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

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| **In re:** | ) | |
| | ) | |
| **Shell Offshore, Inc.** | ) | |
| ***Discoverer* Drillship** | ) | OCS PSD Appeal No. _____ |
| **OCS Permit No. R10OCS/PSD-AK-2010-01** | ) | |
| | ) | |
| **Shell Gulf of Mexico, Inc.** | ) | |
| ***Discoverer* Drillship** | ) | |
| **OCS Permit No. R10OCS/PSD-AK-09-01** | ) | |
| | ) | |

# PETITION FOR REVIEW

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## INTRODUCTION

Pursuant to 40 C.F.R. § 124.19(a), the Iñupiat Community of the Arctic Slope (ICAS) and the Alaska Eskimo Whaling Commission (AEWC) (hereafter Petitioners or AEWC) petition for review of the conditions of two Clean Air Act Outer Continental Shelf (OCS) Prevention of Significant Deterioration (PSD) Permits, Nos. R10OCS/PSD-AK-09-01 (Chukchi Permit) (Attachment 1) and R10OCS/PSD-AK-2010-01 (Beaufort Permit) (Attachment 2), issued to Shell Offshore Shore, Inc. (Permittee or Shell) on September 19, 2011, by Region 10.[1] The first permit at issue in this Petition authorizes Shell to engage in exploratory oil and gas operations at well over one hundred lease blocks in the Chukchi Sea using the *Discoverer* drillship. The second permit at issue in this Petition authorizes Shell to engage in exploratory oil and gas operations at 53 lease blocks in Camden Bay and other locations in the Beaufort Sea using the *Discoverer* drillship. Petitioners contend that certain conditions of these permits are based on clearly erroneous findings of fact and conclusions of law. Petitioners' Comments (Attachment 6). Specifically, Petitioners challenge the following:

(1) The inadequate public process that resulted in these two permits;

(2) The legally erroneous determination of when the *Discoverer* drillship becomes an OCS source;

(3) The unlawful and unenforceable owner requested limits on methane and greenhouse gas emissions; and

(4) The Region's clearly erroneous environmental justice analysis that:

[1] While Region 10 issued two separate OCS PSD permits, it prepared only one Statement of Basis (SOB) (Attachment 3), one Environmental Justice Analysis (EJ Analysis) (Attachment 4), and one Response to Comments (RTC) (Attachment 5) for the two permits.

(a) fails to adequately respond to Petitioners' comments and EPA's new scientific findings about the impacts of Ozone because the permitting decision relies upon an assumption that the operations will not violate the old 8-hour Ozone NAAQS;

(b) fails to address adequately human health impacts from $NO_2$ emissions in light of all the mobile source emissions that are not counted in the permits and the existing concern that the counted emissions will violate the one-hour $NO_2$ NAAQS; and

(c) failed to involve environmental justice communities in its creation and failed to provide sufficient time to provide meaningful input on the draft permits and the accompanying environmental justice analysis.

## FACTUAL AND STATUTORY BACKGROUND

### A. Background On The OCS Permits For Shell's Arctic Operations.

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.*, 13 E.A.D. 357 (EAB 2007). 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. That petition was dismissed when Shell withdrew their permit applications. *Id.* (EAB April 30, 2009) (Order Dismissing Petitions for Review). In 2010, third and fourth petitions were submitted this time for major source air permits issued to Shell for its *Discoverer* drillship – one for the Beaufort Sea and the other for the Chukchi Sea. These permits were remanded to Region 10 for the reasons described

in the Board's December 30, 2010 decision. *In re Shell Gulf of Mexico and Shell Offshore Inc.*, OCS Appeal Nos. 10-01-04, slip.op. (EAB Dec. 30, 2010) (hereafter *Shell II*).

On remand, Shell submitted revised application materials and air quality modeling to Region 10 between March 9 and June 23, 2011. As documented in the record, these submissions included the use of a "new" or different air model (AERMOD-COARE), a new determination of when the *Discoverer* is an OCS source, owner requested restrictions on greenhouse gas emissions, an ambient air boundary and consequent change in Shell's operations, permit conditions designed to ensure compliance with new NAAQS for $NO_2$ and $SO_2$, and a number of other permit changes. SOB at 10-12. The Region held "early information" meetings in Barrow and Kaktovik in which the agency broadly covered the major source air permit for *Discoverer* for the Beaufort, the major source air permit for *Discoverer* for the Chukchi, the minor source air permit for the *Kulluk* in the Beaufort, and the minor source air permit for a jack-up rig in the Chukchi.[2] The Region held one public hearing on both *Discoverer* air permits in Barrow on August 4th, the day before the end of the 30-day comment period on both permits.

**B. Petitioners' Interests.**

The Iñupiat 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 and is centered upon bowhead whales and the whale hunt. Marine life such as fish and walrus, as well as migratory waterfowl and other species, are also critical to the Iñupiat diet. With the advent of modern technologies, Iñupiat have learned that

[2] In Barrow, this meeting also covered the Arctic General Permit, which regulates the discharge of pollution into the ocean from offshore oil and gas activities. EPA Arctic Permits Newsletter Summer 2011 (Attachment 7).

operations that pollute the air and water also contaminate their food sources and threaten their health.

Human caused pollution is also changing the climate and these effects are already being felt in the Arctic, where ice once thought to be impermeable is melting. The result of these climatic changes is twofold. First, Iñupiat are experiencing the effects of global climate change well before most other U.S. populations. Second, there is a rush to discover marketable oil and gas resources, develop new shipping routes, and otherwise access this once rarely accessible area. The ramifications of the industrialization of the Arctic will have untold impacts on Iñupiat culture and the fragile environment upon which the culture is based at a time when Iñupiat communities are already struggling to adjust to a changing climate.

The Iñupiat 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 diseases that differ from other U.S. populations. *See* Attachment 8 (collection of statistics and scientific publications). As abundant public health data has demonstrated, Iñupiat 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 (Attachment 9). Compared to many areas in the United States, the communities along the North Slope of Alaska have fewer combustion sources.

North Slope communities are still relatively pristine and EPA considers them to be in attainment with Clean Air Act standards.

### C. 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 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). Outer Continental Shelf (OCS) sources include drillship exploration. *Id.* § 7627(a)(4)(C). Section 328 requires EPA to promulgate regulations to ensure that operations in the Outer Continental Shelf area comply with the Prevention 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. The PSD program is designed 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.

Under the PSD program, 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 operator 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). Proposed major emitting facilities will also be "subject to the best available control technology [BACT] for each pollutant subject to regulation . . . emitted from, or which results from, such facility." *Id.* § 7475(a)(4).

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).

**THRESHOLD PROCEDURAL REQUIREMENTS**

Petitioners satisfy the threshold requirements for filing a petition for review under Part 124, to wit:

1. Petitioners have standing to petition for review of the permit decision because they participated in the public comment period on the Chukchi permit and the Beaufort permit. *See* 40 C.F.R. § 124.19(a); Petitioners' Comments (Attachment 6).

2. The issues raised by Petitioners in this petition were raised during the public comment period and therefore were preserved for review. Petitioners' Comments at 4-7, 8-9, 10-12, 27-29.

