clear legal error.**

Region 10 promulgated an interpretation of OCS source that conflicts with the statutory definition. Section 328 of the statute defines OCS source to:

include any equipment, activity, or facility which –

(i) emits or has the potential to emit any air pollutant,

(ii) is regulated or authorized under the Outer Continental Shelf Lands Act [], and

(iii) is located on the Outer Continental Shelf or in or on waters above the [OCS].

42 U.S.C. § 7627(a)(4)(C). Additionally, Congress explicitly mentioned "drill ship exploration" as an example of an *activity* included within the definition of OCS source. 42 U.S.C. § 7627(a)(4)(C). The Discoverer is equipment that meets all three criteria long before it is secure and stable at the drill site. The associated fleet are equipment that have the potential to emit air

pollutants, are authorized under OCSLA (as part of Shell's exploration plan), and are located in the waters above the OCS. Collectively, the drill ship and the associated fleet are engaged in the activity of exploring for hydrocarbons, as authorized under OCSLA in an exploration plan, and are emitting air pollutants in the OCS while engaged in exploration. Therefore, Region 10 committed clear legal error by not controlling the emissions from the Discoverer's propulsion engine and the associated fleet as part of the OCS source.

As discussed above, *see supra* at 11-17, the EPA erroneously determined that the drill ship has to be "secure and stable" on the drill site, before it is considered to be an OCS source. However, as with EPA's regulatory definition of OCS source there is nothing in the statutory definition that supports this interpretation. The statutory language as well as the underlying legislative history, support the need for the associated fleet to also be regulated as part of the OCS source, since these vessels also emit air pollutants, are authorized under Shell's exploration plan, and are in the waters above the OCS. 42 U.S.C. § 7627(a)(4)(C); S. Conf. Rep. No. 136, 101st Cong., 2d Sess. at S16983 (1990); S. Rep. No.228, 101st Cong., 1st Sess. 70 (1989), reprinted in 1990 U.S.C.C.A.N. 3385, 3463-64. Thus, vessels associated with a drillship must be regulated as a part of an OCS source. *Kulluk*, slip. op. at 45 (faulting the Region for not considering other scenarios for the definition of "stationary source" and stating that the Region was required to "[a]t a minimum . . . discuss circumstances that give rise to reasonably anticipated questions").

Instead of grappling with the statutory definition of OCS source, Region 10 consistently takes the position that it can base its decision on the much more narrow regulatory definition of OCS source. EPA RTC at 12 (Exhibit 3); EPA Chukchi RTC at 23 (Exhibit 15). Region 10's reliance on and current interpretation of the regulatory definition in this situation, as previously

described, is unlawful, in addition to the fact that it impermissibly restricts the inclusive statutory definition.[6] The Supreme Court made clear in *Massachusetts v. EPA*, 549 U.S. 497 (2007), that EPA does not have the authority to restrict an unambiguous and inclusive statutory definition. There, the Court determined that the agency did not have the discretion to narrow the CAA definition of "air pollutant" by excluding "carbon dioxide" because the statutory definition was unambiguous and inclusive. *Id.* at 528-529. In finding that the definition of "air pollutant" was unambiguous and inclusive, the Court relied up the "sweeping" language in the definition, specifically "includes any." *Id.*

Just as the EPA had in *Massachusetts*, the agency is impermissibly restricting a Clean Air Act term by defining OCS source to exclude the Discoverer before it is secure and stable at the drill site and by failing to regulate the associated fleet aside from when the supply ship is attached to the Discoverer. The statutory definition of OCS source is unambiguous and inclusive because it includes the same "sweeping" and "inclusive" language: "include[s] any," 42 U.S.C. § 7627(a)(4)(C), that was at issue in *Massachusetts v. EPA*. Additionally, Congress emphasized the inclusive nature of the definition by stating that "[s]uch activities include, *but are not limited to*." 42 U.S.C. § 7627(a)(4)(C) (emphasis added). Because the inclusive statutory definition of OCS source is unambiguous, EPA's regulatory definition is impermissibly narrow since it provides a basis for excluding many of the drill ship exploration activities Congress intended the agency to regulate under the Act.

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[6] Petitioners recognize that the respondents will argue that the Board cannot consider the legality of the regulatory definition in this proceeding. However, Petitioners urge the Board to reach this issue because valid legal and policy reasons warrant the Board's resolution of this precedential matter. At the very least, Petitioners maintain this argument to preserve the issue of Region 10's legal error for judicial review of the final permit decision. *See In re: Christian County Generation, LLC*, PSD Appeal No. 07-01, Slip op. at 17 n.21 (EAB Jan. 28, 2008) (noting that "courts are often unwilling to entertain a new issue for the first time on appeal where the record has not been fully developed") (internal citation omitted).

Region 10 next turns to the Court of Appeals for the District of Columbia's decision in *Santa Barbara* to conclude that the vessels associated with an OCS source are not subject to regulation. EPA RTC at 12 (Exhibit 3); EPA Chukchi RTC at 23 (Exhibit 15) (stating that EPA "was challenged on this precise issue in *Santa Barbara* . . . and the OCS regulations were upheld"). But *Santa Barbara* did not address the question at issue here: whether it was reasonable for EPA to exclude the propulsion engine of a drill ship and the vessels that are associated with drill ship exploration. 31 F.3d at 1181. Rather, the petitioners in *Santa Barbara* challenged EPA's failure to regulate *marine vessels in transit – i.e.*, vessels other than those engaged in oil and gas exploration. *Id.* at 1181. The court addressed only whether the EPA was reasonable to exclude the very broad category of "vessels merely traveling over the OCS." *Id.* That category of vessels is entirely different from the vessels at issue here – *i.e.*, those directly associated with drill ship exploration.

Moreover, the court's reasoning in *Santa Barbara* contradicts Region 10's current argument. In rejecting the petitioners' challenge, the court found that "the County's position would be unassailable if vessels in transit were unambiguously included within the definition of OCS source." *Id.* The court then noted that the statutory definition mentions vessels in only two contexts, one of which is "drill ship exploration." *Id.* Thus, *Santa Barbara* fails to support Region 10's position that the regulation allows it to exclude vessels that are part of drill ship exploration.

Region 10's reliance on the EAB's *Kulluk* decision is also misplaced. The factual and legal circumstances in *Kulluk* are very different than those presented in this case. In *Kulluk*, the issue was whether the drill ship was a source when it moved to multiple drill sites and whether all of its emissions from the various sites had to be considered together. Slip op. at 18. This is

distinct from Petitioners' argument here that the emissions from vessels that are essential to Shell's operations and authorized under OCSLA need to be regulated as part of the OCS source.

To support its failure to address the statutory definition of OCS source, Region 10 relied upon the preamble to the regulatory definition, where EPA cited two jurisdictional limitations to justify its failure to regulate vessels. EPA RTC at 12 (Exhibit 3); EPA Chukchi RTC at 16-17 (Exhibit 15) (citing EPA Final Rule: Outer Continental Shelf Air Regulations, 57 Fed. Reg. 40,792, 40,793-94 (Sept. 4, 1992)). Region 10 erred in relying on these justifications because neither limitation is legally defensible. First, EPA stated that the Department of Interior only has the authority under OCSLA to regulate vessels that are attached to the seabed and erected thereon. *Id.* EPA erred in stating that OCSLA does authorize or regulate vessels that are not attached to the seabed. OCSLA regulates several activities that include vessels that are not attached to the seabed. For example, OCSLA's jurisdiction extends over activities that require vessels which are never attached to the seabed: "exploration" includes seismic testing with ships; "development" include "geophysical activity;" and "production" includes "transfer of minerals to shore." 43 U.S.C. § 1331; *see also id.* § 1333(d)(1) (requiring that the Coast Guard "promulgate . . . regulations with respect to lights and other warning devices, safety equipment, and other matters relating to the promotion of safety of life and other property . . . on the waters adjacent thereto . . ."). The legislative history confirms that OCSLA's jurisdiction extends to vessels that are not attached to the seabed. *See* H.R. Conf. Rep. 95-1474 at 6 (extending jurisdiction to facilities "brought into OCS waters for placement so that it can be used to develop and produce OCS materials"). Moreover, EPA only referred to activities that are "regulated" under OCSLA and failed to address Congress's requirement that OCS sources include activities that are "authorized" under OCSLA.

Second, EPA explained in the preamble that "[s]ection 328 of the CAA does not provide EPA with the authority to regulate emissions from engines being used for propulsion" and that the agency is "prohibited from directly regulating mobile sources under [title I of the CAA]." 57 Fed. Reg. 40,792, 40,793-94. As explained below, both of these justifications are erroneous. EPA has now exercised its authority under the CAA to regulate emissions from vessels in transit by promulgating emission standards for marine vessels. EPA Final Rule: Control of Emissions of Air Pollution From Locomotive Engines and Marine Compression-Ignition Engines Less than 30 Liters per Cylinder; Republication, 73 Fed. Reg. 37096, 37102 (June 30, 2008). Because EPA's legal justifications for the regulatory definition of OCS source are erroneous and no longer accurate, Region 10's reliance on the regulation was clear error.

Ultimately, in comments on both draft permits, petitioners and other commenters questioned whether Region 10's interpretation complies with the statutory definition of OCS source. EPA Chukchi RTC at 11-12 (Exhibit 15) (repeating the comment that "the Discoverer meets the three statutory elements days before the anchoring process even begins, triggering the statute's jurisdiction"). But Region 10 failed to respond to the petitioners' comments with a reasonable answer. *In re: Amerada Hess Corp. Port Reading Refinery*, 12 E.A.D. 1, 19 (EAB 2005) ("Ultimately, the failure to *reasonably* respond to significant comments is itself sufficient grounds for remanding the Permit" (emphasis added)) (citing *In re: Wash Aqueduct Water Supply Sys.*, 11 E.A.D. 565, 586, 589-90 (EAB 2004)). The agency merely stated that the petitioners were barred procedurally from raising the issue. EPA Chukchi RTC at 11 (Exhibit 15) ("These comments appear to present a challenge to the definition of "OCS source" in the OCS regulations at 40 C.F.R. § 55.2, and not to EPA's application of the regulation to this permitting action"). This response is inadequate and unreasonable. Moreover, it ignores well-

established precedent that parties can challenge regulations well after the 60-day limit when the parties were not harmed by the regulation until a subsequent EPA action. *Illinois E.P.A. v. U.S. E.P.A.*, 947 F.2d 283, 287-289 (7th Cir. 1991); *see also Bethlehem Steel Corp. v. United States Environmental Protection Agency*, 723 F.2d 1303, 1306 (7th Cir. 1983) (rejecting a similar jurisdictional argument and finding that the petitioners were not required to challenge a regulation that "might some day harm it" because "it makes no sense at a time of heavy federal judicial caseloads to challenge regulations that may never harm them"). These cases highlight that CAA section 307(b)'s 60-day limitation on challenges to regulations is not dispositive in all cases and that the agency was erroneous in relying so heavily on this provision. At the very least, Region 10 should have discussed the merits of the questions raised by petitioners. *Kulluk,* slip. op. at 45 (stating that the Region was required to "[a]t a minimum . . . discuss circumstances that give rise to reasonably anticipated questions").

