25 June 2019

Ms. Jolie Harrison, Chief
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3225

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's (NMFS) 29 May 2019 notice (84 Fed. Reg. 24926) and the April 2018 application submitted by Hilcorp Alaska, LLC (Hilcorp) seeking issuance of regulations under section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA). The taking would be incidental to construction, operation, and maintenance of the Liberty Drilling and Production Island (LDPI) in the Beaufort Sea, Alaska. The Commission previously submitted informal comments to NMFS on its notice of receipt of Hilcorp's application for a letter of authorization (83 Fed. Reg. 21276). Multiple comments were not incorporated into NMFS's proposed rule and are repeated herein.

Background

Hilcorp is proposing to construct and operate the LDPI on an artificial gravel island in Foggy Island Bay approximately 8 km offshore. Construction of the gravel island would involve installation of a steel sheet pile wall around the perimeter of the island in Year 1, followed by installation of 16 steel conductor pipes within the interior of the island in Years 1 and possibly 2. The sheet pile and the conductor pipes would be installed using vibratory and impact hammers and would occur during the ice-covered season and for up to two weeks during the open-water season. Sound also would be generated by equipment used for slope shaping and armoring during the open-water season of Year 1 and possibly Year 2. A sub-sea pipeline would be installed using an excavator from the island to shore during the ice-covered season of Year 2. Construction and maintenance of four ice roads would occur during the ice-covered season of Years 1 and 2, with only one road constructed annually in subsequent years. Drilling of 10 wells and production would commence in Year 3 and continue for the remainder of the regulatory period. Activities under this proposed rule would occur from 1 December 2020 through 30 November 2025.

NMFS preliminarily has determined that the proposed activities could cause Level A and B harassment of small numbers of six species of marine mammals and could cause mortality and serious injury of ringed seals. NMFS believes that the total taking would have a negligible impact on the species or stocks and that the potential for taking would be at the least practicable level because of the proposed mitigation measures. The proposed mitigation, monitoring, and reporting measures as stipulated in the preamble include—

- using two island-based protected species observers (PSOs) to monitor the Level A and B harassment zones during the open-water season for 30 minutes before, during, and for 30 minutes after pile- and pipe-driving and slope shaping;
- using a third island-based PSO to deploy an unmanned aircraft system (UAS)[1] to monitor the extent of the Level B harassment zones during the open-water season for 30 minutes before, during, and for 30 minutes after pile- and pipe-driving and slope-shaping activities;
- using an island-based PSO to monitor the Level B harassment zone in the month of August during drilling activities;
- using standard soft-start and delay procedures during pile- and pipe-driving activities;
- ceasing pile- and pipe-driving activities[2] if any marine mammal comes within 10 m of the equipment;
- ceasing pile- and pipe-driving activities immediately if a bowhead or gray whale enters the Level A harassment zone;
- ceasing pile- and pipe-driving activities after the pile driving is completed if a beluga whale or pinniped enters the Level A harassment zones[3];
- delaying or shutting down pile-driving and -removal[4] activities immediately if a species for which taking has not been authorized, or for which authorized numbers of takes have been met, approaches or is observed within the Level B harassment zone;
- initiating ice road construction prior to 1 March to avoid potential crushing of ringed seals in their lairs[5];
- prohibiting the approach of vessels or operation of heavy machinery within 10 m of an ice seal sighted near or on the island to minimize the likelihood of physical injury or mortality of seals;
- conducting on-ice activities at least 150 ft[6] from any observed ringed seal or ringed seal lair[5];
- ceasing all impact driving during the Nuiqsut Cross Island bowhead whale hunt;

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[1] If UAS deployment is not possible, the third PSO would monitor for marine mammals from a vessel located at the edge of the Level A harassment zone.

[2] NMFS informally indicated that this measure would apply to all construction activities. NMFS also acknowledged that the majority of the proposed shut-down zones for pile and pipe driving are larger than 10 m and that it would revise this measure in the final rule.

