# RESPONSES TO COMMENTS

OIL AND GAS EXPLORATION FACILITIES
ON THE OUTER CONTINENTAL SHELF
AND CONTIGUOUS STATE WATERS IN THE BEAUFORT SEA, ALASKA
Permit Number: AKG282100

AND

OIL AND GAS EXPLORATION FACILITIES
ON THE OUTER CONTINENTAL SHELF IN THE
CHUKCHI SEA, ALASKA
Permit Number: AKG288100

October 2012

## Introduction

On June 26, 2011, the previous NPDES general permit, the Arctic general permit, No. AKG280000, expired. EPA is replacing the Arctic general permit with two general permits, the Beaufort and Chukchi general permits, renumbered as AKG282100 and AKG288100, respectively. EPA solicited public comments on the draft Beaufort and Chukchi general permits in the Federal Register on January 31, 2012. Notices of the draft general permits were also published in the Anchorage Daily News, the Arctic Sounder, and Petroleum News on January 30, 2012.

The public notices also served as notice of the opportunity to comment on the draft Clean Water Act (CWA) Section 401 Certification, which included an antidegradation analysis, provided to EPA by the Alaska Department of Environmental Conservation (DEC) for the Beaufort general permit on January 10, 2012.

Public meetings and hearings were held in communities on the North Slope and in Anchorage the week of March 12-16, 2012. The comment period closed on March 30, 2012. This response to comments document addresses the comments EPA received on the draft Beaufort and Chukchi general permits. DEC has responded to comments on the draft 401 certification separately.

This Response to Comments document includes EPA's responses to all comments received. In some instances, comments were directed at certain permit terms or

discussions in the Ocean Discharge Criteria Evaluations that apply to both the Beaufort and Chukchi Seas. For completeness, EPA responded to those comments for both the Beaufort and Chukchi general permits and ODCEs, where applicable. However, certain comments and responses are specific to one permit only and EPA responded as such. The reader and commenters are encouraged to review the document in its entirety and to refer to the specific relevant permit provisions for context.

## Comments Received

Comments were received by EPA from the following individuals and groups through: (1) public testimony; (2) government-to-government consultations with EPA, either in person or via teleconference; and/or (3) submittal of comment letters. For tracking purposes, the comments are organized into groups, with each assigned a commenter code.

| Commenter ID | Commenter Name | Date Received |
|---|---|---|
| | *Environmental Groups* | |
| 1-1 | The PEW Environment Group | 30 Mar 2012 |
| 1-2 | Center for Biological Diversity | 30 Mar 2012 |
| 1-3 | Oceana – Ocean Conservancy | 30 Mar 2012 |
| | *Industry and Trade Organizations* | |
| 2-1 | Statoil | 29 Mar 2012 |
| 2-2 | ConocoPhillips | 30 Mar 2012 |
| 2-3 | Shell | 30 Mar 2012 |
| 2-4 | Alaska Oil and Gas Association | 30 Mar 2012 |
| | *Tribal Governments* | |
| 3-1 | Native Village of Kivalina | 8 Mar 2012 |
| 3-2 | Native Village of Wales | 8 Mar 2012 |
| 3-3 | Inupiat Community of the Arctic Slope | 12 Mar 2012 |
| 3-4 | Native Village of Point Hope | 12 Mar 2012 |
| 3-5 | Native Village of Barrow | 13 Mar 2012 |
| 3-6 | Native Village of Nuiqsut | 14 Mar 2012 |
| 3-7 | Native Village of Kotzebue | 27 Mar 2012 |
| | *State and Local Governments* | |
| 4-1 | Neal Foster, Alaska House of Representatives | 3 Feb 2012 |
| 4-2 | Northwest Arctic Borough | 28 Mar 2012 |
| 4-3 | Alaska Department of Natural Resources | 29 Mar 2012 |
| 4-4 | North Slope Borough | 30 Mar 2012 |
| 4-5 | Alaska Department of Environmental Conservation | 4 Apr 2012 |
| | *Public and Subsistence Organizations* | |
| 5-1 | Gary Stein | 30 Jan 2012 |
| 5-2 | Jean Public | 31 Jan 2012 |
| 5-3 | Bud Leffler | 2 Feb 2012 |
| 5-4 | NoraJane Burns | 12 Mar 2012 |

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| 5-5 | Point Hope Public Meeting | 12 Mar 2012 |
| 5-6 | Doreen Lampe | 13 Mar 2012 |
| 5-7 | Barrow Public Hearing | 13 Mar 2012 |
| 5-8 | Nuiqsut Public Meeting | 14 Mar 2012 |
| 5-9 | Anchorage Public Hearing | 15 Mar 2012 |
| 5-10 | Teleconference Public Hearing (AM) | 16 Mar 2012 |
| 5-11 | Teleconference Public Hearing (PM) | 16 Mar 2012 |
| 5-12 | Kristi Frankson | 21 Mar 2012 |
| 5-13 | Danielle Verna | 29 Mar 2012 |
| 5-14 | Janet Mills | 30 Mar 2012 |
| 5-15 | Alaska Eskimo Whaling Commission | 30 Mar 2012 |
| **TOTAL** | **34** | |

## Comment Categories

EPA reviewed all the comment letters and the tribal, public, and hearing transcripts and organized them into the categories described below. The Response to Comments document includes EPA's responses to each comment as organized within the respective categories.

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| Category 1 | General Comments |
| Category 2 | ESA Consultation |
| Category 3 | Discharge Prohibitions |
| Category 4 | Zero Discharge |
| Category 5 | NOI |
| Category 6 | EMP |
| Category 7 | Compliance and Inspection |
| Category 8 | Traditional Knowledge |
| Category 9 | ODCE General Comments |
| Category 10 | ODCE Specific Comments |
| Category 11 | Dilution Modeling |
| Category 12 | Fact Sheet |
| Category 13 | Permits |
| Category 14 | Beaufort Permit |
| Category 15 | Tribal Consultation |
| Category 16 | Public Participation |
| Category 17 | Environmental Justice Analysis |
| Category 18 | NPDES Program Authorization |
| Category 19 | Opposition to Permits |
| Category 20 | Noise Disturbance |
| Category 21 | Oil Spills |
| Category 22 | Coastal Zone Management Act |
| Category 23 | Miscellaneous |

| ID | Category | Comment Summary | EPA Response |
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| 1 | General Comments | Commenter requests EPA to precisely define terms used in the general permits and fact sheet such as "area of biological concern," "sensitive or unique biological area," "sensitive biological areas and habitats," "sensitive marine environment" and "environmentally significant or sensitive areas necessary for critical stages of marine organisms" since meanings could have far-reaching implications on exploration and monitoring. | The U.S. Environmental Protection Agency (EPA) has revised the Beaufort and Chukchi general permits to consistently refer to "sensitive biological areas or habitats." For purposes of the general permits, EPA defines the phrase "sensitive biological areas or habitats" as "significant or unique biological communities, including ares of high biological productivity, diversity, or vulnerability, as well as important habitat areas for Arctic species..." |
| 2 | General Comments | You said that the permits will be finalized in October, but they are going to be drilling earlier than that? So the companies are allowed to drill before the permits are finalized? Has EPA given Shell permission to discharge? Why are we asking for comments on the Beaufort and Chukchi permits? And when does that permit expire? Is that legal? EPA must revoke permit coverage based on local concerns that have been expressed over and over again. | The 2006 Arctic National Pollutant Discharge Elimination System (NPDES) general permit for offshore oil and gas exploration expired on June 26, 2011. Prior to expiration of the Arctic general permit, EPA granted discharge authorizations to operators that meet the requirements of the permit. The Arctic general permit remains effective for permittees who received coverage under that permit and who sought to have that permit administratively extended in accordance with 40 CFR 122.6 and 122.21. EPA has reissued the Arctic general permit as two general permits for exploration discharges: the Beaufort general permit and the Chukchi general permit. The draft Beaufort and Chukchi general permits were released for public review on January 31, 2012. Since the Beaufort and Chukchi general permits were not in effect and available for the 2012 drilling season, permittees covered under the 2006 Arctic general permit may discharge under that administratively extended permit until the permit is reissued. Once the Beaufort and Chukchi general permits are effective, operators must re-apply for coverage under the reissued permits. EPA understands the local concerns associated with the exploration discharges. We heard many concerns through our discussions and consultations with the tribes, community members, and local governments during the development of the Beaufort and Chukchi general permits. EPA has addressed these concerns in the permits, consistent with our authorities under the Clean Water Act (CWA). |

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| 3 | General Comments | Are there permits for the support vessels that discharge wastewater - stationary and mobile vessels that are not anchored? How do you define the difference between a ship that is secure and stationary? Are the Coast Guard permits for the support vessels as stringent as the EPA permits? Why does EPA not have any say over what the support vessels discharge? Does this mean that we are going to be seeing the Coast Guard a lot more during the drilling season? | There are EPA-issued NPDES permits available for support vessels that discharge wastewater within the 3-mile territorial sea boundary, whether or not the vessel is stationary or anchored. Generally, EPA considers the vessel to be secure or a "stationary source" when its first anchor is set.<br><br>EPA's Vessel General Permit (VGP) applies to discharges from the normal operation of all non-recreational, non-military vessels 79 feet long or more, which discharge to waters of the United States (defined at 40 CFR 122.2) extending to the outer reach of the three-mile territorial sea (see 40 CFR 122.2 and CWA Section 502(8)). The VGP ballast water discharge provisions also apply to any non-recreational vessel less than 79 feet long or commercial fishing vessel of any size. Information on the VGP is online at: http://cfpub.epa.gov/npdes/vessels/vgpermit.cfm.<br><br>Section 312 of the CWA sets out the principal framework for domestically regulating sewage discharges from vessels, and is implemented jointly by the EPA and the U.S. Coast Guard. The CWA defines sewage as "human body wastes and the waste from toilets and other receptacles intended to receive or retain body wastes," and includes gray water discharges from commercial vessels (see 33 USC 1322(a)(10)). CWA Section 312 controls vessel sewage by regulating the equipment that treats or holds the sewage, called marine sanitation devices (MSDs) (see 33 USC 1322(a)(5)). Support vessels are required to use operable, U.S. Coast Guard certified MSDs onboard when operating in U.S. waters, including the three-mile territorial sea.<br><br>EPA and the U.S. Coast Guard jointly regulate MSDs under CWA Section 312. EPA has issued regulations setting performance standards for MSDs (the standards address fecal coliform and total suspended solids), and Coast Guard regulations govern the design, construction, certification, installation, and operation of MSDs, consistent with EPA's standards. Coast Guard requirements for MSDs are online at: http://www.uscg.mil/hq/cg5/cg5213/msd.asp.<br><br>EPA does not have information about the frequency at which the U.S. Coast Guard will visit the Beaufort and Chukchi Seas during |

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| 3 | General Comments | | drilling operations. Questions regarding the frequency of U.S. Coast Guard oversight and its presence in the Arctic should be directed to that agency. Information about Coast Guard activities in the arctic is online at: http://www.uscg.mil/d17/Arctic%20Shield%202012.asp |
| 4 | General Comments | The fact that EPA is re-issuing a permit is unusual. You are re-issuing the existing Arctic general permit that expired in 2011. EPA should start over with this process. EPA is starting the brand new process of issuing two new permits. Why is this process being created? Aren't we due the same process of law? This is not the proper manner in which permits are issued. It is not right for the EPA to reissue the general permit as two new separate general permits for separate discharges in two separate seas under a single general permit. That is improper. Are the people on the Beaufort side more different than the people on the Chukchi side? Why are the permits so different? For example, the Beaufort permit has restrictions for discharges during active bowhead whaling and on ice discharge restrictions, but none of this is required for the Chukchi permit? | The 2006 Arctic general permit for offshore oil and gas exploration expired on June 26, 2011. EPA is reissuing the Arctic general permit as two general permits: one for the Beaufort Sea and one for the Chukchi Sea. The draft Beaufort and Chukchi general permits were released by EPA for public review on January 31, 2012 and were written to meet the federal regulations governing the issuance of NPDES general permits. See Fact Sheet and Federal Register notice (77 FR 4813). EPA provided the same public comment opportunity for the draft Beaufort and Chukchi general permits and the 2006 Arctic general permit. The different terms and conditions between the Beaufort and Chukchi general permits reflect the different conditions in the two seas, and are explained in detail in the Fact Sheet. |
| 5 | General Comments | It is important to acknowledge the improvements EPA has made to the permits. We appreciate the fact that the new permits cover a smaller geographic area and provide separate coverage for the Chukchi and Beaufort Seas. Other improvements include expanded monitoring requirements, new testing requirements, cooling water monitoring requirements, prohibition of discharging test fluids and non-water based drilling fluids. You did do a lot of work in this process. You did make some changes. You did go out and look at getting some increased monitoring. | EPA appreciates the comment. |

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| 6 | General Comments | We ask that EPA both create numeric limits and restrict the total volume of discharge of muds and cuttings in the permits based on the assumed discharges in the ODCE and update the monitoring plans to ensure compliance with the numeric limits. | EPA's assumptions on the potential discharge volumes at each drill site are based on the Notices of Intent (NOIs) submitted by Shell, ConocoPhillips, and Statoil. The analyses in the Beaufort and Chukchi ODCEs include these per well discharge volumes and EPA estimates that up to 34 and 42 wells will be drilled in the Beaufort and Chukchi Seas, respectively, during the five-year terms of the general permits. The ODCEs concluded that the discharges, including water-based drilling fluids and drill cuttings, from these wells will not result in unreasonable degradation of the marine environment. As such, EPA has determined it is not necessary to restrict the volumes for each discharge. Consistent with EPA's national Effluent Limitation Guidelines (ELGs) of the Oil and Gas Extraction Point Source Category at 40 CFR Part 435, Subpart A, EPA has established effluent limits in the general permits on suspended particulate phase toxicity, and mercury and cadmium concentrations in stock barite for the discharges of drilling fluids and drill cuttings. These concentration limits ensure protection of the marine environment from unreasonable degradation. Data collected from the drilling activities during the five-year permit terms will be used for future decision-making. |

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| 7 | General Comments | Both the NSB and NWAB have historically opposed resource development off the coastlines but recognize that federal and state governments will make the final decisions in offshore resource development; both boroughs support and hereby incorporate by reference the respective NSB and NWAB offshore oil and gas development policy positions; the boroughs are jointly committed to be proactive and insist that any and all offshore resource exploration, development and production occur in a responsible manner. How can the tribe to be involved before oil production starts? We need to start collecting our own data, so we will have more leverage when we come to that point. | EPA recognizes that the Beaufort and Chukchi general permits are of great interest to the North Slope and Northwest Arctic communities. EPA takes seriously its responsibility to ensure that the public has a meaningful opportunity to participate in permitting decisions. Before and during the public comment period for the draft Beaufort and Chukchi general permits, EPA took many affirmative steps to promote and solicit public involvement by the North Slope and Northwest Arctic communities, including in-person meetings and teleconference opportunities in 2009, 2010, 2011, and 2012. EPA intends to continue communication and coordination with North Slope and Northwest Arctic communities during implementation of the Beaufort and Chukchi general permits.<br><br>EPA will post all Notice of Intent (NOI) documentation, Environmental Monitoring Program plans of study and reports, environmental studies data, and data from discharge monitoring reports submitted by permittees and final EPA general permit decisions, authorizations, and analyses on the Region 10 website. These documents will be available to the public.<br><br>The Beaufort and Chukchi general permits authorize wastewater discharges from exploration activities only, provided the permittees meet all terms and conditions of the permits. The general permits do not authorize discharges from oil and gas development and production facilities. Any future development and production discharge permits must undergo a public process, including National Environmental Policy Act (NEPA) review for EPA-issued permits in the Outer Continental Shelf (OCS).<br><br>A development facility is a fixed or mobile structure that is engaged in the drilling of productive wells; and a production facility is a fixed or mobile structure that is engaged either in well completion or in recovery of hydrocarbons from producing geologic formations. The Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) have review and approval authority for leasing and drilling activities, permitting and inspections of oil and gas operations in the OCS. BOEM will conduct a NEPA review to evaluate the potential |

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| 7 | General Comments | | environmental effects of these actions. The NEPA process includes opportunities for public participation.<br><br>Development and production activities in the Chukchi Sea are not likely to occur within the five-year term of the general permits (i.e. 2012-2017). Even if one or more reservoirs are discovered over the next few years, the infrastructure currently does not exist to transfer the oil to shore and connect to the Trans-Alaska Pipeline System (TAPS) in Prudhoe Bay. |
| 8 | General Comments | Can the permit terms be shortened? We ask that the permits be limited to three years so that EPA can collect and review the monitoring data on any discharges that are permitted in light of the agency's failure to preserve monitoring data from past wells that were drilled in the Arctic. GPs limited to three years are also appropriate because of the difficulty in estimating how many wells may be drilled beyond three years, the need for an updated literature review, and the need for updated analyses using new information. The general permit time period should be shorter given the rapidly changing conditions, such as global warming. It is difficult to predict the conditions of the ocean from year to year and what is happening in the Arctic. | CWA regulations require that NPDES permits "shall be effective for a fixed term not to exceed 5 years." Given the time and resources necessary to develop the Beaufort and Chukchi general permits for offshore oil and gas exploration, EPA chose to propose general permits that will be effective for 5 years from the date the permits become final and effective. EPA has the discretion to revoke coverage under the general permits where we determine that the factors enumerated under 40 CFR 122.28(b)(3) are satisfied. In addition, EPA is authorized to modify the general permit coverages and the terms of the Beaufort and Chukchi general permits, specific to individual operators, if we determine that continued discharges may cause unreasonable degradation of the marine environment. These procedural mechanisms provide EPA with the ability to react to new data or unanticipated circumstances as appropriate or necessary during the 5 year permit terms. |
| 9 | General Comments | The ELGs in Part 435 have not been revised in several years even though technology for offshore oil and gas operation has greatly improved. A new analysis of effluent limitation guidelines is necessary for this source category or at least the Arctic. Old policies need to be updated. Commenter supports EPA's decision to prohibit synthetic-based drilling fluids and cuttings, as well as cuttings associated with oil-based fluids, despite the ELGs. | The ELGs development process includes a broad evaluation of the characteristics of industry discharges, standard industry practices, and economics. EPA's Office of Science and Technology is responsible for administering Section 304 of the CWA. EPA Region 10 does not have the discretion to initiate revisions or adoption of new ELGs under 40 CFR Part 435. Requests for review of ELGs must be submitted to the EPA Administrator through a formal petition. See CWA sections 301(d), 304(b), 304(g)(1), 306(b)(1)(B). |

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| 10 | General Comments | The map showing the Chukchi Sea oil and gas leases misrepresents the delineation of the relatively shallow area called "Hanna Shoal." The delineation significantly deviates from all previous representations of the shoal in federal NEPA documents and peer-reviewed literature. Request EPA remove the Hanna Shoal boundary entirely from the map. | EPA agrees with the commenter that the map depicting the Chukchi Area of Coverage in the draft ODCE and general permit does not accurately represent the location of the “Hanna Shoal.” EPA will make the corrections to the map in the final documents; however, we will not remove the Hanna Shoal boundary from the Chukchi Area of Coverage. |
| 11 | General Comments | Industrial waste creates fear that food will be tainted, which could create significant threats to the people. The commenter requests EPA for an explanation on how it will address concerns over food tainting in the communities that includes more than incomplete western science and the promise of future monitoring of ocean discharges. The environmental document says EPA "acknowledges the importance of clearly articulating the potential risks associated with oil and gas exploration. EPA recognizes that even the perception of contamination can produce an adverse effect by causing hunters to avoid harm to particular species from particular areas." The EJ analysis must address ways to mitigate the effects of real or perceived food tainting as a result of the discharges or conclude that an adverse, disproportionate impact will result. We depend on the ocean for sustenance. It is very important that none of the pollutants will contaminate our sources of food, such as clams. | Please see RTC#118. EPA revised the Environmental Justice (EJ) Analysis to further explain the potential for subsistence foods to be contaminated, including the proximity of food sources, to potential discharge areas. The EJ Analysis also explains that the agency will monitor the discharges closely, share discharge and environmental monitoring data with the communities, and revoke or modify coverage for specific operators under the general permits at any time if, on the basis of any new data, EPA determines that continued discharges may cause unreasonable degradation of the marine environment.<br><br>EPA will also request the Agency for Toxics Substances and Disease Registry (ATSDR) review the data from the environmental monitoring reports to determine the potential risks associated with exploration discharges on the communities that rely on marine resources for subsistence. |

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| 12 | General Comments | The primary concern relates to potential negative impacts to the ecosystem, which supports our communities through a rich variety of subsistence resources, from new discharges from oil and gas operations. We depend on marine mammals, fish, and birds that migrate through our areas covered by the proposed general permits to support our economy, culture, and communities. The impacts are not limited to one species, but the entire whole food chain, the whole ecosystem. What is a safe limit for the discharges? How are the discharge standards determined to protect human health and the environment? There are no guarantees that the environment would not be impacted. The cuttings materials could be highly radioactive. EPA has not provided any scientific evidence or human toxicological data to support the safety of increasing the amount of toxins in the subsistence food sources by introducing additional heavy metals into the Chukchi Sea/Beaufort Sea. It would not be sound scientific practice to introduce such a high volume of discharge, particularly harmful toxins, into the marine environment without understanding the site-specific impact on endangered species, subsistence foods, marine animals and humans. | EPA has evaluated the potential effects from exploration activity discharges in the Beaufort and Chukchi Seas and determined that they will not result in unreasonable degradation of the marine environment, including protection of marine resources and human health. The Beaufort and Chukchi general permits require an extensive Environmental Monitoring Program (EMP) to be conducted at each drill site before (Phase I), during (Phase II), and after (Phases III and IV) the drilling activity to evaluate evaluate potential impacts on water, sediment and biological quality associated with the authorized discharges. The data will be used to ensure that the discharges will not result in unreasonable degradation. Additionally, each discharge waste stream will be subject to effluent limitations restricting the nature (e.g., concentrations, narrative conditions) of the discharge or monitoring requirements to collect effluent data for future decision-making. By limiting the concentrations of indicator metals, such as mercury and cadmium in stock barite associated with drilling fluids and drill cuttings (Discharge 001), EPA, through the Development Document for the Offshore ELGs, has determined that the discharges would be protective of human health and the environment. See EPA-821-R-93-003, January 1993.<br><br>Futhermore, the agencies responsible for protecting endangered species, such as polar bears and bowhead whales, the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), respectively, have concurred with EPA's determinations that the discharges will not adversely affect listed species. Please see RTC#23. |

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| 13 | General Comments | Recommend EPA require two complete set of all records including samples, measurements, plans, procedures, treatment and monitoring data to be provided to EPA, and that the operator be required to maintain its records until EPA confirms it has complete electronic set of records for its archives. Historical baseline data will be critical in the future to thoroughly examine any future impacts. Commenter recommends that permit records be kept electronically for at least 20 years, and not be destroyed until EPA and ADEC confirm that they have a complete set of records available. EPA's lack of data on the 36 exploration wells that have been drilled in the Beaufort and Chukchi Seas has been a serious detriment to preparing this permit renewal. | EPA has determined that the permittee's submission of two complete sets of records is not necessary because adequate retention requirements exist in the Beaufort and Chukchi general permits. Under Section III.F., Retention of Records, the permittee is required to retain records for a period of at least five years from the date of the sample, measurement, report, or application. EPA may extend this retention period at any time. Under Section VI.C., Duty to Provide Information, the permittee must furnish EPA copies of records retained for the general permit. Under EPA's record retention practices, permit records are generally retained for ten (10) years and discharge monitoring reports (DMRs) are retained for five (5) years. EPA has the discretion to retain records for longer time periods. EPA is currently developing its electronic discharge monitoring reports submittal and retention procedures and will consider retaining the records for up to 20 years. EPA agrees with the commenter that historical baseline data should be retained for future permit proceedings.<br><br>Finally, EPA disagrees with the commenter that lack of data from historical test wells has been detrimental to development of the Beaufort and Chukchi general permits. In fact, the general permits contain many improvements from previous permits issued by EPA for discharges from oil and gas exploration to the Arctic. A few examples include adding a temperature monitoring requirement for the non-contact cooling water discharges, establishing a no discharge restriction during fall bowhead hunting activities by Nuiqsut and Kaktovik, and requiring collection of environmental monitoring data before, during, and after exploration drilling. These new requirements did not exist in recent NPDES permits for the Arctic. |

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| 14 | General Comments | Recommend EPA revise the permits to require applicants to justify their chemical selection as lowest impact, best technically feasible and commercially available alternatives. Recommend the NOIs document an examination of physical treatment alternatives, such as UV, ozone, installation of cathodic protection systems or other methods to treat the wastes to reduce chemical additive concentrations or volumes. Alternative, we ask that EPA either: (1) create numeric limits on the amount of these chemicals that can be discharge; or (2) permit only use of chemicals that meet the protective "green" standards employed by Norway. It is imperative that EPA works with its toxicologists to create a list of approved chemical additives that can be used in the Arctic instead of allowing the use (and discharge) of any chemicals. Commenter requests the BMP also include: (1) an analysis of the chemicals selected and toxicological data and analysis to show that the applicant selected the lowest impact chemical; (2) an analysis of vessel collection and waste transportation alternatives; and (3) an analysis of any new technology (new equipment, procedures) that would reduce impacts. | EPA has revised the NOI form for the Beaufort and Chukchi general permits to require that permittees disclose each chemical to be used during the drilling process. Additionally, the use of chemicals that meet Norway's "green" classification must be identified in the NOIs.<br><br>Please note Sections II.A.11. and II.A.12. of the Beaufort and Chukchi general permits, respectively, contain limitations for chemical additive use, including an inventory of each chemical used for all discharge waste streams. Additionally, Whole Effluent Toxicity (WET) testing is required if applicable discharges fail the rapid toxity tests, or once per well, if the volumes exceed 10,000 gallons per day in a 24-hour period and if chemicals are added to the system. Finally, the Best Management Plan (BMP) requirements established by the general permits provide reasonable environmental protection measures and prevention of unnecessary use of chemicals. All chemical used during the exploration drilling activity is required to be inventoried, and each additive's concentration and limitations determinations documented, and submitted with the End-of-Well Report.<br><br>Please also see RTC#15. |

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| 15 | Permits | The reason noncontact cooling water is such a concern is because of great volumes of heated water and related biocides that are discharged. EPA should require the installation and use of an impressed current system or improved cathodic protection systems, which protects the cooling water structure from corrosion but also reduces bacterial growth, thus minimizing the need for use of biocides. We suggest that EPA either add further permit conditions or require as part of the BMP plan that such a system or other similar technology be employed. Furthermore, commenter requests that steps are taken to minimize the use of biocides and other chemicals in non-contact cooling water. Commenter requests that EPA's analysis be updated to include an examination of the biocides and other chemicals likely to be contained in the cooling water discharge based on actual Beaufort Sea exploration activity and chemical use, or based on planned use for the Chukchi Sea. Table 10 of the proposed permit requires pH, total volume, temperature, and WET testing, but does not establish any effluent limitations. Commenter requests that effluent limitations be included in Table 10 for these effluent parameters. [same comment for Beaufort-Table 11] More specifically for temperature monitoring, commenter requests that EPA either use its 1986 EPA Marine Water Quality Criteria (10C threshold) as a limit, or explain why this limit is no longer appropriate and the basis for any new temperate limit proposed. Actual temperature monitoring data will aid EPA, industry, and stakeholders to validate thermal modeling assumptions and/or recommend modifications for future permitting actions. Commenter requests that EPA revise the proposed permit to clearly state that cooling water waste, that exceeds the limits established in Table 10, must be collected and transported to a treatment and disposal facility. | EPA's CWA authority includes applying effluent limitations to the discharges, rather than establishing specific treatment technology requirements in NPDES permits. However, consistent with the VGP, EPA has included an additional BMP requirement under the Beaufort and Chukchi general permits, Section IV.B.5.e.13., that states, "Maintain proper cathodic protection to prevent the corrosion of the ship's hull."<br><br>With respect to the use of biocides, Section II.A.11. and II.A.12. of the Beaufort and Chukchi general permits, respectively, authorize the use of chemical additives (including biocides, corrosion inhibiters, etc...). However, the use of these chemicals is limited to either the (1) maximum concentration and any other conditions specified in the EPA product registration labeling if the chemical is an EPA registered product; or (2) the maximum manufacturer's recommended concentration. Furthermore, the EMP (Section II.A.13.n.) requires WET testing if the applicable discharges fail the rapid toxicity test, or once per well, if the flows exceed 10,000 gallons in 24 hours, and if there is a use of chemicals. This toxicity monitoring will ensure discharges do not cause an unreasonable degradation of the marine environment.<br><br>Temperature monitoring is a new requirement of the general permits and is needed to accurately assess the affect of temperature on local conditions, compliance with Alaska Water Quality Standards (AWQS), and adherence to Federal Water Quality Criteria (CWA Sections 308 and 403(c)). Similarly, total volume discharge data and WET results will be used to validate modeling assumptions and surveillance monitoring to determine potential toxicity of the effluent, respectively. EPA does not believe establishing limitations for temperature, total volume, and WET are justifiable at this time as discharge data does not exist to determine reasonable potential to exceed AWQS. As such, EPA has not included a requirement that the discharges must be collected and disposed offsite if the limits are exceeded, as requested by the commenter.<br><br>Finally, EPA has retained the pH limit of 6.5-8.5 standard units for non-contact cooling water (Discharge 009) if chemicals are added |

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| 15 | Permits | | to the system. The addition of chemicals to this large volume waste stream can cause changes to the pH in the receiving environment. However, if chemicals are not added to the system, then the requirement to monitor and report the pH values in the discharge applies. The pH limit is consistent with the recommended pH range in the national water quality criteria under Section 304(a) of the CWA. |
| 16 | General Comments | Request EPA clarify what constitutes an individual "well" in relation to sidetracking. The commenter's definition of a new well is determined by a physical relocation of the drill rig to a new drill site, whereas sidetracking activities are generally considered activities associated with a single well. This is due to the fact that sidetracks are drilled from the same borehole. The definition of a sidetrack well should be clarified in the final permits to explicitly state that a sidetrack well is not a new well. | EPA agrees with the commenter that a sidetrack well should not be considered a new well with respect to the number of wells allowed per lease block. EPA has revised the definition of sidetrack in the general permits to say, “Sidetrack means drilling subsequent wells from the original borehole. A sidetrack well is not considered a new well within the five wells per lease block limitation.” EPA has also provided the additional clarification in Section II.A.15 in the Beaufort and Chukchi general permits. |
| 17 | General Comments | The Beaufort permit authorizing exploration discharges year-round is a big concern. It is not a good idea, considering the extreme conditions as well as the migration routes of multiple species of fish and marine mammals that both the ecosystem and the people -- indigenous peoples and tribal members depend upon. | The Beaufort general permit incorporates terms and conditions that take into account various seasons. The Beaufort general permit retains the seasonal restrictions from the expired 2006 Arctic general permit and the Chukchi general permit includes revised restrictions. These restrictions are necessary to ensure that the discharge of water-based drilling fluids and drill cuttings (Discharge 001) does not cause unreasonable degradation to the marine environment. For example, the Beaufort general permits include discharge restrictions for open water, unstable, or broken ice conditions, and during fall bowhead whale hunting activities by Nuiqsut and Kaktovik. Additionally, the Beaufort general permit restrictions also reflect the Alaska Department of Environmental Conservation (DEC) Zone of Deposit (ZOD) requirements for state waters. Finally, the Beaufort general permit includes a provision to restrict the discharges of drilling fluids and drill cuttings (Discharge 001), and sanitary (Discharge 003) and domestic wastes (Discharge 004) onto stable ice. Operators wishing to discharge these waste streams must submit an alternatives disposal analysis with the NOI. |

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| 18 | General Comments | Discharge limits and monitoring must include the surface water, the water COLUMN, and the water at the sea floor in order to ensure contamination of the environment is limited. | Discharge limits and monitoring requirements are established for compliance at the discharge point. However, the general pemits require an EMP at each drill site, including data collection of the receiving water and sediment before, during, and after drilling activities. Additionally, if discharges of water-based drilling fluids and drill cuttings are authorized, the permittee must monitor for metals, organics, turbidity, and total suspended solids throughout the discharge-affected water column and discharge plume. |
| 19 | General Comments | Will the general permits require monitoring of marine mammals migration? Bearded seals are very important; we would like to be informed of drilling activities so they won't affect our hunting. Beluga migration and sea patterns have changed since the Red Dog Mine activities began. | The Beaufort and Chukchi general permits require observations of potential marine mammal deflection, during periods of discharge of water-based drilling fluids and drill cuttings (Discharge 001) and non-contact cooling water (Discharge 009). The general permits, however, do not require monitoring of marine mammal migration. The federal agencies responsible for protection of these species require that type of information, including observations of marine mammals during vessel movement and drilling activities pursuant to the respective Incidental Take Authorizations (ITAs). EPA will post NOIs received from operators as well as discharge data and environmental monitoring reports from the drilling activities on the EPA Region 10 website. |
| 20 | General Comments | What is the economic viability of exploratory drilling for offshore oil and gas development in areas that is one of the last pristine ecosystems left on the planet, and additionally one of the last places in the world where there is a culture of people that are still able to live as free humans on this planet, being allowed to continue their ways of subsistence. | Economic investment decisions or determinations regarding the viability of exploratory drilling are not directly within EPA's NPDES permitting authority under the Clean Water Act. EPA does not lease lands or waters to oil and gas facilities. The U.S. Department of Interior (DOI) has the jurisdiction to lease those lands for purposes of oil and gas exploration under the Outer Continental Shelf Lands Act (OCSLA). |

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| 21 | General Comments | Development in the Arctic is essential to any effort to reduce our dependence on foreign sources of oil. Alaska's OCS holds 27 billion bbl and 132 trillion cf natural gas. Development will bring an annual average of 54,000 new jobs over 50 years, $145 billion in payroll throughout the U.S., and $193 billion revenues to state, local and federal governments. Alaska's OCS resources are vital to the Trans-Alaska Pipeline system - critical national infrastructure - which is at one-third capacity. Experience has shown that oil and gas development and environmental protection are not mutually exclusive. | Thank you for your comment. EPA has an obligation to ensure that the discharges, authorized under the Beaufort and Chukchi general permits, contain the limitations and restrictions that will protect the marine environment from unreasonable degradation. |
| 22 | General Comments | The oil companies are making billions in profits; the Federal government makes billions from leases on the continental shelf. But the villages have to deal with the environmental and heath impacts. We don't see a dime out of it. We don't benefit from this at all. | EPA does not lease lands or waters for oil and gas exploration, development and production nor does EPA collect royalties from exploration, development or production activities. EPA is responsible for the administration of the Clean Water Act, which includes EPA's authority to issue NPDES permits to offshore oil and gas facilities. See e.g., 33 USC 1342, and 40 CFR. 122.28(c)(1). Please see RTC #20. |

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| 23 | General Comments | Please review the MMPA, 16 U.S.C. 1362 (13). Also 16 U.S.C. 1371 (b). Section 16 U.S.C. 1371(a)(5)(A)(i)(I), "Will not have an unmitigable adverse impact on the availability of such species or stock for taking for subsistence uses." MMPA defines "take" as harass, hunt, capture, or kill, or attempt to harass, threaten, capture or kill any marine mammal. 16 U.S.C. 1362, 13. MMPA specifically allows taking marine mammals by Alaska Natives for subsistence purposes. An Alaska Native in coastal Alaska may taken marine mammals for subsistence purposes. 16 U.S.C.1371(b). [Subsistence uses] are being seriously jeopardized because we're under a quota system. That path where you're going to be allowing them to discharge drilling muds and all those other chemicals into are on the migration feeding route of the bowhead whale, that we have a quota on for 35 years. That will have an adverse impact. | Sections 101(a)(5)(A) and (D) of the MMPA (16 USC § 1371 et seq.) direct the Secretaries of Commerce and Interior to allow, upon request, the incidental, but not intentional taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region, if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of proposed authorization is provided to the public for review. Authorization for incidental takings shall be granted if: (1) the NMFS or the USFWS, respectively, find that the taking will have a negligible impact on the species or stock(s); (2) the taking will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant); and (3) the permissible methods of taking and requirements pertaining to the mitigation, monitoring, and reporting of such takings are set forth.<br><br>EPA has an obligation to consult with NMFS and the USFWS, under Section 7 of the Endangered Species Act (ESA), to ensure that discharges from the Beaufort and Chukchi general permit will not likely jeopardize the continued existence of any species listed under ESA, including bowhead whales, or result in the destruction or adverse modification of critical habitat. EPA developed Biological Evaluations (BEs) for the Beaufort and Chukchi general permits to assess the potential impacts and concluded that the discharges “may affect, but are not likely to adversely affect” ESA listed, candidate, and proposed species, or their designated critical habitat areas. EPA received concurrence from both NMFS and USFWS on our determinations for the species under their jurisdictions. See also RTC#24. |

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| 24 | ESA Consultation | The Endangered Species Act was passed in 1973 to protect plant and animal species that are at risk of becoming extinct. Species that receive protection under the ESA are classified as endangered or threatened, depending on their status, how many are left in the wild, and how severely their survival is threatened. ESA specifically allows the taking of protected species by Alaska Natives for subsistence purposes, provided the taking is primarily for subsistence purposes and is not done in a wasteful manner. If you recall during our government to government meetings [ICAS], we had one board member that was sitting there sewing a seal skin purse. This is threatening our way of life and our economic opportunities. This discharge into the Arctic Ocean has not been reviewing the laws that are in place to protect us. How are the listed species such as the polar bears and bowhead whales protected? There is a need for a timeout period for the species to recover. | As discussed in RTC#23, ESA requires federal agencies to consult with the USFWS and NMFS if the federal agency's actions could affect the continued existence of threatened and endangered species or result in the destruction or adverse modification of critical habitat designated for those species. On February 2, 2012, EPA sent the BEs initiating the consultation process and requested concurrence from USFWS and NMFS that the reissuance of the general permits "may affect, but are not likely to adverse affect" federally listed threatened, endangered or proposed species under their jurisdiction. On March 30, 2012 and April 11, 2012, EPA received concurrences from USFWS and NMFS, respectively, that exploration discharges authorized by the general permits are not likely to adversely affect endangered, threatened, and candidate and proposed species and designated critical habitat areas. |
| 25 | ESA Consultation | How does the ESA consultation process works? Does EPA have oversight of NMFS? In the past, NMFS supervisors forced their scientists to alter their determinations in their reports in dealing with the type of impacts to indicate less of an impact. If NMFS concurs with your conclusions and you find out that they are being dishonest, what type of recourse do you have? | ESA provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead federal agencies for implementing ESA are the USFWS and NMFS. The law requires federal agencies, such as EPA, in consultation with USFWS and NMFS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a "taking" of any listed species of endangered fish or wildlife. Likewise, import, export, interstate, and foreign commerce of listed species are all generally prohibited. In the case of EPA's action of reissuing the Beaufort and Chukchi general permits, EPA consulted with, and obtained letters of concurrence from both USFWS and NMFS, that the action is not likely to adversely affect the ESA species and their critical habitats. EPA does not have oversight of these federal agencies and relies on their regulatory jurisdiction and expertise to ensure protection of the ESA species and their designated critical habitat areas. See also RTC#24. |

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| 26 | ESA Consultation | EPA's determination that the permits may affect, but are not likely to adversely affect violates ESA. The threshold for an action triggering the formal consultation requirements is very low, and any possible effect will trigger formal consultation requirements. One exception is if the agency obtains concurrences for its findings. However, even if EPA obtained concurrences, the BEs still would be arbitrary because the effects on listed species will be significant, and not discountable, insignificant, or beneficial. EPA must not only consider the impacts of the discharges, but it must also consider all impacts of the permitted OCS activities, as such activities could not occur in the absence of NPDES permits from EPA. The species in the Beaufort and Chukchi seas protected under ESA include the bowhead whale, the fin whale, the humpback whale, the polar bear, the spectacled eider, the Stellar's eider, the beaded seal, and the ringed seal. | As discussed in RTC#23, 24, and 25, EPA received ESA concurrence letters from both the USFWS and NMFS on March 30, 2012, and April 11, 2012, respectively. USFWS and NMFS concurred with EPA's determinations that the discharges from exploration activities in the Beaufort and Chukchi Seas, as authorized by the general permits, may affect, but are not likely to adversely affect, the following listed, candidate, and proposed species and designated critical habitats: bowhead, fin, humpback whales, bearded and ringed seals, spectacled and Steller's eiders, Pacific walrus, Yellow-billed loons, and polar bears. The ESA Consultation Handbook can be downloaded from the following website: http://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf |
| 27 | Discharge Prohibitions | The Chukchi GP does not prohibit the discharge of drilling fluids and cuttings during active bowhead whale hunting activities. This differentiation between the two permits is well-grounded because drilling activities in the Chukchi Sea are planned to occur 80 miles or more offshore, where bowhead whaling does not occur. Commenter supports this approach. | Thank you for your comment. |

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| 28 | Discharge Prohibitions | Beaufort permit does not allow discharges during active bowhead whaling. But there is a loophole because it's allowed based on the operator's feasibility analysis. What does that mean? Discharges should not be allowed to occur in the migratory path of the whale. If an operator's feasibility analysis says it's not going to hurt the whales, but they have never done it before, it's just a feasibility study? The criteria that will be used by the Director or DEC to allow discharge to stable ice (via approval of an alternatives analysis) or during whaling is unclear. The permit provides the authority to allow these exemptions, but does not explain to the public how the decision will be made, and how it will protect water quality and subsistence resource interests. | The ODCE for the Beaufort general permit concluded that the exploration discharges would not cause unreasonable degradation. This conclusion is based, in part, on EPA's decision to prohibit the discharges of water-based drilling fluids and drill cuttings (Discharge 001) during fall bowhead hunting activities in the Beaufort Sea. EPA has removed the feasibility analysis component of this prohibition and provided clarification that the Beaufort general permit requires ceasing of Discharge 001 beginning on August 25 until the close of the Kaktovik and Nuiqsut fall bowhead whale hunts, as determined by coordination with the respective Whaling Captains Associations. This timing restriction is consistent with subsistence mitigation measures established by NMFS in its ITA to ensure the drilling activities would not have an unmitigable adverse impact on fall bowhead whale hunts by Nuiqsut and Kaktovik. |
| 29 | Discharge Prohibitions | Commenters support this provision, however, EPA should avoid misunderstandings by interpreting the phrase, "active bowhead whale hunt" clearly and broadly. It must restrict discharges at the beginning of the fall migration. Traditional knowledge shows that once whale deflects the other whales will follow so halting discharges only once subsistence hunting commences is too late. The condition can be lifted only after the Beaufort Sea villages have finished their subsistence hunts. Subsistence hunting of bowhead whales during the fall in the Beaufort Sea takes place broadly between August 15 and mid- to late-October, or can be established during more narrow timeframes by EPA working with local communities to establish Communication Centers that alert industry and the agency when the migration begins and when subsistence hunting is done. | Please see RTC#28. EPA has revised the Beaufort general permit to incorporate the ITA mitigation measure established by NMFS requiring ceasing of Discharge 001 starting on August 25, until the completion of whale hunting activities by Nuiqsut and Kaktovik. |

