

FINDING OF NO SIGNIFICANT IMPACT FOR THE ISSUANCE OF REGULATIONS AND LETTER OF AUTHORIZATION TO HILCORP ALASKA LLC FOR TAKE MARINE MAMMALS BY HARASSMENT INCIDENTAL TO OIL AND GAS EXPLORATION ACTIVITIES

I. INTRODUCTION AND PURPOSE

The National Marine Fisheries Service (NMFS) received an application requesting incidental take of marine mammals from Hilcorp Alaska LLC (Hilcorp) in connection with their proposal to conduct various oil and gas activities in Cook Inlet, Alaska, over the course of five years (2019-2024). NMFS is required to review applications and, if appropriate, issue Incidental Take Authorizations (ITAs) pursuant to the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 et seq.). In addition, the National Environmental Policy Act (NEPA), 40 Code of Federal Regulations (CFR) Parts 1500 -1508 and National Oceanic, Atmospheric Administration (NOAA) policy and procedures require all proposals for major federal actions be reviewed with respect to environmental consequences on the human environment.¹ The purpose of this document is to present the evaluation that issuance of an ITA to Hilcorp will not significantly impact the quality of the human environment.

II. BACKGROUND

NMFS is issuing a final rule and a Letter of Authorization (LOA) to Hilcorp pursuant to Section 101(a)(5)(A) of the MMPA and 50 CFR Part 216. The rule and LOA will be valid from 6/15/2019 through 6/14/2024 and authorizes takes, by Level A or Level B harassment, of small numbers of marine mammals incidental to oil and gas (O&G) activities. Specifically, Hilcorp proposes to conduct exploration, development, production and decommissioning activities over a span five years. These activities include conducting surveys (i.e., two-dimensional (2D) and 3D seismic surveys and geohazard and geotechnical surveys), drilling and abandoning exploratory wells, constructing and maintaining new support infrastructure (i.e., material sites, access road, prefabricated bridges to cross four streams, air strip, barge landing/staging areas, fuel storage facilities, water wells and extraction sites, intertidal causeway, camp/stage area and a drill pad), routine construction and drilling activities at existing O&G production platforms², development drilling at existing O&G platforms, routine O&G pipeline maintenance (i.e., subsea pipeline inspections, stabilizations and repairs, platform leg inspections and repairs, and anode sled installations or replacement), and Drift River terminal decommissioning.

NMFS proposed action is a direct outcome of the Hilcorp's request, where some of the O&G activities mentioned above involve acoustic sources (e.g., sheet pile driving, seismic air guns, sub-bottom profilers, water jets, and vertical seismic profiling) that have potential to cause marine mammal harassment and therefore, requires authorization from NMFS. An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), and, where relevant, will not have an unmitigable adverse impact on the

¹ NOAA Administrative Order (NAO) 216-6A "Compliance with the National Environmental Policy Act, Executive Orders 12114, Environmental Effects Abroad of Major Federal Actions; 11988 and 13690, Floodplain Management; and 11990, Protection of Wetlands" issued April 22, 2016 and the Companion Manual for NAO 216-6A "Policy and Procedures for Implementing the National Environmental Policy Act and Related Authorities" issued January 13, 2017

² Hilcorp owns 15 of 17 existing offshore oil and gas platforms in platforms in central Cook Inlet

availability of the species or stock(s) for subsistence uses. In addition, the final rule and LOAs must set forth the permissible methods of taking, other means of effecting the least practicable adverse impact on the species or stock and its habitat, and requirements pertaining to the monitoring and reporting of such takings.

NMFS's issuance of this final rule and LOAs to Hilcorp allowing the taking of marine mammals, consistent with provisions under the MMPA and incidental to the applicant's lawful activities, is considered a major federal action. Therefore, NMFS determined preparing an Environmental Assessment (EA) was appropriate for the issuance of this rule and LOAs to Hilcorp. In addition, NMFS relied on the public process pursuant to the MMPA to develop and evaluate environmental information relevant to the analysis under NEPA. The public was given the opportunity to submit comments during the comment period for the proposed rule published in the *Federal Register* on April 1, 2019 (84 FR 12330).