[3] Additional pile driving may not be initiated until the animal has left the Level A harassment zone.

[4] The Commission notes that Hilcorp is not proposing to conduct pile-removal activities and that this measure should instead specify Hilcorp's proposed activities during the time period covered by this proposed rule (i.e., construction, drilling, and production).

[5] This requirement was identified in the preamble and included along with other provisions in Hilcorp's Ice Road and Ice Trail Best Management Practices (BMPs), but was not included in the proposed rule. Instead, NMFS indicated in the proposed rule that Hilcorp must implement the BMPs and Wildlife Action Plan, which would be updated as needed throughout the life of the regulations. This proposed approach is discussed further herein.

[6] Hilcorp's application and section 2.1.4.1 of Hilcorp's marine mammal mitigation and monitoring plan (4MP) referenced a distance of 150 m for similar provisions, whereas the preamble and Hilcorp's BMPs referenced 150 ft. The proposed regulatory text does not reference this measure at all. This and other apparent typographical errors, inconsistencies, and omissions in the *Federal Register* notice are noted in the Addendum. The avoidance distance is discussed further herein.

- conducting passive acoustic monitoring (PAM) during the open-water season during Years 1 through 4[7] to verify the extents of the Level A and B harassment zones[8] and to monitor ambient sound during non-project activities;
- conducting PAM using handheld hydrophones deployed through the ice during the ice-covered season to collect data on the presence of marine mammals and on sound levels generated during pile-driving activities[5];
- implementing vessel and aircraft restrictions, as appropriate, to avoid interactions with marine mammals;
- avoiding transit of vessels within designated North Pacific right whale critical habitat and remaining at least 800 m from a North Pacific right whale and 5.5 km from Steller sea lion rookeries or major haulouts;
- reporting injured and dead marine mammals to the NMFS Office of Protected Resources and the Alaska Regional Stranding Coordinator using NMFS's phased reporting approach and suspending activities, if appropriate; and
- submitting to NMFS a marine mammal and acoustic summary report at the end of each season and a final five-year comprehensive report.

Availability of marine mammals for subsistence use

Based on the timing and location of the proposed activities and of subsistence hunting in the project area, NMFS preliminarily has determined that the proposed mitigation measures provide the means of effecting the least practicable impact on the availability of marine mammals for subsistence use by Alaska Natives. Hilcorp provided NMFS with a plan of cooperation (POC) in April 2018 identifying measures that it had taken since 2014, and was continuing to take, to minimize adverse effects on the availability of marine mammals for subsistence purposes. The POC included summaries of meetings with affected North Slope subsistence communities, the Alaska Eskimo Whaling Commission, the North Slope Borough Planning and Wildlife departments, and Native allotment owners whose property is in proximity to the proposed activities. Measures to reduce the likelihood of impacts on marine mammals or subsistence hunting include many of the measures previously referenced, such as conducting ice road and island construction activities when marine mammals are least likely to be present, ceasing all impact pile driving during the Nuiqsut bowhead whale hunt, using PAM and UAS to supplement visual monitoring by PSOs, as well as supporting communications infrastructure[9], supporting the Cross Island whaling study and whaling activities at Cross Island, and signing a conflict avoidance agreement with the Alaska Eskimo Whaling Commission.

Level A harassment zones

As the Commission has indicated in previous letters, it supports NMFS's use of the updated permanent threshold shift (PTS) thresholds and associated weighting functions to estimate the Level A harassment zones. However, there are some shortcomings that need to be addressed regarding the

[7] NMFS will determine whether PAM is required during Year 5 based on the results of PSO and PAM monitoring in previous years.
[8] Acoustic recording devices consist of long-term, bottom-mounted hydrophones and would not be retrieved until the end of each open-water season.
[9] To enhance communication between Cross Island whaling captains and industry operators.

methodology for determining the extent of the Level A harassment zones based on the associated PTS cumulative SEL (SEL_{cum}) thresholds for the various types of sound sources, particularly for stationary sound sources. For determining the range to the SEL_{cum} thresholds, NMFS uses a baseline accumulation period of 24 hours unless an activity would occur for less time (e.g., 8 hours). The Commission supports that approach *if* an action proponent is able to conduct more sophisticated sound propagation and animat modeling. However, that approach is less than ideal for action proponents that either are unable, or choose not, to conduct more sophisticated modeling.