Nor did Region 10 respond to Petitioners' concern that the new interpretation of the regulatory definition of OCS source fails to regulate the Discoverer when engaged in pre-construction activities. EPA Chukchi RTC at 12 (Exhibit 15). Region 10's only response to this comment was "[s]ee response to Comment F.1.a. with respect to concerns that EPA has impermissibly narrowed the regulatory definition of OCS." *Id.* at 11-12. Region 10 cannot simply refer to a previous statement without providing a reasoned response to a particular comment. *Kulluk*, Slip. op. at 41 (citing *In re McGowan*, 2 E.A.D. 604, 606-07 (Adm'r 1988) (finding that the "total lack of response" to a comment cannot be cured by reference to an earlier statement because that statement "merely provides a conclusion without supportive reasoning")).

## II. REGION 10 ERRED BY NOT REQUIRING A SUFFICIENT AMOUNT OF ADEQUATE $PM_{2.5}$ BACKGROUND DATA OR SECONDARY $PM_{2.5}$ DATA IN DETERMINING WHETHER SHELL'S OPERATIONS ARE WITHIN THE NAAQS AND BY FAILING TO DISTINGUISH BETWEEN $PM_{2.5}$ AND $PM_{10}$ IN APPLYING BACT.

In approving the Beaufort air permit, Region 10 failed to obtain sufficient information on $PM_{2.5.}$ In so doing, the agency violated its regulations that call for at least four months of $PM_{2.5}$ background data and that require that the collection of data from a network with a collocated monitor and from a facility with an approved quality assurance project plan. EPA also failed to calculate or model the amount of secondary $PM_{2.5}$ that would be generated by Shell's operations. Additionally, Region 10 failed to conduct an adequate BACT analysis for PM and $PM_{10}$ deciding instead to rely solely on the BACT analysis performed for $PM_{2.5}$. As a result of these clear legal errors, the Beaufort air permit should be remanded.

### A. Region 10's Failure To Require Compliance With The Regulation Requiring At Least Four Months Of $PM_{2.5}$ Background Data As Well As Data From A Collocated Monitor With An Approved Quality Assurance Project Plan Was A Clear Error.

Shell's Beaufort permit was approved by Region 10 based upon background $PM_{2.5}$ data that fails to meet the requirements set forth in EPA's regulations. As petitioners explained in their petition for review of the Chukchi air permit, up until the end of 2008 there was no monitoring being conducted for $PM_{2.5.}$ Letter from EPA to Shell (Sept. 4, 2009) (Exhibit 16) (noting that Wainwright, Alaska monitor "is the first site on the North Slope with a $PM_{2.5}$ monitor"). Therefore, the permit record is clear that there is a general lack of information regarding the background levels of $PM_{2.5}$ along the North Slope of Alaska. Nevertheless, the Beaufort air permit was released for comment using less than four months of $PM_{2.5}$ monitoring data. EPA Beaufort Stmt of Basis at 111 (Exhibit 5) (explaining the $PM_{2.5}$ data was collected between August 20, 2009 and December 15, 2009). Additionally, the data generated at this

station and relied upon by Shell in its permit application was neither collocated nor collected subject to an approved quality assurance project plan (QAPP) as required by EPA's regulations. EPA's failure to require the submission of at least four months worth of $PM_{2.5}$ background monitoring data, as well as the use of collocated $PM_{2.5}$ samplers was a clear legal violation of 40 C.F.R. §§ 52.21(m) (1) (iv); 52.21(m)(3) and 40 C.F.R. part 58 Appendix A sections 3.2.5.5 and 3.2.5.6. The agency's failure to require that the data be collected pursuant to an approved quality assurance project plan in a collocated network violated 40 C.F.R. part 58 Appendix A § 2.1.2. These are clear legal errors, which are not entitled to any deference from the Board. *See In re Lazarus, Inc.*, 7 E.A.D. 318, 351 n.55 (EAB 1997) (noting the general rule that agencies may not advance "the doctrine of administrative deference . . . because the Board serves as the final decisionmaker for EPA"); *see also In re Rochester Pub. Utils.*, 11 E.A.D. 593, 603-08 (EAB 2004) (Board generally will give effect to unambiguous regulatory language).

**1. Legal requirements for the ambient air quality analysis accompanying a PSD permit application.**

EPA's PSD regulations provide that "[a]ny application for a permit under this section shall contain an analysis of ambient air quality in the area that the major stationary source or major modification would affect for" "each pollutant that it would have the potential to omit in a significant amount." 40 C.F.R. § 52.21(m)(1)(i)(a). The regulations further provide that for each "such pollutant" for which a NAAQS exists "the analysis shall contain continuous air quality monitoring data gathered for purposes of determining whether emissions of that pollutant would cause or contribute to a violation of the standard or any maximum allowable increase" and that

> [i]n general, the continuous air quality monitoring data that is required shall have been gathered over a period of at least one year and *shall represent at least the year preceding receipt of the application*, except that, if the Administrator determines that a complete and adequate analysis can be accomplished with monitoring data gathered over a period shorter than one year (*but not to be less*

> *than four months*), the data that is required *shall have been gathered over at least that shorter period*.

40 C.F.R. § 52.21(m)(1)(iii)-(iv) (emphasis added). In gathering this data the applicant "shall meet the requirements of Appendix B to part 58 of this chapter during the operation of monitoring stations for purposes of satisfying paragraph (m) of this section." 40 C.F.R. § 52.21(m)(3). As EPA acknowledges, the requirements of Appendix B have been added to Appendix A, thus, the applicant must meet the requirements of Appendix A to part 58. EPA RTC at 40 (Exhibit 3).

Appendix A to part 58 provides that "[f]or each PSD monitoring network, *one site must be collocated*. A site with the predicted highest 24-hour pollutant concentration must be selected." 40 C.F.R. part 58 Appendix A § 3.2.5.5 (emphasis added). Appendix A provides further requirements for the "two collocated monitors" such as their spacing and that the "[c]alibration, sampling, and analysis must be the same for both collocated samplers and the same as for all other samplers in the network." *Id.* § 3.2.5.6. Additionally, "[t]he quality assurance policy of the EPA requires every environmental data operation (EDO) to have a written and approved QAPP [quality assurance project plan] prior to the start of the EDO" that is "suitably documented," and that "[i]t is the responsibility of the monitoring organization to adhere to this policy." 40 C.F.R. part 58 Appendix A § 2.1.2.

### 2. Factual background pertaining to the collection of background data on and monitoring of $PM_{2.5}$ along the North Slope of Alaska.

As the Board is aware, particulate matter pollution is a mixture of soot, smoke and tiny particles formed in the atmosphere from sulfur dioxide ($SO_2$), nitrogen oxides ($NO_x$), and ammonia ($NH_3$). Williams Decl. ¶14 (Exhibit 17). Fine particles ($PM_{2.5}$) contain microscopic solids or liquid droplets that are so small they can get deep into the lungs and even into the

bloodstream, bypassing the body's defense systems. *Id.* They are implicated in thousands of premature deaths each year.

The EPA started regulating $PM_{2.5}$ in 1997 and recently lowered the short-term NAAQS for $PM_{2.5}$ from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ because scientific information showed that the pollutant is a health concern at levels lower than what the previous standard allowed. EPA, National Ambient Air Quality Standards for Particulate Matter; Final Rule, 71 Fed. Reg. 61,144 (Oct. 17, 2006). The health concerns exposure to particulate matter raises are chronic respiratory disease, asthma, lung cancer, and cardio-respiratory mortality. 71 Fed. Reg. at 61,154.

Little if any monitoring of $PM_{2.5}$ has been done on the North Slope. Letter from EPA to Shell (Sept. 4, 2009) (Exhibit 16). Thus, "[b]eginning in early 2006, EPA suggested that Shell collect ambient data to support its preparation of an air permit application." EPA Chukchi RTC at 8 (Exhibit 15). North Slope communities requested additional site-specific monitoring data be collected back in 2007 when EPA was accepting comments on draft minor air permits for Shell's operations. *See* Letter from Johnny Aiken, North Slope Borough, to Natasha Greaves and Dan Meyer, EPA Region 10 (May 11, 2007) (Exhibit 18). However, Shell did not collect the necessary data.

Instead, the company elected to rely upon less than four months of $PM_{2.5}$ monitoring data to support its permit application. EPA Beaufort Stmt of Basis at 111 (Exhibit 5); Petitioners Comments at 50-51 (Exhibit 2). This data was collected from the Badami monitoring station and no mention was made as to whether the data met the collocated sampler or approved quality assurance project plan requirements. Petitioners Comments at 53-54 (Exhibit 2). The Badani station is part of the network of stations operated by ConocoPhillips and Shell. EPA Chukchi RTC at 110 (Exhibit 15).

EPA explained that "Section 3.2.5.5 of Appendix A requires that, within a network under a single primary quality assurance organization ('PQAO'), there be at least one collocated $PM_{2.5}$ monitor that is a Federal Reference Monitor ('FRM') and that the site in the monitoring network with the highest predicted 24-hour concentration must be selected." EPA Beaufort RTC at 41 (Exhibit 3). The agency went on to acknowledge that "[o]n October 23, 2009, AECOM [Shell and ConocoPhillip's contractor] began operation of collocated PM2.5 monitors in Deadhorse, Alaska, predicting that $PM_{2.5}$ concentrations would be highest in this location of all monitoring stations in its network." *Id.*[7] The data from the monitoring stations is analyzed in quarters. EPA received "[d]ata from the collocated samplers at Deadhorse . . . through December 15, 2009." EPA Chukchi RTC at 113 (Exhibit 15). The QAPP for the Badami monitoring station was approved on February 17, 2010. Email Tom Damaina to Chris Hall (Feb. 16, 2010) (Exhibit 19); Email from Christopher Hall to Tom Damiana (Feb. 17, 2010) (Exhibit 20).

At the most, EPA received a little over two months of collocated background $PM_{2.5}$ monitoring data from Shell in support of its permit. EPA Beaufort Stmt of Basis at 111 (Exhibit 5) (noting that "Valid PM2.5 data collection began on August 20, 2009"); EPA Beaufort RTC at 41 (Exhibit 3) ("On October 23, 2009, AECOM began operation of collocated PM2.5 monitors in Deadhorse, Alaska").

**3. Preservation of error and subject of this petition.**

In their comments on the Beaufort air permit, Petitioners discussed the need for Region 10 to ensure Shell collected sufficient $PM_{2.5}$ data from a network with a collocated monitor. Petitioners' Comments at 50-54 (Exhibit 2).

[7] Thereafter, EPA also expressed concerns about "instruments" at the Deadhorse site that "were not in agreement." Email from Christopher Hall, EPA to Thomas Damiana (Dec. 9, 2009) (Exhibit 21).

By failing to follow its regulatory requirements, Region 10 committed a clear legal error.

#### 4. Clear legal error was committed by EPA in not requiring collocated $PM_{2.5}$ data before approving Shell's permit.