III. PROPOSED ACTION AND ALTERNATIVES SUMMARY

NMFS is required to consider a reasonable range of alternatives to its Proposed Action, which is the consideration whether to issue regulations and an LOA to Hilcorp. Based on the statutory framework explained above, NMFS considers two alternatives, a no action alternative in which NMFS denies the request for an ITA and an action alternative in which it grants the request and issues an ITA. Thus, the Final EA addresses the potential environmental impacts of two alternatives to meet NMFS' purpose and need:

Alternative 1 (No Action Alternative): For NMFS, denial of an MMPA authorization constitutes the NMFS No Action Alternative, which is consistent with our statutory obligation under the MMPA to grant or deny incidental take authorization requests and to prescribe mitigation, monitoring, and reporting with any authorizations. Under the No Action Alternative, NMFS would not issue the regulations and LOA and NMFS assumes Hilcorp would not conduct their planned fishery-independent monitoring activities as described in their application. The No Action Alternative served as a baseline against which the impacts of the Preferred Alternative were compared and contrasted.

Alternative 2 (Preferred Alternative): NMFS issues the final rule and LOA to Hilcorp authorizing take of marine mammals incidental to Hilcorp's proposed O&G activities described in their application and with the mitigation, monitoring and reporting measures described in Section 2.3 in the Final EA and in the final rule under "Mitigation" and "Monitoring" sections.

IV. ANALYSIS SUMMARY

The environmental consequences to the marine environment and protected resources are important to the evaluation leading to the decision to issue any given ITA. In particular, because NMFS' action is specific to authorizing incidental take of marine mammals, the key factors relevant to, and considered in a decision to issue any given ITA, are related to NMFS's statutory mission under the MMPA. The information in the following subsections discusses key factors considered in the analysis in the EA along with the evaluation and reasons why the impacts of our proposed action will not significantly impact the quality of the human environment. Information in the EA specific to descriptions below is incorporated by reference per 40 CFR 1502.21.

A. Summary of Environmental Consequences

In the EA, we present the baseline environmental conditions for the affected resources in locations throughout Cook Inlet where the various O&G activities will occur along with a qualitative evaluation of potential impacts to marine mammals, including explanations about potential acoustic impacts used to indicate what received sound levels marine mammals will experience certain effects.³ However, since the potential effects of sound on marine mammal species involves a complex analysis of the manner in which sound interacts with the physiology of marine mammals and the potential responses of those animals to sound, only general information about sound and marine mammal hearing along with potential effects of sound on marine mammals is explained in the EA while details concerning exposure estimates and the quantitative analysis of impacts to marine mammals is provided in “Take Estimation” section of the final rule.

B. Significance Evaluation

The Council on Environmental Quality (CEQ) Regulations state that the significance of an action should be analyzed in terms of both “context” and “intensity” and lists ten criteria for intensity. The Companion Manual for NOAA Administrative Order 216-6A requires consideration of CEQ’s context and intensity criteria (40 CFR 1508.27(a) and 40 CFR 1508.27(b)) along with six additional factors for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to NMFS’s proposed action and is considered individually as well as in combination with the others.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

NMFS’ proposed action is not expected to cause either beneficial or adverse impacts resulting in any significant effects. NMFS is proposing to authorize take incidental to O&G activities for marine mammal species expected to occur in the action area. Therefore, impacts from NMFS’s proposed action are expected to be predominantly to marine mammals, which, if affected, would be through the introduction of sound into the marine environment during O&G activities. Airguns emit low-frequency noise into the water column, which has the potential to behaviorally disturb marine mammals and, for some species, cause auditory injury. In addition, noise can mask the detection or interpretation of important sounds. Given their reliance on sound for basic biological functioning (e.g., foraging, mating), marine mammals are the species most vulnerable to increased noise in the marine environment, although marine mammal prey (e.g., fish and squid) may be impacted in some of the same ways. However, NMFS expects its action to have only intermittent, localized impacts on marine mammals and their habitat, due to the fact that seismic surveys are mobile, only several months each in duration, stationary activities have much smaller zones of acoustic influence, and the prescribed mitigation and monitoring requires an exclusion zone around sensitive beluga whale foraging habitat designated to protect the most vulnerable marine mammal species and their most important habitat. While NMFS predicts direct adverse effects to individuals it does not anticipate population-level effects that would rise to the level of significance. Effects to marine mammal populations are expected to be negligible for marine mammal species.