As an example, the Level A harassment zone for low-frequency cetaceans was estimated to be greater than the Level B harassment zone during open-water impact pipe driving (870 m[10] vs. 315 m, respectively). Based on the extent of those zones, it is assumed that an animal would experience PTS before responding behaviorally and leaving or avoiding the area. That notion runs counter to the logic that permanent and temporary physiological effects are expected to occur closest to the sound source, with behavioral responses triggered at lower received levels, and thus at farther distances. Specifically, the Level A and B harassment zones do not make sense biologically or acoustically due to NMFS's unrealistic assumption that the animals remain stationary throughout the entire day of the activity[11]. By assuming a stationary receiver, all of the energy emitted during a 24-hour period is accumulated for the SEL_{cum} thresholds.

The Commission continues to believe that NMFS should consult with scientists and acousticians to determine the appropriate accumulation time that action proponents should use to determine the extent of the Level A harassment zones based on the associated SEL_{cum} thresholds in such situations[12]. Those zones should incorporate more than a few hammer strikes (or acoustic pulses) but less than an entire workday's worth of strikes (or pulses). This recommendation is the same as that made in the Commission's 11 July 2017 letter on NMFS's final Technical Guidance and numerous previous letters. Other federal agencies, including the Navy, have made similar recommendations. Since the Commission and other federal agencies have determined that this issue needs resolution, the Commission recommends that NMFS make this issue a *priority* to resolve in the near future. The Commission understands that NMFS formed an internal committee to address this issue but believes that external expertise also is needed to resolve it. Therefore, the Commission again recommends that NMFS consult with external scientists and acousticians to determine the appropriate accumulation time that action proponents should use to determine the extent of the Level A harassment zones based on the associated SEL_{cum} thresholds for the various types of sound sources, including stationary sound sources. Estimated swimming speeds of various species and behavior patterns (including residency patterns)[13] should be considered. More specifically, animat modeling that considers various scenarios should be used to address this issue. This is especially important for ensuring that NMFS's assumptions regarding the appropriate accumulation time conform to real-world scenarios.

[10] As noted in the Addendum, this distance was incorrectly identified in Table 5 as 87 m.
[11] Which generally has been more of an issue for stationary sound sources. However, this also could be an issue for moving sound sources that have short distances between transect lines, in which the user spreadsheet may not be appropriate for use unless the source level could be adjusted accordingly.
[12] Those situations should consider both open-water and ice-covered conditions for pinnipeds that occur in the Arctic.
[13] Results presented in monitoring reports, including data on animal responses, submitted in support of incidental harassment authorizations issued by NMFS also may inform this matter.

Specification of inputs used in take estimation

NMFS includes in all proposed rules and proposed incidental harassment authorizations the duration of each proposed activity. NMFS also specifies the inputs used to estimate takes by Level A and B harassment. Those inputs include the size of the areas expected to exceed the Level A and B harassment thresholds for each activity, the densities of marine mammals expected to occur in the area by season[14], and the number of days each activity is expected to occur in each season.[15] For this proposed rule, seasonal marine mammal densities were provided in the preamble and in Tables 7-10. The ensonified areas used to estimate Level A harassment takes were included in Table 5 but the ensonified areas used to estimate Level B harassment takes were omitted from Table 6[16]. Additionally, the number of days that each proposed activity would occur and when each would occur were not identified in the preamble, with the exception of 15 days indicated for impact driving of sheet piles during the open-water season[17]. NMFS provided those inputs to the Commission in a spreadsheet which was not publicly available. Without full access to the information NMFS used to estimate takes by Level A and B harassment for all proposed activities, it is not possible for the public to determine how many days each activity would occur and when, verify the accuracy of the take estimates, or assess whether those estimates are sufficient.