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| 30 | Discharge Prohibitions | We ask that the permit halt the discharge of noncontact cooling water (010) and related chemicals, sanitary and domestic wastes (003 and 004), and bilge water (011) during subsistence hunting of bowhead whales in the Beaufort Sea because these waste streams risk deflecting bowhead whales from their migratory paths. | EPA concluded that non-contact cooling water will not result in an unreasonable degradation to the marine environment due to the permit restrictions and monitoring requirements placed on this discharge and because temperature is expected to dissipate and achieve complete mixing within 100 meters of the discharge location. See also RTC#15.<br><br>Sanitary and domestic wastes and bilge water discharges, which are relatively small in volume, are not expected to result in unreasonable degradation of the marine environment because the Beaufort and Chukchi general permits incorporate water quality and technology-based effluent limits, which are developed to protect human health, water quality, and the receiving environment. EPA is not aware of evidence to support the conclusion that discharge of waste streams 003, 004, 009, or 011 would cause whales to divert from their migratory paths. However, EPA has included a prohibition on the discharge of drilling fluids and drill cuttings during whaling by Nuiqsut and Katovik. EPA is also requiring observations of potential marine mammal deflection during periods of discharge of water-based drilling fluids and drill cuttings (Discharge 001) and non-contact cooling water (Discharge 009). In addition, EPA is requiring collection of environmental data before, during, and after exploration activities to inform future decisions. |

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| 31 | Discharge Prohibitions | Shell has made voluntary agreements to capture muds and cuttings in Camden Bay and to honor blackout days by ceasing operations and moving out of Camden Bay during the Nuiqsut and Kaktovik fall bowhead whale hunt. We request that EPA include temporal (range of dates and duration) and geographic (boundary and buffer zone) detail regarding its requirements to capture discharges during whaling in the Beaufort Sea. As currently written, this permit stipulation is vague and establishes a changing, unstable restriction timeframe that can unnecessarily delay drilling operations. The term "active bowhead whaling activities" is vague, and has the potential to create confusion regarding appropriate methodologies to be used for compliance, and unnecessarily restrict offshore drilling activities by delaying or shortening the offshore drilling season. | Please see RTC#28. |

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| 32 | Discharge Prohibitions | We recommend EPA include a discharge shut-down when marine mammals are within 2 miles of the area. Marine mammals include walrus, seals, beluga whales, bowhead whales, and polar bears. Offshore oil exploration development is a significant change to the Arctic environment, particularly to habitat that is critical to the birthing, calving and raising of marine life during the spring to summer months when exploration is scheduled to operate. Seal and walrus hunting season occur from mid-June to August, September, October. | Under the MMPA, the USFWS and NMFS have the authority to grant IHAs, provided the taking is small in number, have a negligible impact on the mammals, and will not have an unmitigable adverse impact on the availability of the species for subsistence uses. The IHAs ensure that there is no potential for serious injury or mortality, or that the potential for serious injury or mortality can be negated through mitigation requirements. Exploration companies must apply for, and obtain IHAs, prior to entering the Bering Strait. The IHAs include mitigation and monitoring requirements, such as vessel speed or course alteration, aircraft fly distance, marine mammal observers, power down procedures, and subsistence mitigation measures to ensure no unmitigable adverse impact on subsistence uses of marine mammals. Please visit the following NMFS and USFWS websites for additional information regarding the ITA process. http://www.nmfs.noaa.gov/pr/permits/incidental.htm and http://alaska.fws.gov/fisheries/mmm/itr.htm<br><br>The conditions of the Beaufort and Chukchi general permits, in conjunction with the ESA consultations with the USFWS and NMFS, and the IHAs that must be obtained by the operators, ensure that there will be no unreasonable degradation to marine mammals and that the species are granted the proper protections without a discharge shutdown provision. |

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| 33 | Discharge Prohibitions | We do not support the prohibition against discharge of drilling fluids and cuttings in the Beaufort Sea during bowhead whale hunts. Requirement is extremely vague and could result in a de facto prohibition against any drilling in the Beaufort. EPA provides no scientific basis for this prohibition. Science shows release of these components is environmentally sound. It is unclear what impacts or stressors the proposed restriction is intended to avoid or mitigate. Please provide the data and information about the specific characteristics that are of concern relative to active whaling activities that are used to substantiate this restriction. The areas of bowhead movement and the associated areas of subsistence hunting have been documented. The majority of documented areas of subsistence hunting occur within 2 to 10 miles offshore and rare occurrences of activities are reported at 25 to 35 miles offshore. | Please see RTC#28. The timing restriction is consistent with mitigation measures established by NMFS in its ITA for the Beaufort Sea to ensure that the drilling activities will not cause an unmitigable adverse impact on the availability of species or stock of marine mammals for subsistence uses. EPA's adoption of this restriction ensures that any impact would occur at the lowest level practicable and the discharges will not cause disproportionate impacts to the local communities or result in unreasonable degradation of the marine environment. Furthermore, the discharge prohibition is limited to the discharge of drilling fluids and drill cuttings (Discharge 001), which should not result in a de facto prohibition against drilling in the Beaufort, as suggested by the commenter. The environmental data collection required under the Beaufort and Chukchi general permits will provide additional site-specific information regarding the potential impacts associated with the discharges. |
| 34 | Discharge Prohibitions | The final permits should clarify that the certification of discharges not being within 200 meters of another drill site does not include sidetrack wells. | As discussed in RTC #16, EPA has revised the general permits to clarify that sidetrack wells are not considered a new well, for purposes of determining the number of wells allowed per lease block. Pertaining to the requirement that a permittee provide certification that the discharge location is not within 200 meters of any other drilling site, whether or not a well is a sidetrack well is not relevant. The permittee must, in accordance with Sections I.C.6. and I.C.5. of the Beaufort and Chukchi general permits, respectively, certify in writing within 7 days prior to initiation of any discharge, that the discharge location is not within 200 meters of any other drilling site, i.e., the site of the original bore hole. |

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| 35 | Discharge Prohibitions | EPA should prohibit discharges of water-based muds and cuttings at any exploration well within 60 miles of shore in the Chukchi and Beaufort Seas, as well as Hanna Shoal. This would proactively protect areas that are ecologically important and help sustain the region's subsistence resources. | Based on EPA's analyses, given the short duration and intermittent nature of the discharges, and the prohibitions, restrictions, and requirements of the Beaufort and Chukchi general permits, the discharges authorized under the general permits will not cause unreasonable degradation of the marine environment. In addition, the permits require each operator to complete a robust environmental monitoring program to collect data to inform ongoing permit implementation, oversight activities and future permitting decisions. While a 60-mile discharge prohibition may provide additional protection to the marine environment, such a restriction is not necessary to prevent unreasonable degradation to the marine environment. |
| 36 | Discharge Prohibitions | The fact sheet (Page 34, Section II.E.1.m.) notes that the reason for excluding Discharge 014, Test Fluids, is based on the receipt of recent NOIs under the current general permit, none of which contained a request to discharge this stream. This is not a sound basis for eliminating this waste stream. New operators may apply for approval to discharge in the future. Current operators may request consideration of this discharge under the new general permit. The commenter recommends that EPA leave this discharge stream in the new general permit. | Test fluids, as defined by EPA's Development Document for the Offshore ELGs (January 1993), are discharges that would occur should hydrocarbons be located during exploratory drilling and tested for formation pressure and content. The discharge is very similar to produced water and may contain oil, grease, and residual petroleum hydrocarbons products. Since EPA did not receive requests for authorization to discharge this waste stream, it did not consider the potential impacts of the discharges in the Ocean Discharge Criteria Evaluations. (ODCEs). Consequently, the discharge of test fluids is not authorized under the Beaufort and Chukchi general permits. Operators seeking to discharge test fluids must request authorization to discharge under an individual permit and the potential impacts of the discharges on the marine environment will be evaluated at that time. |

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| 37 | Discharge Prohibitions | The commenter plans to use water-based muds for its proposed 2014 operations. Nonetheless, it does not see a reason to prohibit discharge of the dried synthetic-based mud (SBM) cuttings that are permitted in the Gulf of Mexico. These muds do not form anoxic piles. Industry should have flexibility to use SBMs in the event that a very reactive shale exists that water-based muds cannot effectively drill. If SBM cuttings discharge is prohibited, the amount of time required to drill could increase by approximately 50%. SBM cuttings are not known to cause any incremental environmental risk over water-based muds. (Fact sheet Page 37, Section II.E.2.d.). EPA's Effluent Limitation Guidelines allow the discharge of SBF-cuttings. The expectation that onshore disposal of cuttings is lower risk, and has less negative impacts than offshore discharge of non-aqueous cuttings may be unfounded. Higher risks and negative impacts may be the unintended results of additional transport of cuttings across water. There is no substantiated justification to prohibit the discharge of drill cuttings from non-aqueous drilling fluid operations. | Operators do have the flexibility to use SBMs on an as-need basis to ensure well integrity during construction, but cannot discharge the materials under the Beaufort and Chukchi general permits. The commenter is correct that discharges of cuttings associated with SBMs are generally allowable under EPA's Effluent Limitation Guidelines and are authorized to be discharged in the Gulf of Mexico, where hydrocarbon reservoirs are much deeper and wells must withstand higher formation pressures than those anticipated in the Arctic. However, since the potential impacts associated with the discharges of SBM cuttings in the Beaufort and Chukchi Seas were not evaluated in the ODCEs and potential operators have not indicated their intentions to use SBMs, EPA did not include this discharge in the final permits. Operators wishing to discharge SBMs and cuttings must apply for an individual permit and the potential impacts of SBM discharges on the marine environment will be evaluated at that time. |
| 38 | Discharge Prohibitions | We do not support the prohibition against discharge of drilling fluids and cuttings to stable ice. EPA does not provide any scientific basis for this or why discharges to ice should be treated differently than discharges to open water or unstable or broken ice. There is solid science supporting the release of these components as an environmentally sound practice in the Arctic. EPA should revisit this in the final permits based on good science, not unjustified fears. | The Fact Sheet at II.E.1.l. discusses the availability of ice drilling pads and related ice roads for winter exploratory drilling in the near shore areas of the Beaufort Sea. It is technically feasible to collect and transport drilling fluids and drill cuttings, sanitary wastes and domestic wastes to available land-based disposal facilities during the winter drilling months. Given this option, this permit provision is necessary to ensure discharges do not cause unreasonable degradation in areas where there are reduced dilution capabilities. Furthermore, as addressed in the ODCEs, the presence of drilling fluids and drill cuttings on stable ice may pose a risk of direct exposure and contact by animals, birds, and possibly humans. The Beaufort general permit retains the prohibition of those discharges from the 2006 Arctic general permit unless specifically authorized. Operators seeking to discharge to stable ice must prepare a detailed alternatives analysis demonstrating that onshore discharge locations are not available or technically feasible. The analysis must be submitted with the NOI. |

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| 39 | Discharge Prohibitions | EPA restricts discharge of muds and cuttings, sanitary waste, and domestic waste to stable ice, unless companies alternatives analysis requirement. This is a joke. EPA needs to change its policy. The permit language is very confusing. Furthermore, EPA does not explain how it decided to prohibit discharge in to stable ice but prohibit discharges to open water or broken ice. The same amount of pollutants enters the ocean in either case. | As discussed above in RTC#38, with the availability of ice roads during the winter drilling season, it is technically feasible to collect, transport, and dispose the waste streams at available onshore facilities. EPA has revised the Beaufort permit language to remove any potential confusion. EPA's rationale for this permit provision is discussed in Section II.E.1.l. of the Fact Sheet. |
| 40 | Discharge Prohibitions | We support the permit restriction of no discharge to stable ice in the Beaufort Sea. Discharges on ice will allow wildlife to come into contact with concentrated waste. Many marine mammals, birds, and terrestrial mammals use ice for feeding and hauling out on, and ice moves great distances during the course of a winter, which could carry discharges far away from the exploration sites and increase the likelihood of wildlife contact. Please clarify that activities in the Chukchi would only occur during the open water season, thus there will be no discharges on ice in the Chukchi Sea. | See RTC#38. It is EPA's understanding, based on reviews of the potential operators' Exploration Plans, that drilling activities in the Chukchi are limited to the open water season, which begins approximately on July 1 and ends on October 31. The drilling activities are also restricted to the open water season in the Chukchi by the Bureau of Ocean Energy Management (BOEM). The Chukchi ODCE includes this discussion and the general permit prohibits discharges to stable ice in the Chukchi Sea. |
| 41 | Discharge Prohibitions | What is the time frame for this limitation? Does this requirement mean that no two exploration drilling sites can be within 200 meters during the drilling season? For the duration of the 5-year permit? Ever? | The restriction that limits discharges from no more than five wells in a lease block is associated with the five-year terms of the Beaufort and Chukchi general permits. The requirement that permittees provide a certification that the discharge location is not within 200 meters of any other drilling site includes drilling sites authorized by any NPDES permit. The latter requirement ensures that 100-meter mixing zones, if authorized, do not overlap. The certification requirement is also applicable during the five-year permit term. |

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| 42 | Discharge Prohibitions | Commenter does not understand the rationale and does not see the value in limiting exploration activity to five wells per lease block. Request that this requirement be eliminated. Also, this proposed well limit needs to consider sidetracking activities within an existing well. Commenter is concerned that if a well and four sidetracks counts as "five wells," that will effectively place the remainder of the lease block (a vast area) off limits to coverage under the permits. Strongly believes that a sidetrack well should not be considered a "well" for purposes of this permit limitation. EPA can address reasonable concerns about increased activity by requiring permittees to fully disclose in the NOI plans concerning any contemplated sidetrack wells. | As discussed in RTC #16, EPA has revised the general permits to clarify that sidetrack wells are not considered a new well. As a result, the primary concern raised by the commenter has been addressed. In addition, this well restriction requirement is carried forward from the expired 2006 Arctic general permit, which contains a similar restriction, except that its limit was to no more than five wells at a single drilling site. EPA has revised the restriction to clarify EPA's intent to limit the number of wells per lease block, the sizes of which are 2,560 acres and 5,760 acres for state and federal leases, respectively, rather than at a single drilling site, to ensure unreasonable degradation does not occur. Finally, EPA has revised the NOI form to require applicants to disclose their plans to drill sidetrack wells. |
| 43 | Zero Discharge | Recommend that EPA prohibit discharge of water-based drilling fluids and associated drill cuttings. This waste stream is contaminated with metals and other chemicals that bioaccumulate and persist in the environment. Further, Arctic operators have proven it is technically feasible to collect and transport muds and cuttings to an onshore treatment and disposal facility. As has been exhibited in Norway and by Shell, exploration for offshore oil and gas can be done with little to no discharge of pollutants to the ocean. Other federal agencies (BOEM and NMFS) have deferred to the EPA and its permitting scheme to impose a zero discharge requirement on drilling operations as mitigation for impacts of oil and gas exploration in the Beaufort and Chukchi Seas. EPA should require zero discharge everywhere in both seas. If EPA believes applying Shell's near-zero discharge standard is unreasonable, it should provide a comprehensive analysis of past exploration data demonstrating why it is not technically feasible or justified to achieve a "zero" discharge standard. Commenter requests that EPA expand the discharge prohibition to all water-based muds and cuttings, using its authority similar to the approach taken to prohibit synthetic-based drilling fluids and cuttings, as well as cuttings associated with oil-based fluids. | EPA has evaluated the discharges of water-based drilling fluids and drill cuttings and determined that the discharges would not cause unreasonable degradation. The Beaufort and Chukchi general permits authorize the discharges of water-based drilling fluids and drill cuttings, provided that the discharge limitations, such as suspended particulate phase toxicity thresholds, and mercury and cadmium concentrations in stock barite, at 1mg/kg and 3mg/kg, respectively, are met. The effluent limitations are consistent with the ELGs. Given the short term nature of the discharges and the restrictions and requirements EPA has placed in the permits, a zero discharge standard for drilling fluids and drill cuttings is not needed to ensure unreasonable degradation of the marine environment does not occur.<br><br>Please note EPA's restriction on discharge of cuttings associated with SBMs in the Beaufort and Chukchi Seas is specific to the Beaufort and Chukchi general permits  Operators wishing to discharge cuttings associated with SBMs must apply for an individual permit and the potential impacts of SBM discharges on the marine environment will be evaluated at that time. |

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| 44 | Zero Discharge | The permits propose to discharge a waste stream the size of an entire community directly into its subsistence "garden." Traditional and local knowledge advises that even small quantities of human waste discharged into the ocean can adversely impact subsistence hunting success and safety. Human waste is never put into the water during migratory and hunting times, as whales will avoid those areas. Laundry soaps and all those detergents can kill fish. You discharge those kinds of soaps in the river, the fish aren't going to come in. They are that sensitive. Just like the marine mammals, the seals and whales are also sensitive. | The discharges of sanitary wastes must meet effluent limits for fecal coliform bacteria, biochemical oxygen demand (BOD), Total Suspended Solids (TSS), total residual chlorine, and pH. These limits are based on the national effluent guidelines and State of Alaska water quality standards (WQS) that are protective of beneficial uses for the state marine waters of the Beaufort Sea, such as aquaculture water supply, seafood processing water supply, industrial water supply, contact and secondary recreation, growth and propagation of fish, shellfish, other aquatic life, and wildlife, and harvesting for consumption of raw mollusks or other raw aquatic life. While the Alaska WQS are not applicable to the Chukchi area of coverage because that area does not include state waters, EPA applied the same protective standards for consistency. Furthermore, both the Beaufort and Chukchi general permits to not authorize the discharge of dispersants in response to oil or other hazardous waste spills and require development of best management practices to minimize the use of deck washdown detergents or ice prevention materials in the event they are needed to ensure worker safety.<br><br>The exploration activities and associated discharges are short term in duration, with a relatively small number of personnel onboard the vessels. EPA believes, based on the requirements of the Beaufort and Chukchi general permits discussed above, that the discharges of sanitary wastes will not result in unreasonable degradation. |

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| 45 | Zero Discharge | We are advocating that the permits eliminate drilling and operational discharges to the water, including drilling muds and cuttings (beyond the top hole), or fluids, including produced water; sanitary and domestic waste; ballast water; bilge water, as well as other proposed discharges. The discharges are threatening my ability to continue my subsistence way of life or my tribal subsistence way of life. We got Shell to agree to this and it should be applied to everyone. This approach is approach is appropriate for several reasons: (1) near-zero discharge is a demonstrated best management practice; and (2) there is insufficient information to determine unreasonable degradation; and (3) there are alternatives to on-site disposal. Compromising the pristine arctic water quality would be a significant adverse change and, in our view, would be a loss of aesthetic, recreational, scientific, or economic values, which is unreasonable in relation to the benefit derived from the discharge. Thus, it is imperative that zero discharge principals be adopted in this EPA permit to continue to protect the fragile arctic waters. | EPA understands that Shell executed an independent agreement with local stakeholders to collect and transport off site a number of waste streams, including drilling fluids and drill cuttings, sanitary waste, domestic waste, ballast water, and bilge water from the Torpedo and Sivulliq drill sites in Camden Bay. Shell's independent agreement is not enforceable under the Clean Water Act or under the Beaufort and Chukchi general permits.<br><br>Based on EPA's analyses of the potential impacts associated with the discharges, and with the restrictions and requirements established in the general permits, EPA concluded that the general permits will not result in unreasonable degradation to the marine environment. |

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| 46 | Zero Discharge | To establish permit conditions for sanitary and domestic wastes, free oil associated with discharges 001-013, ballast water, and cooling water intake structure requirements, EPA used its best professional judgment. However, the fact sheet fails to describe the "approach used to develop the limitations...and how the limitations carry out the intent and requirements of the CWA and the NPDES regulations." In exercising its judgment, the EPA is to consider the "appropriate technology...based upon all available information." Furthermore, EPA does not examine current best technology and practices used in the Beaufort Sea and how they can be applied to the Chukchi Sea. Commenter submitted detailed comments on the Beaufort GP where we explain the best technology and practices currently used by operators. These same practices should be applied to the Chukchi Sea. Ultimately, the technology is a zero discharge program. We ask that EPA prohibit discharge of 001, 003, 004, 010, and part of 013. | EPA's Development Document for the Offshore ELGs (January 1993) describes in detail the evaluations that were used to derive the technology-based controls for applicable discharges, which are incorporated into the Beaufort and Chukchi general permits (e.g. drilling fluids and cuttings, sanitary waste, domestic waste). The ELGs also include a no free oil discharge prohibition, which is incorporated in the Beaufort and Chukchi general permits. These provisions are derived from the applicable ELGs and not a best professional judgment analysis, as suggested by the commenter. The technology-based control for no free oil is also imposed by EPA on other authorized discharges (e.g. deck drainage, uncontaminated ballast water, bilge water, muds, cuttings and cement at the seafloor) that are not expressly addressed in the ELGs. A similar control (no oily sheen) is imposed on sanitary discharges. Similarly, the ELG's technology-based controls for sanitary and domestic waste are included in the general permits and are supplemented by the state of Alaska's technology-based secondary treatment standard regulations for sanitary and domestic discharges in state waters and sanitary discharges in federal waters. In summary, the imposition of the ELG controls and other state-based technology controls in the Beaufort and Chukchi general permits are consistent with the CWA and NPDES regulations and will ensure unreasonable degradation does not occur. The applicable technology-based regulatory controls do not require an absolute no-discharge provision as advocated by the commenter. EPA will continue to work with the regulated sector to develop additional best management practices as a means to promote pollution prevention opportunities such as the reduced use of chemical additives. |

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| 47 | Zero Discharge | BMPs can and have been used to control or abate a discharge. BMPs are also used to fill in the gaps where the ELGs cannot keep pace with the most current technologies, which include collecting and shipping waste off site or injecting it underground. EPA can require that facilities submitting NOIs to operate develop BMPs that: (1) adopt various methods or technologies for eliminating waste streams 001, 003, 004, 010, 011, and part of 013; or (2) meet specific management practices that including eliminating those waste streams. The current lofty objectives for the BMPs in the draft permits need to be tied to more direct goals in order for the BMPs to be used as a mechanism for protecting local subsistence communities. Finally, EPA should require the BMP plan be submitted seven days prior to the commencement of the operations so EPA can make this information publicly available. | NPDES permits generally contain effluent limitations applied to specific discharges, monitoring and reporting requirements, standard conditions, and special conditions. NPDES permits may contain supplemental controls, sometimes referred to as special conditions that may be needed to ensure the goals of the CWA are met. BMPs are one type of supplemental control. BMPs are inherently pollution prevention practices that could include operational changes, material substitutions, material conservation, and other such measures. Under the Beaufort and Chukchi general permits' BMP Plan requirements, the permittee must develop BMPs that minimize to the extent feasible the quantity and toxicity of effluent generated or discharged. Consequently, the permittee should be considering methods to reduce and potentially eliminate pollutant discharges by conducting evaluations of each facility component or system for waste reduction opportunities that could potentially minimize or eliminate pollutant discharges to the local environment. Historically, EPA has required that BMP plans be developed, but not submitted, under NPDES permits. Rather, EPA required a written confirmation of the BMP plan's completion and of its availability on-site. Because of public interest in the BMP plans for these general permits and to ensure proper implementation of pollution prevention practices, EPA has revised the NOI submittal requirements to include the BMP Plan. The permittees' BMP Plan will be made available to the public on EPA's Region 10 website. |

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| 48 | Zero Discharge | The capture of drill cuttings, muds, and fluids is a priority for local communities. These materials contain mercury and other toxins and literally smother the benthic community around the well site. We understand the difficulty of capturing the initial discharges that result from the construction of the MLC, however, we would like to work with EPA on reducing these discharges and the agency can look to new technologies and drilling methodologies to reduce the discharges to the ocean. | EPA appreciates and understands North Slope communities' interest in eliminating or minimizing the discharges of drilling fluids and drill cuttings. EPA is also interested in working with the North Slope communities, other federal, state, and local governmental entities and the regulated community to explore new methods and practices to reduce discharges or the effects of such discharges. EPA will continue to explore opportunities for cooperation with these entities going forward to develop methods to eliminate or minimize the effects of authorized discharges on the benthic community and ocean environment. EPA will review the environmental monitoring program data collected before, during, and after drilling to assess the potential chemical and physical effects from drilling activities. This data will also be shared with the public and will be used in future agency decision-making. |
| 49 | NOI | While EPA requires several important documents to be produced in the course of the permit process, this information is not available to EPA for review and approval at the time of the NOI application, nor is it subject to EPA approval. Recommend requiring the BMP, Drilling Fluid Plan, EMP, and QAPP as part of the NOI application and be subject to EPA review and approval. This will allow EPA, and the public, the opportunity to fully understand the applicant's proposed plan and justification for that plan, verify that the operators has selected the best technology and operating practices, and make recommended improvements prior to approval. | EPA has revised the NOI submittal requirements to include the BMP Plan, Drilling Fluid Plan, EMP Plan of Study, and QAPP, among other reports. These documents will be made available to the public via EPA's Region 10 website. EPA will review the documents and require adjustments and/or revisions, as necessary. EPA's acceptance of these documents will be part of any grant of authorization for the operators to discharge under the general permits. |
| 50 | NOI | The 120 day requirement to submit an NOI triples the current submission time requirement. This amount of time seems to be much more than should be needed to assess the request and grant/deny authority. The goal of a general permit is to avoid unnecessary and duplicative work and streamline the process. 120 days is greater than the time required for other general permits issued by other federal agencies. EPA also needs to establish deadlines for review and decision on denying or granting authorization - these dates should be codified in the permit. | The 120-day NOI submittal requirement is increased from the Arctic general permit due to the number of reports required to be submitted along with the NOI and is therefore reasonable. The 120-day NOI submittal requirement will not be changed. Additionally, EPA has not specified deadlines for denying or granting permit authorizations, as requested by the commenter. EPA will make permit authorization decisions based on the specific NOI in accordance with the general permits' requirements and applicable laws and regulations. |

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| 51 | NOI | The NOI Information Sheet directs the application to submit copies of "exploration plans, biological surveys, and environmental reports required by other federal and state agencies." This could include a large volume of information, much of which is irrelevant to discharge issues, and nearly all of which is available to EPA by other means. This requirement should be eliminated, or focused more narrowly on specific information that is anticipated to have significant value for purposes of discharge permitting. Furthermore, Exploration Plans can change during the review process with BOEM, leading to a need to constantly update any filing. Finally, please list the applicable agencies on the NOI form. | With regard to submission of copies, the NOI Information Sheet has not been revised as the commenter requested. Documents such as exploration plans, biological surveys, and environmental reports being prepared for other federal and state agencies should also be submitted to EPA, to the extent they are available at the time of the NOI submittal. Because these documents are already being submitted to other agencies, quite possibly in electronic/CD format, providing copies to EPA would not appear to create an administrative burden. EPA has revised the NOI forms to include examples of applicable agencies. Please see RTC #56. |
| 52 | NOI | The permits contain a requirement to submit separate NOIs for each proposed drill site. The reason for this change is not explained. If more than one drill site is proposed in a given season, one NOI should be sufficient if it contains the specific information requested by EPA. Additionally, the NOI form still lists "initial" latitude and longitude as if the lease block will contain more than one drill site; this is not necessary if the NOI is only applicable to one drill site. | EPA disagrees with the commenter. For tracking purposes, and for purpose of EPA's review and decision-making, it is reasonable and appropriate to require a separate NOI for each drill site. The request for an "initial" latitude and longitude is a carry-over from the Arctic general permit applicable only to mobile facilities. EPA has removed references to an initial drill site from the NOI forms to eliminate potential confusion. |
| 53 | NOI | In order to comply with 40 CFR 122.44(i)(1)(ii), the permits must specify that all outfalls must be accounted for in the diagrams provided with the NOI. The permits should require detailed diagrams to show all the outfalls and be more clear that each outfall will be sampled. | The Beaufort and Chukchi general permits require the submission of a line drawing and flow diagram that shows the flow, including rates/volumes of each discharged waste streams through facility. The line drawing must contain a flow balance showing average and maximum flow rates between intakes, operations, treatment units, and outfalls. While the permits can authorize up to 13 different discharges, a number of these discharges may be released through the same outfall location on the drilling rig/vessel. Please note that each waste stream must be sampled prior to being discharged to the marine environment, as required in Sections II.A. through II.N of the general permits. If an authorized waste stream is discharged through multiple outfalls, the permittee is required to meet the permit's terms and conditions, including sampling requirements, for each individual outfall. |

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| 54 | NOI | Please add to the NOI Form a section that requires a list of the chemical additives that will be used and the amounts. | Please see RTC#14. |
| 55 | NOI | EPA has issued past NOIs for public comment. Will this be true in the future, and within 120 day period ahead of beginning of discharge? Please create a permit condition that requires notice and public comment on the NOIs before they are approved by EPA. | In the response-to-comments document on the 2006 Arctic general permit, EPA committed to invite tribal governments to consult on the NOIs. EPA also committed to allow the tribes and the public an opportunity to review the NOIs for a period of 30 days prior to EPA making a decision whether to authorize the discharges. For the NOIs received under the Beaufort and Chukchi general permits, EPA will post the NOIs on the EPA Region 10 website; however, we will not solicit tribal government consultation or public input. A 60-day public review and comment opportunity on the draft Beaufort and Chukchi general permits was provided from from January 31, 2012 to March 30, 2012. This provided the public with the opportunity to review the general permits' language and requirements. Public review for NOIs is not required under EPA's regulations and will not be provided under the Beaufort and Chukchi general permits. |
| 56 | NOI | We do not support the extensive information dump required in the NOIs without justification about why submission of this data is necessary for permit coverage. | Please see RTC#51. EPA's request for copies of exploration plans, biological surveys, environmental reports, and Drilling Fluid Plan have not changed from the requirements of the Arctic general permit. The Beaufort and Chukchi general permits also require the submissions of initial site surveys, EMP Plan of Study, alternative disposal analysis (if applicable), cooling water intake structure requirements, and engineering plans, which are necessary for EPA or DEC decision-making. |
| 57 | NOI | We have significant concerns about EPA's capacity to respond to NOI applications within the requisite time period, given such vast quantities of information. It would be helpful if EPA is more specific in the final permits as to what information it actually needs. | All required NOI submittals are discussed in Section I.C. of the Beaufort and Chukchi general permits, and are summarized in the Schedule of Submissions and on the NOI Form. All documents identified are necessary for EPA or DEC to review the operators' requests for discharge and to inform agency decision-making. |

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| 58 | EMP | There should be a neutral company that does the monitoring because there is a conflict of interest for industry to do it themselves. | It is appropriate, for purposes of permit enforcement and safety concerns, to require the operators to conduct environmental monitoring of their discharge activities. The CWA specifically authorizes self-reporting through Discharge Monitoring Reports (DMRs). Permittees must comply with all conditions of the general permits. Any noncompliance with the general permit, including monitoring and reporting requirements, constitutes a violation of the CWA and is grounds for enforcement action, including civil, administrative, and criminal penalties; permit termination or revocation; or denial of permit renewal application. In addition, all reports and information submitted to EPA must be signed and certified by a responsible corporate officer. The certification includes an acknowledgment that significant penalties would be assessed for submitting false information, including the possibility of fine and imprisonment for knowing violations. |
| 59 | EMP | Support EPA's requirement for improved monitoring. However, the number of monitoring programs and cost of those programs and oversight could be streamlined and reduced by simply prohibiting the discharge of drilling muds and cuttings and sanitary wastes. Commenter is opposed to any discharge of drilling muds and cuttings that could be recovered, treated, and properly disposed of with existing technology. Commenter does not agree that studying pollutant impacts is an adequate replacement to implementation of known best technology. | Based on the analyses contained in the ODCEs, EPA has made the determination that the discharges, including drilling fluids and drill cuttings and sanitary wastes, will not result in unreasonable degradation to the marine environment. EPA made this determination based on review of the ten criteria established in the regulations at 40 CFR Part 125, Subpart M. The Beaufort and Chukchi general permits include effluent limits, monitoring requirements, and other restrictions to protect human health and the marine environment. EPA's requirements for environmental studies are not established in lieu of the operators' ability to collect and dispose the drilling fluids and drill cuttings or sanitary wastes at an alternative location. Rather, the studies will provide useful site-specific data before, during, and after drilling to ensure unreasonable degradation does not occur. |

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| 60 | EMP | Please require permittees to track the amount of barite used in the drilling fluids, particularly copper, lead, and mercury, and to include those amounts in the monitoring reports. An evaluation of the amount of discharged barite and its constituent parts raises serious concerns when compared to public health and environmental safety standards. NSB estimates that EPA's proposed permit, will discharge 1.7 lbs of Mercury, 5.0 lbs of Cadmium, 31.4 lbs of Copper, and 59 lbs of Lead. These estimates are based on a 12,000' well, a barite use rate of 140 lbs/ft, mercury effluent limit of 1 ppm (Table 1 of the permit), cadmium effluent limit of 3 ppm (Table 1 of the permit), Copper effluent limit of 18.7 ppm (Table 3-2 ODCE), and Lead effluent limit of 35.1 ppm (Table 3-2 ODCE). The amount of Mercury, Cadmium, Copper, and Lead proposed for discharge raises serious concerns when compared to public health and environmental safety standards. | EPA has revised the Beaufort and Chukchi general permits to include a requirement for permittees to report the amount of barite used in the drilling fluid system in the End-of-Well Report (Section II.A.14.). However, EPA will not require reporting of the specific metal constituents in barite. The general permits require Discharge 001 to meet the stock barite limitation of 1 mg/kg and 3 mg/kg of mercury and cadmium, respectively. EPA has determined that the limitation indirectly controls the levels of toxic pollutant metals because barite that meets the mercury and cadmium limits is also likely to have reduced concentrations other metals. (Development Document for the Effluent Limitation Guidelines Offshore Subcategory, EPA January 1993). Finally, if the permittee is authorized to discharge water-based drilling fluids and drill cuttings(Discharge 001), the EMP includes a requirement to analyze each drilling fluids system for metal contaminants of concern. The EMP also includes metals monitoring of the sediment and benthic community during baseline and post drilling activities. |
| 61 | EMP | We support requiring monitoring before, during, and after the discharges as EPA has proposed for both permits. This will help generate useful information about the well sites and how they are impacted by the discharges (assuming any occur). The EMP should also include gathering data on any on-ice discharges (if allowed - whether stable ice or not). However, if muds and cuttings discharge is prohibited, this testing will not be necessary, reducing industry's cost of sampling and analysis and local, state, and federal oversight of the results. | EPA agrees with the commenter that the EMP will generate useful information regarding the nature and extent of the potential impacts associated with exploration discharges. The Beaufort and Chukchi general permits require operators to conduct the environmental monitoring before, during, and after drilling, at the drill site(s) within the general permits' areas of coverage, whether the discharges occur in open water, on ice or otherwise. The EMP requirements apply to any operator authorized to discharge, with increased requirements if the operator is authorized to discharge water-based drilling fluids and drill cuttings. |

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| 62 | EMP | EPA proposed an extensive environmental monitoring program. The rationale is not enough scientific information exists to determine the potential impacts to the environment from discharge of water-based drilling fluids. Numerous studies have been conducted on potential impacts from drilling muds. Shell completed environmental studies of well sites drilled in the '80s and '90s in the Chukchi and Beaufort Seas and has provided this information to EPA. Arctic exploration discharge studies show little evidence of long term adverse impacts on marine environment: water-based drilling muds discharges are rapidly dispersed, are non-toxic, no bioaccumulation of metals and hydrocarbons by marine animals, and no uptake in food web (Neff 2010). [Also applies to Fact Sheet Section II.D.2.c.] | As noted in RTC#61, the EMP includes monitoring provisions if an operator obtains authorization for one or all of the 13 potential discharges, with increased requirements if the operator is authorized to discharge water-based drilling fluids and drill cuttings. EPA's rationale for the robust EMP is to ensure that the discharges will not result in unreasonable degradation during different phases of the drilling program. EPA appreciates the data provided by Shell, which include sampling results from sites where discharges have occurred a few decades ago. However, it is critical that site-specific data be collected from the drill sites before, during, after, and approximately one year after exploration activities. |
| 63 | EMP | Region 4 of EPA does not apply the same EMP requirements in the Eastern Gulf of Mexico (NPDES Permit No. GEG46000). Similar to the standards applied in the Eastern GOM, the prohibition of the discharge of free oil, oil-based muds, and muds with diesel oil added as well as the requirements for low levels of cadmium and mercury in barite in drilling muds provide sufficient protections to human and aquatic life. | EPA establishes permit requirements based on environmental conditions and region-specific concerns. The Arctic is known to include sensitive marine habitat and species, as well as Inupiat communities that rely on marine resources and wildlife for subsistence. Region 10's basis for requiring the environmental monitoring program is to ensure that robust data are collected in the site-specific locations within the Arctic before, during, and after drilling occurs to prevent unreasonable degradation. |
| 64 | EMP | The permits lack clarity on the process for approval of EMP. It is assumed that an EMP must be reviewed by EPA, does not clearly state that the EMP must be completely reviewed by EPA and "approved" before an NOI is authorized (page 32 of the Fact Sheet claims this is a "condition" for receiving authorization to discharge). | See RTC#49. EPA approval of the EMP Plan of Study will be reflected in the authorization to discharge under the Beaufort and Chukchi general permits. EPA's acceptance and approval of the EMP is a necessary pre-condition to the issuance of applicable discharge authorizations. |

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| 65 | EMP | Under the draft permits, historical monitoring data cannot be utilized as currently written; only data collected under the general permits can be used for the EMP. This does not account for pre-GP collected data that are very instructive regarding current environment and potential impacts, and should be allowed to be provided for purposes of this permit. Beaufort Sea well water-based muds/cuttings discharge studies show disturbance to marine environment is minor, recovery is rapid, offshore discharges have little/no harmful effects on organisms, BOEM/MMS and oil industry monitoring of drilling activities effects show that little metal and petroleum hydrocarbons accumulation in sediments, no detection of environmentally-significant concentrations of petroleum hydrocarbons above regional background levels in Beaufort Sea sediments (NRC, 1983; Neff, 2009; Brown, 2010). | To ensure no unreasonable degradation to the marine environment, EPA requires that each operator complete an EMP for each drill site. While pre-GP data have been collected at certain locations in the Beaufort and Chukchi Seas, variations of environmental conditions likely occur across drill sites; consequently, the effect – if any – from exploration activities may be different across drill sites. The EMP is intended to assess the range of impacts at each drill site and facilitate EPA's assessment of whether discharges from the general permits result in an unreasonable degradation of the marine environment. However, EPA has included a provision in Phase I of the EMP to allow operators to make a demonstration that data previously collected in the vicinity of the drillsite location by the operators within the most recent five year period, meet the objectives of the Phase I baseline characterization data collection requirements, and request EPA's consideration that they be used to meet the Phase I elements. See RTC #66 and #67, below.<br><br>Please note that as a result of public comments, EPA reorganized the EMP sections of the general permits, and added a summary table as Attachment 2, to assist the regulated community in understanding its EMP obligations under the general permits. Attachment 2 summarizes some of the main elements required in the EMP. The permittee is responsible for all elements of the EMP, as applicable, even if they are not summarized in Attachment 2. |

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| 66 | EMP | EPA's requirement to conduct EMP for each exploration well drilled for each year of coverage is not necessary and burdensome. Commenters believe the information gathered from one exploration well site would be representative of other nearby exploration well sites and should be sufficient. Previous baseline environmental studies have shown some natural variability in established site conditions, but the affected area is expected to be consistent regardless of the location of the exploration drilling activities. Furthermore, many of the lease prospects are homogeneous, and requiring EMPs for each well is unnecessary. Information gathered from one well site, determined to be representative of other well sites, should be sufficient. We do not support the requirement for EMPs for every well drilled, for each year under the permits. Within a lease block area or marine domain, it is preferable to propose a monitoring program for the first well drilled by an operator which would act as a representative for all anticipated drilling sites instead of requiring an EMP be performed for each individual well. Such an optimized design could result in greater statistical power and lower overall costs. | As discussed in RTC#65, in order to ensure no unreasonable degradation occurs at the individual drill sites, specific EMPs must be completed at each drill site location. However, please note both the Beaufort and Chukchi general permits contain provisions in Sections II.A.13.m. allowing permittees the opportunity to demonstrate that previously collected baseline data can be used to meet the Phase I requirements of the EMP. Under this provision, the permittee may request agency consideration of data that the permittee has fully implemented and completed at a prior drill site authorized under the general permits. Also see RTC#67. |
| 67 | EMP | Commenters are concerned about the lack of standards provided by the EMP-reuse provision; approval appears to be entirely at the Director's or DEC's discretion. For example, operators must show that the new site is "equivalent" to the past site, but equivalent is not defined. EPA must not implement this provision, but if it does, it should provide clearer standards. | The EMP at Subsequent Drilling Site provision (Section II.A.13.m.) establishes five evaluation criteria that must be included in the permittee's request to use and consider data derived from a fully implemented and completed EMP under the Beaufort and Chukchi general permits. EPA has replaced the word "equivalent" with "substantially similar." The term "substantially similar" is intended to provide permittees flexibility in making a demonstration that drill sites possess similar physical, chemical, and biological characteristics. EPA retains the discretion to make decisions based on the information submitted by the permittee. See also RTC#92. |

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| 68 | EMP | EPA should include an opt-out provision from EMPs, unless an operator changes its drilling practices. Encourage EPA to provide language in the permits, and establish a review process, that provide for flexibility to relax the EMP requirements if initial monitoring confirms the intended discharge areas are similar or demonstrate environmentally insignifcant effects. The EMP obligation should be adaptable so that it does not impose unnecessary costs and technical burdens that serve no environmental benefit. | See RTC#66 and #67. The general permit provision at Section II.A.13.m., EMP at Subsequent Drilling Site, addresses the concerns raised in this comment. |
| 69 | EMP | Are the phases study periods or report times? Drilling windows in the Chukchi Sea are during open water period and wells are planned for a single season. Is Phase III then in the same season but after drilling/discharging is complete, or is it in the summer (one year after) following drilling? Are Phases III and IV meant to be separate field seasons so that sampling/surveying is done? If Phases III and IV are supposed to be separated in time, then the text should say that. Right now there is simply a maximum delay for Phase IV - no mandatory separation on time. | EPA has reorganized the EMP sections of the general permits and has added a summary table in Attachment 2 to assist with better understanding of the EMP requirements. Attachment 2 summarizes some of the main elements required in the EMP. The permittee is responsible for all elements of the EMP, as applicable, even if they are not summarized in Attachment 2. |
| 70 | EMP | Phase IV includes toxicity testing which would have to be conducted during drilling (Phase II). However, according to Section II.A.12.f., there are only two reports. Please clarify what the requirements are for studies and reporting. | For clarification, Phase IV does not include toxicity testing. Toxicity testing is required during the discharge periods (Phase II). Please see RTC#69. The commenter is correct that EPA requires submittal of two EMP reports, the first report is due to EPA by June 1 of the year following cessation of drilling operations, and the second EMP report is due by June 1 of the year following completion of all monitoring activities. EPA has reorganized the EMP sections of the Beaufort and Chukchi general permits, and included a summary table of some of the main EMP elements as Attachment 2, to assist with better understanding of the EMP requirements. |