3. The issues raised in this petition are either the subject of the Board's December 30, 2010 remand or are issues that arose as a direct result of the remand proceedings.

## ARGUMENT

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) (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 the information in the record." *In re Shell,* 13 E.A.D. at 386 (quoting *In Re Gov't of D.C. Mun. Separate Storm Sewer.*, 10 E.A.D. 323, 342 (EAB 2002)). Thus, the rationale for the Region's decision must be "adequately explained and supported in the record." *Id.* (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)).

### I. REGION 10 ERRED BY FAILING TO PROVIDE AN ADEQUATE PUBLIC PROCESS FOR REVIEW OF THE REMANDED PERMITS.

Region 10 committed clear legal error by failing to provide the public an adequate opportunity to comment on the Chukchi and Beaufort *Discoverer* permits. Public participation is at the core of the Clean Air Act's PSD program. 42 U.S.C. § 7470(5); *In re Russell City Energy Center*, PSD Appeal No. 08-01, slip.op. at 22 (EAB July 29, 2008); *In re Weber*, 11 E.A.D. 241, 245 (EAB 2003); *In re Rockgen Energy Center,* 8 E.A.D. 536, 557 (EAB 1999). One of the

main purposes of the permitting program is to "assure that any decision to permit increased air pollution in any area . . . 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) (emphasis added). For this reason, EPA's regulations state that the agency "shall allow *at least* 30 days for public comment" on draft permits. 40 C.F.R. § 124.10(b) (emphasis added); *id.* § 52.21(q) ("The Administrator shall follow the applicable procedures of 40 CFR part 124 in processing applications under this section").

Region 10 failed to meet these requirements here. Petitioners' Comments at 4-7. The agency provided draft permits, permit records, and held comment periods on four different air permits for offshore oil and gas drilling in the Arctic between July and September, 2011. Due to these overlapping comment periods, instead of providing 30 days for comment on each permit, Region 10 at most provided the public with 15 days to comment on each major source permit for the *Discoverer*. The table below illustrates these overlapping comment periods and the time local communities had to comment:

**Table 1: Comment period for offshore oil and gas air permits in the Arctic (July-September 2011)***

| **Permit** | **Comment Period Opens** | **Comment Period Closes** | **Time to comment in light of other comment periods** |
|---|---|---|---|
| Shell *Discoverer* Beaufort | July 6 | August 5 | 15 days |
| Shell *Discoverer* Chukchi | July 6 | August 5 | 15 days |
| Shell *Kulluk* Beaufort | July 22 | September 6 | 16 days |
| ConocoPhillips Chukchi – original | July 22 | September 6 | 16 days |
| ConocoPhillips Chukchi – revised | July 22 | September 21 | 30 days |

* This chart is based on the reality that local communities only have the capacity to comment on one air permit at a time.

As a result of these overlapping comment periods, Region 10 failed to provide at least 30 days to comment on each air permit in violation of 40 C.F.R. § 124.10(b).[3] The fact that these permits were remanded to the agency, RTC at 13, is irrelevant to the duration of the comment period. Both permits have changed substantially. *See* SOB at 10-12 (describing the extensive changes in the permits). When Region 10 revised the Chukchi permit between 2009 and 2010, the agency provided first 60 and then 40-day comment periods, which did not overlap with the Beaufort permit comment period. RTC at 11. The similarities between the Chukchi and Beaufort permits, RTC at 13, do not justify holding overlapping comment periods. These two major source permits have always had several similarities, but that does not change that they are for operations that include a different number of vessels, RTC at 13, that are different distances offshore, SOB at 64, are in oceans with different weather patterns, RTC at 13, and where the timing of subsistence activities vary. Tetra Tech, Literature Review of North Slope Marine Traditional Knowledge (June 4, 2010) (Attachment 10).

Because the introduction of pollution to the Arctic environment is an important issue for local communities, Petitioners asked Region 10, before any draft permits were released for comment, to hold non-overlapping comment periods on the OCS permits and to provide 45 days to comment on each permit. Letter from Brower, *et al.* to Hardesty (June 15, 2011) (Attachment 11); Petitioners' Comments at 5-7. Region 10 denied this request. Letter from Albright to Brower, *et al*. (July 21, 2011) (Attachment 12). The Region argued that a short delay in permit issuance could impact exploration and pointed to deadlines. *Id.* However, there are many months before the 2012 open water season and one permittee (ConocoPhillips) does not plan to

[3] Region 10 previously provided separate comment periods for the *Discoverer* air permits and provided a 40-day comment period when the Chukchi permit was revised in 2010. RTC at 11.

explore until 2013.[4] The Region's offer to meet with Petitioners during the short and overlapping comment periods is not equivalent to providing sufficient time for public review. Petitioners' Cover Letter.

Moreover, the short and overlapping comment periods provided by Region 10 deprived Petitioners' of a meaningful opportunity to comment on Shell's new air modeling results. *In re Russell City Energy Center*, slip.op. at 25 ("the essence of the alleged 'harm' from the procedural violation is not simply its potential impact on the final permit decision, but rather the deprivation of the public's opportunity to have its views considered by the permitting agency"). Petitioners were unable to hire an air modeler to help review Shell's new modeling results generated by the AERMOD model within the limited time provided for comment. Petitioners' Comments at 6; Petitioners' Cover Letter. In response to this fact, Region 10 explains that it received substantive comments on modeling issues and therefore, the comment period was sufficient. RTC at 13. The fact that the agency feels it received substantive comments does not negate the fact that Petitioners were deprived of the opportunity to work with an air modeler in developing their comments. Indeed, Petitioners still have unanswered questions about how Shell applied AERMOD in the Arctic and the new algorithms it developed. Thus, Petitioners were deprived of a meaningful opportunity to comment on Shell's two major source air permits.

[4] With respect to the deadlines for processing these permits, the statement of basis shows that Shell submitted new permit application materials in June of 2011. SOB at 10. Assuming Region 10 accepted Shell's applications as complete in June, the Region has a year to finalize the permits, 42 U.S.C. §7475. Shell had almost six months to prepare new permit applications, Region 10 took six weeks to issue the final permits and respond to comments, but the public was provided only 30 days to comment on two major source permits. This is unfair. While Petitioners support providing amble time for EAB review of permits, with the Board's New Source Review Standing Order in place for expeditious processing of Petitions such as this one, surely the public could have been provided a few extra weeks to review and comment upon these permits.

## II. REGION 10 COMMITTED CLEAR LEGAL ERROR IN DETERMINING WHEN THE *DISCOVERER* BECOMES AN OCS SOURCE.

In making its new OCS source determination, Region 10 committed clear legal error. As the Board has explained, when the *Discoverer* "becomes an OCS source determines when CAA section 328 applies to, and thus regulates air pollution from" the drillship. *Shell II*, slip.op. at 39. This determination "is of primary importance" because the "later in time the [*Discoverer*] becomes an OCS source, and the sooner it ceases to be an OCS source . . . the more limited the inclusion of potential emissions from both the [*Discoverer*] and the Associated Fleet in the air quality analysis." *Id.*

For both the Chukchi and Beaufort permits, Shell has revised its operations such that one of the icebreakers will now "pre-lay" eight of the anchors for the *Discoverer* at the drill site. SOB at 21-22. The *Discoverer* will then travel to within one mile of the drill site, be towed on to the drill site, drop its ship's anchor, and be connected to the anchors pre-layed by the icebreaker. *Id.* at 22. Region 10 has determined that once the drillship drops its ship's anchor at the drill site it is an OCS source. *Id.* at 22-23.