Shell has not provided a year's worth of $PM_{2.5}$ data in support of its permit as recommended by 40 C.F.R. § 52.21(m)(1)(iv). *See* EPA Beaufort Stmt of Basis at 111 (Exhibit 5) ("EPA has determined that PM2.5 data collected from August 20, 2009 to December 15, 2009 is appropriate for use as representative background air quality data for this permitting action"). Shell also failed to provide the mandatory minimum of at least four months worth of data in support of its permit application. *Id.* Of the less than four months of $PM_{2.5}$ data Shell provided with its permit application, only the data collected from October 23 to December 15, 2009 was from a network with a collocated $PM_{2.5}$ monitor. 40 C.F.R. § part 58 Appendix A § 3.2.5.5 ("For each PSD monitoring network, one site must be collocated"). For all the collocated $PM_{2.5}$ data that Shell did collect, it did not have "a written and approved QAPP prior to the start of the" data collection, 40 C.F.R. part 58 Appendix A § 2.1.2. *See* Email from Christopher Hall to Tom Damiana (Feb. 17, 2010) (Exhibit 20) (noting that the Badami QAPP was approved in February 2010). Approving Shell's permit based on the data provided to EPA was a clear legal error, especially in light of the lack of prior monitoring data for $PM_{2.5}$ for the North Slope. Letter from EPA to Shell (Sept. 4, 2009) (Exhibit 16). EPA violated the requirements of 40 C.F.R. § part 58 Appendix A § 3.2.5.5 and 40 C.F.R. part 58 Appendix A § 2.1.2.

EPA's explanation for these violations is that it has sufficient information to determine "that the precision and bias goals through December 15, 2009 are being met." EPA Beaufort RTC at 43 (Exhibit 3). In drawing this conclusion, EPA points to the data collected at "Nuiqsut and Wainwright" to demonstrate that the data collected at Badami "is representative." *Id.* at 33. Ultimately, the agency concludes that if it lumps together the four months of data requirement

with the "quality assurance requirements" and looks at all the available data somehow "EPA's minimum data requirements" are met. *Id.* Since the regulatory language is clear and provides no opportunity for non-compliance, EPA committed a clear legal error. *See In re: D.C. Water and Sewer Authority* NPDES Appeal Nos. 05-020, 7-10, 07-11, 07-12, slip op. at 26 (EAB March 19, 2008) (finding that the plain language of a regulation controls); *In re Rochester Pub. Utils.*, 11 E.A.D. 593, 603-08 (EAB 2004) (Board generally will give effect to unambiguous regulatory language).

A critical failure in relying on the Badami $PM_{2.5}$ data also is the fact that collocated $PM_{2.5}$ background data does not exist for the less than four months of data upon which EPA is relying. *See* EPA Beaufort Stmt of RTC at 41 (Exhibit 3) ("[o]n October 23, 2009, AECOM [Shell and ConocoPhillip's contractor] began operation of collocated PM2.5 monitors in Deadhorse"); Email Herman Wong to Christopher Hall at 3 (Aug. 18, 2009) (Exhibit 22) ("my interpretation of the regulation is that any valid and useable $PM_{2.5}$ data in a PSD application ambient air quality analysis must be collected during the period in which there was concurrent and collocated sampling occurring at a monitoring site or network station"). EPA's regulations are clear that "[f]or each PSD monitoring network, one site must be collocated." 40 C.F.R. part 58 Appendix A § 3.2.5.5.

Additionally, Shell failed to provide any $PM_{2.5}$ background data for July or the first part of August – *i.e.*, the first six to seven weeks of its operation. EPA Beaufort Stmt of Basis at 111 (Exhibit 5) ("EPA has determined that PM2.5 data collected from August 20, 2009 to December 15, 2009 is appropriate for use as representative background air quality data"). In addressing Shell's two permit applications, various EPA employees stress the need for background data from "the Shell drilling season . . . ." *See e.g.*, Email from Herman Wong to Pat Nair at 2 (Aug.

26, 2009) (Exhibit 23) ("Currently, we are assuming that a minimum four months of collected data is adequate. Based on the Wainwright measurement, I now believe that it would be prudent to change the data collection period to include the Shell drilling season in the Chukchi Sea, *i.e.*, data collection from July to December which I assume is a permit condition."). For all these reasons, it was a clear legal error for EPA to fail to require compliance with its own regulatory requirements specifying at least four months of background data be provided from a network with collocated monitors.

### B. Region 10's Failure To Account For Secondary Particulate Matter Emissions Was A Clear Error.

Region 10 committed clear error by not calculating or accounting for the formation of secondary particulate matter as a result of Shell's operations. As previously described, communities along the North Slope of Alaska have: markedly higher rates of pulmonary disease than the general population in the U.S.; different genetic predispositions to disease; and are substantially more vulnerable to morbidity and mortality from air pollution than are other Americans. *See supra* at 6-7. Also as previously described, the health concerns posed by particulate matter include chronic respiratory disease, asthma, lung cancer, and cardio-respiratory mortality. Because Region 10 failed to take into account the formation of secondary $PM_{2.5}$ in calculating Shell's potential to emit and in ensuring compliance with the NAAQS, the agency committed a clear error.

#### 1. Potential to emit, BACT and compliance with the NAAQS.

Before issuing a Prevention of Significant Deterioration (PSD) permit to a major new stationary source, the EPA must conduct a BACT analysis for each pollutant that the source has the potential to emit in significant quantities. 42 U.S.C. § 7475(a)(4). The OCS regulations define potential emissions as

> the maximum emissions of a pollutant from an OCS source operating at its design capacity. Any physical or operational limitation on the capacity of a source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as a limit on the design capacity of the source if the limitation is federally enforceable. Pursuant to section 328 of the Act, emissions from vessels servicing or associated with an OCS source shall be considered direct emissions from such a source while at the source, and while en route to or from the source when within 25 miles of the source, and shall be included in the 'potential to emit' for an OCS source.

40 C.F.R. § 55.2.[8]

As EPA has explained "[u]nder the PSD program, a source's [potential to emit] PTE is used to determine . . . the pollutants that are subject to application of 'best available control technology' or 'BACT,'" and the "analysis of ambient air quality impacts from the project . . . ." EPA Beaufort Stmt of Basis at 20 (Exhibit 5). "A source is required to apply BACT for each pollutant for which the [potential to emit] PTE exceeds the 'significant emission rate' or 'SER' within the meaning of 40 C.F.R. § 52.21(b)(23)(i)." *Id.*

Typically, BACT is applied using a "top down" approach. EPA, New Source Review Workshop Manual (1990) (available at: http://www.epa.gov/ttn/nsr/gen/ wkshpman.pdf). EPA describes this as:

> the top-down process provides that all available control technologies be ranked in descending order of control effectiveness. The PSD applicant first examines the most stringent--or "top"--alternative. That alternative is established as BACT unless the applicant demonstrates, and the permitting authority in its informed judgment agrees, that technical considerations, or energy, environmental, or economic impacts justify a conclusion that the most stringent technology is not "achievable" in that case. If the most stringent technology is eliminated in this fashion, then the next most stringent alternative is considered, and so on.

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[8] The PSD regulations define the "potential to emit" as "the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant including air pollution control equipment and restriction on hours of operation or on the type of amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable." 40 C.F.R. § 52.21(b)(4).

*Id.*

The permit applicant is also "required" to analyze "ambient air quality for each" pollutant that exceeds the significant emission rate, and provide "a demonstration that it will not cause or contribute to a violation of any NAAQS or PSD increment." EPA Beaufort Stmt of Basis at 27-28 (Exhibit 5); *see also* 42 U.S.C. § 7475(a)(3) (a PSD permittee must demonstrate that it will not "cause, or contribute to, air pollution in excess of any ... maximum allowable increase").

**2. Factual background on secondary $PM_{2.5}$ formation.**

$PM_{2.5}$ is emitted directly from combustion point sources and from fugitive emissions sources. Williams Decl. ¶15 (Exhibit 17). Emissions of $NO_x$, VOCs, $SO_2$ and ammonia can form, after being emitted into the atmosphere, into $PM_{2.5}$ (also called secondary $PM_{2.5}$) and these secondary emissions can potentially be a significant component of ambient $PM_{2.5}$ concentrations. Memorandum from Stephen D. Page, Director, Office Air Quality Planning and Standards, dated March 23, 2010 Re: Modeling Procedures for Demonstrating Compliance with PM2.5 NAAQS at 3 (Exhibit 24) (hereafter Page Memorandum); Damberg, Policies for Addressing PM 2.5 Precursors (Exhibit 25). While primary $PM_{2.5}$ emissions are generally a localized issue, secondary $PM_{2.5}$ emissions can occur on a more regional scale and affect a larger region. Williams Decl. ¶15 (Exhibit 17). The fraction of $PM_{2.5}$ concentrations in the ambient air that is due to the secondary formation of $PM_{2.5}$ (*e.g.*, sulfates and nitrates), as opposed to directly emitted [primary] $PM_{2.5}$ (*e.g.*, as a product of combustion) is dependent on many factors. *Id.*

One factor is the presence of strong temperature inversions that limit dispersion of emitted pollutants and contribute to the formation of secondary $PM_{2.5}$ in the atmosphere. Williams Decl. ¶16 (Exhibit 17). Such temperature inversions can increase secondary $PM_{2.5}$ formation. $PM_{2.5}$ concentrations, therefore, can be due to gaseous pollutants that form fine

particles after reacting with other compounds in the air during meteorological inversions. Strong temperature inversions occur on the North Slope. *Id.*; Petitioners Comments at 56 (Exhibit 2).

As previously described, while there are very limited data available regarding background $PM_{2.5}$ levels on the North Slope, *see supra* at 32-33, 35. In addition, high levels of the pollutant were recorded at the Wainwright monitoring station in the third and fourth quarter monitoring reports from the station. Exhibits 23, 26; EPA Beaufort RTC at 34 (Exhibit 3). As a result, Petitioners asked EPA to analyze secondary $PM_{2.5}$ emissions. Petitioners Comments at 56-57 (Exhibit 2). Indeed, EPA even explained in a letter to Shell that "as of July 2008, EPA rescinded the surrogate policy for the federal PSD permitting programs, such that PSD permit applications needed to fully comply with all requirements for $PM_{2.5}$ direct emissions and *$PM_{2.5}$ precursors ($SO_2$ and NOx)*." Letter from Regional Administrator, EPA to Peter Slaiby, Shell (Aug. 20, 2009) (Exhibit 27) (emphasis added).

Nevertheless, the final Beaufort permit does not take into account the formation of secondary $PM_{2.5}$ resulting from Shell's emissions. Region 10 never calculated or modeled whether or how secondary $PM_{2.5}$ could impact air quality and whether Shell could still demonstrate compliance with the NAAQS. Moreover, of the modeling results that were presented in EPA's Statement of Basis for the Beaufort permit, those results predict $PM_{2.5}$ concentrations at over 83 percent of the 24-hour NAAQS. EPA Beaufort Stmt of Basis at 115 (Exhibit 5). When the accuracy of the data inputs underlying this analysis are taken into account, this prediction is barely within the appropriate margin of error for a demonstration that the operations will comply with the NAAQS. Williams Decl. ¶15 (Exhibit 17); *see also* Exhibit 23. This is true even without acknowledging the fact that these calculations only take into account direct emissions of $PM_{2.5}$ and not the formation of secondary $PM_{2.5}$.

