DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XC359]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Tugs Towing Drill Rig in Cook Inlet, Alaska

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of incidental harassment authorizations.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued two incidental harassment authorizations (IHAs) to Hilcorp Alaska LLC to incidentally harass, by Level B harassment only, marine mammals during tugs towing jack-up rig activity in Cook Inlet, Alaska.

DATES: These authorizations are effective from September 14, 2022 through September 13, 2023 and September 14, 2023 through September 13, 2024.

FOR FURTHER INFORMATION CONTACT: Sara Young, Office of Protected Resources, NMFS, (301) 427–8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.* In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the ''take'' of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) 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 proposed or, if the taking is limited to harassment, a notice of a proposed incidental harassment authorization is provided to the public for review.

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 will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other ''means of effecting the least practicable adverse impact'' on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as ''mitigation''); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

NMFS previously issued Incidental Take Regulations (ITRs) to Hilcorp for a suite of oil and gas activities in Cook Inlet, Alaska (84 FR 37442, July 31, 2019) and issued three letters of authorization (LOAs) under those ITRs. The ITRs covered activities including: two-dimensional (2D) and three-dimensional (3D) seismic surveys, geohazard surveys, and vibratory sheet pile driving. On September 17, 2019, Cook Inletkeeper and the Center for Biological Diversity filed suit in the District of Alaska challenging NMFS's issuance of the ITRs and LOAs and supporting documents (the Environmental Assessment (EA) and Endangered Species Act (ESA) Biological Opinion). In a decision issued on March 30, 2021, the court ruled largely in NMFS's favor, but found a lack of adequate support in NMFS's record for the agency's determination that tug towing of drill rigs in connection with production activity will not cause take of beluga whales and remanded back to NMFS for further analysis of tug use under the MMPA, ESA, and National Environmental Policy Act (NEPA).

Hilcorp notified NMFS that all activities described in their initial ITR application (2018) and for which incidental take was authorized have already been completed or will not be completed under the ITRs. Accordingly, NMFS has begun the process of withdrawing the 2019 ITRs. As a result, the only remaining activity to be analyzed for incidental take and authorization thereof is the use of tugs towing a jack-up rig.

On January 13, 2022, NMFS received a request from Hilcorp for two back-to-back IHAs to take marine mammals incidental to tugs towing a drill rig in Cook Inlet, Alaska. The application was deemed adequate and complete on March 8, 2022. Hilcorp's request is for take of small numbers of 12 species of marine mammals by Level B harassment only. Neither Hilcorp nor NMFS expects serious injury or mortality to result from this activity and, therefore, IHAs are appropriate.

As described in our **Federal Register** notice of proposed IHAs (87 FR 27597, May 9, 2022), NMFS considered the potential effects of tug towing a jack-up rig on marine mammals. The slow, predictable, and generally straight path of this tug configuration makes it unlikely that marine mammals would be exposed to the tugs towing a jack-up rig such that harassment would occur. However, there is overall potential for exposure in combination with the nature of the tug and jack-up rig configuration (*e.g.,* difficult to maneuver, potential need to operate at night), making it possible that take could occur over the total estimated period of tug activities. Because of this possibility, NMFS proposed take by Level B harassment from Hilcorp's use of tugs towing a jack-up rig in Cook Inlet, Alaska.

In a letter dated April 28, 2022, Hilcorp notified NMFS of their need to begin tugging the jack-up rig in May due to depleted energy reserves for the Southcentral Alaska region. NMFS concurred with Hilcorp's assessment that take of marine mammals by Level B harassment was unlikely to occur incidental to the transport of the jack-up rig from the Rig Tender's Dock in Nikiski to the Tyonek platform in middle Cook Inlet, as described in Hilcorp's letter. Hilcorp completed one move of their jack-up rig during the time that NMFS processed the request for IHAs; this rig move was included in Hilcorp's original application and was factored into our exposure estimate calculations accordingly. We have therefore removed that portion of the rig move from our analysis as it was already completed. Please refer to the Changes from Proposed IHAs to Final IHAs section later in this document for additional discussion. Below we discuss the IHAs as issued.

Description of Activity

Overview

Hilcorp Alaska, LLC (Hilcorp) plans to carry out activities that will occur during two separate consecutive one-year IHA periods—from September 1, 2022, to August 31, 2023 (Year 1), and from September 1, 2023, to August 31, 2024 (Year 2). Hilcorp plans to use three

ocean-going tugs to tow a jack-up rig in support of plugging and abandonment (P&A) of an existing well and to support production drilling at other locations in middle Cook Inlet and Trading Bay over the course of 2 years.

Dates and Duration

The schedule for Hilcorp's P&A and production drilling activities is provided in Table 1 below. The noise-producing rig-towing activities for which take is authorized would occur in between those activities, for approximately 14 days per year for Year 1 and 16 days for Year 2.

TABLE 1—DATES AND DURATIONS OF PLANNED ACTIVITIES IN COOK INLET

Project type	Cook Inlet region	Timing	Duration of activity *
Year 1:			
Plug and Abandonment of Well 17589.	Middle Cook Inlet	April–November	30 days.
Production Drilling	Middle Cook Inlet Trading Bay	April–November	180 days.
Year 2:			
Production Drilling	Middle Cook Inlet Trading Bay	April–November	180 days.

* Duration is in reference to the supported activity that requires the jack-up rig to be in a specific location. It is not reflective of the duration or the number of days the jack-up rig is towed.

Specific Geographic Region

Hilcorp's activities will take place in Cook Inlet, Alaska. For the purposes of this project, lower Cook Inlet refers to waters south of the East and West Forelands; middle Cook Inlet refers to waters north of the East and West Forelands and south of Threemile River on the west and Point Possession on the east; Trading Bay refers to waters from approximately the Granite Point Tank Farm on the north to the West Foreland on the south; and upper Cook Inlet refers to waters north and east of Beluga River on the west and Point Possession on the east. A map of the specific area in which Hilcorp plans to operate is provided in Figure 1 below.

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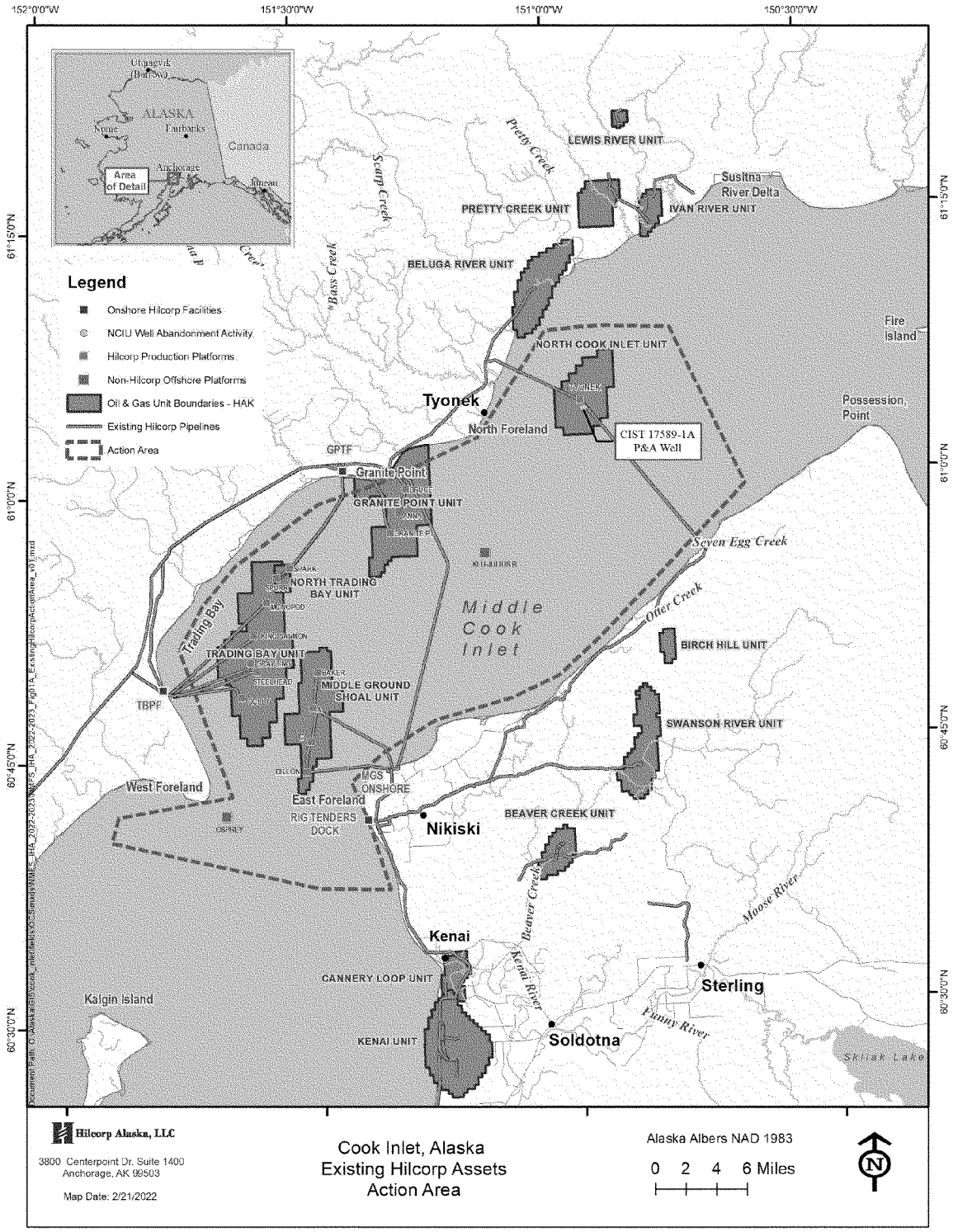

Figure 1 -- Map of Hilcorp's Activity Location

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Detailed Description of Specific Activity

Hilcorp plans to use three tugs to pull and position a jack-up rig in support of well plugging and abandonment (P&A) and support of production drilling by using the rig as a temporary drilling platform. Hilcorp plans to use the jack-up rig Spartan 151, or similar. A jack-up rig is a type of mobile offshore drill unit used in offshore oil and gas drilling activities. It is comprised of a buoyant mobile platform or hull with moveable legs that are adjusted to raise and lower

the hull over the surface of the water. The Spartan 151 (or similar) will be towed via three ocean-going tugs. The horsepower (hp) of each of the three tugs used to tow the jack-up rig may range between 4,000 and 8,000. Three tugs are needed to safely and effectively pull the jack-up rig into the correct position where it can be temporarily secured to the seafloor. Specifications of the tugs anticipated for use are provided in Table 2 below. If these specific tugs are not available, the tugs contracted would be of similar size and power to those listed in Table 2.

TABLE 2—DESCRIPTION OF TUGS TOWING THE JACK-UP RIG

Vessel name	Specifications
M/V Bering Wind.	22-m length x 10-m breadth, 144 gross tonnage.
M/V Anna T ...	32-m length x 11-m breadth, 160 gross tonnage.
M/V Bob Franco.	37-m length x 11-m breadth, 196 gross tonnage.

The amount of time the tugs are under load transiting, holding, and positioning the jack-up rig in Cook Inlet is tide-dependent. The power output of the tugs depends on whether the tugs are towing with or against the tide and can vary across a tide cycle as the current increases or decreases in speed over time. Hilcorp will make every effort to transit with the tide (which requires lower power output) and minimize transit against the tide (which requires higher power output).

The jack-up rig will be transported via towing by three ocean-going tugs, with final demobilization at the Rig Tenders Dock in Nikiski, Alaska (where mobilization began). Towing the jack-up rig northward with an incoming tide or southward with an outgoing tide requires less than half power, generally only 20 to 30 percent of total power output (Durham 2021, pers. comm.). A high slack tide is preferred to position the jack-up rig on an existing platform or well site. The relatively slow current and calm conditions at a slack tide enable the tugs to perform the fine movements necessary to safely position the jack-up rig within several feet of the platform. Positioning and securing the jack-up rig is generally performed at high slack tide rather than low slack tide to pin the legs down at an adequate height to ensure the hull of the jack-up rig remains above the water level of the subsequent incoming high tide. Because 12 hours elapse between each high slack tide, tugs are generally under load for those 12 hours during rig mobilization and demobilization, even if the towed distance is small, as high slack tides are preferred to both attach and detach the jack-up rig from the tugs. Once the tugs are on location with the jack-up rig at high slack tide (12 hours from the previous departure), there is a 1 to 2-hour window when the tide is slow enough for the tugs to initiate positioning the jack-up rig and pin the legs to the seafloor on location. The tugs are estimated to be under load, generally at half-power conditions or less, for up to 14 hours from the time of departure through the initial positioning attempt of the jack-up rig. If the first positioning attempt takes longer than anticipated, the increasing current speed prevents the tugs from safely positioning the jack-up rig on location. If the first positioning attempt is not successful, the jack-up rig will be pinned down at a nearby location and the tugs will be released from the jack-up rig and no longer under load. The tugs will remain nearby, generally floating with the current. Approximately an hour before the next high slack tide, the tugs will re-attach to the jack-up rig and reattempt positioning over a period of 2 to 3 hours. Positioning activities are generally at half power. If a third attempt is needed, the tugs would be under load holding or positioning the jack-up rig on a second day for up to 5 hours. The vast majority of the time, the jack-up rig can be successfully positioned over the platform in one or two attempts.

A location-to-location transport (*e.g.,* platform-to-platform) of a jack-up rig is conducted similarly to the mobilization from the Rig Tenders Dock described above with one main difference. In a location-to-location transport in middle Cook Inlet or Trading Bay, there is no harbor available for temporary staging to avoid transiting against the tide. Maintaining position of the jack-up rig against the tidal current can require more than half power (up to 90 percent power at the peak tidal outflow). However, greater than half power effort is only needed for short periods of time during the maximum tidal current, expected to be no more than 3 hours maximum. During a location-to-location transport, the tugs will transport the jack-up rig traveling with the tide in nearly all circumstances except in situations that threaten human safety and/or infrastructure integrity. There may be a situation wherein the tugs pulling the jack-up rig begin transiting with the tide to their next location, miss the tide window to safely set the jack-up rig on the platform or pin it nearby, and so have to transport the jack-up rig against the tide to a safe harbor. Tugs may also need to transport the jack-up rig against the tide if large pieces of ice or extreme wind events threaten the stability of the jack-up rig on the platform.

Although the variability in power output from the tugs can range from an estimated 20 percent to 90 percent throughout the hours under load with the jack-up rig, as described above, the majority of the hours (spent transiting, holding, and positioning) occur at half power or less. See the Estimated Take section below for more detail on assumptions related to power output.

Year 1—For the first year of activity, Hilcorp will use three tugs to pull the jack-up rig for P&A of Well 17589, which began in 2021 but was not completed due to equipment sourcing issues. Prior to pinning the jack-up rig legs to the seafloor, a multi-beam sonar may be used to ensure the seafloor is clear of debris that may impact the ability to pin down the legs of the platform. The multi-beam echosounder emits high frequency (240 kilohertz (kHz)) energy in a fan-shaped pattern of equidistant or equiangular beam spacing. The multi-beam sonar operates at a frequency outside of marine mammal hearing range and is not addressed further in our analysis. After the rig is secure, divers enter the water and use hand tools to complete the P&A process. In addition to the hand tools, the divers will also use water jets to wash away debris and marine growth on the structure (*e.g.,* a CaviDyne CaviBlaster). Based on measurements conducted by Hilcorp during 2017 use of water jets, the source level for the CaviBlaster® was estimated as 176 decibels (dB) re 1 micropascal (μPa) root mean square (rms) with a Level B harassment threshold of 860 m, with most energy concentrated above 500 Hz with a dominant tone near 2 kHz. Hilcorp plans to put a protected species observer (PSO) on watch to monitor the full extent of the harassment zone and shutdown when a marine mammal approaches the zone during water jet use. Because of this, Hilcorp is not requesting take associated with water jet use and it is not considered further in our analysis.

Hilcorp also plans to tug the jack-up rig to existing platforms in middle Cook Inlet and Trading Bay in support of production drilling activities from existing platforms and wellbores. Production drilling itself creates some small level of noise due to the use of generators and other potentially noise-generating equipment. Furie Operating Alaska, LLC, performed detailed underwater acoustic measurements in the vicinity of the Spartan 151 in 2011

(Marine Acoustics Inc., 2011) northeast of Nikiski Bay in water depths of 24.4 to 27.4 m (80 to 90 ft). Primary sources of rig-based acoustic energy were identified as coming from the D399/D398 diesel engines, the PZ–10 mud pump, ventilation fans, and electrical generators. The source level of one of the loudest acoustic sources, the diesel engines, was estimated to be 137 dB re 1 μPa rms at 1 m in the 141 to 178 Hz frequency range. Based on this measured level, the 120 dB rms acoustic received level isopleth would be approximately 50 m away from where the energy enters the water (jack-up leg or drill riser). Sound source levels were also measured by JASCO (a company) for drilling and mud pumping from the Yost jack-up rig in 2016. The primary sources of continuous sounds measured from the Yost were drilling (158 dB) and mu167d pumping (148.4 dB), producing 120 dB isopleths of 330 and 225 meters, respectively. The acoustic energy of drilling noise was found to be predominantly under 500 Hz (Denes and Austin, 2016a). Denes and Austin (2016) did not record other rig-based activities including cementing, running casing, and tripping in and out of the hole with drill string; however, these activities may also produce sounds similar to mud pumping. There is open water in all directions from the drilling location. Additionally, Hilcorp plans to monitor the area around the drilling platform for 30 minutes prior to starting drilling activities and delay their activity if marine mammals are seen close to the platform. Any marine mammal approaching the rig would be fully aware of its presence long before approaching or entering the zone of influence for behavioral harassment, and we are unaware of any specifically important habitat features (*e.g.,* concentrations of prey or refuge from predators) within the rig's zone of influence that would encourage marine mammal use and exposure to higher levels of noise closer to the source. Given the absence of any activity-, location-, or species-specific circumstances or other contextual factors that would increase concern, we do not expect routine drilling noise to result in the take of marine mammals.