2. Can the proposed action reasonably be expected to significantly affect public health or safety?

³ Equivalent to regulatory definitions of harassment pursuant to the MMPA.

The issuance of regulations and an LOA to Hilcorp for take of marine mammals is not likely to have the potential for this kind of effect because the proposed 2D and 3D seismic surveys would take place offshore in a broad area and are unlikely to overlap with activities conducted by the public. Additionally, Hilcorp's drilling related activities, such as sub-bottom profiler use, vertical seismic profiling, and use of water jets would occur in a localized area under heavy observation from the Hilcorp work crew. NMFS only authorizes the take of marine mammal species associated with these O&G activities, which does not involve the public or expose the public directly (e.g., chemicals, diseases) or indirectly (e.g., food sources) to hazardous or toxic materials in a way that would be linked to the quality of the environment and well-being of humans.

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

The primary potential effects that may result from NMFS proposed action are potential adverse effects to marine mammals that are the subject of the take authorization, as well as their habitat. Any proposed activity must be consistent with the MMPA and NMFS' implementing regulations and, as applicable, must cause no greater than negligible impacts to affected species or stocks, cause taking determined to be of no greater than small numbers, and include measures sufficient to effect the least practicable adverse impact to marine mammal species or stocks and their habitat. Therefore, it is not likely the issuance of this rule and LOA to Hilcorp could adversely impact these areas at a level that would reach significance under NEPA. The action area does not contain, and is not adjacent to, areas of notable visual, scenic, historic, or aesthetic resources that would be substantially impacted. The surrounding water is primarily used for shipping traffic and is already impacted by human development. The impacts to EFH and critical habitat for federally-listed species are likely to be minor, localized and short-term. Hilcorp's activities may overlap spatially with federally designated critical habitat but this overlap is temporally limited and should affect a small portion of the overall available critical habitat. Seasonal exclusion zones at areas of foraging for marine mammals, which includes habitat for prey species, are included as additional measures of habitat protection.

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

The underlying activity (i.e., O&G activities) and NMFS's action (i.e., issuance of regulations and LOAs for take of marine mammals) are somewhat controversial—NMFS received several public comments during review of its notice of receipt of the application, as well as its notice of proposed rulemaking. Concerns expressed by the public in relation to NMFS' proposed action of issuance of regulations and LOAs extend in large part to potential effects that are not actually associated with NMFS' action, (e.g., significant oil spills related to development activity permitted by BOEM and potential effects to commercial and recreational fisheries). However, NMFS does not have authority to authorize the underlying activities proposed by Hilcorp, NMFS authorities under the MMPA are specific to implementing the requirements under Section 101(a)(5)(A) concerning take of marine mammals incidental to an applicant's (in this case, Hilcorp) activities as described in their applications; thus, the effects of NMFS action is appropriately focused on the effects on marine mammals and their habitat.

In addition, NMFS previously assessed and authorized incidental take of marine mammals for multiple activities involving active acoustic sources, including airguns and completed NEPA analyses for similar activities conducted in diverse locations, including several in Cook Inlet, Alaska. Based on the substantial nature of prior environmental reviews and analyses under the MMPA, the effects of NMFS issuance of IHAs for incidental take of marine mammals associated with the type of activities proposed by Hilcorp are well-understood, and there is no substantial disagreement concerning the scientific methods and analyses used by NMFS in its determinations to grant or deny incidental take authorizations under the MMPA. Nor are the environmental effects disproportionate in type or scope from similar activities.

Through NMFS' history of issuing IHAs for similar survey activities, relatively standard mitigation and monitoring measures have been developed and vetted during past public comment periods under the MMPA and other NEPA reviews. Appropriately, NMFS continues to evaluate mitigation measures in the context of the specific proposals and the evolving science, and in this case, NMFS identified and required an expanded suite of mitigation and monitoring requirements specific to the proposed seismic portion of the activity. These mitigation and monitoring requirements are more protective than those proposed by the applicant and ensure the least practicable adverse impact to marine mammals or stocks. NMFS analysis and mitigation is based on the best available science and there is not substantial disagreement over the methods used or impacts anticipated.