In their comments, Petitioners pointed to several models that have been used to address secondary $PM_{2.5}$ formation and discussed the fact that EPA's Support Center for Regulatory Atmospheric Modeling (SCRAM) provides resources for modeling secondary $PM_{2.5}$. Petitioners Comments at 56-57 (Exhibit 2). Petitioners also explained that the Bureau of Land Management has modeled secondary $PM_{2.5}$ formation. *Id.*

**3. Preservation of error and subject of this petition.**

In their comments on the revised Beaufort air permit, Petitioners discussed the need for modeling of secondary $PM_{2.5}$ emissions from Shell's operations. Petitioners' Comments at 56-57 (Exhibit 2).

By failing to model or otherwise take into consideration the formation of secondary $PM_{2.5}$, Region 10 committed a clear legal error.

**4. EPA's legal errors resulting from the agency's failure to take the formation of secondary $PM_{2.5}$ into account.**

The calculation of secondary $PM_{2.5}$ emissions was never performed for Shell's operations. The determinations that the Beaufort permit will not cause or contribute to violations of the NAAQS or PSD increments also does not account for Shell's actual secondary $PM_{2.5}$ emissions. As a result, EPA committed clear legal and factual errors in finalizing the Beaufort permit.

As an initial matter, EPA's position that it did not have to address secondary $PM_{2.5}$ emissions is contrary to what EPA told Shell in July of 2008, regarding the need "to fully comply with all requirements for $PM_{2.5}$ direct emissions and $PM_{2.5}$ precursors ($SO_2$ and NOx)." Letter from Regional Administrator, EPA to Peter Slaiby, Shell (Aug. 20, 2009) (Exhibit 27). As described below, Region 10 has failed to adequately explain its change in position from first noting that Shell had to account for both direct and secondary $PM_{2.5}$ emissions to its current

position that Shell need only account for direct $PM_{2.5}$ emissions. *In re Austin Powder Co.*, 6 E.A.D. 713, 720 (EAB 1997) (remanding a permit because the agency provided different explanations for its permitting decision that were unclear).

With respect to the failure to calculate and account for Shell's secondary $PM_{2.5}$ emissions, EPA first says this failure is justified due to the "limitations in the tools and models currently available to address secondary $PM_{2.5}$ emissions." EPA Beaufort RTC at 51 (Exhibit 3). The only support EPA provides for this statement is a reference to an EPA memorandum dated March 23, 2010. *Id.* (citing Memorandum from Stephen D. Page, Director, Office Air Quality Planning and Standards, dated March 23, 2010 Re: Modeling Procedures for Demonstrating Compliance with PM2.5 NAAQS). This memorandum acknowledges that "[s]econdary formation of $PM_{2.5}$ from emissions of NOx, SOx and other compounds from sources across a large domain will often contribute significantly to the total ambient levels of $PM_{2.5}$, and may be the dominant source of ambient $PM_{2.5}$ in some cases." Page Memorandum at 3 (Exhibit 24). It also presents an interim method of analyzing $PM_{2.5}$ emissions because "[t]he current preferred dispersion model for near-field PM25 modeling, AERMOD, does not account for secondary formation of $PM_{2.5.}$" *Id.* at 9. The author explains that EPA intends to issue "additional guidance" on secondary $PM_{2.5}$ but that "if the facility emits significant quantities of $PM_{2.5}$ precursors, some assessment of their potential contribution to cumulative impacts as secondary $PM_{2.5}$ may be necessary." *Id.* Therefore, the memorandum fails to support EPA's statement that there are limitations on the tools currently available to address secondary $PM_{2.5}$ emissions, since it presents a way forward for addressing these very emissions.[9]

[9] Petitioners take no position on the adequacy of the analyses recommended in the Page Memorandum, since it was not followed by EPA in approving the Chukchi permit only a few days later. Petitioner point out that the Memorandum does stress the need for adequate and

EPA's next line of defense for its refusal to model secondary $PM_{2.5}$ emissions is "the conservatism built into the modeling assumptions that were used in conducting the air impact analysis . . . mitigate against the possibility that $PM_{2.5}$ would cause or contribute to a violation of the NAAQS." EPA Beaufort RTC at 51 (Exhibit 3). Not surprisingly, Petitioners disagree with this conclusion. First, as previously discussed, *see supra* at 32-33, 35, very limited background data exists for $PM_{2.5}$ levels on the North Slope. The background $PM_{2.5}$ data collected by Shell was inadequate for permitting purposes because it fails to meet EPA's regulatory requirements that the data is collected subject to an approved QAPP, and that collocated samplers were operating pursuant to approved QAPPs within the network during the time the data was collected. None of these requirements were met in Shell's application which calls into question EPA's characterization of the modeling performed using this data as conservative.

Additionally, EPA did not use the most conservative data for establishing the background level of $PM_{2.5}$. As Petitioners explained in their comments, what happened with the background data collected in Wainwright for Shell's Chukchi air permit demonstrates the importance of having sufficient data (*i.e.*, at least a year's worth) or at the very least using conservative background levels. In the case of the Chukchi, the third and fourth quarter monitoring reports that were submitted to EPA after the initial draft permit was released for public comment showed far higher background levels of $PM_{2.5}$ – *i.e.*, as high as 23 μg/m3 – and far above the 8 μg/m3 used as the original background level of $PM_{2.5}$ in Shell's application and the draft permit. *See* Petitioners Beaufort Comments at 52 (Exhibit 2). Petitioners urged EPA to consider setting a more conservative background level of $PM_{2.5}$, *id.*, however, EPA did not heed this request. The

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detailed background monitoring of $PM_{2.5,}$ in order to properly address a PSD permit applicant's $PM_{2.5}$ emissions, Page Memorandum (Exhibit 26), and that such background data is inadequate here, *see supra* at 33-39.

background data that was collected for the Chukchi air permit in Wainwright thus, demonstrates the need for either further data collection in Badami or at least the use of conservation background numbers. This data also demonstrates that EPA's reliance upon the "conservatism built into the modeling assumptions" is faulty.[10]

As all of EPA's explanations make clear, the agency never denies that Shell's operations will result in secondary $PM_{2.5}$ formation or that there is no basis for being concerned about these emissions. Rather, the agency simply brushes the secondary $PM_{2.5}$ emissions under the rug.

### C. Region 10's Failure To Distinguish Between $PM_{2.5}$ And $PM_{10}$ In Applying BACT To Shell's Operations Was A Clear Error.

EPA's failure to distinguish between PM, $PM_{2.5}$ and $PM_{10}$ emissions resulted in an arbitrary BACT analysis. EPA Beaufort Stmt of Basis at 62 (Exhibit 5). The PSD program requires BACT limits for "each pollutant subject to regulation." 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(j)(2)). Since 1997, $PM_{2.5}$ and $PM_{10}$ have been regulated as separate pollutants under the Act because they are subject to separate NAAQS. *See* National Ambient Air Quality

[10] Region 10 also references the Chukchi RTC, *see* EPA Beaufort RTC at 52 (Exhibit 3). Inasmuch at this includes EPA's rejection of the models presented by Petitioners because they "are not included in [Appendix W of 40 C.F.R. Part 51] and are therefore, not recommended for air permit modeling," EPA Chukchi RTC at 123 (Exhibit 15), Petitioners incorporate their arguments from their Chukchi petition for review that this response is wholly insufficient. First, EPA has discretion under Appendix W to select appropriate models for "a given situation." *See* Appendix W § 3.3(a) ("The Regional Administrator has the authority to select models that are appropriate for use in a given situation"). Second, several of these models have been used by other agencies to model secondary $PM_{2.5}$ emissions as Petitioners described in their comments. Petitioners Comments at 48 (Exhibit 2). Thus, EPA clearly had the authority to propose use of one of the models recommended by Petitioners. More importantly, Region 10's response directly conflicts with the fact that all the modeling performed by Shell was done using a model that is also not included in Appendix W of 40 C.F.R. Part 51 – the ISC3-Prime model. EPA Revised Chukchi Stmt of Basis at 92 (Exhibit 13). It was entirely arbitrary for EPA to approve the use of a non-guideline model for modeling of all Shell's emissions in its permit application, and then turn around and refuse to model secondary $PM_{2.5}$ emissions because only a non-guideline model could be used. *See In re Austin Powder Co.*, 6 E.A.D. 713, 720 (EAB 1997) (remanding a permit because the agency provided different explanations for its permitting decision that were unclear).

Standards for Particulate Matter, 62 Fed. Reg. 38,652 (July 18, 1997) (codified as amended at 40 C.F.R. § 50.7). It is anticipated that EPA will finalize $PM_{2.5}$ PSD increments this summer. *See* 73 Fed. Reg. 54,115 (Sept. 21, 2007); EPA, PSD for Pm2.5 (Exhibit 28).

Therefore, EPA erred in issuing the Beaufort permit because it addressed PM, $PM_{2.5}$, and $PM_{10}$ all "together" in the BACT analysis. *See* EPA Beaufort Stmt of Basis at 62 (Exhibit 5) ("Throughout the BACT section PM, $PM_{2.5}$ and $PM_{10}$ emissions will be addressed together for all emission units except the incinerator"). This analysis violates the plain language of the Act and EPA's regulations.

In its response to comments regarding BACT issues raised regarding the Beaufort air permit, the EPA relies primarily on the response to comments prepared for Shell's Chukchi air permit. See EPA Beaufort RTC at 18 (categories J through N state "See the Chukchi Response to Comments for responses related to this category of comments"). In so doing, the agency failed to adequately respond to comments raised regarding the Beaufort permit.

Assuming EPA can simply direct the public to the Chukchi Response to Comments without laying out the concerns raised by members of the public regarding the Beaufort permit and where their responses could be found, EPA's explanations fail to support its BACT analysis. The agency states that "[p]articulate control devices designed to reduce $PM_{2.5}$ emissions from [diesel] engines are also effective on particulate matter in the larger size ranges" in contrast to control devices that are used on non-diesel engines that "have significantly different control effectiveness for the different particulate matter size ranges . . . ." EPA Chukchi RTC at 30 (Exhibit 15). However, unless EPA breaks down its analysis of control technologies by pollutant it cannot sufficiently assure that the NAAQS (and soon the PSD increments) will not be exceeded.

This grouping together of pollutants for a BACT analysis is contrary to the language of the statute and EPA's regulations. 42 U.S.C. § 7475(a)(4) (requiring EPA to impose BACT limits for "each pollutant subject to regulation"); 40 C.F.R. § 52.21(j)(2)) (similar requirement). Nothing EPA has said justifies the agency's departure from these legal requirements.

## III. REGION 10 ERRED BY NOT REQUIRING SHELL TO COMPLY WITH EMERGING LEGAL REQUIREMENTS FOR $CO_2$, $NO_2$ and $PM_{2.5}$ DESPITE ISSUING SHELL A PERMIT THAT IS WITHOUT TIME LIMITS AND THAT COVERS A VAST AREA OF THE BEAUFORT SEA.