In support of these activities, helicopters and support vessels transit from the mainland to the production sites to mobilize personnel and supplies. Helicopters will fly at 1,500 ft (457 m) or higher unless human safety is at risk or it is operationally impossible (*e.g.,* takeoff and landing points are so close together the aircraft cannot reach 1,500 ft or 30 m). During take-off and landing of a helicopter, it is expected that only a small amount of sound would penetrate the water because the helicopter will be moving vertically over the helipad and most of the sound is reflected and does not penetrate at angles greater than 13 degrees from vertical. Additionally, the platforms that helicopters are navigating to/from are already 100 or more feet above sea level, further reducing potential for harassment of marine mammals such that take is not requested nor authorized. Vessel trips to and from the location of the jack-up rig are expected to increase by two trips per day above normal activity levels. Hilcorp plans to maintain watch for marine mammals during supply vessel trips, stay at least 100 yards (91 m) away from marine mammals, reduce speed in poor visibility, and handle supply vessels such that an encounter with a marine mammal is unlikely and additional take for supply vessel activities is not requested nor authorized.

Year 2—For the second year of activity, Hilcorp does not plan to conduct P&A activities with the jack-up rig and will only be tugging the jack-up rig in support of production drilling activities.

The specific configuration of tugs towing the jack-up-rig as used by Hilcorp has not been analyzed previously. Hilcorp contracted JASCO Applied Sciences to conduct a sound source verification (SSV) of their tugs in operation in Cook Inlet during October 2021. This SSV measured tugs pulling the jack-up-rig at various power outputs (Lawrence *et al.,* 2022). This SSV returned a source level of 167.3 dB re 1 μPa for the 20 percent power scenario and a source level of 205.9 dB re 1 μPa for the 85 percent power scenario. Assuming a linear scaling of tug power, a source level of 185 dB re 1 μPa was then calculated as a single point source level for three tugs operating at 50 percent power output. This is approximately five dB higher than the literature summary described below.

Hilcorp conducted a literature review of available source level data for tugs under load in varying power output scenarios. Table 3 below provides values of measured source levels for tugs varying from 2,000 to 8,200 horsepower. For the purposes of this table, berthing activities could include tugs either pushing or pulling a load. The sound source levels appear correlated to speed and power output, with full power output and higher speeds generating more propeller cavitation and greater sound source levels than lower power output and lower speeds. Additional tug source levels are available from the literature, but they are not specific to tugs under load (rather they measured values for tugs during activities such as transiting, docking, and anchor pulling). For a summary of these additional tug values, see Table 7 in Hilcorp's application.

TABLE 3—LITERATURE VALUES OF MEASURED TUG SOURCE LEVELS

Vessel	Vessel length (m)	Speed (knots)	Activity	Source level @1 m (re: 1 μPa)	Horsepower	Reference
Eagle	32	9.6	Towing barge	173	6,770	Bassett *et al.,* 2012.
Valor	30	8.4	Towing barge	168	2,400	
Lela Joy	24	4.9	Towing barge	172	2,000	
Pacific Eagle	28	8.2	Towing barge	165	2,000	
Shannon	30	9.3	Towing barge	171	2,000	
James T Quigg	30	7.9	Towing barge	167	2,000	
Island Scout	30	5.8	Towing barge	174	4,800	
Chief	34	11.4	Towing barge	174	8,200	
Lauren Foss	45	N/A	Berthing barge	167	8,200	Austin *et al.,* 2013.
Seaspan Resolution	30	N/A	Berthing at half power	180	6,000	Roberts Bank Terminal 2 Technical Report, 2014.
Seaspan Resolution	30	N/A	Berthing at full power	200	6,000	

The Roberts Bank Terminal 2 Technical Report (2014), although not in Cook Inlet, includes repeated measurements of the same tug operating under different speeds and loads. This allows for a comparison of source levels from the same vessel at half power versus full power, which is an important distinction for Hilcorp's activities, as a small fraction of the total time spent by tugs under load will be at greater than 50 percent power. The Seaspan Resolution's half-power berthing scenario has a sound source level of 180 dB re 1 μPa at 1 m. In addition, the Roberts Bank Report (2014) analyzed 650 tug transits under varying load and speed conditions and reported mean tug source levels of 179.3 dB re 1 μPa at 1 m, the 25th percentile was 179.0 dB re 1 μPa at 1 m, and 5th percentile source levels were 184.9 dB re 1 μPa at 1 m.

Based solely on the literature review, a source level of 180 dB for a tug under load would be appropriate. However, Hilcorp's use of a three tug configuration would increase the literature source level to approximately 185dB. As one or two tugs are primarily under load, the third tug sits off to the side. NMFS still considers these tugs to be simultaneous sources. When considered in conjunction with the additional tugs present in the configuration as well as the SSV conducted by JASCO for Hilcorp's specific configuration, a source level of 185 dB for tugs towing a jack-up rig was carried forward for analysis.

Mitigation, monitoring, and reporting measures are described in detail later in this document (please see **Mitigation** and **Monitoring** and **Reporting**).

Comments and Responses

A notice of NMFS's proposal to issue IHAs to Hilcorp was published in the **Federal Register** on May 9, 2022 (87 FR 27597). That notice described, in detail, Hilcorp's activity, the marine mammal species that may be affected by the activity, and the anticipated effects on marine mammals. During the 30-day public comment period, NMFS received comments from Hilcorp, the Bureau of Ocean Energy Management (BOEM), and the Center for Biological Diversity (CBD) in conjunction with Cook Inletkeeper and Kachemak Bay Conservation Society (this group comment letter is referenced as CBD throughout this notice). These letters are available online at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-hilcorp-alaska-llc-oil-and-gas-activities-cook-inlet-alaska-0.* A summary of the commenters' recommendations as well as NMFS' responses is below.

Comment 1: NMFS received comments about how the proposed IHAs would relate to the Incidental Take Regulations (ITRs) NMFS issued to Hilcorp in 2019 (84 FR 37442, July 30, 2019). CBD commented that NMFS cannot ''segment'' its MMPA analysis for the activities proposed under the IHAs from its authorization of Hilcorp's oil and gas activities under the 5-year ITRs. Additionally, Hilcorp requested that NMFS withdraw the ITRs.

Response: The activities for which take was analyzed in the ITRs have already occurred or, per Hilcorp, will not occur during the remaining period of the ITR, which currently expires on July 30, 2024. Because none of the activity for which take was authorized under the ITRs is planned to occur under the ITRs, NMFS and Hilcorp determined there would be no benefit to undertaking the process of re-evaluating the ITRs. Instead it was determined that IHAs under section 101(a)(5)(D) would be an efficient vehicle for addressing incidental take from tug activities in a timely fashion, should authorization be needed, particularly compared to the process for rulemaking under section 101(a)(5)(A).

Hilcorp accordingly applied for two IHAs and NMFS evaluated the potential for take of marine mammals incidental to the tug activity Hilcorp included in its application. Given the type of activity Hilcorp plans to conduct, the fact that any potential take would be in the form of Level B harassment, only, and the timeframe of those activities, IHAs are appropriate. This is the course of action NMFS would advise for any applicant planning to conduct 2 years of approximately 14 days and 16 days of take-related activity per year, respectively, with the potential to result in take by harassment only.

As indicated above, and at Hilcorp's request, NMFS is undertaking the process to withdraw the ITRs to reduce any confusion. NMFS will not issue any more LOAs pursuant to the ITRs to authorize take incidental to Hilcorp's tug towing activities. Thus there is no possibility for NMFS to authorize incidental take of beluga whales simultaneously through an IHA and the ITRs.

Comment 2: BOEM commented that NMFS' **Federal Register** (FR) notice did not discuss potential effects of helicopters and support vessels described in Hilcorp's application for IHAs and that NMFS may benefit from analysis of effects to marine mammals from these activities.

Response: NMFS briefly discussed these activities in the Detailed Description of Specific Activity in the notice of proposed IHAs, following the discussion of water jets. That paragraph includes a discussion of why these activities were not considered further.

Comment 3: BOEM commented that NMFS could add clarity as to why 185 dB was used as an estimated source level for the multi-tug configuration by referring readers to the JASCO monitoring report for the sound source verification of Hilcorp's sources.

Response: NMFS omitted this source inadvertently. We have now included Lawrence *et al.* (2022) in our references for further information regarding the sound source verification used to derive a source level of 185 dB for the three-tug combination.

Comment 4: BOEM commented that NMFS may want to consider effects to Pacific white-sided dolphins based on an acoustics report (Castellote *et al.,* 2020).

Response: Based on this report and other information described below, NMFS has added take of Pacific white-sided dolphins to our analysis and authorizations. See **Description of Marine Mammals in the Area of Specified Activities** section for more discussion of the species and why they are included in our analysis.

Comment 5: BOEM noted page 27621 of the notice of proposed IHAs listed requirements for monitoring of pile driving activities.

Response: These requirements were included in error and have been removed from the final notice.

Comment 6: Hilcorp commented that the notice of proposed IHAs and draft EA incorrectly refers to Hilcorp's planned tugging activities as the ''proposed activity'' when the proposed activity from NMFS' perspective is the proposed issuance of IHAs to take marine mammals incidental to Hilcorp's planned activities.

Response: Hilcorp is correct and NMFS has clarified Hilcorp's planned activities from NMFS' activities in all documents.

Comment 7: Hilcorp contests NMFS' characterization of the project area as a ''non-industrial setting'' prior to the onset of Hilcorp's tugging activities. The oil and gas facilities in Cook Inlet, including Hilcorp's platforms, have been active, with daily activities, for the past 60 years.

Response: NMFS agrees that this area is not pristine, as Hilcorp's platforms and development structures are already in existence. However, Hilcorp's activities will introduce additional anthropogenic activity into the area,

such as increased vessels around the platforms, helicopter trips for personnel, supplies, *etc.* NMFS has clarified the characterization of the action area accordingly.

Comment 8: Hilcorp recommended that NMFS more clearly describe why any incidental marine mammal harassment related to tug-towing activities is likely to be very low due to the characteristics of those activities in the notice of issuance of IHAs and final EA.

Response: NMFS agrees with Hilcorp's characterization that a multi-tug configuration under load moves in a slow, predictable pattern that is unlikely to surprise marine mammals in the area and, further, animals near industrial activities may become habituated to regular activities in the area, as has been shown for Cook Inlet belugas around the Port of Anchorage, for example (61 North Environmental, 2020). However, given the sources levels, there is still the potential that some belugas may behaviorally respond in a manner that would qualify as a take. NMFS characterizes the type of harassment (behavioral disturbance only) that may occur from tugs in this **Federal Register** notice and has authorized Level B harassment out of caution due to several combined factors, as described in the **Potential Effects of Specified Activities on Marine Mammals and their Habitat** section.

Comment 9: Hilcorp recommends that NMFS clearly express its finding that the incidental harassment levels for each IHA constitutes a ''small number'' for each marine mammal stock regardless of NMFS's ''one-third'' standard.

Response: NMFS has made a small numbers finding for each IHA individually. The quantitative rationale for determining these numbers are ''small'' is put forth in Table 15 below.

Comment 10: Hilcorp requests that NMFS clarify that the renewal process is not necessary for the Year 2 IHA to become effective. Hilcorp specifically applied for, and NMFS proposed to issue, two separate, stand-alone IHAs. The Year 2 IHA would not be a ''renewed'' version of the Year 1 IHA. Hilcorp anticipates no need for renewal of the Year 1 IHA and requests removal of the renewal provision from the IHAs.

Response: Hilcorp is correct that the Year 2 IHA is not dependent upon a renewal of Year 1 and is a completely separate authorization from the Year 1 IHA. NMFS issued the Year 1 IHA to Hilcorp effective through September 13, 2023. NMFS has also issued a Year 2 IHA to Hilcorp with effective dates from September 14, 2023 to August 13, 2024. Further, at Hilcorp's request, NMFS will not consider a renewal of the Year 1 IHA and has removed the renewal provision from these IHAs.

Comment 11: Hilcorp recommends that NMFS clarify whether or not the EA relies upon the NEPA regulatory amendments recently adopted by the Council for Environmental Quality (CEQ) that became effective on May 20, 2022 (87 FR 2,453, April 20, 2022).

Response: Per NMFS' internal guidance dated June 17, 2022, NEPA reviews for actions initiated after September 14, 2020, but prior to May 20, 2022, will be conducted according to the 2020 CEQ regulations. In accordance with this guidance, NMFS' Environmental Assessment for this action references the 2020 CEQ regulations.

Comment 12: Hilcorp suggested several corrections or changes for clarity or to improve accuracy throughout the FR notice. Hilcorp commented that NFMS incorrectly characterized the straight line towing distance in the Marine Mammal Hearing section of the proposed IHA notice as 37 km when the distance used in the analysis was 64 km (40 mi). Hilcorp also comments that use of the phrase ''approximately 7 km'' was confusing as that was an estimation of the diameter of the ensonified area and that 3.8 km radius is a more precise characterization of the analysis of the ensonified area.

Response: These errors and clarifications have been fixed for this notice of the final IHAs.

Comment 13: The Center for Biological Diversity (CBD) recommended that NMFS stop allowing take of Cook Inlet beluga whales unless and until the agency conducts a comprehensive evaluation of the numerous threats. They note that NMFS developed 5-year action plans for each of the ''Species in the Spotlight'' that outline short-term efforts vital for stabilizing their populations and preventing their extinction. The first of the ''Key Actions Needed 2016–2020'' in NMFS's Species on the Spotlight Cook Inlet Beluga Whale 5-Year Action Plan is ''Reduce the Threat of Anthropogenic Noise in Cook Inlet Beluga Whale Habitat.'' They further note that the NMFS' Recovery Plan for Cook Inlet beluga whales (2016) (Recovery Plan) lists tugboats as the highest noise threat to critically endangered species.

Response: NMFS shares CBD's concern regarding the impacts of human activities on Cook Inlet beluga whales and is committed to supporting the conservation and recovery of the species. Under section 101(a)(5)(D) of the MMPA, NMFS considers the at risk status of Cook Inlet beluga whales (and other species) in both the negligible impact analysis and through our consideration of impact minimization measures that will support the least practicable adverse impact on those species. For example, the Hilcorp final rule included shutdown zones for Cook Inlet beluga whales that extended well beyond standard shutdown zones all the way to the Level B harassment isopleth. However section 101(a)(5)(D) also mandates that NMFS ''shall issue'' an IHA if we are able to make the necessary findings for any specified activity for which incidental take is requested.

In accordance with our implementing regulations at 50 CFR 216.104(c), we use the best available scientific evidence to determine whether the taking by the specified activity within the specified geographic region will have a negligible impact on the species or stock and will not have an unmitigable adverse impact on the availability of such species or stock for subsistence uses. Based on the scientific evidence available, NMFS determined that the take incidental to Hilcorp's tugging of the jack-up rig, which is primarily acoustic in nature, transient, and of a low level, would have no more than a negligible impact and no unmitigable adverse impact on availability of marine mammals for subsistence uses. Moreover, Hilcorp proposed and NMFS has required in the IHAs a rigorous mitigation plan to further reduce potential impacts to Cook Inlet beluga whales and other marine mammals to the lowest level practicable. Protected species observers are required to conduct monitoring during all jack-up rig towing activity. Since publication of the proposed IHAs, aerial surveys have been incorporated to monitor for beluga presence when towing to or from the Tyonek platform as the more northern location is approaching an area of known Cook Inlet beluga whale use.

Our analysis indicates that issuance of these IHAs will not contribute to or worsen the observed decline of the Cook Inlet beluga whale population. Additionally, the ESA Biological Opinion determined that the issuance of these IHAs is not likely to jeopardize the continued existence of the Cook Inlet beluga whales or the western distinct population segment of Steller sea lions or to destroy or adversely modify Cook Inlet beluga whale critical habitat. The Biological Opinion also outlined Terms and Conditions and Reasonable and Prudent Measures to reduce impacts, which have been incorporated into the IHAs, including the aerial surveys discussed in the **Mitigation** section

below. Therefore, based on the analysis of potential effects, the parameters of the activity, and the rigorous mitigation and monitoring program, NMFS determined that the taking from the specified activity for Year 1 and for Year 2 would have a negligible impact on the Cook Inlet beluga whale stock.

Moreover, Hilcorp's jack-up rig towing activity would take only small numbers of marine mammals relative to their population sizes. Further, these takes represent one annual disturbance event for each of these individuals, or perhaps a few individuals could be disturbed a few times, in which case the number of impacted individual whales is even lower. As described in the **Federal Register** notice of proposed IHAs, NMFS used a method that incorporates density of marine mammals overlaid with the anticipated ensonified area to calculate an estimated number of takes for belugas, which was estimated to be less than 8 percent of the stock abundance, which NMFS considers small.

Regarding CBD's comment about tugboat noise, NMFS' Recovery Plan ranks noise from tugboats as the most important source that could potentially interfere with Cook Inlet beluga whale recovery based on signal characteristics and spatio-temporal acoustic footprint. However, notably, the Recovery Plan is referencing tugboat noise as a whole across all vessels and the entirety of Cook Inlet, not Hilcorp's specified activity in the specified location and geographic region, which is likely a small portion of overall tugboat use in Cook Inlet throughout the year. NMFS' biological opinion on NMFS' IHAs for Hilcorp's activity addressed the impacts of the marine mammal take NMFS is authorizing in the context of both the environmental baseline and the cumulative effects (including tugboats) and found that it likely would not jeopardize Cook Inlet beluga whales or destroy or adversely modify their Critical Habitat. In the MMPA analysis, NMFS addresses the signal characteristics and spatio-temporal overlap of Hilcorp's specific tug activity in the **Federal Register** notice and has authorized take accordingly.

In addition to implementing mitigation and measures to minimize the impact of Hilcorp's activity, more broadly NMFS is taking several proactive steps to address the decline of the species. NMFS provides online platforms that allow public access to search for and review NOAA Fisheries permits and authorizations, as well as consultations under section 7 of the ESA. Additionally, NMFS is supporting the development of a population consequences of disturbance model to further refine information about the effects of stressors on Cook Inlet beluga whale behavior, energetic costs, and vital rates. NMFS continues to conduct outreach and education to various stakeholders to minimize the potential for unauthorized take of Cook Inlet beluga whales. Lastly, NMFS is developing site-specific stranding response and disaster response guidelines for Cook Inlet, which could inform responses and further reduce impacts to Cook Inlet beluga whales.