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| 71 | EMP | Given the limitations on the operating window (ice/weather, whaling blackouts, and other regulatory limitations) it may be impossible to collect this information during the same season. If Phase II and IV are meant to be a year apart, then operators will find it very difficult to do benthic sampling, conduct all analysis, and prepare the report within the approximate 3 months (12 months from 15). | Phase II must be conducted during drilling operations and Phase IV must occur no later than 15 months after drilling activities have concluded at the well site. Please note, two EMP reports are required, with the second report to be submitted by June 1 of the year following completion of all EMP monitoring activities, i.e., conclusion of Phase IV. See also RTC#70. |
| 72 | EMP | This requirement seems in some ways duplicative of the shallow hazards survey completed prior to BOEM EP approval. Per BOEM regulations, operators must conduct shallow hazards surveys at all drill sites, and side scan sonar coverage, along with bathymetry/fathometer and high resolution seismic survey, is one component. EPA should accept and be clear in the permits that BOEM shallow hazard surveys would meet the EMP physical site characterization requirements. Details on these shallow hazards surveys can be viewed in BOEM's NTL 05-A01. | Phase I data collected within the most recent five-year period in the vicinity of the specific drill site location pursuant to other agency requirements may be used and submitted under the general permits for EPA review. Permittees should take appropriate actions to ensure the general permits' requirements for the Phase I data are met. Please see RTC#65. |
| 73 | EMP | Receiving water monitoring does not provide a sound baseline for comparison with water quality at the drill site during and after exploratory driling. It does not provide useful information for evaluating impacts because the currents and exchange of water masses means that these monitoring data would not be considered representative of site-specific information before drilling. Because all water chemistry parameters that EPA recommends for monitoring in Phase I are natural components of the Arctic water column and are unlikely to change due to drilling activities, there is no sound basis for including the proposed water chemistry monitoring requirement. | EPA disagrees with the commenter. All aspects of Phase I baseline data at the specific drill site location, such as the physical site survey, the composition of the benthic community, and water chemistry characterization of the receiving environment, will be useful to determine potential impacts associated with drilling discharges and to ensure no unreasonable degradation of the marine environment. The pre-drilling monitoring should include an assessment of pollutants that are expected to be present in discharge effluent and for which there are federal water quality criteria and/or state water quality standards. This data will be used to determine if increases in concentrations occur as a result of drilling discharges. Per RTC#65, above, EPA will accept water chemistry data collected within the most recent five year period at or in the vicinity of the same drill site location. See also RTC#74. |

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| 74 | EMP | Phase I Assessment collection of water chemistry data is not necessary to achieve stated objectives. ANIMIDA, cANIMIDA databases are available and adequate to understand spatial and temporal trends in regional water quality. Ocean water conditions vary constantly, there is limited utility in collecting site-specific water chemistry data prior to Phase II Assessment to be conducted during drilling. Upstream water column samples collected for background reference purposes concurrently with the assessment of discharge plumes in Phase II are greater value to evaluate magnitude and extent of potential perturbations from drilling than data collected during prior sampling event. | Please see RTC#73. In order to determine potential impacts from drilling activities to water, sediment, and the benthic community, site-specific baseline data, including water chemistry, are necessary. Because water quality does vary over location and time, as noted by the commenter, it is important to collect site-specific data prior to drilling. EPA recognizes that existing data been collected at or within the vicinity of certain drill site locations and has included a provision in the Beaufort and Chukchi general permits allowing permittees to submit existing data, if collected within a period of the most recent five years, to meet the Phase I data collection requirements. |
| 75 | EMP | The commenter proposes a substitute for the Phase I assessment of water chemistry with chemical characterization of sediments and selected benthic invertebrates in Phase I to provide a better baseline for comparison with results of Phase III monitoring. Deposition of chemicals (metals and hydrocarbon) in sediments and bioaccumulation by benthic invertebrates is best assessed near the discharge compared to those before drilling and in nearby areas. This would provide much more useful information than sampling of the water column, which is too variable. | Please note that the Beaufort and Chukchi general permits require analyses of the drilling fluids systems for metals, collection of sediment characteristics, and sampling of the benthic community tissue at the proposed drill site location during Phase I, if the permittee is authorized to discharge water-based drilling fluids and drill cuttings. The same sampling must be conducted during Phases III and IV. EPA has reorganized the EMP requirements in the final permits, including adding Attachment 2, to assist with better understanding of the different phases and reporting requirements. |
| 76 | EMP | Data already collected in the drill site areas as baseline data should be able to provided to meet these requirements. | See RTC#65. |
| 77 | EMP | The permit requires water column monitoring of "pollutants that are expected to be present in the discharge effluent" for which water quality criteria are available. Among the metals recommended for analysis, antimony, beryllium, silver, methylmercury, and thallium have never been detected at elevated concentrations in drilling muds, cuttings, and other permitted discharges or in sediments at drilling sites. The permit should not rigidly require monitoring for those metals. Alternatives, based on site-specific conditions, should be expressly allowed. | The Beaufort and Chukchi general permits allow the permittee to propose an alternative list of metal contaminants of concern based on site- and project-specific data. |

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| 78 | EMP | Phase I Assessment (Baseline) includes a requirement to analyze for bacteria. Marine environments naturally contain huge numbers of various types of bacteria throughout the water column and sediment. The requirement does not specify the purpose of this analysis or the types of bacteria that should be evaluated. Lack of purpose and specificity makes it challenging for operators to meet this requirement. Recommend this requirement be removed. | EPA agrees with the commenter. Bacteria was included as a parameter in the EMP as a result of concerns regarding human waste discharges. However, due to the fecal coliform effluent limits established by EPA for the sanitary waste discharges to state and federal waters, respectively, EPA has removed the requirement to analyze the receiving water samples collected during Phase I for bacteria. |
| 79 | EMP | All the permitted discharges sometimes contain low concentrations of one or more specialty chemical additives or contaminants. A suitable first tier toxicity test is the Microtox test, which is rapid and requires a small amount of space. However, WET testing would be required if the screening test indicates "potential toxicity." This pass/fail criteria must be defined. | The Beaufort and Chukchi general permits do not specify the type of screening test since each test may indicate different toxicity thresholds. It is incumbent upon the permittee to document the type of rapid test, the trigger threshold, and whether or not the toxicity thresholds are exceeded for the tested waste streams. These requirements have been added to the general permits. |
| 80 | EMP | When initial screening toxicity test results are negative but flow rate or volume greater than 10,000 gallons during any 24-hour period, or chemicals are added in the system, WET testing appears overly conservative. We suggest EPA revise the draft permits to require a supplemental round of screening level testing in these situations; WET testing would be then conducted if a positive screening test result is obtained. (Section II.A.12.e.) | The requirement for WET testing is reasonable: if (1) toxicity threshold is triggered during the screening test, or (2) once per well, if the volume of applicable discharges is greater than 10,000 gpd, and chemicals are added to the system. Given these criteria, it is possible that none of the waste streams must be tested for WET. EPA believes the suggestion to conduct a secondary confirmation screening test is unnecessary. |

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| 81 | EMP | The proposed EMP requirement of WET testing during active drilling is not practicable and would provide no environmental benefit. Commenter is not aware of any Alaska-based laboratory that performs WET analyses. Given the remote location of the Chukchi Sea, the 36-hour holding time is too short. If WET analysis is required, recommend the holding time be set at no less than 72 hours. Section II.A.12.e.6. Determination of the outcome of the proposed testing would require a couple weeks following the initial trigger and the results not provided to the regulatory agencies for up to six weeks. How would the latency in obtaining this information be used in the decision-making process? | EPA disagrees with the assertion that WET surveillance testing during drilling would provide no environmental benefit. Due to the potential impacts associated with chemicals that may be used in the drilling process, it is crucial that toxicity of the discharges is tested. EPA understands the constraints associated with the lack of nearby analytical laboratories. As such, EPA has revised the Beaufort and Chukchi general permits to establish the regulatory holding time of no more than 36 hours as the general requirement, with a potential additional holding time of not to exceed 72 hours. The permits also require documentation in the DMRs of the conditions that resulted in the need for the longer holding time beyond 36 hours and the potential effect of the extended holding time on the accuracy of the results. EPA understands that the WET testing results will not be available until the following month's Discharge Monitoring Report, but will make the results available to the public as soon as possible. Please note that the permits do not establish WET limits as discharge data does not exist to determine reasonable potential; rather, the monitoring data will be used to inform ongoing permit implementation, oversight activities, and for future decision-making. |
| 82 | EMP | Only discharges 005 (desalination unit wastewater) and 009 (noncontact cooling water) are likely to exceed the 10,000 gallons/day discharge rate. Desalination wastewater is saline brine containing the same inorganic salts found in seawater. Cooling water discharge is seawater; biofouling is controlled by an electrical anti-fouling system that may release traces of copper or by adding biocides. The biocides will be fully oxidized by the time it enters the ocean. Discharges 005 and 009 are diluted by more than 25-fold before they enter the ocean. The WET testing requirements serve no environmental benefit and are not justified. | EPA agrees with the commenter that it is likely only non-contact cooling water and perhaps desalination unit wastes will exceed the 10,000 gpd threshold. However, if the discharges pose no toxicity risk, then they should pass the rapid toxicity screening test. If the applicable waste streams pass the screening test, or alternatively, if the discharge volume exceeds the 10,000 gpd but no chemicals are added, then WET testing is not required by the Beaufort and Chukchi general permits. |

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| 83 | EMP | We support: (1) WET testing for discharges to which chemicals are added and (2) the use of multiple WET tests at a well site. EPA should require WET testing during different phases of the operations to account for operational variations, with tests done during construction of the MLC, during drilling, and at other specific stages. If initial screening triggers toxicity, additional tests are required. We ask that initial WET tests be subject to EPA's 36-hour holding time and follow-up samples be allowed additional holding times of 72 hours. If there are significant differences between the samples with the 36 hour holding time and those with 72 hours, the permit should require another sample be submitted with a 36 hour holding time. | EPA appreciates the interest in WET testing. The tiered toxicity evaluation approach required by the Beaufort and Chukchi general permits is appropriate to determine potential toxicity of the discharges. See RTC #80 and #81. Additionally, due to the distance of the offshore lease locations and the potential constraints associated with meeting the 36-hour holding time requirement, EPA has established a holding time of up to 72 hours for the WET samples with a requirement that operators must document the reasons for exceeding the 36-hour holding time and the potential ramifications on the data results. |
| 84 | EMP | After initial data collection, the modeling results may demonstrate that in-field plume termperature monitoring is unnecessary, in which case the permit should allow sufficient flexibility so that such monitoring would not be further required. The temperature of the mixed discharge stream (including noncontact cooling water as the main component) exiting the downcomer or discharge caisson is likely to be only slightly higher than the ambient seawater and will cool within a short distance from the discharge. Monitoring of temperature of the receiving water in the disharge plume would not provide useful information. | EPA disagrees with the commenter and continues to require continuous temperature monitoring of the non-contact cooling water waste stream during periods of discharge. Due to variations in the types of drilling rig, equipment, drilling duration, and potentially drilling seasons, and due to the fact that these are general permits, the requirement to monitor for temperature applies to each operator. Data collected during the five-year terms of the general permits will be used for to inform ongoing permit implementation and oversight activities and future decision-making. |

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| 85 | EMP | The requirement to monitor marine mammal deflection due to a slight increase in temperature would be very questionable and extremely difficult to support scientifically. It is unclear what benefit would be gained from attempting to collect the requested data. Furthermore, due to air permit limitations, a vessel cannot be dedicated to monitor the maximum discharge rate given that the monitoring vessel has a primary duty that may be ice management at the precise time when the maximum discharge rate is attained. A marine mammal monitoring plan has been developed with NMFS and USFWS to monitor, detect, record, and report behavior of marine mammals. The permit potentially creates conflicting monitoring requirements with these agencies. | EPA has removed the requirement to monitor the plume temperature. EPA's purpose for requesting the plume monitoring was twofold: (1) to compare with the plume modeling predictions; and (2) address local communities' concerns regarding temperature effects. The Beaufort and Chukchi general permits include a requirement to continuously monitor temperature in the non-contact cooling water (Discharge 009) during discharge. EPA believes the discharge data will be sufficient to determine how temperature disperses in the marine environment to meet the dual purposes stated above. The Beaufort and Chukchi general permits do not dictate the exact means by which the effluent temperature monitoring should occur so the permittee has flexibility in proposing methods that account for varying vessel configurations (e.g. multiple discharge points) and other potential operational constraints. The permittee's EMP should include details of any constraints and how those constraints are being addressed in obtaining representative discharge data. EPA does not agree with the assertion that the general permits' requirement for collection of potential mammal deflection observations conflicts with other agencies' monitoring requirements. The general permits do not expressly require monitoring for marine mammals at all times; rather, the permittee must, to the maximum extent possible, collect potential deflection observations during periods of discharge of drilling fluids and drill cuttings (Discharge 001) and non-contact cooling water (Discharge 009). The permittee should identify any such legal or technical conflicts with specificity and alternative data collection methods in their EMP Plan of Study. |

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| 86 | EMP | Please ensure this monitoring includes measuring the temperature of the discharge at the outfall as well as measuring the temperature of the plume and the extent of the plume. Also, we recommend that EPA elaborate on the marine mammal observer (MMO) requirement. Since MMOs have specific monitoring responsibilities, such as monitoring for noise thresholds, it is important that the permits specify the need for another MMO to monitor the plume. Depending on how the plumes of warm water are extending into the ocean, EPA may need to consider requiring the MMO to make its observations from a vessel that is not the primary drill rig. | The Beaufort and Chukchi general permits include a requirement to continuously monitor temperature in the non-contact cooling water (Discharge 009) discharge. EPA believes the discharge data will be sufficient to verify modeling predictions and to determine how temperature disperses in the marine environment. As such, EPA is not requiring temperature monitoring of the plume or extent of the plume. See RTC#85.<br><br>EPA's requirement for the collection of potential marine mammal deflection data does not impose any requirement regarding the use of marine mammal observers (MMOs). The permittees have flexibility to determine how to obtain that mammal observation data, including the location where the observations are made (e.g. support vessels or drill rig) and if the MMOs are an available means, the permittee can work with the MMOs to collect that data. The general permits, accordingly, will not require the addition of an MMO for these observation provisions. |
| 87 | EMP | Post drilling sampling may not be possible during some drilling seasons because drilling may continue until ice prevent further activities at the drill site. Safety of personnel and presence of ice may prevent this data from being collected. | EPA understands the potential complications associated with unpredictable ice conditions. Companies must make the necessary decisions to ensure the safety of their employees. In the event unforeseen circumstances occur preventing the environmental sampling of data immediately after drilling, the permittee must immediately notify EPA and the appropriate course of action will be determined. The Beaufort and Chukchi general permits have been revised to reflect this possible occurrence and notification requirements. |
| 88 | EMP | If Phase IV monitoring is required, based on the results of Phase III, it should address the same elements as in Phases I and II. Sediment and benthic fauna chemical characterization should be included in Phase I, III and IV, to allow for a more definitive assessment of possible effects and persistence over time. | The Beaufort and Chukchi general permits include monitoring of the sediment and benthic community during Phases I, III, and IV, if drilling fluids and drill cuttings are authorized to be discharged. See RTC#75. |

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| 89 | EMP | If Phase III monitoring reveals that no significant adverse environmental effects were documented during drilling discharges, a fourth phase of monitoring should not be required. The requirement of Phase IV monitoring should be contingent on the results of Phase III monitoring. Phase IV requirements are overly burdensome with the benefit to such a survey not having been adequately explained. Absent a complete exposure pathway between inorganic components in discharges and benthic tissue, if the physical survey conducted during Phase III determines that the seafloor has not been altered by drilling, and discounting the body of scientific evidence concerning the ability of these compounds to migrate into biological tissue, there is no justification for Phase IV bioaccumulation monitoring program. (Section II.B.c. Benthic Community Bioaccumulation Monitoring) | While Phase III data will be very useful to determine the physical extent (i.e., aerial extent and depth/thickness of solids deposition caused by Discharges 001 and 013) immediately after drilling activities have ceased, the data would not reveal the potential bioaccumulation effects. One of the purposes of the Phase IV study is to assess the effects in the benthic and epibenthic invertebrates over time. EPA does not agree that data from Phase III can be used to discount the need for a Phase IV study. |
| 90 | Compliance and Inspection | Commenter supports the move toward paperless reporting. | EPA appreciates the comment. EPA's efforts to implement electronic reporting are intended to promote data preparation and transfer efficiencies as well as increase the availability of discharge data to the public on a timely basis. |

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| 91 | Compliance and Inspection | Recommend EPA ensure that the permits include an adaptive management component so that any necessary changes can be made during or in between drilling seasons to protect the marine environment as new information about the ecosystems in the Beaufort and Chukchi Seas comes to light. For example, if new studies (e.g. EMP) identify a particular well site as sensitive to any species, the permits should include the flexibility to limit or prohibit discharges in that area. EPA should require operators to search for and immediately report any conditions or discharges that are cause for concern, and immediately halt operations if there is a threat of unreasonable degradation. To improve future permitting decisions and to provide for appropriate revisions to the permit, EPA should undertake annual collection and review of all monitoring data. This review should include ecosystem interactions and modeling and not be limited to environmental toxicity. | The Beaufort and Chukchi general permits include provisions that address several of the commenters' concerns and allow EPA to react to new data or changing conditions. For example, the EMP Phase I requires the permittee to conduct a baseline site characterization to ensure the well location is not in a sensitive marine environment. The permittee must find another well location if the proposed initial site is in a sensitive marine environment and notify EPA within 7 days from receipt of the physical sea bottom survey data. Monthly DMRs and EMP reports will be reviewed and their results will be used and considered during EPA deliberations on future NOIs. In addition, as required by 40 CFR 125.123(d)(4) Section IV.D. of each general permit includes a procedural mechanism that allows EPA or DEC to modify or revoke a permittee's discharge authorization at any time, if based on new data, there is a determination that continued discharges may cause unreasonable degradation of the marine environment. |
| 92 | Compliance and Inspection | EPA should include in the permits a plan for how monitoring information will by synthesized, analyzed and used to further limit or prohibit discharges. Also, we believe there is plenty of evidence to show that the ocean currents affect a much larger area than just where the permits are being monitored. | NPDES permits typically contain regulatory terms and conditions (e.g. sampling, monitoring, effluent limitations, reporting) that are imposed on the permittees. NPDES permits do not typically include internal EPA procedures, evaluation methods, or prospective plans for how permit-generated data might be used in future permit proceedings, or in ELG promulgation or revision proceedings, that may further limit or prohibit discharges. Accordingly, EPA will not include the internal procedures requested by the commenters. EPA's dispersion models indicate that the discharges would affect a relatively small area, however, EPA has included in the EMP the requirement to collect data after drilling occurs to study the nature and extent of impacts associated with the discharges to ensure unreasonable degradation does not occur. |

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| 93 | Compliance and Inspection | We request continuous real-time, onsite monitoring, using electronic equipment such as video cameras. Also, will the companies have the equipment on the drilling site to test each sample, put the data online for that same day, like real-time test results? Will someone in EPA be monitoring their daily reports, on a daily basis, to make sure that the toxicity levels are at a safe point? | The Beaufort and Chukchi general permits include the monitoring requirements that EPA has determined are necessary and reasonable, including permittees' self-reporting requirements. See RTC#58. EPA does not have information or data at this time that justifies the requirement for the installation of real-time, onsite monitoring (e.g. video cameras). The current drilling vessels anticipated for use in the Chukchi and Beaufort Seas do not have the laboratory capability to test every required sample on-board. For example, the 96-hour suspended particulate phase (SPP) toxicity test for the drilling fluids and drill cuttings discharge will likely have to be conducted at a land-based laboratory for the foreseeable future. EPA does not have the resources to conduct daily reviews of daily reports of all sampling and monitoring data. Monthly DMR data will be reviewed and entered into the Integrated Compliance Information System (ICIS) for review by compliance and enforcement staff. However, the permittee is also required to report to EPA an exceedance of the SPP toxicity limitation within 24-hours in accordance with Section III.G.1 of the general permits. EPA will be prepared to respond to these 24-hour noncompliance notices regarding SPP toxicity results in accordance with our enforcement authorities. |

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| 94 | Compliance and Inspection | There is a major concern as to whether there is proper environmental oversight and enforcement capacity. The discharge area is extremely remote; onsite monitoring by EPA officials is necessary to validate permit compliance. Recommend EPA make clear in the decision documents its plans for an EPA on-site inspection and audit program, to assure the public it will be providing technical and scientific oversight and compliance monitoring of the permits. Improvements, such as increased inspection frequency, should be made clear to the public for comment. Does EPA independently verify that the monitoring equipment are functional? Will EPA personnel be on board monitoring the discharges? Commenter requests that both the permit holder and EPA immediately contact NSB to report any noncompliance situation that could potentially impact subsistence food safety or human health. | EPA understands that a comprehensive and robust compliance and enforcement program is a critical component of an effective NPDES program. EPA intends to use a number of mechanisms to ensure compliance with the Beaufort and Chukchi general permits, including evaluation of sampling results and monitoring submissions, developing on-site inspection capabilities and conducting enforcement, as necessary. EPA conducted an on-site compliance evaluation inspection during the 2012 drilling season. EPA did not intend to conduct independent sampling of the discharges during this drilling season. EPA inspection plans for future drilling seasons will depend on many factors, including the compliance outcomes of the 2012 drilling season, inspection and oversight results, inspection logistic issues, budgets, and efforts to leverage other federal agency resources for compliance assistance and oversight functions. EPA will not have inspectors occupying the drill rigs (e.g. 24-hour, 7-day presence) during drilling operations; that is not a compliance practice of EPA.<br><br>EPA has coordinated, and will continue to coordinate, with the Bureau of Safety and Environmental Enforcement (BSEE) to obtain additional NPDES-related compliance assistance during the 2012 drilling season. EPA intends to continue discussions with BSEE in the post-drilling season to determine what coordinated compliance or inspection efforts could be implemented in future drilling seasons as a means to develop efficiencies but maintain a robust compliance presence in the oil and gas sector.<br><br>EPA compliance staff will review DMRs, any noncompliance reports, and End-of-Well reports for compliance with general permit requirements. Onsite inspections of NPDES-regulated facilities typically include a review of laboratory equipment and procedures (e.g. testing equipment calibrations) associated with NPDES-required sample analysis. As time permits, EPA intends that on-site inspections of drilling rigs would attempt to review similar laboratory methods and equipment.<br><br>Under Section III.G.1.b., the permittee is required to notify EPA and DEC within 24 hours from the time the permittee becomes aware of noncompliance circumstances that may endanger health or the |

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| 94 | Compliance and Inspection | | environment. EPA has included the North Slope Borough in the notification requirement. |
| 95 | Compliance and Inspection | Does industry self-report? Where in the permit is there some kind of independent monitoring, quality control, or verifications? EPA allowing industry to self-monitor causes great concern. | The NPDES program relies heavily on permittee self-reporting. The Beaufort and Chukchi general permits require that a the permittee's duly authorized representative certify the truth, accuracy, and completeness of all applications, reports and other information submitted to EPA. The CWA subjects permittees and individuals to criminal liability for falsifying these submissions. In addition, on-site inspections or EPA requests for documents provide opportunities for EPA inspectors to review records that are used to prepare submissions and these methods provide another mechanism for independently verifying submission accuracy. See RTC#58. |
| 96 | Compliance and Inspection | Having worked briefly as a contractor for a major oil company in Alaska, the high prevalence of leaks and spills, reportable and non-reportable, is alarming. | EPA appreciates that information. The Beaufort and Chukchi general permits, Section III.G.1.a., require the permittee to notify EPA and DEC (applicable to the Beaufort general permit) of any unauthorized discharges within 24 hours from the time the permittee becomes aware of the discharge. The BMP Plan must also include practices to prevent leaks and spills, and to address them if they were to occur. |

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| 97 | Compliance and Inspection | EPA requires waste to be tested prior to discharge; however, the permits do not clearly state that all waste must be stored and verified acceptable for discharge prior to actual discharge. Additionally, the permits do not clearly state that failed effluent limit tests mean that the waste must be collected and disposed off-site in all cases. Recommend clarification in the ODCE and permits. If the tests show that there are any toxics in their waste streams, will they have equipment on board to hold that toxic waste, to bring it to some different location to discharge it? Or are they going to put some chemicals in it, to make it not so toxic, before they discharge it? | The Beaufort and Chukchi general permits require the sampling and testing of discharges (e.g. continuous, intermittent). The general permits do not require collection and storage of waste streams pending the outcome of sample evaluations and receipt of sampling results by the permittee. EPA does not anticipate that typical drilling rigs will have storage capacity for waste streams pending completion of sampling tests before discharge. However, Permittees must cease the discharge of drilling fluids and drill cuttings upon failure of the static sheen test as determined in accordance with Appendix 1 to Subpart A of 40 CFR Part 435. The permittee is allowed to retest the material causing the sheen or slick and if subsequent tests do not result in a sheen or slick covering greater than one-half of the surface area of the test container, the discharge may continue. If noncompliance with effluent limitations occurs, the permittees are required to identify and report steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. EPA also has the discretion to pursue enforcement action for instances of noncompliance pursuant to the CWA. |
| 98 | Compliance and Inspection | Recommend that EPA make clear in its decision documents its post-drilling season audit program for reviewing baseline data and actual discharge monitoring data and reports and making improvements to the permits prior to the next drilling season. | EPA intends to review DMRs and End-of-Well reports prior to the next drilling season. EPA intends to review EMP reports in a timely manner. Given the June 1 submission deadline, it is unlikely that EPA would propose and complete a major modification of any general permit provisions within the time frame needed to make improvements, prior to the next drilling season, assuming most Beaufort and Chukchi Seas drilling seasons will begin during ice free conditions (e.g. in and around an early July time frame). However, EPA has the authority to modify or revoke a permittee's general permit coverage under Section IV.D., if based on the new data, EPA determines that continued discharges may cause unreasonable degradation of the marine environment. |

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| 99 | Compliance and Inspection | Since Shells' proposal to haul the wastes out of Camden Bay is not an enforceable action, what if Shell actually just go ahead and dump it. | It is a violation of the CWA and the NPDES regulations for a person or entity to discharge pollutants from a point source to waters of the United States without an NPDES permit and such violations are subject to administrative, civil, and criminal monetary penalties, injunctive relief, and possible imprisonment, depending upon the circumstances of the unauthorized discharge. EPA will take appropriate actions, including enforcement actions if necessary, in response to unauthorized discharges into waters of the United States. The commenter should refer to the general permits, Section V.B. for the specific violation circumstances and remedy summaries. |
| 100 | Compliance and Inspection | What are the penalties if the companies violate their permit? | The legal remedies for violations of the general permits are summarized in Section V.B. These remedies include administrative, civil, and criminal monetary penalties, injunctive relief, and possible imprisonment. The commenter should refer to the general permits, Section V.B. for the specific violation circumstances and remedy summaries. |
| 101 | Compliance and Inspection | We don't have assessments from the known existing environmental degradations that have occurred with past violations. EPA has not gone back and monitored some of those other sites that were known to be difficult, or problems with discharge violations. There is no proof that companies did not improperly disposed materials. We are not reassured that we're going into this process in a good way. | There were no known exploration activities or reported discharges associated with exploration drilling under the Arctic general permit from June 2006 through June 2012, so there have been no known discharge violations. The EPA response-to-comments document for the 2006 Arctic general permit reported that three facilities discharged under the prior 1995 Arctic general permit and that two facilities did not have effluent violations. The RTC reported that the third facility had TSS and BOD effluent limit violations associated with its sanitary waste stream, and that no enforcement action was taken for those violations. The administrative record for issuing the Beaufort and Chukchi general permits includes information about evaluations conducted at certain prior drill sites, which assessed effects of past drilling discharges and practices. There should be no unreasonable degradation of the marine environment for discharges authorized under the Beaufort and Chukchi general permits if permittees comply with the general permits' terms and conditions. |
| 102 | Compliance and Inspection | The fines EPA collects for lack of compliance should go to the Tribes for compensation of our food resources. | By statute, monetary penalties obtained in EPA enforcement actions for NPDES permit violations must be paid and submitted to the U.S. Treasury. |

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| 103 | Compliance and Inspection | Could MMOs verify sampling for EPA? Also, reports of MMO activities on the vessels are never shared with the communities. | EPA has no plans to independently sample discharges on drilling rigs in the 2012 drilling season. EPA has the authority to have its authorized representatives, including authorized contractors, to enter upon the permittee's premises to sample or monitor for purposes of assuring NPDES permit compliance. EPA has no current plans to train marine mammal observers to take or verify samples required under the Beaufort and Chukchi general permits, and the NPDES permits do not regulate MMO activity reports or their availability for public review. EPA encourages commenters interested in this information to contact NMFS and USFWS, as they are the federal agencies responsible for ensuring compliance with the MMPA. |
| 104 | Compliance and Inspection | The daily, weekly testing, and monitoring results are sent to EPA. Can we get that information sent to us also? We would like to monitor the types of discharges that are going into the ocean. | EPA is working to enhance transparency and public accountability regarding compliance and enforcement performance. For example, EPA is implementing electronic reporting of compliance data as a means to improve the ability of interested persons to monitor NPDES permit compliance. Interested persons can find compliance and enforcement information about regulated facilities on EPA's Enforcement and Compliance History Online (ECHO) website at http://www.epa-echo.gov/echo/.<br><br>EPA continues to look for effective ways to inform communities and interested persons about the compliance status of exploration facilities authorized to discharge under the Beaufort and Chukchi general permits. |
| 105 | Traditional Knowledge | The maps are not adequate, they don't cover the subsistence resources that we rely on. | The subsistence maps in the ODCEs and EJ Analysis are intended to cover a broad range of marine species. EPA regrets any error or deficiencies in these maps. The commenter does not provide specific details, however, that would enable EPA to make any needed revisions. |
| 106 | Traditional Knowledge | If a first whale is deflected, the other whales will follow that deflection. And we will have a harder time trying to get whales, like we did in 1985. And the whales will be spooked. Whales that are spooked can be dangerous to hunt sometimes. | Thank you for your comment. EPA is aware of concerns expressed regarding whale deflection. The Beaufort and Chukchi general permits require permittees to monitor for potential whale deflection during periods of discharge of drilling fluids and drill cuttings and non-contact cooling water. Please see RTC#108 regarding restrictions in the Beaufort Sea during fall subsistence bowhead hunting by the communities of Nuiqsut and Kaktovik. |

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| 107 | Traditional Knowledge | We commend EPA for gathering input from North Slope communities and tribal organizations that would be impacted by discharges regulated under the permits. While workshops should have been conducted in more communities, particularly in the Chukchi Sea coastal region, we view these workshops as a positive step toward better integrating traditional knowledge into the analyses on which the agency bases its decisions. | EPA recognizes that the Beaufort and Chukchi general permits are of interest to North Slope and Northwest Arctic communities. We understand the strong relationship the local communities have to the Arctic environment and its resources, and the importance of subsistence hunting and fishing and the traditional way of life.<br><br>To inform and engage the communities in the development of the general permits, EPA conducted multiple early informational meetings in 2009, 2010, and 2011, in Kotzebue, Point Hope, Point Lay, Wainwright, Barrow, Nuiqsut, and Kaktovik. In the spring of 2010, EPA visited Point Hope, Point Lay, Wainwright, Barrow, Nuiqsut, and Kaktovik to share information regarding the Beaufort and Chukchi general permits reissuance process and to discuss EPA's intent to collect Traditional Knowledge information for these permits. During the summer of 2010, EPA contacted these six North Slope coastal communities to request each community's participation in the collection of Traditional Knowledge information. Organizations contacted in these communities included six federally recognized tribal governments, the Iñupiat Community of the Arctic Slope (ICAS), Alaska Eskimo Whaling Commission (AEWC), local governments, and Native corporations. Point Lay, Barrow, Nuiqsut, and Kaktovik agreed to participate in the study; Point Hope declined to participate after multiple offers by EPA, and EPA did not receive a response from Wainwright after multiple attempts to contact the community. Once each community agreed to participate, Stephen R. Braund & Associates (SRB&A) coordinated with representatives from tribal or local governments to plan trips and identify a local community liaison to assist in contacting residents, selecting initial participants, and scheduling workshops. After arriving in the study communities, SRB&A interviewers met with a representative from the Native village (federally recognized tribal government) or city to discuss the project and answer any questions. Communities that did not participate in the Traditional Knowledge workshops were provided the workshop protocol questions and were given an opportunity to submit information in writing or an alternate format, such as via a teleconference.<br><br>It is not practical for EPA to hold meetings in each of the North |

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| 107 | Traditional Knowledge | | Slope and Northwest Arctic communities that have an interest in the Beaufort and Chukchi general permits. EPA will continue its efforts to maintain communication and coordination with these communities on the final decisions and implementation of the Beaufort and Chukchi general permits. |
| 108 | Traditional Knowledge | The Inupiat people have a special knowledge and unique understanding of the Arctic ecosystems as a result of generations of subsistence use. The marine mammals in the Arctic are critical to our continued survival in the most harshest conditions in the world. While the importance of scientific knowledge is widely recognized, the value of local and traditional knowledge should be equally recognized and must included in the process as a validation to science. The proposed permits appear to discount most of the traditional knowledge input. For example, traditional knowledge testimony was provided on the adverse impacts of discharging human waste, mud and cuttings, and resultant offshore deflection of subsistence species making hunts less successful and more dangerous. Yet, in spite of this traditional knowledge input, EPA proposes to allow discharge of human waste, muds and cuttings. | Please see RTC#30, #44, and #107. Based in part on the Traditional Knowledge information collected, EPA incorporated permit stipulations including: (1) eliminate the authorization to discharge drill cuttings associated with non-aqueous drilling fluids (i.e., only water-based drilling fluids and cuttings are authorized); (2) prohibit the discharges of water-based drilling fluids and drill cuttings under the Beaufort general permit during fall bowhead whale hunting activities in the Beaufort Sea by Nuiqsut and Kaktovik; (3) require an alternatives analysis before authorization is granted for discharge of water-based drilling fluids and drill cuttings, sanitary, and domestic wastes to stable ice in the Beaufort Sea area of coverage; (4) require an inventory of chemicals added to each waste stream, where in the drilling process they are used, and establish limits on chemical additive concentrations; (5) require an EMP at each drilling site during four phases of the drilling activity; (6) require toxicity screening and WET testing; (7) limit drilling to 5 wells per lease block; and (8) prohibit all discharges in areas with water depths of less than 5 meters in the Beaufort Sea. |
| 109 | Traditional Knowledge | Traditional knowledge is a very component of understanding the Arctic. EPA's analysis is lacking in its incorporation of traditional knowledge. For example, Traditional knowledge indicates that whales can smell and it took many years for western science to catch up to this fact. Whales can smell and the discharges will cause them to deflect away from our subsistence harvest areas. | Please see RTC#44, #107 and #108. Also in response to concerns expressed regarding whale deflection, EPA has included a provision in the Beaufort and Chukchi general permits to require permittees, to the maximum extent possible, to monitor for the potential deflection of marine mammals during periods of drilling fluids and drill cuttings and non-contact cooling water discharges. See RTC#86. |

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| 110 | Traditional Knowledge | There are significant adverse changes in ecosystem diversity. When you affect our whaling, it affects many different layers of our process, the whole realm of a lifetime that goes into that. It's not just whaling, it's the whole year-long activities associated with that. If we don't have a successful whale harvest, it affects what we do at our Thanksgiving and Christmas. It affects whether or not we're going to have a blanket toss in the summertime. All the planning activities associated with that, all the activities of sharing and interacting with the multiple community members that contribute to providing for the feasting activities that we do. | EPA acknowledges the importance of whaling activities to the communities and their way of life. As such, EPA is prohibiting the discharges of drilling fluids and drill cuttings until after fall whaling activities have concluded in Nuiqsut and Kaktovik. Please see RTC#28. |
| 111 | Traditional Knowledge | EPA's contractor is doing work for ConocoPhillips. Concerned about the quality of the report and conflict of interest. Michael Galginaitis from Applied Sociocultural Research did subsistence research on Cross Island for many years. Stephen R. Braund & Associates may have studied coastal villages, but he has not studied Cross Island Nuiqsut whalers. He has no knowledge of being out there. EPA needs someone who has been out there many years to do a thorough documentation of bowhead whales that are coming through Cross Island. Would like EPA to use this researcher. | The purpose of EPA's Traditional Knowledge work is to collect traditional information and concerns relating to the water discharges from the communities that agreed to participate in the interview workshops. EPA understands the importance of fall bowhead whaling activities at Cross Island and other locations. Whaling information was one focus of EPA's Traditional Knowledge data collection. EPA disagrees with the commenter that the work performed by our contractor presents a conflict of interest. SRB&A is required by the Federal Acquisition Regulations (FAR) to disclose to the agency any potential conflicts of interest. Futhermore, EPA is not aware of any activities conducted by SRB&A that would constitute a conflict with the Traditional Knowledge work for the Beaufort and Chukchi general permits. SRB&A's work products are highly regarded and their work was conducted here in accordance with EPA's direction and expectations. |

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| 112 | Traditional Knowledge | EPA should delete our interviews from this report. Delete the interviews that have been done by SBRA. Stephen Braund has not been there. EPA should have consulted with Nuiqsut before drafting the document. | EPA does not plan to delete the interviews conducted by SRB&A in Nuiqsut. EPA obtained consent from the tribal council and native corporation leaders from the Native Village of Nuiqsut for SRB&A to conduct Traditional Knowledge workshop interviews within the community. SRB&A followed proper protocol by requesting assistance from the village leaders to identify and gain input from subsistence hunters from the community. SRB&A developed the interview protocol in consultation with the EPA. Before each interview began, study team members explained the project and asked each participant to read and sign the informed consent form. Traditional Knowledge information provided from interview participants has been very helpful to EPA in our decision-making process. EPA appreciates the input provided by all participants. |
| 113 | ODCE General Comments | Where are the locations of the wells to be drilled? | Each NOI submitted by operators requesting EPA's authorization to discharge must include the well location information, such as a site map showing the exact location of the facility and discharges associated with the project, the lease block number and well name, and the latitude and longitude of the discharge location. All NOIs received will be posted on EPA's Region 10 website. The NOIs received under the Arctic general permit are posted on our website at http://yosemite.epa.gov/r10/water.nsf/npdes+public+notices/arctic-gp-pn-2012. The maps show the locations of exploration wells that may be drilled in the future. |

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| 114 | ODCE General Comments | These definitions for evaluation and criteria on the ocean discharges, unreasonable degradation. How are we supposed to get the definitions, and try to communicate this, when it's not clearly defined. What is a safe discharge limit? How are the discharge standards determined to protect human health and the environment? | EPA must use the regulatory definitions provided under 40 CFR 125.121(e) to determine unreasonable degradation. The definition is threefold: (1) significant adverse changes in ecosystem diversity, productivity, and stability of the biological community within the area of discharge and surrounding biological communities; (2) threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms; and (3) loss of aesthetic, recreational, scientific, or economic values, which are unreasonable in relation to the benefit derived from the discharge. How EPA evaluates whether the discharges result in unreasonable degradation must be based on the ten criteria established by regulation. This regulatory framework guides our decision-making. For the Beaufort and Chukchi general permits, EPA has completed the evaluation and determined that the discharges, with the limits and controls placed on them in the general permits, will not result in unreasonable degradation of the marine environment. |
| 115 | ODCE General Comments | Lack of baseline data for Arctic waters include inadequate information about water quality, marine mammal migration and habitat, subsistence impacts, and health impacts. Without adequate baseline information, it will be impossible to determine impacts from drilling activities, including discharges authorized by the proposed permits. The ODCE should be revised to clearly document the fact that the Chukchi Sea and the Beaufort Sea are pristine water bodies, compared to other OCS Lease Areas, and warrants additional protections to preserve its pristine quality. We have not seen Tom Cod in this area in a couple of years. Is there scientific study on drilling during bowhead whaling? | EPA disagrees with the assertion that the Arctic lacks adequate baseline data. Comprehensive research and studies have been conducted over the last several years by researchers, offshore operators, universities, and local and federal governments to collect environmental data in the Beaufort and Chukchi Seas. Additionally, EPA's ODCE must be based on the ten criteria established by regulation for NPDES discharges of pollutants into the territorial seas, the contiguous zone, and the oceans. In compliance with the process established by regulation, EPA has completed the ODCEs for the Beaufort and Chukchi general permits and concluded that the discharges, with the limits and restrictions placed by EPA, will not cause unreasonable degradation of the marine environment. See RTC#114.<br><br>Finally, NMFS and BOEM are developing an Environmental Impact Statement (EIS) evaluating the effects of oil and gas activities in the Arctic Ocean, which considers the impacts of drilling on bowhead whales. BOEM (formerly Minerals Management Service) also released in 2009 an assessment of subsistence bowhead whaling near Cross Island, from 2001-2007. See also RTC#119. |

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| 116 | ODCE General Comments | Neighboring Arctic nations have had additional time and reason to study the lasting effects of pollution to the marine environment in this region. For example, Canadian studies have been available for decades. The Beaufort Sea Project, conducted in 1974-1975 as a joint Canadian government-industry initiative, produced 39 technical reports investigating the potential environmental and social impacts of drilling in the Beaufort Sea. These reports include studies related to oceanography, biology, glaciology, and oil spill effects. While it is not safe to assume that all Arctic regions are homogenous or alike, these studies and others like them provide ample evidence of the potential effects of oil to ice and marine ecosystems. | EPA is aware of the Beaufort Sea Project, as well as other research programs evaluating potential impacts of oil and gas activities in the Canadian Beaufort, including the five-year Beaufort Regional Environmental Assessment (BREA) research-based initiative. EPA has relied on the large body of existing data to evaluate the potential impacts associated with oil and gas activities in the Arctic. |

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| 117 | ODCE General Comments | What onshore and nearshore data have been collected for subsistence animals, plants, and other species? Will EPA require onshore data collection, to evaluate impacts to subsistence species? Could the discharges cause piles to collect on the seafloor or erosion to occur on land? We are concerned about the discharges into the ocean washing up onshore. Any spill or chemicals discharged would affect the onshore environment. We rely on the water and on the land. | The Beaufort and Chukchi general permits authorize discharges from oil and gas exploration facilities located in waters that are seaward of the inner boundary of the territorial seas as defined in section 502(8) of the Clean Water Act. The Chukchi area of coverage includes leases located in the Outer Continental Shelf (OCS) approximately 70 miles or more from shore. The Beaufort area of coverage includes leases located in the OCS and in nearshore state leases, with discharges occurring seaward of the inner boundary of the territorial sea, which is generally the line marking the mean lower low water. The permits require collection of environmental data prior to drilling, during drilling, and after drilling activities have completed. The results of the environmental data will be used to inform future decisions, which may include additional data collection, including onshore areas. EPA has taken precautions to ensure piling, shoreline erosion, or materials washing onshore do not occur. These precautions include limiting the discharge rate for drilling fluids and drill cuttings within certain water depths, and prohibiting discharges in areas where the water depth is less than 5 meters in the Beaufort Sea. BOEM and the U.S. Coast Guard, and the Alaska Department of Natural Resources (ADNR) are the federal and state agencies, respectively, with regulatory jurisdiction to ensure the appropriate protections are in place to prevent potential spills during drilling. The federal agencies, including EPA, also have the regulatory authorities to require spill prevention and control, contingency planning, and equipment inspection activities associated with oil and gas facilities within their respective jurisdictions. |

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| 118 | ODCE General Comments | In light of our communities' concerns over food tainting, this evaluation should lead to a conclusion that several waste streams should not be discharged to the Arctic Ocean. When the proper level of discharges is considered, the scope of the permits redefined, the flaws of the agency's evaluations are corrected, it is apparent that zero discharge permits are necessary for the Beaufort and Chukchi Seas. Absent data to prove there will be no unreasonable degradation to the Chukchi Sea or the Beaufort Sea from the proposed discharges, significant discharges of waste containing chemicals, heavy metals and other toxins should be prohibited until proven safe. The communication or the science are not adequate to assess if there is harm being done on the degradation by pollution discharges to the habitat of the whale and other marine mammals. If that habitat and the massive area that EPA is determining that discharge takes place, which is larger than some states. Given that the discharges will occur in such a large area, I don't think that there is adequate information to understand if migration patterns will change with the pollution discharges. [If the information gathered under these permits shows an unreasonable amount of degradation] will EPA cancel the permit? We have had years of no/low tomcod and there is little of that recovery now. Where will this be addressed? Where does that fit into the determination of unreasonable degradation? | EPA understands the communities' concerns regarding potential tainting of subsistence resources. EPA simulated the mixing, dispersion, and deposition of the drilling discharges. In most scenarios, the majority of the drilling fluid solids are deposited within 1,250 meters (3,280 ft) of the discharge location. The maximum predicted deposit was approximately 2 cm (0.8 in), and the median for all scenarios was a deposit of approximately 0.2 cm (0.07 in). Based on this data and the low likelihood of the chemical constituents to bioaccumulate or persist in the environment, the discharges do not pose a threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms. EPA requires the operators to collect environmental monitoring data before, during and after drilling to ensure unreasonable degradation does not occur and to assist with community outreach on the concerns regarding food tainting. Finally, EPA has the authority to modify or revoke permit coverage at any time, if on the basis of any new data, EPA determines that continued discharges may cause unreasonable degradation of the marine environment.<br><br>As discussed in RTC#11, EPA will also request ATSDR review the data from the environmental monitoring reports to determine the potential risks associated with exploration discharges on the communities that rely on marine resources for subsistence. |