Petitioners appreciate the recognition that the drillship is an OCS source once it drops an anchor on the seabed. Petitioners' Comments at 8. Drillships are used for the purpose of exploring for hydrocarbons and are erected onshore or at port before they ever set sail. Therefore, once a drillship drops an anchor it is attached to the seabed, erected thereon, and used for exploration and meets the regulatory definition of OCS source. 40 C.F.R. § 55.2. However, in light of the current configuration of Shell's operations, Petitioners are concerned that the emissions from pre-setting the eight anchors are not captured in Shell's potential to emit – even though they are classic pre-construction emissions. Petitioners' Comments at 8-9. For this reason, Petitioners asked Region 10 to alter the OCS source determination to clarify that the

*Discoverer* is an OCS source when it drops an anchor on any of the lease blocks that Shell is authorized to operate on under each permit – not just at the drill site. *Id.* This way, when the *Discoverer* drops its ship's anchor during pre-laying of the eight other anchors, those emissions will be captured under the permits. Region 10's insistence that the *Discoverer* can only be an OCS source at a drill site where Shell has a permit to drill excludes the pre-anchoring emissions from Shell's potential to emit and is contrary to law as set forth below.

**A. The Agency's Interpretation Of Erected Thereon Is Contrary To Law.**

Under the Clean Air Act, an OCS source is any equipment or activity that has the potential to emit pollution, is authorized under the Outer Continental Shelf Lands Act (OCSLA), and is on the OCS or the waters above the OCS. 42 U.S.C. § 7627(a)(4)(C). OCSLA contemplates several stages of oil and gas activities: five- year planning, lease sales, exploration, and production and development, *Sec'y of the Interior v. California*, 464 U.S. 312, 337 (1984), with the final, production stage entailing significant construction. 56 Fed. Reg. 63,774, 63,776 (Dec. 5, 1991). Under EPA's regulations, a vessel is an OCS source if it is also used for the purpose of exploring for or producing oil and gas, is attached to the seabed floor, and erected thereon. 40 C.F.R. § 55.2. For the *Discoverer* permits, Region 10 has added on two additional requirements, namely that: 1) Shell have a permit to drill and 2) the drillship is at the permitted drill site before a source is created. SOB at 23. Region 10 purports to justify these additional requirements primarily as an interpretation of "erected thereon." RTC at 23.

In justifying its new OCS source requirements, the Region first argues that erected thereon "reflect[s] the process by which a vessel becomes attached to the seabed and used thereafter for the purpose of exploring, developing, or producing resources from the seabed." SOB at 23. Requiring attachment to the seabed at the drill site "ensures that the attachment" is

"related to" a "planned activity as an OCS source." *Id.* at 24. However, the agency also finds that the "used for the purpose of exploring, developing or producing resources" criterion "is met by the fact that the Discoverer is a drillship." *Id.* at 24.[5] If the "used for exploration" criterion is met by the fact that the Discoverer is a drillship (a vessel that is undeniably used for exploration), why is Region 10 requiring that attachment occur at the drill site to *also* meet this criterion? Put another way, because a drillship is always used for the purpose of exploring for resources, given its nature, there is no need for it to also be at the drill site to meet this criterion. The agency's new interpretations of its regulations are therefore, internally inconsistent and lack an explanation for the agency's departure from its previous interpretations. *Int'l Alliance of Theatrical and Stage Employees v. NLRB,* 334 F.3d 27, 34 (D.C. Cir. 2003) (granting petition for review and vacating unfair labor practice finding because Board interpretation of "any employee who engages in a strike" under section 8(d) of Act was "in conflict with both interpretive precedent and the statute's structure" and produced "internal inconsistency" and "irrational results in practice"). Furthermore, Region 10 also says that "erected thereon" is used "more as an explanatory phrase than as a separate requirement from attachment." SOB at 24. Once again, the agency is changing its mind about whether it is interpreting erected thereon or attached. *Shell II,* slip.op. at 50-51.[6]

In responding to comments, Region 10 argues that its new OCS source determination is consistent with the regulatory definition of OCS source and OCSLA, which "discuss more than attachment to the seabed." RTC at 18. However, for drillship exploration, this is simply not the

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[5] Petitioners agree with this determination.

[6] Presumably, the Region is also attempting to address the concern that the drillship could be considered an OCS source at port if it drops an anchor. But that concern is addressed by Petitioner's proposal to limit where Shell can be a source to the lease blocks on which it is authorized to operate. Petitioners' Comments at 8-9.

case. The preamble to EPA's OCS regulations provides that "[d]rill ships are considered to be an 'OCS source' because they are attached, at least temporarily, to the seabed, and so are authorized and regulated pursuant to the OCSLA; as such, they will be subject to regulation as stationary sources while attached to the seabed." 56 Fed. Reg. at 63,777. The legislative history of OCSLA explains Congressional intent that "federal law is to be applicable to all activities on all devices in contact with the seabed for exploration, development, and production." H.R. Rep. No. 95-1474, at 80, *reprinted in* 1978 U.S.C.C.A.N. at 1679. The First Circuit has determined that such structures need not even be related to mineral extraction to be covered under OCSLA. *Alliance to Protect Nantucket Sound, Inc. v. U.S. Army*, 398 F.3d 105 (1st Cir. 2005). Therefore, Region 10's argument that the regulatory definition of OCS source and OCSLA contemplate more than attachment for a drillship to be a source is in error. Indeed, these authorities support Petitioners' position that the drillship is a source whenever it drops its anchor on any of the lease blocks for which Shell is authorized to operate under its permits.

Moreover, the Region's arguments ignore the fact that these provisions apply to activities beyond just drillship exploration. The OCS provisions also apply to platform exploration as well as construction of production facilities and actual production. *See supra* at 12 (discussing the Clean Air Act and OCSLA). With respect to platform exploration, the pieces are shipped to the OCS, erected, and then attached to the seabed floor. Moving beyond exploration, EPA explained the phases of oil and gas drilling in the preamble to the OCS regulations, noting that "OCS activity is primarily related to the exploration and recovery of oil and gas. This activity can be divided into three phases: exploration, construction, and development and production." 56 Fed. Reg. 63774, 63,776 (Dec. 5, 1991). The agency went on to explain that the construction phase "is the most equipment-intensive phase" and it is "[d]uring this stage, [that] sections of the

platform are towed by barge to the site and the platform is assembled." *Id.* Therefore, "erected thereon" is readily given meaning in the context of platform exploration and the other phases of oil and gas activity, and not drillship exploration, for which Shell seeks authorization. Region 10 is attempting to fit a round peg (drillship exploration) in a square hole (statutory and regulatory requirements that also apply to platforms and development and production activities). Attempting to give "erected thereon" extra meaning in the context of drillship exploration, will only create regulatory problems down the road. If "erected thereon" means only at a drill site for which the applicant has permission to drill, then construction of pipelines to shore and other production related construction activities that are authorized under OCSLA will not be covered under the Clean Air Act. Thus, the Clean Air Act, the OCS implementing regulations, and OCSLA fail to support Region 10's determination.