Comment 14: CBD commented that the Recovery Plan recommends a review of the current system of allocation of takes by harassment of beluga whales to better reduce cumulative effects of harassment takes by numerous projects. CBD provides examples for the number of takes authorized by NMFS for various time periods, citing Migura and Bollini (2021).

Response: We note first that the Migura and Bollini (2021) paper cited by CBD seems to have led to a misunderstanding of the takes authorized or permitted by NMFS. In summary, CBD asserts that NMFS authorized nearly 120,000 takes of Cook Inlet belugas from 2017 to 2025 and that in 2020 alone, NMFS authorized the equivalent of 50 percent of the entire Cook Inlet beluga whale population to be ''incidentally'' harassed by industrial projects in the Inlet, such as oil and gas development and pile driving activities.

The vast majority of the asserted ~120,000 total takes (99 percent), including all of the very small amount of take by Level A harassment, were authorized under directed research or enhancement permits, which support research or actions identified in the Recovery Plan to address Cook Inlet beluga whale recovery goals. Further, the vast majority (~99 percent) of the total permitted research or enhancement take numbers cited by CBD are low-level MMPA Level B harassment from remote or non-invasive procedures that are considered not likely to adversely affect listed species pursuant to the ESA (*i.e.,* no associated take under the ESA is either expected to occur or exempted for those specific activities). We further note that based on the required post-research reporting from this 9-year period, an average of 25 percent of the permitted takes actually occurred. For the Directed Take Program, scientific research and enhancement permits authorize intentional close approaches that target marine mammals and that may result in harassment. These permitted takes generally are a larger number than the actual takes that occur because researchers need the ability to work in the field without running out of takes mid-season when optimal conditions and opportunities arise to meet their stated research objectives. Factors such as weather, funding, the pandemic, *etc.,* affect whether takes can be used.

Regarding the comprehensive evaluation and minimization of permitted takes, we reference the analysis that has already been completed through NMFS' 2019 Biological and Conference Opinion on the Proposed Implementation of a Program for the Issuance of Permits for Research and Enhancement Activities on Cetaceans in the Arctic, Atlantic, Indian, Pacific, and Southern Oceans (NMFS, 2019), which determined that the research and enhancement takes permitted by the program would not jeopardize the existence of any of the affected species. As part of our programmatic framework for permitting directed take of ESA species, the Permits and Conservation Division will continue to closely evaluate the number and manner of Cook Inlet beluga whale takes requested by each applicant, how the proposed research ties to recovery plan goals, and the collective number of authorized and requested takes to consider the potential cumulative impact of the activities to the population. Each directed take annual report is reviewed to understand how authorized takes were actually used and to closely monitor the impacts that permitted research methods are having on the target animals.

NMFS also has an active role on the Research subcommittee of the Cook Inlet Beluga Whale Recovery Implementation Task Force. Starting in 2021 the subcommittee increased efforts to monitor and coordinate research undertaken on Cook Inlet beluga whales each year. This effort includes pre- and post-season meetings with all parties conducting these studies to (1) coordinate field efforts and minimize harassment of whales, (2) learn of the latest findings by these groups and others. The subcommittee also plans to review new findings about threats listed in the Recovery Plan (NMFS, 2016) and identify data gaps as potential avenues for future research.

Regarding the incidental takes authorized for 2020, those takes represent instances of exposure above the Level B harassment threshold that could occur within a day. In other words, if those approximately 130 takes were assumed to be 130 separate individual whales, it would mean that those individual whales were each behaviorally disturbed on one day in that year. The more likely scenario is

that some of those 130 exposures were takes of the same whale on a few different days, and in fact a lesser number of individuals were taken, but still on only a few days within a year. In all cases, the necessary findings under MMPA and ESA were made prior to the authorization of the take. Further, ITAs issued for activities that may take Cook Inlet beluga whales typically include enhanced protective measures for beluga whales that include delaying the activity or shutting down if a beluga is sighted within the Level B harassment zone and avoiding activities in important feeding areas, such as the Susitna Delta. These measures ensure that in the unlikely event that a beluga whale is harassed by activities covered by an ITA, the impacts are expected to be of a comparatively low level of severity.

Comment 15: CBD commented that NMFS' actions contradict the recommendations of the Marine Mammal Commission, which has repeatedly urged NMFS to stop issuing authorizations until the agency better understands the decline in abundance.

Response: CBD cites letters NMFS received from the Marine Mammal Commission (MMC) for previous proposed incidental take authorizations before 2021 recommending NMFS refrain from authorizing take of Cook Inlet beluga whales until more is understood about the decline in abundance. NMFS responded to those comment letters (*e.g.,* 84 FR 37451, July 31, 2019) and we incorporate that response by reference. NMFS did not receive a comment letter from the MMC regarding the proposed IHAs for Hilcorp, but we refer the reader to the responses to comments 13 and 14 above.

Comment 16: CBD commented that the MMPA states that IHAs are valid for periods of not more than 1 year, but that NMFS is proposing a series of IHAs for the next 3 years without conducting a comprehensive analysis of take across all 3 years.

Response: Incidental harassment authorizations issued under section 101(a)(5)(D) for a specified activity are limited to periods of 1 year or less. Each IHA must satisfy the negligible impact standard for the authorized taking and include the means of effecting the least practicable adverse impact on the species or stock and its habitat and, where relevant, on the availability of such species or stock for taking for subsistence uses (*i.e.,* mitigation). NMFS considered Hilcorp's request for two IHAs for two distinct specified activities (identified as Year 1 and Year 2 activities) and, therefore, performed two distinct negligible impact analyses (because NMFS removed the possibility of a renewal of the IHAs at Hilcorp's request, there will not be a possibility for a third year). NMFS has a documented history of issuing consecutive IHAs to the same applicant, including sequential IHAs authorizing take of Cook Inlet beluga whales (85 FR 19294, April 6, 2020; 85 FR 1140, January 9, 2020; 85 FR 68291, October 28, 2020). Although it is not clear what is meant by a ''comprehensive'' analysis, under NMFS' implementing regulations for the MMPA, our negligible impact analyses take into account the ''baseline''; moreover, under NEPA, NMFS' EA considers all anthropogenic activities that NMFS is aware of, including those for which take is not authorized in the cumulative effects section and incorporates where appropriate into the environmental baseline under the ESA, NMFS' biological opinion considered the same types of activities in their environmental baseline and cumulative effects discussions.

Regarding the potential for a third year of activities through the issuance of a renewal at a later date, please see the response to comment 17.

Comment 17: CBD commented that issuance of renewals of IHAs via an expedited process is unlawful as it circumvents public comment timing laid out in the MMPA.

Response: NMFS' IHA renewal process meets all statutory requirements. All IHAs issued, whether an initial IHA or a renewal, are valid for a period of not more than 1 year; the public has 30 days to comment on proposed IHAs, with a cumulative total of 45 days for IHA renewals. The Request for Public Comments section in the notice of proposed IHA made clear that the agency was seeking comment on both the initial proposed IHA for this project and the potential issuance of a renewal. Because any renewal (as explained in the Request for Public Comments section) is limited to another year of identical or nearly identical activities (as described in the Description of Proposed Activity) or the same activities that were not completed within the 1-year period of the initial IHA, reviewers have the information needed to effectively comment on both the immediate proposed IHA and a possible 1-year renewal, should the IHA holder choose to request one in the coming months.

In prior responses to comments about IHA Renewals (*e.g.,* 84 FR 52464, October 02, 2019; 85 FR 53342, August 28, 2020), NMFS has explained how the Renewal process, as implemented, is consistent with the statutory requirements contained in section 101(a)(5)(D) of the MMPA, provides additional efficiencies beyond the use of abbreviated notices, and, further, promotes NMFS' goals of improving conservation of marine mammals and increasing efficiency in the MMPA compliance process. Therefore, we intend to continue implementing the Renewal process.

In this case, as already stated, at Hilcorp's request NMFS removed the renewal provision from these IHAs.

Comment 18: CBD commented that NMFS' interpretation of ''small'' as it pertains to the small numbers analysis is unreasonable, and that a number may be considered small only if it is ''little or close to zero'' or ''limited in degree.''

Response: In NMFS' Final Rule for taking of marine mammals incidental to geophysical surveys in the Gulf of Mexico (86 FR 5322, January 19, 2021), NMFS fully describes its interpretation and implementation of ''small numbers''. Included as part of that discussion, NMFS explains the concept of ''small numbers'' in recognition that there could also be quantities of individuals taken that would correspond with ''medium'' and ''large'' numbers. As such, NMFS has established that one-third of the most appropriate population abundance number—as compared with the assumed number of individuals taken—is an appropriate limit with regard to ''small numbers.'' This relative approach is consistent with the statement from the legislative history that ''[small numbers] is not capable of being expressed in absolute numerical limits'' (H.R. Rep. No. 97–228, at 19 (September 16, 1981)), and relevant case law (*Center for Biological Diversity* v. *Salazar,* 695 F.3d 893, 907 (9th Cir. 2012) (holding that the U.S. Fish and Wildlife Service reasonably interpreted ''small numbers'' by analyzing take in relative or proportional terms)).

We note that the comment selectively includes a definition in support of CBD's favored position. For example, the definition of ''small'' in Webster's New Collegiate Dictionary (1981) included ''having little size, esp. as compared with other similar things.'' See also *www.merriam-webster.com/dictionary/* small (defining ''small'' as ''having comparatively little size''). These definitions comport with the small numbers interpretation developed by NMFS, which utilizes a proportionality approach.

Comment 19: CBD claims that NMFS's proposed IHAs failed to account for all sources of take.

Response: NMFS acknowledges that Hilcorp's overall activity in Cook Inlet

includes more than the activities for which take is authorized under these IHAs. Firstly, ITAs under the MMPA are a request-based authorization by which NMFS analyzes the potential for incidental harassment at the request of the applicant for the activities described. NMFS also considers other related activities by the applicant to assess whether they, alone or in combination with the specified activity for which take was requested, may result in take, and will advise if they should be included in the take application. In the specific example used by CBD that vessel trips may increase by two trips per day from normal platform operations, there is no indication that take is likely to occur nor has Hilcorp requested take due to supply vessel trips. While vessel noise can contribute to masking and is a contributor to elevated noise in the area, the manner in which Hilcorp plans to operate their support vessel (with inherent mitigation to avoid the presence of marine mammals) supports the assessment that an encounter with a marine mammal, let alone a disruption of their behavioral pattern, is unlikely to occur.

Comment 20: CBD commented that NMFS failed to consider noise from water jets, production drilling, helicopters, and vessel traffic.

Response: NMFS considered these additional sources and did not find authorization of take was warranted for these activities. Additional detail about these sources and NMFS' rationale is provided in the *Detailed Description of Specific Activity* section of this notice.

NMFS also disagrees with CBD's characterization that the MMPA definition of harassment ''includes not only those activities that will or are likely to cause take but those that 'ha[ve] the potential to injure . . . or . . . disturb a marine mammal.' '' This is an incomplete recitation of the statutory definition of harassment. Level B harassment refers to an act of pursuit, torment, or annoyance that has the potential to disturb a marine mammal or marine mammal stock in the wild ''by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.'' This requires that an act have ''the potential to disturb by causing disruption of behavioral patterns,'' not simply result in a detectable change in motion or vocalization. See 84 FR 63268, 63285 (December 7, 2018).

Comment 21: CBD commented that NMFS is artificially lowering take estimates ''by calculating the number of harassments per activity by days of exposure rather than the instances of harassment.''

Response: In order to provide a practical, consistent, biology-based (*i.e.,* the Diel Cycle) currency for impact assessment across the wide range of take calculation methods applicants may use—for years NMFS has recommended that for the purposes of counting instances of take—we do not consider one individual as taken more than one time in a day, even if that an individual could be exposed to sound or other stressors multiple separate times in one day. For the purposes of the negligible impact analysis of the effects of the enumerated takes on any individuals and the stock, though, it is important to understand the likely nature of these enumerated instances of take (*e.g.,* momentary exposure versus multiple hours, high level versus low level), and that is how the potential for multiple exposures in a day (if expected) or longer duration exposures are appropriately considered in the analysis.

For Hilcorp, NMFS used the best available science to arrive at the most realistic characterization of potential harassment possible. In this instance, NMFS calculated the area likely to be ensonified above 120 dB and applied the best available density values for species in Cook Inlet to arrive at a number of individuals exposed in a single day. This is then multiplied by the number of days to result in the number of exposures across the entire duration of the activity (*e.g.,* 14 or 16 days, respectively). If anything, this calculation may be an overestimate as animals are not uniformly distributed across the action area, and the same individual animals may be exposed to sound levels greater than 120 dB several times over the duration of the activity but due to the constraints of our calculations, they are being considered as separate animals in our estimations.

Comment 22: CBD commented that NMFS' small numbers determination for Cook Inlet beluga whales fails to consider the status of the species. CBD claims that ''small'' must be considered against the status of the species and whether the percentage of take for each affected species will ensure that population levels are maintained at or restored to heathy numbers.

Response: NMFS disagrees with CBD's assertion. The argument to establish a small numbers threshold on the basis of stock-specific context is unnecessarily duplicative of the required negligible impact finding, in which relevant biological and contextual factors are considered in conjunction with the amount of take and would risk conflating the two standards. Similarly, CBD's assertion that NMFS' small numbers analysis must consider whether the percentage of take would restore a population to ''healthy number'' is not required by section 101(a)(5)(D) of the MMPA.

Comment 23: CBD commented that NMFS has no basis on which to conclude that additional harassment by noise has a negligible impact on Cook Inlet beluga whales as a species, given the population's lack of recovery and continued decline.

Response: In the Negligible Impact Analysis and Determination section, we describe how the take predicted and authorized for Hilcorp's tugboat activity (not additional harassment by noise at large), which is 11 in Year 1 and 22 in Year 2 for beluga whales, will have a negligible impact on all of the affected species. In summary, this determination is based upon the small numbers of beluga whales that might be exposed briefly during the 16 days of the activity, the comparatively low degree of behavioral harassment that might result from any one of the 11 or 22 instances of take that occur within a year, and the likelihood that the mitigation measures further lessen the likelihood of exposures. NMFS has considered the status and decline of Cook Inlet beluga whales in its analysis, as well as the importance of reducing impacts from anthropogenic noise, but nonetheless, there is no indication that brief exposure to low level noise not causing greater than Level B harassment would have a greater than negligible impact on Cook Inlet beluga whales.

Comment 24: CBD claims that NMFS incorrectly stated that Cook Inlet beluga whales are not known to engage in critical behaviors in the area where Hilcorp's project is planned.

Response: NMFS acknowledges observation of one potential but unconfirmed incidence of mating behavior in the Trading Bay area, but the extent to which critical behaviors occur in Hilcorp's project area is still unknown. (Lomac-Macnair *et al.,* 2016). Such behaviors have not been reported since. Surveys by NMFS or McGuire *et al.* (2020) with concentrated effort on the western coast of Cook Inlet have not yielded a comparable sighting. Other key behaviors, such as calving and feeding, are described in more detail below but are thought to occur primarily in other concentrated areas outside of Hilcorp's action area.

We are unaware of any information regarding areas where Cook Inlet belugas are more likely to engage in mating behavior, however, what is known about calving suggests that it is

most concentrated in the upper Inlet, north of Hilcorp's project area. McGuire *et al.* (2020) characterizes habitat use by age class in northern Cook Inlet and documented the majority of calves in the northernmost parts of Cook Inlet (*e.g.,* Susitna Delta) despite concentrated survey effort in areas along the west part of the Inlet heading south toward the Forelands. NMFS acknowledges that Cook Inlet beluga whales use the area, especially in spring and fall months, but their habitat range at those times is not nearly as constricted as their summer habitat, which is concentrated in a small area with high anthropogenic activity.

Cook Inlet beluga whales may well occur in the project area, which is why a small amount of take by Level B harassment is authorized for this species incidental to Hilcorp's jack-up rig towing. Tagging data, acoustic studies, and opportunistic sightings indicate that Cook Inlet belugas continue to occur in the upper inlet throughout the winter months, in particular the coastal areas from Trading Bay to Little Susitna River, with foraging behavior detected in lower Knik Arm and Chickaloon Bay, and also detected in several areas of the lower inlet such as the Kenai River, Tuxedni Bay, Big River, and NW Kalgin Island (Castellote *et al.,* 2011, 2020, 2021; C. Garner, pers. comm.; Shelden *et al.,* 2015, 2018). Belugas were historically seen in and around the Kenai and Kasilof rivers during June aerial surveys conducted by ADFG in the late 1970s and early 1980s and by NMFS starting in 1993 (Shelden *et al.,* 2015b), and throughout the summer by other researchers and local observers. In recent years, sightings in and near these rivers have been more typical in the spring and fall (Ovitz, 2019). It is unknown if this is due to increased monitoring efforts in the area or an increase in belugas using this area. While visual sightings indicate peaks in spring and fall, acoustic detections indicate that belugas can be present in the Kenai River throughout the winter (Castellote *et al.,* 2016). Despite the historic sightings (1970s–1990s) of belugas throughout the summer (June–August) in the area, recent acoustic detections and visual sightings indicate that there appears to be a steep decline in beluga presence in the Kenai River during the summer, despite an annual return in recent years of 1–1.8 million sockeye salmon, which are important beluga prey.

As described above, we have no reason to expect beluga whales to be concentrated in the path of Hilcorp's tug boats for the purposes of reproductive or feeding behaviors, but even if one or more of the 11 (Year 1) or 22 (Year 2) instances in which the brief tugboat operations intersects with an individual beluga is engaged in these behaviors, the anticipated short duration and low level disturbance of any such encounter would not be likely to impact reproductive or foraging success of any individuals.

Comment 25: CBD comments that NMFS' negligible impact determination relies largely on mitigation measures required under the IHAs that require visual observations, which it claims are ineffective.