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| 119 | ODCE General Comments | EPA's conclusions that the proposed discharges will not cause unreasonable degradation are arbitrary because: (1) the agency improperly calculated potential sedimentation; (2) failed to properly consider the potential for persistence or bioaccumulation of pollutants; (3) ignored important local characteristics of the seas; (4) considered impacts on too large a scale; (5) failed to consider the effects of climate change; and (6) reached a determination that is at odds with current science. The agency's promise to gather information on potential harms cannot save its analysis because the data will likely arrive after the harm is done. Before issuing a permit, EPA must conclude that unreasonable degradation will not occur. Small changes in either the stressed conditions of the Beaufort and Chukchi Seas, or the introduction of new chemical stressors from the exploratory drilling, may cascade into ecosystem level adverse effects. Due to the high degree of uncertainty regarding potential adverse effects, EPA should work to minimize all discharges. Each of these may contain materials which may stress either individual populations or the ecosystem beyond poorly defined tipping points. Thus, both the Beaufort and Chukchi Sea General Permits should acknowledge the increased uncertainty in estimating adverse impacts from the discharges related to oil and gas exploration activities and prohibit all discharges of drilling fluids and cuttings (Discharges 001 & 013), and sanitary wastes (Discharge 003), and minimize the use of biocides in non-contact cooling water (Discharge 009). | Section 403 of the CWA is intended to prevent unreasonable degradation of the marine environment when authorizing a discharge of pollutants under an NPDES permit. Specifically, section 403(a) requires that any NDPES permit for discharge into the territorial seas, the contiguous zone and the oceans – including the outer continental shelf – satisfy the guidelines set out in section 403(c) of the CWA.<br><br>The section 403 guidelines require EPA to determine whether issuing an NPDES permit will result in unreasonable degradation to the marine environment. The guidelines allow permit writers the flexibility to tailor application requirements, effluent limitations, and reporting requirements to the specific circumstances of each NPDES permit. 45 Fed. Reg. 65942 (October 3, 1980). The section 403 guidelines also require that EPA conduct an ODCE. EPA regulations establish a minimum of 10 criteria that the agency must consider in an ODCE. At the conclusion of an ODCE, EPA must make one of three findings under 40 C.F.R. § 125.123(a)-(c):<br><br>(a) there is no unreasonable degradation, and issue the permit with any conditions necessary to ensure that degradation will not occur;<br><br>(b) there is unreasonable degradation, and deny the permit; or<br><br>(c) there is insufficient evidence to make a determination about unreasonable degradation, and issue the permit if the proposed discharge will not cause irreparable harm, there are no reasonable alternatives to on-site discharge, and the discharge will be in compliance with certain mandatory permit conditions.<br><br>When conducting an ODCE, EPA's burden of proof is not the same burden a scientist must satisfy when reaching a conclusion. 45 FR at 65943. EPA is not required to possess complete knowledge of the impact of a discharge when conducting an ODCE. Hence, under EPA guidance, "[u]nless available data indicate that a discharge will cause unreasonable degradation, [EPA] need not take additional steps, including the compilation of additional data, to support a conclusion that no further limitations of the discharge" is necessary. 45 FR at 65945. In addition, EPA is not required to |

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| 119 | ODCE General Comments | | ensure there is no degradation before issuing a permit. Rather, EPA must exercise "reasonable judgment" when reaching a determination about unreasonable degradation. Id. at 65943, 65947–48.<br><br>In reaching a conclusion that there is no unreasonable degradation, EPA may presume that discharges in compliance with the CWA section 301(g), 301(h), or 316(a) variance requirements, or with State water quality standards, do not cause unreasonable degradation to the marine environment. But EPA may, on the basis of the factors specified in 40 C.F.R. § 125.122(a), conclude that additional permit conditions or limitations are necessary to ensure no unreasonable degradation to the marine environment even though the requirements of sections 301(g), 301(h), 316(a), or State water quality standards, have been met. Id. at 65943. Additional conditions or limitations - which stand apart from any other applicable CWA provision - can be expressed as enforceable limits, corrective actions based on monitoring results, or designed to create a conditional permit. Id. at 65944, 65947.<br><br>Overall, EPA has not identified any available scientific information that would support a conclusion that the proposed discharges authorized under either permit will result in unreasonable degradation of the marine environment. However, some available information – scientific and local knowledge – suggests there may be uncertainty about the temporal and spatial impacts from the proposed discharges under either the Beaufort or Chukchi permit. As a result, after evaluating the various factors in the ODCE, EPA concluded that additional permit conditions are required to ensure there is no unreasonable degradation to the marine environment. These necessary conditions, such as increase in the frequency and type of monitoring for multiple discharges, no discharge restriction during fall bowhead hunting activities by Nuiqsut and Kaktovik, EMP studies before, during and after exploration activities, toxicity testing, and robust reporting requirements are included in the final permits. Consequently, EPA exercised reasonable judgment, based on detailed analysis in the ODCE, in determining that discharges authorized by the general permits will not cause unreasonable degradation to the marine environment. |

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| 119 | ODCE General Comments | | With respect to the commenters specific concerns about EPA's analysis, please see the final Beaufort and Chukchi ODCEs at the following sections:<br><br>Calculation of potential sedimentation – Section 6.1.1.<br><br>Potential for persistence or bioaccumulation of pollutants – Sections 6.1.3. and 6.1.4.<br><br>Analysis of local characteristics of the seas – Sections 4, 5, and 6.2.2.<br><br>Analysis of climate change effects – Section 5.9.4.<br><br>On the issue of the scale of EPA's analysis, please see RTC#118 and #136. |

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| 120 | ODCE General Comments | EPA lost the prior monitoring data from previous wells that were drilled in the Arctic, as a result, there is no real data from which to estimate the discharges. When "insufficient information" exists to determine whether "there will be no unreasonable degradation of the marine environment" then "there shall be no discharge of pollutants in to the marine environment..." EPA should be contemplating a zero discharge program since other data is not available upon which the agency can base its evaluation. It is too early to say, nor is it appropriate to say, that nothing will be impacted. There are absolutely no guarantees that the environment will not be impacted. Comparing that baseline that you are about to see, with the baseline that was already established when Popcorn and Burger were drilled in 1989. And whether there was a recovery or not. The impacts to marine mammals and fisheries are just barely being understood, including the biological, chemical, physical habitat in which the impacts of pollution discharge need to be understood better. Only a few months ago, the Marine Mammal Commission described the paucity of data for safe exposure levels. The risks from oil and gas exploration greatly outweigh potential benefits, and the considerable lack of baseline scientific information remains an ongoing concern. It is important to note that where sufficient data are lacking, EPA's regulations supply a remedy. EPA has not followed this procedure, such as determining whether there are no alternatives to onsite disposal. An evaluation of the factors in 40 C.F.R. 125.123(c) is warranted. | As discussed in RTC#119, when EPA makes a determination about whether a NPDES permit will cause unreasonable degradation, and whether to issue that NPDES permit, EPA must make one of three findings under 40 C.F.R. § 125.123. With growing interest in offshore oil and gas prospects in the Arctic Ocean, EPA is faced with complex issues ranging from ecological concerns to disproportionate impacts on native communities that rely on traditional subsistence practices.<br><br>When evaluating these issues under the ODCE, EPA is not required to ensure there is no degradation to the marine environment. Rather the standard EPA must apply is whether there is “unreasonable degradation” to the marine environment. Nor do EPA regulations require complete knowledge of the impact of a discharge prior to permit issuance. But rather, as discussed in EPA's RTC#119, EPA must use “reasonable judgment” when determining if a discharge will cause unreasonable degradation. Furthermore, in reaching a determination of no unreasonable degradation to the marine environment, EPA need not assess alternative locations or methods for disposal. 45 FR at 65943. EPA is only required to conduct an alternatives analysis in those cases where there is insufficient information to make a finding of no unreasonable degradation to the marine environment.<br><br>In those circumstances where EPA has insufficient information to make a reasonable judgment about the impacts of a discharge, EPA may exercise its authority to issue the NPDES permit in accordance with 40 C.F.R. § 125.123(c). Under that provision, if EPA has insufficient information to determine prior to permit issuance that there will be no unreasonable degradation of the marine environment pursuant (as set out under 40 C.F.R. § 125.122), then EPA may not authorize the discharge of pollutants into the marine environment unless EPA determines “on the basis of available information” that:<br><br>(1) Such discharge will not cause irreparable harm to the marine environment during the period in which monitoring is undertaken, and |

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| 120 | ODCE General Comments | | (2) There are no reasonable alternatives to the on-site disposal of these materials, and<br><br>(3) The discharge will be in compliance with all permit conditions established pursuant to paragraph 40 C.F.R. § 125.123(d).<br><br>As discussed in greater detail in the ODCEs, EPA evaluated historic and anticipated impacts of oil and gas exploration activity in the Arctic and concluded that any impacts will be limited in scope across space and time. As a result, EPA determined on the basis of available information and through the imposition of permit requirements and conditions that the discharges authorized by the general permits will not result in an unreasonable degradation to the marine environment. Consequently, EPA is not required to complete an analysis under 40 C.F.R. § 125.123(c).<br><br>EPA has revised the Chukchi ODCE to include additional details from the recent sampling and monitoring efforts at the historical drill sites in the Chukchi Sea. Please refer to Section 6.1.3. of the final Beaufort and Chukchi ODCEs for updated analyses of the Arctic marine environment. Finally, based on its consideration in the ODCE, EPA determined that additional monitoring and reporting conditions should be included in the permits to ensure there is no unreasonable degradation of the marine environment. The monitoring and reporting requirements will provide EPA with timely information to continually evaluate impacts to the marine environment. See RTC#98. |

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| 121 | ODCE General Comments | The agency has failed to evaluate the impact of the discharges of chemical additives that are included in various waste streams but not regulated in the same fashion as the thirteen designated waste streams. Bowhead whales and other subsistence species will be exposed to these manmade discharges in the ocean. Monitoring and screening the discharges may be helpful down the road for western scientific purposes, but they do not alleviate the fact that manmade substances are being discharged into areas used by local subsistence hunters and fishers. Specifically, commenter requests that EPA's analysis be updated to include an examination of the chemicals likely to be contained in the proposed deck drainage discharge based on actual Beaufort Sea exploration activity and chemical use or planned Chukchi chemical selection. In the absence of specific data on planned Chukchi operations, the Beaufort Sea data can inform Chukchi permit decisions. EPA's analysis supporting its proposed discharge limits and monitoring program requirements for deck drainage appear to be based on data collected by EPA from a 1989 study (ODCE Table 3-3) at three drilling rigs in temperate waters, unrelated to the Chukchi Sea, or any current Chukchi Sea drilling operation. EPA does not provide any data to show the amount or composition of deck drainage common to Chukchi Sea drilling rigs, nor does EPA provide an examination of the chemicals likely to be contained in the proposed discharge. | EPA evaluated the potential impacts associated with the discharges as a whole, rather than by constituent or specific discharge type or the impacts associated with the type of chemicals that may exist in the discharge. EPA concluded that permit limits and conditions, and the requirements on the concentrations of chemicals used, adequately control conventional and nonconventional pollutants; and that discharge of pollutants under the general permits will not result in unreasonable degradation of the marine environment.<br><br>The sources of deck drainage includes all water resulting from incidental spills on the drilling vessel/facility, facility washings, deck washings, tank cleaning operations, and run-off from curbs, gutters, and drains. The primary pollutant of concern in deck drainage is oil and grease, rather than chemicals. The limitation on free oil in deck drainage and the requirement that the deck drainage discharge be treated through an oil-water separator adequately control any potential toxic pollutants at appropriate regulatory levels. The Beaufort and Chukchi general permits also require monitoring and reporting of concentrations of TAH and TAqH in the discharge of the effluent from the oil water separator. In addition, the restriction on the concentration of chemical additives use and reporting requirements provide the necessary controls on chemicals that may exist in the discharge. EPA does not have data to indicate that the deck drainage discharge will contain chemicals, as such will not examine the chemicals as requested by the commenter. EPA will use the chemical data inventory from the Beaufort and Chukchi general permits for future decision-making. |

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| 122 | ODCE General Comments | EPA relies heavily on the 1993 ELG to support its proposal to allow exploration waste discharges to the Beaufort and Chukchi Seas in some cases; yet, in other cases dispenses with the ELGs as out-of-date and inconsistent with best technology and science for the Arctic. Recommend that EPA not just selectively reject the 1993 ELGs for some waste streams and not others (e.g., restrict discharges of oil and synthetic-based fluids and cuttings). Recommend EPA revise the permits and ODCEs to acknowledge that it is technically feasible to collect and transport offsite all drilling fluids and cuttings. Additionally, commenter requests that EPA remove all references to temperate water studies and studies completed in heavily industrialized and polluted areas, such as the Gulf of Mexico that are not relevant to arctic waters or the level of protection sought for these pristine waters. Request that EPA revise the permit, ODCE and other support documents to only rely on arctic data, and identify where data gaps exist. | Data from the ELG Development Document for the Offshore Point Source Subcategory, January 1993, provide a framework and basis for EPA's decision-making. EPA will not remove the references to the studies used to support the ELGs, as requested by the commenter. While Shell has demonstrated it is technically feasible to collect, transport, and dispose several waste streams elsewhere, and has independently agreed to collect and transport a number of discharges, including drilling fluids and drill cuttings from its Camden Bay drillsites, EPA has evaluated the potential impacts of the water-based drilling fluids and drill cuttings discharges and determined they do not result in unreasonable degradation of the marine environment. As such, those discharges are authorized under the Beaufort and Chukchi general permits. Please note, to ensure the discharges of drilling fluids and drill cuttings will not impact the fall subsistence activities, EPA has restricted the discharges of drilling fluids and drill cuttings (Discharge 001) during fall bowhead whale hunting activities by Nuiqsut and Kaktovik.<br><br>The ODCEs supporting the final permit decisions incorporate data, where they exist, including data relied by the agency to establish national guidelines, to ensure a robust analysis of the potential effects associated with the discharges. Finally, EPA does not consider its decision to not evaluate the discharges of synthetic-based fluids and cuttings as selective use of the 1993 ELGs. Rather, the agency has made the decision to not authorize those discharges under the Beaufort and Chukchi general permits since all known potential operators have indicated their plans to only use water-based drilling fluids. Any operator wishing to discharge synthetic-based fluids and cuttings may request authorization under individual permits, and the proposed discharges' potential impacts to the marine environment would be evaluated at that time.<br><br>EPA has not removed the discussion of data from the Gulf of Mexico or other locations to rely solely on Arctic data, as requested by the commenter. All relevant and available data are used by EPA as they aid in our understanding of potential impacts and result in informed decision-making by the agency. In addition, EPA has acknowledged that site-specific data, collected before, during and |

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| 122 | ODCE General Comments | | after drilling, are necessary to ensure that there is no unreasonable degradation of the marine environment. |
| 123 | ODCE General Comments | We're concerned about potential negative environmental impacts of new pollutants directly discharged into the water from the proposed exploration activities, including drilling fluids and cuttings, sanitary and domestic waste discharges, blowout preventer fluids, ballast water discharges, bilge water, excess cement slurries and test fluids. These discharges may have significant adverse effects, particularly to the benthic community, which will affect the whole ecosystem including the health and availability of subsistence marine mammals, fish and other marine life. | Based on EPA's evaluation of the discharges and with the limits and controls placed on each individual waste stream, we have determined that the discharges will not result in unreasonable degradation to the marine environment. Additionally, EPA is requiring the operators to collect environmental data before, during and after drilling to ensure unreasonable degradation will not occur. If operators discharge drilling fluids and drill cuttings, the general permits require bioaccumulation studies to be conducted above and beyond the EMP requirements applicable to all dischargers. This site-specific data will be shared with communities and stakeholders and will be used in future decision-making. Please note the Beaufort and Chukchi general permits do not authorize the discharge of test fluids. Please also see RTC#11. |

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| 124 | ODCE General Comments | EPA does not have the research to demonstrate that drilling muds and cuttings will not bioaccumulate in organisms in the ocean, and harm the subsistence species upon which we depend. Additionally, EPA relies on flawed assumptions regarding bioaccumulation of the metals and other man-made materials in the drilling fluids and cuttings that are critical to its analysis. First the agency concludes or assumes that amphipids, the benthic community, etc. will only be exposed to drilling muds and cuttings for four to five days. This assumption is not supported by the activities that EPA is regulating. There is no guarantee that small organisms in the area will have the opportunity to detoxify in "clean salt water" after five days since most drilling operations are proposed for 30-90 days. This criterion also requires evaluation of the additive chemicals that are discharged to the ocean along with the 13 identified waste streams. For example, biocides are discharged with noncontact cooling water in large quantities. These chemicals contain toxins and heavy metals that also need to be considered in an analysis of bioaccumulation and persistence. Mercury pollution in particular has become a large problem despite efforts to control regional mercury contamination. Levels continue to rise in Arctic species such as polar bears, beluga whales, and seals, which pose a tremendous problem for indigenous peoples. There is growing evidence that metals and some organic compounds may have non-lethal chronic effects on a variety of species. Typically behavioral impacts manifest through sight, smell, hearing, or other sensory organs. Finally, EPA's analysis did not consider impacts of discharges from five wells, or more, per lease block. The ODCE should be revised to remove contradictory conclusions regarding bioaccumulative effects of the discharge. The ODCE cannot conclude that drilling pollutants do not bioaccumulate or persist in the environment and also that they do. Additionally, the ODCE cannot conclude that there is insufficient data to understand the bioaccumulation potential, and yet also conclude there are no adverse impacts based on the | The bioaccumulation of a number of metals from exposure to drilling fluids and drill cuttings has been studied in the laboratory and in the field. Short-term laboratory experiments and field situations have found barium and chromium to accumulate beyond control organisms. Also, long-term exposures, which are particularly relevant to assessing impacts of development operations, have been studied. The assessment of the bioaccumulation of drilling fluids-related metals will be driven by the exposure of benthic epifauna and infauna to drilling fluid particulates. Yet, bioaccumulation studies routinely have tested highly concentrated whole fluids or the aqueous phase of the fluids, which are indicative of extreme worse-case scenarios and not necessarily representative of the discharges and their behavior upon contact with the receiving marine environment. In other words, during drilling activities, the discharges would immediately dilute and disperse upon contact with the receiving water and any exposure would occur with the suspended particulates in the water column or the materials that settle on the sea floor. Furthermore, studies that have tested exposure to the solids estimated a 100 percent exposure situation. (EPA 2000). While an exploration drilling activity may occur over a period of a month or longer, drilling fluids and drill cuttings discharges are episodic and typically occur only a few hours in duration during periods when the borehole is advanced. Industry estimates are that actual drilling activities occur approximately 50-75% of the time; the other 25-50% includes non-drilling activities such as casing and cementing operations, well logging, and equipment preparation. Organisms that live in the water column are not likely to have long-term exposures to the discharge of drilling fluids and drill cuttings. EPA is requiring operators discharging water-based drilling fluids and drill cuttings, as part of the EMP, to conduct bioaccumulation studies on the benthic community. The studies, along with toxicity data collection required under the general permits, will generate useful site-specific information useful for future decision-making. |

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| 124 | E General Comn | absence of that data. | |
| 125 | ODCE General Comments | Bioavailability of metals and organic compounds in drilling muds and cuttings is low (Crecelius, 2007; Neff 2002, 2008; Terzaghi, 1998; Trefry, 1986, 2007; Westerlund, 2001, 2002) and do not bioaccumulate in marine food webs appreciably (Jenkins, 1989; Leuterman, 1997; Neff, 1987, 1989; Phillips, 1987; Schaanning, 2002; Trefry, 1986; URS, 2002). Drilling mud and cuttings components will not bioaccumulate in arctic food webs (Neff, 2010). Concentrations of metals and hydrocarbons in marine animals near wells drilled are not elevated compared to regional levels (Crippen, 1980; NTS, 1981, 1982; Tornberg, 1980). Metals and petroleum hydrocarbons in Beaufort Sea invertebrates and fish collected during ANIMIDA and cANIMIDA are consistent with background levels (Brown, 2010; Neff, Durell, 2009, 2012). | Please also see RTC#124. It is important to collect site-specific data to support ongoing permit implementation, oversight activities, and future decision-making. As such, EPA is requiring operators discharging water-based drilling fluids and drill cuttings to conduct bioaccumulation studies on the benthic community as part of the EMP. |

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| 126 | ODCE General Comments | EPA admits that "several parameters exceed acute water quality criteria in the mixing zone" and that "concentrations of some dissolved constituents could also exceed levels where chronic effects could occur." EPA claims that "chronic criteria are generally based on effects over 4 days of continuous exposure to a discharge plume." This conclusion is entirely inconsistent with Exploration Plans and air permits EPA has approved. For example, the minor source air permits for Shell's Kulluk allows drilling for 1,632 hours (68 days) and construction of the MLC for 480 hours or 20 days. Admittedly, there may be periods of time in which Shell is engaged in neither drilling nor MLC construction, but any possible gaps in the operations will not produce a 4-day exposure period. Indeed, it is important that EPA remember that these discharges will be occuring at one well site for 30-90 days based on the agency's own estimates. The proposed permits risk exposing benthic communities and ESA listed species such as bowhead whales to levels of pollution that exceed WQS and risk chronic effects. One study reported that exposure to substances found in drill cuttings resulted in acute toxic effects in a range of marine species tested, including a copepod, algae, and oyster embryos. It is not clear why EPA would decide to only protect marine life from acute and chronic water quality impacts outside the mixing zone. | As noted in RTC#124, while a drilling activity may last over a period of a month or longer, the discharges of drilling fluids and drill cuttings are expected to occur intermittently, during periods when the drill bit is advancing the well, and short-term in duration. As discussed in the ODCEs, localized effects are expected through exposure in the water column or in the benthic environment within the mixing zone.<br><br>EPA's policies, regulations, and guidance documents allow for mixing zones, where water quality criteria can be exceeded as long as acutely toxic conditions are prevented. Please note, with the exception of stock barite mercury and cadmium limitations, the effluent limitations for all discharges established by the Beaufort and Chukchi general permits are end-of-pipe limits. More information regarding mixing zones can be found at http://water.epa.gov/scitech/swguidance/standards/mixingzones/index.cfm.<br><br>EPA's ODCE regulations require a demonstration that unreasonable degradation will not occur as a result of the discharges; however, a certain degree of degradation is allowed. See RTC#119. Also, please note EPA received letters of concurrence from both the USFWS and NMFS that the discharges may affect, but are not likely to adversely affect threatened and endangered species and their critical habitat areas. See RTC#23. |

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| 127 | ODCE General Comments | We ask that EPA analyze the traditional knowledge it gathered before reaching this conclusion. While the provision restricting discharges during active bowhead hunting activities is helpful for minimizing impacts to subsistence hunting, it does not ensure that bowhead whales will not be swimming through polluted water in non-hunting areas. Likewise, the proposed permit conditions do not address changes to migratory patterns and presence of different species as they adapt to our changing climate in the Arctic. | As discussed in RTC#108, the Traditional Knowledge data collected were very helpful to EPA and resulted in general permit requirements that are protective of the marine environment. Based on the ODCE analyses and the BEs, EPA concludes that the discharges will not adversely impact bowhead whales or other ESA species and their designated critical habitat areas. Both NMFS and USFWS, the agencies charged with protection of threatened, endangered, and candidate species agreed with EPA's "may affect, but are not likely to adversely affect" determinations. Finally, the Beaufort and Chukchi general permits include a provision, as part of the EMP, requiring permittees to collect observations for potential marine mammal deflection during periods of discharge of drilling fluids and drill cuttings (Discharge 001) and non-contact cooling water (Discharge 009). EPA will use this data to inform future decision-making.<br><br>At this time, EPA does not have information indicating changes to migratory patterns or the presence of different species due to changing climate on a large scale. However, the Beaufort and Chukchi general permits' requirements for a robust EMP will produce a large data set to aid in future agency decision-making, when additional information related to climate change and its effects on Arctic species may be available, including how the discharges could potential have an effect on the changing climate. |
| 128 | ODCE General Comments | While it is true that the areas of coverage for the permits do not include marine sanctuaries, refuges, parks, or monuments, that does not mean that important areas will not be impacted by the permitted discharges. There are areas covered by the permits that are special aquatic sites - namely because of their importance to bowhead whales. We ask that EPA analyze the following special aquatic areas to ensure biological consequences will not result: (1) Camden Bay, (2) Barrow Canyon/western Beaufort Sea (between Smith Bay and the canyon), (3) Harrison Bay, (4) Hanna Shoal, (5) the lead system in the Chukchi Sea (including the zone extending beyond the typical lead area), (6) Herald Shoal, and (7) the Berring Strait. | EPA appreciates the commenter's concerns regarding the areas listed. However, since marine sanctuaries, refuges, parks, or monuments are not within the areas of coverage for the Beaufort and Chukchi general permits, it is not expected that the discharges will have an effect. The ODCEs for the Beaufort and Chukchi general permits include analyses of the impacts to the areas noted by the commenter that are within the respective general permits' Areas of Coverage. |

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| 129 | ODCE General Comments | The potential for impacts to human health either directly or indirectly from the proposed exploration activities and discharges is great. EPA concludes that the permits will not pose a risk to human health, but it does so based on quite limited western scientific information. EPA's permit conditions do not address the potential of perception of marine life tainted by the discharges. The permit prohibition of no discharge during active bowhead hunting does not protect whales from exposure to the pollution elsewhere. EPA's proposal to monitor the discharges is not a solution because it assumes that local communities will continue to consume traditional foods while the data is collected. It places the risk on our people if the results show harm, instead of placing the burden on the agency to demonstrate harm will not result. There is only one solution to addressing the concern: put in place zero discharge permits. We hope that discharges will not promote algae blooms or growth, can you confirm that this won't happen? Red tides are poisoning the shellfish that are important to our diet. EPA has not provided data to show that the amount and type of pollution EPA proposed under this permit will not result in direct and/or indirect impacts to human health. Instead, EPA proposes to allow discharges by arguing that the waste, even if discharged above acute and chronic toxicity concentrations at the drillsite, will eventually disperse in the large ocean and that marine life will only quickly and temporarily be exposed to acute and chronic pollution as it passes though the discharge plume that will exist between the drilling rig and the end of the mixing zone. | EPA appreciates concerns about food tainting, however, to a large extent, EPA must rely on scientific data. EPA's analyses indicate that human health impacts are not expected from either direct (from direct exposure to the discharges), or indirect pathways (from consumption of potentially contaminated foods). Modeling data show that drilling mud will disperse within 100 meters of the source. Coarser cuttings particles, greater than 125 um, will be deposited within approximately 1,000 meters of the discharge. Non-mud and cuttings discharges were shown to achieve high dilutions within 1,000 meters. See RTC#118.<br><br>Exposure of subsistence resources, such as bowhead whales, to the pollutants contained in the discharges, within and outside the zones of discharge, is anticipated to be negligible. EPA's requirement of no-discharge of water-based drilling fluids and drill cuttings during fall bowhead whale hunting by Nuiqsut and Kaktovik in the Beaufort Sea further ensures that this important subsistence activity is protected. Finally, the effluent limitations placed on each of the discharge waste streams, the results from discharge monitoring, and the EMP will produce a robust data set to aid in the understanding of potential impacts and for use in future agency decision-making. It will also inform ongoing permit implementation and oversight activities. Please also see RTC#126 and #127. |

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| 130 | ODCE General Comments | The EJ analysis does not address the concern in local communities about real or perceived food tainting and the resulting human health impacts linked to the avoidance of traditional foods. EPA failed to draw reasonable conclusions about food tainting or include permit conditions to address our communities' concerns. Moreover, EPA concludes in its reasoning that because it believes the marine environment will not be degraded there will be no adverse, disproportionate impact to local minority communities. This circular reasoning is confusing. Again, monitoring the discharges is not the same as reducing the risks that they pose to the environment and subsistence communities. Environmental injustice is occuring because oil companies get to do what they want out here. Commenter requests that EPA prepare a detailed health impact assessment for this proposed action. We reviewed international best practices for managing OCS discharges, and found that community concern over potential contamination, coupled with acknowledged data gaps creates uncertainty in such assessments. Fears about contamination are well-documented causes for decreased participation in subsistence activities and decreased consumption of subsistence foods. In this case, the recognized data gaps regarding the subsistence consumption contaminant exposure pathway could contribute to these fears and exacerbate the problem. Decreased consumption of subsistence foods would constitute an adverse effect on the nutrition and physical activity of North Slope residents. Similarly, decreased consumption of subsistence foods could create an incremental increased risk of problems such as diabetes, obesity, and hypercholesterolemia. As described above, any adverse impact on subsistence would increase stress in communities, which constitutes an adverse effect on public health. | EPA has included a health-related impact discussion in the EJ Analysis and ODCE. EPA has also revised the EJ Analysis to incorporate the most recent health impact information provided to us by the North Slope Borough. Based on the restrictions and requirements imposed by the Beaufort and Chukchi general permits, EPA has concluded that reisssuance of the general permits will not result in adverse disproportionate health impacts on the subsistence communities. EPA will not conduct any further health impact analyses for this permit. Please see RTC#129.<br><br>Finally, as discussed in RTC#11, EPA will request that ATSDR review the data from the environmental monitoring program reports to determine the potential risks associated with exploration discharges on the communities that rely on marine resources for subsistence. |

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| 131 | ODCE General Comments | Request EPA provide a thorough analysis of the data it has collected on previous exploration drilling operations from the 36 exploration wells that have been drilled in the Chukchi and Beaufort Sea to date, identify best practices and technologies, and summarize known impacts identified by the monitoring programs. EPA must present an analysis of Beaufort Sea exploration wells drilled in the past 10 years. | Very little data exist from the historical wells drilled in the Beaufort and Chukchi Seas. While operators may have requested and received authorizations from EPA to discharge, in many instances, the discharges did not occur, or only certain wastestreams were discharged, such as sanitary wastes or ballast water. EPA would only have discharge data for the actual wastestreams discharged during those exploratory operations. The last well drilled in the Chukchi Sea was in the late 1990s and the last well drilled in the Beaufort Sea was 2002. Additionally, EPA has not previously required environmental monitoring programs of the same scope as required under the Beaufort and Chukchi general permits. For example, the exploration general permit, effective June 1995 - June 2000, required environmental monitoring if the discharges of drilling fluids and drill cuttings occurred within 4,000 meters of certain locations. However, if that monitoring provision was not triggered, then data was not required to be collected.<br><br>The following are recent exploration permits issued by EPA: AKG284200, June 23, 1995 – June 23, 2000; and AKG280000, June 23, 2006 – June 23 2011. The following exploration programs were granted authorization to discharge: BPXA Liberty #1 (AKG284201); Warthog 1 (AKG284202); Doyon Kabuli #2 (AKG284203); Pike (AKG284204); and McCovey (AKG284205); Pioneer Oooguruk (AKG280001); Shell (AKG280002-0034); Eni Petroleum (AKG280035); ConocoPhillips (AKG280036-0040); Statoil (AKG280041-0045). Discharge data and End-of-Well reports, where available, from these and older NPDES permit coverages are included in EPA's administrative records for the general permits. |

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| 132 | ODCE General Comments | EPA should consider how cumulative impacts from oil and gas activities may affect the marine ecosystem for which it is permitting. The need to consider cumulative impacts for the bowhead, walrus, and other Arctic species is particularly acute because of the potential for climate change and increased global shipping to impact these species. We found no evidence that EPA has completed a sufficient analysis of cumulative impacts from significant discharges covered by the general permits. Exploration is just the start; the impacts will be longterm. The ODCE and permit do not adequately document the fact that arctic ecosystems are under multiple stresses, and that oil and gas exploration introduces a cumulative and compound impact. The ODCE and permit should be revised to assess this cumulative and compound impact of oil and gas exploration on the arctic ecosystem already subject to multiple stressors. | EPA has evaluated the potential effects of the discharges to the marine environment in accordance with the Ocean Discharge Criteria Evaluation requirements at 40 CFR 125.120 – 125.124. Based on EPA's analyses of the ten evaluation criteria, EPA has made the determination that the discharges, with the effluent limitations, restrictions and conditions, will not result in unreasonable degradation of the marine environment. While EPA is not required by the NPDES regulations to evaluate and consider cumulative impacts associated with the permitting action, EPA is aware of, and has reviewed, multiple Environmental Impact Statements (EIS) under development by federal agencies, such as NMFS and BOEM, pursuant to NEPA evaluating the potential environmental impacts associated with oil and gas exploration and development activities in the Beaufort and Chukchi Seas. Most recently, EPA reviewed the draft EIS on the Effects of Oil and Gas Activities in the Arctic Ocean developed by NMFS and BOEM. The document contains a comprehensive analysis of the past, present, and reasonable foreseeable future activities. EPA refers the commenter to this document. |
| 133 | ODCE General Comments | Recommend EPA demonstrate to the public what levels of impact or harm in the environment will trigger precautionary steps on the part of EPA and how they will know if unreasonable degradation has occurred. EPA should make monitoring data, as well as all non-proprietary data gathered by the permit holder, available as soon as is practicable to facilitate refinement of the ocean physics and environmental dynamics models which predict trophic interactions. Whenever practicable new data should be ground-truthed (back-casted) to help determine the model's continuing predictive value regarding concentrations, bioavailability, and biocentration of discharged materials. This knowledge will improve our understanding of transport of contaminants in the discharged materials away from discharge sites, and potentially into critical habitat areas. Circulation models will also help further our understanding of location and importance of areas of uncertain importance. | EPA's regulations establish concentration thresholds for certain constituents in the discharges, such as mercury and cadmium limits in stock barite for the drilling fluids and drill cuttings discharge (Discharge 001) that ensure protection of the marine environment. EPA has incorporated the appropriate limits and monitoring requirements in the Beaufort and Chukchi general permits that are consistent with state WQS and federal guidelines. The Beaufort and Chukchi general permits include a number of additional requirements as discussed in RTC#108.<br><br>Finally, as discussed in RTC#7, EPA will make available to the public all NOIs, EMP Plans of Study, environmental studies data, and data from discharge monitoring reports submitted by permittees and final EPA general permit decisions, authorizations, and analyses. EPA will review the body of data as a whole and will make the appropriate decisions as allowable by law. Please note the general permits require modeling and collection of baseline physical site conditions. This data will aid in the understanding of contaminant transport at site-specific locations. |

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| 134 | ODCE General Comments | The ODCE includes considerable data and analysis from areas outside of the Arctic that in many cases is decades old. Request EPA purge the ODCE, permits, and technical support materials of irrelevant and expired data, and only include only data that is current and relevant to operations in the Arctic ecosystems. EPA should start by updating its literature review and incorporate new information into its analysis as appropriate. | EPA relied on pertinent data, from activities in the Arctic and elsewhere, to ensure a complete analyses of potential impacts relating to the ten ODCE criteria. EPA has reviewed available literature and incorporated information where appropriate. See RTC#122. |
| 135 | ODCE General Comments | The analysis fails to contain updated information about subsistence practices in the Beaufort Sea and Chukchi Sea. For example, the Chukchi ODCE needs to specify that the Villages of Point Hope and Wainwright hunt bowhead whales in both the spring and the fall and provide information on when and how these subsistence hunts are conducted. Likewise, the Chukchi ODCE says that Point Lay landed a whale in 2009 but does not discuss Point Lay whaling since that time. Nor does the evaluation include Kivalina, Kotzebue, Gambell, Savoonga, Little Diomede, or Wales. | EPA has revised the ODCEs to include the most recent subsistence information available. EPA has also added clarification to the documents that our analyses are focused on the North Slope whaling communities of Point Hope, Point Lay, Wainwright, Barrow, Nuiqsut, and Kaktovik. EPA has determined that protection of the resources relied on by these communities will also result in protection of the Northwest Arctic communities of Kivalina, Kotzebue, Gambell, Savoonga, Little Diomede, and Wales, which essentially rely on the same resources. |

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| 136 | ODCE General Comments | EPA's discharge modeling in the ODCE shows that there will be a half-to-one mile impact zone around each drillsite that will be subject to benthic smothering, sediment contamination with heavy metals and other chemicals, and pollutant discharges into the water column. EPA concludes that the one mile pollution zone around each well is a minor impact relative to the size of the entire ocean, and accepts some level of expendable marine life but does not quantify the degree of biologic impact nor explain how the concept of "expendable marine life" comports with protection afforded under federal subsistence and endangered and threatened species law. EPA does not allow one-mile radius areas of pollution around onshore facilities, and instead would identify this type of pollution as a "contaminated site." It is unclear why EPA would allow this same type of pollution offshore. | The modeling discussion in the ODCE predicts concentrations of constituents and solids in the discharge as well as the initial deposition of solids on the seafloor. The model runs accounted for the drilling fluids and drill cuttings requirements in the Beaufort and Chukchi general permits restricting the discharge amount, rates, and locations relative to water depths. A total of 51 drilling fluid scenarios were modeled with a median predicted deposit of approximately 0.07 inches (0.2 cm) of solids materials on the seafloor. The maximum predicted deposition was 0.8 inches in thickness. For realistic scenarios, maximum deposition was less than 0.13 cm. Cuttings discharges were also modeled and predictions indicate that most deposition will occur within 100 m of the discharge. Solids deposition would not occur in a uniform circular pattern around each drill site, but would vary based on several factors, including water depth and prevailing current direction. The half-to-one mile radius represents the extreme.<br><br>As required under 40 CFR 125.122, the ODCE is based on 10 criteria which are discussed in detail in the ODCE documents. Several of the criteria focus on ensuring aquatic communities are not unreasonably degraded (as defined in 40 CFR 125.121(e)), including:<br><br>(a) Composition and vulnerability of the biological communities that might be exposed to such pollutants, including the presence of unique species or communities of species, the presence of species identified as endangered or threatened pursuant to the Endangered Species Act, or the presence of those species critical to the structure or function of the ecosystem, such as those important for the food chain;<br><br>(b) Importance of the receiving water area to the surrounding biological community, including the presence of spawning sites, nursery/forage areas, migratory pathways, or areas necessary for other functions or critical stages in the life cycle of an organism;<br><br>(c) Existence of special aquatic sites including marine sanctuaries and refuges, parks, national and historic monuments, national seashores, wilderness areas, and coral reefs; |

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| 136 | ODCE General Comments | | (d) Existing or potential recreational and commercial fishing, including finfishing and shellfishing.<br><br>Modeling results were utilized in the evaluations that occurred for each of the above mentioned criteria and supported EPA's conclusion that the discharges will not result in unreasonable degradation of the marine environment.<br><br>See RTC#119, #126, #133, and #137. |

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| 137 | ODCE General Comments | In determining whether the discharges will result in unreasonable degradation, EPA assesses the impact in relation to the entire Beaufort Sea or Chukchi Sea. The choice to analyze impacts on such an enormous scale ignores recent science that ponits to more differentiation among sub areas. The regulations define "unreasonable degradation" to refer to the "area of discharge and surrounding biological communities," which contemplates a much smaller area than the entire sea. We ask that EPA focus its analysis on the lease blocks that have been leased and potential future leases that the oil and gas industry have expressed an interest in leasing in the future and develop a more reasonable estimate. Could the discharges cause piles to collect on the seafloor or erosion to occur on land? We are concerned about the discharges into the ocean and washing up onshore. We rely on the water and on the land. | The commenter misunderstands the ODCE analyses due to certain imprecise references in the evaluation. EPA does focus its analyses on discharge areas smaller than lease blocks and potential future locations where oil and gas industry discharges are likely to occur. Specifically, the ODCEs focus on hypothetical likely scenarios within discharge plumes and outside those discharge plumes (Section 3.5.). The draft ODCEs accompanying the proposed Beaufort and Chukchi general permits may have created this misimpression by noting that the area of coverage encompasses the entire geographic area in the Beaufort and Chukchi Seas. As discussed further below, however, the specific discharge analyses supporting EPA's permitting actions, focus on a smaller geographic area where exploration facilities might be located.<br><br>In accordance with federal regulation, EPA "shall…issue general permits covering discharges from offshore oil and gas exploration and production facilities within the Region's jurisdiction." 40 C.F.R. § 122.28(c)(1). "For Federally leased lands, the general permit area should generally be no less extensive than the lease sale area defined by the Department of the Interior." "With sufficient information to determine permit conditions, general NPDES permits may be issued for entire tracts or groups of tracts offered in OCS [i.e., outer continental shelf] lease sales." 48 Fed. Reg. 39611 (Sept. 1, 1983). Thus, the Chukchi general permit covers the Department of Interior's entire lease sale area. In contrast, the Beaufort general permit covers the Department of Interior's entire lease sale area, as well as state leases located Alaskan state waters in the territorial seas.<br><br>As discussed in RTC#119, whenever EPA issues a NPDES permit for discharges into the territorial sea, the waters of the contiguous zone, or the oceans, the agency must conduct an ODCE. The ODCE supports EPA's finding about whether the discharges associated with the NPDES permit will result in an unreasonable degradation to the marine environment.<br><br>EPA defines "marine environment" to mean "territorial seas, the contiguous zone and the oceans." 40 C.F.R. § 125.121(e). And "unreasonable degradation" is defined as: "(1) significant adverse |

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| 137 | ODCE General Comments | | changes in ecosystem diversity, productivity and stability of the biological community within the area of discharge and surrounding biological communities, (2) threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms, or (3) loss of esthetic, recreational, scientific or economic values which is unreasonable in relation to the benefit derived from the discharge." 40 C.F.R. § 125.121(e).<br><br>The term "within the area of discharge and the surrounding biological communities" applies to the area where a NPDES permit would authorize a discharge. In the context of a general NPDES permit, which is defined in part by geographic area, it is anywhere prospective operators may discharge. When evaluating whether discharges under a general NPDES permit may result in an unreasonable degradation of the marine environment, EPA looks across the area of coverage to assess the impact from potential discharges (that would be authorized under the general permit), and analyzes potential impacts within the specific areas of discharge and the biological communities surrounding such discharge.<br><br>Here, EPA defines the Areas of Coverage for the Beaufort and Chukchi general permits in Sections 1.2.1 of the respective ODCEs. The ODCEs for both the Beaufort and Chukchi general permits evaluate the potential impact from discharges over the 5-year period for the general permits within the area of coverage. Because the discharges authorized under the general permits are from temporary short-term exploration facilities, EPA conducted its evaluations on hypothetical scenarios where a discharger may be located, e.g., within an average depth, with average currents, with biological communities known to exist in the area, etc. (see Sections 1.2.2.,2.0, 4.2., and 5.0.)<br><br>In addition, EPA imposed limits on operation under the general permits. Specifically, both permits are limited by seasons and areas of biological concern. For example, the Chukchi general permit prohibits discharges onto stable ice and includes restrictions for discharges to open water and in unstable or broken ice conditions. The Beaufort general permit prohibits discharges to areas where the |