**B. Region 10's OCS Source Determination Leads To Irrational Results.**

The Discoverer Beaufort permit authorizes Shell to operate at approximately 53 different lease blocks. Beaufort Permit at 1. The Chukchi permit authorizes Shell to operate at well over 100 lease blocks. Chukchi Permit at 1. However, under both permits Shell can only be a source at a designated drill site for which the company also has a permit to drill. Beaufort Permit at 16; Chukchi Permit at 13. Currently, Shell is seeking authorization to drill up to four wells in the Beaufort and six wells in the Chukchi. Excerpt Camden Bay EP at 1-2 (Attachment 13); Excerpt Chukchi EP at 1-2, 1-3 (Attachment 14).

It is not rational for Region 10 to authorize Shell to operate on many lease blocks covering vast areas of the ocean, but to limit where Shell can be a source to only those few locations where it has a permit to drill. *Earth Island Institute v. Hogarth*, 494 F.3d 757, 763-64 (9th Cir. 2007) (basic flaws in reasoning do not warrant deference); *Nat'l Audubon Soc'y v.*

*Butler*, 160 F. Supp. 2d 1180, 1189 (W.D. Wash. 2001) ("internal inconsistencies in the documents also heighten the uncertainty" of the agency's decision). Either the scope of the permit should be limited to match the definition of where Shell can be an OCS source (*i.e.*, only where Shell has a permit to drill), or the definition of OCS source should be expanded to match the areas where Shell is authorized to operate (*i.e.*, the numerous lease blocks listed on the first page of each permit). On the OCS, a Clean Air Act permittee must be "authorized" under OCSLA. *See* 42 U.S.C. § 7627(a)(4)(C)(ii) (an OCS source is "any equipment, activity, or facility which . . . is regulated or authorized under" OCSLA). Here, Region 10 is accepting Shell's lease blocks for purposes of determining the scope of the permit, but then leaving the Department of Interior, Bureau of Ocean Energy Management (BOEM) to determine where Shell can be a source based on where Shell is permitted to drill. Allowing the lease blocks to define the scope of the permit and the permit to drill to define where Shell can be a source is an inconsistent interpretation of OCSLA.

Moreover, Region 10's interpretation is also inconsistent with how the Clean Air Act is applied onshore. The concept of "temporary sources" under the Clean Air Act, 42 U.S.C. § 7661d(e), such as Shell's operations here, was designed originally with asbestos demolition contractors and certain asphalt plants in mind. H.R. Rep 101-490, 101st Congress, 2d session (May 17, 1990), 1990 CAA Leg. Hist. 3021, 3374. The idea was for a "permittee to receive a permit allowing operations, after notification to the permitting authority, at numerous fixed locations without requiring a new permit at each site." *Id.* Nowhere does the statutory provision on temporary sources or the legislative history of that provision contemplate EPA issuing permits for a number of locations but saying that the permittee is only a source at a few of them. Yet, that is precisely what the agency is doing here.

For all these reasons, Region 10 committed clear legal error in determining when the *Discoverer* becomes an OCS source.

## III. REGION 10 COMMITTED CLEAR LEGAL ERROR BY FAILING TO INCLUDE ENFORCEABLE GREENHOUSE GAS PERMIT CONDITIONS.

In the revised *Discoverer* permits, Shell requested and obtained limits on its greenhouse gas emissions so that a BACT analysis was not required. SOB at 11. The *Discoverer* operations were predicted to result in the emission of 149,794 tons of $CO_{2e}$ per year. Shell, Discoverer Update (April 15, 2011) (Attachment 15). In order for the owner requested limits in the permits to operate as intended, they must be both: 1) "federally enforceable as defined by 40 C.F.R. Sections 52.21(b) (17), 51.165(a) (1) (xiv), 51.166(b) (17);" and 2) "enforceable as a practical matter." EPA, Limiting Potential to Emit in New Source Permitting at 2 (1989). A range of limitations is possible that meet these criteria including:

> restrictions over a given period of time on the amount of a pollutant which may be emitted from a source into the outside air. Production limits are restrictions on the amount of final product which can be manufactured or otherwise produced at a source. Operational limits are all other restrictions on the manner in which a source is run, including hours of operation, amount of raw material consumed, fuel combusted, or conditions which specify that the source must install and maintain add-on controls that operate at a specified emission rate or efficiency.

*Id.* at 5.

### A. The Permit Conditions Related To Methane Emissions Are Not Enforceable.

Region 10 committed clear legal error in accepting an owner requested restriction for methane from mud-off gassing that is not enforceable.[7] The permit provides that "[t]o account for mud off-gassing, monthly CH4 emissions from the drilling mud shall be assumed to be 0.798

[7] Petitioners raised concerns in their comments with Shell's greenhouse gas "owner requested limitations" as a whole. Petitioners' Comments at 11-12. Other commenters raised in more detail concerns over the methane permit condition. *See* Comments of AWL, *et al*. at 16 (Attachment 16).

tons/month." Beaufort Permit at B.6.1.3; Chukchi Permit at B.6.1.3.[8] Obviously, this is not in any way a limitation on Shell's operations let alone an enforceable permit provision. Therefore, the Region claims that Shell's methane emissions are also subject to an "operational restriction," RTC at 28, namely the fact that Shell can operate for only five months.

However, this is not an operational restriction in the true sense of the term because without some other parameter, there is no real restriction on methane emissions. The permits still assume only a certain amount of methane will be emitted each month and that assumption is limited to a five month time frame. There is no monitoring of the methane emissions to serve as a check on the assumed amount of methane that will be emitted. *See* RTC at 29 (there is no "monitoring of emissions or operations from the drilling mud system" and the only other monitoring related to this provision is "monitoring the duration of operations and the other monitoring required in the permits"). There is no production limit on the amount of mud that will be processed. Without more, the methane "limitation" in each permit is not an enforceable owner requested limit.

