

**NORTHERN ALASKA ENVIRONMENTAL CENTER
NATIVE VILLAGE OF POINT HOPE
NATURAL RESOURCES DEFENSE COUNCIL
PACIFIC ENVIRONMENT * REDOIL * SIERRA CLUB
CENTER FOR BIOLOGICAL DIVERSITY
ALASKA WILDERNESS LEAGUE**

April 1, 2008

Dan Mahar
EPA Region 10
1200 Sixth Ave, Suite 900, AWT-107,
Seattle, WA 98101
R10-Public_Comments@epa.gov
Submitted via e-mail

Dear Mr. Mahar,

Thank you for this opportunity to comment on the Air Quality Control Minor Permit No. R10OCS-AK-07-01 (Revised) ("Revised Proposed Permit"), which would authorize Shell Offshore, Inc. ("Shell") to mobilize, operate and demobilize the *Kulluk* at drill sites in the Beaufort Sea OCS. These comments are submitted on behalf of the Northern Alaska Environmental Center, Native Village of Point Hope, Natural Resources Defense Council, Pacific Environment, Resisting Environmental Destruction on Indigenous Lands (REDOIL), Sierra Club, Center for Biological Diversity, and Alaska Wilderness League.

We are very concerned that the Revised Proposed Permit may allow Shell to unlawfully degrade air quality and threaten the health of communities and fish and wildlife habitats on the North Slope by operating the *Kulluk* and its support vessels with outdated and inadequate pollution control technology. EPA still has failed to provide adequate consideration of the environmental impacts of air quality as required to comply with the National Environmental Policy Act, including cumulative effects and human health impacts. It has neglected to rectify the critical data gaps identified by the National Research Council (2003) including lack of a quantitative baseline of spatial and temporal trends in North Slope air quality, studies to distinguish between locally derived emissions and long-range transport, to determine how they interact, and monitor potential human exposure to air contaminants. EPA continues to rely on out-dated and inadequate baseline ambient air quality information, old wind rose data from the 1980's, and failed to address the potential environmental and human health impacts to communities including the nearby villages of Kaktovik and Nuiqsut.

EPA's Revised Proposed Permit is deficient in several respects. As an initial matter, EPA has effectively permitted drilling operations at an unlimited number of well sites for an indeterminate period of time. In addition, EPA has improperly segmented Shell's exploratory drilling operations in several ways in order to avoid major source review. First, EPA has segmented its own permitting process for Shell's exploratory operations by "suspending" its efforts to issue a

revised permit for the *Frontier Discoverer*. Second, EPA has improperly segmented the operations of the *Kulluk*, treating the vessel as a distinct source at each different planned well site, irrespective of the interrelation between such wells. Finally, EPA has arbitrarily declined to consider whether operations at multiple well sites drilled within a rolling 12-month or 52-week period should be permitted as a single stationary source. Because it cannot do so in compliance with the law, EPA should decline to issue a minor source permit to Shell to mobilize and operate the *Kulluk*.

EPA Should Limit the Duration of the Revised Proposed Permit

The Revised Proposed Permit does not provide for its termination on a date certain. EPA should limit the duration of the permit by providing a date certain beyond which it cannot be used. The permit should not remain effective beyond the anticipated duration of Shell's exploration drilling program. Shell requested authorization from Minerals Management Service to conduct exploratory drilling with the *Kulluk* during 2007, 2008 and 2009. To the extent that Shell has provided EPA with specific drilling plans, including the identified icebreakers and support vessels associated with the *Kulluk*—which provide the basis for emissions forecasts—those plans are part and parcel of the Exploration Plan filed with Minerals Management Service. EPA should not issue a permit that remains effective indefinitely and may allow Shell to operate the *Kulluk* to drill an indeterminate number of wells over an indefinite time frame.

EPA Should Conduct Major Source Review

EPA has improperly segmented the operations of the *Kulluk* and has completely ignored the possible prospective operations of the *Frontier Discoverer* in order to issue a minor source permit. Irrespective of its location in the Beaufort Sea, at all times when it is attached to the seabed within 25 miles of the coast, the *Kulluk* should be regulated as a single stationary source under the Clean Air Act. But even if EPA may treat the *Kulluk* as a separate stationary source each time it moves to a different planned well location, EPA improperly concludes that multiple planned wells located on a single prospect are not located on "contiguous or adjacent properties." See 40 C.F.R. § 51.166(b)(6). Such wells are, without question, interdependent, necessarily proximate, and fit well within the common sense notion of a plant. Accordingly, they are located on contiguous or adjacent properties, requiring that EPA consider the *Kulluk* to constitute a single stationary source at any two planned wells located that are on the same prospect.