### A. The Failure To Regulate Shell's $CO_2$ Emissions Is A Clear Legal Error.

The EPA committed a clear legal error by failing to regulate Shell's $CO_2$ emissions. The Clean Air Act requires that before issuing a PSD permit, the EPA must conduct a BACT analysis and include emissions limitations for "each pollutant subject to regulation" under the Act. 42 U.S.C. § 7475(a)(4). Carbon dioxide is a pollutant under the Act, *Massachusetts v. EPA*, 549 U.S. 497, 529 (2007), and is regulated as described below. Therefore, $CO_2$ needs to be controlled by the Beaufort OCS permit.

#### 1. The legal authority in support of the fact that carbon dioxide is a regulated pollutant under the Clean Air Act.

$CO_2$ and other greenhouse gases clearly fall within the Clean Air Act's definition of "air pollutant." *Massachusetts v. EPA*, 549 U.S. at 532. The Act defines "air pollutant" to include "*any* physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air." 42 U.S.C. § 7602(g) (emphasis added). Further, the Clean Air Act specifically includes carbon dioxide in a list of "air pollutants." 42 U.S.C. § 7403(g)(1).

The emission of air pollutants, such as carbon dioxide, are regulated under a number of the Clean Air Act's major substantive provisions, when, in EPA's judgment, such emissions cause or contribute to air pollution which "may reasonably be anticipated to endanger public

health or welfare." 42 U. S. C. § 7521(a)(1). The major substantive provisions include: section 111 establishing new source performance standards for categories of stationary sources; and section 202 establishing standards for emissions from new motor vehicles. EPA requires that major sources monitor, record, and report emissions of $CO_2$ pursuant to section 821 of the CAA. 40 C.F.R. § 75; Section 821 of Pub.L. 101-549(a) ("The Administrator of the Environmental Protection Agency shall promulgate regulations . . . to require that all affected sources subject to Title V of the Clean Air Act shall also monitor carbon dioxide emissions according to the same timetable as in section 511(b) and (c)").

On December 15, 2009, EPA formally announced that greenhouse gases "endanger both the public health and the public welfare of current and future generations." Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009) (to be codified at 40 C.F.R. ch. I). The agency also found "that the combined emissions of these greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas air pollution that endangers public health and welfare under CAA section 202(a)." *Id.* Section 202(a) of the Act pertains to transportation sources. The findings took effect on January 14, 2010. 74 Fed. Reg. at 66,496.

In reaching its conclusions, the agency relied upon evidence that demonstrated greenhouse gases pose a risk to food production and agriculture, forestry, water resources, sea level rise and coastal areas, energy infrastructure, and settlements, and ecosystems and wildlife. With respect to human health effects, EPA concluded that greenhouse gases "affect public health by:" changing "air quality" such that "[i]ncreases in ambient ozone . . . are expected to increase serious adverse health effects;" increasing "temperatures" with resultant "impact[s] on mortality and morbidity;" "lead to changes in aeroallergens that could increase the potential for allergenic

illnesses;" and that "certain groups . . .are most vulnerable to these climate-related health effects." 74 Fed. Reg. at 66,497-99. As a result of its findings, EPA decided to regulate $CO_2$ and other GHG emissions from transportation sources.

EPA also announced that it will require large industrial facilities emitting at least 25,000 tons of greenhouse gases a year to obtain construction and operating permits covering the greenhouse gas emissions. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 74 Fed. Reg. 55,292, 55,300 (Oct. 27, 2009) (to be codified at 40 C.F.R. pt. 51, 52, 70, and 71). These facilities must demonstrate the use of best available control technologies and energy efficiency measures to minimize greenhouse gas emissions. *Id.*

These recent decisions are in addition to other EPA decisions to regulate $CO_2$ under the Act. Effective May 29, 2008, the EPA approved a SIP amendment submitted by the state of Delaware that dealt with emissions from stationary generators. 73 Fed. Reg. 23101 (April 29, 2008). As EPA explained to the EAB at that time, the approved SIP included "specific limitations on the rate of several pollutants, including carbon dioxide, that may be emitted by stationary generators in the state." Letter from Brian Doster, EPA, to Clerk of the Board (Sept. 9, 2008) (Exhibit 29).

On December 29, 2009, EPA started regulating carbon dioxide by requiring "fossil fuel suppliers and industrial gas suppliers, direct greenhouse gas emitters and manufacturers of heavy-duty and offroad vehicles and engines" that emit 25,000 metric tons or more per year of greenhouse gases "to monitor and report" their emissions. Mandatory Reporting of Greenhouse Gas Emissions, Final Rule, 74 Fed. Reg. 56,260 (Oct. 30, 2009). On July 8, 2009, EPA announced its decision to grant California's request for a waiver for its GHG vehicle standard. California State Motor Vehicle Pollution Control Standards, Notice of Decision Granting a

Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emissions Standards for New Motor Vehicles, 74 Fed. Reg. 32,744 (July 8, 2009).

Section 165(a)(2) of the CAA provides that a major emitting facility is "subject to the best available control technology for each pollutant subject to regulation under [the Clean Air Act] emitted from, or which results from, such facility." 42 U.S.C. § 7475(a)(2).

**2. Factual background on the Arctic and Shell's permit and $CO_2$ emissions.**

The Arctic has already witnessed temperature increases that are twice as large as global averages and is poised to continue warming temperatures at greater levels than the rest of the world. International Panel on Climate Change, Climate Change: 2007 Synthesis Report, at 30 (Exhibit 30). The effects of global warming are acute in the Arctic where melting sea ice, changing ocean pH levels, and increased flooding and erosion threaten local species and coastal communities. *See Arctic Marine Shipping Assessment 2009 Report,* Arctic Council p. 26 (Exhibit 31) (reporting that the five smallest September ice-covered areas for the Arctic Ocean during the modern satellite record (1979-2008) have occurred in the five most recent seasons (2004-2008)); Henry Huntington and Shari Fox, *The Changing Arctic: Indigenous Perspectives* p. 76, Chapter 3 *in Impact of a Warming Arctic: Arctic Climate Impact Assessment* (2004) (Exhibit 32); *Alaska Native Villages, Most Are Affected by Flooding and Erosion, but Few Qualify for Federal Assistance*, U.S. General Accounting Office Report to Congressional Committees, No. GAO-04-142 (2003) p. 3 (Exhibit 33). Reducing greenhouse gas emissions is imperative to slowing and stopping these dramatic events from further harming the people and ecosystem of the Arctic.

The Discoverer drillship and its associated support vessels will contribute large amounts of heat-trapping carbon dioxide each year in which Shell is operating. The operations include emissions of approximately 55,000 tons of $CO_2$ per year. Excerpts of Exploration Plans submitted by Shell to MMS for operations in the Chukchi and Beaufort Seas at 4 (Exhibit 6). (estimating that the drillship the Discoverer itself will emit an estimated 20,000 tons of carbon dioxide while the Discoverer and its support vessels will emit about 55,000 tons per year). The final Beaufort OCS PSD permit does not regulate Shell's emissions of $CO_2$.

As Petitioners explained in their comments to EPA, Petitioners Comments at 4 (Exhibit 2), Shell's $CO_2$ emissions are equivalent to the annual carbon dioxide emissions from 11,000 cars based on EPA's MOBILE6.2 fuel economy numbers, which calculate that the average passenger vehicle emits approximately 5.5 metric tons of $CO_2$ equivalent per year. EPA, Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle, EPA420-F-05-004 February 2005 (Exhibit 34). This is a significant increase for the North Slope.

**3. Preservation of error and subject of this petition.**

In their comments on the Beaufort air permit, Petitioners discussed the need for regulation of $CO_2$ emissions from Shell's operations. Petitioners' Comments at 3-9 (Exhibit 2).

By failing to regulate Shell's $CO_2$ emissions, Region 10 committed a clear legal error.

**4. EPA committed clear legal error by failing to regulate Shell's $CO_2$ emissions especially in light of its decision to approve a permit that pertains to all of Shell's lease blocks in the entire Beaufort Sea.**

In deciding not to regulate the $CO_2$ emissions from Shell's operations, the EPA committed clear legal error. Section 165(a)(2) of the CAA provides that a major emitting facility is "subject to the best available control technology for *each pollutant subject to regulation* under [the Clean Air Act] emitted from, or which results from, such facility." 42 U.S.C. § 7475(a)(2)

(emphasis added). $CO_2$ is a pollutant subject to regulation under the Act and Shell will emit at least 55,000 tons per year of it, therefore, the Beaufort permit needed to include a BACT analysis for $CO_2$. EPA violated CAA sections 165(a)(4) and 169(3) by failing to apply "BACT," or best available control technology, to limit carbon dioxide ("CO2") emissions from the facility.

In response, EPA points to "its reconsideration of when a pollutant becomes 'subject to regulation"' notice that was issued just a few weeks (April 2, 2010) before it issued the Beaufort permit as its justification for the decision not to regulate $CO_2$ in the permit. EPA Beaufort RTC at 57-58 (Exhibit 3). As a preliminary matter, Petitioners point out that EPA failed to provide any explanation for its decision to not regulate $CO_2$ in the Statement of Basis for the Beaufort permit, after having received comments on this very issue in 2009 and 2010 pertaining to Shell's Chukchi air permit. *See* EPA Beaufort Stmt of Basis (Exhibit 5). The rationale set forth in the April 2 federal register notice certainly was not included in EPA's statement of basis for the Beaufort permit. Therefore, the permit should be remanded so the public can review and comment on EPA's explanation for its decision. *In re: Amerada Hess*, slip op. at 19 ("Ultimately, the failure to *reasonably* respond to significant comments is itself sufficient grounds for remanding the Permit" (emphasis added)) (citing *In re: Wash Aqueduct Water Supply Sys*., 11 E.A.D. 565, 586, 589-90 (EAB 2004)). Out of an abundance of caution, Petitioners also provide a response to EPA's new position herein.

EPA's new position is that $CO_2$ will not be a regulated pollutant under the Clean Air Act unless: (1) it is "subject to either a provision in the CAA or regulation adopted by EPA under the CAA;" (2) the CAA provision or the regulation "requires actual control of emissions of that pollutant" such that monitoring or reporting requirements are not sufficient; and (3) "the PSD permitting requirements will not apply to a newly regulated pollutant until a regulatory

requirement to control emissions of that pollutant 'takes effect.'" 75 Fed. Reg. at 17,016, 17,006-08. Referring to this as the "actual control interpretation," EPA determined this "is a permissible interpretation of the CAA and is the most appropriate interpretation to apply given the policy implications." *Id.* at 17,006. Specifically, with respect to $CO_2$, EPA "concluded that PSD program requirements will apply to GHGs upon the date that the anticipated tailpipe standards for light-duty vehicles (known as the "LDV Rule") take effect." *Id.* at 17,007.

First, the new position conflicts with the statutory language. The Clean Air Act provides that a major emitting facility is "subject to the best available control technology for each pollutant subject to regulation under [the Clean Air Act] emitted from, or which results from, such facility." 42 U.S.C. § 7475(a)(2). Moreover, Congress explicitly stated that the purpose of the PSD program is to "protect public health and welfare from *any* actual or *potential adverse effect* which in the Administrator's judgment may reasonably be anticipate[d] to occur from air pollution . . . notwithstanding attainment and maintenance of all national ambient air quality standards." 42 U.S.C. § 7470(1) (emphasis added).