This point is critical, because as EPA acknowledges, ConocoPhillips and Shell provided very different estimates of methane emissions from drilling muds with their permit applications. ConocoPhillips' estimated emissions are much higher at "183 tons per month of CO2e (8.7 tons per month of methane)" compared to Shell's estimated emissions of 17 tons per month of CO2e or 0.798 tons per month of methane. Excerpt SOB for ConocoPhillips' draft Permit at 35 (Attachment 17); RTC at 29 n.9. In the event that Shell's estimates are off, the current permit

[8] This is equivalent to about 17 tons per month of $CO_{2e}$. RTC at 29.

conditions would never reveal that fact.[9] Without monitoring of the actual methane emissions or testing of those emissions, there is no way to determine that the estimate of monthly methane emissions in the permit is accurate. Moreover, without a monitoring mechanism neither EPA, nor the public can ensure that Shell abides by its owner requested limits for greenhouse gases, including methane.[10]

Region 10 argues that the assumptions used in setting the limit for methane emissions are conservative, but whether this is true or not is irrelevant to assessing whether the methane permit condition is enforceable. In *Steel Dynamics*, the Union petitioners sought review of owner requested limits for lead where the agency had adopted a pounds per hour limit and stack testing. 9 E.A.D. 165, 175 (EAB 2000). Ultimately, the Board remanded the permit because of

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[9] Petitioners were unable to compare the basis of Shell's estimate with ConocoPhillips' estimate because Shell deemed its estimates "confidential" and did not release them until after the comment period closed. RTC at 29. Therefore, this information was not in the record or available for comment. *In re Knauf Fiber Glass*, 8 E.A.D. 121, 174-75 (EAB 1999) (partial remand of permit where EJ analysis was not included in the record); *Hawaii Electric Co.*, 8 E.A.D. 66, 112 (EAB 1999) (declining to rely on data that was not in the record and not reviewed by the public). As a result, Petitioners were not able to even evaluate whether the information upon which Shell relied was from the Beaufort, the Chukchi, or both and whether methane emissions should be assumed to be the same in both oceans (as Shell and Region 10 assume) or should be different given the multitude of differences between the two oceans.

[10] Region 10's reliance upon the agency's guidance for grain elevators, RTC at 28, is in error for this same reason – *i.e.*, there are no definitive measurements of the amount of methane that will be emitted from oil and gas exploration. In the case of grain elevators, EPA believed that the "highest amount of grain received during the previous 5 years, multiplied times an adjustment factor of 1.2, will constitute a realistic upper bound on the amount of grain a country elevator could receive." Memorandum from John Seitz, Calculating Potential to Emit (PTE) and Other Guidance for Grain Handling Terminals at 5 (Nov. 14, 1995). Here, there are not five years of previous data upon which to set the upper bound. Instead, the Region has two very different estimates of monthly methane emissions from two different permittees before it – one estimating 17 tons per month of $CO_{2e}$, RTC at 29, and the other estimating "183 tons per month CO2e emissions." SOB for ConocoPhillips' draft Permit at 35. Instead of conducting its own independent assessment of these estimates and arriving at a consistent approach to calculating methane, Region 10 simply adopted what each permittee proposed resulting in widely different draft permit conditions.

information that was lacking from the record during the comment period, *id.* at 179, but in so doing, it noted that in "cases of synthetic minors, the emissions limit would be needed to ensure emissions remain beneath the significance level." *Id.* at 178 n.13. Here, there is nothing in the permit to ensure that Shell's emissions remain at the predicted level and will not push the operations over the significance level.[11]

### B. The Blanket Restriction On Greenhouse Gas Emissions In The Permits Is Unenforceable And These Permit Conditions Require Review By The Board Because Of The Important Precedent They Set.

The only other permit condition that arguably applies to the methane emissions is the "blanket emission limitation" contained in each permit for $CO_{2e}$ – *i.e.* that greenhouse gas emissions cannot exceed 70,000 tons. Chukchi Permit at B.6.1; Beaufort Permit at B.6.1. However, both courts and the EPA have determined that such blanket emission limits cannot be used to limit a source's potential to emit. *United States v. Louisiana-Pacific Corporation*, 682 F. Supp. 1122, 1133 (D. Colo. 1987); *United States v. Louisiana-Pacific Corporation*, 682 F. Supp. 1141 (D. Colo. 1988); EPA, Guidance on Limiting Potential to Emit in New Source Permitting at 5-6 (June 13, 1989). This is because "limits" that fail to restrict production or operations are simply not enforceable. *In re Peabody Western Coal Co.*, 12 E.A.D. 22, 32 (EAB 2005) ("In order to be cognizable as a PTE limit, however, a capacity restriction must meet certain minimum criteria" including that it is "practically enforceable"). Therefore, the greenhouse gas permit condition is of no use in ensuring that Shell's methane emissions from drilling muds or any other greenhouse gas emissions are capped.

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[11] Region 10 argues that methane emissions are fugitive emissions, RTC at 28, but the Region also notes that some of these emissions are vented. SOB for the draft ConocoPhillips' Permit at 35.

Presumably, the Region and Shell will argue that this point is irrelevant in the real world context because they do not anticipate that Shell's methane emissions (whatever they may be) will push the overall $CO_{2e}$ emissions over the 75,000 tons per year threshold to qualify as a major source. 40 C.F.R. § 52.21(b)(49)(iii) ("'significant' is defined at 75,000 tpy $CO_{2e}$"). Whether this is true, or not, is irrelevant to the legal issue posed by the methane permit condition, which will set an important precedent for OCS permitting in the Arctic. Indeed, Region 10 has already proposed analogous permit conditions in draft synthetic minor source permits for Shell's *Kulluk* drillship and ConocoPhillips' jack-up rig.[12] Thus, whether this condition is enforceable or not is critical on the ground because of the legal precedent it sets and the need for resolution of this issue in Region 10 permitting matters.

Therefore, Petitioners ask the Board to find that the methane permit condition and the blanket $CO_{2e}$ permit conditions are unenforceable and unlawful under the Clean Air Act.

## IV. REGION 10 COMMITTED LEGAL AND FACTUAL ERRORS IN CONDUCTING THE ENVIRONMENTAL JUSTICE ANALYSIS.

The Executive Order on Environmental Justice provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Exec. Order 12,898, 59 Fed. Reg. 7629, 7629 (Feb. 11, 1994). The Board has held that "a permit issuer should exercise its discretion to examine any 'superficially plausible' claim that a minority or low-income population may be disproportionately affected by a particular facility that is the

[12] These draft permits are available on-line at: http://yosemite.epa.gov/R10/airpage.nsf/permits/ocsap/.

subject of a PSD permit proceeding." *In re Avenal Power Center, LLC*, PSD Appeal Nos. 11-02-05, slip.op. at 20 (EAB Aug. 18, 2011) (hereafter *Avenal*) (internal citations omitted).

The local communities who will be affected by Shell's operations contain a high number of Alaskan Natives who are a minority under the Executive Order. SOB at 64. The record establishes that Iñupiat have higher rates of pulmonary disease than the general U.S. population, may have genetic predispositions to diseases that differ from other U.S. populations, and are substantially more vulnerable to morbidity and mortality from air pollution than are other Americans. *Supra* at 4; SOB at 65. Petitioners submit that Region 10 has failed to put forth a valid basis for concluding that Alaskan Natives will not be disproportionately impacted by Shell's air pollution. Petitioners' Comments at 27-29. Petitioners address the substantive and then procedural problems with the Region's environmental justice analysis.