Irrespective of its location, the *Kulluk* should be regulated as a single stationary source under the Clean Air Act all times when it is attached to the seabed within 25 miles of the coast. See 42 U.S.C. §§ 7479, 7627. By treating the ship as a different source at each location, EPA is improperly segmenting operations by the same source to allow it to avoid major source review. This violates the terms and contravenes the basic purpose of the Clean Air Act and allows unnecessary degradation of air quality.

Even if EPA declines to treat the ship itself as the source, it should nonetheless consider the *Kulluk* to be "located on contiguous or adjacent properties" when drilling at any one of multiple planned well sites located on a single prospect, such as the Sivulliq prospect, based on the

proximity and interdependence between all such exploratory and delineation wells.¹ During such operations, the *Kulluk* employs the same equipment and the same crew to explore and delineate the same prospect. This fits well within the “common sense notion of a plant,” which is the guiding principle in EPA’s adjacency determination. Letter from Joan Cabreza, EPA Region 10, to Andy Ginsberg, Oregon Dep’t of Env’tl. Quality, re: ESCO Corp. Plants (August 7, 1997).

In fact, the Kuvlum and Sivulliq (Hammerhead) prospects have previously been unitized and Shell (as Shell Frontier Oil & Gas) was a partner in the Hammerhead Unit which was in effect from May 6, 1993 until MMS accepted relinquishments of the leases on October 27, 1999. (MMS Hammerhead, Kuvlum, and Sandpiper Unit Files (public information) 1992-1999). MMS geologists have discussed various development options for Kuvlum. See Minerals Management Service, Proceedings of the 1995 Arctic Synthesis Meeting, OCS Study MMS95-0065, Alaska OCS Region, (February 1996), see pp. 4, 20-31,² The Sivulliq Prospect is the same as Hammerhead, according to the MMS. Environmental Assessment, Shell Offshore Inc. Beaufort Sea Exploration Plan, OCS EIS/EA MMS 2007-009 (February 2007);³ MMS states that the Hammerhead #1 and Kuvlum #1 wells were “determined producible” under MMS regulations.⁴

Shell Oil Inc. appears to have amnesia regarding its past operations in the proposed drilling areas and prospects in the Beaufort Sea. For example, Shell Oil Inc. has presented vague information to EPA highlighting that they will be drilling “exploratory” wells with no mention in its application or any of EPA’s attachments to its Statement of Basis that there has been a past history of drilling a number of wells in the area, that each of these Units had an oil discovery, that there were former Hammerhead and Kuvlum Units which operated under “Suspension of Production due to uneconomic market conditions” (See attached excerpts from MMS Hammerhead, Kuvlum, and Sandpiper Unit Files (public information) 1992-1999). The past Plans of Operations approved by MMS discussed that “delineation” wells had been drilled in the Kuvlum Unit (e.g. MMS, August 13, 1993, Letter from Rodney A. Smith to Mr. David A. Sutter, ARCO Alaska Inc). While EPA’s Statement of Basis shows the locations of past drilling in the Sivulliq/Hammerhead and Kuvlum Prospects, Table One (p.9) only addresses the distances between well sites, not the relationship of drilling in one location to another within an area of known oil discovery, nor does it address the other potential drilling sites that could be covered by EPA’s broad permit. Furthermore, Shell said in 2007 that Sivulliq “leverages Hammerhead discovery” (See Shell Exploration & Production, January 23, 2007, p. 18.).⁵

The map showing “2007 APD locations” (EPA Statement of Basis, Attachment 7) shows that three proposed Sivilluq well sites are within lease blocks 6658, 6708, and 6707, and the proposed exploration well shown for Sivulliq Prospect, Exploration Well Site Clearance Assessments (EPA Statement of Basis, Attachment 10), are all contained within the former Hammerhead Unit. See Mapmakers, September 1998, Arctic Slope & Beaufort Sea Oil & Gas Activity; and MMS

¹ EPA’s decision to define the operative “property” for purposes of its adjacency analysis as the hull of the *Kulluk* when attached to the sea bed arbitrarily fails to account for the hulls of the various support vessels. The emissions from these vessels are considered direct emissions from the source, 42 U.S.C. § 7627(a)(4)(C), and Shell can similarly exclude the public from the hulls of these ships, which should therefore be included as part of the “property” for purposes of any adjacency analysis.