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| 137 | ODCE General Comments | | water depth is less than 5 meters as measured from mean lower low water, places restrictions on discharges during fall bowhead hunting activities, discharges onto stable ice, and imposes additional restrictions in certain areas and seasons.<br><br>Furthermore, EPA made determinations and estimates regarding the specific number of exploratory wells in both seas that might be drilled during the five-year terms of the general permits. As discussed in RTC#157, EPA estimates that up to 34 wells will be drilled in the Beaufort Sea and up to 42 wells will be drilled in the Chukchi Sea over the 2013-2017 timeframe.<br><br>Based on the ODCE analyses, and these geographic, seasonal, and operational limitations, EPA concluded that the discharges would not result in an unreasonable degradation of the marine environment, in part because the scope of impacts from the total discharge would be limited across time and space.<br><br>Finally, in response to several specific concerns raised by this commenter regarding mounding on seafloor, erosion on land, and materials washing up onshore as a result of exploration drilling activities, please see RTC#117. |
| 138 | ODCE General Comments | Recent studies and data indicate that the water column, benthic communities and surface level populations are not uniform throughout the two seas. Additional research efforts currently underway indicate there are non-homogenous sub-regions and elements of the foodweb in the seas that may be more sensitive to the discharges of even just one well than EPA estimates. The agency's analysis fails to consider the full range of conditions and environments found in the Beaufort Sea and the Chukchi Sea. | EPA has considered whether the discharges would cause unreasonable degradation in compliance with the ten criteria established by 40 CFR 125.122. Based on EPA's analyses and the data considered by the agency, we have made the determination that the discharges will not result in unreasonable degradation. Recognizing that the conditions at the lease locations may not be homogenous, EPA has required a robust environmental monitoring program before, during, and after exploration drilling at specific drill site locations in the Beaufort and Chukchi general permits to ensure unreasonable degradation will not occur. This data will aid in future agency decision-making. |
| 139 | ODCE General Comments | Conflicting conclusions on whether certain chemicals and contaminants proposed for discharge bioaccumulate or persist in the environment. | EPA has revised the ODCEs to remove any conflicting statements or conclusions. |

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| 140 | ODCE General Comments | EPA based it estimated discharges on Shell's proposed Chukchi and Beaufort Sea 2012 exploration plans. Historically, there have been 31 Beaufort Sea exploration wells and 5 Chukchi exploration wells drilled. Request that EPA compile data from the historical wells and document how much of the waste was actually discharged to the ocean, how much was collected and sent by truck or vessel to a treatment and disposal facility. Furthermore, EPA should provide data to support its conclusion that, "All the drilling operations would result in similar, if not identical, types of discharges," or modify this conclusion based on actual data. Additionally, commenter does not agree with EPA's characterization of "commonly," because most Beaufort Sea exploration operations do not discharge waste into the sea, and are conducted during the winter season where the waste is collected and transported to onshore treatment and disposal facilities. EPA has not provided any data to show that within the last 10 years (two Arctic NPDES GP periods) the discharge of muds and cuttings into the Beaufort Sea is common. In fact, EPA's analysis does not provide any historical data to support its claim that discharge of muds and cuttings, including waterbased muds and cuttings, is common. Commenter requests that EPA provide a summary of the data collected from state and federal Beaufort Sea NDPES monitoring and reporting programs in the past 10 years, and use that data to inform best practices for the Chukchi Seas. | EPA does not have discharge data from the historical wells unless the waste streams were discharged pursuant to requirements of a NPDES permit. EPA has collected discharge data from available records and has updated discharge estimates in the ODCEs. Data pertaining to amounts collected and disposed to on-land disposal facilities are not available to EPA and not pertinent to the ODCE analysis. Finally, the list of discharges authorized by EPA under the Beaufort and Chukchi general permits are "common" discharges for oil and gas exploration operations. General permits are, by design, not specific to any operator or drilling rig type. Thus, for nearshore operations in the Beaufort Sea that occur during winter seasons when ice roads can be constructed to transport wastes to on-land disposal facilities, EPA has included a provision requiring operators to submit an analysis of alternative disposal options if they intend to discharge drilling fluids and drill cuttings, sanitary wastes, and domestic wastes on ice. This approach allows EPA to make informed decisions regarding whether to allow or deny requests for discharge for activities that occur during the winter seasons. See RTC#131 for information regarding discharges from the last 10 years. |

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| 141 | ODCE General Comments | Note Chukchi ODCE's projected discharge quantities include the lower volumes reported in Shell, ConocoPhillips, and Statoil's NOIs, with considerably higher projected discharge quantities listed in a footnote. For example, EPA's 478 barrels estimate for deck drainage is based only on Shell and Statoil NOIs but does not include ConocoPhillips's much higher estimate of 3,400 bbls, nor explain why that data was omitted from the analysis. [244 barrels and data from 31 Beaufort explorations wells omitted]. We appreciate this decision assuming that it leads the agency to put numeric limits on the discharges that will be permitted under the GPs. Otherwise the agency faces the same situation it did with the prior GP where NOIs include discharges of waste streams far in excess of the estimates analyzed in the ODCE. The estimates for sanitary waste, deck drainage, domestic wastes, desalination unit wastes, blowout preventer fluid, boiler blowdown, uncontaminated ballast water, and excess cement slurry are not the averages from the NOIs and require special consideration in the final permits. Averaging the discharge volumes from the NOIs is not conservative and underestimates the impacts. Also, the conclusion that all wells and drilling rigs would result in similar discharges is misleading. The type and amount of waste generated from a drilling operation will depend on the type of drilling rig, equipment and technology used on that rig, chemicals used in the operation and the depth of the well. We agree with the agency's decision in the Chukchi not to include Shell's NOI estimates for waste streams that Shell has eliminated. | As discussed in RTC#140, since the permits are general permits, they are not tailored for specific exploratory drill types or discharges. Furthermore, EPA has determined it is neither reasonable nor necessary to establish a cap or threshold on the volumes for each discharge. In accordance with the national effluent guidelines and consistent with other oil and gas permits, EPA has included limits on suspended particulate phase toxicity, and mercury and cadmium concentrations in stock barite for the discharges of drilling fluids and drill cuttings. EPA has revised the ODCEs to include estimated discharge volumes from NOIs received to-date from Shell, ConocoPhillips, and Statoil. EPA's assumptions and estimates in the ODCEs are not meant to be exact and include a level of uncertainty. By averaging the volumes reported in the NOIs by company, EPA has captured the reasonable range of potential discharges that may occur during the five-year permit terms. |

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| 142 | ODCE General Comments | EPA's analysis relies on drilling fluid data compiled by EPA in the late 1980's and early 1990's for drilling operations that were not located in the Arctic. Recommend EPA update its drilling fluid data analysis to include current Arctic drilling mud formations, and more clearly explain to the public the contaminants in those formations and the potential risk if discharged to the ocean. Heavy metal constituents of concern have been reduced in modern water-based muds to levels similar to concentrations found in marine sediment (Neff, 2010). National Research Council concluded that offshore discharges of water-based muds and cuttings have little/no harmful effects on water column organisms (NRC, 1989). Water-based muds additives are not bioavailable, non-toxic, or used in such small amounts that they are not present in used drilling fluids at concentrations high enough to contribute to whole mud toxicity (Wojtanowicz, 1989). Majority of toxicity to aquatic organisms documented in previous studies was associated with petroleum components (Breteler, 1988; Conklin, 1983)and chrome lignosulfonate (Neff, 1987; Parrish, 1989); water-based muds lack these constituents and have not exhibited toxicity (Neff, 2010). | As discussed in RTC#122, EPA has included available and relevant data in the ODCE analyses. Additionally, EPA has incorporated current information from Shell's Drilling Fluid Plan submitted to EPA for its 2012 operations in the Chukchi Sea. EPA understands that similar drilling fluid systems are used in both seas. EPA has also reviewed the references cited by the commenter and relevant information has been considered and incorporated in the ODCEs where appropriate. The ODCEs provide a clear explaination of the compositions of mud systems and their potential effects to the marine environment. |
| 143 | ODCE General Comments | The ODCE did not examine alternative chemical treatment methods. Instead the permits set effluent limits that establish some discharge constraints, but do not encourage the lowest impact or best technically feasible and commercially available alternatives. Recommend (1) EPA's analysis include an examination of the chemicals likely to be contained in the proposed discharge based on actual Beaufort Sea exploration activity and chemical use; and (2) EPA make recommendations for the type of chemicals that industry should consider that have the lowest toxicity and impact. | The effluent limits developed by EPA for the Beaufort and Chukchi general permits are based on national guidelines, Alaska water quality standards, and best professional judgment. These limits are protective of the marine environment and will not result in unreasonable degradation. Furthermore, as was discussed in RTC#14, EPA has included a provision in the NOI requiring the disclosure of each chemical to be used during the drilling process. Additionally, the use of chemicals that meet Norway's “green” classification are required to be identified in the NOI form. The chemicals used by permittees must not exceed the manufacturer's recommended concentrations and all chemical use must be submitted to EPA in the End-of-Well Report. See also RTC#15. |

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| 144 | ODCE General Comments | EPA does not justify why marine life is protected in some areas of the Beaufort and Chukchi Seas and not the areas around drilling discharges. Marine life is mobile, and should be afforded similar protections throughout the sea. It is not rational to prohibit discharges in certain locations to protect environmentally sensitive areas and species, yet, allow discharges at well sites that are used by migrating species. Additionally, EPA has not conducted an adequate assessment of drilling sites overall, to ensure appropriate protections. Hanna Shoals is a major feeding source for walruses, seals, beluga because of the shallow depth. The drilling will be right in the middle of their feeding grounds. | EPA included the no-discharge prohibition of water-based drilling fluids and drill cuttings during bowhead whaling activities by Nuiqsut and Kaktovik in the Beaufort Sea to ensure there is no unreasonable degradation of the marine environment. This prohibition is consistent with NMFS' requirements pursuant to MMPA. EPA's analysis concludes that the migrating species will spend a negligible amount of time within the discharge plume prior to it completely dissipating. The Beaufort and Chukchi general permits incorporate water pollution prevention and control requirements, including applicable water quality standards, to ensure compliance with applicable CWA requirements. The general permits also include restrictions, such as the rates of discharge within certain water depths and prohibiting discharges in waters less than 5 meters in the Beaufort Sea to ensure unreasonable degradation of the marine environment does not occur. Finally, EPA's map of the Chukchi area of coverage in the draft permit contained errors regarding the location of Hanna Shoal relative to the location of existing leases. EPA has revised the map to reflect the accurate locations. See RTC#10. |
| 145 | ODCE General Comments | We have a tremendous resource in Arctic Cisco. We have the broad whitefish that we depend upon to share as an additional dietary item. These fish we get from the waters, and we bring them into our families, and we share them with families. The migratory route of these fish, they are going to go through areas that have discharges. We talk about trying to protect some of these migratory routes, in order for the regulatory process, regulations, assessments to be effective and to make sure that words on paper were being enforced. | EPA appreciates this information and understands the importance of subsistence resources on the North Slope and in Northwest Arctic communities. The effluent limits and restrictions established in the Beaufort and Chukchi general permits are protective of the receiving marine environment, including subsistence resources, such as Arctic Cisco. |

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| 146 | ODCE Specific Comments | The evaluations acknowledge the potential for "acute or chronic effects on a localized basis…thorugh exposure in the water column or in the benthic environment." What are the ramifications of this exposure for bowhead whales, which both migrate through these areas and consume zooplankton from these areas? (Beaufort Permit, Page ES-5) | As discussed in RTC#124, the discharges from exploration activities are expected to be intermittent and short-term in duration, i.e, a few hours in duration during periods of actual drilling activities, which occur approximately 50-75% of the time. In addition, any exposure from drilling fluids and drill cuttings will occur within a relatively short distance, between 100 and 1,250 meters, from the discharge location and within a short timeframe until complete dispersion is achieved. EPA does not expect that migrating bowhead whales will spend enough time within the discharge plume to be adversely exposed. NMFS has concurred with EPA's determination that that discharges are not likely to have an adverse affect on bowhead whales.<br><br>Any exposure of the benthic community is not expected to result in long-term changes to the composition of the species. Exposure of bottom feeders such as sea ducks, walrus, and gray whales to those benthic communities is not anticipated to result in any adverse effects according to current data.<br><br>The discharge limitations established by the Beaufort and Chukchi general permits, the no-discharge restriction of water-based drilling fluids and drill cuttings during fall bowhead whale hunting activities by Nuiqsut and Kaktovik in the Beaufort Sea, and the environmental monitoring requirements are adequate to ensure there is no unreasonable degradation to the marine environment. Data from the environmental monitoring program will further assess the potential effects on the benthic communities at specific drill sites. |
| 147 | ODCE Specific Comments | USFWS maps do not indicate any portion of the Alaska Maritime National Wildlife Refuge exists in the Barrow to Peard Bay area or elsewhere north of Icy Cape. (Beaufort Permit, Page ES-6) | EPA has consulted the USFWS website at http://alaskamaritime.fws.gov/ and confirmed that the Alaska Maritime National Wildlife Refuge includes the volcanic islands of the Aleutian chain, the seabird cliffs of the remote Pribilofs, and icebound lands located in the western Chukchi Sea. EPA has revised the Chukchi ODCE text. |
| 148 | ODCE Specific Comments | Criterion 9 presumably needs to be edited to discuss the Beaufort and not the Chukchi. (Beaufort Permit, Page ES-8) | EPA has made the necessary revisions to the ODCEs to ensure they discuss the pertinent information relative to each sea and respective general permit. |

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| 149 | ODCE Specific Comments | This figure shows the entire Chukchi Sea Planning Area (basically all Federal Waters) as the coverage area. It is not the same as the analogous figure in the Draft GP which simply shows Lease Sale 193. (Figure 1-1; Page 1-2) | EPA has made the appropriate revisions to the figures in the Chukchi ODCE and general permit to ensure consistent and accurate description of the area of coverage. |
| 150 | ODCE Specific Comments | Differs from the description in the GP which says it covers all federal waters in the figure. Also, this statement in the ODCE doesn't match its own figure - includes more than was in lease sale 193 and more than in the 2012-2017 five-year plan. (Section 1.2 Scope of Analysis; Page 1-4) | Please see RTC#149. |
| 151 | ODCE Specific Comments | Leases that were offered in Lease Sale 193 were much closer than 75 miles. Leases purchased in Sale 193 are as close as 50 miles. (Section 1.2.1 Chukchi Sea Area of Coverage; Page 1-4) | Please see RTC#149. |
| 152 | ODCE Specific Comments | Executive Summary says 2-3 wells on page ES-1. At the bottom of the paragraph it states that three companies would drill up to 8 wells over 5 years; totally 120 wells. This contradicts EPA's estimate of 42 wells at the beginning of the section. Also, the large number of wells that EPA anticipates will be drilled during the life of the permit does not reflect information in the permit record about the number of wells that are likely to be drilled. For example, the Chukchi ODCE states that "BOEM estimates that 7-14 more would be needed to delineate a commercial field." Why is EPA estimating that up to 42 wells will be drilled in the Chukchi if this is the case? It also appears from EPA's assumptions that it had underestimated the rate at which wells could be drilled using a single rig, thus underestimating the potential impacts. It is unknown how many wells will be drilled on each lease in the Beaufort and Chukchi. EPA has failed to evaluate the full impact of all these discharges. EPA does not even know how many wells that will be drilled, yet it will issue the permits. (Section 1.2.2.) | There are many uncertainties associated with estimating the number of wells that may be drilled over a five year period of the NPDES permit term. For example, no wells were drilled during the 2006-2011 term of the Expired Arctic general permit. Based on existing data from operators, other federal agency assumptions, and best professional judgment, EPA estimates that up to 34 wells will be drilled in the Beaufort Sea and up to 42 wells will be drilled in the Chukchi Sea over the 2013-2017 period. EPA has revised the discussion of the estimated number of wells in the Beaufort and Chukchi Seas in the respective ODCEs. While EPA cannot predict the exact number of wells, the ODCE analyses include the most conservative scenarios to estimate potential impacts. EPA has established the necessary restrictions and prohibitions in the general permits to ensure the discharges will not result in unreasonable degradation of the marine environment. |

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| 153 | ODCE Specific Comments | Discussion may not be necessary, as neither type of MODU may be practicable in the Chukchi OCS. (Section 2, Description of Exploratory Activities) | EPA agrees with the commenter and has revised the Chukchi ODCE to remove references to floating barges and semi-submersible as potential exploration drilling types in the Chukchi Sea. |
| 154 | ODCE Specific Comments | Please clarify and/or consider that discharges from the mud line cellar can occur closer to the surface, depending on drilling configuration. (Section 3.2; Same for Beaufort ODCE) | EPA agrees with the commenter that discharges from construction of the mudline cellar (Discharge 013) can occur at the seafloor or closer to the surface, depending on the drilling configuration. EPA has added the clarification in both the Beaufort and Chukchi ODCEs. |
| 155 | ODCE Specific Comments | The terms drilling fluids and drilling muds should be distinguished as they don't necessarily mean the same things within industry. (ODCE Section 3.3; Same for Beaufort ODCE) | EPA recognizes that the terms "drilling fluids" and "drilling muds" may have different meaning for industry and in many instances, the terms are used interchangeably. For purposes of describing Discharge 001 in the Beaufort and Chukchi general permits and ODCEs, EPA uses the terms "drilling fluids and drill cuttings." The Beaufort and Chukchi general permits define drilling fluids as the circulating fluid (mud) used in the rotary drilling of wells to clean and condition the hole and to counterbalance formation pressure. This discharge is separate and should be distinguished from muds, cuttings, and cement at the seafloor (Discharge 013), which EPA defines as the materials discharged at the surface of the ocean floor during construction of the mudline cellar, during the early phases of drilling operations before the riser is installed, and during well abandonment and plugging. The term drilling fluids is generally used throughout the ODCEs, but drilling muds might be used in support documents and documents cited as references. |
| 156 | ODCE Specific Comments | There does not appear to be any basis to distinguish discharges from arctic platforms any differently than discharge from elsewhere, e.g. Cook Inlet. Platforms are not used in exploration so not germane to this permit. (ODCE Section 3.4) | EPA has revised the ODCEs to remove references to "platforms" as the term has caused confusion. EPA agrees with the commenter that platforms will not be used in exploration, although the discharges described could result from any drilling vessel/rig type. |
| 157 | ODCE Specific Comments | This table should have a column that shows the concentrations found in marine sediments for perspective - sediment concentrations can exceed these. (ODCE Section 3.3.3.1., Table 3-2; Same for Beaufort ODCE) | EPA does not believe it is relevant, for purposes of this section in the ODCEs, to add a column showing marine sediment concentrations, as suggested by the commenter. This data represent the metal concentrations in barite that form the basis of the effluent limitations of mercury and cadmium in EPA's Effluent Limitation Guidelines for the Offshore Subcategory. |

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| 158 | ODCE Specific Comments | Freshwater fishes should not be included as the area of coverage is located >50 miles offshore. Even diadromous fish are uncommon in the area of coverage as they are largely restricted to coastal waters. Commenter disagrees that northern pike or salmon are common in the area. Range maps for northern pike do not show the coast of the northeastern Chukchi Sea. On the same page the ODCE states that salmon are uncommon. The known northern distribution of coho salmon ends at about Point Hope (Mecklenburg et al. 2002). Mecklenburg et al. (2002) noted that the presence of coho salmon in the Beaufort/Chukchi region was based on two specimens report by Craig and Haldorson (1986). Craig and Haldorson (1986) stated "that there are no known stocks of chinook, sockeye, or coho salmon in Arctic waters north of Point Hope. Collection records of these species generally consists of single specimens." Members of this species should be considered "extralimital strays" in the Beaufort/Chukchi seas. The same holds true for sockeye salmon whose range ends at Point Hope (Mecklenburg et al. 2002). Mecklenburg et al. (2002) noted that Craig and Haldorson (1986) listed rare records of stray sockeye salmon north of Point Hope, including the Colville River, Simpson Lagoon, and the Canning River in Alaska. Members of this species in the Beaufort/Chukchi seas should be considered "extralimital strays" as well. (ODCE Section 5-4; Same for Beaufort ODCE) | EPA has reviewed the references provided by the commenter and updated the fish section in the ODCEs to reflect the data as appropriate. |
| 159 | ODCE Specific Comments | Should be updated to reflect fall bowhead harvest. (ODCE Section 5.9.6.) | EPA has made the appropriate revisions to the document. |
| 160 | ODCE Specific Comments | Our review of IWC reports indicates that more whales were harvested by Barrow in the fall than in spring during 10 of the last 20 years and that 56% of the whales harvested during thses 20 years were harvested during the fall. (ODCE Section 5.9.8.; Same for Beaufort ODCE) | EPA has updated the ODCEs based on the most recent data available. |

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| 161 | ODCE Specific Comments | The evaluation discusses the application of chronic criteria and days of exposure. Please include within this discussion information on well sites and bowhead whale feeding and resting areas and what the expected exposure of the whales is to the proposed discharges. (ODCE Section 6.3.1.) | Other than potential drill locations reported in the recent NOIs submitted by operators under the Arctic general permit, EPA does not have information regarding specific drill sites. The areas of coverage for the Beaufort and Chukchi general permits include existing leases and any potential new leases that may be sold during the five-year permit terms. Camden Bay, Barrow Canyon, and the Western Beaufort Sea are known to be feeding and/or resting areas for bowhead whales. As discussed in RTC#146, EPA's analyses indicate that any exposure to bowhead whales is anticipated to be negligible in duration and concentrations. The general permits include restrictions and requirements to ensure the discharges will not result in unreasonable degradation of the marine environment. |
| 162 | Dilution Modeling | EPA used the 1983 Offshore Operators Committee (OOC) model to estimate discharge of muds. EPA acknowledges that the model under-predicts the impacts of muds and cuttings discharges because it is not effective in modeling cutting discharge. Specifically, there is no information to verify that the model was calibrated using actual discharge data from previous Arctic operations to ensure accuracy to predict future impacts. EPA did not examine alternative modeling methods to address both muds and cuttings, and whether there is a model improvement over the OCC. Nor did EPA examine whether its predicted modeling results match actual discharge performance in the field. Request that EPA complete this work and locate a model that can also examine cuttings impacts. | The purpose of the OOC model is to analyze fate and transport of drilling fluids, and the model does not include a cuttings component. Therefore, it is not accurate to state that the model is "not effective" in this regard. The final model includes simple calculations of combined drilling fluids and drill cuttings based on a range of assumptions about cuttings deposition (e.g., uniform deposition over a 100 m radius and over a radius associated with location of maximum predicted drilling fluid deposition). The product is a set of new maximum accumulation estimates for a deeper well that also account for both the drilling fluid and drill cuttings components. Details of the final model analysis, including a description of the advection/diffusion model used for the cuttings, can be found in the Modeling Technical Memo, which is included in the administrative record.<br><br>Regarding model performance and verification, the OOC model has been lab and field tested for a range of conditions (see Smith et al. 2003 and Nedwed et al. 2003 for recent studies). Regarding alternative methods, EPA is not aware of any other models that are specifically designed to simulate drilling fluid plumes and deposition, nor does the commenter offer an alternative model. EPA has provided reasonable estimates of the expected fate and transport of drilling fluids and drill cuttings. |

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| 163 | Dilution Modeling | The model volumes were based on Shell's 2012 exploration plans and are not representative of the full range of exploration discharges that may occur. Model should be based on statistical analysis of past drilling in both the Beaufort and Chukchi Seas. | The discharge volumes analyzed are not based on Shell plans alone. To the contrary, wide ranges of potential discharge volumes for both drilling fluid and non-drilling fluid discharges were analyzed. EPA has verified that the modeled scenarios capture the range of proposed discharges in NOIs received to date and the assumptions updated, if warranted. These ranges were also checked to ensure that they encompassed the discharge volumes indicated in the Shell NOIs. |
| 164 | Dilution Modeling | The feasibility of modeling temperature of the cooling water plume in the receiving environment during drilling should be further evaluated. Since all permitted discharges are co-mingled, the differences in temperature and turbidity of the discharge will be variable. Timing of the modeling requirement also needs clarification as the cooling water flow will be nearly continuous while the other discharges will be intermittent. The permit should also clarify whether all anticipated discharge scenarios should be modeled for temperature and other changes, or only those involving drilling muds and cuttings. | EPA agrees that analysis of co-mingled discharges and timing issues should be considered in the EMP. The Beaufort and Chukchi general permits require a study to assess both non-contact cooling water and drilling fluids and drill cuttings discharges using "facility-specific discharge configurations." If the discharge configuration for a facility co-mingles waste streams, the monitoring program will need to address these situations. Therefore, EPA does not believe the languagein the general permits should be changed. |
| 165 | Dilution Modeling | Field and modeling studies between 1980-2009 show discharge dilution and dispersion are extremely rapid (Ayers, 1980, 1982, 1994; Houghton, 1980; O'Reilly, 1989; Ray, Meek, 1980), and non-toxic concentrations of mud/cuttings are reached within 50 feet of discharge (Ayers, 1994). Non-contact cooling water, 1°C above the temperature of the receiving water, accounting for 99% of the total discharge volume, is shown by numerical modeling simulations to dissipate to non-detectable levels within 50 m to 100 m from the discharge (Shell, 2011a, b). | Comment noted. EPA has conducted an independent analysis and concluded that the discharges will not cause unreasonable degradation of the marine environment. |

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| 166 | Dilution Modeling | EPA acknowledges that its modeling underestimates total sedimentation because the model does not include cuttings. It is arbitrary for EPA to rely on modeling that systematically underestimates sedimentation. EPA must develop more accurate modeling to properly assess whether unreasonable degradation may occur. | See RTC#163. As noted in that response, cuttings are not simulated by the OOC model and it was therefore necessary to analyze cuttings separately from drilling fluids. EPA has further analyzed cuttings deposition and updated the Modeling Technical Memo and ODCEs. Since drilling fluids are likely to disperse over a larger area than cuttings, more detailed analysis of the fate and transport of drilling fluids is provided through the use of the OOC model. In making the determination on whether discharges will cause unreasonable degradation, EPA considered the potential impacts of all waste streams expected to be discharged. |
| 167 | Fact Sheet | The fact sheet failed to demonstrate why greater restrictions on disposal of discharges in the Chukchi Sea have not been imposed. Shell has shown that it is feasible to avoid discharges into ocean waters. | Based on the analysis in the Chukchi ODCE, EPA concluded that the discharges to the Chukchi Sea will not result in unreasonable degradation of the marine environment. The fact sheet provided the necessary documentation of EPA's conclusions and included the justification of permit requirements and restrictions to ensure that unreasonable degradation of the marine environment will not occur during the five-year term of the permit. Please note, through a separate agreement, Shell agreed to collect its wastestreams from exploration drilling activities in Camden Bay of the Beaufort Sea. This agreement did not extend to its leases in the Chukchi Sea. |
| 168 | Fact Sheet | Commenter supports the decision to establish a separate general permit for federal waters of the Chukchi Sea. The areas at issue in federal waters of the Chukchi Sea where exploratory drilling may occur share common features, which allow for a cohesive permitting regime. (Chukchi Permit Section I.B., Page 12) | Thank you for your comment. |

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| 169 | Fact Sheet | The Beaufort Area of Coverage appears to extend from the shore out hundreds of miles into the ocean. However, the Beaufort GP does not provide coverage for activities in the area defined as "coastal" - i.e., the inner boundary of the territorial sea. Why is this area excluded? (Beaufort Permit, Section I.B.2.) | As discussed in Section I.B. of the Fact Sheet, EPA regulations at 40 CFR § 122.28(a) require that the geographic area of coverage for a general permit correspond to existing geographic or political boundaries. In the case of the Beaufort and Chukchi general permits, EPA made the decision to address exploration discharges to offshore waters. These areas include facilities located in waters that are seaward of the inner boundary of the territorial seas as defined in section 502(8) of the CWA and are subject to the Offshore Subcategory of the Oil and Gas Extraction Point Source Category (40 CFR Part 435, Subpart A).<br><br>The area of coverage for the Beaufort general permit is consistent with lease sales conducted by BOEM (formerly MMS) on the OCS and lease sales conducted by the State of Alaska within the boundaries of state waters in the territorial sea of the Beaufort Sea.<br><br>40 CFR 435.40 defines the term “coastal” as any location in or on a water of the United States landward of the inner boundary of the territorial seas. Since the Beaufort general permit authorizes discharges pursuant to the Offshore Subcategory, the Coastal Subcategory under 40 CFR Part 435, Subpart D does not apply. Facilities discharging in “coastal” waters must submit a permit application for an individual NPDES permit. |
| 170 | Fact Sheet | The NOI form does not call out these agencies. A list of applicable agencies should be provided. (Section I.F.2.e., Notice of Intent) | EPA has revised the NOI forms to include examples of applicable agencies. Please see RTC#51. |

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| 171 | Fact Sheet | See comment under Section II.A.11: EPA should identify the decision-making process and specifically commit to using tools such as Net Environmental Benefit Analysis and Lifecycle Assessment in the evaluation of alternative waste disposal options. (Section II.A.12.b.1) | It is unnecessary for EPA to commit to using certain tools, such as Net Environmental Benefit Analysis, as our decisions are governed by the CWA and its implementing regulations. Here, the agency is required to conduct an ODCE to assess the discharges against 10 criteria established by regulation, and determine the potential of the discharges to cause unreasonable degradation. EPA's rationale for requiring an alternative disposal analysis for operators wishing to dispose drilling fluids and drill cuttings, sanitary wastes, and domestic wastes onto stable ice in the Beaufort Sea is based on concerns regarding potential impacts on human health through direct and indirect pathways, which may trigger the ODCE criterion 6, and the availability of on-land disposal options for winter operations nearshore. However, we encourage operators to utilize such tools in their submissions of alternative disposal options required by the Beaufort general permit. Please see RTC#38. |
| 172 | Fact Sheet | Please ensure that the BMPs are provided to EPA and made available to the public before exploration operations commence. | EPA has revised the NOI form to include the submission of BMP plans and other support documents. All NOI submissions will be posted on the EPA website. Please see RTC#47. |
| 173 | Fact Sheet | EPA incorporated information and observations from North Slope stakeholders into the ODCE process and general permits. EPA uniformly adopted the same EMP requirements broadly throughout the OCS without regard to factors such as remote distance from subsistence areas and areas of low marine ecosystem biodiversity. It is not clear why the community derived input justified a wholesale EMP roll-out that overrides the body of scientific information indicating no environmental impact from offshore drilling discharges (Neff, 2010). (Fact Sheet Section II.D.2.c.) | General permits, by design, include similar requirements for similar discharges within the same geographic area. As the commenter noted, EPA has applied the EMP requirements for each drill site to all operators in order to ensure consistency with permit conditions. Recognizing that certain operators may have collected baseline data, EPA has incorporated language in the Beaufort and Chukchi general permits for operators to demonstrate historical data exist and are sufficient to meet the Phase I EMP requirements. Regarding Phases II, III, and IV, EPA believes site-specific and operation-specific data collection are warranted. Please note that EPA's requirements for the EMP are to ensure no unreasonable degradation of the marine environment occurs at any drill site locations. See RTC #65, #66, and #67. |

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| 174 | Fact Sheet | EPA should retain pH limits for the discharge of noncontact cooling water because of the chemicals and biocides that are added to this waste stream. (Fact Sheet, Section II.E.1.e.) | EPA agrees with the commenter and has revised the Beaufort and Chukchi general permits to require pH monitoring of the noncontact cooling water discharge (Discharge 009) if chemicals are not added to the system; however, if chemicals are added, then the pH limit of 6.5-8.5 standard units applies to the effluent. Due to the large volumes of non-contact cooling water that may be discharged and the addition of chemicals can potential cause changes to the pH levels in the receiving water environment, establishing a pH limit for this discharge ensures the pH levels are appropriately controlled. The pH range of 6.5-8.5 standard units is consistent with the recommended pH range in the national water quality criteria under Section 304(a) of the CWA. Please See RTC#15. |
| 175 | Fact Sheet | Permit allows EMP data from first drill site as basis to modify data gathering at subsequent drilling sites. If completed EMP does not indicate unreasonable degradation, EMPs for subsequent similar wells should not be required. Single WET test should be adequate when screening test toxicity threshold is exceeded. WET tests are more comprehensive, more relevant to marine biota, and better indicators of potential toxicity. Single test results are routinely used for decision-making in other programs. If temporal variability in the toxicological potential of a given effluent exists, the required sampling frequency is suitable for detecting it. Considering significant logistical issues in sample transport and absent scientific information indicating toxicological properties of the effluents typical of off-shore exploration activities, we request EPA relax the sample holding time requirements and consider requiring permittees conduct a special evaluation of the impact of holding times on representative effluents. (Fact Sheet, Section II.E.1.h.) | The general permits allow operators to demonstrate that an EMP fully implemented by the permittee at another drill site authorized under the general permit can be used to ensure no unreasonable degradation would occur at a subsequent drill site. Based on the submissions to be accompanied with the NOIs, EPA will either modify the EMP requirements, or agree to a revised EMP scope for subsequent drill sites. EPA's EMP scope revision decision(s) will be documented in the discharge authorization letter(s). Additionally, EPA has revised the WET testing requirements to specify a WET sample be collected if the screening test indicates a potential toxicity within the applicable waste streams, or once per well if the discharge exceeds 10,000 gpd and chemicals are added. EPA has incorporated language in the permits allowing for exceedance of the 36-hour holding time, up to 72 hours, for the WET in extenuating circumstances. The permittee must document these occurrences and conduct an evaluation of the impact of the exceedance of the holding time on the toxicity results. |

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| 176 | Fact Sheet | The commenter is concerned that extending the holding time to 72 hours could increase mortality rates. (Fact Sheet, Section II.E.1.h.) | The commenter is correct that extending the WET sample holding time from 36-hours to 72-hours could potentially increase mortality rates. EPA has incorporated language in the general permits to allow for exceedance of the sample holding times during extenuating circumstances, such as weather restrictions, without violating the permit conditions. However, the permittee must document these occurrences and conduct an evaluation of the impact of the exceedance of the holding time on the toxicity results. |
| 177 | Fact Sheet | There are several cooling water outlets on drilling units used in the Chukchi Sea. Air permits for the drilling units restrict the number of vessels that can be within 25 miles of the drilling unit. The commenter is concerned whether plume monitoring can be done without increased safety risk and/or added vessel traffic leading to air permit issues. Also, the Fact Sheet claims that marine mammals may be deflected during periods of maximum discharge of noncontact cooling water. The agency should provide any data it has to support this statement. (Fact Sheet, Section II.E.1.h.) | EPA does not intend to include requirements in the Beaufort and Chukchi general permits to result in noncompliance with the operator's air permit(s). EPA has removed the plume and water column temperature monitoring requirements for the non-contact cooling water discharge (Discharge 009) from the EMP. The effluent monitoring requirements to sample the non-contact cooling water continuously for temperature during periods of discharge are sufficient to collect necessary data to verify with modeling predictions. However, please note, EPA retains the plume monitoring requirements for the drilling fluids and drill cuttings discharge (Discharge 001).<br><br>Regarding the commenter's request for data to support the deflection statement made in the Fact Sheet, the information submitted by operators in the NOIs from the Arctic general permit makes clear that the non-contact cooling water discharge consists of the largest discharge volume and rate. Local subsistence users have expressed concerns, based on traditional knowledge and observations of oil and gas activities on the North Slope, that high temperature in the discharges may cause deflection of bowhead whales. Please see the Report of Traditional Knowledge Workshops – Point Lay, Barrow, Nuiqsut, and Kaktovik, Stephen R. Braund & Associates, March 11, 2011. |

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| 178 | Fact Sheet | This appears overly burdensome to a permittee, with the benefit to such a survey not having been adequately explained. (Fact Sheet, Section II.E.1.h.) | Phase IV includes a requirement to conduct a sea bottom survey no later than 15 months after completion of drilling activities. Many community questions and concerns were raised regarding the extent of deposition associated with Discharges 001 and 013. Data related to post drilling site conditions is necessary to determine physical, chemical, and biological changes to the drilling location and the seafloor in the vicinity of the drill site. |
| 179 | Fact Sheet | References to the "Patch" as a rare and unique biological community susceptible to adverse effects caused by drilling fluids and drill cuttings is a fairly definitive statement that needs technical support in the permit record. (Fact Sheet, Section II.E.2.a.) | The Stefansson Sound Boulder Patch consists of sensitive benthic communities, Arctic kelp, and fish habitat (Effects of Oil and Gas Activities in the Arctic Ocean Draft Environmental Impact Statement. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, December 2011, MMS Beaufort Sea and Chukchi Sea Planning Areas Oil and Gas Lease Sales 209, 212, 217, and 221 Draft Environmental Impact, November 2008.)The Beaufort and Chukchi general permits include permit conditions and requirements to ensure that the discharges will not result in unreasonable degradation of the marine environment, including the "Patch." |
| 180 | Fact Sheet | The permits should require submittal of the QAPPs. This is important to ensure compliance and will help the public understand the monitoring results. | EPA agrees with the commenters and has revised the NOI submittal requirements to include the BMP, Drilling Fluid Plan, and QAPP. EPA will make these documents available to the public by posting them on the website, along with the authorization(s) for discharge. Please see also RTC #49. |
| 181 | Fact Sheet | Arctic water averages approximately pH 8.2. If the EPA is going to bracket the pH, it seems more reasonable to use the existing pH average of 8.2 as a mid point, using a range of 7.2 - 9.2. | The pH range of 6.5 - 8.5 applied by EPA under the Beaufort and Chuchi general pemits is based on Alaska Water Quality Standards, for protection of beneficial uses. This permit limitation will not change. |
| 182 | Permits | How will discharge amounts per well site be allocated under the permits? Otherwise, EPA is permitting untold discharges to the ocean without accountability and with only having considered a certain level of discharge in the ODCEs prepared to support the permits. | EPA does not intend to "allocate" the total discharge volumes per well. As discussed in RTC#43, EPA has established the effluent limitations and restrictions on waste streams discharged. This approach complies with existing regulations, consistent with other oil and gas permits issued by the agency, and ensures unreasonable degradation does not occur to the marine environment. EPA will use data collected from this permit term to inform future permitting decisions. |

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| 183 | Permits | Effluent limit tables are missing monthly or daily effluent limitations for many of the pollutant parameters. For example, Table 1 does not establish effluent limitations for pH, TAqH, and TAH. Request that EPA revise all effluent limitations and monitoring requirement tables to include quantitative limitation for each effluent parameter. This effectually means that any after-the-fact reporting would be accepted by EPA, which should not be the case. Furthermore, we request that Table 1 of the permit require monitoring of pH, TAqH, TAH, mercury, and cadmium prior to discharge, not just once per well. | EPA applied the effluent limitations in the Beaufort and Chukchi general permits in compliance with the national ELGs for the Offshore Subcategory (40 CFR Part 435, Subpart A), which requires technology-based controls on effluents; and applicable Alaska water quality standards to protect the beneficial uses of the receiving water. Additionally, in some cases, EPA used best professional judgment to apply requirements to the waste streams consistent with the requirements established by the agency in previous permits for the oil and gas industry. Also, EPA has increased the frequency of suspended particulate phase toxicity testing from monthly to weekly to ensure adequate environmental controls are in place for the water-based drilling fluids and drill cuttings discharge (Discharge 001). As such, where warranted, effluent concentration limtations are established. In other cases, EPA requires monitoring of specific parameters in the effluent to ensure unreasonable degradation does not occur. See RTC#46.<br><br>Finally, please note that cadmium and mercury concentrations associated with Discharge 001 must be met in the stock barite. Cadmium and mercury concentrations are tested prior to their use in the drilling process and subsequently discharged. As discussed in the fact sheet, EPA is retaining the monitoring requirements in the Beaufort general permit for pH, TAH, and TAqH for to ensure compliance with AWQS for discharges to state waters, and has applied the same monitoring requirements in the Chukchi general permit to ensure no unreasonable degradation to the marine environment. EPA has not established quantitative limitations for pH (with the exception of certain waste streams), TAH, or TAqH as discharge data does not exist to determine reasonable potential to exceed AWQS. Data collected during this permit term will inform future decision-making. See also RTC#242. |
| 184 | Permits | Please clarify that the reference to 10,000 gpd applies to each discharge type and does not establish a maximum limit of 10,000 gpd for the additive, accumulated total of all discharge types covered under the issued permits. | The commenter is correct that the 10,000 gpd discharge threshold, as one of the triggers for WET testing, is applicable to each discharge type, and not the cumulative total of all the discharge waste streams. |

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| 185 | Permits | It is unclear from the draft permits and accompanying materials whether chemical additions to the drilling fluids need to be inventoried. Please make this clear and ensure these chemicals are subject to numeric limitations. | Permittees are required, under Section II.A.11. and II.A.12. of the Beaufort and Chukchi general permits, respectively, to keep an inventory of chemical additives (and total quantities) used for Discharges 001-013. Concentrations of chemical additives may not exceed the most stringent of the following limitations: 1) the maximum concentrations specified in the EPA product registration labeling; or 2) the maximum manufacturer's recommended concentration. Additionally, permittees are required to calculate the maximum concentrations discharged in any waste stream, which must be based on the amount of chemical additives added to the volume of the waste stream discharged. The permittee must include the chemical calculation methods in the BMP Plan. The End of Well reports must include the chemical additive inventories, and documentation of each additive's concentration and limitations determinations. |
| 186 | Permits | Please ensure the amount of noncontact cooling water that EPA is authorizing to be discharged under the permits comply with 316(a) and (b) pertaining to thermal discharges. | Under Section 316(a) of the CWA, thermal effluent, such as cooling water, is considered a pollutant, and facilities wishing to discharge thermal effluent into a water source must apply for a NPDES permit. CWA Section 316(a) allows a thermal discharger to obtain a thermal effluent variance by demonstrating that less stringent thermal effluent limitations would still protect aquatic life. The Beaufort and Chukchi general permits do not authorize a 316(a) thermal variance for the non-contact cooling water discharges.<br><br>The CWA Section 316(b) Phase III regulations require that the location, design, construction, operation and capacity of cooling water intake structures reflect the best technology available to minimize adverse impacts to aquatic organisms. The Beaufort and Chukchi general permits require compliance with these regulations, as discussed in Parts II.N. and Attachments 3 of each permit. |

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| 187 | Permits | The intention behind what appeared to be this "additional" notification is not clear. This would appear only relevant if an operator drilling a well has a significant difference in time from when they stop discharging mud and cuttings and the end of the well. Even in that case, the Notification requirement (I.E.3.) "Facility Operations and Authorized Discharge Cessation" should suffice for this sort of notice. EPA's response to this comment should also consider each time a well is temporarily abandoned due to ice incursions, or the whaling blackout departure (i.e., any temporary cessation in operations necessitated by similar conditions. (Permits, Section I.E.2.) | The Discharge 001 cessation notification provision under Section I.E.2. requires the permittee to notify EPA, in writing, within 7 days of ceasing all discharges of water-based drilling fluids and drill cuttings at a drilling site. This provision ensures EPA is informed of the conclusion of this discharge and assumes that other discharges, such as sanitary and domestic wastes, may continue during well abandonment and demobilization activities. As suggested by the commenter, EPA has revised this provision in Beaufort and Chukchi general permits to include notification of temporary well abandonment. |
| 188 | Permits | It is not clear if this notification requires filing for a Temporary Abandoned well where the drill site (well) would be re-visited the next drill season. (Permits, Section I.E.3.) | EPA has revised the notification of discharge cessation required under Section I.E.3. of the Beaufort and Chukchi general permits to clarify that the wells temporarily abandoned for the season, to be completed the following year, are subject to this provision. |
| 189 | Permits | This standard is too broad and causes too much uncertainty regarding when EPA might unilaterally change conditions of the discharge. The terms "circumstances have changed," "discharger is no longer appropriately controlled," and "significant contributor of pollutants" have no objective standards attached, leaving the regulated public with little guidance or recourse in this area. (Permits, Section I.G.1.d & e.) | This language comes directly from the NPDES general permit regulations at 40 CFR 122.28(b)(3)(i)(E) and (G). EPA does not have the authority to deviate from these regulations. |
| 190 | Permits | This language would seem to indicate a "one time" opportunity for a permittee within the first 90 days of the GP being published to ask for coverage under an individual permit. There is no apparent reason for this requirement, and does not allow for potential changes in operating configurations, etc., over the 5-year GP period that may necessitate the need for an individual permit by a permittee. (Permits, Section I.G.3.) | Similar to the response above in RTC#189, this general permit provision applies the regulatory language found in the general permit regulations at 40 CFR 122.28(b)(3)(iii) and (iv). |