### A. Region 10 Has Ignored Petitioners' Comments And EPA's Scientific Findings On The Need For A New Ozone Standard.

Region 10's scant environmental justice analysis, *In re Avenal*, slip.op. at 24 (citing *Shell II*, slip.op. at 75), fails to address adequately the potential impacts to local communities from Ozone formation and EPA's latest scientific findings regarding Ozone. Petitioners' Comments at 28-29. After the Board's December 30, 2010 decision on Shell's OCS permits, EPA determined that the 8-hour Ozone NAAQS is inadequate to protect human health and the environment. 75 Fed. Reg. 2,938 (Jan. 19, 2010). Specifically, EPA found that "children and adults with asthma and other preexisting pulmonary diseases are at increased risk to the effects of O3 exposures." Draft Final Decision at 45[13]; 75 Fed. Reg. at 2,946. The new 8-hour standard was expected to be adopted during the summer of 2011 and EPA was expected to set the new

[13] Available at: http://www.epa.gov/glo/pdfs/201107_OMBdraft-OzoneNAAQSpreamble.pdf

standard between 0.060 and 0.070 ppm.[14] Petitioners raised concerns in their comments about the impacts of Ozone formation on local communities and asked for an analysis of Ozone in light of EPA's decision to revise the 8-hour NAAQS. Petitioners' Comments at 28.[15] After the comment period for Shell's two PSD permits closed on August 5, adoption of the final Ozone rule was delayed by the Obama administration due to concerns about the economic costs of the rule – not its health ramifications.[16]

Despite these facts, in preparing the environmental justice analysis for the Shell permits and responding to comments, Region 10 relied upon compliance with the old 8-hour Ozone NAAQS. SOB at 69; EJ Analysis at 20; RTC at 108. The agency failed to address its own recent scientific findings on Ozone despite the fact that these findings support the need for further consideration of the impacts of $NO_2$ emissions on Iñupiat communities on the North Slope. SOB at 69; EJ Analysis at 20; Petitioners' Comments at 28. By once again relying upon compliance with the existing, inadequate NAAQS instead of addressing its recent scientific

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[14] After EPA set the 8-hour NAAQS at 0.075 ppm, "CASAC took the unusual step of sending EPA a letter expressing strong, unanimous disagreement with EPA's decisions on both the primary and secondary standards (Henderson, 2008). The CASAC explained that it did not endorse the revised primary O3 standard as being sufficiently protective of public health because it failed to satisfy the explicit stipulation of the Act to provide an adequate margin of safety." 75 Fed. Reg. at 2,943; *see also* CASAC, Review of the Agency's Final Ozone Staff Paper (March 26, 2007) ("*Ozone Panel members were unanimous in recommending that the level of the current primary ozone standard should be lowered from 0.08 ppm to no greater than 0.070 ppm.*" (emphasis in original)).

[15] Petitioners also pointed out that "[p]ermittees are required to conduct preconstruction monitoring for $NO_2$ and VOCs emissions over 100 tpy." Petitioner's Comments at 24. However, the statement of basis only summarizes the percent of the $NO_2$ NAAQS that the background levels of Ozone are at in Wainwright, Prudhoe Bay, and Point Lay. SOB at 57. The Region's discussion focuses on the Chukchi and fails to detail the formation of Ozone in the Beaufort where stationary sources are much closer to Shell's lease blocks. Therefore, Region 10 reached its conclusions regarding Ozone with minimal analysis.

[16] The draft final rule is posted on EPA's website: http://www.epa.gov/air/ozonepollution/pdfs/201107_OMBdraft-OzoneNAAQSpreamble.pdf

findings (and those of the CASAC), Region 10 failed to offer a rational conclusion for its environmental justice findings that are supported by the record. *In re Shell*, 13 E.A.D. at 386; *Shell II*, slip.op. at 74-75 ("Compliance with a NAAQS standard that the Agency has already deemed inadequate to protect the public health cannot by itself satisfy a permit issuer's responsibility to comply with the Executive Order"); *id.* at 78 (agency should explain "why it reached a determination about [Ozone] health effects that is inconsistent with the Administrator's findings").

Moreover, the record is quite bare on the agency's Ozone findings. *Shell II*, slip.op. at 41 ("the Board looks at . . . whether the Region articulated with reasonable clarity the reasons for its conclusions and the significance of the principal facts it relied upon in reaching those conclusions"). The environmental justice analysis itself contains only a few sentences on Ozone. EJ Analysis at 20. The statement of basis fairs no better. SOB at 69. It is only in responding to comments that the Region acknowledges the draft new Ozone standard.

However, while the agency acknowledges the range for the proposed new Ozone standard, it discounts any concern. The Region argues that: the amount of NOx and VOCs that will be emitted from Shell's operations does not warrant further consideration of Ozone formation; "current ozone levels in the area are well below even the low end of the range" proposed by EPA; and "Region 10 does not believe modeling is required to conclude that emissions of ozone precursors from Shell's operations will [not] [sic] cause or contribute to ozone levels that would exceed the low range of the proposed NAAQS." RTC at 108. The record shows and Region 10 has acknowledged that background levels of Ozone are between 0.040 and 0.050 ppm. Petitioners' Comments at 24; RTC at 108. The record further shows that Region 10 is proposing to issue four OCS air permits for offshore operations in the Arctic – two

of which will take place in the Chukchi. Yet, nowhere does the Region consider whether the cumulative emissions from all these operations will threaten public health or a violation of the new 8-hour Ozone NAAQS.[17]

This is in contrast to the environmental justice analysis in the *Knauf* petition where the Region concluded that even with the emissions from the project, air quality would "remain well within the levels determined to be healthful . . . ." *In re Knauf II*, 9 E.A.D. 1, 16 (EAB 2000). Here, compliance with the old Ozone NAAQS was not demonstrated through modeling, RTC at 92, and Ozone monitoring data was not discussed in agency's statement of basis. SOB at 57. There is no State Implementation Plan (SIP) or the equivalent for the OCS and the Region has never conducted a regional Ozone analysis, therefore, beyond the limited Ozone background data that ConocoPhillips and Shell are collecting, there is little information on Ozone formation on North Slope communities. Something more than an assumed compliance with the NAAQS is required in a situation like this where: EPA has found that people "with asthma and other preexisting pulmonary diseases are at increased risk" from Ozone exposure, Draft Final Ozone Decision at 45; and the Region is considering a new source permit in an area where respiratory and related ailments are more prevalent than in other U.S. populations. *Supra* at 4; SOB at 65. Region 10 has repeated the mistakes it made with $NO_2$ in the 2010 permits for the *Discoverer* in the 2011 permits by failing to address adequately the impacts from Ozone formation on local communities in its environmental justice analysis.

[17] Because the agency is considering four new sources of air pollution in the Arctic, its argument that Shell's emissions of NOx and VOCs are *de minimis* misses the point, especially in the context of a regional air pollutant like Ozone.

### B. Region 10's Consideration Of $NO_2$ In The Environmental Justice Analysis Also Ignores Salient Evidence In The Record.

Region 10's reliance upon the $NO_2$ NAAQS in the environmental justice analysis is also flawed in that it is insufficient and ignores salient record evidence. As an initial matter, as AEWC has previously stressed, allowing EPA to simply equate NAAQS compliance with an environmental justice analysis vitiates the intent and effectiveness of the Executive Order, because every new source permit decision made by EPA must be accompanied by a finding that the emissions will not result in a violation of the NAAQS. 42 U.S.C. §§ 7475(a)(3), (a)(7).