The primary anticipated impact is the introduction of sound into the marine environment, though increased noise levels are expected to be localized and temporary. Although there is some lack of consensus within the scientific and stakeholder communities about the potential effects of noise on marine mammals, there is basic understanding regarding the likely effects of noise exposure on individual marine mammals (dependent on species and context), as well as the extent to which such effects may or may not accrue to the extent that effects may occur at the population level. NMFS fully considered all comments in preparing the Final EA and final rule. Based on the best available scientific literature, as well as consideration of all public comments received, NMFS determined that given the limited duration of the activities and the transient and temporary nature of impacts in any given location, viewed in concert with the required mitigation and monitoring, the issuance of a final rule would have a negligible impact on the affected marine mammal species or stocks under the MMPA.

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

Some scientific uncertainties exist regarding the degree and manner in which anthropogenic noise, including that produced through use of airguns or other sources such as sub-bottom profilers, impacts to marine mammals; however, the uncertainty is not substantial. There is a substantial body of scientific literature regarding the impacts of noise—and specifically airgun noise—on marine mammals. NMFS has issued ITAs and conducted associated NEPA analyses for similar activities or activities with similar types of marine mammal harassment in numerous locations; this includes reviewing, evaluating, and considering the results of monitoring required for IHAs authorizing takes from similar noise-producing activities. Although fewer of these analyses have been conducted for activities in Cook Inlet, we do not expect the action's effects on the human environment to be substantially different. Therefore, we expect any potential effects from the issuance of regulations and LOA to Hilcorp to be similar to prior analyzed activities, which are not likely to be highly uncertain or involve unique or unknown risks. Mitigation and monitoring methods have been

evaluated in numerous prior environmental reviews and are expected to be effective in reducing adverse effects to marine mammals from the geophysical survey activities.

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

The issuance of any given ITA may inform the environmental review for future projects but would not establish a precedent or represent a decision in principle about future actions. NMFS' actions under MMPA Section 101(a)(5)(A) are considered individually and are based on the best available scientific information, which is continuously evolving, and requests for ITAs are evaluated on their own merits relative to the criteria established in the MMPA and 50 CFR Part 216 on a case-by-case basis. Therefore, issuance of an ITA to a specific entity for a given activity does not guarantee or imply that NMFS will issue future authorizations upon request in relation to similar activities. For these reasons, the issuance of this final rule and LOA to Hilcorp would not set a precedent. Should future applicants apply for ITA to conduct additional O&G activities in Cook Inlet or elsewhere, NMFS will conduct relevant subsequent analyses and evaluate each on a case-by-case basis.

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

The proposed action considered herein is the issuance of regulations and LOAs, and the aggregate effects of such issuance on marine mammals and their habitat. Other relevant actions to be considered in evaluating potentially cumulatively significant impacts include commercial fishing, vessel traffic, coastal construction, and other oil and gas development activities and scientific research. While consideration of these activities in sum suggests an increase in industrialization of Cook Inlet, many of these activities are spatially and temporally limited and do not permanently reduce or degrade the habitat available to marine mammals or their prey species. Cook Inlet is also a geographically vast area and many activities, including the activities proposed by Hilcorp, are geographically separated in various portions of the Inlet, which prevents the continued or permanent disruption of one particular portion of the Inlet for extended durations. We considered all relevant activities in evaluating the potential for cumulatively significant impacts in the Final EA. NMFS' EA concludes that the impacts of the O&G activities considered in context with NMFS's required mitigation, will not result in cumulatively significant impacts to marine mammals and their habitat when viewed collectively with other past, present, and reasonably foreseeable future actions.