² http://www.mms.gov/alaska/reports/1990rpts/95_0065_ArcticSyn.pdf (accessed 3-28-08).

³ http://www.mms.gov/alaska/ref/EIS%20EA/ShellOffshoreInc_EA/SOI_ea.pdf (accessed 3-28-08).

⁴ <http://www.mms.gov/alaska/fo/wellhistory/prodwell.htm> (accessed 3-28-08).

⁵ http://www.sepcocontractor.com/conference/2007/2007_SEPCo_EPW_Well_Engineering_SupplierConference.pdf, accessed 4-1-2008).

Hammerhead Unit public files 1992-1999). The Application for Approval of Hammerhead Unit, Beaufort Sea (Letter submitted by Unocal to MMS, January 26, 1993), stated, "Unocal and its partners, Shell Frontier Oil & Gas Inc. and Amoco Production Co. believe that the lands designated herein represent a logical area for unitization." The attached Plan of Operations, Hammerhead Unit, called for "Drill Hammerhead #3 in the untested northeast fault block to all prospective intervals, and evaluate with a full suite of logs, conventional cores, and drillstem tests, at such time that the projected economics and marketing conditions, as determined by the Working Interest Owners, support development of the prospect." Maps depicting unit boundaries show oil and gas pool boundaries spanning distances more than a few miles within the former Hammerhead Unit and the former Kuvlum Unit and extending beyond individual unit boundaries, according to Alaska Department of Natural Resources. See ADNR, Historical and Projected Oil and Gas Consumption, Alaska North Slope Map, p. v, (May 1998) http://www.dog.dnr.state.ak.us/oil/products/publications/annual/h&p_may1998.pdf (accessed 3-28-08); ADNR, Alaska Oil and Gas Activities, Division of Oil and Gas. (February 1998). http://www.dog.dnr.state.ak.us/oil/products/slideshows/ogactivity_feb1998/Budget98.pdf (accessed 3-28-08). Since the draft permit would cover not only the Sivilluq/Hammerhead prospect but leases covering parts of the former Kuvlum Unit, as well as all other Shell leases, there are undoubtedly many other inter-related decisions. In 1996, the MMS wrote to Shell Frontier Oil and Gas, Inc., "we request Shell submit a report which reassesses the economic viability of the Hammerhead Prospect and which summarizes and takes into account the results of its review of technology and assessment of joint development opportunities (including but not limited to the Kuvlum Unit). This report should also address results of efforts to address options for drilling the untested central fault block." (See Letter from Jeff Walker, Regional Supervisor, MMS to Mr. D.B. Champlin, Shell Frontier Oil and Gas, Inc. June 20, 1996).

Emission generating activities at multiple planned well sites on a single prospect are interdependent in several important ways that Shell, its attorneys at Patton Boggs and EPA have failed to account for. Such wells are planned together based on a preliminary model of subsurface hydrocarbon potential and possible development models, drilled by the same crew with the same equipment under the same exploration plan and the data obtained by drilling all such wells are pooled and used by the exploration team to develop and refine a model of the subsurface geology of the reservoir. Norman J. Hyne, *Geology for Petroleum Exploration, Drilling and Production*. McGraw-Hill, 1984 at 200 ("Geologists spend most of their time mapping and constructing cross sections of the subsurface. Subsurface maps (structural, isopach, and lithofacies) are made of potential reservoir rocks with scales ranging up to a whole basin and down to a county or oil field. Every time a new well is drilled in that area, more information is obtained about the subsurface. The data is then plotted on subsurface maps and the maps recontoured and reinterpreted. Common geological principles are applied to predict where hidden subsurface structures and facies changes might form a petroleum trap."); Norman J. Hyne, *Nontechnical Guide to Petroleum Geology, Exploration, Drilling and Production*, PennWell Books at 225-27 ("When a well is drilled, a record of rocks in the well called a well log is made. Comparison of rock layers on well logs is used to correlate between wells. ... A stratigraphic cross section is made by hanging the well logs by the same marker bed in each well. ... [The stratigraphic cross section] is used to illustrate the relationship between rock layers such as facies changes and to locate stratigraphic petroleum traps."); Charles F. Conway, *The Petroleum Industry: A Nontechnical Guide*. PennWell Books, 1999 at 130 (information from