Furthermore, had Congress intended to express EPA's interpretation that the regulation of $CO_2$ actually control the emissions (instead of regulate by requiring monitoring or reporting), it would have used the word "control" instead of regulate. Throughout the Clean Air Act, Congress differentiated "regulation" from "control." *Compare* section 821, 42 U.S.C. § 7651k, *with* section 165(a)(4), 42 U.S.C. § 7475(a)(4). Thus, EPA's interpretation of the terms regulate and regulation would read this distinction out of the Act. *See In re: Arecibo & Aguadilla Regional Wastewater Treatment Plants*, 12 E.A.D. 97, n.60 (EAB 2005) ("A fundamental canon of statutory construction is that if language is plain and unambiguous it must be given effect.").

Second, the EPA has failed to provide an adequate explanation for its change in interpretation of a pollutant subject to regulation. While the agency states repeatedly that it is simply continuing its previous interpretation, 75 Fed. Reg. at 17004, in fact it added a new requirement to what constitutes a pollutant subject to regulation under the Act – *i.e.*, the fact that regulation must actually be in effect and controlling emissions. The pollutant must not only be subject to a CAA or EPA regulation that requires actual emissions controls, but the emissions controls must actually be in effect. It is clear that EPA's new interpretation of a regulated pollutant was spurred by the Supreme Court's ruling in *Massachuettes v. EPA*, that $CO_2$ is a pollutant under the Act. EPA is now grasping for a way to yet again avoid regulating $CO_2$. Thus, it has added yet another requirement to its purely self-serving definition of a regulated pollutant under the Clean Air Act and failed to provide a rationale explanation for its change in position.

Third, EPA's purported policy rationales for its interpretation are simply not applicable to $CO_2$. The agency discusses the need to "assess whether is a justification for controlling emissions of a particular pollutant," "provide notice to the public," promote "orderly administration of the permitting program," and set significant emission rates before a pollutant is actually regulated under the PSD program. 75 Fed. Reg. at 17,006-07. Ironically, all of these things have already been done for $CO_2$. EPA made an endangerment finding for $CO_2$, which provides the justification for regulating $CO_2$. 74 Fed. Reg. 66,496. The public was put on notice by the Supreme Court's ruling in *Massachusetts v. EPA*, that $CO_2$ is a pollutant covered by the Act and that regulation was coming, as well as EPA's numerous notices in the federal register regarding $CO_2$ and greenhouses gases and the regulation thereof. *See supra* at 49-51. EPA established a significant emission rate for $CO_2$ in the tailoring rule. *See* 74 Fed. Reg. 55,292

(discussing "applicability threshold" of "25,000 tons per year"). Therefore, EPA's policy hurdles have all been overcome and there is no reason for Shell's $CO_2$ emissions not to be regulated.

As for the orderly administration of permitting, Petitioners are not unsympathetic to EPA's concerns but submit that whatever concerns the agency has about existing sources and how to bring them into compliance with significance levels for $CO_2$, *see* 75 Fed. Reg. at 17,008-10, and about new sources that will be regulated for the first time because of their $CO_2$ emissions, *see id.* at 17,009, are irrelevant here. Shell is neither. As demonstrated by the existing Beaufort permit, Shell's operations make it a major source irrespective of its $CO_2$ emissions. Moreover, Shell will emit approximately 55,000 tons of $CO_2$ per year, which is well above the thresholds set in the tailoring rule. *See* Excerpts of Exploration Plans submitted by Shell to MMS for operations in the Chukchi and Beaufort Seas at 4 (Exhibit 6).[11] Furthermore, because the Beaufort permit is time unlimited and applies to hundreds of lease blocks, it is imperative that BACT be applied to Shell's $CO_2$ emissions this first season and in all future seasons of operation. This is especially necessary because Shell's operations are proposed for the Arctic where Petitioners are already feeling the effects of climate change.

Fourth, reality points overwhelmingly toward the fact that EPA has adopted regulations requiring the control of $CO_2$ that are in effect. The first of these is the EPA's preemption waiver. On July 8, 2009, EPA authorized California to implement its motor vehicle greenhouse gas emission standards pursuant to Section 209(b) of the Clean Air Act, 42 U.S.C. § 7543(b). 74 Fed. Reg. 32744; *see also id.* at 32752 ("California's greenhouse gas emissions standards establish allowable grams per mile ('gpm') levels for greenhouse gas emissions, including

[11] By making this point Petitioners in no way concede that the threshold in the tailoring rule is sufficient.

tailpipe emissions of carbon dioxide (CO2)"). As a result of this authorization, carbon dioxide was immediately subject to emission limits not only in California, but also in ten other states that have imposed these same standards pursuant to their independent authority under Section 177 of the Act, 42 U.S.C. § 7507. This is because Model Year 2010 began on January 2, 2009 (and Model Year 2009 began on January 2, 2008, see 40 CFR 85.2304). Two Courts have already determined that the $CO_2$ emission limits in California and ten other states are federal Clean Air Act standards. *Central Valley Chrysler-Jeep, Inc. v. Goldstene,* 529. F.Supp.2d 1151, 1165 (E.D. Cal. 2007); *Green Mountain Chrysler v. Crombie,* 508 F.Supp.2d 295, 350 (D.Vt. 2007). The same can be said for EPA's approval of the amendments to Delaware's SIP. *See supra* at 50.

Additionally, the fact that EPA has issued an endangerment finding *and* is regulating $CO_2$ through monitoring and reporting requirements should be sufficient to demonstrate that $CO_2$ is a regulated pollutant under the CAA. EPA makes the policy argument that it should not have to regulate an air pollutant under the PSD program when it is studying the pollutant to determine whether it should be regulated under the Act. 75 Fed. Reg. at 17,006-09. Inasmuch as this policy argument makes sense, it is not applicable to $CO_2$ since the agency has already determined that the pollutant endangers the public health and welfare.

As Petitioners pointed out in their comments to EPA, the precedent exists for major sources to conduct BACT analyses for $CO_2$. Petitioners explained "[a] combined petroleum refinery and IGCC power plant completed a $CO_2$ BACT analysis for its permit." Hyperion Energy Center BACT Analysis for $CO_2$ (March 2009) (Exhibit 35). EPA provided absolutely no response to the suggestion that like Hyperion Refining, Shell should complete a BACT analysis

for $CO_2$. As a result, the Beaufort permit should be remanded for a further explanation from EPA regarding $CO_2$.

### B. Region 10 Committed A Clear Legal Error By Not Requiring Shell To Comply With The $NO_2$ NAAQS.

On February 9, 2010, EPA issued a final rule to strengthen its NAAQS for nitrogen dioxide. Final Rule Nitrogen Dioxide NAAQS, 75 Fed. Reg. 6474 (Feb. 9, 2010). While this rule was finalized before the Beaufort air permit was issued in April, Region 10 did not require compliance with the new NAAQS for $NO_2$. As a result, the agency committed clear legal error.

#### 1. The legal authority in support of the fact that the Beaufort air permit should have required compliance with the new $NO_2$ NAAQS.

The rule strengthening the NAAQS for $NO_2$ was finalized on February 9, 2010. Final Rule Nitrogen Dioxide NAAQS, 75 Fed. Reg. 6,474 (Feb. 9, 2010). With this action, EPA established a new one-hour standard of 100 parts per billion (ppb) to supplement the existing annual standard of 100 µg/$m^3$. *Id.* According to EPA "[t]his level defines the maximum allowable concentration anywhere in an area" and is designed to "protect against adverse health effects associated with short-term exposure to $NO_2$, including respiratory effects that can result in admission to a hospital." EPA Fact Sheet, Final Revisions to the National Ambient Air Quality Standards For Nitrogen Dioxide (Exhibit 36). The Clean Air Act requires that a PSD permittee demonstrate that it will not "cause, or contribute to, air pollution in excess of any ... maximum allowable increase." 42 U.S.C. § 7475(a)(3).

#### 2. The factual background demonstrating the need for compliance with the new $NO_2$ NAAQS.

On June 26, 2009, EPA proposed the draft new $NO_2$ NAAQS. 74 Fed. Reg. 34,404 (June 26, 2009). On February 9, 2010, the new NAAQS for $NO_2$ were finalized. 75 Fed. Reg. at 6,474. This rulemaking was undertaken as the result of a "judicial order resolving a lawsuit filed

in September 2005" that "provides that the Administrator will sign, for publication, notices of proposed and final rulemaking concerning the review of the primary $NO_2$ NAAQS no later than June 26, 2009 and January 22, 2010, respectively." 75 Fed. Reg. at 6,477.

On February 17, 2010, the draft Beaufort air permit was released for a 30 day public comment period. On February 24, 2010, EPA was asked to extend the comment period to provide the public with 45 days and that request was denied by the agency on March 1, 2010. Exhibit 37. EPA predicted that Shell's operations will take up 31 percent of the old annual NAAQS for $NO_2$. EPA Beaufort Stmt of Basis at 115 (Exhibit 5). EPA takes the position that the Beaufort air permit was issued on April 9, 2010. The agency did not announce the finalization of the permit until Monday, April 12, 2010, *see* Email from EPA to Public (Exhibit 38) – the same day that the new NAAQS for $NO_2$ went into effect. *See* 75 Fed. Reg. at 6,474 ("This final rule is effective on April 12, 2010"). EPA did not require Shell to demonstrate that it complied with the new NAAQS for $NO_2$. EPA Beaufort RTC at 62 (Exhibit 3).

**3. Preservation of error and subject of this petition.**

In their comments on the Beaufort air permit, Petitioners discussed the need for Region 10 to ensure compliance with the new $NO_2$ NAAQS. Petitioners Comments at 9-10 (Exhibit 2).

By failing to require compliance with the new $NO_2$ NAAQS, Region 10 committed a clear legal error.

**4. Argument demonstrating that Region 10 failed to require compliance with current legal requirements.**

By failing to require Shell to comply with the new $NO_2$ NAAQS, EPA committed a clear legal error. The new $NO_2$ NAAQS was finalized on February 9, 2010, long before the final Beaufort air permit was announced – *i.e.*, April 12, 2010. Exhibit 38. EPA's first explanation for this failure is that the new $NO_2$ NAAQS is "not currently in effect." EPA Beaufort RTC at

62 (Exhibit 3). However, the finalization of the Beaufort permit was not announced until the date that the new $NO_2$ NAAQS was effective. More importantly, all of Shell's operations will occur after April 12, 2010. *See supra* at 3 (noting that the permit covers operations between July and December). Therefore, Shell's operations under the permit will not meet all applicable legal requirements.[12]

EPA refers to its response to comments on this issue regarding the Chukchi permit, EPA Beaufort RTC at 62 (Exhibit 3), where the agency argued that "Shell will be required to demonstrate compliance with the $NO_2$ NAAQS . . . when it applies for a Title V operating permit." EPA RTC at 136 (Exhibit 3). However, this ignores the fact that Shell need only "apply for an operating permit as provided in 40 C.F.R. § 71.5(a)(1)(i) within 12 months of first becoming an OCS on Shell's current leases in the Beaufort Sea." EPA Beaufort Stmt of Basis at 31 (Exhibit 5). Therefore, Shell could operate for at least two seasons if not more, until the Title V permit is approved. During all this time, Shell would not be operating in compliance with the new $NO_2$ NAAQS.[13]

Furthermore, while the new $NO_2$ NAAQS did not take effect until the day the final Beaufort permit was announced to the public, the rule was finalized before the permit was issued. The $NO_2$ NAAQS was updated as a result of a Court order and therefore, it had been clear for a long time when the final $NO_2$ NAAQS rule would be issued. 75Fed. Reg. at 6,477

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[12] Additionally, had EPA provided the public with at least 45 days to comment on the Beaufort air permit, EPA's statement of basis, the permit application, and accompanying record as requested, certainly the permit would have been issued after April 12, 2010.