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| 191 | Permits | All waters within the Chukchi Area of Coverage are deeper than 5 meters so this limitation should be removed. The landward limits of the area of coverage for the permit are many miles seaward of the 5-meter bathymetric contour. (Section II.A.11.) | EPA agrees with commenter that all waters at the Chukchi lease locations are deeper than 5 meters, and has removed the limitation from the Chukchi general permit on discharges to waters less than 5 meter in depth. However, please note, EPA has retained the provision at II.B.3.a. prohibiting discharges of drilling fluids and drill cuttings at depths greater than 1 meter below the surface of the receiving water between 5 and 20 meters isobaths during open water conditions. See RTC#200. |
| 192 | Permits | Commenter suggested replacing the word "each" with "a" in the first sentence and adding a second sentence, "EPA may grant a waiver on a case-by-case basis if a permittee can provide adequate information demonstrating that representative information is being gathered under an EMP for a similar area." (Section II.A.12.) | EPA disagrees with the comment. The Beaufort and Chukchi general permits require an EMP performed at each drill site to ensure location-specific data are collected. See RTC#66 and #67. |
| 193 | Permits | Commenter suggested adding to the beginning of the sentence, "Except for drill sites exempted from the EMP requirements as discussed in section II.A.12 the..." (Section II.A.12.d.2.) | The Beaufort and Chukchi general permits allow the permittee to propose the use and consideration of data derived from a fully implemented and completed EMP by the permittee under the general permits at a prior drilling site. The permittee must demonstrate how the use of this data from a previous drilling site(s) satisfies the goals and objectives of the EMP requirements. This provision is essentially the EMP "exemption." EPA has not revised the permit language as suggested. |
| 194 | Permits | Commenter suggested revising the beginning sentence to say. "Collect physical data to characterize conditions representative of the drilling site and receiving waters." (Section II.A.12.d.3.ii.) | As discussed in RTC#65, EPA has included a provision in Phase I of the EMP to allow operators to make a demonstration that data previously collected in the vicinity of the drillsite location by the operators within the most recent five year period, meet the objectives of the Phase I baseline characterization data collection requirements. As such, EPA has not revised the Beaufort and Chukchi general permits to add the word "representative," as requested by the commenter. |
| 195 | Permits | Commenter suggested deleting the word "bacteria" from the third sentence. (Section II.A.12.d.3.iii.) | EPA agrees with the commenter and has removed the requirement to analyze the receiving water samples collected during Phase I for bacteria. See RTC#78. |

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| 196 | Permits | Commenter suggested deleting the last sentence. (Section II.A.12.d.3.b.ii.) | EPA has not made the suggested change. The Beaufort and Chukchi general permits retain the requirement for the permittee to collect observations for potential marine mammal deflection, to the maximum extent possible, during periods of discharge of drilling fluids and drill cuttings and non-contact cooling water. Please see RTC#19. |
| 197 | Permits | Commenter suggested revising (1) to read, "(1) exceed 10,000 gallons during any 24-hour period and if chemicals are added or may exist in the system;" (Section II.A.12.d.3.e.) | The suggested change is a matter of semantics and does not add clarity to the requirements of the Beaufort and Chukchi general permits. EPA has not made the change as requested. Please note the entire EMP section of the permits have been reorganized. |
| 198 | Permits | References to mixing zones and differing dilutions are unnecessary and confusing for discharges to federal waters. Recommend removal of these references in the Chukchi GP and ODCE. (Section II.A.12.e.5.a) | EPA agrees with the commenter that references to mixing zones and dilutions in the context of the WET testing requirements under the Chukchi general permit are confusing as state-authorized mixing zones are not applicable to discharges to federal waters. However, the mixing zones and dilutions associated with the modeling discussions in the ODCE are relevant and are retained in the document. |
| 199 | Permits | It is not clear if this report has to be filed for a temporarily abandoned well where the drill site (well) would be re-visited the next drill season. It would appear such a requirement would be unnecessarily burdensome, and should truly be required at the "end" of the well. (Section II.A.13., End-of-Well Report; Also Applies to Chukchi) | EPA has revised Section II.A.14. of the Beaufort and Chukchi general permits to include two parts. Section II.A.14.a. remains unchanged from the draft Beaufort and Chukchi general permits. Section II.A.14.b., reads as follows, “If a well is temporarily abandoned and drilling operations are planned to be resumed the following drilling season, the permittee does not have to submit an End-Of-Well Report. However, the permittee must notify the Director, in writing, within 30 days of leaving the drill site, and provide the information requested under II.A.14.a.1. and II.A.14.a.2., as well as the anticipated return-date to the drilling site. The temporary-well-abandonment notification must be signed and certified in accordance with the Signatory Requirements (Section VI.E.) of this general permit.” |

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| 200 | Permits | This restriction should be removed. The landward limits of the area of coverage for the Chukchi GP are many miles from the 5-meter and 20-meter bathymetric contours. (Section II.B.4.a.) | As noted in RTC#191, EPA has retained the prohibition for discharges of drilling fluids and drill cuttings at depths greater than 1 meter below the surface of the receiving water between 5 and 20 meters isobaths during open water conditions in the Chukchi Sea. However, EPA has removed the reference, "as measured from mean lower low water" to reduce confusion about the landward limit. This provision is retained as a precaution in the event shallower depths are encountered in the Chukchi area of coverage. |
| 201 | Permits | This restriction should be removed. The landward limits of the area of coverage for the Chukchi GP are many miles from the 5-meter and 20-meter bathymetric contours. (Section II.B.4.b.) | See RTC#200. |
| 202 | Permits | Performing the suspended particulate phase (SPP) test every week and at the end of the well (5-6 times during drilling of a single well) would be extremely difficult to accomplish due to the remoteness of operations and logistical constraints. This type of testing requires laboratory conditions that are not available on a drilling rig. The closest known lab certified for SPP testing is in Anchorage. Considering the potential for inclement weather to affect flying conditions, the prospect of getting samples to a lab in time for testing is poor, and the cost of maintaining that kind of program would be unreasonably high. | Footnote 1 of Table 1 of the general permits has been revised to include a provision requring the permittee to notify EPA within 24 hours if inclement weather conditions prevent compliance with the SPP testing requirements, and provide the specified documentation and rationale in the following monthly DMR. See also RTC#208. |

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| 203 | Permits | The target chemical parameters should be adjusted to more closely align with what is expected to be in drilling fluids and drill cuttings, as well as what would be useful for at-sea fate environmental monitoring. Commenter suggested focusing on measurement of total nonaromatic hydrocarbons by EPA Method 624 and parent and alkyl-PAH by EPA Method 8270 in water and sediments instead of TAqH and TAH. | TAqH and TAH monitoring are established by the Beaufort and Chukchi general permits to ensure compliance with Alaska water quality standards (applicable to state waters in the Beaufort Sea) and that unreasonable degradation does not occur in the marine environment. The parameters also serve as indicators for the potential presence of hydrocarbons in the discharges. TAH and TAqH data will also provide concentration information that will be used by EPA in future reasonable potential analyses. EPA does not expect the presence of PAHs to occur in the discharge due to the fact that the Beaufort and Chukchi general permits authorized only the discharge of water-based drilling fluids and drill cuttings (i.e., no mineral oil content). In addition, the general permits establish a no discharge restriction if free oil or diesel oil is detected in the effluent, as determined by the static sheen test and gas chromatograph (GC) analysis, respectively. (Offshore ELGs Development Document, January 1993). |
| 204 | Permits | Do the stated hourly rate limitations include or exclude entrained seawater and/or seawater added for dilution? This should be made clear. We would assume that seawater that is not circulated is excluded from any rate limit. Please clarify that seawater is not considered a drilling fluid. Seawater used in drilling the MLC and upper hole section is neither circulated or used to condition the hole. (Also apply to Beaufort GP) | The flow rates do not include entrained seawater. EPA has added a footnote to Table 2 of the Beaufort and Chukchi general permits to reflect this clarification. |
| 205 | Permits | This language is very unclear, and therefore confusing. Does this mean there is a daily limit and a monthly average limit? Such limits are not addressed in the table or elsewhere under requirements for Discharge 001. A literal reading would indicate that the daily limit is a volume equal to the hourly rate limit, so in water depths >40 m one could discharge no more than 1,000 bbl in a 24-hr period. (Table 2, Footnote 3; Also apply to Beaufort GP) | EPA has revised the Rate of Discharge Limitation footnote language in Table 2 of the Beaufort and Chukchi general permits to read, "The maximum daily discharge limitation is calculated by multiplying the maximum hourly rate of discharge by 24 hours. For purposes of reporting, each hourly measurement must be recorded for each calendar day of discharge within the month. The monthly average limit is the average of the maximum daily hourly rate for each calendar day." |

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| 206 | Permits | The reporting requirements for volume discharged, pH, TAqH, and TAH will be of little use for identifying sources of toxicity if any is found. These parameters appear to be listed only because there are water quality criteria for them. The WET testing requirement may not apply because the discharge rate of deck drainage is unlikely to exceed 10,000 gallons/day in the absence of heavy rain or a severe storm. (Permits, Table 3) | As discussed in the Fact Sheet at II.E.3.c., the Beaufort and Chukchi general permits retain the requirement from the Arctic general permit for the monitoring of pH, TAqH and TAH. This information is used to assess whether water quality criteria are exceeded and as a means to collect data to ensure unreasonable degradation does not occur. Regarding the WET testing requirements, if the applicable discharge passes the initial toxicity screening test or, once per well, if the flow rate does not exceed 10,000 gallons in any 24-hour period and chemicals are not added, then WET testing will not apply. |
| 207 | Permits | The effluent limitations and monitoring requirements for sanitary waste discharges are reasonable. Commenter will use modern, U.S. Coast Guard approved MSDs, which are capable of meeting these requirements. (Permits, Table 4) | Thank you for the comment. |
| 208 | Permits | The increased frequency of fecal coliform monitoring should not be changed from monthly (previous GP) to weekly. It is the commenter's experience that even with a monthly sampling frequency requirement, it has been logistically difficult to get at least one sample to a laboratory within the 48 hr timeframe to provide a valid sample. In the Arctic environment, the logistics are even greater. Requiring weekly testing will result in non-compliance due to circumstances outside of the applicant's control. (Permits, Table 4) | In light of concerns over discharges of human waste to areas of subsistence use and to ensure no unreasonable degration of the marine environment, the weekly monitoring frequency is appropriate. EPA recognizes, however, that inclement weather or the harsh Arctic environment may disrupt sample transport to laboratories for analysis. EPA has added footnotes to the fecal coliform sampling requirements of the Beaufort and Chukchi general permits to acknowledge this and to clarify that the permittee must notify EPA within 24 hours and document the conditions and rationale for any delays in the following month's DMR. |

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| 209 | Permits | If sanitary waste discharges are not prohibited, recommend EPA greatly reduce the quantity of sanitary wastes allowed under the permits and specify the Marine Sanitation Device (MSD) type to ensure proper treatment. Will raw sewage, wash water be treated before it is discharged? EPA's proposed permit does not require treatment through a MSD, nor does it specify the type of MSD which should be required—it only states that if a facility uses a MSD, it must be tested annually to ensure it is operating properly. While EPA anticipates waste will be treated with chlorine (e.g. a Type I or Type II MSD), it does not specifically require it in the permit. In fact, EPA specifically eliminates chlorine monitoring requirements by stating in the permit that "Monitoring is not required if chlorine is not used as a disinfectant or for facilities serving fewer than 10 persons,"(Table 4, footnote 4) meaning that for small vessels used to support drilling operations, EPA envisions no disinfection of waste at all prior to discharge. | Section 312 of the CWA sets out the principal framework for domestically regulating sewage discharges from vessels, and is implemented jointly by EPA and the U.S. Coast Guard. Section 312 requires the use of operable, U.S. Coast Guard-certified MSDs onboard vessels that are (1) equipped with installed toilets, and (2) operating on U.S. navigable waters (which include the three mile territorial seas; 33 U.S.C. 1322(h)(4)). EPA has issued regulations setting performance standards for MSDs, such as total suspended solids and fecal coliform, and the Coast Guard has issued regulations governing the design, construction, certification, installation, and operation of MSDs, consistent with EPA's standards. The Beaufort and Chukchi general permits establish concentration limits for biochemical oxygen demand (BOD5), total suspended solids (TSS), fecal coliform (FC), dissolved oxygen (state waters only), pH, total residual chlorine, floating solids/garbage, foam and oily sheen. The discharges must be treated in order to meet these limits, which are protective of state water quality. Additionally, EPA's regulations at 40 CFR Part 435 Subpart A specify that facilities continuously manned by 10 people or more (M10) must meet a minimum concentration of 1mg/L residual chlorine. For facilities continuously manned by 9 people or less or intermittently manned (M9IM), the requirement is no discharge of floating solids. Finally, please note the general permits are applicable to the drilling vessels. Discharges from support vessels within 3 nautical miles (nm) are subject to EPA's Vessel General Permit, or U.S. Coast Guard requirements outside of the 3nm limit. |
| 210 | Permits | Monthly reporting of pH is not necessary. If discharges were to fresh waters with limited mixing and circulation, there could be concern about the pH of this effluent. However, pH is unlikely to be a problem when the discharges are to well mixed and pH-buffered open ocean waters, especially since the pH of the discharge will have similar pH of seawater, or diluted in the downcomer prior to discharge. Water based muds may have a pH up to about 10, but this will decline to that of seawater during mixing in the downcomer. (Permits, Table 5) | As discussed in the Fact Sheet at II.E.4.b., EPA has determined it is appropriate to maintain a pH limit for discharges of sanitary and domestic wastes (Discharges 003 & 004) in state waters to ensure compliance with AWQS and to ensure that discharges do not cause unreasonable degradation in the marine environment. EPA has established the same limitations for discharges of sanitary wastes (Discharge 003) and pH monitoring for discharges of domestic wastes (Discharge 004) to federal waters of the Beaufort Sea and the Chukchi Sea for consistency and to further ensure no unreasonable degradation. The limits and monitoring requirements for pH are also consistent with the recommended pH range in the national water quality criteria under Section 304(a) of the CWA. |

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| 211 | Permits | Collecting pH measurements and WET testing is unnecessary. Any toxicity of this discharge would be from the high sea-salt concentration, which will be diluted to a salinity value similar to that of seawater in the downcomer prior to discharge, and thus not toxic to the marine environment. (Permits, Table 6) | As discussed in RTC#239, WET testing includes a two tier approach. WET testing for desalination unit wastes (Discharge 005) is required if the effluent fails the initial toxicity test, or once per well, if the discharge exceeds 10,000 gpd and chemical additives are added. Monitoring for pH ensures water quality criteria are not exceeded when a pH limit is applicable and to gather data about potential pH exceedances, and unreasonable degradation does not result from the discharge. The Beaufort and Chukchi general permits retain the toxicity testing and pH monitoring requirement. |
| 212 | Permits | This is a very small volume discharge that would only occur if the blowout preventer is used. There is no value in pH monitoring for this potential discharge. This requirement should be eliminated. (Permits, Table 7) | Monitoring for pH for blowout preventer fluid (Discharge 006) ensures that water quality criteria are not exceeded and that unreasonable degradation does not result from this discharge. The Beaufort and Chukchi general permits retain the monitoring requirement for pH. |
| 213 | Permits | Boiler blowdown water may contain inorganic salts that condenses out of the feed water when it is boiled to generate steam. Depending on the salts that precipitate, the water could be slightly acid or alkaline. The water will be neutralized to a pH near that of seawater during dilution in the downcomer. pH monitoring is not necessary and should be eliminated. (Permits, Table 8) | Monitoring for pH for boiler blowdown (Discharge 007) ensures that water quality criteria are not exceeded and that unreasonable degradation does not occur. The Beaufort and Chukchi general permits retain the monitoring requirement for pH. |
| 214 | Permits | Jackup rigs use pre-load water during jacking up of the rig. The commenter seeks clarification that pumping of pre-load water would be deemed a discharge of ballast water under the permit. (Permits, Table 11) | The Beaufort and Chukchi general permits include the following definition for ballast water, "Ballast water means harbor or seawater added or removed to maintain the proper ballast floater level and ship draft and to conduct jack-up rig related sea bed support capability tests (e.g., jack-up rig preload water)." |

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| 215 | Permits | Recommend EPA require the operator to examine the best available control or treatment methods for ballast water to prevent non-indigenous species contamination and risk to indigenous subsistence species populations. Commenter requests that ballast water containing non-indigenous species not be discharged into the Beaufort Sea, avoiding risk of a biological invasion and the resulting impacts to subsistence resources. Shell has evaluated its ballast management options and determined that the vessel trim can be maintained by moving ballast from one tank to another on the drillship, rather than discharging large volumes of ballast overboard. Shell's approach to ballast water mitigation is a best management practice that should be required. | EPA has added a sub-provision under the BMP Plan requirements at IV.B.5.d. to say, "Ensure that intake/exchange activities minimize the risk of introducing non-indigenous/invasive species to the Beaufort and Chukchi Seas." |
| 216 | Permits | The commenter proposes the 10th day of the month submittal requirement be changed to the 20th day of the month following the practice in Cook Inlet. It is often difficult to receive sample results and complete reporting by the 10th day of the following month. (Permits, Section III.B.) | EPA agrees with the commenter's recommendation and rationale. EPA has revised the Beaufort and Chukchi general permits to require DMR submission no later than the 20th day of the month following the completed reporting period. |
| 217 | Permits | The reference to 40 CFR § 1252.21(r)(2) is not included in the CFR. Please clarify. (Permits, Attachment 2) | The Cooling Water Intake Structure Requirements (Attachment 3) have been updated to include the correct reference, which is 40 CFR Part 122.21(r) (2). |
| 218 | Beaufort Permit | Please complete a global search of "Director" and "DEC" to ensure that the phrase "Director and DEC" appears in all applicable portions of the permit. DEC has identified areas in the permit that discuss items potentially relevant to both state and federal waters and where accompanying submittals are only required for the Director (i.e. EPA). (Pg. 57 III.D.2., Pg. 61 IV.A.1., Pg. 62 IV.B.2., Pg. 65 IV.B.5.b.4., Pg. 74 V.F.3.b., Pg 75 V.K., and Pg. 76 VI.B.1.) | EPA has made the changes in the documents. |

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| 219 | Beaufort Permit | Suggest the following revisions: (1) Under the "due dates" column the statement should say "chemical additives" instead of chemical additive;" (2) Under the "due dates" column there should be a space between "June" and "1;" and (3) The statement "from the time" occurs twice in a row and one should be deleted. (Permits, Section II.A.10.b.) | EPA has corrected the Schedule of Submissions for both the Beaufort and Chukchi general permits. |
| 220 | Beaufort Permit | Request the inclusion of the following language in the permit, "Please note the burden of proof for justifying a mixing zone or zones of deposit rests with the applicant." (Section I.C.3.) | EPA has included the requested language within Section I.C.3. |
| 221 | Beaufort Permit | Recommend for clarity, making a separate number for the middle sentence and rewriting to say, "Applicants requesting proposed discharges of water-based drilling fluids and drill cuttings, sanitary wastes or domestic wastes to stable ice must demonstrate that other disposal means are not technically feasible in accordance with Section II.A.11.c." (Section I.C.3.) | For further clarity, EPA has revised the second sentence to say, “Applicants requesting a ZOD or mixing zone to discharge water-based drilling fluids and drill cuttings, sanitary wastes, or domestic wastes to stable ice must demonstrate that other disposal means are not technically feasible in accordance with Section II.A.12.b. of this general permit.” However, the sentence remains within Section I.C.3. |
| 222 | Beaufort Permit | Delete "provide" from second sentence, this is already a list of information to be included. (Section I.C.6.) | EPA has corrected the sentence. |
| 223 | Beaufort Permit | Under Section II.A.12.c. the permittee is required to submit an EMP plan of study alsong with the NOI. However, one required element of the EMP plan of study is a QAPP which is not otherwise required to be completed until 90 days following written notice of authorization of discharge or, if shorter, prior to the pre-drilling monitoring required by the EMP. Suggest adding the following sentence after the word "completed" to clarify the deadlines to submit and implement the QAPP, "However, the QAPP must be completed and implementation initiated prior to the pre-drilling monitoring required in the EMP (Section II.A.12.)." (Section I.E.4.) | Since EPA has revised the Beaufort and Chukchi general permits to require submittal of the QAPP with the NOI, the commenter’s request to clarify the deadline and implementation of the QAPP is essentially addressed. Please see RTC#49 and #180. |

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| 224 | Beaufort Permit | Third sentence, replace "it" with "the permittee". (Section I.E.6.) | EPA has revised the third sentence in Section I.E.5. of the Beaufort and Chukchi general permits to read, "The permittee must certify in the notification that the permittee is not subject to any pending enforcement actions including citizen suits brought under state or federal laws." |
| 225 | Beaufort Permit | Please include a statement that specifies DEC may request the submittal of NetDMRs if their online system becomes customized during the permit cycle to accept NetDMRs. DEC will notify all permittees of this requirement in writing if NetDMR submittals are required at a future time during the applicable permit cycle. (Section I.F.) | The permit provision at I.F.2. specifies that DMRs, other reports required by the general permit (except EMP reports), and all notices of compliance must either be submitted electronically using NetDMR, or paper submittals, as directed by the permitting authority. This language sufficiently addresses the commenter's request. |
| 226 | Beaufort Permit | First sentence should say "...that any of the following conditions apply, including but not limited to those listed below..." ("apply" is missing from this sentence). (Section I.G.1.) | EPA has corrected the sentence. |
| 227 | Beaufort Permit | Figure 1 is not at a scale for the legend to be legible or the different patterns to be seen. (Figure 1) | The state and federal lease blocks depicted in Figure 1 of the Beaufort general permit are obtained from ADNR and BOEM, respectively. Please visit their websites below for detailed map information. Operators requesting permit coverage must submit an NOI for each lease block, which must include a site map showing the exact location of the facility and discharges associated with the project.<br>http://dog.dnr.alaska.gov/ and<br>http://www.boem.gov/About-BOEM/BOEM-Regions/Alaska-Region/Index.aspx |
| 228 | Beaufort Permit | This provision seems difficult to track compliance on given that it doesn't clearly identify one numeric criterion for the permittee or the permitting authority to compare the concentration of the chemical additive to. Recommend adding 10.a.1. and 2. maximum concentrations to the IV.C. Drilling Fluid Plan Requirements for chemical additives that are identified for use. (Section II.A.10.a.) | The permit provision contained in Section II.A.10.a. is applicable to any authorized discharge. This provision ensures that the operator does not exceed the product's recommended use concentrations. Establishing a numeric criterion in the permits would be difficult as the products can vary greatly. Since this provision also applies to Discharge 001, it is not necessary to add it to the Drilling Fluid Plan requirements as recommended by the commenter. |
| 229 | Beaufort Permit | Last sentence, "chemical additive" should say "chemical additives." (Section II.A.10.b.) | EPA has made the appropriate change. |

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| 230 | Beaufort Permit | This prohibition does not define what constitutes "active bowhead whaling activities." In addition, the prohibition provides no guidance for permittees on when such activities are likely to occur nor does it provide any means of ascertaining when they are occurring. Therefore, permittees are limited in their ability to plan for no discharge periods and have no means to verify whether they are in compliance. Request the permit include the following: (a) a definition of "active bowhead whaling activities," (b) an estimate of when during the year such activities generally occur, and (c) a notification process to identify when such activities are planned to occur and whether they are occurring. Also, the permittee is required to seek authorization by the Director or DEC to discharge certain wastes during Bowhead whale hunting season and stable ice conditions. The permit has no criteria to determine whether to grant authorization. EPA should identify the decision-making process and commit to using tools such as Net Environmental Benefit Analysis, Lifecycle Assessment in the evaluation of alternative disposal options. [Section II.A.11.b.; Also applies to Section II.B.5. Seasonal Restrictions and Section I.F.k. Discharges to Stable Ice.] | EPA has revised the Beaufort general permit to remove the provision that would allow authorization of discharges during bowhead whaling activities based on an alternatives analysis. Instead, the Beaufort general permit applies the same “blackout” period adopted by NMFS as a mitigation measure to protect fall subsistence hunting activities by the Nuiqsut and Kaktovik communities in the Beaufort Sea. The Beaufort general permit requires ceasing drilling fluids and drill cuttings discharge starting on August 25. Recognizing that the subsistence hunting window with regard to the end of the whaling hunt can change year by year, the Beaufort general permit requires coordination with the Whaling Captains Associations within each community to coordinate the end times of whaling activities each fall. Regarding the commenter's suggested use of the Net Environmental Benefit Analysis, please see RTC#171. |
| 231 | Beaufort Permit | This prohibition is subject to the discretion of EPA and DEC. Recommend removal of discretionary clause. (Section II.A.11.b.) | The Beaufort general permit has retained the discretionary clause. EPA and DEC, as permitting authorities may authorize or deny a discharge. In the case of the no-discharge restriction of drilling fluids and drill cuttings, sanitary waste, and domestic waste onto stable ice, unless the permittee can demonstrate that no on-land disposal alternatives are available and accessible, the discharge of drilling fluids and drill cuttings, and sanitary and domestic wastes will be prohibited. |

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| 232 | Beaufort Permit | Active bowhead whaling could be said to begin on August 25 (beginning of Kaktovik and Nuiqsut hunts) and continue throughout the end of the fall hunt in Barrow. This blanket prohibition, not limited in any way by time or scope, would appear to be a defacto end to 001 discharges during the open water season from August 25 onward. There should be evidence provided regarding a determination that 001 discharges unreasonably degrade the marine environment and are detrimental to the subsistence harvest of bowhead whales. If these determinations are made, then some limitation of time and scope (i.e., area) limitation would appear appropriate as bowhead whaling does not always occur during the totality of the open ice season, in the totality of the Beaufort Sea. The proposed language is overly broad. (Section II.A.11.b.) | Please see RTC #230. |
| 233 | Beaufort Permit | EPA does not provide any basis for restricting discharges 001, 003, and 004 to stable ice, which are allowed under the expired GP. The commenter believes these discharges should be allowed unless the Director or DEC prohibits such discharges due to clear circumstances. (Section II.A.11.c.) | Please see RTC#38 and #231. |
| 234 | Beaufort Permit | Stated objective of Phase I initial site assessment is "to ensure the exploratory facility is not located or anchored in a sensitive biological area." When does EPA anticipate that initial site assessment takes place? Unless initial site assessment is conducted well before drilling starts, permittee will have already investigated the drilling sites as part of the EP process and ruled out locations on or near sensitive biological areas. [Section II.A.12.b.1.; Also applies to Section II.A.12.d.3.a.i. Initial Site Physical Sea Bottom Survey] | As noted by the commenter, Phase I baseline site assessment would most likely be conducted for purposes of Exploration Plan development for submittal to BOEM. As discussed in RTC#65, EPA has included a provision in the Beaufort and Chukchi general permits allowing permittees to make a demonstration that data previously collected in the vicinity of the drillsite location within the most recent five year period, meet the objectives of the Phase I baseline characterization data collection requirements, and request EPA's consideration that they be used to meet the Phase I elements. The Phase I data, if available, may be submitted to EPA with the EMP Plan of Study. |
| 235 | Beaufort Permit | Suggest deleting item #4 and adding the following sentence at the end of the section, "Note that the permittee must develop a QAPP (Section IV.A.) which is subject to separate notification requirements (Section I.E.4.)" (Section II.A.12.c.) | EPA has retained the language as written. The suggestion by the commenter does not add clarity to the permits' requirements. |

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| 236 | Beaufort Permit | The paragraph indicates that the purpose of this section is to, "Conduct data collection to inform site-specific models of plume and sediment deposition, and conduct model simulations that account for the observed range of receiving water conditions and effluent flow." Subsequent to this paragraph, subparts a-c discuss which modeling assessments must be conducted. DEC recommends a sentence be added at the end of section that specifies that this requirement is unique to the EMP Plan, and is accordingly separate from any mixing zone or zone of deposit the applicant requests from DEC. Applicants requesting a mixing zone or zone of deposit must do so in accordance with Permit Part I.C.3 (page 11). (Section II.12.d.1.) | Since mixing zone and zone of deposit requests are only relevant to state waters covered by the Beaufort general permit, EPA has added a sentence to the permit to clarify that the modeling requirements are specific to the EMP and are not associated with mixing zone or zone of deposit requests made to DEC. |
| 237 | Beaufort Permit | EPA proposes that site-specific data required as inputs to these models be collected during Phase I Site Assessment. But reports on the modeling must be submitted to the Director and DEC with the Plan of Study prior to the Phase I Site Assessment. EPA should allow use of historical regional water quality data for this initial characterization as model inputs. Or EPA should clarify the timing and sequence of planning and data collection events and submittals. Can EPA confirm in this section that the purpose of performing the modeling simulations is to optimize the sampling programs to focus on areas where changes from pre-drill conditions are to be expected so that, for example, increased benthic sediment sampling can be targeted in areas where deposition is probable, and concomitantly decreased in areas where deposition is unlikely? This would improve the effectiveness of the program and minimize sampling in areas where no impacts are anticipated. [Section II.A.12.d.1.; Also applies to Section II.A.12.d.3.a.ii. Physical Characteristics.] | The comment correctly states the purpose of the modeling analysis, and EPA has clarified the permit language. Given this purpose, in order to inform the EMP Plan of Study, the modeling analysis must be completed before submittal of that plan. The sequence of tasks related to the modeling analysis is as follows: first, data collection of site-specific waterbody conditions at the discharge location is conducted, or existing relevant data collected at the drill site is evaluated for use in the analysis; second, the modeling analysis using the site-specific information is performed; and third, an EMP Plan of Study is developed that incorporates the modeling predictions into consideration. Regarding data collection, EPA has determined that site-specific data, not regional data, should be collected or utilized for this analysis. The site-specific data will be the more recent available data, which can then also be used to add to the regional database. |
| 238 | Beaufort Permit | Second sentence needs to include the word "for" at the end: "...and and/or state water quality standards for." (Section II.A.12.d.3.a.iii.) | EPA has changed the second sentence to read as follows, “This monitoring should include an assessment of pollutants that are expected to be present in discharge effluent and for which there are federal water quality criteria and/or state water quality standards.” |

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| 239 | Beaufort Permit | There is no need to test non-contact cooling water for effluent toxicity unless compounds are added. (Section II.A.12.d.3.b.i.) | Please see RTC#80. Since it is standard industry practice to add corrosion inhibitors or biocides to the non-contact cooling water stream, toxicity testing requirements are justified to ensure the discharge will not result in unreasonable degradation to the marine environment. |
| 240 | EMP | From previous discharge assessments it is likely, based on metocean characteristics, mud and cuttings particle size and other factors, that the Phase III physical sea bottom survey may find no significant or limited solids deposition around the well and no substantive change in the natural sediment physical characteristics. If physical and visual characterization of the seafloor fail to identify significant impacts from drilling, then there has been no impact to the benthic community structure. Permits should allow permittee the flexibility to conduct the Benthic Community Structure assessment concurrently with the Phase III Assessment, eliminating the need to return for a Phase IV Assessment. Verification in Phase III that the benthic community had not been altered would support position to eliminate Phase IV assessment. [Section II.A.12.d.3.c.i; Also applies to Section II.A.12.d.ii Phase IV Assessment and Section II.B.3. Requirements for Water-Based Drilling Fluids and Drill Cuttings and Section II.B.3.b. Sediment Characteristics and Discharge Effects.] | EPA disagrees with the commenter that data from Phase III can be used to discount the need for a Phase IV study. Please see RTC#89. |
| 241 | Beaufort Permit | Second sentence both instances should say "these data" instead of "this data." (Section II.A.12.h.) | EPA has corrected the sentence. |

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| 242 | Permits | Why isn't there a reasonable potential analysis for mercury, cadmium, pH, TAH, and TAqH? (Table 1) | The mercury and cadmium limits are established under the effluent limitation guidelines at 40 CFR Part 435 Subpart A for the discharges of drilling fluids and drill cuttings. Consistent with these guidelines, EPA established the mercury and cadmium concentation limits in the Beaufort and Chukchi general permits for this discharge. The Fact Sheet at II.E.1.l.2.c. explains EPA's rationale for retaining the monitoring requirements for TAqH and TAH in state waters from the Arctic general permit to ensure compliance with AWQS. EPA is retaining the monitoring in the Beaufort general permit for discharges to federal waters, and in the Chukchi general permit for consistency and as necessary conditions to ensure the discharges do not cause unreasonable degradation to the marine environment. Similarly, pH monitoring is required to ensure unreasonable degradation of the marine environment does not occur. The data collected will be used for future agency decision-making. See RTC#183. |
| 243 | Beaufort Permit | Last sentence should say "identified in" instead of "identifying." (Section II.B.6.) | EPA has corrected the sentence. |
| 244 | Beaufort Permit | Should say "API report" instead of "retort." (Section II.B.7.b.9.) | EPA has corrected the sentence. |
| 245 | Beaufort Permit | Recommend adding "and any associated authorizations" to "...a copy of this NPDES general permit..." as records to be retained. (Section III.F.) | EPA has added the recommended phrase. Section III.F. reads as follows, "The permittee must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this general permit, copies of DMRs, a copy of this NPDES general permit and associated authorizations, and records of all data used to complete the application for this general permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director or DEC at any time." |

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| 246 | Beaufort Permit | Suggest the following revision to the paragraph, "The permittee must develop, and implement, a permit. The permittee must complete and initiate implementation of the QAPP prior to the pre-drilling monitoring required in the Environmental Monitoring Program (Section II.A.12.). Within 90 days following written notification that the Director or DEC has authorized discharge under this general permit, the permittee must notify the Director or DEC, in writing, that the QAPP is complete and the date it was implemented. This notification…" (Section IV.A.1.) | Please see RTC#223. Since EPA has revised the Beaufort and Chukchi general permits to require submittal of the QAPP with the NOI, the commenter's request to clarify the deadline and implementation of the QAPP is essentially addressed. Please also see RTC#49 and #180. |
| 247 | Beaufort Permit | (1) Should say "200,000" instead of "200,00." (Section V.2.b.iv.) | EPA has corrected the violation amount. |
| 248 | Beaufort Permit | "The Clean Water Act" is "The Act" everywhere else (including in the definitions). (Section V.K.) | EPA has made the change to be consistent with the rest of the document. |
| 249 | Beaufort Permit | Both first sentences should say "Nothing in this general permit may be construed…" instead of "…must be construed…" (Section VI.I.and J.) | EPA has revised Sections VI.I. and J. to say, "Nothing in this general permit shall be construed…" |
| 250 | Tribal Consultation | EPA has a trust obligation to federally-recognized tribes to not just inform, but also to protect and take into consideration the unique ways of life and the cultural resources and natural resources of the various indigenous communities and their various government. | Please see RTC#107, #108, and #252. EPA takes its trust responsibility seriously and has held many discussions with federally-recognized tribes on the North Slope and in Northwest Arctic communities throughout the development of the Beaufort and Chukchi general permits. Additionally, EPA has coordinated closely and shared information throughout the permitting process with the local governments and Alaska Eskimo Whaling Commission. From these conversations, where numerous concerns were expressed to EPA, and through the Traditional Knowledge process, EPA has included several restrictions, prohibitions, and provisions in the general permits to address the concerns raised. |

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| 251 | Tribal Consultation | In our 2010 comments, we encouraged EPA to continue close communication and coordination with the NWAB, tribes, and communities throughout the reissuance process. EPA need to work closely with the 11 coastal communities within the NWAB that depend on harvests of marine species. Other than a notice sent to the Native Village of Kivalina late in the process, there is no indication that EPA worked with our communities and there appeared to be a lack of consideration of impacts to our communities and tribes. | Please see RTC#107, #108, #250, and #252. EPA included the Native Village of Kivalina in our outreach to all communities and invitations to tribal governments to consult with the agency. EPA appreciates the Native Village of Kivalina's participation in the government-to-government conversation with EPA on March 8, 2012 to share the tribe's questions and concerns. |
| 252 | Tribal Consultation | In order for the federal government to do their permitting process properly, they need to do more consultation with the native villages. | Please see RTC# 107 and #108. EPA's consultation with tribal governments is integral to EPA's understanding of the issues and concerns associated with the general permits. As such, EPA has held multiple meetings with tribal governments, tribal members, and subsistence commissions throughout development of the general permits. EPA Region 10's Tribal Consultation and Coordination Procedures call for an invitation to tribal governments to consult with EPA regarding Agency actions that may impact tribal communities and their subsistence resources. EPA understands that marine species migrate and they are shared resources amongst the Alaska Native communities, as such, EPA specifically invited the 11 tribal governments that are part of the Alaska Eskimo Whaling Commission to consult with EPA. |
| 253 | Tribal Consultation | From our experience with Red Dog Mine, we have been voicing ourselves, putting it in writing and always seems like we are never heard, we don't want to see that happen here, we are people of the North Slope and we want to be heard. | Please see RTC#107, #108, and #251. |

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| 254 | Public Participation | The teleconference idea is very helpful for people who have telephones and who communicate in an audio manner. We are working with people who are hearing impaired and visually impaired, and I think for a matter this important, that all efforts need to be made to extend accessible places when there are in-person meetings. I think every effort on the federal government to fairly accommodate the people is a good idea and the teleconference hearing is working for me. | EPA takes seriously its responsibility to ensure that the public has a meaningful opportunity to participate in permitting decisions. Before and during the public comment period for the draft Beaufort and Chukchi general permits, EPA took many affirmative steps to promote meaningful public involvement, including offering multiple in-person meetings and teleconference opportunities. These opportunities include EPA informational meetings with local communities, tribal governments, and other stakeholders in Kotzebue, Point Hope, Point Lay, Wainwright, Barrow, Nuiqsut, Kaktovik and Anchorage in May 2009, March-April 2010, and June 2011. EPA conducted multiple informational teleconference meetings with communities and tribal governments in February 2012.<br><br>At the start of the comment period, EPA distributed copies of the draft general permits and supporting materials to local and tribal government offices, and to information repositories located in each North Slope community, and also posted these and other documents on EPA's website. In March 2012, EPA held community and tribal government meetings to answer questions and take public comments on the draft general permits in Point Hope, Barrow, Nuiqsut and Anchorage. At the Barrow and Anchorage public hearings on March 13 and 16, 2012, teleconference lines were available for remote communities to participate and provide testimony. Finally, EPA held several informational meeting sessions in Barrow on September 18, 2012. Teleconference lines were utilized to ensure communities located in remote areas can participate in the conversation. |

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| 255 | Public Participation | About 80 percent of the people in the Northwest Arctic Borough still practice a subsistence way of life and that provides not only for nutritional security, but also for our cultural survival. The opportunity for direct face-to-face dialogue is critically important to help to address some of these concerns and to find some solutions that we can all work with in moving forward. What are the protocols and mechanisms that need to be addressed in order to get EPA to Kotzebue or to Kivalina or other communities in the borough? How do we make that happen? What is the process? This is too important – EPA should be present at the public meetings in person not on teleconference. There is too much at stake regarding our livelihood. These issues are too important to discuss over the phone. | Please see RTC#107, #108, #250 and #254. |
| 256 | Public Participation | We have been participating in agency meetings for decades, expressing concerns about the importance of our health, our tradition and our culture. I have been participating for many years talking about our concerns and, yet, efforts to participate in meetings seems like they are falling on deaf ears. Also, why did EPA not hold a meeting in Kaktovik? The drill sites are located near the Village of Kaktovik. | EPA recognizes that the Kaktovik community is very interested in the Beaufort and Chukchi general permits and we made many efforts to foster public participation by Kaktovik and other North Slope communities. See RTC# 107 and # 108. |
| 257 | Public Participation | EPA has to find some other ways than just using the websites and newspapers to notify the public of meeting opportunities. People in the rural areas do not necessarily have access to the regular newspapers or regular Internet notices. Your publicity could be a little bit more widespread. | EPA made a concerted effort to foster maximum public participation by North Slope and Northwest Arctic communities. EPA advertised early informational meetings held in 2009 and 2010 by multiple letters, telephone calls, faxes, emails, fliers, website and radio announcements to individuals, communities, tribal and local governments, and stakeholders. We also advertised all of the public meetings and community and tribal teleconferences in 2012 by newspaper notices in the Anchorage Daily News, the Arctic Sounder, and the Petroleum News. EPA has developed a North Slope Communications Protocol to ensure consistent and effective outreach effort. |

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| 258 | Public Participation | There are other communities along the coast that share these resources and were not included in this process. We do not believe there were adequate notification for some of the Bering Sea coastal communities to provide input. The public interest would be better served if additional hearings could be scheduled in Western Alaska, and meeting notices be published in the regional newspapers of public record. I wanted to also commend EPA on the its extensive outreach with the communities in the Arctic. EPA has done a better job than any other agency I have seen. | The Beaufort and Chukchi general permits are of interest to individuals and communities located over a broad geographic area. EPA made a concerted effort to foster public participation by North Slope and Northwest Arctic communities. Please see RTC#'s 107, 108, 250, 254, 255 and 257. |
| 259 | Public Participation | We would like to see more informed decision making in permitting the re-issuance process that respects the impact of local communities. We encourage the EPA to continue close communications and coordination with the NW Arctic Borough, tribes and Arctic communities throughout the re-issuance process. We have been voicing ourselves in writing but are never heard. We don't want to see that happen here, we are people of the North Slope and we want to be heard. | EPA recognizes that the Beaufort and Chukchi general permits are of interest to individuals and communities located over a broad geographic area, and we made a concerted effort to foster public participation by North Slope and Northwest Arctic communities. Please see RTC#'s 107, 108, 250, 254, 255 and 257. |
| 260 | Public Participation | We have seen a lot of different people come to Barrow in the last two years with EPA, and I can't say who is the right person to deal with on each and every issue that we present on these concerns. Who is supposed to come out for this project versus that project, the Beaufort side, versus the state side, and federal side. It's so convoluted and layered but we're still here at the table talking about the importance of our traditional and cultural uses. The fragmentation of this process does not give me reason to be reassured. | There are many federal laws that apply to oil and gas exploration and development activities, including those that govern environmental protection, natural resource development, and public safety. Under each law, Congress may establish jurisdiction within a particular agency over a specific activity or suite of activities. In this context, EPA has jurisdiction to issue NPDES permits under the Clean Water Act for discharges of pollutants into waters of the U.S. As noted in RTC#7, #25, and #28, other federal agencies have jurisdiction over different components of oil and gas exploration and development. In addition, the State of Alaska has established its own regulations and agencies that have different roles in on-shore and near-shore oil and gas exploration and development activities. EPA has heard this comment in the past, and has strived to be clear in its communications about the respective roles of different federal and state agencies. We have also strived to have a consistent presence for those activities that involve EPA within the North Slope and Northwest Arctic Boroughs. |