drilling each well “helps assess the reservoir’s overall extent and quality.”); *see also* Shell.com, Exploring, Well Technology for Exploration *available at* http://www.shell.com/home/content/technology-en/exploring/well_technology_exploration/well_technology_exploration_11122006.html (“Each prospect offers various development options, and we investigate the commercial potential of these before exploration starts. *This integrated thinking takes in the whole exploration and production life cycle of the field.* Our global experts help our team and their partners around the world to optimize project value.”) (emphasis added). That model is the “marketable” end product that results from the exploratory drilling process and is used to inform the decision whether to abandon or produce the prospect, which is the end goal of any exploratory drilling. *See* Leffler, William L. *Deepwater Petroleum Exploration and Production: A Non-technical Guide*. PennWell Corp., 2003 at 47 (“The wildcat has been drilled. Hydrocarbons are present in the well test. The exploration geologist and geophysicist are thrilled with the success. But the excitement soon dissipates as management asks the critical questions, ‘How big is the accumulation? Are there enough reserves to justify further investment?’ As part of the planning process, the team members who worked the subsurface model developed various scenarios. If the well proves to contain hydrocarbons, where would they drill the next well? ... Superimposed on these ideas, the team considers and integrates the information from the various logs from the wildcat into their model.”); Hyne, *Geology for Petroleum Exploration, Drilling and Production* at 229 (“After drilling a well, it must be decided if the well is worth the expenses of completion. This is known to the investor as the casing point. Is there enough petroleum to make the well commercial?”); *see also* Shell.com, Exploring, Data Evaluation *available at* http://www.shell.com/home/content/technology-en/exploring/data_evaluation/data_evaluation_10012007.html (““Integrated data evaluation combines a number of technologies used to predict hydrocarbons, characterise reservoirs and improve the development of oil and gas fields throughout the exploration and production life cycle. It integrates the work of geophysicists, petrophysicists, geologists and engineers based in central technology teams. These experts use seismic and well logging data, as well as the results from core and fluid sample analyses, to provide critically important information for evaluation and asset teams around the world. ... *The main objectives of integrated evaluation are to find hydrocarbons and predict their commercial amounts and also to predict the quality and quantity of the oil or gas field.* This methodology can also ... provide information about the later expected gas and oil production.”) (emphasis added). EPA should not depart from its prior practice of focusing on the end product in making adjacency determinations. *See* Letter from Joan Cabreza, EPA Region 10, to Andy Ginsberg, Oregon Dep’t of Env’tl. Quality, re: ESCO Corp. plants (August 7, 1997); Letter from Bill Hathaway, EPA Region 6, to Allen Bell Re: Valero Applicability (Nov. 3, 1986); Memo from Doug Hardesty, EPA region 10, to Robert Robichaud re: Forest Oil Kustatan Facility Applicability Determination (Aug. 21, 2001). The interdependence of these wells is reflected in the fact that but for the other exploratory wells drilled on a prospect, a single delineation well would likely not be an economically viable project with enough independent utility to justify its cost as a stand-alone project. *See* Letter from Judith Katz, EPA Region 3, to James Salvaggio, Pennsylvania Dep’t of Env’tl. Prot. Re: Northeast Hub Partners Source Determination at 3 (“United Salt would not have a viable operation at this location but for the existence of NE Hub”). Moreover, as Shell’s attorneys acknowledge, the design and location of subsequent wells can be influenced, at least in some circumstances, by the results of drilling earlier wells on the same prospect. For example, data obtained from an earlier

well may be used to help the wellsite geologist to anticipate when the drill bit approaches a zone of interest in subsequent wells, determine when coring may be warranted or which portions of a subsequent well should be logged, and to correctly interpret the data obtained by drilling subsequent wells. See Conway, *The Petroleum Industry: A Nontechnical Guide* at 130-31 (based on the description of a cutting, "the geologist can find the equivalent zone in nearby wells to locate himself in the stratigraphic column."), 135 ("There is a great deal of pressure on the geologist, first, not to miss a potential pay zone and, second, not to waste rig time in coring shales or other non-reservoir rocks."), 141 (logging wells is costly and is typically only completed up to the shallowest zone of interest). Given its sophisticated integrated approach to exploration, and the considerable investment it makes to drill an offshore well, it is inconceivable that Shell would simply ignore the data obtained from one well when it drills subsequent wells on the same prospect later in the season. Thus, EPA has arbitrarily concluded that multiple wells on a single prospect are independent.