[13] There is precedent for sources complying with regulatory requirements prior to final agency action. As mentioned earlier, the Hyperion Energy Center in EPA Region 8 voluntarily conducted a BACT determination for $CO_2$ that was completed because the source "recognize[s] adding $CO_2$ emissions is an important issue, on which the political, regulatory, and legal framework may be changing." *See* Hyperion Energy Center Best Available Control Technology (BACT) Analysis for Emissions of Carbon Dioxide, March 2009, at 2 (Exhibit 35).

("The schedule for completion of this review is governed by a judicial order resolving a lawsuit filed in September 2005, concerning the timing of the current review. The order . . . provides that the Administrator will sign, for publication, notices of proposed and final rulemaking concerning the review of the primary $NO_2$ NAAQS no later than June 26, 2009 and January 22, 2010, respectively"). In such unique circumstances, where the regulated community knew the deadline for the final rule and it was well before the permit was issued, it is entirely arbitrary for EPA not to require compliance with the new $NO_2$ NAAQS simply because the new standard was not effective until the day the final permit was announced.

Additionally, as Petitioners explained in their comments to EPA, there are serious concerns regarding whether Shell could comply with the new $NO_2$ NAAQS. Petitioners Comments at 9-10 (Exhibit 2). Shell's operations are predicted to take up 31 percent of the old annual NAAQS for $NO_2$. EPA Beaufort Stmt of Basis at 115 (Exhibit 5). However, in looking at the NAAQS for which hourly predicting periods exist, Shell as a general matter will take up a much greater percentage of the hourly NAAQS. *Id.* For example, Shell is predicted to take up only 20.6 percent of the annual $PM_{2.5}$ NAAQS but is predicted to take up 83 percent of the 24-hour $PM_{2.5}$ NAAQS. *Id.* Therefore, Shell's $NO_2$ emissions could be significant in light of the new one-hour $NO_2$ NAAQS. As a result, it was imperative that EPA provide an adequate justification for failing to require Shell to comply with the new, final $NO_2$ NAAQS. The agency simply failed to provide this justification.

## IV. REGION 10 ERRED BY NOT REQUIRING THE INCLUSION OR REGULATION OF EMISSIONS FROM PLANNED, ROUTINE ASPECTS OF SHELL'S OPERATIONS.

The calculation of Shell's potential emissions fails to include the emissions that would result from: the clean-up of an oil spill pursuant to Shell's Oil Spill Response Plan; the "other"

vessels that Shell claims will remain more than 25 miles away from the drill ship including the oil tanker, the barge, and shallow water landing craft; and the drill ship's propulsion engine. The potential to emit therefore, fails to account for "the maximum capacity" of Shell's operations in violation of clear legal requirements.

### A. Legal Background Establishing The Requirements For An Adequate Potential To Emit Calculation.

As previously explained, a BACT analysis for each pollutant that the source has the potential to emit in significant quantities must be conducted before a PSD permit can be issued. 42 U.S.C. § 7475(a)(4). The potential to emit is defined in the PSD regulations as:

> the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant including air pollution control equipment and restriction on hours of operation or on the type of amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

40 C.F.R. § 52.21(b)(4). The definition of "potential emissions" in the OCS regulations is nearly identical except that it adds at the end that "[p]ursuant to section 328 of the Act, emissions from vessels servicing or associated with an OCS source shall be considered direct emissions from such a source while at the source, and while en route to or from the source when within 25 miles of the source, and shall be included in the 'potential to emit' for an OCS source." 40 C.F.R. § 55.2.

Under the PSD program, EPA has maintained a longstanding policy that the Clean Air Act does not allow automatic exemptions for excess emissions during startup, shutdown, and malfunction (SSM) events. *See, i.e., Indeck-Elwood, LLC*, PSD Appeal No. 03-04, slip op. at 66 (Sept. 27, 2006), 13 E.A.D. __ ("EPA has, since 1977, disallowed automatic or blanket exemptions for excess emissions during startup, shutdown, maintenance, and malfunctions by

defining most periods of excess emissions as 'violations' of the applicable emission limitations") (citing *In re Tallmadge Generating Station*, PSD Appeal No. 02–12, at 24 (EAB, May 21, 2003)). Recently, the Tenth Circuit in *Arizona Public Service Co. v. U.S.*, highlighted that the agency's "longstanding policy makes clear that excess emissions resulting from malfunctions are violations of the Clean Air Act, for such emissions can interfere with attainment of the national air standards." 562 F.3d 1116 (10th Cir. 2009); *see also* 72 Fed. Reg. at 25,705. The EAB relied upon this policy to remand a PSD permit that included a provision exempting a coal-fired steam electric generating station from otherwise applicable emissions limits during startup, shut down, and malfunction events. *Indeck-Elwood, LLC*, slip op. at 71, 76 (Sept. 27, 2006).

### B. Factual Background On Shell's Operations And How The Potential To Emit Was Challenged.

In calculating the potential to emit for Shell's Beaufort permit, the emissions from cleaning up an oil spill pursuant to Shell's approved Oil Spill Prevent Plan were not included. EPA Beaufort RTC at 70 (Exhibit 3) (referring to Chukchi response to comments regarding oil spills); EPA Chukchi RTC at 93 (Exhibit 15) (explaining that "[e]missions from emergency or upset conditions" "are generally not considered"). The emissions from "the tanker, barge, and shallow water landing craft were not included in the EPA's review for the PSD permit." *Id.* at 95. Because an oil spill is such a likely, and not merely an unforeseeable event, Shell is employing an entire "oil spill response" (OSR) fleet as part of its proposed operations. One of the OSR vessels, the Nanuq, will be positioned about 5,000 meters away from the Discoverer and will be used to conduct "on-water drills" for training, approximately 8-hours at a time, no more than once per day. EPA Beaufort Stmt of Basis at 59 (Exhibit 5).

Region 10 does note that "the permit does limit emissions from the Associated Fleet to ensure that the potential emissions of the OCS source do not cause or contribute to a violation of

the NAAQS or violate increment." EPA Beaufort RTC at 15 (Exhibit 3). EPA also determined that "that emissions from the propulsion engine of the Discoverer are not to be considered in the PTE of the OCS source while en route to and within 25 miles of the drill site, a period of approximately four hours . . . ." EPA Chukchi RTC at 27 (Exhibit 15); EPA Beaufort RTC at 20 (Exhibit 3) (referencing Chukchi response to comments).

### C. Preservation Of Error And Subject Of This Petition.

In their comments on the Beaufort air permit, Petitioners discussed the need for oil spill response emissions, and emissions from all of the associated fleet and the Discoverer's propulsion engine to be included in the potential to emit calculations. Petitioners' Comments at 22-24 (Exhibit 2).

In issuing the Beaufort air permit, Region 10 failed to comply with the regulatory definition of potential to emit and EPA's longstanding interpretation thereof.

### D. Argument As To Why Shell's Potential To Emit Calculation Was Legally Inadequate.

As EPA explained, "determining a project's PTE is essential for determining . . . the scope of PSD review, in particular, the pollutants that are subject to application of BACT . . . ." EPA Beaufort Stmt of Basis at 32 (Exhibit 5). Nevertheless, in determining Shell's potential to emit the oil spill response fleet's emissions during the clean-up of an oil spill or during the time they respond to another emergency were not included. Additionally, the emissions from the rest of the ancillary fleet that are specified as remaining at least 25 miles from the Discoverer and the Discoverer's propulsion engine emissions were also not included. This violated the plain language of EPA's regulations defining the potential to emit.

With respect to the oil spill response fleet, moving the entire OSR fleet to the drill site, cleaning up oil, and conducting other response activities, will cause the addition of air pollutants

from the use of the propulsion engines, generators, and other equipment. Shell also lists in situ burning – *i.e.* burning of spilt materials either oil and/or gas –as a method to clean up a spill, which will also increase its air emissions. Excerpts Shell, Oil Discharge Prevention and Contingency Plan (Exhibit 39). These activities are well documented as required by MMS. *See* 30 C.F.R. part 254 (describing requirements for oil spill response plan). For this reason, Petitioners requested that they be included in Shell's potential to emit calculation.

EPA's response is that "[e]missions from emergency or upset conditions" were not included within the potential to emit because they are not "routine operations." EPA Chukchi RTC at 93 (Exhibit 15). However, the record belies this conclusion. Shell's clean-up operations are well documented and are even rehearsed by the company. *See* Shell, Oil Discharge Prevention and Contingency Plan Excerpts (Exhibit 39). More importantly, they fit squarely within the definition of potential to emit which includes "the maximum capacity of a stationary source to emit a pollutant." 40 C.F.R. § 52.21(b)(4). Responding to an oil spill is a necessary capacity of Shell's fleet and is a component of exploration that Shell cannot be authorized to operate without. *See e.g.*, 30 C.F.R. § 250.219 (explaining the "oil and hazardous substance spills information" that must accompany an exploration plan); *id.* § 250.219(a)(1) (requiring submission of an "oil spill response plan" "for the facilities [the applicant] will use to conduct your exploration activities"); *see also* 30 C.F.R. part 254 (specific requirements for oil spill response plan). Thus, Region 10 committed clear legal error by failing to include these emissions within Shell's potential to emit.

Moreover, to provide Shell with an automatic exemption for these excess emissions would be contrary to EPA's longstanding policy under the PSD program that the Clean Air Act does not allow automatic exemptions for malfunctions. *Indeck-Elwood, LLC*, slip op. at 66;

*Arizona Public Service Co. v. U.S.*, 562 F.3d 1116 (10th Cir. 2009); *see also* 72 Fed. Reg. 25,702, 25,705. EPA fails to address this policy in responding to comments regarding the need to model the emissions from responding to an oil spill pursuant to the Oil Discharge Prevention and Contingency Plan.

As for the rest of the associated fleet and the propulsion engine, EPA admits that emissions from the associated fleet were not included in Shell's potential to emit. However, its explanation for this is that "these vessels are not expected to operate within 25 miles of the Discoverer while the Discoverer is an OCS source." EPA Chukchi RTC at 95 (Exhibit 15). As demonstrated by the fact that several of these vessels would be used to respond to an oil spill, this response is not adequate. Nor is the EPA's response that it will provide a proper response to these emissions when they occur. *Id.* at 97.