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| 261 | Public Participation | It's good that you're coming up here. We hope that things are heard in a good way. We hope that you look at the reality that we're looking at, that generations of our families rely on these resources. You have only added to our generations of concerns, not allayed them. The process is to move forward with the permitting tasks, but the process should be looking at protecting human health. | EPA appreciates the commenters' interest in the Beaufort and Chukchi general permits. We recognize the strong relationship the local communities have to the arctic environment and its resources, and the deep importance of subsistence hunting and fishing and the traditional way of life. Please see RTC#'s 107. 108, 254, 255 and 257. |
| 262 | Public Participation | Will the data reports be made available to the public? What kind of studies and water analyses would be required? How do we access information about the discharges? When they do daily, weekly testing, and send those results to EPA, can we get that information sent to us also, so we can monitor the types of discharges that are going into the ocean? We look forward to EPA continuing to communicate with the impacted communities and Tribes and regular updates on how the NPDES program is implementing the permits, including results of the EMP and oversight activities. Commenter requests that the chemical inventory data provided by industry be posted on EPA's webpage, along with EPA's analysis of the data, and a written summary of the action EPA took in response to this data. Commenter recommends that the records also include all information required by the EPA approved Environmental Monitoring Plan, Best Management Practice Plan, Drill Fluids Plan and Quality Assurance Project Plan. | EPA will post all NOI documentation, Environmental Monitoring Program plans and reports, and discharge monitoring reports submitted by permittees under the Beaufort and Chukchi general permits to the EPA Region public website. EPA will also post final EPA decisions and authorizations to the EPA Region 10 public website. See RTC#180.<br><br>EPA will continue its ongoing efforts to maintain communication and coordination with North Slope and Northwest Arctic communities on the final permit decisions and implementation of the Beaufort and Chukchi general permits. |

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| 263 | Environmental Justice Analysis | Available evidence indicates that the discharges, especially drilling fluid and drill cuttings could result in substantial harm to Alaska Native subsistence populations on the North Slope. Contamination of the Arctic ecosystem would put Alaska Natives' well-being at risk, giving them few or no healthy food options. Thus, EPA's conclusion that the permits will not have a disproportionate high and adverse human health or environmental effect on minority or low-income populations is arbitrary. The ODCEs and permits should be revised to clearly document the cultural significance of the Beaufort and Chukchi Seas to the Inupiat and document that NSB and its residents have testified that discharges should be prohibited wherever technically feasible. The permits and ODCEs should be revised to prohibit discharges that compromise trust in subsistence resources.The pristine nature of the Beaufort and Chukchi Seas as central to the Inupiat culture and provides both traditional and customary subsistence uses. These seas are central to the culture, identity, and subsistence way of life for Inupiat communities along its coast. | The data and conclusions presented in the ODCEs are based on the science available to the agency. As discussed in RTC#107 and #108, EPA also collected Traditional Knowledge data as part of the information gathering and review process for development of the ODCEs. EPA is aware of the food tainting concerns and has incorporated in the Beaufort and Chukchi general permits the limits, restrictions and requirements to control the discharges of pollutants to the marine environment.<br><br>Finally, as discussed in RTC#11, EPA will request ATSDR review the data from the environmental monitoring reports to determine the potential risks associated with exploration discharges on the communities that rely on marine resources for subsistence. |
| 264 | Environmental Justice Analysis | While EPA acknowledges that the traditional practice is to not discharge man-made wastes into the ocean, it responds to this cultural practice and belief with western science. While we disagree that western science supports the agency's conclusions, it fails to support our cultural beliefs. EPA's second response is to require monitoring and other provisions, which do not address the adverse effects of food tainting on our health, culture, and communities. Based on the current facts, it is apparent that a disproportionate adverse impact will be borne by our communities unless EPA moves to a zero discharge requirement for these permits. The ODCE and proposed permit should be revised to more thoroughly document Inupiat traditional knowledge related to adverse impacts from pollutants disposed of in the Chukchi and Beaufort Seas. | Please see RTC# 263. |

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| 265 | Environmental Justice Analysis | The scope of the demographic analysis is too narrow and misrepresents the true demographics of our communities. The demographic information only addresses eight incorporated villages on the North Slope. What about information from the unincorporated villages of Kivalina, Kotzebue, Gambell, Little Diomede, and Savoonga? Despite the failure to provide information from these areas, EPA uses its analysis to draw conclusions about the overall impacts to all North Slope residents from the proposed discharges. Moreover, the agency specifically says that the permits will be protective of "AEWC whaling communities" including the unincorporated villages without considering any information from these villages. | The EJ Analysis discusses the traditional subsistence hunts of bowhead whales by the communities of Gambell, Savoonga, Little Diomede, and Wales (on the Bering Sea coast); Kivalina, Point Lay, Point Hope, Wainwright, and Barrow (on the coast of the Chukchi Sea); and Nuiqsut and Kaktovik (on the coast of the Beaufort Sea). The EJ Analysis acknowledges the importance of this subsistence activity and the similarities between the Northwest Arctic coastal communities with the North Slope coastal communities. In the analysis, EPA takes the approach that if the Beaufort and Chukchi general permits actions are protective of subsistence resources, then they will be protective of all residents on the North Slope and Northwest Arctic communities as they rely on the same marine resources for subsistence. Although there are other North Slope and Northwest Arctic communities that are concerned with potential impacts to the marine environment, and consequently their way of life, the EJ Analysis focused on the North Slope communities that practice subsistence within or close to the permits' areas of coverage. EPA conducted extensive outreach activities to communities that are members of the Alaska Eskimo Whaling Commission, including government-to-government consultations. The information shared and discussed with EPA was included in the EJ Analysis and the ODCEs. EPA used and will continue to use available means to identify potential impacts to marine resources relied on for subsistence use. |
| 266 | Environmental Justice Analysis | Please expand the discussion of "specialty additives" that are included in drilling fluids, their amounts and potential for bioaccumulation. This information is important for the EJ analysis as well as EPA's ODCE. (Environmental Justice Analysis, Page 27) | EPA has expanded the discussion of specialty additives in the Beaufort and Chukchi ODCEs to include the information available to EPA. Please note, per RTC#14, EPA has revised the NOI form to require disclosure of each chemical to be used during the drilling process, including identification of chemicals that meet Norway's "green" classification. This information will be used by EPA to inform future decision-making. |

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| 267 | Environmental Justice Analysis | The discussion of existing conditions in the Beaufort Sea fails to disclose the sediment concentrations for chromium, copper, lead, and selenium. Are these levels below sediment quality criteria? (EJ Analysis, Page 27) | EPA has included a table in the ODCEs summarizing the metals concentrations in the sediments in the Beaufort and Chukchi Seas based on available data. While a number of sediment quality guidelines have been developed for relating chemical concentrations in sediment to their potential for biological effects, there have been few studies evaluating the relative effectiveness of different approaches. Additional evaluation of different approaches by EPA and state regulatory agencies are ongoing to develop standard sediment quality criteria. As there are no standard national guideline, EPA has not made a comparison of the metals concentrations in the Beaufort and Chukchi sediments. |
| 268 | Environmental Justice Analysis | EPA acknowledges that additional information is necessary to assess the bioaccumulation effects to benthic communities from offshore oil and gas discharges. Please discuss these possible pathways and what they might mean for local subsistence communities. (Page 29) | Existing data indicate that bioaccumulation from the discharges is not occurring at rates or levels that would result in unreasonable degradation of the marine environment. See RTC#124. Additionally, available data do not appear to indicate a direct or indirect exposure pathway to subsistence users. However, EPA is requiring operators authorized to discharge drilling fluids and drill cuttings conduct bioaccumulation studies. The purposes of the studies are to add to our understanding of bioaccumulation in the Arctic, including any potential impacts to subsistence resources, and to ensure unreasonable degradation does not occur. Finally, as discussed in RTC#11, EPA will request that ATSDR review the data from the environmental monitoring reports to determine the potential risks associated with exploration discharges on the communities that rely on marine resources for subsistence. |
| 269 | Environmental Justice Analysis | As an example, looking at the subsistence map for Nuiqsut, a vast majority of the federal lease blocks are contained within the Nuiqsut subsistence hunting and fishing activities. It is difficult to understand how the draft Beaufort GP conditions will ensure that community members will not shun traditional foods out of fear of food tainting from the discharges in the subsistence use areas. | The Beaufort general permit restricts the discharges of drilling fluids and drill cuttings during fall bowhead hunting activities by Nuiqsut and Kaktovik. Additionally, EPA requires environmental monitoring before, during, and after drilling activities. The environmental data will be shared with the communities and will be used by EPA for future decision-making and to inform ongoing permit implementation and oversight activities. Finally, as discussed in RTC#11, EPA will request that ATSDR review the data from the environmental monitoring reports to determine the potential risks associated with exploration discharges on the communities that rely on marine resources for subsistence. |

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| 270 | Environmental Justice Analysis | A host of vessels accompany the drillship or jack-up rig to the well site and all of these vessels discharge pollution into the ocean. This additional pollution needs to be considered in the EJ analysis. | EPA's EJ Analysis evaluates the potential disproportionate effects on low income and minority communities of the decision to authorize the exploration discharges to the Beaufort and Chukchi Seas. EPA's NPDES permitting authority extends to discharges from the drilling vessels and does not include discharges from the support vessels. The discharges from the support vessels outside the 3 nautical mile territorial seas are subject to U.S. Coast Guard requirements (see RTC#3). However, EPA has expanded the EJ Analysis to consider and discuss the potential cumulative effects associated with wastewater discharges to the Beaufort and Chukchi Seas. |
| 271 | Environmental Justice Analysis | In 2009, EPA published a notice of data availability in the federal register inviting public comment on "additional pertinent data or scientific information that may be useful in addressing ocean acidification." EPA has yet to issue guidance to the states on this issue or otherwise issue its recommended changes to the national marine pH water quality criteria. We are hopeful this guidance will be forth coming and ask that EPA consider the need for revision of Alaska's water standards to address ocean pH as part of its EJ and ODCE analysis. | The pH standard from the Alaska Water Quality Standards of 6.5 to 8.5 standard units must be met for certain waste streams. EPA is applying the standard for those certain discharges to both state and federal waters to ensure protection of beneficial uses within state waters and to ensure that unreasonable degradation of the marine environment does not occur. At this time, EPA does not have an update on any new activities beyond the Notice of Data Availability published on April 15, 2009. |
| 272 | NPDES Program Authorization | Transfer of the program appeared rushed, and with the one-year extension, the public isn't convinced DEC has the capacity to monitor all these permits. Furthermore, there is a backlog on permitting. It's not clear whether DEC has enough staff or resources to implement the program. | EPA approved transfer of the NPDES permitting program to the State of Alaska in accordance with the CWA. The transfer of the program to the Stateof Alaska has been implemented in phases over a four-year period, in part to allow DEC to build the necessary capacity and experience by permitting sector. The transfer of Phase 4, which is predominantly the oil and gas NPDES permit sector, was extended by one year so that EPA could complete the issuance of key oil and gas permits and DEC could build additional permitting capacity for their APDES program. EPA will continue to work with DEC's APDES program to ensure it has the capacity to administer the program in compliance with CWA and NPDES requirements. |

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| 273 | NPDES Program Authorization | Alaska intends to issue more leases in the Beaufort. How does that work in regards to EPA's periodic spot checks, what adjustments would you be making? What oversight do you have over the state to be sure that degradation does not take place, since the authority will be delegated to the state for waters inside the 3-mile limit. | Since transfer of the NPDES permitting program to DEC in October 2008, EPA has made oversight a regional priority. EPA has and will continue to review state-issued permits consistent with our authorities. Furthermore, EPA plans to conduct a complete permitting, compliance and enforcement program review in 2013 and will continue to work closely with DEC to ensure state-issued permits comply with the CWA and the NPDES permitting regulations. |
| 274 | NPDES Program Authorization | Many of the tribal communities went on record with resolutions opposing the primacy transfer. The tribes passed two resolutions in 2007, Resolution 12-01 supports the clean water initiative, and Resolution 12-2 opposes DEC assuming NPDES primacy until the state demonstrates tribal consultation in the fullest sense of the word. | EPA is aware of tribal opposition regarding the transfer of the NPDES permitting program to DEC. EPA and DEC are committed to ensuring that tribal voices are heard. To that extent, EPA encourages tribes to review the permits issued by DEC for early 10-day or the usual 30-day public reviews, and to inform DEC and EPA of any potential concerns. Additionally, DEC has a public and tribal coordinator in their Division of Water and this position is connected to DEC's APDES program, in part, to assist tribes in participating in the APDES permit projects. EPA encourages tribes to remain in close contact with DEC and to keep both DEC and EPA informed of tribal issues and concerns. DEC's website containing APDES information for tribes can be found at http://dec.alaska.gov/water/TribalCommunication/tribes.html. |
| 275 | NPDES Program Authorization | The PPA between EPA and DEC includes language about NPDES permitting and inclusion of tribal communities, but that hasn't been demonstrated at all according to the wording of the PPA. Additionally, the PPA identified priority number one is communication of controversial projects and issues. It is not clear how DEC is achieving this for clean water standards like an anti-degradation. This needs to be codified in a policy that people can understand and know is being enforced. | As discussed in RTC#274, EPA encourages tribes to stay involved in the federal and state permitting processes, review available preliminary and draft permits, and share with EPA and DEC any tribal concerns. Regarding DEC's development of antidegradation implementation procedures for the State of Alaska, EPA encourages tribes interested in the process to contact DEC for information. |

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| 276 | NPDES Program Authorization | One of the bigger problems is the state failed to implement the anti-degradation policy. Considering that consistency in the interagency review and the anti-degradation policy includes the Alaska coastal management program; without that program in place, there should not be any permits issued anywhere in the Beaufort Sea. Please make the anti-degradation information more prominent on the DEC website. | The antidegradation information can be found on DEC's website at http://dec.alaska.gov/water/wqsar/Antidegradation/index.html.<br><br>Please note, EPA considered DEC's interim antidegradation guidance document to be consistent with federal requirements. EPA has also periodically attended workgroup meetings and provided technical input. EPA lacks the jurisdiction to require the state to have an Alaska Coastal Zone Management Act program. |
| 277 | NPDES Program Authorization | There is an intent by the state of Alaska to issue a bunch of leases off the coast in the Beaufort. What oversight do you have over the state to be sure that degradation does not take place? Since the authority will be delegated to the state for waters inside the 3-mile limit. | EPA does not have the authority to regulate, nor does it have oversight of, state lease sales. On October 31, 2008, EPA authorized DEC to implement and administer the NPDES program called the Alaska Pollutant Discharge Elimination System (APDES). On October 31, 2012, EPA will transfer the final phase, the oil and gas sector, to DEC. As such, the Beaufort general permit will be jointly administered by the EPA and DEC for discharges to federal and state waters, respectively. See RTC#273 for a discussion of EPA's oversight authority. |
| 278 | Opposition to Permits | We are opposed to the re-issuance of this Arctic general permit for the Beaufort and Chukchi Seas. I think we are favoring industrial wastewater discharges over the health of the environment and human health. EPA should not issue the permits considering the critical habitat of multiple species of marine mammals, and the potential impacts the discharges may have. Another reason for opposition is there is not adequate science and understanding of the physical, biological and chemical impacts on the migration of marine mammals as well as the fisheries. What is happening out here in our Beaufort Sea, they are looking for black gold. EPA should say 'we have a pressing issue that involves survival of the species, and there is a need for a timeout period for the species to recover.' EPA needs a timeout period to allow the species to recover, so that Shell, Statoil, Conoco will not be falsely liable, when you do your future studies and notice that the tomcod are gone, and the animals are skinny. | EPA appreciates the concerns expressed by the commenters. EPA has established effluent limits and requirements in the Beaufort and Chukchi general permits to ensure that the discharges will not cause unreasonable degradation of the marine environment. Additionally, each operator will be required to collect environmental data before, during, and after drilling to gather data associated with the drilling activity and its potential environmental effects, and to ensure unreasonable degradation does not occur. Please also see RTC#28, #38, and #62. |

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| 279 | Noise Disturbance | In addition to discharges, the EPA must consider the noise during the discharge process and for the disturbance it will cause to marine mammals. For example, walrus normally stay on ice floes in the development area of the Chukchi Sea to feed and raise their young in the summer. Walrus are very sensitive to noise and it can be detrimental to young calves as they can be easily trampled by adults. Due to a changing climate, the walrus are increasingly hauling out on land at base sites and the U.S. Fish and Wildlife is receiving more reports of trampled young. With ships and crews of up to 200 people during a season, with small boats and helicopter support, the noise factors must be included in area that previously was undisturbed. Additional marine species must be considered such as beluga whales and seals, as examples. | EPA does not have the authority to regulate noise levels through our authorities under the CWA. The discharges themselves are not anticipated to cause or contribute to increases in noise levels. NMFS and BOEM recently released a draft EIS evaluating the potential environmental impacts, including noise impacts, of exploration and seismic activities in the Beaufort and Chukchi Seas. NMFS and BOEM have the statutory authorities to regulate noise levels. NMFS, through the ITA process, includes mitigation measures, such as reducing vessel speed in the presence of marine mammals, to minimize potential impacts due to noise and vessel strikes. Please see RTC#282. |
| 280 | Noise Disturbance | 42 wells are anticipated to be drilled in the Chukchi and 34 wells in the Beaufort within the 5-year permit term. Whether or not those numbers are reached, even one well would have an impact on marine mammals. The noise pollution in the ocean from multiple sources, whether it's military, or shipping, or fishing, or offshore oil development, the ocean is becoming a lot noisier. Marine mammals have really good hearing. When you're bringing in tons of helicopters, personnel, equipment, monitoring and all these different things that are not part of the natural environment, so then we have to go farther offshore to get our food. There is mounting evidence that even low level noise will raise the stress levels of bowhead whales and affect their health and behavior. We saw that when they drilled at Seal Island, which is now called North Star. We did not land or sighted any whales that year, not even bearded seals or any waterfowl in that area. Does EPA regulate noise impacts? If not, who are the agencies with regulatory authorities? | EPA has determined that the wastewater discharges from the anticipated number of exploration wells in the Beaufort and Chukchi Seas will not result in unreasonable degradation. Please see RTC#119. Please also see RTC#282 regarding NMFS' ITA noise level provisions and monitoring requirements. |

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| 281 | Noise Disturbance | Seismic activities have diverted the whales and caused problems with the availability of our subsistence foods. We still had to deal with more seismic activity. Not only on the water, but we also dealt with it on shore. Even though we talked about multiple species being impacted and lack of enforcement for this. Who regulates seismic activities? There was D2 seismic work done from Canada all the way to Point Hope for 10 years ending in 1989. Nearly all the tomcod were wiped out. In 1989, more than 1 out of 10 of seals were sinking in the wintertime due to malnutrition. | EPA is aware that studies have indicated diversion and deflection of marine mammals from high noise-generating activities, such as seismic. However, EPA does not regulate seismic activities. Offshore seismic activities are regulated and administered through BOEM's Resource Evaluation Program Office. Geological and Geophysical permits, generally known as G&G permits, are issued by BOEM after review and evaluation of seismic activity applications. The review includes preparation of Environmental Assessments (EAs) that are supplemental to the lease sale EIS, to address potential impacts and invites public participation. NMFS also issues ITAs pursuant to the Marine Mammal Protection Act, for seismic activities in offshore waters. ITAs generally include mitigation measures and requirements, such as installation of Marine Mammal Observers onboard vessels to ensure reduction in noise levels and/or shut-down of seismic work when marine mammals are observed in the vicinity. |
| 282 | Noise Disturbance | Will the permits require decibel readings during exploration activities in the summer and winter months? When the water freezes over it can get loud under the ice over here, and in the summer as well. | EPA does not have the authority under the CWA to require decibel readings during exploration activities. Please note NMFS, through the ITAs the agency issues to operators, establishes noise thresholds and requires specific monitoring requirements to ensure the least practicable impact on affected marine mammal species or stocks. Please see RTC#279. |
| 283 | Noise Disturbance | Should be a requirement that should be added on to the permits, as a baseline study, to see how loud it is during the summer, during the winter, before activity starts. | Thank you for your comment, however, EPA does not have the authority to require noise monitoring under the NPDES permits. See RTC#279 and #282. |
| 284 | Oil Spills | We are not using the best available science to gauge the the large geographic biological impacts of the ocean currents on an oil spill. A large uncontrolled discharge of pollution into the Chukchi Sea could affect salmon habitat into the North Pacific. | BOEM released a Supplemental Environmental Impact Statement (SEIS) for the Chukchi Lease Sale 193 in August 2011, which incorporated a Very Large Oil Spill (VLOS) analysis. The VLOS would involve a spill more than or equal to 150,000 barrels of oil during exploration activities. For more information about the analysis please visit BOEM's website at http://www.boem.gov/. |

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| 285 | Oil Spills | We are very concerned, because agencies failed to place protections to prevent blowouts and spills, and are facing problems from Repsol. A situation like Repsol can happen in the water. Does EPA have safety measures to ensure that an accident like the well blowout in the Gulf of Mexico will not happen in the Beaufort and Chukchi Seas? | EPA appreciates community concerns regarding potential well blowouts and safety measures to ensure they do not occur. Section 311 of the Clean Water Act prohibits the discharge of oil and hazardous materials in harmful quantities. Routine discharges specifically controlled by the Beaufort and Chukchi general permits are excluded from the provisions of Section 311. However, the general permits do not preclude legal action or relieve permittees from any responsibilities, liabilities, or penalties for other unauthorized discharges of oil and hazardous materials covered by Section 311. Numerous regulations have been put in place by BOEM and BSEE since the Deepwater Horizon incident to ensure controls to prevent well blowouts from occurring. Additionally, specific requirements, such as minimum response times, types of response equipment, and the availability relief well capabilities, are available nearby to address a spill or blowout, should one occur. |
| 286 | Oil Spills | One of our greatest concerns relates to potential adverse impacts of unforeseen circumstances in the harsh Arctic environment that could realistically result in catastrophic water discharges and oil spills into the ecosystem that support subsistence resources and uses. As a result of the cold temperatures in the region, such excess discharges and/or spills would have a lasting environmental effect because of slow decomposition in cold climates. A discharge and/or spill during the fall, winter and spring is especially troublesome because industry and government have not proven their capability to effectively clean up discharges in any ice conditions in the large geographic distances for cleanup response to arrive timely in the Arctic. The U.S. Coast Guard acknowledges that the infrastructure is not in place in the Arctic to support a timely response. How long will it take to respond to a spill? Even a small amount of oil will affect our resources. The greatest tragedy of this whole thing is the spill response. If the companies are going to have this permit, the companies have to demonstrate their spill response. | The U.S. Coast Guard is responsible for responding to offshore oil spills and acts as Federal On-Scene Coordinators (FOSC) in those waters. If spills occur on inland navigable waters, EPA takes the lead as FOSC. All potential operators drilling exploratory wells in the Beaufort and Chukchi Seas are required to submit Oil Discharge Prevention and Contingency Plans to BOEM/BSEE, the agencies that have jurisdictional authorities, for review and approval. See also RTC#285. |

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| 287 | Oil Spills | Royal Dutch Shell had over at least 200 oil spills just within the last years, many of them in the Niger Delta area. More and more oil has been dumped into our oceans. | Thank you for your comment. |
| 288 | Oil Spills | Prince William Sound still feeling the affects of the Exxon Valdez spill. Have subsistence resources and the environment recovered from the Exxon-Valdez oil spill? Are there scientific evidence of cleaning up any spilled oil or contaminants? Please take this into consideration as the sea animals are our livelihood for generations to come. | EPA recognizes the concerns regarding oil spills and their impacts on the environment. Regarding the Exxon Valdez oil spill in Prince William Sound, according to the Exxon Valdez Oil Spill Trustee Council, while harvest levels have generally increased in many communities since the spill, results of harvest surveys have been variable. Please visit their website for additional information regarding the oil spill, its impacts, and restoration efforts, including scientific data on environmental recovery at http://www.evostc.state.ak.us/. |
| 289 | Coastal Zone Management Act | There is great concern within the coastal communities in Alaska that without the coastal zone management program there is no formal mechanism for notifying coastal tribal communities of agency decision-making as mandated by the federal Coastal Zone Management Act. | EPA does not have the authority to require a Coastal Zone Management Act program to be in place. Please visit the following State of Alaska website for information and updates about Alaska's Coastal Management Program http://www.alaskacoast.state.ak.us/. |
| 290 | Coastal Zone Management Act | With the termination of the ACMP in July 2011, regulation of OCS activities adjacent to Alaska waters have actually been diminished. When the ACMP was in place, DEC's statutes and regulations were applied to federal waters. The loss of this important program provides a justification for even stronger requirements in the proposed general permits. That program has always helped the coastal communities get more protections, more stipulations. | Please see RTC#289. EPA conducted extensive outreach activities with stakeholders on the North Slope and Northwest Arctic communities during development of the Beaufort and Chukchi general permits. EPA has incorporated many of the concerns expressed by those stakeholders as permit provisions and conditions. Additionally, the Beaufort general permit establishes permit limits that are protective of state water quality standards, and where appropriate, EPA has incorporated those limits for discharges to the OCS in the Beaufort and Chukchi general permit for consistency. Please also see RTC#257. |
| 291 | Coastal Zone Management Act | House Bill-325 [Alaska Coastal Management Program] will give the villagers a right to say something about the oil companies drilling in the Beaufort Sea. Concerns regarding conflict of interest within state government. | Please see RTC#289 and 290. |

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| 292 | Miscellaneous | Russia Today's article called "A Cash Flow in Oil Spills for Shell's Directors," provides an account of the recent oil spills and record profits. It is completely unnecessary for us to be giving a general permit to a foreign nation to extract resources that don't even belong to that nation to give it it another foreign nation. How is this really helping the American economy? Does EPA have authority over foreign vessels? | The Beaufort and Chukchi NPDES general permits do not authorize the extraction of resources. Rather, the two NPDES general permits authorize the discharge of pollutants to waters of the United States associated with oil and gas exploration activities. EPA is authorized to issue these permits under Section 402 of the CWA. EPA's authority under the Clean Water Act over foreign vessels is targeted to activities on such vessels that trigger EPA's authority to regulate the discharge of pollutants to waters of the United States. |
| 293 | Miscellaneous | I think there is a really good chance that the Beaufort and Chukchi Seas are eligible to be considered outstanding natural resource waters. I mean, these are one of the few intact oceans, especially in an Arctic environment on the planet, since the North Sea has been polluted over time from the use of synthetic drilling muds and so forth. The Chukchi Sea currently sustains the last third of the world's fisheries. | The commenter references the term “outstanding natural resource waters.” EPA’s Clean Water Act implementing regulations establish a designation for high quality waters that constitute an “outstanding National resource” or ONRW. The authority to designate a water as an ONRW falls under a state’s or tribes’ antidegradation policy, which is a part of that state’s or tribe’s water quality standards. 40 C.F.R. § 131.12(a)(3).<br><br>The State of Alaska has established implementation procedures for its antidegradation policy. DEC’s methods for implementing Alaska's antidegradation policy, found in 18 AAC 70.015, are identified in the DEC’s July 14, 2010, "Interim Antidegradation Implementation Methods" guidance. In accordance with the policy and implementation procedures, the State has not designated any portion of the Chukchi Sea or the Beaufort Sea as an ONRW (i.e., a tier 3 water), pursuant to the State’s CWA 401 certification. |

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| 294 | Miscellaneous | Those facilities that are associated with this process can put out a lot of emissions. We know that industry has done a lot of their process in a piecemeal fashion. So we question the adequacy of the discharge assessment. I am concerned about the air quality from the Beaufort Sea too, where EPA has jurisdiction. What is the status of EPA's air permits? | EPA's authority to issue an NPDES permit in the territorial seas, contiguous zone, or in the oceans, is granted under CWA sections 402 and 403. In accordance with CWA section 403, EPA completed the ODCEs prior to making a determination of no unreasonable degradation of the marine environment for the Beaufort and Chukchi general permits. In the ODCEs, EPA considered all of the proposed discharges from oil and gas exploration facilities that fall within the jurisdictional reach of the CWA. The Fact Sheet, Section I.A., lists all the discharges that were considered in the ODCEs.<br><br>Regarding the status of EPA's air permits, the commenter is directed to EPA's webpage at http://yosemite.epa.gov/R10/airpage.nsf/Permits/ocsap/ to obtain the most recent available information about the air permits in the Beaufort and Chukchi Seas. |

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| 295 | Miscellaneous | Significant local concerns regarding the Repsol Q4 blowout: air impacts, respiratory issues, no federal jurisdiction, etc. Repsol has leases somewhere near Camden Bay; the new companies don't know anything about Alaska or about the North Slope and their people and inhabitants. They are so careless that they don't care about any of the animals that we rely on for subsistence. EPA needs to orient these new companies that are going to be coming up here to explore the Beaufort Sea. Why are there different rules for federal or state jurisdiction? Why was there no EIS for the Repsol project? We urge EPA follow up on the the Repsol Q4 blowout to make sure that the state is being responsible. | EPA was notified by the Coast Guard of the Repsol incident on February 15, 2012 at 1354 PST.<br><br>EPA cannot specifically respond to other federal agencies' decisions regarding preparation of an Environmental Impact Statement (EIS). However, EPA has the authority under Section 309 of the Clean Air Act to review certain proposed actions of other federal agencies in accordance with NEPA and to make those reviews public. EPA has developed a set of criteria for rating draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft. If improvements are not made in the final EIA, EPA may refer the final EIS to the Council on Environmental Quality (CEQ). Please visit EPA's website below for additional information regarding EPA's role in the NEPA process http://compliance.supportportal.com/link/portal/23002/23009/Article/32907/What-is-EPA-s-role-in-the-NEPA-process<br><br>EPA also cannot speak to the company's knowledge of the North Slope, its resources, and/or culture.<br><br>The Beaufort Sea general permit establishes requirements for the discharges from exploration of oil and gas resources in offshore leases within state and federal waters. The requirements ensure that the discharges, whether they occur in state or federal waters, will not result in unreasonable degradation of the marine environment. EPA is currently the NPDES permitting authority for discharges from oil and gas activities to state and federal waters in the Beaufort Sea under the Arctic general permit. After October 31, 2012, EPA and DEC will jointly administer the Beaufort Sea general permit with each agency applying its authorities in their respective jurisdicational waters.<br><br>The State of Alaska is responsible for developing water quality standards, pursuant to CWA section 303, for state waters. In developing the State waters portion of the Beaufort Sea general permit, EPA relied on CWA section 403, which sets the ocean discharge criteria requirements, and the State's water quality standards (see RTC#295). EPA continues to conduct oversight of the State, as appropriate, within our regulatory jurisdictions and |

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| 295 | Miscellaneous | | authorities. |
| 296 | Miscellaneous | Northstar Island is on federal waters. Northstar has impacted us since day one back to 1980's. We haven't been compensated or given impact mitigation by Northstar. What we have experienced from Northstar, is likely to happen with any other offshore operators, whether they are major or independents. What kind of assurance are EPA giving the whalers who won't catch a whale this fall? What kind of help will EPA provide to the whalers? EPA should recommend to the DOI that they should set aside a portion of the billions of dollars of lease money for compensation of any impact by offshore operators, from the exploration to development, and production stages. | EPA does not have the authority to compensate for a failed hunt, nor do we have control over the laws, regulations, and policy governing DOI's disposition of funds from the lease sales. However, based on EPA's evaluation of the exploration discharges and the limits and controls established in the Beaufort general permit, such as no discharge of drilling fluids and drill cuttings during fall bowhead whale hunting activities by Nuiqsut and Kaktovik, this subsistence activity will be protected. See RTC#28. |
| 297 | Miscellaneous | The federal government did not inform the local communities when it sold the leases to these operators. The government did not come to the communities and hold meetings like they do nowadays. The leases in the Chukchi Sea are on the beluga migration corridor. How can Kivalina get involved in the lease sale process? | BOEM is the federal agency responsible for designating five-year planning areas and holding Outer Continental Shelf lease sales. The BOEM leasing program proposal undergoes a NEPA process to evaluate the potential environmental impacts of these actions. The NEPA process includes opportunities for public participation. EPA encourages the Native Village of Kivalina to contact BOEM and request its tribal council members be added to BOEM's listserv. BOEM's Leasing Section implements the federal government's OCS Oil and Gas Leasing Five-Year Program within the bounds of the Alaska OCS Region. The Section ensures that OCS Lands Act requirements and procedures are followed in the preparation and conduct of sales listed in the Five-Year Program. Please visit the Alaska Region website for information regarding its leasing activities: http://www.boem.gov/About-BOEM/BOEM-Regions/Alaska-Region/Leasing-and-Plans/Index.aspx |

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| 298 | Miscellaneous | Any time we have meetings with federal agencies, they say, "it is not our job," and we have to deal with another agency. That's how they respond to us. You have to go from one agency to another to get answers because no one federal agency has all the answers. | Congress has granted certain authorities to each federal agency and we are bound by the limits of our regulatory jurisdiction. So while communities have expressed frustration and confusion over which agency has what authority, EPA can only speak to our own requirements and provide answers when we are able during meetings with the communities. EPA continues to share with other federal agencies the concerns and messages we hear. EPA has made efforts in this response to comments document to identify other agencies' resources and weblinks in an effort to provide the reader additional assistance in locating information resources. |
| 299 | Miscellaneous | EPA needs to acknowledge that Nuiqsut whalers has a signed CAA with the company (Shell) that will have a discharge in the Beaufort Sea. EPA must acknowledge that the CAA requires zero discharge of fluids. Acknowledge that the CAA stands for "Conflict Avoidance Agreement." EPA says the CAA 'is not enforceable by any federal or state regulatory authorities.' The CAA is just a good faith agreement that Shell is making with AEWC and the North Slope Borough? EPA won't enforce it? Why can't EPA enforce this agreement? | EPA recognizes that Nuiqsut whalers have signed a Conflict Avoidance Agreement (CA Agreement) with Royal Dutch Shell. That agreement between Nuiqsut and Shell falls outside outside of the CWA's regulatory framework. EPA is not a party to this agreement and therefore cannot enforce its terms. Please also see RTC#43 and #45. |

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| 300 | Miscellaneous | Is the EPA a cooperating agency for DOI, MMS, and BOEM on their EIS? A lot of our comments concern industry activity; will they be included with your permit or the EIS? Or has the EIS already been done? Will there be an EIS for the pipeline construction? What would be EPA's role? EPA needs to do an EIS for the permits. | EPA is currently not a cooperating agency on the EIS that BOEM and NMFS are developing to evaluate the effects of oil and gas activities in the Arctic Ocean. However, EPA is a reviewing agency and has provided information and comments on the preliminary chapters of the document, reviewed the Draft EIS, and provided input on certain sections, based on public comments. EPA also has independent authority under the Clean Air Act Section 309 to review all federal agency EIS documents and rate them on the extent of environmental impacts and adequacy of the analyses. Pertaining to EPA's obligations to conduct a NEPA analysis for the Beaufort and Chukchi general permits, because exploration discharges are not considered "new sources," the issuance of the general permits does not trigger NEPA requirements. See 33 USC 511(c), RTC#314.<br><br>Regarding the NEPA requirements for pipeline construction to deliver oil from the Beaufort and/or Chukchi Seas to the Trans-Alaska Pipeline System (TAPS), at this time, EPA considers this activity speculative and does not currently know what our role would be, if and when an EIS is developed. |
| 301 | Miscellaneous | EPA should provide assistance to the Village of Nuiqsut on these issues. We need help with that, especially on the environmental issues. The Native Village of Nuiqsut needs someone from the federal government to work with all the Native Villages tribes on the North Slope. | EPA, through the Indian Environmental General Assistance Program (GAP) and other environmental funding programs available to federally-recognized tribal governments, provides grant funding to assist tribes in building capacity to administer tribal environmental programs. The Native Village of Nuiqsut should be aware of this environmental grant opportunity. EPA provides a designated tribal coordinator to work closely with each tribe to help tribes apply for and use the grant. EPA is committed to ensuring that tribes are provided the appropriate assistance and support to address their environmental concerns. |

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| 302 | Miscellaneous | The operators on the federal waters side will have to find a way for their pipeline to come ashore. They will have to cross state waters in order to go on to federal land. How can EPA and the State work together on issues like that? You have federal lease sales out there and federal oil and gas exploration development and production going on in federal waters and they come on the state waters side. Who becomes responsible for those? | If a pipeline is needed to transport oil from federal leases to shore, many agencies, including EPA, would likely be involved in any NEPA process for evaluating environmental impacts. In the majority of cases where a project impacts wetlands and a CWA 404 permit from the U.S. Army Corps of Engineers is needed for construction through those wetland areas, the Corps would take the lead agency role on the EIS, and EPA may be a cooperating agency. For projects that cross over different agency jurisdictions, involved agencies often cooperate to conduct one joint EIS. Federal and state agencies have worked closely and cooperated on many EIS documents in the State of Alaska for large development projects. |
| 303 | Miscellaneous | 109 seals have been found dead within hauling distance of Point Lay. There was no findings as to what was the cause of the lesions and the illnesses of the seals, and some of the deaths of the young seals. There was some sampling done and research that said there was no virus but we never really got a clear answer. Does EPA know about this? | EPA is aware of and concerned by the occurrences of sick seals. Scientists and biologists from the U.S. Fish & Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) are closely monitoring the events and conducting tests to determine possible causes. On December 20, 2011, NOAA declared the recent deaths of ringed seals in the Arctic and Bering Strait regions of Alaska an Unusual Mortality Event. The underlying cause of this event remains a mystery. Testing has ruled out numerous bacteria and viruses known to affect marine mammals, including Phocine distemper, influenza, Leptospirosis, Calicivirus, orthopoxvirus, and poxvirus. In February 2012, preliminary radiation testing results indicate radiation exposure is likely not a factor in the illness. Further quantitative radionuclide testing is underway. Currently, the causes remain unknown. |
| 304 | Miscellaneous | The EPA settlement with Kivalina and the industry on Red Dog Mine does not involve Point Hope. That settlement gives an immediate solution to that community but it did not give a solution to the salmon that will be spawning in the Wulik River when the discharge will be coming out 8 tons per day directly into the ocean from a 30" pipe. | EPA appreciates this comment and has informed the appropriate personnel within the agency of this concern. Issues relating to the Red Dog Mine and this comment are outside the scope of the Beaufort and Chukchi general permits. |

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| 305 | Miscellaneous | The Native Village of Point Hope told BOEM that our interests go beyond the 200-mile limit under the international law of the sea treaties. We really want that to be made clear. These permits don't go beyond the 200-mile limit at this point, but they will somewhere in the future. We have gone on record that we have concerns about the drilling beyond the 200-mile limit up here. | Thank you for your comment. EPA does not have regulatory jurisdiction over designation of lease areas. |
| 306 | Miscellaneous | Who regulates this activity? Will the Coast Guard escort the drilling fleet into the Chukchi and Beaufort Seas? Will they be watching for illegal discharges? | The U.S. Coast Guard is responsible for oversight of vessel traffic. Questions regarding whether the Coast Guard will accompany or escort the drilling vessel and its support fleet to their drilling locations should be directed to that agency. Additionally, discharges from the support vessels, if outside the 3-mile territorial sea, will be subject to Coast Guard requirements. |
| 307 | Miscellaneous | How are the lawsuits that have been filed against drilling affect EPA's draft NPDES permits and Shell's plans to drill in the Ocean? | It is unclear what lawsuits the commenter is referencing. Shell, and any other operator, must receive all the required permits and authorizations prior to commencing drilling activities. The terms and conditions in the Beaufort and Chukchi general permits are based on EPA's evaluation of available scientific and local information, as well as application of federal regulations. EPA's permits authorize the discharge of wastewater from exploration activities, if the terms and conditions are met. They do not provide the authorizations to drill. |
| 308 | Miscellaneous | What happens if no oil is found? How will the companies maintain these wells? | Well maintenance, temporary cap, or permanent abandonment activities are subject to BOEM and BSEE's requirements and jurisdictions. Questions should be directed to the appropriate agencies. Here, EPA's jurisdiction is wastewater discharges from exploratory activities, pursuant to the CWA. |
| 309 | General Comments | The reissued permits should be given a five-year term to expire on June 26, 2016. NPDES permits are limited to a maximum five-year duration. Commenter requests the improved permits establish an expiration date of on or before June 26, 2016. | The Beaufort and Chukchi general permits will be effective for five years from the date they become effective. See RTC#8. |

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| 310 | Compliance and Inspection | NSB supports EPA's decision to expand the chemical inventory reporting requirements. NSB requests that EPA describe in its final permit documentation, in detail, its process for auditing the chemical inventory data provided by industry, what action it will take based on data, and how this data will be used to improve the permit of limit pollution in a timely manner. In addition to the chemical inventory data requirements listed in the proposed permit, NSB requests that industry be required to provide a MSDS for each chemical used. | EPA appreciates the comment supporting the chemical inventory reporting requirements. The End-of-Well Report must contain the permittee's inventory of chemical additives used and documentation of each additive's concentration determinations and limitation compliance. EPA has added a requirement that the Material Safety Data Sheet (MSDS) for each chemical used must be included in the End-of-Well Report. EPA intends to review the End-of-Well reports for compliance determination purposes. Follow-up actions, if any, may depend on the nature and extent of the compliance issues and other factors (e.g. remedial efforts). EPA permitting staff will monitor the chemical inventory data and limitation compliance to determine if any modifications are needed for a particular permittee's authorization or additional permit modifications are needed to ensure no unreasonable degradation of the marine environment. |
| 311 | ODCE General Comments | The ODCE should be revised to remove jack-up rigs except in cases where specially designed arctic rigs are employed. While a jack-up rig has been proposed by ConocoPhillips for Chukchi exploration in 2013, this jackup rig program has not been approved by DOI nor has any prior jackup rig been approved for Chukchi exploratory drilling in the past, so it is not correct to say that exploration activities most often employ jack-up rigs. Jack-up rigs have not been used in the Beaufort Sea. There are no jack-up rigs currently built to safely operate in the multi-year ice conditions present in the Beaufort Sea. Commenter supports the use of purpose built rigs that are designed for the Arctic. Use of temperate water rigs in arctic operations has not been supported by commenter. | The discussion of rig types the ODCEs are meant in general terms. While Shell plans to utilize drilling vessels, and both ConocoPhillips and Statoil have proposed using jack-up rigs, any drilling type used must be approved by BOEM. EPA's analyses are focused on the discharges that may occur and the potential for the discharges to cause unreasonable degradation. EPA has included a statement in the ODCEs to clarify that the purpose of the discussion of rig types and to provide a general description of exploratory operations. |

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| 312 | ODCE General Comments | The description of the weather conditions in the Chukchi ODCE tends to discount the severity of extreme weather events. It is important that EPA's analysis accurately accounts for the range of severe weather events that may occur. Severe weather events tend to disrupt Best Management Practices which may result in less controlled discharges. Increased mixing energy will increase rates of dilution but may also increase the access of benthic organisms to harmful materials in the discharges, and facilitate transport to other sensitive areas. | EPA has revised the Chukchi ODCE to include the range of weather conditions that could occur in the Chukchi Sea. |
| 313 | ODCE General Comments | The ability to drill from an ice island or an ice-reinforced barrier/gravel island will be a function of water depths and distance from shoreline. Where physically possible, the safest, lowest-risk time of the year is to drill during the winter drilling season with a land-based drilling rig working atop an ice island. In this case, if a blowout were to occur, the spill would land on top of solid ice and be more readily cleaned up. Additionally, ice roads connecting offshore drilling operations to onshore waste treatment and disposal facilities provide opportunities for zero discharge of drilling wastes. For example, Northstar wells were drilled into OCS leases from ice islands in the Beaufort Sea. When drillships are used, waste can be stored in vessels alongside the drillship and transported to onshore treatment and disposal facilities or transported to an offshore injection well location. | EPA agrees that winter drilling in nearshore locations can allow greater opportunities for disposal of waste streams at on-land disposal facilities. Other benefits can include lower operational risk, such as cleanup of potential oil spills. Accordingly, EPA is requiring permittees to submit an evaluation and demonstration of the lack of available on-land disposal options with the NOI before EPA or DEC will authorize discharges of three waste streams to stable ice in the Beaufort Sea. |