Response: NMFS disagrees with this characterization of the negligible impact determination. Our discussion in the Negligible Impact Analysis and Determination section below contains the factors NMFS considered in reaching its negligible impact determinations. Although NMFS' implementing regulations at 50 CFR 216.104 (c) state that NMFS may incorporate successful implementation of mitigation measures to arrive at a negligible impact determination, for issuance of IHAs for Hilcorp's tug towing rig activity, NMFS did rely upon an assumption of set level of effectiveness in mitigation to make our negligible impact determinations. That said, based on prior monitoring efforts in Cook Inlet, it is clearly possible to detect and identify marine mammals to the species level at kilometers away from the source level, including beluga whales. This is dependent on several factors such as visual acuity, sea state, glare, animal behavior/body type, speed of travel for vessel and animal, *etc..* NMFS does not assume total effectiveness of monitoring, but the demonstrated record of protected species observer sightings for activities in Cook Inlet illustrate that visual monitoring is appropriate for implementing mitigation such as avoidance in this case.

Comment 26: CBD commented that NMFS relied on Hilcorp's commitment to operate with the favorable tide to reduce the power output of the tugs without including the requirement in the IHAs.

Response: The requirement to use a favorable tide and operate at night if a favorable tide fell during nighttime hours was included in the Proposed IHAs Year 1 and Year 2 that were available on our website (*https://www.fisheries.noaa.gov/action/incidental-take-authorization-hilcorp-alaska-llc-oil-and-gas-activities-cook-inlet-alaska-0*) as measures 4.f and 4.g. It is also in the final IHAs.

Comment 27: CBD commented that NMFS failed to ensure the least practicable adverse impact on Cook Inlet beluga whales by failing to consider requiring the use of passive acoustic monitors to detect the presence of marine mammals.

Response: NMFS considered the use of passive acoustic monitoring for mitigation purposes in the rulemaking for Hilcorp's oil and gas activities in Cook Inlet. As we stated in the notice of proposed rulemaking, passive acoustic monitoring for previous activities in Cook Inlet where incidental take was authorized by NMFS has not been an effective mitigation or monitoring measure due to environmental conditions (84 FR 12330, 12368; April 1, 2019 (incorporating by reference discussion of limited effectiveness of passive acoustic monitoring for survey mitigation in Hilcorp's petition for rulemaking)). For the same reasons, we have determined passive acoustic monitoring is not likely to be sufficiently effective at detection for real-time mitigation for Hilcorp's tug towing activities and is not included in the IHAs.

As CBD notes, academic researchers have begun to implement more effective passive acoustic monitors for research purposes at several places in Cook Inlet (Castellote *et al.,* 2020). However, the framework used by those researchers is impractical, particularly for Hilcorp's planned activity, which primarily involves straight-line transit. An article on NOAA's website (*https://www.fisheries.noaa.gov/science-blog/beluga-whale-acoustic-monitoring-survey-post-3*) clearly illustrates the level of customization, expertise, and difficulty required to assemble a passive acoustic mooring to then deploy in the Inlet. Additionally, these instruments are stationary, which means to effectively use these monitors as a means of avoiding harassment of marine mammals during Hilcorp's activity, Hilcorp would need to build and successfully deploy dozens (or more) of stationary monitors along a route of travel that is subject to change depending upon weather or other environmental and shipping restrictions. Additionally, the data stored on these types of moorings is not accessible until they are retrieved by the researcher who deployed them. In the future, if an established network of passive acoustic monitors with shared access to the data is available, this could be a useful tool for implementing mitigation measures, but is currently not practicable.

Comment 28: CBD commented that NMFS failed to consider time-area restrictions for tugs such as Trading Bay in April and May and a prohibition on

activities from July through September (CBD did not specify a location for this proposed measure).

Response: NMFS did consider such a time-area restriction and does not agree that these proposed restrictions are appropriate under the least practicable adverse impact standard. Hilcorp's activity in Trading Bay would be either a single day of transit or several hours of positioning the jack-up rig at an existing well site. As discussed in our above comment response, there has been one published observation of potential (not confirmed) mating behavior of Cook Inlet beluga whales in Trading Bay. Surveys by NMFS or McGuire *et al.* with concentrated effort on the western coast of Cook Inlet have not yielded a comparable sighting. Closure of the entire area for two months is not practicable as Hilcorp would not be able to access the well sites that are part of the intended activity. As discussed above and in the species-specific section of the proposed IHAs, Cook Inlet belugas are highly concentrated in the upper Cook Inlet especially in the summer months (Goetz *et al.,* 2012; McGuire *et al.,* 2020). In the past, Cook Inlet beluga whales used the Kenai area in summer months but that trend has shifted in recent decades to occasional spring and fall sightings (Ovitz, 2019). Throughout the Inlet, mean group sizes during the summer and fall were largest in July and smallest in October, with the largest groups seen during mid-July and early August in the Susitna River Delta, while the smallest group sizes were in the Kenai River Delta. These patterns of high seasonal concentrations have continued to be documented since 2012 (*e.g.,* McGuire *et al.,* 2020). In reflection of this information, NMFS has imposed time area restrictions in the Susitna River Delta from April to November to reduce effects of Hilcorp's activity to the greatest extent practicable. In the case of the Tyonek platform, which lies within 10 miles of the mean lower-low water line of the Little Susitna and Beluga Rivers, Hilcorp will conduct aerial surveys to clear the Tyonek platform of Cook Inlet beluga whales to the greatest extent practicable. This evidence further suggests a closure in the middle Inlet during the summer months, in the season with longest daylight hours and best conditions for visual observations to implement mitigation and monitoring, is not appropriate under the least practicable adverse impact standard.

See also response to comment 24.

Comment 29: CBD stated that NMFS failed to consider noise-quieting engines such as electric tugboats.

Response: The citation provided by CBD regarding electric tugboats was a link to a concept drawing of a boat that is not expected to be on the seas in the U.S. until at least 2023. NMFS is not aware of any commercially available seaworthy tug vessels that are used in tandem (*e.g.,* three tug configuration) with effective quieting technologies or of any company or entity with electric tug fleets able to use them in tandem as required for Hilcorp's activities.

Comment 30: CBD commented that NMFS did not meaningfully consider the chosen clearance zone distance of 1,500 meters and that it is not equivalent to the Level B harassment zone.

Response: CBD is correct that the clearance zone required under the IHAs (1,500 m) is not equivalent to the Level B harassment zone (3,850 m). There is no requirement that the clearance zone be equal to or greater than the Level B harassment zone. Using the Level B harassment zone as the clearance zone would be impractical as identification of certain species may be unreliable at such distance in Cook Inlet's environmental conditions. The 1,500 m distance ensures more effective monitoring closest to the vessels, where any potential impact to animals is anticipated to be the greatest. While underway, protected species observers will observe for marine mammals to the greatest extent possible (and they are not limited to observing within 1,500 m of the vessel). Any marine mammal sighted by PSOs at any distance is noted and reported to NMFS, per the reporting requirements of the IHAs.

Comment 31: CBD comments that NMFS defines its purpose and need in the Environmental Assessment too narrowly, making issuance of successive IHAs the only option.

Response: NMFS disagrees with this characterization of purpose and need. Under section 101(a)(5)(D) of the MMPA, NMFS has an obligation to consider and grant requests for the taking of marine mammals incidental to a specified activity, provided they satisfy the relevant requirements. Hilcorp submitted an application for two IHAs, each covering 1 year of tug towing rig activity. Once deemed adequate and complete, NMFS had an obligation to consider and respond to these requests in the manner described in the implementing regulations. While Hilcorp's request for two IHAs did not guarantee that they would be issued (*i.e.,* if one or both years of the specified activity did not satisfy the relevant MMPA standards, NMFS would not issue the IHA(s)), characterizing the purpose and need to include issuance of only one IHA would not be in accordance with our requirement to consider both adequate and complete requests submitted by Hilcorp.

Comment 32: CBD commented that NMFS segmented its analysis of the impacts of Hilcorp's activities under these IHAs from the activities authorized under the ITRs.

Response: As explained earlier (see Comment 1), NMFS is in the process of withdrawing the ITRs based on Hilcorp's representations that they will not be undertaking any further activities for which take was authorized under the ITR during the remaining period of effectiveness. The only take currently authorized by NMFS incidental to Hilcorp's activities in Cook Inlet, Alaska, over the next 2 years is through the two IHAs for the take incidental to tugs towing the jack-up rig, as described in this notice.

Comment 33: CBD commented that NMFS failed to consider several additional alternatives under NEPA including: requiring the use of passive acoustic monitoring to detect the presence of marine mammals; requiring the use of drones to detect the presence of marine mammals; requiring the use of electric tugboats; restrictions on the timing of activities when Cook Inlet belugas are less likely to be present; restrictions on the overall amount of authorized activity, and authorizing take incidental to decommissioning activity but not production activity.

Response: Under NEPA, NMFS is required to consider a reasonable range of alternatives. Our EA considered the preferred alternative, which satisfied our purpose and need, and the no-action alternative. We also considered, but rejected from further consideration, two variations of the preferred alternative, including alternative technologies (such as electric tugboats). Similarly, as explained in a previous response, NMFS is not requiring mitigation such as passive acoustic monitoring or electric tugboats because they do not satisfy the MMPA's least practicable adverse impact standard. NMFS is requiring a time-area closure specifically to enhance protection for Cook Inlet beluga whales based on the best available science. This mitigation measure to protect Cook Inlet beluga whales in a biologically important area at times of known high density of whales was included in the preferred alternative. NMFS did not explore ''restrictions on the overall amount of authorized activity'' because NMFS does not authorize the underlying activity, and restricting the amount would have changed the applicant's specified activity (and further was not necessary

to reach our negligible impact determinations). NMFS did not consider authorizing take incidental to decommissioning (P&A) activity but not production activity because for purposes of our MMPA analyses of the impacts of the tug activities, these are exactly the same activity—the same three tugboats pulling and positioning one jack-up rig for the time windows provided in the project description. NMFS is not authorizing any take of marine mammals incidental to production drilling itself or decommissioning itself, but rather the moving of the jack-up rig into position, which will then be used to complete those activities. Authorizing take incidental to tugs towing the jack-up rig to be used only for decommissioning purposes would be arbitrary and capricious.

Comment 34: CBD commented that NMFS' EA failed to consider impacts from vessels and other sources associated with Hilcorp's activity, even if they do not rise to the level of take.

Response: NMFS disagrees with this characterization. In the description of the activity in NMFS' EA, as in the **Federal Register** notice of proposed IHAs, NMFS includes a discussion of other activity associated with Hilcorp's rig-towing and why it does not rise to the level of take. NMFS has included that discussion in this **Federal Register** notice as well with further detail about the way Hilcorp plans to conduct those activities that means take is unlikely. Aspects of these sources, such as increased vessel traffic or helicopter traffic to the area, are addressed in the EA in the Cumulative Effects section.

Comment 35: CBD commented that NMFS' EA relies on mitigation measures required in the IHAs to dismiss the significance of impacts from Hilcorp's activity, claiming that the mitigation measures rely on marine mammals being detected by observers which CBD considers ineffective. CBD did not provide any examples or citations of this in their description.

Response: NMFS does not rely on ineffective mitigation measures to dismiss the significance of impacts—as described in the EA, the primary reason the impacts are considered insignificant are because of the limited duration of the activity (14 and 16 days respectively), the low level of noise created by the tug configuration, and the low density of marine mammals in the action area resulting in small exposure estimates. Further, NMFS disagrees with the characterization that the mitigation measures are ''ineffective'' because they rely on visual detection. NMFS has received many marine mammal monitoring reports over the years demonstrating that visual observers for marine mammals are effective in Cook Inlet. At no point in the MMPA or NEPA analysis does NMFS assume that mitigation is 100 percent effective, as environmental conditions can confound monitoring effort, but there is a spectrum of effectiveness when implementing mitigation, and visual observation in Cook Inlet is an appropriate means for detecting marine mammals to implement mitigation zones.

Comment 36: CBD comments that NMFS' EA fails to properly analyze the current state of climate change and how new fossil fuel production contributes to climate change. CBD claims that NMFS must consider and disclose how facilitating fossil fuel production and total greenhouse gas emissions associated with the project will exacerbate climate change. As part of this analysis, CBD contends that NMFS must consider downstream greenhouse gas emissions.

Response: NMFS considers climate change in its EA. However, as described previously, NMFS does not authorize production drilling or any of Hilcorp's activities but rather take of marine mammals incidental to Hilcorp's activities. In Federal waters, BOEM conducts lease sales that provide qualified bidders the opportunity to bid on blocks of the outer continental shelf to gain conditional rights to explore, develop, and produce oil and natural gas in those blocks. BOEM's consideration of climate change for its lease sales is found in the agency's environmental compliance documents, such as the EIS written for Lease Sale 244 (BOEM, 2016), the most recent lease sale in Cook Inlet, Alaska. Of note, for Alaska state waters, Hilcorp would obtain necessary permits for production drilling from Alaska Department of Environmental Conservation. NMFS' IHAs cover take of marine mammals incidental to tugs towing and positioning a jack-up rig, which may occur even if Hilcorp produces no natural gas or oil from their wells with the jack-up rig.

Comment 37: CBD commented that NMFS failed to properly consider impacts to subsistence use as Hilcorp's activity would impede the recovery of Cook Inlet beluga whales, which in turn affects the beluga harvest.

Response: NMFS considered impacts on subsistence users, especially for species such as harbor seals, which are harvested by communities along Cook Inlet. NMFS found that take of Cook Inlet beluga whales incidental to Hilcorp's tug towing activity would have a negligible impact on the stock and there is no evidence to suggest that the impacts of 14 or 16 days of rig towing per year for 2 years (resulting in 11 and 22 low-level behavioral disturbance events, respectively), would impact the reproductive success or survival of any individual in any way, much less impede the recovery or impact the availability of Cook Inlet beluga whales for subsistence harvest were a harvest to occur.

Comment 38: CBD also commented that NMFS failed to take a hard look at cumulative impacts of the IHAs, specifically with respect to Cook Inlet beluga whales.

Response: NMFS disagrees with the assertion that cumulative impacts were not adequately considered, especially with respect to Cook Inlet beluga whales. Cook Inlet beluga whales are frequently discussed together with the other 11 species of marine mammal for which take is authorized, as cited in CBD's example regarding vessel noise, because effects of vessel noise on Cook Inlet beluga whales are expected to be highly similar to the effects of vessel noise on other marine mammals, except in that the number of takes is different (and lower) than some other species due to their likely distribution in the area. As described in Castellote *et al.* (2019), Cook Inlet beluga whales are one of the species that exhibits high site fidelity with a strong temporal correlation. Because of this, there is strong evidence that Cook Inlet beluga whales are not expected to occur in the project area during the ice-free season when Hilcorp would be towing the rigs in a largely offshore environment. While Cook Inlet beluga whales exhibit high site fidelity, it is not fidelity to the project area at the time of year and location of Hilcorp's platforms. They may be affected by other activities in the area where they would be expected to occur in ice-free seasons, such as the Port of Anchorage, and those activities are discussed in our Cumulative Effects section of the EA.

Cumulative impacts have been adequately addressed under NEPA in the final environmental assessment (EA) supporting NMFS' determination. In the final EA, we reviewed potential direct, indirect, and cumulative impacts to protected species and their environment, associated with NMFS' proposed action and alternatives. Separately, cumulative effects were analyzed as required through NMFS' required intra-agency consultation under section 7 of the ESA. The Biological Opinion (BiOp) that NMFS Alaska Region issued on September 9, 2022, determined that NMFS' action of issuing the IHAs is not likely to

jeopardize the continued existence of listed marine mammals or result in the destruction or adverse modification of critical habitat of such species, including Cook Inlet beluga whales.

Comment 39: CBD commented that NMFS' cumulative impacts analysis ignores the impacts of take of Cook Inlet beluga whales already authorized or occurring, including take from other ITAs, research permits, and unpermitted takes from vessel noise, water pollution, and other impacts. Further, CBD commented that NMFS should attempt to quantify take and analyze impacts to the species in the EA.

Response: NMFS agrees with CBD that a quantification of take may be helpful to the public and has included those numbers in the appropriate section of the EA's cumulative effects discussion. However, these take numbers are frequently taken out of context when purely summed. Takes of marine mammals, including Cook Inlet beluga whales, through other ITAs is considered in NMFS' environmental baseline when conducting the necessary analysis for issuance of these IHAs. There are other takes of Cook Inlet beluga whales authorized for scientific research and enhancement of the species. While they are all considered ''take'' for purposes of issuing an authorization or permit under the MMPA in advance of an activity, the context of these takes is important (see responses to Comments 13 and 14). Authorized takes, in the research context, are what allow researchers frequently cited by NMFS and CBD (*e.g.,* Castellote *et al.,* McGuire *et al.,* Shelden *et al.,* Hobbs *et al.*) to collect the scientific data necessary to inform their publications. Researchers' interactions with marine mammals are carefully controlled through permit conditions and reporting requirements, which often require research efforts to cease if any effects to important biological functions are detected by qualified researchers that are skilled at observing marine mammal behavior (NMFS, 2019).

The context of the take is of the utmost importance when cumulatively evaluating takes of marine mammals, as the intensity of impacts from a given activity can vary widely. For example, an animal exposed to noise levels just above our harassment threshold in a non-critical area may experience a small change in a behavioral pattern with no biological consequence while an animal exposed to very loud noise levels in an area where active critical foraging occurs could result in behavioral changes that may be more likely to impact fitness. While both of these examples would be characterized as Level B harassment, the resulting impact on the population could be different. Context differences such as these are analyzed in our negligible impact analysis for each application under the MMPA.

Furthermore, NMFS does not consider unpermitted ''takes'' explicitly in its analysis. It is difficult to determine if a take has occurred without monitoring in place to assess the effects of a particular activity. However, NMFS broadly and qualitatively addresses potential effects from other types of activity or development without distinguishing if any potential ''take'' is permitted. For example, NMFS considers potential effects of construction activities, some of which have the potential to result in take, in the Cumulative Effects section of the EA. NMFS discusses the overall effects of construction without discerning individual takes due to construction or attributing takes to a ''permitted'' or ''unpermitted'' status.

Comment 40: CBD commented that NMFS failed to consider Hilcorp's poor track record of environmental and safety violations and accidents and how this may affect the environmental impacts of Hilcorp's activities under the IHAs.

Response: Oil spills, accidents, or other disasters stemming from man-made structures in Cook Inlet are not considered, as they are not authorized and are a breach of authorizations and perhaps of other agencies' regulations. It is the responsibility of the applicants to comply with all additional regulations, and to work with the state to obtain approval of their Oil Discharge Prevention and Contingency Plans (ODPCP).