Further, some of the information in the preamble regarding timing of activities does not match the information contained in NMFS's spreadsheet. For example, NMFS indicated that island construction would be conducted primarily during winter (84 Fed. Reg. 24928). However, NMFS's spreadsheet indicated that island construction would commence in winter, with the majority of pile driving occurring in spring and the remainder in summer, and slope shaping occurring through the end of summer. For these reasons, the Commission recommends that NMFS include in the preamble of the final rule all of the inputs it used to estimate takes by Level A and B harassment, including the type of activity that will occur during each season[14] and the number of days each season that each activity will occur—such information should be included in all future proposed rules and proposed authorizations.

Appropriateness of the Level A and B harassment takes

Level A harassment takes—NMFS proposed to authorize five Level A harassment takes of ringed seals during Year 1. However, the preamble stated that impact driving of sheet piles could occur on up to 15 days during the open-water season. Given that (1) ringed seals are expected to remain in the project area during the open-water season, (2) the size of the Level A harassment zone during impact driving of sheet piles is 526 m[18], and (3) Hilcorp would not be required to shut down its pile-

[14] Based on winter, spring, summer, and fall rather than the ice-covered and open-water seasons.
[15] Additional information is required to estimate Level A harassment takes.
[16] NMFS has since indicated that the ensonified areas associated with Level B harassment would be included in the final rule.
[17] Rather than noting that pile-driving activities could occur during the open-water season (84 Fed. Reg. 24954), it would have been useful for NMFS to clarify that, if pile-driving activities were to occur during the open-water season, they would occur for up to 15 days at the beginning of July. Thus, the takes of cetaceans should be minimized.
[18] Although the Commission understands that impact pile driving may not be continuous throughout the day, NMFS estimated the extents of the Level A harassment zones based on the total time pile driving could occur on a given day (i.e., 40 minutes). Thus, Hilcorp will be required to monitor and enumerate takes associated with the full extent of the Level A harassment zone based on those inputs, irrespective of whether an animal actually spends 40 minutes within the Level A harassment zone.

driving activities if a seal occurs in the Level A harassment zone, the Commission maintains that the number of Level A harassment takes for ringed seals have been underestimated. There is the potential for at least one ringed seal to be taken by Level A harassment each day that impact pile driving occurs, particularly since it appears that impact pile driving could occur intermittently throughout a given day. Moreover, ringed seals move considerable distances during the open-water season (see Kelly et al. 2010), thus different individuals could be taken each day. The Commission recommends that NMFS increase the number of Level A harassment takes of ringed seals from 5 to at least 15 during Year 1.

Level B harassment takes—The spreadsheet that NMFS provided to the Commission indicated that Level B harassment takes during vibratory pile driving of sheet piles in the open-water season were based on an ensonified area of 64 km^2 for each of the estimated 15 days of pile driving. However, 64 km^2 is the area associated with the southwest side of the island, which was the smallest of the ensonified areas associated with each of the five sides of the island specified in Table 6-9 of Hilcorp's application. The Commission understands that Hilcorp plans to install piles beginning at the north side of the island and to work its way around to the southwest side of the island. Although Hilcorp expects that it can install all of the piles during the ice-covered season and pile driving during the open-water season was included as a precaution, operational and weather delays routinely occur during construction projects. NMFS acknowledges this fact by noting that construction schedules are subject to delays for multiple reasons in the preamble (84 Fed. Reg. 24928). Unless Hilcorp can verify that vibratory pile driving would occur only on the southwest side of the island during the open-water season, the Commission recommends that NMFS revise the numbers of Level B harassment takes for all species to account for vibratory driving occurring at any of the five sides of the island during the open-water season and, unless Hilcorp has contrary data regarding how many days vibratory driving would occur at each of the five sides of the island, assume that pile driving would occur for three days at each of the five sides.