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| 314 | General Comments | EPA's permit and supplemental documents do not explain why an exploratory drilling rig that is not permitted, nor in operation would be considered an existing discharger. Additionally, it is unclear what waivers, benefits or grandfathering rights EPA is proposing to grant an "existing" versus a new discharger. Commenter recommends that all exploration drilling rigs be classified as new facilities and new permits, unless EPA can explain why it is more protective to designate exploration drilling rigs as existing dischargers. | New discharges are not necessarily new sources. The term "new source" is defined as any facility that discharges pollutants where construction commenced after the effective date of applicable New Source Performance Standards ("NSPS"). See 33 USC §§ 306 and 511(c); 40 CFR 122.2. The Beaufort and Chukchi general permits cover discharges from facilities engaged in field exploration and drilling activities under the Offshore Subcategory of the Oil and Gas Extraction Point Source Category (40 CFR Part 435, Subpart A). For Offshore Subcategory facilities (those located in waters seaward of the inner boundary of the territorial sea), NSPS were promulgated in March 1993. See 58 Fed. Reg. 12454 (Mar. 4, 1993). Thus, any new development or production facilities that commenced construction after March 1993 would be considered "new sources" subject to the relevant NSPS.<br><br>Construction of a "new source" commences if the owner or operator of the facility (1) has begun, or caused to begin significant site preparation work as a part of a continuous on-site construction program or (2) has entered into a binding contractual obligation for the purchase of facilities or equipment that are intended to be used in its operations within a reasonable amount of time. See 40 CFR 122.29(b). Significant site preparation work – as defined in the Offshore Subcategory – means the process of surveying, clearing or preparing an area of the water body floor for the purpose of constructing or placing a development or production facility on or over the site.  See 40 CFR 435.11(w)(1)(ii). For purposes of the Beaufort and Chukchi Seas, only new development or production facilities that commenced construction after March 1993, as set forth in this definition, would be considered "new sources."<br><br>NPDES permits for discharges from "new sources" are subject to the requirements of the National Environmental Policy Act. See 33 U.S.C. § 511(c)(1). In addition, variances from effluent limitation guidelines based on fundamentally different factors are not available to "new sources." 33 USC § 301(n); "DuPont v. Train", 430 U.S. 112 (1977).<br><br>In contrast to the above definition, the term "new source" does not include new exploratory facilities because exploration activities at a |

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| 314 | General Comments | | site are not considered “significant site preparation” work. 58 Fed. Reg. at 12454, 12457 (Mar. 4, 1993). The Offshore Subcategory regulations define “significant site preparation work” as “surveying, clearing or preparing an area of the water body floor for the purpose of constructing or placing a development or production facility "on or over the site,” which excludes exploration activities. See 40 CFR 435.11(w)(1)(ii) (emphasis added). As explained in the preamble for the final Offshore Subcategory regulations, exploratory wells are not considered “significant site preparation work” because the operations are conducted at a particular site for a short duration, typically lasting only three to six months, and not necessarily followed by development and production activities at the site. Moreover, even when development and production does occur, it may not occur for months or years after exploration. See 58 Fed. Reg. at 12457 (noting that “exploratory wells would not be new sources in any circumstance”).<br><br>Similarly, exploratory facilities generally differ from production and development facilities in that they do not have high volume discharges, and they do not discharge produced water. Moreover, the volume of drilling fluids and drill cuttings discharged from an exploratory facility is significantly less than from a development facility, where up to fifty wells can be drilled. As a result, discharges from exploratory facilities are not considered “new sources.”<br><br>As described above, under the Clean Water Act, NEPA review is only required for NPDES permits that authorize discharges from “new sources.” 33 USC 511(c). However, please note that BOEM has completed Environmental Impact Statements pursuant to NEPA for all lease sales and supplemented those analyses with EAs for its Exploration Plan approvals. NMFS and BOEM also released a Draft EIS in late 2011 evaluating the effects of oil and gas activities in the Arctic Ocean. |
| 315 | ODCE General Comments | The ODCE should be revised to explain that a MLC is constructed when a subsea blowout preventer is used. A MLC is not construvted when a well is drilled from an ice island, or an ice-reinforced barrier/gravel island. | Thank you for your comment. EPA has revised the Beaufort ODCE as suggested. |

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| 316 | ODCE General Comments | The ODCE and proposed permit should be revised to more thoroughly document data commenter provided for consideration in advance of the permit. As noted in the reference section at the end of this document, commenter provided EPA with extensive comments, scientific and technical documents and a detailed list of reference materials to consider in developing this permit. We are disappointed that most of those materials were not included by EPA in this analysis supporting the draft permit. In particular, commenter is concerned that EPA did not include the analysis of Dr. Rosa, NSB Wildlife Veterinarian and Research Biologist who studied pollutant impacts for the North Slope Borough. | As discussed in RTC#142, EPA has reviewed the references cited by the commenter and relevant information has been considered and incorporated in the ODCEs, where appropriate. EPA also reviewed the paper authored by Dr. Cheryl Rosa, entitled "Environmental Impact of Industrial Pollutants" (undated). Dr. Rosa identified general concerns regarding the toxic effects of metals on the environment and transport through the food chain, including bioaccumulation and bioavailability, based on a review of Shell's exploration plans and EPA's 2006 ODCE. Dr. Rosa also identified data gaps in Shell's plans raised concerns regarding consumption of potentially contaminated food sources, such as bowhead whales. EPA did not incorporate in the ODCEs the general statements made by Dr. Rosa in the paper referenced above because it did not contain specific data or information that are useful to the agency. However, EPA has included information from research papers published by Dr. Rosa and others on the toxicological assessment of contaminant concentrations and heavy metals in bowhead whales over the last 30 years. |
| 317 | EMP | Commenter requests EPA require sufficiently detailed assessment of the environment (EMP Phase I) to facilitate future assessment and evaluation of the adverse effects caused by disruption of trophic interactions, and the cumulative effects of multiple stressors. Commenter acknowledges the need for single species data in understanding the life-cycle and distribution of individual species. However single species tests cannot assess the cumulative effects on the interactions of multiple species or multiple trophic levels. | If Discharge 001 is authorized, the Beaufort and Chukchi general permits require the permittee to conduct a bioaccumulation study to assess the potential effects of the discharges in the benthic and epibenthic invertebrates. The EMP must target appropriate species within each group that constitute a significant portion of the diet of higher trophic level species. Any environmental factors that may ameliorate or exacerbate metals uptake, availability and persistence should be identified. Tissue evaluations and applicable components of the bioaccumulation/ bioavailability study must be conducted during the following three phases of the EMP: (1) baseline site characterization; (2) post-drilling; and (3) no later than 15 months after drilling operations cease. This data will be used to determine the potential direct and indirect effects to the marine environment and their receptors. The data will also aid in evaluations of the potential cumulative effects and stressors on multiple species or multiple trophic levels. |

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| 318 | ODCE General Comments | The ODCEs and permits do not adequately consider the likelihood of adverse effects resulting from permitted activities due to small changes in ecosystem or ocean dynamics. Although phytoplankton and zooplankton are seasonally abundant and short-lived, the short summer season and harsh Arctic climate may preclude a second bloom in cases where exploration activity may have diminished the normal plankton blooms. The ocean dynamics in the Beaufort and Chukchi Seas support a reconsideration of the likelihood of adverse effects resulting from small changes caused by permitted activities. | The analyses in the ODCEs include evaluations of the composition and vulnerability of the biological communities which may be exposed to the pollutants in the discharges, including the presence of unique species or communities of species, the presence of species identified as endangered or threatened pursuant to the Endangered Species Act, or the presence of those species critical to the structure or function of the ecosystem, such as those important for the food chain (Criterion 3). Please note, the Beaufort and Chukchi general permits require environmental monitoring before, during, and after drilling to evaluate the potential physical, chemical, and biological effects of the drilling activities, including bioaccumulation studies (see RTC#317). The data collected will be used for future decision-making. and to inform ongoing permit implementation and oversight activities. |

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| 319 | Permits | Given the potential for bioaccumulation, and contamination of subsistence foods, EPA should prohibit discharge of water based drilling muds containing Barite where possible. Where it is not possible to entirely prohibit discharge of muds containing Barite, the maximum levels of mercury and cadmium allowed to be discharged should reduced to the minimum levels practicable. Discharge of copper and lead should be regulated by the permits. Discharges should be limited to the minimum levels practicable. Any permitted discharge of copper should consider the extreme sensitivity of many marine organisms to this metal. Also, the permits require sampling of drilling fluids and drill cuttings when the metals concentrations are projected to be at their maximum value for each applicable system. Please explain what process and method EPA envisions for industry to follow to ensure that the peak metalconcentration is sampled. Routine sampling is necessary to ensure that peak concentrations are not missed. | The Beaufort and Chukchi general permits apply the concentration limits of mercury and cadmium in stock barite, pursuant to the Offshore ELGs. The limits are 1mg/kg and 3mg/kg of mercury and cadmium, respectively. If analytical results exceed these concentrations, the permittee(s) are required to report the results to EPA within 24 hours as a non-compliance event.<br><br>As discussed in RTC#60, the mercury and cadmium limitations in stock barite indirectly control the levels of toxic pollutant metals, including lead and copper, because barite that meets the mercury and cadmium limits is also likely to have reduced concentrations of other metals. Additionally, EPA has increased the frequency of toxicity testing of the suspended particulate phase to weekly and at end-of-well, and together with the no discharge of free and diesel oil, has included the appropriate controls of pollutants in the discharges. The increase in testing frequency also ensures that the peak concentrations in metals and other pollutants are sampled.<br><br>Collection and analysis of potential metal contaminants of concern are required under the EMP, including (1) receiving water concentrations during the Phase I pre-drilling study; (2) analysis of each drilling fluid system, if the permittee is authorized to discharge water-based drilling fluids and drill cuttings; and (3) evaluation of the drilling discharge effects during Phases III and IV. Finally, as discussed in RTC#317, benthic tissue evaluations and bioaccumulation/ bioavailability studies must be conducted during Phases I, III, and IV if the permittee is authorized to discharge drilling fluids and drill cuttings. |

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| 320 | Permits | The ODCE and proposed permit should be revised to document organic compound discharge exposure impacts on both the arctic ecosystem and the Inupiat communities. This discussion should include traditional knowledge and should include the full suite of PAH as measured by the NOAA standard protocol. Commenter supports EPA's proposed EMP requirements; however, commenter requests that EPA's proposal be expanded to include an initial site characterization, including full Gas Chromatography/Mass Spectrometer (GC/MS) testing of both the parent, unsubstituted PAH (EPA Priority Pollutants), and the substituted PAH between two and five rings, consistent with the standard NOAA method. Any sample that fails the static sheen test should also be submitted to a full PAH characterization. | As discussed in RTC#114, EPA must use the regulatory definitions provided under 40 CFR 125.121(e) to determine unreasonable degradation. The definition of unreasonable includes a determination of significant adverse changes in ecosystem diversity, productivity, and stability of the biological community within the area of discharge and surrounding biological communities.<br><br>Consistent with 40 CFR 125.122, Criterion 3 of the ODCEs requires an evaluation of the composition and vulnerability of the biological communities that might be exposed to such pollutants, including the presence of unique species or communities of species, the presence of species identified as endangered or threatened pursuant to the Endangered Species Act, or the presence of those species critical to the structure or function of the ecosystem, such as those important for the food chain. Crierion 6 requires an evaluate the potential impacts on human health through direct and indirect pathways. The ODCEs include the analyses in compliance with both criteria.<br><br>As discussed in RTC#203, the Beaufort and Chukchi general permits require monitoring for TAH and TAqH, which will indicate the presence of hydrocarbons in the discharges. EPA does not expect the presence of PAHs to occur in the discharge of water-based drilling fluids and drill cuttings. EPA does not have the basis to require the level of monitoring suggested by the commenter.<br><br>Please note, the discharge of drilling fluids or drill cuttings generated using drilling fluids which contain diesel oil is prohibited. Compliance will be demonstrated by gas chromatograph (GC) analysis. Whenever drilling fluids or drill cuttings fail the static sheen test, the permittee is required to analyze an undiluted sample of the material which failed the test to determine the presence or absence of diesel oil in accordance with EPA SW846 Method 8015C (2007) or using gas chromatography/mass spectrometry (GC/MS). |

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| 321 | General Comments | An individual permit would allow for a fuller consideration of Executive Order 12898, disproportionate impacts, as well as CEQ regulations relating to health impact assessment. | EPA completed an extensive environmental justice evaluation and traditional knowledge survey. Information and analyses from those documents was included in the agency's ODCEs and administrative record for both the Chukchi Sea and Beaufort Sea general permits. |
| 322 | Permits | Commenter is strongly opposed to any allowance for discharge of floating solids, debris, sludge deposits, foam, scum, or residues of any kind. | The Beaufort and Chukchi general permits prohibit the discharge of floating solids, debris, sludge, deposits, foam, scum, or other residues of any kind. Please refer to Section II.A.5. of the permits. |
| 323 | Permits | Commenter is concerned that mixing energy of the discharge may mask a sheen for discharges where a static sheen test is more appropriate. | The Beaufort and Chukchi general permits require static sheen tests, in accordance with Appendix 1 to Subpart A of 40 CFR Part 435, for the discharges of water-based drilling fluids and drill cuttings (Discharge 001), deck drainage (Discharge 002), and bilge water (Discharge 011).<br><br>For the following discharges, if visual observations of the discharge are not possible, the permittee must collect a grab sample and test for sheen using the static sheen test: desalination unit wastes (Discharge 005), blowout preventer fluid (Discharge 006), boiler blowdow (Discharge 007), fire control system test water (Discharge 008), and uncontaminated ballast water (Discharge 010).<br><br>The remaining discharges authorized by the permits require visual monitoring for presence of a film, sheen, or discoloration of the surface of the receiving water. This approach reasonably focuses the static sheen testing efforts to the discharges that may contain free oil. |

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| 324 | EMP | In addition to assessing the effects of authorized discharges on water sediments and biological quality, the EMP should be capable of assessing the effects of prohibited discharges, especially those related to sheen-producing hydrocarbons. The baseline site characterization should also be sufficiently detailed to assess the environmental impacts of an intentional or accidental release of petroleum hydrocarbons. Finding petroleum hydrocarbons is the purpose of an oil and gas exploration program. If the detailed site characterization is delayed until a spill actually occurs, it will be too late. The environmental baseline will have been altered. | The Beaufort and Chukchi general permits require that the discharge of the tested material must cease if a sheen or slick occurs on greater than one-half of the surface area of the test container after the test material is introduced during the static sheen test. Discharges must also cease if visual observations indicate presence of a film or sheen upon, or a discoloration of, the surface of the receiving water. Each authorized discharge must meet the effluent limitation requirements. The permits also establish best management practices to ensure the pollutants are not introduced to the environment. If a Discharge 001 is authorized, the EMP must include benthic community bioaccumulation studies conducted over three phases (Phases I, III, and IV).<br><br>EPA disagrees with the commenter that the EMP requirements should be revised to assess the potential effects of unauthorized discharges. Any unauthorized discharges will result in violations of the CWA and subject to appropriate enforcement actions. |

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| 325 | EMP | Commenter is concerned about the adequacy of these tests for arctic waters. None of the available WET test protocols use arctic species. Although recent studies by Shell and other partners in the joint industry projects has been interpreted as showing minimal differences in dose-response of related arctic and non-arctic species, none of the actual WET tests have made side-by-side comparisons of dose responses in approved test species and the closest comparative species from the permit areas. Ideally, discharges should not be permitted until these arctic toxicity tests are developed. Alternatively, they should be developed by the next permit renewal. | The Beaufort and Chukchi general permits' requirements for WET testing are in compliance with the CWA's prohibition of the discharge of toxic pollutants in toxic amounts. WET testing is triggered if (1) toxicity threshold is triggered during the screening test, or (2) once per well, the volume of discharge is greater than 10,000 gpd, and chemicals are added to the system. The WET tests measure the wastewater's aggregate toxic effects on a test organisms' ability to survive, grow and reproduce. Standardized WET testing protocols available for use in the NPDES program are established by regulation and specified at 40 CFR 136.3, Table 1A. The standardized species and testing protocols apply to all applicable facilities across the country, and ensure consistency in agency requirements and produce precise results. EPA's testing manual entitled, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition, October 2002 (EPA-821-R-02-014) discusses testing organisms at Section 6. Subsection 6.1.4 notes that EPA allows the use of indigenous species only where state regulations require their use or prohibit importation of species identified in Subsection 6.1.3 (i.e., those available in 40 CFR 136). EPA is not aware of state requirements or prohibitions in this instance. While the commenter is correct that the selected WET methods include non-arctic species, they have been shown to be sensitive to a wide range of toxicants and are appropriate surrogate species. The results will provide reasonable indicators of potential toxicity and will yield valuable information for use in future EPA decision-making.<br><br>More information on the agency's WET testing requirements and methodology are found at http://water.epa.gov/scitech/methods/cwa/wet/ |

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| 326 | EMP | EPA should also consider developing tests for long-term life cycle effects; possibly by using short lived surrogate species, such as medaka or zebrafish. If they can be found, EPA should utilize a small, rapidly growing arctic test species. Lifecycle tests should be used as a compliment to, not a substitute for the proposed chronic tests. | WET testing is used to determine the aggregate toxic effect to aquatic organisms from all pollutants contained in a facility's wastewater effluent. The existing tests, as provided by agency regulation and guidance, are appropriate indicators of chronic toxicity associated with the discharges. At this time, EPA Region 10 is not aware of national efforts to establish testing protocols to determine long-term life cycle effects associated with industrial discharges. See RTC#325. |
| 327 | Permits | Commenter supports EPA's ODCE proposal to prohibit discharge of fluids and cuttings contaminated by diesel- or mineral oil-based spots or pills. However, commenter does not support the proposed permit language that allows discharge of mineral oil pill contaminants. Commenter requests that the ODCE and permit be revised to make it very clear that all discharge of fluids and cuttings contaminated by diesel or mineral oil-based spots or pills is prohibited. | Mineral oil pills, also called mineral oil spots, are formulated and circulated in the drilling fluid system as a slug to free stuck pipes. The pills generally consist of two parts; a spotting compound and mineral oil. Mineral oil pills may be used to aid in the freeing of a stuck drill pipe. In this situation, the standard technique is to pump a slug or pill of the fluid down the drill string and spot it in the area where the pipe is stuck. Most of the pill can be removed from the underlying bulk drilling fluids system and disposed of separately; however complete removal is not possible so the mineral oil pill provision of the general permits only allows the discharge of residual amounts after various precautions are taken, including toxicity testing before pill addition and after pill removal and the removal of at least a 50 barrel buffer of the drilling fluid on either side of the pill (these buffer amounts cannot be discharged). Finally, the residual oil concentration must comply with a specific numeric limitation (i.e. must not exceed 2% volume of mineral oil per volume of drilling fluid). The general permits' authorization for mineral oil pill use recognizes the limited circumstances for pill use (e.g. stuck pipe) and the precautions and limitations provide necessary restrictions to limit residual discharges and potential effects. EPA will not implement a total prohibition on the use of mineral oil pills in the general permits as proposed by the commenter.<br><br>EPA has included clarifications in the ODCEs to note that discharges of mineral oil or synthetic-based drilling fluids and drill cuttings are not authorized under the Beaufort and Chukchi general permits. Only the discharge of water-based drilling fluids and drill cuttings are authorized. |

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| 328 | ODCE General Comments | EPA cites two industry studies (Crecelius 2007 and Neff 2008 and 2010) as its basis for concluding that the bioavailability of metals discharges is low. EPA does not provide its own independent analysis or any analysis from an independent toxicologist to confirm whether industry's conclusion is correct. EPA appears to use industry's assumption of low bioavailability to justify discharge of water-based drilling muds containing metals. But, later in the ODCE, EPA also concludes that there is inadequate information available (even with these studies) to quantify the potential bioaccumulation of metals from exploratory oil drilling operations. EPA cannot both conclude the bioaccumulation of metals is low, and then conclude that there is inadequate information available to know with any certainty. The ODCE does not provide sufficient analysis on the bioavailability of the metals and organic compounds discharged, and whether the EPA action levels are adequate to safe guard the arctic environment and health of its residents. | As discussed in the ODCEs, drilling fluids that use barite as a weighting agent, have a low solubility in seawater. The metals constituents in barite are relatively insoluble, thus, not readily bioavailable to marine organisms in the water column or bottom feeders (Sections 6.1.2. and 6.2.3.1.). Crecelius et al. (2007) investigated leaching of metals from barite in anoxic sediment. Barium, iron, manganese, and zinc were found to be more soluble under anoxic conditions in pore water, but concentrations of cadmium, copper, mercury, methylmercury, and lead were not significantly different from un-amended sediment. The results suggest that metals would form insoluble sulfide minerals under anoxic conditions and, therefore, would not be bioavailable to benthic organisms.<br><br>The ODCEs noted that existing data are not adequate to quantify the potential bioaccumulation effects from exposure to exploratory oil drilling operations. Howevr, based on available data, EPA concluded that because the bioavailability of trace metals from barite is quite low, the bioaccumulation risks are also expected to be low (Section 6.1.4.).<br><br>The metals of concern in the drilling fluids and cuttings discharge are mercury and cadmium. The ELG limitations on mercury and cadmium in barite, and the suspended particulate toxicity tests assures that toxic pollutants and nonconventional pollutants found in drilling fluids and drill cuttings are indirectly controlled. The ODCEs have been revised to include the appropriate level of analysis on the bioavailability of metals and organic compounds and demonstration of the protectiveness of the Beaufort and Chukchi general permits.<br><br>Finally, as discussed in RTC#317, the permittee is required to test the benthic community tissue for potential metal contaminants and conduct a metals bioaccumulation/ bioavailability study in the drilling site area to assess the potential for metals contamination in the benthic community resulting from Discharge 001. The EMP will provide site-specific data to assist and inform ongoing permit implementation and future permitting decisions. |

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| 329 | Dilution Modeling | The OCC model input parameters used (ODCE, Table 3-5) are not appropriate for the Chukchi Sea. Foremost, the model examines discharge from a jackup drilling rig. Jackup drilling rigs have not been used in the Chukchi Sea, and while one is planned by ConocoPhillips, it has not been approved for use at this time. Additionally, EPA has not provided data to show that the drilling fluid characteristics used in the modeling are representative of current drilling fluid systems actually used in the Chukchi Sea. Modeling assumes a 5,000 bbl discharge over a 30-day well based on Shell's 2011 NOI for the 7,000' vertical Sivulliq well, and does not examine the additional drilling mud discharges that would result from drilling wells deeper than 7,000', which could occur in the Chukchi Sea for both for vertical and high-angle wells. Therefore, the modeling under predicts the discharges that would occur for wells drilled deeper than 7,000'. A well depth of at least 12,000' TVDSS99 should be used, or longer for high-angle wells, or the permit should limit applicability only to vertical wells drilled to 7000'. | EPA has reviewed the modeling input parameters and determined that the choice of rig type and relative depths of discharge associated with each rig does not significantly alter the model predictions. For example, the rates of discharge of water-based driling fluids and drill cuttings are determined by the Beaufort and Chukchi general permits at Table 2. EPA has revised the ODCE to incorporate maximum discharge volumes per well, reported by industry's NOIs.<br><br>The model determined that the drilling fluid deposition thickness calculation is linear with respect to the total volume discharged when ambient conditions (water depth, discharge depth, and current speed) and the discharge rate are constant. For example, the deposition associated with 2,000 bbls discharge in two hours would be twice that of 1,000 bbl discharged in one hour. Please see the Modeling Technical Memo for additional details. |

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| 330 | ODCE General Comments | EPA acknowledges that muds and cuttings will cause benthic smothering and impacts for up to a mile around each drillsite, yet concludes that these impacts are acceptable because they are short-lived. EPA's conclusion that impacts are short-lived (approximately 4 months) is based on Australian drilling data and a Norwegian study that used ilmenite drilling mud (contains less mercury and other metals). EPA does not explain how Australian drilling data is relevant to the Arctic, where recovery is typically slower than in temperate waters, or how a Norwegian study examining ilmenite instead of barite, which is actually used in arctic drilling muds, is relevant to the Chukchi Sea (barite drilling mud contains higher mercury and metal content). The Norwegian data on lower impact ilmenite drilling mud could be relevant to the Chukchi Sea if EPA required the use of ilmenite instead of barite, but it did not. NSB recommends zero discharge of drilling mud; however, if EPA does not prohibit mud discharge, NSB requests that EPA examine the option to require use of ilmenite to reduce mud discharge impacts. | In 2004, OSPAR included ilmenite on the "List of Substances/Preparations Used and Discharged Offshore That Are Considered to Pose Little or No Risk to the Environment", i.e., the PLONOR list, to encourage its use as a replacement for impure barite in drilling fluids discharged to the North Sea. Concern about possible environmental impacts of metals found in barite led OSPAR to include ilmenite in the PLONOR list. Barite was retained on the list to allow operators the choice of using low trace metal barite or ilmenite as a weighting agent (Neff 2010). However, a recent study, published in 2012 from the United Kingdom, suggested that the use of fine barite in offshore drilling may provide a more favorable environmental impact profile than the use of ilmenite (Strachan and Kingston 2012) or standard barite, based on the impact of drilling fluids components on bivalve mollusks.<br><br>As noted in RTC#122, all relevant and available data, including data from Australian drilling activities, are used by EPA as they aid in our understanding of potential impacts and result in informed decision-making by the agency. In addition, EPA has acknowledged that site-specific data in the Beaufort and Chukchi Seas, collected before, during and after drilling, are necessary to ensure that there is no unreasonable degradation of the marine environment on an ongoing basis.<br><br>Finally, the NPDES permitting requirements established under the CWA rely on technology-based effluent limitation guidelines to achieve defined levels of control for categories and subcategories of industrial dischargers and water-quality based effluent limitations to ensure protection of beneficial uses. As discussed in RTC#6, consistent with the Offshore ELGs, EPA has established limits in the Beaufort and Chukchi general permits on mercury and cadmium concentrations in stock barite for the discharges of drilling fluids and drill cuttings. These concentration limits, along with the suspended particulate phase toxicity limitation and monitoring requirements, ensure the marine environment is protected. As such, EPA will not examine the option of requiring the use of ilmenite in drilling fluids systems. |

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| 331 | ODCE General Comments | EPA provided a reference to data collected after 23 years from the Beaufort Sea Hammerhead location, stating that there was not a measurable impact on the trophic structure of the infaunal community. However, because this data was not collected for 23 years, it is not clear how long the recovery actually took, and there is not information to show that recovery would have occurred in a 4 month period as suggested by EPA from the Australian data. Beaufort Sea Hammerhead only shows that recovery was achieved sometime within that 23 year span, and it should also be noted that this same study did find heavy metals still persisting in ocean sediment 23 years later. EPA did not provide any data on metal contamination from the 5 Chukchi Sea exploration wells that have been drilled to understand what impact occurred and the recovery time in the Chukchi Sea. | EPA has updated the Chukchi ODCE to incorporate a discussion of the sampling data from the Burger and Klondike drill sites in the Chukchi Sea. Generally, hydrocarbon concentrations and distributions are higher in some surface and subsurface sediment samples, but are within the range of background concentrations. High concentrations of barium were also detected on the seafloor. While concentrations of silver, aluminum, cadmium, chromium, iron, magnesium, and zinc were at background levels, concentrations of copper, mercury, and lead are elevated in a few of the sediment samples that also contained high levels of barium, compared with background levels. These metals are thought to be associated with drilling fluid barite or drilling cuttings discharged during exploratory drilling in the late 1980s.<br>Based on existing data, recovery is expected to occur within a few months. However, as discussed in RTC#319, the Beaufort and Chukchi general permits require collection and analysis of potential metal contaminants of concern as part of the EMP during all phases of the drilling activity. See also see RTC#330. |
| 332 | ODCE General Comments | The ODCE should be corrected to require operators to provide sufficient storage capacity either on the drilling rig or in a vessel alongside the rig to provide muds and cuttings storage capacity needed for the well operation. Limitations on storage capacity should not prompt unnecessary pollution. This section of the ODCE should be revised. | EPA will not revise the ODCE as suggested by the commenter to require operators to provide storage capacity for collection of drilling fluids and drill cuttings. The Beaufort general permit and ODCE have been revised to require no discharge of drilling fluids and drill cuttings during fall bowhead whale hunting activities by Nuiqsut and Kaktovik in the Beaufort Sea, consistent with similar requirements and mitigation measures established by NMFS through their ITAs. |

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| 333 | Discharge Prohibitions | EPA does not explain how it decided to prohibit discharge in water depths less than 5 meters (16') and allow pollution at depths above 16 feet. | The prohibition of all discharges in areas where water depths are less than 5 meters (approximately 16 feet) in the Beaufort Sea ensures unreasonable degradation does not occur in nearshore areas. Modeling conducted by EPA (TetraTech 2004) indicated that minimal dispersion occurs in water depths ranging from 2 to 5 meters, with drilling fluids and drill cuttings materials accumulation exceeding the water depth by 10 to 20 times. This prohibition was also established, in part, based on input from community stakeholders and through Traditional Knowledge interviews, which revealed local concerns regarding shallow areas that contain feeding areas and habitat for anadromous fish, seals, and migrating beluga whales. This prohibition was also included in the 2006 Arctic general permit and is consistent with other oil and gas general permits issued by EPA Region 10. |
| 334 | Discharge Prohibitions | The Chukchi Sea ODCE does not explain why it is acceptable to discharge waste. North Slope residents subsistence hunt many marine mammals and fish in the Chukchi Sea throughout the year. Pollution prevention should be a continuous approach, not just a temporary solution during active whaling, and only afforded in the Beaufort Sea and not the Chukchi Sea. | The Chukchi ODCE describes the types of discharges, analyzes the discharges against the ten criteria established by EPA regulation, and concludes that the discharges will not cause unreasonable degradation of the marine environment, including subsistence resources. EPA's determination is based on the effluent limits, restrictions, and monitoring requirements imposed by the general permit. Also, as discussed in RTC# 23 and #24, EPA developed BEs for the Beaufort and Chukchi general permits to assess the potential impacts to ESA-listed, candidate, and proposed species and their designated critical habitat areas and concluded that the discharges "may affect, but are not likely to adversely affect" these species or areas. EPA received concurrence from both NMFS and USFWS on our determinations for the species under their jurisdictions. Additionally, because whaling activities do not occur near the lease locations in the Chukchi Sea, it is not reasonable to apply the same no discharge prohibition in the Chukchi general permit. Finally, please see RTC#34 for a discussion of the BMP requirements. |

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| 335 | Discharge Prohibitions | The ODCE does not explain why an alternatives analysis is required to examine collection and transport of drilling muds and cuttings to an onshore treatment and disposal facility or offshore injection downhole only during periods of stable ice, and why an alternatives analysis would not be prudent year-round on all projects. It is technically feasible to collect drilling waste during open water into a storage vessel. This is no different than EPA's requirement for the operator to collect waste into trucks and transport that waste back to shore on an ice road. Drilling support vessels can transport the waste to a West Coast treatment and disposal facility when the vessels return to the West Coast to overwinter. Alternatively, vessels can be used to transport waste to onshore or offshore grind and inject facilities and disposal wells in the Beaufort Sea region. Disposal wells are located both onshore in the Beaufort Sea Area (e.g. Prudhoe Bay and Badami) and at offshore drilling locations (e.g. Northstar Island). OCS operators can develop facility sharing agreements with the owners/operators of those facilities to use them, or can construct their own grind and inject and disposal wells, as many operators have already done. NSB is not recommending a prescriptive approach, or suggesting that EPA require an operator to enter into an agreement with any particular operator; rather, NSB is highlighting the fact that there are existing options for proper waste disposal, or options for operators to construct proper waste disposal facilities. | Please see RTC#38 for a discussion of the alternatives analysis requirement, and RTC#43 for a discussion of why it is not a year-round standard.<br><br>EPA recognizes that waste injection options exist at onshore locations in the Beaufort Sea. While EPA understands commenters would like EPA to require reinjection of wastes, or collection and transportation of wastes to alternative locations, EPA has evaluated the potential impacts associated with direct discharges to surface water. Based on the ODCE analyses, EPA has made the determination that the discharges will not result in unreasonable degradation of the marine environment. This determination is made in consideration of the limits, restrictions, and requirements established by the Beaufort and Chukchi general permits. |

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| 336 | ODCE General Comments | NSB requests that the ODCE be updated with current data and references to support the water based drilling fluid section. The ODCE contains information on water-based drilling fluids that is two decades or more old; it should contain current information from drilling mud suppliers and industry on formulations planned for the Chukchi Sea, not mud formulations from an unrelated 1985 EPA study of temperate water mud systems. Mud systems are specifically designed for arctic operations and have changed significantly in composition since the 1980s. Additionally, EPA relies on a 1993 list of water based mud fluid types, but does not show any evidence that it worked with industry to verify whether this information is current or accurate for the Chukchi Sea. | During development of the ODCEs, EPA relied, in part, on data supporting the ELGs for discharges within the Oil and Gas Offshore Subcategory. EPA has also incorporated recent information from technical reports and the mud plan submitted by Shell for the 2012 drilling season. While five historical wells have been drilled in the Chukchi Sea since the late 1980s, EPA does not have the mud plans from those wells. See RTC#142. |
| 337 | EMP | EPA did not explain how it arrived at a 10,000 gallon per day threshold for requiring WET monitoring, and how discharges less than 10,000 gallons per day are protective. EPA estimates a total of 478 barrels of deck drainage (ODCE, Table ES-1), which equates to a total of 20,076 gallons of discharge over the entire well. Therefore, it is unlikely that a 10,000 gallon per day threshold for requiring WET monitoring would ever be triggered. [244 barrels and 10,248 gallons for Beaufort] | WET testing is triggered by one of two ways. First, WET testing is required for the applicable discharges that fail the initial screening test; or second, once per well, if the discharges exceed 10,000 gallons per day and if chemicals are added. This approach ensures that toxicity of the appropriate waste streams can be reasonably determined. EPA used the 10,000 gpd estimate to be consistent with other oil and gas permits issued by Region 10. |

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| 338 | Permits | NSB requests that EPA include effluent limitations for deck drainage corresponding to its proposed effluent parameter monitoring requirements. Table 3 of the proposed permit lists six effluent parameters that are required to be monitored (free oil, total volume, pH, TAqH, TAH and WET); however, EPA has only assigned effluent limitations to prohibit discharge of free oil if it creates a sheen. EPA has not defined in the permit what an unacceptable pH level, TAqH, TAH, or WET testing result is, and when deck drainage would be prohibited as a result of those test results. EPA should WET testing of all deck drainage or explain why this is not appropriate. The permit should state that deck drainage must be routed to a holding tank for testing prior to discharge, such that wastes that do not meet the effluent limitations in Table 3 must be collected and transported to a treatment and disposal facility rather than being discharged. Finally, EPA estimates a total of 20,076 gallons of deck drainage during the life of the entire well; however, it has not set any limit on the total allowed volume of discharge in Table 3. A limit should be set, or EPA should explain the upper limit of discharge that could be allowed at any one well and be protective of the environment. [10,248 gallons for Beaufort] | The Beaufort and Chukchi general permits require area drains contaminated with oil and grease to be kept separate from those area drains that would not be contaminated to minimize commingling of the waste streams. Additionally, the permits require that deck drainage contaminated with oil and grease be processed through an oil-water separator prior to discharge and sampled. The permits' requirements are consistent with the regulations at 40 CFR 435.12, which establish no "free oil" effluent limitations for deck drainage discharges, as determined by the presence of a film or sheen upon or a discoloration of the surface of the receiving water. Here, EPA required this determination to be made through the use of a static sheen test on effluent from the oil-water separator that is treating any contaminated deck drainage. Please also refer to RTC#121. |
| 339 | Permits | EPA is proposing to allow disposal of 10,443 bbls of sanitary and domestic waste per well into the Chukchi Sea (ODCE, Table ES-1), with an upper limit of 10,000 gallons per day (Table 4 of the proposed permit). The ODCE states that these volumes are based on Shells and Statoil's estimated NOI volumes, but not on ConocoPhillips estimated volume, which is substantially higher at 15,800 bbls. EPA should use ConocoPhillips's higher volume estimate or explain why it was not included. | Please note, Shell submitted its discharge estimates to EPA based on a per well basis,which the company estimates would be completed within 32-35 days. The ConocoPhillips' and Staoil's volume estimates in their NOIs are based on a per-season basis (approximately 100 days), during which the companies anticipate up to two wells can be drilled. Thus, the volumes reported by Shell's NOIs are not directly comparable with those reported in ConocoPhillips' or Statoil's NOIs. For computation purposes, EPA assumed one well can be drilled in 40 days, to ensure a conservative estimate of the potential discharge volumes. EPA then converted the volumes to barrels per day and multiplied that number by 40. The estimated volumes in the ODCEs have been revised to include the average and maximum discharge quantities for each waste stream based on all NOIs submitted. |

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| 340 | Permits | Most drinking water regulations have a zero limit for fecal coliforms. For non-drinking water sources, the limit is often 10 cfu/l. Fecal Coliforms are not the only human pathogens which may be carried into the Arctic by workers. These pathogens may cause human disease, or possibly related diseases in marine mammals through zoonotic transfers. About 7 years ago, an infectious case of V.parahemolyticous was brought into Prince William Sound from unidentified sources. This resulted in an outbreak among cruise ship passengers who ate contaminated oysters. Some non-human pathogen bacteria may cause an ecological threat if introduced as invasive species. If EPA allows sanitary and domestic waste to be discharged, despite community objection, NSB requests that at a minimum total bacterial load (MPN) should be monitored as well as fecal coliforms. MPN values over 100 times background should trigger further testing to identify the source of the elevation. | The domestic and sanitary waste discharges authorized by the Beaufort and Chukchi general permits are from relatively small and temporary exploration facilities. EPA applied the marine sanitation devices standards, 40 CFR § 140.3(d), which require that effluent contain a maximum of 200 FC/100 mL. For discharges to state waters, if there is no state-authorized mixing zone, the Beaufort general permit incorporates the more stringent water quality-based criteria of 14 FC/100 mL and 43 FC/100 mL as end-of-pipe limits to protect the beneficial uses of the marine environment (e.g., harvesting for consumption of raw mollusks or other raw aquatic life). For discharges that are granted a mixing zone and for those in federal waters, EPA applied the technology-based limit of 200 FC/100 mL.<br><br>Sampling for fecal coliform are required weekly. This sampling frequency has been increased from the monthly sampling requirements of the Arctic general permit. |
| 341 | Permits | Desalination unit waste is residual high-concentration brine; it is the end product of distillation or reverse osmosis units, which are used to create freshwater from seawater. While the brine discharge into a saline ocean is not a concern, additives discharged with desalination wastes include cleansers, water purifiers, and acidifier/scale removers. EPA proposed an initial toxicity test to examine whether the chemical additives (cleansers, water purifiers, and acidifier/scale removers) exceed a certain threshold, however, neither the threshold for that test not the results of that testing is required in Table 6 . Commenter requests that initial toxicity test limits and reporting, and effluent limitations, be included in Table 6. [same comment for Beaufort --Table 7]. Commenter requests that EPA revise the proposed permit to clearly state that desalination unit waste that exceeds the limits established in Table 6 must be collected and transported to a treatment and disposal facility. [same comment for Beaufort --Table 7] | The Beaufort and Chukchi general permits require toxicity testing as a component of the EMP. As the commenter noted, the toxicity testing requires an initial screening test. If toxicity is triggered, a WET test must be conducted, or, once per well, if the discharge exceeded a volume limit (10,000 gpd) and if chemicals are added to the system. The WET testing requirements are incorporated into Table 7 and 6 of the Beaufort and Chukchi general permits, respectively. The results from these tests must be reported to EPA. As discussed in RTC#81, the permits do not establish WET limits as discharge data does not exist to determine reasonable potential; rather, the monitoring data will be used to inform ongoing permit implementation, oversight activities, and for future decision-making. EPA has not established effluent limits for desalination unit wastes, and as such, has not revised the permits to require collection and disposal at alternative locations if desalination unit wastes exceed limits. |

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| 342 | Permits | Blowout preventer testing is a critical well control and safety function. Commenter supports frequent BOP testing, and requests that the EPA requires industry to use the lowest environmental impact fluid possible, preferably vegetable oils. Applicants should be required to explain in their application how they selected the lowest impact test fluid. Table 7 of the proposed permit lists three effluent parameters that are required to be monitored (free oil, total volume, and pH); however, EPA has only assigned effluent limitations to prohibit discharge of free oil if it creates a sheen. A volume and pH limit should be set that is protective of the environment. [same comment for Beaufort --Table 8] | EPA does not have the authority to require certain fluids be used in the blowout preventer. The discharges of blowout preventer fluids are relatively small, approximately 50 barrels, on a per well basis. The ODCEs concluded that the discharges, including blowout preventer fluids, will not result in unreasonable degradation of the marine environment. As such, EPA has determined it is not necessary to restrict the volumes or to establish a pH limit. Actual discharge volumes and pH monitoring data will be used in future EPA decision-making. |
| 343 | Permits | Commenter requests that EPA's analysis be updated to include an examination of the chemicals likely to be contained in the boiler fluid discharge based on actual Chukchi Sea exploration activity and chemical use. Table 8 of the proposed permit lists three effluent parameters that are required to be monitored (free oil, total volume, and pH); however, EPA has only assigned effluent limitations to prohibit discharge of free oil if it creates a sheen. EPA has not defined in the permit what is an unacceptable pH level or discharge volume. A volume and pH limit should be set that is protective of the environment. Commenter requests that EPA revise the proposed permit to clearly state that boiler waste that exceeds the limits established in Table 8 must be collected and transported to a treatment and disposal facility. [same comment for Beaufort --Table 9] | The Beaufort and Chukchi general permits require the permittee to keep an inventory of all chemicals used (Section II.A.10) for all discharges and where in the process they are used, establish maximum concentrations based on manufacturer or label recommendations, report the rates and concentrations used, and document each additive's concentration and limitations determinations in the End-of-Well Report. This data will be used in future permit proceedings and EPA decision-making. Similar to RTC#342, above, the ODCEs concluded that the discharges, including boiler blowdown, will not result in unreasonable degradation of the marine environment. As such, EPA has determined it is not necessary to restrict the volumes or to establish a pH limit. |

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| 344 | Permits | Shell's revised 2011 plan proposes to collect 100% of the bilge water and transport it to a treatment and disposal facility in Oregon; this is a best management practice that should also be required for the Beaufort and Chukchi Seas. Table 12 of the proposed permit requires pH, total volume, and WET testing, but does not establish any effluent limitations. Commenter requests that effluent limitations be included in Table 12 for these effluent parameters. [same comment for Beaufort -- Table 13]. | See RTC#45. The Beaufort and Chukchi general permits require the permittee to process all bilge water through an oil-water separator prior to discharge. This requirement is combined with the no free oil limitation and the testing requirements WET (if triggered). Similar to RTC#342, the ODCEs concluded that the discharges, including bilge water, will not result in unreasonable degradation of the marine environment. As such, EPA has determined it is not necessary to restrict the volumes or to establish a pH limit. |
| 345 | General Comments | In 2010 and 2011, NSB provided an extensive list of technical and scientific reference materials to EPA,and requested that EPA include an evaluation of that material in this permit renewal process. However, many of the references do not appear to have been evaluated. NSB requests that EPA review these materials and incorporate in its proposed decision-making. These references are again submitted to EPA as Attachment C. | EPA has researched all references provided by commenters and reviewed all available data. Where relevant and appropriate, EPA has incorporated this information into our technical support documents for the permits. Due to the large number of references provided, EPA's review of the information has been summarized in a separate spreadsheet and included in the administrative records for the permits. |

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