Shell's *Discoverer* permits also present the unique situation where significant questions exist over whether Shell's emissions will actually comply with the new 1-hour $NO_2$ NAAQS especially when Shell's operations are viewed as a whole. Petitioners' Comments at 17-21. Region 10 has failed to set forth a rational response to this evidence in the record in preparing its environmental justice analysis and determining that local North Slope minority communities will not be disproportionately impacted by $NO_2$ pollution. SOB at 67-68.

Shell's ability to comply with the new $NO_2$ NAAQS must be put in the context of the overall emissions from Shell's planned operations. Shell's plans include three classes of emissions. The first class of emissions are the emissions from the engines on the drillship that are regulated as the OCS source, along with the stationary emissions from the supply ship when attached to the *Discoverer*. These emissions are subject to BACT and regulated under the OCS air permits for the *Discoverer*. The second class of emissions are the emissions from the "Associated Fleet" – *i.e.*, those vessels that operate within the 25-mile radius around the drillship – that are counted toward Shell's potential to emit. The third class of emissions are those from the Associated Fleet when outside the 25-mile radius of the drillship, the rest of the vessels associated with Shell's operations that are not included in the Associated Fleet, the emissions

from the drillship's propulsion engine, and the emissions from the ice breaker while pre-laying the anchors. As an example, in the Beaufort these vessels include:

**Table: Vessels Listed in Shell's Camden Bay Exploration Plan**

| **Type of Vessel** | **Vessel Name** |
|---|---|
| Drillship | *Discoverer* or *Kulluk* |
| Primary Ice Management | *Nordica* |
| Secondary Ice Management / Anchor Handler | *Hull 247* |
| Resupply (shallow water) | *Arctic Seal* |
| Offshore Resupply Vessel (ORV) | *Harvey Explorer* |
| Waste Stream Transfer Vessel | *Carol Chouest* |
| Deck barge (temporary storage of waste) | *Southeast Provider* |
| Deck barge tug | *Ocean Ranger* |
| Waste Barge (for storage) | TBD |
| Waste Barge tug | TBD |
| Primary Oil Spill Response (OSR) barge | *Arctic Endeavor Barge* |
| Primary Oil Spill Response Tug | *Point Oliktot Tug* |
| OSR Liquid Storage & Refuel Supply Vessel (OST)* | *Mikhail Ulyanov* |
| OSR Containment barge* | Barge |
| OSR Containment barge tug* | Invader Class tug |
| Anchor Handler for Containment barge* | TBD |
| Secondary Relief Well Drilling Vessel* | *Kulluk* or *Discoverer* |
| Chukchi OSR Barge* | *Klamath* |
| Chukchi OSR Barge Tug* | Crowley *Sea Robin* |
| Chukchi OSR Vessel* | M/V *Nanuq* |
| Science Vessel | |
| West Dock Shuttle | |

This chart is based on information from Shell's Camden Bay and Chukchi Sea Exploration Plans.

* Indicates vessels that are neither within 25 miles of the *Discoverer* or part of the fleet that will remain in the vicinity of the *Discoverer* but outside the 25 mile boundary.

Petitioners have long been concerned about the collective impact of these emissions on air quality and the health of local residents as evidenced by Petitioners' efforts to have Region 10 consider these emissions as those of the OCS source in prior EAB appeals. As a result, Petitioners asked Region 10 to address these emissions in determining whether the permits will have a disproportionate adverse health impacts on their communities. Petitioners' Comments at 28. Region 10 failed to undertake an analysis of all of the emissions from Shell's operations.

The Region did point to Petitioners' previous comments, which contained an estimate of the $NO_2$ emitted by the drillship's propulsion engine. RTC at 103. However, with regard to the rest of the emissions from Shell's operations, Region 10's primary responses are that: 1) the Region does not have sufficient information to estimate the "mobile source emissions" that are "not subject to regulation under these permits;" and 2) the Region "does not expect these additional emissions" to cause or contribute to a violation of the NAAQS, RTC at 103-104, despite its lack of information. Both points are in error.[18]

First, Region 10 could readily compile rough estimates of the "mobile source" emissions. Region 10 already has modeling for many of these vessels. The emissions from the icebreaker pre-laying the anchors could be estimated by looking at the same vessel's emissions while it is connecting the Discoverer to the pre-laid anchors. All the vessels in the Associated Fleet have been modeled to some extent or another, EPA, Technical Review Document at 14 (Attachment 18), such that the Region could *estimate* the emissions from these vessels outside the 25-mile radius of the drillship. As for the rest of the vessels, they are listed in Shell's exploration plans, including descriptions of the make and model of most of the vessels. *See supra* at 27. Looking up the horsepower of the typical engines on board these vessels and either comparing them to similar engines (for which Shell did modeling) or making rough estimates of their emissions are also feasible and reasonable steps for the agency to take to ensure against adverse health and environmental impacts. This is particularly necessary here where the impacted minority population already suffers higher rates of pulmonary diseases and respiratory problems than other U.S. populations, is more susceptible to and at risk from $NO_2$ concentrations, *supra* at 4;

[18] In *Avenal*, the region addressed mobile sources in its environmental justice analysis discussing the fact that "motor vehicle emissions are by far the greatest concern." *In re Avenal*, slip.op. at 21-22.

SOB at 65, and spends significant amounts of time engaged in subsistence activities offshore – *i.e.*, closer to the emissions sources than Shell's onshore modeling reveals. Tetra Tech, Literature Review of North Slope Marine Traditional Knowledge (June 4, 2010).

The Region also argues that many of the mobile source emissions can be discounted because they will dissipate while the vessels are in transit. RTC at 104. This argument discounts the cumulative effect these emissions have on air quality and the fact that the local populations spend significant amounts of time offshore. Indeed, a fatal flaw of the environmental justice analysis is its failure to *analyze* the impacts of Shell's emissions on subsistence hunters and fishers while offshore. Region 10 discusses Shell's modeled impacts onshore and 500 to 2000 meters from the Discoverer, EJ Analysis at 16, but never explains what the impacts are in key subsistence areas. The Region acknowledges that subsistence hunters travel as far as 60 miles in pursuit of traditional foods. EJ Analysis at 20. However, nowhere does the agency account for this information in its analysis. Instead, the agency simply concludes that the NAAQS will be complied with at the 500-meter boundary. *Id.*[19]

Second, these "mobile emissions" could collectively cause or contribute to a NAAQS violation. The record reflects that compliance with the 1-hour $NO_2$ NAAQS is a concern even when the "mobile source emissions" are not accounted for in the modeling. Particularly in the Chukchi, Shell's emissions plus background concentrations are at 93 percent of the 1-hour $NO_2$ NAAQS. EPA, Technical Document at 31 (Attachment 18). When the margin of error for these calculations is taken into account, it is difficult for EPA to ensure compliance with the NAAQS.

[19] The record contains detailed information about subsistence use of the areas where drilling will occur. Tetra Tech, Literature Review of North Slope Marine Traditional Knowledge (June 4, 2010). Region 10 discloses at least some of this information in its EJ analysis. However, the agency never connects the pollution that will be emitted with subsistence use areas and never discusses whether subsistence hunters and fishers could be adversely impacted by this pollution.