Likewise, EPA's conclusion that planned well sites are not proximate is patently arbitrary. EPA has apparently concluded that planned wells are not proximate because they must be separated by at least 1,000 meters⁶ and because "Shell indicates that each Planned Well must necessarily be at a distance far enough apart from another so as to create a distinct information gathering value. Thus, applying the policy laid out in the Oil and Gas Memorandum to the relevant facts of this specific permitting action would result in a determination that, none of the Exploratory Operations allowed under the proposed permit would be located in close enough proximity to be considered a single stationary source." Supplemental Statement of Basis at 15. This explanation does not ensure that the drill sites will necessarily be separated by any distance at all, if distinct information can be gained from sites very near one another. Moreover, EPA offers no justification for its apparent, and implicit conclusion that emission generating activities at well sites separated by 1,001 meters are not proximate. EPA has identified no meaningful limitation on its proximity determination that provides a reasoned basis for concluding these drill sites are not proximate.

EPA has improperly determined that the *Kulluk* does not become a stationary source until the last of its anchors is attached to the seabed. As soon as one of its anchors has been attached to the seabed, the *Kulluk* becomes an OCS Source, and EPA should begin to measure (and regulate) emissions for purposes of its major source determination at that point. See 42 U.S.C. § 7627(a)(4)(C).

EPA has improperly and arbitrarily failed to consider whether planned wells that are drilled in successive seasons, but within a one-year rolling time period are interdependent. In addition to the many indicia of interdependence discussed above, the specific surface location of a well on a given prospect will likely be influenced by the data obtained by any wells drilled on that prospect in the preceding season and resultant revisions to the geologic reservoir model. Operations at such wells, including even the determination of their surface location, are clearly interdependent.

⁶ EPA's explanation that the requisite 1,000 meter separation will prevent NAAQS exceedences simply does not make sense. The bulk of emissions come from the icebreakers and support vessels, which can occupy the exact same locations whether or not the *Kulluk* is authorized to drill wells that are within 1,000, 5,000, or 10,000 meters of one another. Moreover, it seems that if the emissions from *Kulluk* and its support ships might exceed NAAQS if operating at wells within 1,000 meters, they are equally likely to do so from a single drill site, or at drill sites separated by 1,001 meters.

We are concerned that EPA's draft permit is overly broad in its geographic scope as well as temporal scope and should not address the possibility of any future speculative well locations nor those not specifically requested by Shell at this time. The Permit: R10OCS-AK-07-01 needs to provide the specific drilling locations instead of stating "any Drill Site within a Beaufort Sea outer continental shelf (OCS) lease block authorized by the United States Minerals Management Service (MMS) within 25 miles of the State of Alaska's seaward boundary." The permit also needs to provide an expiration date.

EPA has improperly disregarded the effect of possible simultaneous operations by the *Frontier Discoverer*. Shell requested that EPA suspend, not withdraw the application for a minor source permit for the *Frontier Discoverer*. Under the Exploration Plan submitted to Minerals Management Service, both of these ships would be operating simultaneously and potentially proximate to one another. Thus, EPA must account for this possibility in the Revised Proposed Permit. At the very least, however, EPA should include a permit condition that Shell shall not operate two drill ships in the Beaufort Sea simultaneously or that the permit will be withdrawn and revised in a process subject to public review and comment in the event that Shell later proposes to drill with two ships simultaneously.

Furthermore, at Sakhalin Island an exploration rig that had originally drilled in the Beaufort Sea was converted to a production rig – could this happen here in the Beaufort Sea and begin to set in motion long term use of poor control technology through this issuance of a "minor" permit? We continue to be concerned that a long-term major air pollution source may be introduced to the pristine Beaufort Sea waters through an incremental, piecemeal process.

We request that EPA remove the language in section 3.3-3.4 (p.6) of the Permit which allows a modification of the permit without a formal permit revision for use of different support vessels which could have different air emissions. We are concerned that Shell persisted in convincing EPA to include this language authorizing a short-circuited procedure to change its pollution sources and "authorizing alternative support vessels" and having the option under the permit to use "various combinations of icebreakers with the *Kulluk*, possibly changing year to year."⁷ This errs in cutting the public out of a necessary review process for situations that are not anticipated today. The icebreaking vessels are a necessary part of the *Kulluk* operation and the EPA's Statement of Basis and environmental impact evaluation needs to cover the emissions sources which this permit will cover, and contain the actual information on emissions that the public can evaluate.