NMFS has prescribed mitigation according to the best available science and information to minimize potential impacts, as required by the MMPA. Furthermore, the activities are limited to various time and space constraints. Specifically, the activities cannot occur within near the Susitna Delta during the biologically important summer months of Cook Inlet beluga whale feeding, and are excluded from the Kasilof River designated to provide the greatest possible benefit to the most sensitive species affected. The location of Hilcorp's activities are not known to be critical feeding grounds for other marine mammal species. Therefore, we find that the effects of issuance of the regulations and LOAs are effectively minimized and are not significant. When considered incrementally in addition to other activity ongoing in the survey area (i.e. commercial and recreational fisheries, shipping and marine transportation, military activity, recreational boating, energy development, construction, etc.), cumulative impacts from the combined potential activity are not expected to be significant.

8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

The effects of issuance of this final rule and LOA is limited to those occurring to marine mammals and their habitat; and, therefore, NMFS's proposed action is not expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. Likewise, it is not expected to cause loss or destruction of significant scientific, cultural, or historical resources. Furthermore, the underlying O&G activities themselves take place in open water and involve production of underwater sound; therefore, although known or unknown historical resources may be present, the chance of affecting such resources is so remote and unlikely as to be discountable.

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

The issuance of regulations and LOAs is not expected to have a significant impact on endangered or threatened species or critical habitat under the ESA. Based on the results of the ESA section 7 consultation (summarized below) along with mitigation measures designed to avoid or minimize impacts to ESA-listed species and critical habitat, NMFS expects that any impacts to ESA-listed marine mammals, as well as their critical habitat, will be short-term and limited to harassment.

The proposed geophysical surveys may have the potential to affect the following species listed as threatened or endangered under the ESA: Cook Inlet beluga whales, fin whales, humpback whales, and Steller sea lions. In 2018, NMFS's Permits and Conservation Division initiated consultation with NMFS's Alaska Regional Office for issuance of regulations. In June 2018, NMFS' Endangered Species Act Interagency Cooperation Division found that NMFS' issuance of regulations and LOAs will not jeopardize the continued existence of endangered or threatened species and would not affect critical habitat, and issued a BiOp providing conclusions specific to NMFS's actions relevant to the proposed O&G activities.

We determined that the proposed geophysical surveys may result in taking by harassment only of small numbers of these species, and that the total taking will result in no greater than a negligible impact on the affected species or stocks. Harassment and other acoustic impacts are expected to be solely an outcome of acoustic exposure from O&G activities and will be temporary in nature. Fin whales and Steller sea lions are considered rare in the activity area but NMFS has provided a precautionary take authorization. To reduce potential exposure, NMFS is requiring multiple monitoring and mitigation measures for marine mammals. These are described in detail in the EA and notice of issuance of regulations, but in summary include: shutdowns for marine mammals within or entering an exclusion zone; continuous visual monitoring before, during, and after the surveys; shutdowns at extended distance for certain sensitive species; time-area closures (e.g., Susitna Delta in summer months, and mouth of Kasilof River); aerial surveys to sight Cook Inlet beluga whales prior to beginning seismic activity, ramp-up requirements; vessel strike avoidance measures; and reporting requirements.

The only critical habitat designation within the proposed survey area relevant to NMFS' action is for Cook Inlet beluga whales, which includes much of Cook Inlet, Alaska. Use of the greater habitat

area varies temporally, specifically with large feeding aggregations known to occur in the summer months. NMFS is requiring stringent mitigation measures to restrict activity throughout the Susitna River Delta portion of Critical Habitat in a way that is expected to minimize impacts to this habitat and whales within it. Separately, if a Cook Inlet beluga whale is observed outside of these closure areas, an extended shutdown requirement will be enacted to minimize the severity and duration of any potential disturbance.

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

The issuance of this final rule and LOA to Hilcorp will not violate any federal, state, or local laws for environmental protection, as NMFS has engaged in consultation and conducted analyses as necessary to ensure compliance with relevant environmental protection laws. NMFS' Permits and Conservation Division initiated consultation under section 7 of the ESA with NMFS' Alaska Regional Office in 2018 to consider the effects of issuance of this final rule and LOA. This consultation concluded in June 2019 and found, as described above, that NMFS's action to potentially issue regulations and LOAs would not jeopardize the continued existence of any listed species nor affect critical habitat. As discussed in the EA, NMFS' action will not affect resources of any National Marine Sanctuary, Essential Fish Habitat (EFH) designated pursuant to the MSFCMA, or have reasonably foreseeable effects on the uses or resources of the coastal zone of any state (pursuant to the Coastal Zone Management Act). There are no other environmental laws, regulations, federal permits, or licenses applicable to NMFS for the issuance of this final rule and LOA.