In addition, the preamble stated that Hilcorp requested, and NMFS proposed to authorize, two Level B harassment takes of gray whales annually (84 Fed. Reg. 24952). However, Table 11 included only one Level B harassment take of gray whales in any given year. Although the likelihood of a gray whale occurring near the project area is low, the Commission continues to believe that NMFS should be authorizing takes based on relevant group sizes. Two gray whale takes (rather than one) would account for the average group size of two or more gray whales as observed elsewhere in the Arctic (Clarke et al. 2017). The Commission recommends that NMFS increase the Level B harassment takes of gray whales from one to two annually in Years 1 through 5.

Similarly, Table 11 indicated that only one Level B harassment take of bowhead whales would be authorized annually in Years 2 through 5. That take estimate does not reflect the typical group size of two to five bowhead whales observed in the Beaufort Sea (Clarke et al. 2017). Therefore, the Commission recommends that NMFS increase the Level B harassment takes of bowhead whales to account for the typical group size of two to five whales annually in Years 2 through 5. Further, NMFS indicated that impact driving would be prohibited during the Nuiqsut Cross Island bowhead whale hunt. The timing of the start of that hunt may vary depending on when whales start migrating west, but usually occurs no earlier than mid-August. Although pile driving would occur if necessary for 15 days during the beginning of the open-water season, construction schedules are subject to delays as previously stated. If pile driving were to occur after the Nuiqsut Cross Island hunt, the numbers of bowhead whale takes may be underestimated since they occur in

greater numbers, and thus higher densities, in the fall (September through October). If there is a possibility that pile driving could occur after the Nuiqsut Cross Island hunt, the Commission recommends that NMFS re-estimate the number of Level B, as well as Level A, harassment takes for bowhead whales.

Mitigation, monitoring, and reporting measures

NMFS has proposed in section 217.34(c)(4) of the proposed rule that Hilcorp would be required to cease all pile- or pipe-driving activities if a bowhead whale or other low-frequency cetacean enters the *Level A harassment zone*. A related measure was included in that same section for beluga whales and pinnipeds[19]. Although NMFS indicated in the preamble that the *shut-down zones* equate to the *Level A harassment zones* provided in Table 5 (84 Fed. Reg. 24955), neither that specification nor the actual extents of the zones were included in the proposed rule. Further confusing this matter is the fact that the *shut-down zones* for beluga whales and pinnipeds during *pre-activity monitoring* are based on the Level A harassment zones but the 'minimum *shut-down zones*' *during pile- and pipe-driving* are specified in the proposed rule as 10 m (section 217.34(c)(1)). Therefore, the Commission recommends that NMFS specify in the final rule that the Level A harassment zones equate to the shut-down zones *and* the relevant circumstances when they apply.

In addition, NMFS indicated in the preamble and section 217.34(b) of the proposed rule that Hilcorp would be required to follow its BMPs and Wildlife Action Plan to minimize disturbance of ice seals (particularly ringed seals and their lairs) during ice road and island construction, maintenance, operation, and decommissioning[20]. However, the BMPs were not made available to the public for review on NMFS's website[21], as indicated in the preamble, until halfway through the public comment period, and then only after the Commission requested that they be made available. Portions of the Wildlife Action Plan were provided to the Commission yesterday, which is too late for a thorough review, and were not made available to the public at all. As a result, the Commission and other reviewers are unable to determine whether the measures stipulated in those documents are appropriate and sufficient for minimizing disturbance of ice seals. The Commission recommends that NMFS make the Wildlife Action Plan available to the public and provide an additional opportunity for review and comment on both the BMPs and the Wildlife Action Plan prior to issuing the final rule.