This is particularly true because excess emissions resulting from an oil spill response or the emissions from the associated fleet or propulsion engine of the drill ship could have the potential to increase Shell's emissions such that Shell can no longer demonstrate compliance with the NAAQS. In several instances, the modeling done for Shell's emissions demonstrate its operations will take up large percentages of the NAAQS. *See e.g.*, EPA Beaufort Stmt of Basis at 115 (Exhibit 5) (documenting $PM_{2.5}$ concentrations at over 83 percent of the 24-hour NAAQS). Moreover, EPA even clarified that the "associated fleet are being regulated through emission limits and throughput limits" in order to ensure that Shell's operations "will not interfere with attainment or maintenance of any currently applicable NAAQS." EPA Beaufort RTC at 15 (Exhibit 3). Therefore, it was critical that these emissions be counted within Shell's potential to emit.

## V. REGION 10 COMMITTED A CLEAR LEGAL ERROR BY NOT PERFORMING AN ENVIRONMENTAL JUSTICE ANALYSIS.

Petitioners requested that EPA perform an environmental analysis of Shell's operations. The Inupiat communities that will be impacted by Shell's emissions suffer from disparate lung and heart health problems when compared to other U.S. populations. Additionally, among the air pollutants that are authorized under the Baeufort air permit, are $PM_{2.5}$ and $NO_2$ for which scientific evidence exists that the NAAQS are inadequate to protect the health of all populations.

### A. Legal Background Supporting The Need For Environmental Justice Analyses Of PSD Permits.

Under Executive Order No. 12898, EPA must consider and address, when appropriate, "disproportionately high and adverse human health and environmental effects of [their] programs, policies, and activities on minority and low-income populations." Exec. Order No. 12,898, Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7,629, 7,632-33 (Feb. 11, 1994). The board has previously remanded PSD permits to EPA when the agency has failed to include an environmental justice analysis in the record. *See e.g.*, *In re: Knauf Fiber Glass*, 8 E.A.D. 121, 175 (EAB 1999) (remanding PSD permit to the permitting agency to include the environmental justice analysis in the record).

### B. Factual Background Demonstrating That An Environmental Justice Analysis Was Necessary For The Beaufort Air Permit.

As previously described, North Slope communities have markedly higher rates of pulmonary disease, have different genetic predispositions to disease, and are substantially more vulnerable to morbidity and mortality from air pollution than the general population in the U.S. *See supra* at 5-7. The health concerns posed by particulate matter and nitrogen oxides include

chronic respiratory disease, asthma, lung cancer, and cardio-respiratory mortality. *See supra* at 35, 58-59.

EPA did not regulate secondary $PM_{2.5}$ in the Beaufort air permit or even model the level of emissions of this pollutant, *see supra* at 39-47, the Beaufort permit does not require compliance with the new $NO_2$ NAAQS, *see supra* at 58-62, nor does the Beaufort air permit require compliance with the new PSD increments for $PM_{2.5}$ that will be finalized this summer, *see infra* at 69.

**1. Background on regulation of $PM_{2.5}$ under the Clean Air Act.**

$PM_{2.5}$ concentrations at levels lower than the current NAAQS are a concern for human health. In revising the $PM_{2.5}$ standard, the EPA Administrator convened the Clean Air Scientific Advisory Committee (CASAC or Committee) pursuant to section 109(d)(2) of the Clean Air Act to recommend revisions to the $PM_{2.5}$ standards. EPA-CASAC-LTR-06-003, Clean Air Scientific Advisory Committee Recommendations Concerning the Final National Ambient Air Quality Standards for Particulate Matter, September 29, 2006 (Exhibit 40). The CASAC unanimously recommended to EPA that the 24-hr $PM_{2.5}$ standard be lowered from 65 $\mu g/m^3$ to 30-35 $\mu g/m^3$ and that the annual standard be lowered from 15 $\mu g/m^3$ to 13-14 $\mu g/m^3$. *Id.* EPA set the standard on the high end of the CASAC recommended range for the short-term standard and chose not to lower the annual standard at all. 71 Fed. Reg. at 61,145.

In response, CASAC made it clear in their September 29, 2006 recommendation letter to the EPA that their recommendations were based on "clear and convincing scientific evidence" and that the EPA's decision not to lower the annual standard does not provide for "an adequate margin of safety … requisite to protect the public health" as required by the CAA and furthermore, that their recommendations were "consistent with the mainstream scientific advice

that EPA received from virtually every major medical association and public health organization that provided their input to the Agency." EPA-CASAC-LTR-06-003, Clean Air Scientific Advisory Committee Recommendations Concerning the Final National Ambient Air Quality Standards for Particulate Matter, September 29, 2006 (Exhibit 40). Nevertheless, on October 16, 2006, EPA adopted the high range 24 standard and made no changes to the annual standard. 71 Fed. Reg. at 61,145. These $PM_{2.5}$ standards remain in effect today.

Following on its decision to update the 24 hour $PM_{2.5}$ NAAQS, EPA also decided to issue PSD increments, SILs, and SMC for $PM_{2.5}$, 72 Fed. Reg. 54,112, that are slated to go into effect in June, 2010. EPA, PSD for $PM_{2.5}$ (Exhibit 28). As previously described these standards are necessary because "[p]rimary and secondary fine particles have long lifetimes in the atmosphere (days to weeks) and travel long distances (hundreds to thousands of kilometers)." 72 Fed. Reg. 54,112, 54,127 (Sept. 21, 2007). EPA proposed a 24-hour Class II increment of 9 $\mu g/m^3$ and an annual Class II increment of 4-5 $\mu g/m^3$. 72 Fed. Reg. at 54,115.

**2. Background on the regulation of $NO_2$ under the Clean Air Act.**

As previously discussed, the rule strengthening the NAAQS for $NO_2$ was finalized on February 9, 2010. Final Rule Nitrogen Dioxide NAAQS, 75 Fed. Reg. 6,474 (Feb. 9, 2010). The new $NO_2$ NAAQS is designed to "protect against adverse health effects associated with short-term exposure to $NO_2$, including respiratory effects that can result in admission to a hospital." EPA Fact Sheet, Final Revisions to the National Ambient Air Quality Standards For Nitrogen Dioxide (Exhibit 36).

**C. Preservation Of Error And Subject Of This Petition.**

In their comments on the Beaufort air permit, Petitioners discussed the need for EPA to perform an environmental justice analysis of the emissions from Shell's operations citing to the

disparate health problems on the North Slope and the failure of the NAAQS to protect all populations – especially with respect to particulate matter. Petitioners Comments at 62-63 (Exhibit 2).

Region 10 committed clear legal error by not requiring the completion of an environmental justice analysis for the Beaufort air permit.

### D. EPA Failed To Prepare The Necessary Environmental Justice Analysis Required For Shell's Permit.

As previously described, Region 10 failed to require any modeling or calculation of secondary $PM_{2.5}$ in approving the Beaufort air permit, any demonstration of compliance with the new $PM_{2.5}$ increments, or compliance with the new $NO_2$ NAAQS. These failures are critical in light of the existing health disparities in the populations that will be impacted by Shell's emissions. *See supra* at 6-7. Thus, it was critical that Region 10 at the very least analyze these issues in an environmental justice analysis as Petitioners requested. However, EPA failed to provide this analysis.

The EPA relies on its response to comments on the Chukchi air permit, *see* EPA Beaufort RTC at 63 (Exhibit 3). There, the EPA's justification for this failure is that:

> this permitting action will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment . . . [because] the final permit is designed to meet the requirements of the CAA. The emissions limits in the permit are expected to curb air pollution sufficiently so that air quality in the region continues to attain applicable NAAQS. The level of the NAAQS is set low enough to protect public health, including sensitive individuals, with an adequate margin of safety . . . Objections to the NAAQS themselves must be addressed during the NAAQS review process . . .

EPA Chukchi RTC at 138 (Exhibit 15). In other words, since the permit is designed to comply with the NAAQS, an environmental justice analysis is not required.

This means that no PSD permit will ever trigger the requirements of the Executive Order on environmental justice, because the EPA cannot issue a final PSD that fails to ensure compliance with the NAAQS. *See* 42 U.S.C. §§ 7475(a)(3), (a)(7); *see also* Email from Herman Wong to Pat Nair at 2 (Aug. 26, 2009) (Exhibit 23) ("We can't issue a permit with a predicted violation!"). Such arbitrary reasoning necessitates a further explanation from the agency. Indeed, the Board has previously remanded PSD permits in situations like this where the EPA has failed to include the environmental justice analysis in the record. *See e.g.*, *In re: Knauf Fiber Glass*, 8 E.A.D. 121, 175 (EAB 1999) (remanding PSD permit to the permitting agency to include the environmental justice analysis in the record).[14]

As previously discussed, the Inupiat people living along the North Slope of Alaska suffer from disparate health problems from other U.S. populations. The permitted emissions will affect populations that already experience markedly higher rates of pulmonary disease and chronic lung disease and that are substantially more vulnerable to morbidity and mortality from air pollution than are other Americans. *See supra* at 6-7. Thus, EPA's reliance solely on compliance with the NAAQS to protect human health, risks increasing a pre-existing health disparity between Inupiat people on the North Slope and human populations elsewhere in the United States.

In addition, EPA updated the NAAQS for $NO_2$ and in so doing recognized that the new standards are necessary to "protect against adverse health effects associated with short-term exposure to $NO_2$, including respiratory effects that can result in admission to a hospital." EPA Fact Sheet, Final Revisions to the National Ambient Air Quality Standards For Nitrogen Dioxide

[14] EPA was well aware of the need to provide an adequate response on this issue. In ther record for the Chukchi air permit is a December 1, 2000 memorandum on environmental justice analyses that recognizes that the "EAB remanded a PSD permit to the delegated permitting authority (the Shasta County Air Quality Management District) for failure to provide an environmental justice analysis in the administrative record in response to comments raising the issue." EPA Memorandum on Environmental Justice at 12 (Exhibit 39).

(Exhibit 36). Additionally, CASAC has explained that there is "clear and convincing scientific evidence" that the EPA's decision not to lower the annual $PM_{2.5}$ standard does not provide for "an adequate margin of safety … requisite to protect the public health" as required by the CAA. EPA-CASAC-LTR-06-003, Clean Air Scientific Advisory Committee Recommendations Concerning the Final National Ambient Air Quality Standards for Particulate Matter, September 29, 2006 (Exhibit 40). Thus, there is strong evidence here that the NAAQS are simply not sufficient to protect public health – let alone the health of Inupiats along the North Slope.

Therefore, in light of the disparate health problems that already exist on the North Slope, the likelihood of particulate matter and $NO_2$ worsening existing health problems, and the acknowledgements from both EPA and CASAC that the NAAQS that the Beaufort air permit are ensuring compliance with are not sufficient to protect human health, EPA needs to provide a new rationale for failing to conduct an environmental justice analysis.

## CONCLUSION

For these reasons, we respectfully urge the Board to review and remand the PSD permit to EPA for further analysis.

Respectfully submitted,

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Dated: May 12, 2010

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