EJ Analysis at 2-3, 21. Added to these concerns is the fact that the most conservative background $NO_2$ data was not used. Data from Wainwright instead of the more conservative background data from Point Lay were used as the background for $NO_2$ in the Chukchi. Petitioners' Comments at 21. The problems with Region 10's analysis of $NO_2$ emissions, however, does not end there. Significant concerns exist with whether the controls that will be installed for $NO_2$ (OxyCat and SCR) will function in the Arctic where cold temperatures could impair their functioning, *id.* at 14, the use of generic $NOx/NO_2$ ratios in lieu of actual source tests, *id.* at 17, the use of "diurnal pairing" of $NO_2$ data, *id.* at 19, and the use of only one stack test to provide data to demonstrate compliance with the hourly $NO_2$ standard where Shell's emissions vary hour by hour. *Id.* at 13-14. Petitioners also discussed the "need for additional tracer experiments" to supply data for the AERMOD model to ensure that it provides more accurate results for the Arctic. *Id.* at 16. Indeed, in light of all these concerns, Petitioners requested that Region 10 require the installation of continuous emissions monitors (CEMs) for demonstrating $NO_2$ compliance.[20] As Petitioners' comments demonstrate, Shell's operations pose a real risk of a 1-hour $NO_2$ NAAQS violation. When Shell's mobile source emissions are added into this equation and Shell's emissions are looked at in their entirety, as requested by Petitioners, it is clear the Region failed in its environmental justice analysis.

With a pollutant like NOx where short-term exposures are linked to respiratory illnesses and hospitalization particularly in sensitive populations, EJ Analysis at 14, such as those along

[20] Self-monitoring provisions in draft air permits for the OCS have long been a concern for local communities who have consistently asked Region 10 to require independent monitoring. For example, in their latest comments, Petitioners requested monitoring at the 500-meter mark to ensure that the NAAQS are complied with at the ambient air boundary and they also requested CEMs for $NO_2$. Petitioners' Comments at 8, 13-14, 12. If the Region is not going to estimate the total impacts of all of Shell's emissions on air quality and the health of local communities, then at least the agency should put in place stringent monitoring provisions so that if more pollution is emitted than was predicted EPA can take rapid action to protect against adverse health impacts.

the North Slope where many people already suffer from respiratory disease, SOB at 65, the Region cannot ignore these facts in its environmental justice analysis. Nor can the Region ignore what the Board has previously recognized that because Iñupiats use the Beaufort and Chukchi Seas for subsistence activities – including hunting and fishing – and spend extended periods of time offshore in closer proximity to Shell's operations, this raises a "potential environmental justice consideration that may be unique to the OCS PSD permitting . . . ." *Shell II*, slip.op. at 72. Thus, the Region failed to address adequately hourly $NO_2$ emissions in its environmental justice analysis.

### C. Region 10 Did Not Engage In An Adequate Public Process In Undertaking Its Environmental Justice Analysis.

As with the public process surrounding these air permits, the public process for the environmental justice analysis was also woefully inadequate. While Region 10 titles the analysis "Supplemental," it is important to recall that the agency previously prepared no environmental justice analysis for either of Shell's *Discoverer* permits. Nevertheless, the Region relies heavily upon the public process for the 2010 permits to try to argue that public involvement this time around was sufficient. SOB at 66. It was not.

First, the agency did not plan for a 60-day comment period or grant Petitioners' request for a 45-day comment period. *See* North Slope Communications Protocol at 4 (Attachment 19) (noting that Region 10 "will routinely plan for a 60-day window for public comment opportunity" and that "we will set aside a timeframe of 60 days, to provide for any comment period extension requests, to accommodate any scheduling changes that might be necessary after consideration of the subsistence year activities (described Section 5), or changes due to logistical complications"); Letter from Albright to Brower, *et al*. (July 21, 2011). Instead, the Region provided only 30 days for the public to comment on two PSD permits. As discussed previously,

*supra* at 10, Petitioners were unable to find an air modeler to assist with commenting on the two *Discoverer* air permits during the limited public comment period. Therefore, this comment period did not provide a meaningful opportunity for local communities to engage on the permits. Moreover, as Region 10's North Slope Communications Protocol recognizes, during this time period (between July 6 and August 5), local communities are typically involved in fishing activities, caribou, ugruk and walrus hunting, drying meat and making seal oil, and preparing ugruk skins for boats. *Id.* at 13; *see also* Excerpt Tetra Tech, Literature Review of North Slope Marine Traditional Knowledge (June 4, 2010). In light of on-going subsistence activities, it is also critical that Region 10 is sensitive to requests for additional time.

Second, the agency did not travel to most of the North Slope communities that will be affected by Shell's emissions. The environmental justice analysis recognizes that the closest villages to Shell's operations are Point Lay and Wainwright in the Chukchi and Kaktovik, Deadhorse, and Nuiqsut in the Beaufort. EJ Analysis at 6.[21] Region 10 only held one public hearing and that was in Barrow, Alaska on August 4, 2011, and held early informational meetings on all four proposed air permits in Barrow and Kaktovik. *See supra* at 3. Region 10 did not hold any hearings or meetings in any of the Chukchi Sea villages. In contrast, with the 2010 permits EPA officials traveled to far more of the North Slope villages. SOB at 65.[22]

Further evidence of the Region's inadequate environmental justice process, is the fact that Region 10 did not even post the environmental justice analysis on its website until it was asked to do so. Email from Suzanne Skadowski to Tanya Sanerib (July 6, 2011) (Attachment

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[21] The environmental justice analysis discusses only incorporated Villages on the North Slope, EJ Analysis at 6, and therefore, excludes Kivalina, Little Diomede, Wales, Gambell, and Savoonga.

[22] The Region had translators available for hearings and meetings in 2010, but does not make the same claim for 2011. SOB at 66.

20). Nor did it include its analysis within the Statement of Basis for the permit, as other regions have done.

While the Board's remand in 2010 specifically addressed environmental justice concerns with the *Discoverer* permits, Region 10 has failed to live up to the plain meaning and the spirit of the Board's decision.

## CONCLUSION

For the foregoing reasons, Petitioners respectfully request that the Board remand the Beaufort OCS PSD permit and the Chukchi OCS PSD permit to Region 10 because of the clear errors of law and fact described in this Petition.

Respectfully submitted,

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*Alaska Eskimo Whaling Commission & Iñupiat Community of the Arctic Slope*

Dated: October 24, 2011

## WORD CERTIFICATION

Petitioners Iñupiat Community of the Arctic Slope and the Alaska Eskimo Whaling Commission hereby certify that this Petition for Review of Permit Nos. R10OCS/PSD-AK-09-01 (Chukchi Permit) and R10OCS/PSD-AK-2010-01 (Beaufort Permit) is less than 14,000 words. EAB, Order Governing Petitions for Review of Clean Air Act New Source Review Permits at 2, ¶ 1. Petitioners certify that their Petition contains 10,789 words and is therefore, well within the Board's word limitation for new source review petitions.

Respectfully submitted,

*s/ Tanya Sanerib*

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## CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Petition for Review were served by electronic mail upon the following entities:

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