As noted, NMFS omitted some requirements stipulated in the preamble from its proposed rule. Those included requiring Hilcorp to (1) conduct PAM using a hand-held hydrophone deployed through the ice during the ice-covered season[22] and (2) include in its annual reports and final report an extrapolated total take estimate for each species based on the number of marine mammals

[19] If a beluga whale or pinniped enters the Level A harassment zone while pile driving is occurring, pile driving may continue until the pile is fully driven, but additional pile driving must not be initiated until the animal has left the Level A harassment zone.
[20] As noted previously, Hilcorp did not include decommissioning as a proposed activity for the five-year timeframe covered by the proposed rule.
[21] NMFS also indicated the wrong website address in the *Federal Register* notice to obtain Hilcorp's application, the BMPs, and other supporting documents.
[22] This is similar to the requirements in section 217.35(h) of the proposed rule for conducting PAM during the open-water season. If NMFS is including in the proposed rule specific requirements for PAM during the open-water season, a similar requirement should be included for PAM during the ice-covered season.

observed and the extent of the harassment zones during the various construction activities. The Commission believes that these requirements provide essential data both for determining sound propagation during in-ice conditions for the various sound-producing activities and for more accurately enumerating the numbers of marine mammals taken to ensure that the authorized limits are not exceeded. As such, the Commission recommends that NMFS include the above-stated requirements in the final rule.

Peer review panel recommendations

NMFS convened a peer review panel in May 2018 to review Hilcorp's 4MP, as required by the MMPA. The peer review panel made several recommendations to minimize the number of Level A harassment takes and to enhance monitoring for marine mammals. The Commission commends NMFS for working with Hilcorp to implement the peer review panel's recommendations by—

- reviewing past incidents of seal presence and disturbance around island and ice road construction projects in the Beaufort Sea and using that and other information to develop its BMPs to monitor for, and minimize disturbance of, ice seals (primarily ringed seals and their lairs) during island and ice road construction, maintenance, use, and decommissioning;
- consulting with biologists at NMFS's Marine Mammal Laboratory and other institutions familiar with using UAS technology to study marine mammals to determine the appropriate UAS protocols and procedures for the proposed project[23];
- reconfiguring the locations of the acoustic recorders to enhance the utility of PAM data collected during the open-water season, as well as ambient sound during periods when Hilcorp's activities are not occurring;
- deploying hand-held hydrophones through the ice to collect PAM data during the ice-covered season; and
- signing a conflict avoidance agreement with the Alaska Eskimo Whaling Commission to minimize disturbance of bowhead whales and whaling activities.

As noted previously and in the Addendum, there are contradictory references regarding the distance at which Hilcorp must avoid ringed seals and ringed seal lairs during ice road and island construction activities in Hilcorp's application, 4MP, BMPs, the preamble, and the proposed rule. The peer review panel evaluated a minimum avoidance distance of 150 m based on section 2 of Hilcorp's draft 4MP (dated April 2018)[24] rather than 150 ft, which is noted in the preamble and BMPs. The panel had recommended increasing the 150-m distance to 300 m based on concerns that the proposed 150-m avoidance distance may be inadequate for preventing disturbance of seals in lairs. NMFS did not discuss that recommendation in the preamble, nor did it propose to require Hilcorp to implement a 150-m avoidance distance. Additionally, there was no discussion of the panel's recommendation that Hilcorp investigate the availability of laser range finders that would improve the resolution and range of detections of marine mammals beyond 600 m. The Commission recommends that NMFS ensure the minimum distance specified in the final rule, 4MP, and BMPs for avoidance of ringed seals and lairs is at least 150 m, not 150 ft. The Commission

[23] However, no mention was made of how Hilcorp would comply with Federal Aviation Administration (FAA) requirements for UAS operations (at 14 C.F.R. §107), including maximum altitude requirements. Hilcorp indicated it would operate at altitudes up to 500 ft. Unless a waiver is obtained, the FAA restricts UASs from flying above 400 ft.
[24] Which is consistent with section 11.2.1 of Hilcorp's application.

further recommends that NMFS clarify in the preamble to the final rule its rationale for not incorporating the peer review panel's recommendations to (1) increase the avoidance distance for ringed seals and lairs to 300 m and (2) investigate the availability of laser range finders that would improve the resolution and range of detections of marine mammals beyond 600 m.