Comment 41: CBD commented that NMFS should reinitiate and complete consultation on the 5-year take regulations and issue a biological opinion that properly analyzes the impacts of all of Hilcorp's activities on threatened and endangered species and their habitats, including from tugs towing rigs.

Response: As described above, NMFS is in the process of withdrawing the incidental take regulations issued to Hilcorp in 2019, as none of the activity for which incidental take was authorized is planned to occur in the foreseeable future. The remaining take of marine mammals incidental to Hilcorp's activity is solely from Hilcorp's tug-towing activities, which are covered by these IHAs and for which consultation was completed. The resulting Biological Opinion was issued on September 9, 2022.

Changes From Proposed IHAs to Final IHAs

There are several changes from the proposed IHAs, starting with the timing of the activity. The Year 1 and Year 2 IHAs were initially proposed to become effective in April 2022 and April 2023, respectively. This timeline has been delayed during the course of processing the IHA requests. Hilcorp now requests that the Year 1 IHA be effective September 2022 and the Year 2 IHA become effective on September 2023. Since the conclusion of the public comment period in June 2022, NMFS has reviewed newly available information, including recent draft Stock Assessment Reports, information on relevant Unusual Mortality Events, and other scientific literature, and incorporated this information into our analysis of impacts on marine mammals and their habitat. Additionally, NMFS removed the consideration of renewals of the IHAs at Hilcorp's request.

During the processing of the IHA requests, Hilcorp notified NMFS of the need to conduct the initial rig tow in June 2022. On April 28, 2022, Hilcorp sent a letter to NMFS describing the need to move the jack-up rig as well as the mitigation and monitoring Hilcorp planned to employ during the rig move to avoid take. In a letter dated May 17, 2022, in consideration of the low likelihood of exposures above the 120 dB harassment threshold, the short duration of the jack-up rig move, the further reduced likelihood of exposure above 120 dB supported by the expanded mitigation, and further, the reduced probability that an animal exposed to a received level above 120 dB tugboat noise would respond in a manner that qualifies as a take under the MMPA, NMFS concurred with Hilcorp's assessment that take of marine mammals by Level B harassment is unlikely to occur during the transport of the jack-up rig from the Rig Tender's Dock in Nikiski to the Tyonek platform in middle Cook Inlet. NMFS' concurrence letter did not authorize any take of marine mammals under the MMPA or ESA incidental to the rig move. As a result of this initial move, Hilcorp's planned Year 1 activities have been reduced to approximately 14 days of tug towing and positioning. This reduction in activity duration under the IHA, and appropriate reductions in take estimates, have been made throughout this notice and the Year 1 IHA.

Hilcorp began the mobilization process in June 2022 as described in their April 28, 2022, letter and fully abided by all of the minimization measures described therein. Three

ocean-going tugs towed the jack-up rig for 32.2 miles and the approximate total time under load including transiting, holding and positioning amounted to 27 hours. The jack-up rig was positioned at the Tyonek platform where it has remained since that mobilization. During the rig move, Hilcorp observed 14 harbor porpoises and six harbor seals at distances ranging from 75 meters to 4,960 meters from the tug towing jack-up rig configuration, and no beluga whales. Based on the distance at which some animals were observed and our assumed source levels, it is possible individual animals received sound levels greater than 120 dB, which is NMFS' current threshold for estimating when Level B harassment is predicted to occur, though there are other qualitative factors that may be considered. There are certain characteristics of tugging that reduce the probability that being exposed to received levels above 120 dB will result in disruption of behavioral patterns. Tugboats under load, especially a multi-tug configuration, are slow-moving as compared to typical recreational and commercial vessel traffic. Assuming an animal was stationary, exposure from the moving tug configuration would be on the order of minutes in any particular location. Hilcorp's monitoring report indicates these animals were traveling or swimming, with three animals changing their course of direction when approaching the tug configuration, suggesting their exposure time could have been even shorter. The slow, predictable, and generally straight path of this tug configuration further lessened the likelihood that exposures at the expected levels resulted in the harassment of marine mammals. The slow transit along a predictable path occurred in an area of routine vessel traffic where many large vessels move in slow straight-line paths, and some individuals are expected to be habituated to these sorts of exposures.

NMFS made two changes with respect to species and stocks included in the final IHAs. During the course of consultation under the ESA, it was brought to NMFS' attention that humpback whales in Cook Inlet could potentially belong to the Western North Pacific stock as well as the Central North Pacific stock. NMFS has considered both stocks in our analysis for the final IHAs. Additionally, BOEM suggested that Pacific white-sided dolphins be included based on acoustic detection data. They have been included in our analysis and take authorized in the final IHAs.

During the process of section 7 consultation under the ESA, Hilcorp notified NMFS that complying with the Susitna Delta mitigation zone as proposed would not be practicable for operations at their Tyonek platform because the location of the platform is within the Susitna Delta exclusion zone. The dates and applicability of the Susitna Delta exclusion zone have been changed from the proposed to final IHAs. The changes, as well as additional protective measures associated with the change, are described in more detail in the Mitigation section below.

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.,* physical and behavioral descriptions) may be found on NMFS's website (*https://www.fisheries.noaa.gov/find-species*).

Table 4 lists all species or stocks for which take is expected and authorized for this action, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. For taxonomy, we follow the Committee on Taxonomy (2021). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS's SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS's U.S. 2021 SARs (*e.g.,* Muto *et al.,* 2022). All values presented in Table 4 are the most recent available at the time of publication and are available in the 2021 SARs (Muto *et al.* 2022) (available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports*).

TABLE 4—MARINE MAMMAL SPECIES OR STOCKS FOR WHICH TAKE IS EXPECTED AND AUTHORIZED

Common name	Scientific name	Stock	ESA/MMPA status; strategic (Y/N) [1]	Stock abundance (CV, N_{min}, most recent abundance survey) [2]	PBR	Annual M/SI [3]
Order Cetartiodactyla—Cetacea—Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae:						
Gray whale	*Eschrichtius robustus*	Eastern North Pacific	-, -, N	26,960 (0.05, 25,849, 2016).	801	131
Family Balaenidae:						
Humpback whale	*Megaptera novaeangliae*	Western North Pacific	E, D, Y	1,107 (0.3, 865, 2006)	3	2.8
Humpback whale	*Megaptera novaeangliae*	Central North Pacific	E, D, Y	10,103 (0.3, 7,890, 2006)	83	26
Minke whale	*Balaenoptera acutorostrata*	Alaska	-, -, N	N/A (see SAR, N/A, see SAR).	UND	0
Family Balaenopteridae (rorquals):						
Fin whale	*Balaenoptera physalus*	Northeast Pacific	E, D, Y	see SAR (see SAR, see SAR, 2013).	see SAR	0.6

TABLE 4—MARINE MAMMAL SPECIES OR STOCKS FOR WHICH TAKE IS EXPECTED AND AUTHORIZED—Continued

Common name	Scientific name	Stock	ESA/ MMPA status; strategic (Y/N) [1]	Stock abundance (CV, N_{min}, most recent abundance survey) [2]	PBR	Annual M/SI [3]
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae:						
Beluga whale	*Delphinapterus leucas*	Cook Inlet	E, D, Y	279 (0.061, 267, 2018)	0.53	0
Killer whale	*Orcinus orca*	Alaska Resident	-, -, N	2,347 c (N/A, 2347, 2012).	24	1
Killer whale	*Orcinus orca*	Gulf of Alaska, Aleutian Islands, and Bering Sea Transient.	-, -, N	587 c (N/A, 587, 2012)	5.87	0.8
Pacific white-sided dolphin	*Lagenorhynchus obliquidens*	North Pacific	-, -, N	26,880 (N/A, unknown, 1998).	UND	0
Family Phocoenidae (porpoises):						
Harbor porpoise	*Phocoena phocoena*	Gulf of Alaska	-, -, Y	31,046 (0.21, N/A, 1998)	UND	72
Dall's porpoise	*Phocoenoides dalli*	Alaska	-, -, N	see SAR (0.097, see SAR, 2015).	131	37
Order Carnivora—Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions):						
Steller sea lion	*Eumetopias jubatus*	Western	E, D, Y	52,932 a (see SAR, 52,932, 2019).	318	254
California sea lion	*Zalophus californianus*	U.S.	-, -, N	257,606 (N/A, 233,515, 2014).	14,011	>320
Family Phocidae (earless seals):						
Harbor seal	*Phoca vitulina*	Cook Inlet/Shelikof	-, -, N	28,411 (see SAR, 26,907, 2018).	807	107

[1] Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

[2] NMFS marine mammal stock assessment reports online at: *www.nmfs.noaa.gov/pr/sars/.* CV is coefficient of variation; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable depending on the methodology described in the stock assessment report (SAR) and the date of last available survey data. Where necessary, NMFS refers reader to the SAR for more detail.

[3] These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, ship strike). Annual mortality and serious injury often cannot be determined precisely and is in some cases presented as a minimum value or range.

As indicated above, all 12 species (with 14 managed stocks) in Table 4 temporally and spatially co-occur with the activity to the degree that take could reasonably occur, and we have authorized it. In addition, the northern sea otter may be found in Cook Inlet, Alaska. However, sea otters are managed by the U.S. Fish and Wildlife Service and are not considered further in this document.

Pacific White-Sided Dolphin

Pacific white-sided dolphins are a pelagic species. They are found throughout the temperate North Pacific Ocean, north of the coasts of Japan and Baja California, Mexico (Muto *et al.,* 2018). They are most common between the latitudes of 38° North and 47° North (from California to Washington). The distribution and abundance of Pacific white-sided dolphins may be affected by large-scale oceanographic occurrences, such as El Niño, and by underwater acoustic deterrent devices (NPS, 2018a).

Scientific studies and data are lacking relative to the presence or abundance of Pacific white-sided dolphins in or near Cook Inlet, Alaska. Most observations of Pacific white-sided dolphins occur off the outer coast or in inland waterways near entrances to the open ocean. A report of acoustic monitoring efforts during Hilcorp's 3D seismic survey in 2020 concluded that Pacific white-sided dolphins were briefly detected near Iniskin Bay in Cook Inlet. Detections of vocalizations typically lasted on the order of minutes, suggesting the animals did not remain in the area and/or continue vocalizing for extended durations. These observational data, combined with anecdotal information, indicate that there is a small potential for Pacific white-sided dolphins to occur in the Project area. On May 7, 2014, Apache Alaska observed three Pacific white-sided dolphins during an aerial survey near Kenai. This is one of the only recorded visual observations of Pacific white-sided dolphins in Cook Inlet; they have not been reported in groups as large as those estimated in other parts of Alaska (*e.g.,* 92 animals in NMFS' IHAs for Tongass Narrows). Due to the cryptic nature of the species and the lack of maneuverability of the tug configuration, take of Pacific white-sided dolphins was added to the proposed authorizations for Year 1 and Year 2.

Humpback whale

Humpback whales are found throughout southern Alaska in a variety of marine environments, including open-ocean, near-shore waters, and areas with strong tidal currents (Dahlheim *et al.,* 2009). Most humpback whales are migratory and spend winters in the breeding grounds off either Hawaii or Mexico. Humpback whales are regularly present and feeding in Cook Inlet in the summer. Current threats to humpback whales include vessel strikes, spills, climate change, and commercial fishing operations (Muto *et al.,* 2021).

Humpback whales worldwide were designated as ''endangered'' under the Endangered Species Conservation Act in 1970, and were listed under the ESA at its inception in 1973. However, on September 8, 2016, NMFS published a final decision that changed the status of humpback whales under the ESA (81 FR 62259), effective October 11, 2016. The decision recognized the existence of 14 distinct population segments (DPSs) based on distinct breeding areas in tropical and temperate waters. Five of the 14 DPSs were classified under the ESA (4 endangered and 1 threatened),

while the other 9 DPSs were delisted. Humpback whales found in the project area are predominantly members of the Hawaii DPS, which is not listed under the ESA. However, based on analyses of photo-identification studies in Alaska, members of the Mexico DPS and the Western North Pacific DPS, which are listed as threatened and endangered respectively, are thought to occur in Cook Inlet. Approximately 1 percent of all humpback whales in Cook Inlet are thought to belong to the endangered Western North Pacific DPS and 11 percent are thought to belong to the threatened Mexico DPS. All other humpback whales present are thought to belong to the non-listed Hawaii DPS (Wade *et al.,* 2021). Members of different DPSs are known to intermix on feeding grounds; therefore, all waters off the coast of Alaska should be considered to have ESA-listed humpback whales. Critical habitat was recently designated near the entrance of lower Cook Inlet for Western North Pacific DPS and Mexico DPS humpback whales (86 FR 21082, April 21, 2021); however, Hilcorp's action area does not spatially overlap with any critical habitat designated for humpback whale DPS.

The DPSs of humpback whales that were identified through the ESA listing process do not necessarily equate to the existing MMPA stocks. The stock delineations of humpback whales under the MMPA are currently under review. Until this review is complete, NMFS considers humpback whales in Cook Inlet to primarily be part of the Central North Pacific stock, with a status of endangered under the ESA and designations of strategic and depleted under the MMPA (Muto *et al.,* 2021). As described in the above Changes from Proposed IHAs to Final IHAs, during the course of consultation under the Endangered Species Act, it was brought to NMFS' attention that humpback whales in Cook Inlet could occasionally be from the Western North Pacific stock, and therefore have been included as a potential stock in the Final IHAs.

In the summer, humpback whales are regularly present and feeding in the Cook Inlet region, including Shelikof Strait, Kodiak Island bays, and the Barren Islands, in addition to Gulf of Alaska regions adjacent to the southeast side of Kodiak Island (especially Albatross Banks), the Kenai and Alaska peninsulas, Elizabeth Island, as well as south of the Aleutian Islands. Humpbacks also may be present in some of these areas throughout autumn (Muto *et al.,* 2017).

Humpback whales have been observed during marine mammal surveys conducted in Cook Inlet; however, their presence is largely confined to lower Cook Inlet. During SAExploration's 2015 seismic program, three humpback whales were observed in Cook Inlet; two near the Forelands and one in Kachemak Bay (Kendall *et al.,* 2015). During NMFS Cook Inlet beluga whale aerial surveys from 2000 to 2018, there were 88 sightings of 191 estimated individual humpback whales in lower Cook Inlet (Shelden *et al.,* 2017). They have been regularly seen near Kachemak Bay during the summer months (Rugh *et al.,* 2005). There are observations of humpback whales as far north as Anchor Point, with recent summer observations extending to Cape Starichkof (Owl Ridge, 2014). Several humpback whale sightings occurred lower Cook Inlet between Iniskin Peninsula and Kachemak Bay near Augustine, Barren, and Elizabeth Islands (Shelden *et al.,* 2013, 2015, 2017). There were two sightings of three humpback whales observed near Ladd Landing north of the Forelands on the recent Harvest Alaska Cook Inlet Pipeline Extension (CIPL) project (Sitkiewicz *et al.,* 2018). There were 14 sightings of 38 humpback whales observed in the 2019 Hilcorp lower Cook Inlet seismic survey in the fall (Fairweather Science, 2020). This higher number of humpback whales was expected in the lower Cook Inlet region than Hilcorp's proposed work in the late summer/fall period.

Ferguson *et al.* (2015) identified a biologically important area (BIA), in which humpback whales are known to concentrate for feeding, in the Gulf of Alaska region. The BIA encompasses the waters east of Kodiak Island (the Albatross and Portlock Banks), a target for historical commercial whalers based out of Port Hobron, Alaska (Ferguson *et al.,* 2015; Reeves *et al.,* 1985; Witteveen *et al.,* 2007). This BIA also includes waters along the southeastern side of Shelikof Strait and in the bays along the northwestern shore of Kodiak Island. The highest densities of humpback whales around the Kodiak Island BIA occur from July–August (Ferguson *et al.,* 2015). This BIA lies directly south but does not spatially overlap with Hilcorp's proposed action area.

A detailed description of the of the other species likely to be affected by Hilcorp's tug towing jack-up rig activity, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the **Federal Register** notice for the proposed IHA (87 FR 27597, May 9, 2022); since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that **Federal Register** notice for these descriptions. Please also refer to NMFS' website (*https://www.fisheries.noaa.gov/find-species*) for generalized species accounts.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.,* low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 5.

TABLE 5—MARINE MAMMAL HEARING GROUPS

[NMFS, 2018]

Hearing group	Generalized hearing range *
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz.
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz.
High-frequency (HF) cetaceans (true porpoises, *Kogia,* river dolphins, cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*).	275 Hz to 160 kHz.
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz.
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz.

* Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.,* 2007) and PW pinniped (approximation).

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.,* 2006; Kastelein *et al.,* 2009; Reichmuth and Holt, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information.

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

The underwater noise from Hilcorp's tug towing jack-up rig activity has the potential to result in behavioral harassment of marine mammals in the vicinity of the survey area. The notice of proposed IHA (87 FR 27597, May 9, 2022) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from Hilcorp's tug towing jack-up rig activity on marine mammals and their habitat. The effects described in the notice of proposed IHAs are expected to be the same on Western North Pacific stock of humpback whales and Pacific white-sided dolphins as for the other species and stocks considered in the proposed IHAs. That information and analysis is incorporated by reference into this final IHA determination and is not repeated here; please refer to the notice of proposed IHA (87 FR 27597, May 9, 2022).

Estimated Take

This section provides an estimate of the number of incidental takes authorized through these IHAs, which informs both NMFS' consideration of ''small numbers'' and the negligible impact determinations.

Harassment is the only type of take reasonably expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines ''harassment'' as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would be by Level B harassment only, in the form of disruption of behavioral patterns for individual marine mammals resulting from exposure to the tugs towing and positioning the jack-up rig. Based on the nature of the activity, Level A harassment is neither anticipated nor authorized.

As described previously, no serious injury or mortality is anticipated or authorized for this activity. Below we describe how the authorized take numbers are estimated.

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.,* previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the take estimates.

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur permanent threshold shift (PTS) of some degree (equated to Level A harassment).