We also note that significant air emissions may be overlooked from *Kulluk* Support Vessels because they are only subject to regulation according to the permit when "the vessel is physically attached to the *Kulluk* at a Drill Site." (Sec. 5.2, p.8). All emissions from the *Kulluk* and its support vessels within 25 miles of a drill site must be included as emissions for purposes of EPA's major source determination and should be subject to regulation as "direct emissions from the OCS source." 42 U.S.C. § 7627(a)(4)(C).

⁷ Shell Offshore Inc. January 8, 2008 Letter to Mr. Daniel L. Meyer, EPA from Susan Childs re: Modified Air Impact Analysis – Shell *Kulluk* Minor Permit R10OCS-AK-07-01.

Shell states that “one of the two *Kulluk* propulsion engines emissions are not modeled, because there is no plan that includes them operating during drilling.” See Shell Offshore, Inc., January 8, 2008, *Kulluk* Beaufort Sea Exploratory Drilling Program, Modified Impacts Analysis Report, Approval to Construct No. R10OCS-AK-07-01, p. 3. However, this exclusion may ignore emissions during important kinds of operations, especially since the *Kulluk* has not been operated for drilling since the two new Thrustmaster Caterpillar engines were added to the vessel (Oil & Gas Journal, October 2007, Shell Alaska readies ice-class drilling units for Beaufort Sea). Furthermore, if the propulsion engines are holding the rig in place, and are idling even at the Drill Site, it appears that these emissions may not be considered a Source Activity, “the idling of a propulsion engine is not an OCS Source Activity.” (see Sec. 1.6, Statement of Basis – Permit No. R10-OCS-AK-07-01 (Revised), p. 17).

While EPA asked two questions of Shell regarding Critical Curtailment operations, (Questions #8 and #10; See Attachment 7, Patton Boggs, November 15, 2007, p. 9-13) it did not ask Shell to provide historical information regarding such curtailments in the Beaufort Sea region as well as using the *Kulluk* in the past, nor require an estimate of how much time of additional rig operations could be entailed, if this would change the way the *Kulluk*'s equipment would be used. For example, EPA should evaluate the air emissions that may be produced during periods of critical curtailment when *Kulluk* drilling may need to be suspended and/or possibly moved off site and returned due to ice, wind, or other conditions which exceed the operating limitations of the drilling technology, and evaluate whether during such risky operations both propulsion engines may be needed during those intervals to hold the vessel in place. Critical curtailments took place during drilling of past wells in the Beaufort Sea including in the area of Sivalliq (Hammerhead #1 and #2 wells), and were extensive when the *Kulluk* rig was used to drill the Belcher well, and during Shell's drilling of the Corona well east of Kuvlum, according to MMS information.⁸

Finally, if EPA persists in treating the *Kulluk* as a separate minor source at each planned well, rather than issuing a blanket permit to authorize Shell to mobilize, operate and demobilize countless minor sources indefinitely, EPA should evaluate each planned well in a separate minor source permit. In such case, EPA cannot issue a permit until a well location is identified, and it must then make an actual case-by-case determination whether such locations constitute contiguous or adjacent properties, based on the actual facts at issue.

Sulfur Dioxide, Visible Emissions and Particulates

EPA has provided lax conditions for reducing the levels of sulfur dioxide emissions, protection of clear air through opacity testing for visible emissions, and reduction of particulate pollution for PM10 and PM2.5.

⁸ Miller, P.A., D. Smith, and P.K. Miller. 1993. Oil in arctic waters: the untold story of offshore drilling in Alaska. Anchorage: Greenpeace. “Common occurrences: critical curtailment of drillships in Arctic waters” p. 74, 82. Chart derived from MMS, April 9, 1991, Letter in response to Greenpeace USA FOIA request dated October 2, 1990, Summary of Critical operations and curtailment plans implementation resulting in suspension of operations.

Minerals Management Service. 2006. Beaufort Sea Exploration Wells. http://www.mms.gov/alaska/fo/wellhistory/BS_WELLS.HTM (accessed 3-30-08).