11. Can the proposed action reasonably be expected to adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

Hilcorp's proposed O&G activity has the potential to take marine mammals by harassment, as defined by the MMPA. However, while take of numerous marine mammals is expected across the total duration of the activity, we do not expect adverse impacts at the population level to stocks of marine mammals. Importantly, effects on individuals or groups of animals does not necessarily translate into an adverse effect to a stock or species, unless such effects result in reduced fitness for those individuals and, ultimately, accrue to the point that there is reduced reproduction or survival leading to effects on annual rates of recruitment or survival for the species. Adverse effects on stocks could potentially result from direct mortality or serious injury or from harassment impacting critical biological functioning and behaviors, such as feeding, mating, calving, or communicating, in a manner that reduces reproductive fitness or survivorship in enough individuals to negatively affect population rates. The loss or serious injury of an individual, or significant reductions in health or reproductive rates, could trigger population impacts if birth rates or emigration do not offset the loss of individuals. For this proposed activity, impacts to marine mammals would occur through noise exposure from use of airguns, other geotechnical equipment and associated increases in ambient noise. Prolonged or repeat exposure could lead to physiological effects or behavioral disruption, though the magnitude of impact depends on multiple factors, including biological (e.g., age, sex) and behavioral state (e.g., diving, directionality of the individual at the time of exposure) of the marine mammal(s), as well as characteristics of the sound source and physical environment (e.g., bottom type, weather). However, due to the required mitigation and monitoring and transitory portions of impactful parts of the activity (i.e. seismic activity) and intermittent nature of the remaining development activities, prolonged or repeated exposure of a nature that would impact

individual fitness is not anticipated; and NMFS does not anticipate the activity having adverse effects on marine mammal species or stocks.

12. Can the proposed action reasonably be expected to adversely affect managed fish species?

NMFS expects issuing regulations and LOAs to Hilcorp for the take of marine mammals incidental to conducting O&G activities to cause short-term minor adverse impacts to some managed fish species. No gear type associated with the surveys is anticipated to physically impact important habitat for managed fish species. Individual fish may be directly impacted by noise from use of airguns but such impacts are expected to be limited to temporary displacement. In addition, marine mammals are not a prey component of managed fish species in this area, so authorizing the incidental take of marine mammals will not reduce the quantity and/or quality of EFH.

13. Can the proposed action reasonably be expected to adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

Effects of NMFS' action—the issuance of the final rule and LOAs—is limited to impacts to marine mammals and their habitat. The proposed surveys (i.e., 2D and 3D seismic surveys and the geohazard and geotechnical surveys) may result in temporarily elevated noise levels within the various locations throughout Cook Inlet but these surveys will be short in duration and intermittent within any specific areas. Therefore, authorizing the take of marine mammals is unlikely to affect water quality or substrate necessary to provide spawning, feeding, breeding or growth to maturity functions for managed fish. While drilling related activities may temporarily increase turbidity, waters in Cook Inlet are notoriously turbid and this elevation in turbidity is unlikely to be detectable or impactful, as well as being temporary in nature.

In accordance with 2017 guidance issued by NMFS' Office of Habitat Conservation concerning incidental take authorizations and EFH, we determined the issuance of the regulations and LOAs will not result in adverse impacts to EFH and, further, that it will not require separate consultation per Section 305(B)(2) of the MSA as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267).