Level B Harassment—Though significantly driven by received level, the onset of behavioral disturbance or harassment from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.,* frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.,* bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.,* Southall *et al.,* 2007, 2021, Ellison *et al.,* 2012). Accordingly, based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to reasonably estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally affected in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared pressure received levels (RMS SPL) of 120 dB (referenced to 1 micropascal (re 1 μPa)) for continuous (*e.g.,* vibratory pile-driving, drilling) and above RMS SPL, 160 dB re 1 μPa (rms) for non-explosive impulsive (*e.g.,* seismic airguns) or intermittent (*e.g.,* scientific sonar) sources.

Hilcorp's activity includes the use of continuous (tug towing and positioning the rig) sources, and therefore the RMS SPL 120 dB re 1 μPa is applicable.

Level A harassment for non-explosive sources—NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine

Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). Hilcorp's activity includes the use of non-impulsive (tugs towing rig) sources.

These thresholds are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance.*

TABLE 6—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT

Hearing group	PTS onset acoustic thresholds * (received level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1:* $L_{pk,flat}$: 219 dB; $L_{E,LF,24h}$: 183 dB	*Cell 2:* $L_{E,LF,24h}$: 199 dB.
Mid-Frequency (MF) Cetaceans	*Cell 3:* $L_{pk,flat}$: 230 dB; $L_{E,MF,24h}$: 185 dB	*Cell 4:* $L_{E,MF,24h}$: 198 dB.
High-Frequency (HF) Cetaceans	*Cell 5:* $L_{pk,flat}$: 202 dB; $L_{E,HF,24h}$: 155 dB	*Cell 6:* $L_{E,HF,24h}$: 173 dB.
Phocid Pinnipeds (PW)(Underwater)	*Cell 7:* $L_{pk,flat}$: 218 dB; $L_{E,PW,24h}$: 185 dB	*Cell 8:* $L_{E,PW,24h}$: 201 dB.
Otariid Pinnipeds (OW)(Underwater)	*Cell 9:* $L_{pk,flat}$: 232 dB; $L_{E,OW,24h}$: 203 dB	*Cell 10:* $L_{E,OW,24h}$: 219 dB.

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (L_{pk}) has a reference value of 1 μPa, and cumulative sound exposure level (L_E) has a reference value of 1μPa^{2}s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI, 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.,* varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

As described above in the Detailed Description of Specific Activity, based on in situ measurements of Hilcorp's tug and a review of the available literature of tugs under load, a source level of 185 dB re 1 μPa was used for Hilcorp's three tug configuration for towing the jack-up-rig. Hilcorp contracted SLR Consulting to model the extent of the Level B harassment isopleth as well as the extent of the PTS isopleth for their activity.

Rather than applying practical spreading loss, SLR created a more detailed propagation loss model in an effort to improve the accuracy of the results by considering the influence of environmental variables (*e.g.* bathymetry) at the specific well sites, as Hilcorp's operational locations are known in advance. Modeling was conducted using dBSea software. The fluid parabolic equation modeling algorithm was used with 5 Padé terms (see pg. 57 in Hilcorp's application for more detail) to calculate the transmission loss between the source and the receiver at low frequencies (⅓-octave bands, 31.5 Hz up to 1 kHz). For higher frequencies (1 kHz up to 8 kHz) the ray tracing model was used with 1,000 reflections for each ray. Sound sources were assumed to be omnidirectional and modeled as points. The received sound levels for the project were calculated as follows: (1) One-third octave source spectral levels were obtained via reference spectral curves with subsequent corrections based on their corresponding overall source levels; (2) Transmission loss was modeled at one-third octave band central frequencies along 100 radial paths at regular increments around each source location, out to the maximum range of the bathymetry data set or until constrained by land; (3) The bathymetry variation of the vertical plane along each modeling path was obtained via interpolation of the bathymetry dataset which has 83 m grid resolution; (4) The one-third octave source levels and transmission loss were combined to obtain the received levels as a function of range, depth, and frequency; and (5) The overall received levels were calculated at a 1-m depth resolution along each propagation path by summing all frequency band spectral levels.

Model Inputs—Bathymetry data used in the model was collected from the NOAA National Centers for Environmental Information (AFSC, 2019). Using NOAA's temperature and salinity data, sound speed profiles were computed for depths from 0 to 100 meters for May, July, and October to capture the range of possible sound speed depending on the time of year Hilcorp's work could be conducted. These sound speed profiles were compiled using the Mackenzie Equation (1981) and are presented in Table 8 of Hilcorp's application. Geoacoustic parameters were also incorporated into the model. The parameters were based on substrate type and their relation to depth. These parameters are presented in Table 9 of Hilcorp's application.

Detailed broadband sound transmission loss modeling in dBSea used the source level of 185 dB re 1 μPa at 1 m calculated in one-third octave band levels (31.5 Hz to 64,000 Hz) for frequency dependent solutions. The frequencies associated with tug sound sources occur within the hearing range of marine mammals in Cook Inlet. Received levels for each hearing marine mammal group based on one-third octave auditory weighting functions were also calculated and integrated into the modeling scenarios of dBSea. For modeling the distances to relevant PTS thresholds, a weighting factor adjustment was not used; instead, the data on the spectrum associated with their source was used and incorporated the full auditory weighting function for each marine mammal hearing group.

Because Hilcorp plans to use the tugs towing the jack-up-rig for essentially two functions (positioning and towing), the activity was divided into two parts (stationary and mobile) and two approaches were taken for modeling the relevant isopleths.

Stationary—For stationary activity, two locations representative of where tugs will be stationary positioning the jack-up rig were selected for the model. These locations are in middle Cook Inlet near the Tyonek platform, and in lower Trading Bay where the production platforms are located, with water depths of 40 m and 20 m respectively. The modeling at these locations assumed a stationary 5-hour exposure to a broadband spectrum of 185 dB as described above. A 5-hour exposure duration was chosen to account for the up to 5-hour positioning attempts on individual days as well as events where the tugs need to hold the jack-up rig while waiting for a following tide. Stationary model results are presented in Table 7.

Mobile—For the mobile portion of the activity, a representative route was used from the Rig Tender's dock in Nikiski to the Tyonek platform, the northernmost platform in Cook Inlet (representing Middle Cook Inlet), as well as from the Tyonek Platform to the Dolly Varden platform in lower Trading Bay and then from the Dolly Varden platform back to the Rig Tender's Dock in Nikiski. This route is representative of a typical route the tugs may take; the specific route is not yet known because the order in which platforms will be drilled with the jack-up rig is not yet known. The lowest threshold for the onset of PTS is for high frequency cetaceans at 173 dB. Based on a source level of 185 dB, and assuming practical spreading, the high frequency cetacean PTS threshold of 173 dB would be reached at 6.3 meters away from the source. The mobile source modeling assumed a transit speed of 2.06 m/s for the tug configuration. With an assumed vessel speed of 2.06 m/s, it would take the vessel 6.11 seconds to traverse a distance of two times the radius, with two times the radius used because the source is omnidirectional and the ship is moving in a straight line. Although a source level of 185 dB incorporates the use of three tugs simultaneously, because the three tugs will likely not be perfectly aligned in space (*e.g.,* one could lag slightly behind the forward two), three separate six second exposures were summed (one for each tug passing in space) to arrive at a total duration of exposure of 18 seconds. While it is possible the duration of exposure could be as short as six seconds if all tugs were perfectly aligned, separate exposures for each tug were considered as the exact formation of the tugging vessels at any given time is unknown. Mobile source model results are presented in Table 8.

Because there is no temporal component associated with NMFS' current Level B threshold, making it a potentially conservative assumption given the transitory nature of the rig towing activity, the results of the modeled distance to the 120 dB threshold for both stationary and mobile tug use are presented in Table 9 below. The average of these distances was used for calculation of estimated exposure to Level B harassment (3,850 m).

The locations used in the stationary and mobile source models are depicted in Figure 2 below.

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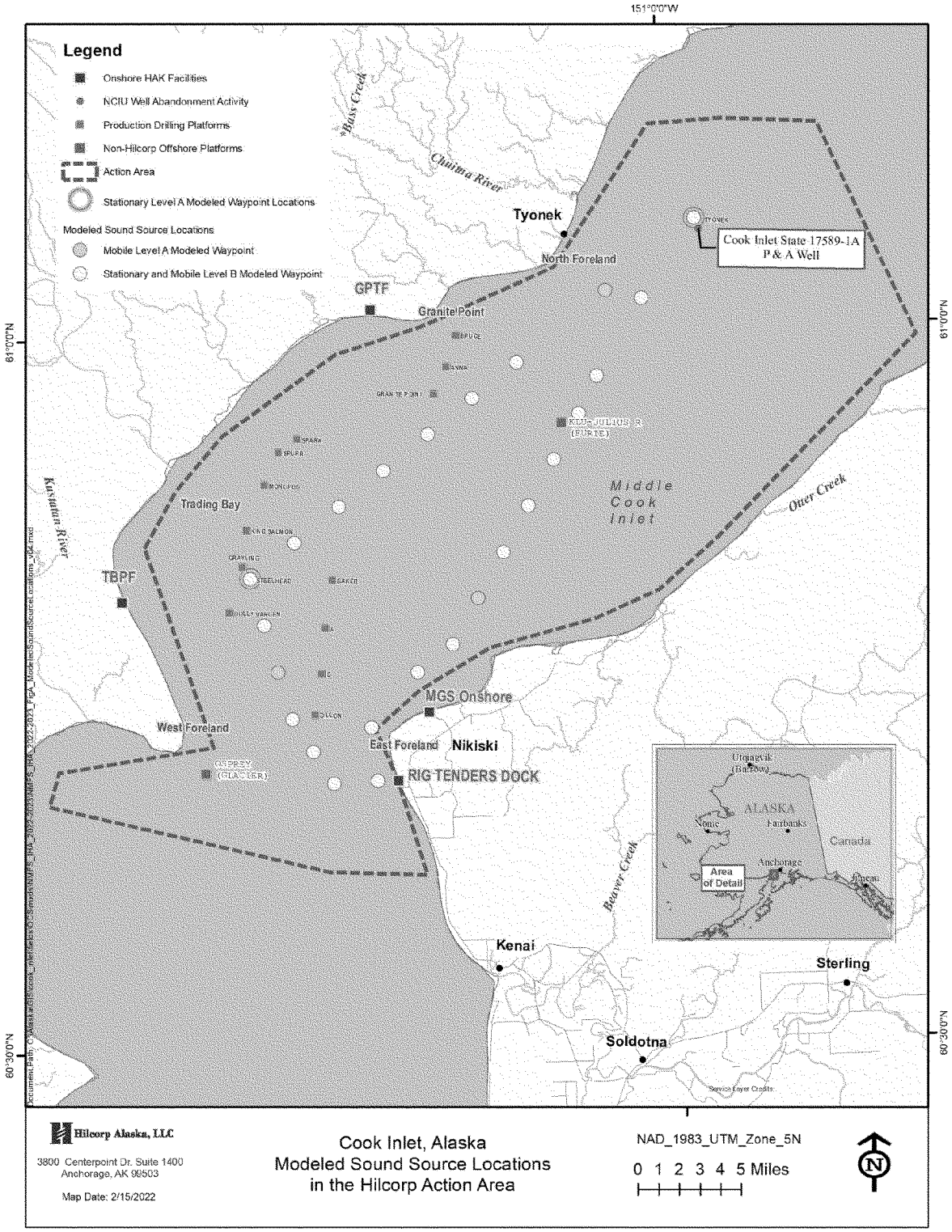

Figure 2 -- Locations Used for Stationary and Mobile Isopleth Models

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The outputs of the mobile and stationary models as distances to the relevant threshold (in meters) are presented below in Tables 7–9.

TABLE 7—AVERAGE DISTANCES TO PTS THRESHOLDS FOR STATIONARY ACTIVITY

Location	Season	Average distances (m) to PTS threshold by functional hearing group				
		LF	MF	HF	PW	OW
Trading Bay	May	100	72	716	59	
Trading Bay	July	122	73	697	63	
Trading Bay	October	98	72	694	59	
Middle Cook Inlet	May	83	83	643	77	
Middle Cook Inlet	July	89	85	664	78	
Middle Cook Inlet	October	80	84	661	78	
Average		95	78	679	69	0

TABLE 8—AVERAGE DISTANCES TO PTS THRESHOLDS FOR MOBILE ACTIVITY

Location	Season	Average distances (m) to PTS threshold by functional hearing group				
		LF	MF	HF	PW	OW
M2	May			10		
M2	July			5		
M2	October			10		
M11	May			10		
M11	July			5		
M11	October			10		
M22	May			10		
M22	July			5		
M22	October			10		
Average		0	0	8	0	0

TABLE 9—AVERAGE DISTANCES TO LEVEL B THRESHOLD

[stationary and mobile]

[120 dB]

Waypoint	Average distance to 120 dB threshold (m)			Season average distance to threshold (m)
	May	July	October	
M1	4,215	3,911	4,352	4,159
M2	3,946	3,841	4,350	4,046
M3	4,156	3,971	4,458	4,195
M4	4,040	3,844	4,364	4,083
M5	4,053	3,676	4,304	4,011
M6	3,716	3,445	3,554	3,572
M7	2,947	2,753	2,898	2,866
M8	3,270	3,008	3,247	3,175
M9	3,567	3,359	3,727	3,551
M10	3,600	3,487	3,691	3,593
M11	3,746	3,579	4,214	3,846
M12	3,815	3,600	3,995	3,803
M13	4,010	3,831	4,338	4,060
M14	3,837	3,647	4,217	3,900
M15	3,966	3,798	4,455	4,073
M16	3,873	3,676	4,504	4,018
M18	5,562	3,893	4,626	4,694
M20	5,044	3,692	4,320	4,352
M22	4,717	3,553	4,067	4,112
M24	4,456	3,384	4,182	4,007
M25	3,842	3,686	4,218	3,915
M26	3,690	3,400	3,801	3,630
M27	3,707	3,497	3,711	3,638
M28	3,546	3,271	3,480	3,432
M29	3,618	3,279	3,646	3,514
Average	3,958	3,563	4,029	3,850

Marine Mammal Occurrence

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations.

Densities for marine mammals in Cook Inlet were derived from NMFS' Marine Mammal Laboratory (MML) aerial surveys, typically flown in June, from 2000 to 2018 (Rugh *et al.,* 2005; Shelden *et al.,* 2013, 2015, 2017, 2019). A survey was also conducted in 2021 but density information is not yet available. While the surveys are concentrated for a few days in June annually, which may skew densities for seasonally present species, they are still the best available long-term dataset of marine mammal sightings available in Cook Inlet. Density was calculated by summing the total number of animals observed and dividing the number sighted by the area surveyed. The total number of animals observed accounts for both lower and upper Cook Inlet. There are no density estimates available for California sea lions and Pacific white-sided dolphins in Cook Inlet, as they are so infrequently sighted. Densities are presented in Table 10 below.

TABLE 10—DENSITIES OF MARINE MAMMALS IN COOK INLET

Species	Density (indiv/km^2)
Humpback whale	0.001770
Minke whale	0.000009
Gray whale	0.000075
Fin whale	0.000311
Killer whale	0.000601
Beluga whale (MML lower CI)	0.000023
Beluga whale (MML middle CI)	0.001110
Goetz beluga—LCI	0.011106
Goetz beluga—NCI	0.001664
Goetz beluga—TB	0.015053
Dall's porpoise	0.000154
Harbor porpoise	0.004386
Pacific white-sided dolphin	0.000000
Harbor seal	0.241401
Steller sea lion	0.007609
California sea lion	0.000000

For beluga whales, two densities were considered as a comparison of available data. The first source considered was directly from the MML aerial surveys, as described above. Sighting data collected during aerial surveys is collected and then several correction factors are applied to address perception, availability, and proximity bias. These corrected sightings totals are then divided by the total area covered during the survey to arrive at a density value. Densities were derived for the entirety of Cook Inlet as well as for middle and lower Cook Inlet. Densities across all three regions are low and there is a known effect of seasonality on the distribution of the whales. Thus, densities derived directly from surveys flown in June might underestimate the density of beluga whales in lower Cook Inlet at other ice-free times of the year.

The other mechanism for arriving at beluga whale density considered here is the Goetz *et al.* (2012) habitat-based model. This model is derived from sightings and incorporates depth soundings, coastal substrate type, environmental sensitivity index, anthropogenic disturbance, and anadromous fish streams to predict densities throughout Cook Inlet. The output of this model is a beluga density map of Cook Inlet, which predicts spatially explicit density estimates for Cook Inlet belugas. Using the resulting grid densities, average densities were calculated for two regions applicable to Hilcorp's operations. The densities applicable to the area of activity (*i.e.,* the North Cook Inlet Unit density for middle Cook Inlet activities and the Trading Bay density for activities in Trading Bay) are provided in Table 11 below and were carried forward to the exposure estimates. Likewise, when a range is given, the higher end of the range was used out of caution to calculate exposure estimates (*i.e.,* Trading Bay in the Goetz model has a range of 0.004453 to 0.015053; 0.015053 was used for the exposure estimates).

TABLE 11—COOK INLET BELUGA WHALE DENSITIES BASED ON GOETZ *et al.* (2012) HABITAT MODEL

Project Location	Beluga whale density (ind/km^2)
North Cook Inlet Unit (middle Cook Inlet)	0.001664
Trading Bay Area	0.004453–0.015053

Take Calculation and Estimation

Here we describe how the information provided above is brought together to produce a quantitative take estimate for each of the two IHAs.

Year 1 IHA—As described above, Hilcorp's tug towing rig activity was divided into two portions for the purpose of take estimation: stationary and mobile activity. For stationary activity, 5 hours of sound production per day was assumed for up to 14 days (seven moves or segments consisting of 2 days each). For the mobile portion of the activity, 1 day of 9 hours of mobile activity (assuming a source velocity of 2.06 m/s) and 6 days of 6 hours of mobile activity were assumed, for a total of 7 rig moves. The first 5 stationary hours are assumed to occur on the same day as the mobile hours, the second 5 stationary hours will occur the following day. The first 5 stationary

hours are assumed to occur on the same day as the mobile hours, the second 5 stationary hours will occur the following day.

Year 2 IHA—For stationary activity, 5 hours of sound production per day was assumed for up to 16 days. For mobile activity, 9 hours of sound production was assumed for 2 days, as well as 6 hours of sound production for 6 days, for a total of eight rig moves.