Please contact me if you have questions regarding the Commission's recommendations.

Sincerely,

Peter O. Thomas, Ph.D.,
Executive Director

References

Clarke, J.T., A.A. Brower, M.C. Ferguson, and A.L. Willoughby. 2017. Distribution and relative abundance of marine mammals in the eastern Chukchi and western Beaufort Seas, 2016: Annual report. OCS Study BOEM 2017-078, NMFS Marine Mammal Laboratory, Seattle, Washington. 462 pages.

Kelly, B.P., J.L. Bengtson, P.L. Boveng, M.F. Cameron, S.P. Dahle, J.K. Jansen, E.A. Logerwell, J.E. Overland, C.L. Sabine, G.T. Waring, and J.M. Wilder. 2010. Status review of the ringed seal (*Phoca hispida*). NOAA Technical Memorandum NMFS-AFSC-212, National Marine Mammal Laboratory, Seattle, Washington. 265 pages.

Addendum

Typographical errors, inconsistencies, and omissions include—

- Table 5 incorrectly specified that the Level A harassment zone was 87 rather than 870 m for low-frequency cetaceans during impact driving of conductor pipes.
- Table 6 specified that the median Level B harassment zone was 2.05 km rather than 2.5 km for impact driving of sheet piles.
- The preamble stated that the first dedicated summer survey began in the Aerial Surveys of Arctic Marine Mammals (ASAMM) study area in 2012, in mid-July (84 Fed. Reg. 24951). However, the summer survey effort began in July 2011, based on Clarke et al. (2012).
- The preamble also stated that NMFS monitored for marine mammals on effort for 7,990 km and 9,244 km, for summer and fall, respectively, from 2011 through 2016 (84 Fed. Reg. 24951). That statement should be revised to reflect the data in Table 7 of the *Federal Register*, which indicated that NMFS observed for marine mammals on effort for 19,993 km and 11,047 km for summer and fall, respectively, from 2011 through 2017.
- Table 9 indicated that the average number of beluga whales per km was zero for each season, rather than 0.0303 for summer and 0.0020 for fall.
- Table 11 omitted the two proposed mortality takes of ringed seals.
- The preamble stated that any ringed seal or known lair would be avoided within 150 ft of construction, maintenance, or decommissioning activities (84 Fed. Reg. 24958) rather than 150 m as noted in Hilcorp's application and 4MP.
- Section 217.34(c)(3) of the proposed rule included the condition that NMFS may adjust the shut-down zones pending review and approval of an acoustic monitoring report. However, section 217.34(c)(3) is related to monitoring zones and not shut-down zones. That condition should be included in 217.34(c)(2) of the final rule that pertains to shut-down zones.
- Section 217.35(a) of the proposed rule stipulated that all marine mammal and acoustic monitoring must be conducted in accordance to Hilcorp's 4MP. However, the 4MP does not include specifics associated with the acoustic monitoring plan but merely references Hilcorp's acoustic monitoring plan that includes details regarding the methodology and analyses that would be conducted. Section 217.35(a) of the final rule should stipulate that all marine mammal and acoustic monitoring must be conducted in accordance with Hilcorp's 4MP *and* its acoustic monitoring plan.

Reference

Clarke, J.T., C.L. Christman, A.A. Brower, and M.C. Ferguson. 2012. Distribution and relative abundance of marine mammals in the Alaskan Chukchi and Beaufort Seas, 2011: Annual report. OCS Study BOEM 2012-009, NMFS National Marine Mammal Laboratory, Seattle, Washington. 344 pages.