14. Can the proposed action reasonably be expected to adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

We do not expect our action to impact any vulnerable marine ecosystems, nor any aspects of biodiversity or functioning of marine ecosystems, in a significant manner. As described elsewhere in this document, the impact from our action is limited to impacts to marine mammals and their habitat, due to the potential increased noise levels into the marine environment during the O&G activities. The scientific literature does indicate that impacts to marine mammal habitat, in the form of effects to marine mammal prey species, is possible. For example, one recent study investigated zooplankton abundance, diversity, and mortality before and after exposure to airgun noise, finding that the exposure resulted in significant depletion for more than half the taxa present and that there were two to three times more dead zooplankton after airgun exposure compared with controls for all taxa. However, in order to have significant impacts on species such as plankton, the spatial or temporal scale of impact must be large in comparison with the ecosystem concerned. Therefore, while the effect observed in this study is of concern, it would likely warrant greater concern particularly where repeated noise exposure in an area is expected (which it is not here) and, given

questions about these findings, further study is warranted. Additional studies have shown that some fish and invertebrate species may experience displacement or behavioral changes as a result of acoustic exposure from airgun surveys, such as temporary displacement or cessation in vocalization. However, any noise impact is expected to be sporadic, temporary, and localized given a mobile sound source over a broad area. Thus, short-term minor adverse effects are likely to occur but are not expected to rise to the level of significance. As noted, we do not anticipate significant physical interactions from O&G activities on the environment, other than temporary benthic disturbance and temporarily increased turbidity, and do not expect that noise production from the O&G activities would impact coastal ecosystems.

15. Can the proposed action reasonably be expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

We do not expect our action to have a substantial impact on biodiversity or ecosystem functioning within the affected environment. The effects of our proposed action are expected to be limited to behavioral response, masking or stress. These effects are anticipated to be short term and localized. Current research indicates that some fish species and other marine mammal prey (e.g., squid, zooplankton) can be affected by ocean noise, though the degree of impact depends on many environmental and biological conditions. Any potential impacts to fish are expected to be temporary and localized, and result in short-term displacement at most. Other recent studies show potential impacts on zooplankton, which forms the basis of many food webs, but while there is some scientific disagreement on impacts to zooplankton from this activity (see discussion in response to prior question), there is little doubt that impacts are not expected to affect predator-prey relationships or otherwise impact any form of benthic productivity.

16. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

The proposed O&G activities do not involve methods known or likely to result in the introduction or spread of non-indigenous species, such as through ballast water exchange. Hilcorp is required to follow strict protocols to prevent the introduction, continued existence, or spread of noxious organisms or other non-native species. Therefore, it is not likely that NMFS's issuance of these regulations and LOAs would promote or result in the introduction or spread of invasive species at a level that would reach significance under NEPA.

V. CONDITIONS – MITIGATION, MONITORING AND REPORTING

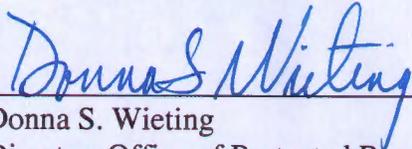
NMFS does not authorize Hilcorp's oil and gas activities, however, NMFS does authorize the incidental take of marine mammals under its jurisdiction in connection with these activities and prescribes, where applicable, the methods of taking and other means of effecting the least practicable impact on the species and stocks and their habitats. NMFS's issuance of these regulations and LOAs is thus conditioned upon reporting requirements and the implementation of mitigation and monitoring designed to reduce impacts to marine mammals to the level of least practicable impact. These conditions summarized below are described in detail in the "Mitigation" and "Monitoring" sections of the regulations and LOAs and in Chapter 2.3 of the EA.

Mitigation includes: visual monitoring before, during, and after oil and gas activities described in Hilcorp's application, use of a mitigation vessel with an additional observer during seismic

surveying, use of aircraft to scan the intended seismic area for beluga whales daily before airgun ramp up, as well as exclusion zones of biologically significant areas. Observers monitor in accordance with the required information described in the "Monitoring" section of the final rule and submit reports to NMFS weekly, monthly, and at the end of each activity year.

VI. DETERMINATION

Based on the information presented herein along with the analysis in the Final EA and Hilcorp's application, it is hereby determined the issuance of the final rule and LOA to Hilcorp will not significantly impact the quality of the human environment. In addition, we addressed all beneficial and adverse impacts of the action to reach the conclusion of no significant impacts associated with NMFS's issuance of this final rule and LOA. Accordingly, the preparation of an Environmental Impact Statement for this action is not necessary.



Donna S. Wieting
Director, Office of Protected Resources

JUL 17 2019

Date