The ensonified areas calculated per activity type (stationary and mobile) for a single day were multiplied by marine mammal densities to get an estimate of exposures per day. This was then multiplied by the number of days of that type of activity (stationary or mobile) to arrive at the number of estimated exposures per year per activity type. These exposures by activity type were then summed to result in a number of exposures per year for all tug towing rig activity. The estimated exposures are provided below in Tables 12 and 13 for Year 1 and Year 2 of activity, respectively. As we are now considering one less rig mobilization in Year 1 than was considered in the notice of proposed IHAs, the calculated exposures for Year 1 are slightly lower than those of Year 2. There are two estimates for beluga whales provided in the tables below to demonstrate the difference in the calculations based on the chosen density value. As exposure estimates were calculated based on specific potential rig moves or well locations, the density value for beluga whales that was carried through the estimate was the higher density value for that particular location. There are no estimated exposures based on this method of calculation for Pacific white-sided dolphins and California sea lions because the assumed density is 0 animals/km^2.

TABLE 12—TOTAL CALCULATED EXPOSURES FOR YEAR 1

Group	Species	Level A	Level B
LF Cetaceans	Humpback whale	0.000	3.065
	Minke whale	0.000	0.016
	Gray whale	0.000	0.129
	Fin whale	0.000	0.538
MF Cetaceans	Killer whale	0.000	1.041
	Beluga whale NMFS	0.000	1.922
	Beluga whale Goetz	0.000	9.411
	Pacific white-sided dolphin	0.000	0.000
HF Cetaceans	Dall's porpoise	0.001	0.266
	Harbor porpoise	0.031	7.595
Phocids	Harbor seal	0.011	418.051
Otariids	Steller sea lion	0.000	13.176
	California sea lion	0.000	0.000

TABLE 13—TOTAL CALCULATED EXPOSURES FOR YEAR 2

Group	Species	Level A	Level B
LF Cetaceans	Humpback whale	0.000	4.058
	Minke whale	0.000	0.021
	Gray whale	0.000	0.171
	Fin whale	0.000	0.712
MF Cetaceans	Killer whale	0.000	1.379
	Beluga whale NMFS	0.000	2.545
	Beluga whale Goetz	0.000	11.651
	Pacific white-sided dolphin	0.000	0.000
HF Cetaceans	Dall's porpoise	0.001	0.353
	Harbor porpoise	0.038	10.057
Phocids	Harbor seal	0.012	553.565
Otariids	Steller sea lion	0.000	17.448
	California sea lion	0.000	0.000

Based on the analysis described above, NMFS has not authorized take via Level A harassment related to Hilcorp's tug towing drill rig activity. For mobile tugging, the distances to the PTS thresholds for high frequency cetaceans (the only functional hearing group of concern based on the model results) are smaller than the overall size of the tug and rig configuration, making it unlikely a cetacean would remain close enough to the tug engines to incur PTS. For stationary positioning of the jack up rig, the PTS isopleths are up to 679 m for high frequency cetaceans, but calculated on the assumption that an animal would remain within several hundred meters of the jack-up rig for the full 5 hours of noise-producing activity. Given the location of the activity is not in an area known to be essential habitat for any marine mammal species with extreme site fidelity over the course of 2 days, the occurrence of PTS is unlikely. A table indicating the number of takes, by Level B harassment, authorized is provided below.

TABLE 14—TAKES (BY LEVEL B HARASSMENT) CALCULATED AND AUTHORIZED FOR YEAR 1 IHA AND YEAR 2 IHA

	Year 1 calculated	Year 1 authorized	Year 2 calculated	Year 2 authorized
Humpback whale	3.065	5	4.058	6
Minke whale	0.016	6	0.021	6

TABLE 14—TAKES (BY LEVEL B HARASSMENT) CALCULATED AND AUTHORIZED FOR YEAR 1 IHA AND YEAR 2 IHA—Continued

	Year 1 calculated	Year 1 authorized	Year 2 calculated	Year 2 authorized
Gray whale	0.129	2	0.171	2
Fin whale	0.538	4	0.712	4
Killer whale	1.041	10	1.379	10
Beluga whale	1.922 (MML), 9.411 (Goetz).	11	2.545 (MML), 11.651 (Goetz).	22
Pacific white-sided dolphin	0	3	0	3
Dall's porpoise	0.266	6	0.353	6
Harbor porpoise	7.595	44	10.057	44
Harbor seal	418.051	418	553.565	554
Steller sea lion	13.176	13	17.448	17
California sea lion	0	2	0	2

As illustrated by the table above, the estimated exposures for several species are less than one. While uncommon, these species have been previously sighted in Cook Inlet and some are unlikely to appear as solitary individuals when sighted.

For humpback whales, the number of takes authorized is increased from the calculated estimate of four to six individuals. There were two sightings of three humpback whales observed near Ladd Landing north of the Forelands during the Harvest Alaska CIPL project (Sitkiewicz *et al.,* 2018). Based on documented observations during the CIPL survey (the survey nearest the Action Area), Hilcorp requested six takes of humpback whales to allow for up to two sightings of three individuals, consistent with what was observed during the CIPL project. We expect a small number of humpback whale groups will be exposed, with most of these groups consisting of one or two animals. There is a small probability more humpbacks are exposed than the calculated, three humpbacks in Year 1 and four in Year 2, therefore, we added an additional median group size of two humpback whales to each year resulting in an exposure estimate of five humpbacks in Year 1 and six in Year 2.

Minke whale takes authorized are increased from the calculated less than one individual to five. Minke whales are commonly sighted in groups of two or three, as well as sightings of individuals. There were eight sightings of eight minke whales observed during the 2019 Hilcorp lower Cook Inlet seismic survey (Fairweather Science, 2020). As the occurrence of minke whales is expected to be less in middle Cook Inlet than lower Cook Inlet and considering the observed group sizes, Hilcorp is requesting six takes of minke whale to allow for the possibility of two sightings of a group of three individuals, both in Year 1 and again in Year 2.

During Apache's 2012 seismic program, nine gray whales were observed in June and July (Lomac-MacNair *et al.,* 2013). During Apache's seismic program in 2014, one gray whale was observed (Lomac-MacNair *et al.,* 2014). During SAExploration's seismic survey in 2015, the 2018 CIPL project, and Hilcorp's 2019 seismic survey, no gray whales were observed (Kendall *et al.,* 2015; Sitkiewicz *et al.,* 2018; Fairweather Science, 2020). Considering the Action Area is in middle Cook Inlet where sightings of gray whales are less common, Hilcorp is requesting two takes of gray whales to allow for the potential occurrence of two individual gray whales both in Year 1 and again in Year 2.

The number of fin whale takes authorized is increased from one to four individuals, as they may be seen in groups of two to seven individuals. During seismic surveys conducted in 2019 by Hilcorp in the lower Cook Inlet, fin whales were recorded in groups ranging in size from one to 15 individuals (Fairweather, 2020). During the NMFS aerial surveys in Cook Inlet from 2000 to 2018, 10 sightings of 26 estimated individual fin whales in lower Cook Inlet were observed (Shelden *et al.,* 2013, 2015, 2016, 2019). A total authorized take of four fin whales would account for two sightings of two animals, which is the lower end of the range of common group size. Exposure of up to four fin whales could occur in Year 1 and again in Year 2.

The number of authorized killer whale takes is increased to 10 from the calculated exposure of one. Killer whales are typically sighted in pods of a few animals to 20 or more (NOAA, 2022b). During seismic surveys conducted in 2019 by Hilcorp in the lower Cook Inlet, 21 killer whales were observed, either as single individuals or in groups ranging in size from 2 to 5 individuals (Fairweather, 2020). Based on documented sightings, Hilcorp requested 10 takes of killer whales to allow for 2 sightings with a group size of 5 individuals in Year 1 and again in Year 2.

Depending on the density data used for each activity, the estimated annual exposures for beluga whales is 3 to 10 animals. The number of takes authorized for beluga whales is 11 animals for Year 1 and 22 animals in Year 2 to allow for the possibility that more than one observation of typical Cook Inlet beluga groups occurs. The 2018 MML aerial survey (Shelden and Wade, 2019) estimated a median group size of approximately 11 beluga whales, although group sizes were highly variable (2 to 147 whales) as was the case in previous survey years (Boyd *et al.,* 2019). We are not accounting for multiple groups of 11 belugas for Year 1 given that a large portion of the total mobilization distance has already been traveled, making an encounter with multiple beluga groups less likely. Additionally, vessel-based surveys in 2019 observed beluga whale groups in the Susitna River Delta (roughly 24 km [15 miles] north of the Tyonek Platform) that ranged from 5 to 200 animals (McGuire *et al.,* 2021). The very large groups seen in the Susitna River Delta are not expected near Hilcorp's platforms, however, smaller groups (*i.e.,* around the median group size) could be traveling through to access the Susitna River Delta and other nearby coastal locations, particularly in the shoulder seasons when belugas are more likely to occur in middle Cook Inlet.

The number of Dall's porpoise takes authorized is increased from less than one estimated individual to six. Dall's porpoises are usually found in groups averaging between two and 12 individuals (NOAA, 2022c). During seismic surveys conducted in 2019 by Hilcorp in the lower Cook Inlet, Dall's porpoises were recorded in groups

ranging in size from two to seven individuals (Fairweather, 2020). The 2012 Apache survey recorded two groups of three individual Dall's porpoises (Lomac-MacNair, 2014). Because occurrence of Dall's porpoise is anticipated to be less in middle Cook Inlet than lower Cook Inlet, the smaller end of documented group sizes (three individuals) is used, and Hilcorp requests six takes of Dall's porpoise to allow for two sightings of three individuals similar to the numbers observed during the 2012 Apache survey. The same number of takes are authorized in Year 1 and Year 2 because the calculated exposure for each year is less than one, making the group size methodology equally applicable to Year 1 and Year 2.

Harbor porpoise takes are increased from an estimated 10 takes to 44 takes. Shelden *et al.* (2014) compiled historical sightings of harbor porpoises from lower to upper Cook Inlet that spanned from a few animals to 92 individuals. The 2018 CIPL project that occurred just north of the Action Area in Cook Inlet reported 29 sightings of 44 individuals (Sitkiewicz *et al.,* 2018). While the duration of days that the tugs are towing a jack-up rig will be less than the CIPL project, given the increase in sightings of harbor porpoise in recent years, the sighting of harbor porpoise during Hilcorp's rig move in June 2022, and the inability to shut down the tugs, Hilcorp requests 44 takes of harbor porpoise, commensurate with the number observed in the nearby CIPL project. Once the rig move to Tyonek is removed from the calculation, as Hilcorp completed that work before issuance of these IHAs, calculated exposure of harbor porpoise is less in Year 1 than in Year 2. However, based on Hilcorp's monitoring report during their initial rig move, more harbor porpoises were seen than expected, so NMFS did not reduce the authorized take for Year 1 from what was originally requested (which included the Tyonek rig move in the calculation). As a result, 44 takes of harbor porpoise are authorized for both Year 1 and Year 2.

Take of harbor seal and Steller sea lion authorized for Year 1 and Year 2 is based on the calculated exposure. Because Hilcorp already completed a rig move to Tyonek and that effort has been removed from the calculation, take for both species in Year 1 is less than in Year 2.

Calculated take of Pacific white-sided dolphins and California sea lions was zero because the assumed density in Cook Inlet is zero. For California sea lions, any potential sightings would likely be lone out of habitat individuals. Two solitary individuals were seen during the 2012 Apache seismic survey in Cook Inlet (Lomac-MacNair *et al.,* 2013). Two takes are authorized based on the potential that two lone animals could be sighted over a year of work, as was seen during Apache's year of work. For Pacific white-sided dolphins, the only reported visual sightings that NMFS is aware of was three dolphins from Apache's monitoring efforts in 2014 in Kenai, which is in the general vicinity of Hilcorp's planned activities. Therefore, NMFS authorized three takes of Pacific white-sided dolphins annually in case a repeated group of similar size is encountered. For both species, the same number of takes are authorized for Year 1 and Year 2 because the calculated exposure for each year would be zero given the lack of density data, making the group size methodology equally applicable to Year 1 and Year 2.

Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses. NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat, as well as subsistence uses. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned), and;

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

Mitigation for Marine Mammals and Their Habitat

NMFS anticipates the project, in both of the two IHAs, will create an acoustic footprint above ambient sound levels of approximately 45 km² around the tugs positioning the jack-up rig or for approximately 3.8 km in all directions along a towing trajectory of approximately 64 km (40 mi). There is a discountable potential for marine mammals to incur PTS from the project, as source levels are relatively low, non-impulsive, and animals would have to remain at very close distances for multiple hours to accumulate acoustic energy at levels that could damage hearing. Therefore, we do not believe there is potential for Level A harassment. However, Hilcorp will implement a number of mitigation measures designed to reduce the potential for and severity of Level B harassment, protect belugas in important beluga whale habitat, and minimize the acoustic footprint of the project.

The tugs towing a jack-up rig are not able to shut down while transiting or positioning the rig. Hilcorp will maneuver the tugs towing the jack-up rig such that they maintain a consistent speed (approximately 4 knots) and avoid multiple changes of speed and direction to make the course of the vessels as predictable as possible to marine mammals in the surrounding environment, characteristics that are expected to be associated with a lower likelihood of disturbance. Hilcorp will implement a clearance zone of 1,500 meters around the centerpoint of the three tug configuration and will employ two NMFS-approved protected species observers (PSOs) to conduct marine mammal monitoring for all mobile and stationary activity involving tugs towing attached to the jack-up rig. Prior to commencing activities during daylight hours or if there is a 30-minute lapse in operational activities, the PSOs will monitor the clearance zone for marine mammals for 30 minutes. If no marine mammals are observed, operations may commence. If a marine mammal(s) is observed within the clearance zone during the clearing, the PSOs will

continue to watch until either: (1) the animal(s) is outside of and on a path away from the clearance zone; or (2) 15 minutes have elapsed if the species was a pinniped or small cetacean, or 30 minutes for large cetaceans whales. Once the PSOs have determined one of those conditions are met, operations may commence.

Should a marine mammal be observed during towing or positioning, the PSOs will monitor and carefully record any reactions observed until the jack-up rig has reached its intended position. No new operational activities would be started until the animal leaves the area; transitioning from tugging to positioning without shutting down is not considered a new operational activity. PSOs will also collect behavioral information on marine mammals sighted during monitoring efforts.

Hilcorp will make every effort to operate with the tide, resulting in a low power output from the tugs towing the jack-up rig. If human safety or equipment integrity is at risk, Hilcorp may necessarily operate in an unfavorable tidal state. Due to the nature of tidal cycles in Cook Inlet, it is possible the most favorable tide for the towing operation will occur during nighttime hours. Hilcorp will operate the tugs towing the jack-up rigs at night if the nighttime operations result in a lower power output from the tugs by operating with a favorable tide.

In low-light conditions, night-vision devices shown to be effective at detecting marine mammals in low-light conditions (*e.g.,* PVS–7 night-vision devices or similar) will be provided to PSOs to aid in low-light visibility. Every effort will be made to observe that the clearance zone is free of marine mammals by using night-vision devices, however it may not always be possible to see and clear the entire clearance zone prior to nighttime transport. PSOs will monitor the greatest extent feasible for 30 minutes immediately prior to the start of load bearing activities. If no marine mammals are observed, operations may commence. If a marine mammal is observed within the during the clearing, the PSOs will continue to watch until either: (1) the animal(s) is outside of and on a path away from the clearance zone; or (2) 15 minutes have elapsed if the species was a pinniped or small cetacean, or 30 minutes for large cetaceans whales. Once the PSOs have determined one of those conditions are met, operations may commence.

Out of concern for potential disturbance to Cook Inlet beluga whales in sensitive and essential habitat, Hilcorp will not conduct noise-producing activity within 16 km (10 miles) of the mean lower-low water (MLLW) line of the Susitna River Delta (Beluga River to the Little Susitna River) between April 15 and November 15 with the exception of work conducted at the Tyonek platform. The dates of applicability of this exclusion zone have been expanded based on new available science, including visual surveys and acoustic studies, which indicate that substantial numbers of Cook Inlet beluga whales continue to occur in the Susitna Delta area through at least mid-November (M. Castellote, pers. comm., T. McGuire, pers. comm.). As the MLLW is not a straight line but rather a jagged contour following the coastline, it is difficult to determine the southernmost extent of the zone during operations. For ease of implementation, the southernmost extent of the Susitna Delta exclusion zone will be considered a straight line from Tyonek at the west to Point Possession at the east (see Figure 3 below).