There is an insufficient rationale for why all liquid fuels for any emission units should not be less than 0.05 by weight, as is required for selected units (K-8, K-9, K-10, K-13, and K-14) in order to reduce Sulfur Dioxide (Permit Sec. 10, p. 16) and particulate emissions (Permit Sec. 13.3, p. 19). Some of Shell's leases are only 3 miles from Barter Island and the community of Kaktovik, only 3 miles from the coast of the Arctic National Wildlife Refuge, and all of the leases are within subsistence use areas and resource habitats depended upon by North Slope communities. EPA has not considered nor analyzed the environmental impacts of the alternative of reducing environmental impact by requiring all lower sulfur fuel for the *Kulluk* and its support vessels.

The Visible Emissions Performance Test should be required at greater intervals, including these key times: within 8 hours of completion of anchoring at the Drill Site, as well as during the first 24 hours of drilling operations, and once a week during drilling operations (see Permit Sec. 12.1, p. 18). Performance tests should be required for operations at each Drill Site (the monitoring should not be waived for subsequent exploratory wells, per Permit Sec. 12.1.a., p.18), especially since subsequent drilling could take place at a location with different dispersion characteristics that affect visibility, or are closer to the shoreline, subsistence hunting, fishing, or other users, or communities. Certain factors could significantly mask deterioration in visibility (e.g. thick fog) and the operator could select those times to conduct the Performance Test, thereby skewing the results. Shell should also be required to report any visible plumes observed from the *Kulluk* source.

Conclusion

Because it cannot do so in compliance with the law, EPA should decline to issue a minor source permit to the *Kulluk*. EPA needs to comply with NEPA. Moreover, EPA should not issue a permit for exploratory drilling activities that have been enjoined by the Ninth Circuit.

We are disappointed that EPA has failed to address the major issues we outlined in this letter because of our concern that this significant new source of air pollution in the Beaufort Sea will degrade vital habitats for migrating and feeding bowhead whales, polar bear denning, feeding, and migration, migratory birds; and harm subsistence hunting and fishing grounds and human health in coastal communities.

By accepting a number of specious justifications put forward by Shell and their lawyers, EPA would allow industrial operations to proceed under minor permit rules, instead of using the more rigorous major permits which require Best Available Control Technology. We question why Shell is not willing to comply with these basic standards of the Clean Air Act and instead tries again to wiggle around them with arguments that defy common sense. Neither the MMS nor the EPA have adequately evaluated the human health impacts⁹ nor cumulative effects of air pollution including emissions of greenhouse gas emissions nor important changes caused by global climate change which may affect the modeling analyses and air pollution impacts on the human and natural environment. EPA has not addressed the disproportionate impacts of this air pollution to Alaska Native residents as required under E.O. 12898. Therefore, we request that EPA deny this

⁹ See Bureau of Land Management. 2007. Northeast National Petroleum Reserve-Alaska. Draft Supplemental IAP/EIS. http://www.blm.gov/ak/st/en/prog/planning/npra_general/ne_npra/northeast_npr-a_draft.html.

proposed permit based on the information we have presented here and in our prior comments and arguments.

Please contact Pamela A. Miller or Eric Jorgensen (Earthjustice) if you are unable to obtain copies of any of the resources referenced in this letter.

Thank you for considering these comments.

Sincerely,



Pamela A. Miller, Arctic Coordinator
Northern Alaska Environmental Center
pam@northern.org

On behalf of:

Jack Schaefer, President
Native Village of Point Hope
jschaefer@tikigaq.com

Charles M. Clusen, Director
National Parks and Alaska Projects
Natural Resources Defense Council
cclusen@nrdc.org

Whit Sheard, Alaska Program Director
Pacific Environment
WSheard@pacificenvironment.org

Faith Gemmill, Outreach Coordinator
Resisting Environmental Destruction on
Indigenous Lands (REDOIL)
Redoill@acsalaska.net

Trish Rolfe, Alaska Representative
Sierra Club
Trish@sierraclubalaska.org

Brendan Cummings
Ocean Program Director
Center for Biological Diversity
bcummings@biologicaldiversity.org

David Dickson
Western Arctic Wilderness and Oceans
Program Director
Alaska Wilderness League
david@alaskawild.org

Attachments:

Attachment 1 – 27 pp. (pdf)

Attachment 2 – MMS Unitization Public Files 1992-1999, 39 pp. (PDF)

Attachment 3- Excerpts: Mapmakers 1994, 1998; NRC 2003; Miller et al. 1993, 13 pp (PDF)