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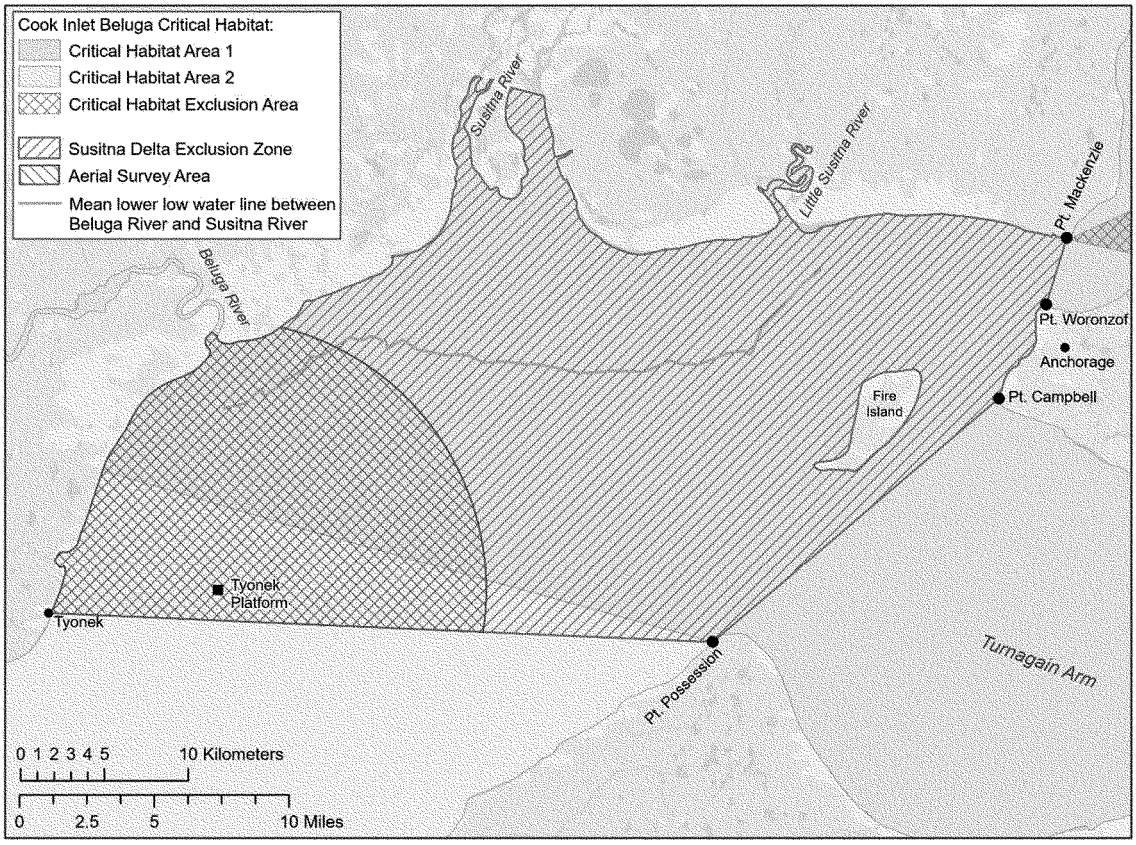

Figure 3 -- A map of the Susitna Delta exclusion zone and aerial survey area

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During the course of consultation under section 7 of the ESA, Hilcorp notified NMFS that adhering to the exclusion zone for the Tyonek platform would not be practicable given the operational and human safety concerns of accessing the platform outside of the open water season. Prior to tugging the jack-up rig to and from the Tyonek platform, Hilcorp will conduct a systematic aerial survey of all marine waters within a 10 mile radius of the Tyonek platform that intersects with the Susitna Delta exclusion zone, termed the aerial survey area (see Figure 3) to ensure the area is clear of beluga whales. Aerial surveys will be flown with a PSO observing for beluga whales at an altitude of approximately 1,000 ft (305 m). This survey will be conducted no more than 12 hours (one half of one tide cycle) prior to the proposed departure of the rig from its moored or anchored location. If beluga whales are observed during the aerial survey prior to mobilizing the jack-up rig to or from the Tyonek platform, Hilcorp will not begin mobilization of the rig until a subsequent aerial survey indicates the aerial survey area contains no beluga whales. Starting from the proposed departure date, Hilcorp will conduct aerial surveys as described above and if belugas are seen in the aerial survey area will defer moving the jack-up rig if there is another departure date that fits the tide/tug criteria for moving onto and off of the dock within 8 days. If the rig move is deferred until the next departure window occurring within 8 days of the first proposed departure date, Hilcorp will again conduct aerial surveys and will defer moving the rig until the last available tide for departure that allows the tugs to complete the transport in that second departure time frame. If beluga whales are observed in the aerial survey area prior to the last available tide in the already deferred second departure time-frame, Hilcorp will move the jack-up rig to its next location. If there is not another departure date within 8 days of the first proposed departure date, Hilcorp will conduct multiple aerial surveys (weather permitting) as described above and if belugas are seen in the aerial survey area will defer moving the rig until the last available tide in that initial departure window that fits with the tugs availability to complete the rig transport. If ice or other safety conditions exist that require the tugs to move the jack-up rig to preserve human safety, Hilcorp will move the jack-up rig to its next location even if belugas are observed in the aerial survey area.

Based on our evaluation of these measures, for both IHAs, NMFS has determined that the mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance and on the availability of such species or stock for subsistence uses.

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be

present in the action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

• Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.,* presence, abundance, distribution, density).

• Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.,* source characterization, propagation, ambient noise); (2) affected species (*e.g.,* life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.,* age, calving or feeding areas).

• Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors.

• How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks.

• Effects on marine mammal habitat (*e.g.,* marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat).

• Mitigation and monitoring effectiveness.

Hilcorp will abide by all monitoring and reporting measures contained within their Marine Mammal Monitoring and Mitigation Plan, dated March 7, 2022. A summary of those measures and additional requirements required by NMFS is provided below.

A minimum of two NMFS-approved PSOs will be on-watch during all activities wherein the jack-up rig is attached to the tugs for the duration of the project. Minimum requirements for a PSO include:

(a) Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;

(b) Advanced education in biological science or related field (undergraduate degree or higher required)—PSOs may also substitute Alaska native traditional knowledge for experience;

(c) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience);

(d) Experience or training in the field identification of marine mammals, including the identification of behaviors;

(e) Sufficient training, orientation, or experience with the activity to provide for personal safety during observations;

(f) Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when tugging activities were conducted; dates and times when tugging activities were suspended; and marine mammal behavior; and

(g) Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

PSOs will be stationed aboard a tug or the jack-up rig, work in shifts lasting no more than 4 hours without a minimum of a 1 hour break, and will not be on-watch for more than 12 hours within a 24-hour period.

Hilcorp will submit monthly reports for all months in which tugs towing or positioning the jack-up rig occurs. A draft marine mammal monitoring report would be submitted to NMFS within 90 days after the completion of the tug towing jack-up rig activities for the year. It will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated marine mammal observation data sheets. Specifically, the report must include:

• Date and time that monitored activity begins or ends;

• Construction activities occurring during each observation period;

• Weather parameters (*e.g.,* percent cover, visibility);

• Water conditions (*e.g.,* sea state, tide state);

• Species, numbers, and, if possible, sex and age class of marine mammals;

• Description of any observable marine mammal behavior patterns, including bearing and direction of travel and distance from tugging activity;

• Distance from tugging activities to marine mammals and distance from the marine mammals to the observation point;

• Locations of all marine mammal observations; and

• Other human activity in the area.

If no comments are received from NMFS within 30 days, the draft final report will constitute the final report. If NMFS submits comments, Hilcorp will submit a final report addressing NMFS comments within 30 days after receipt of comments.

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHAs (if issued), such as an injury, serious injury or mortality, Hilcorp would immediately cease the specified activities and report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the Alaska Regional Stranding Coordinator. The report would include the following information:

• Description of the incident;

• Environmental conditions (*e.g.,* Beaufort sea state, visibility);

• Description of all marine mammal observations in the 24 hours preceding the incident;

• Species identification or description of the animal(s) involved;

• Fate of the animal(s); and

• Photographs or video footage of the animal(s) (if equipment is available).

Activities would not resume until NMFS is able to review the circumstances of the prohibited take. NMFS would work with Hilcorp to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Hilcorp would not be able to resume their activities until notified by NMFS via letter, email, or telephone.

In the event that Hilcorp discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.,* in less than a moderate state of decomposition as described in the next paragraph), Hiclrop would immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinator. The report would include the same information identified in the paragraph above. Activities would be able to continue while NMFS reviews the circumstances of the incident. NMFS would work with Hilcorp to determine whether modifications in the activities are appropriate.

In the event that Hilcorp discovers an injured or dead marine mammal and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHAs (*e.g.,* previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Hilcorp would report the incident to the

Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinator, within 24 hours of the discovery. Hilcorp would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.,* population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be ''taken'' through harassment, NMFS considers other factors, such as the likely nature of any impacts or responses (*e.g.,* intensity, duration), the context of any impacts or responses (*e.g.,* critical reproductive time or location, foraging impacts affecting energetics), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS' implementing regulations (54 FR 40338, September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the baseline (*e.g.,* as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, the discussion of our analysis applies to all the species listed in Table 15, given that the anticipated effects of this activity on these different marine mammal stocks are expected to be similar in nature. There is little information about the nature or severity of the impacts, or the size, status, or structure of any of these species or stocks that would lead to a different analysis for this activity. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, they are described independently in the analysis below.

The project would create an acoustic footprint around the project area for a total of 14 to 16 days per year from approximately April through October, though not necessarily in the same calendar year. Noise levels within the footprint would reach or exceed 120 dB rms. We anticipate the 120 dB footprint to be limited to no more than 45 km^2 around the tugs positioning the jackup rig or approximately 3.8 km in all directions along a towing trajectory of approximately 64 km. The habitat within the footprint is not heavily used by marine mammals during the project time frame (*e.g.,* Cook Inlet beluga whale Critical Habitat Area 2, within which the activity resulting in the take of marine mammals is anticipated to potentially occur, is designated for beluga fall and winter use) and marine mammals are not known to engage in critical behaviors associated with this portion of Cook Inlet (*e.g.,* no known breeding grounds, foraging habitat, *etc.*). Most animals will likely be transiting through the area; therefore, exposure would be brief. The tugs would be moving at a relatively slow speed and in a predictable manner that is not expected to result in more severe behavioral responses. Animals may swim around the project area, avoiding closer approaches to the boats, but we do not expect them to abandon any intended path.

Feeding behavior is not likely to be significantly impacted, as no areas of biological significance for marine mammal feeding are known to exist in the project area and individual marine mammals are not expected to be exposed to the noise from the activities repeatedly or in long durations. We also expect the number of animals exposed to be small relative to population sizes. Finally, Hilcorp will minimize potential exposure of marine mammals to elevated noise levels by not commencing tugging activities if marine mammals are observed within the immediate starting area. Hilcorp is also able to reduce the impact of their activity by conducting tugging operations with favorable tides whenever feasible. Given this, any behavioral disturbance is expected to be comparatively low level and unlikely to affect the reproduction success or survival of any individuals, much less the population or stock.

Potential impacts to marine mammal habitat were discussed previously in this document (see Potential Effects of Specified Activities on Marine Mammals and their Habitat). Marine mammal habitat may be impacted by elevated sound levels, but these impacts would be temporary. In addition to being temporary and short in overall duration, the acoustic footprint of both years of activity is small relative to the overall distribution of the animals in the area and their use of the area.

In summary and as described above, the following factors primarily support our determinations that the impacts resulting from the activities described for these two IHAs are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality, serious injury, or injury is anticipated or authorized;
- The mobile portion of the project does not involve noise sources capable of inducing PTS in any species other than high frequency cetaceans, and due to the small size of the PTS isopleth for high frequency cetaceans (6 meters), it is unlikely to occur;
- Exposure would likely be brief given transiting behavior of marine mammals in the action area and the small number of days on which the activity is occurring;
- Marine mammal densities are low in the project area; therefore, there will not be substantial numbers of marine mammals exposed to the noise from the project compared to the affected population sizes; and
- Hilcorp will monitor for marine mammals daily and minimize exposure to operational activities.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the monitoring and mitigation measures, NMFS finds that the total marine mammal take from the activity described in the Year 1 IHA will have a negligible impact on all affected marine mammal species or stocks. Also, separately, NMFS finds that the total marine mammal take from the activity described in the Year 2 IHA will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of

abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one third of the species or stock abundance (as it is for all stocks in both the Year 1 and Year 2 IHAs), the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

Table 15 provides the quantitative analysis informing our small numbers determinations for the Year 1 and Year 2 IHAs. For most species, the amount of take authorized represents less than approximately two percent of the population for each IHA. For beluga whales, the amount of take authorized represents slightly under 8 percent of the population for each IHA.

TABLE 15—PERCENT OF STOCK AUTHORIZED TO BE TAKEN BY LEVEL B HARASSMENT UNDER EACH IHA

Species	Stock	Abundance (Nbest)	Authorized take (Level B)	Percent of stock
Year 1:				
Humpback whale	Western North Pacific; Central North Pacific	1,107; 10,103	5	0.45; 0.05
Minke whale	Alaska	1,233	6	0.49
Gray whale	Eastern Pacific	26,960	2	0.01
Fin whale	Northeastern Pacific	2,554	4	0.16
Killer whale	Alaska Resident, Gulf of Alaska, Aleutian Islands, and Bering Sea Transient.	587; 2,347	10	1.7; 0.43
Beluga whale	Cook Inlet	279	11	3.94
Pacific white-sided dolphin	North Pacific	26,880	3	0.01
Dall's porpoise	Alaska	83,400	6	0.01
Harbor porpoise	Gulf of Alaska	31,046	44	0.14
Harbor seal	Cook Inlet/Shelikof	26,907	418	1.55
Steller sea lion	Western	53,624	13	0.02
California sea lion	U.S.	233,515	2	0.00
Year 2:				
Humpback whale	Western North Pacific; Central North Pacific	1,107; 10,103	6	0.5; 0.06
Minke whale	Alaska	1,233	6	0.49
Gray whale	Eastern Pacific	26,960	2	0.01
Fin whale	Northeastern Pacific	2,554	4	0.16
Killer whale	Alaska Resident Gulf of Alaska, Aleutian Islands, and Bering Sea Transient.	587	10	1.7; 0.43
Beluga whale	Cook Inlet	279	22	7.89
Pacific white-sided dolphin	North Pacific	26,880	3	0.01
Dall's porpoise	Alaska	83,400	6	0.01
Harbor porpoise	Gulf of Alaska	31,046	44	0.14
Harbor seal	Cook Inlet/Shelikof	26,907	554	2.06
Steller sea lion	Western	53,624	17	0.03
California sea lion	U.S.	233,515	2	0.00

Based on the analysis contained herein of the activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks for the Year 1 IHA. Separately, NMFS also finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks for the Year 2 IHA.

Unmitigable Adverse Impact Analysis and Determination

In order to issue an IHA, NMFS must find that the specified activity will not have an unmitigable adverse impact on the availability of such species or stock for taking for subsistence uses by Alaska Natives. NMFS has defined ''unmitigable adverse impact'' in 50 CFR 216.103 as an impact resulting from the specified activity: (1) That is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) Causing the marine mammals to abandon or avoid hunting areas; (ii) Directly displacing subsistence users; or (iii) Placing physical barriers between the marine mammals and the subsistence hunters; and (2) That cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

To further minimize any potential effects of their action on subsistence activities, Hilcorp has outlined their communication plan for engaging with subsistence users in their Stakeholder Engagement Plan (Appendix B of Hilcorp's application). Hilcorp will be required to abide by this plan and update the plan accordingly.

Subsistence communities identified as project stakeholders near Hilcorp's middle Cook Inlet and Trading Bay activities include the Village of Salamatof and the Native Village of Tyonek. The ADF&G Community Subsistence Information System does not contain data for Salamatof. For the purposes of our analyses for the Year 1 and Year 2 IHAs, we can assume the subsistence uses are similar to those of nearby communities such as Kenai. At 3.5 km away from the closest point of approach, Tyonek is the closest subsistence community to Hilcorp's planned tug route. Tyonek, on the western side of lower Cook Inlet, has a subsistence harvest area that extends from the Susitna River south to Tuxedni Bay (BOEM, 2016). In Tyonek, harbor seals were harvested between June and September by 6 percent of the households (Jones *et al.,* 2015). Seals were harvested in several areas, encompassing an area stretching 32.2 km (20 miles) along the Cook Inlet coastline from the McArthur Flats north to the Beluga River. Seals were searched for or harvested in the Trading Bay areas as well as from the beach adjacent to Tyonek (Jones *et al.,* 2015).

Cook Inlet beluga whale subsistence harvest discontinued in 1999 as a result of both a voluntary moratorium by the

hunters that spring, and the passage of Public Law 106–31, section 3022 (later made permanent by Pub. L. 106–553, section 627), requiring any taking of Cook Inlet beluga whales by Alaska Natives to occur pursuant to a cooperative agreement between NMFS and affected Alaska Native organizations. A co-management agreement allowed the harvest of two whales in 2005 and one whale in 2006; however, no whales were taken in 2006 due to poor weather and the avoidance of females with calves. In 2008, NMFS issued regulations (73 FR 60976, October 15, 2008) establishing long-term limits on the maximum number of Cook Inlet beluga whales that may be taken for subsistence by Alaska Natives. These long-term harvest limits, developed for 5-year intervals, require that the abundance estimates reach a minimum 5-year average of 350 belugas (50 CFR 216.23(f)(2)(v)). No hunt has been authorized since 2006.

Subsistence hunting of whales is not known to currently occur in Cook Inlet. Hilcorp's tug towing jack-up rig activities may overlap with subsistence hunting of seals. However, these activities typically occur along the shoreline or very close to shore near river mouths, whereas most of Hilcorp's tugging is in the middle of the Inlet and rarely near the shoreline or river mouths. Any harassment to harbor seals is anticipated to be short-term, mild, and not result in any abandonment or behaviors that would make the animals unavailable to Alaska Natives.

Based on the description of the specified activity, the measures described to minimize adverse effects on the availability of marine mammals for subsistence purposes, and the mitigation and monitoring measures, NMFS has determined that there will not be an unmitigable adverse impact on subsistence uses from Hilcorp's activities under the Year 1 IHA. Separately, NMFS has also determined that there will not be an unmitigable adverse impact on subsistence uses from Hilcorp's activities under the Year 2 IHA.

National Environmental Policy Act

NMFS prepared an Environmental Assessment (EA) and analyzed the potential impacts to marine mammals that would result from the Hilcorp tug towing jack-up rig activity. A Finding of No Significant Impact (FONSI) was signed on September 14, 2022. A copy of the EA and FONSI is available upon request.

Endangered Species Act

NMFS authorized take of humpback whales (Mexico DPS, Western North Pacific DPS), fin whales (Northeastern Pacific stock), beluga whales (Cook Inlet stock), and Steller sea lion (Western DPS), which are listed under the ESA. The NMFS Alaska Regional Office Protected Resources Division issued a Biological Opinion on September 9, 2022 under section 7 of the ESA, on the issuance of an IHA to Hilcorp under section 101(a)(5)(D) of the MMPA by the NMFS Permits and Conservation Division. The Biological Opinion concluded that the action is not likely to jeopardize the continued existence of these populations, and is not likely to destroy or adversely modify critical habitat.

Authorization

NMFS has issued two IHAs to Hilcorp for the potential harassment of small numbers of 12 marine mammal species incidental to tugging a jack-up rig in Cook Inlet, Alaska, that include the aforementioned mitigation, monitoring and reporting requirements.

Dated: October 7, 2022.

Catherine G. Marzin,

Deputy Director, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2022–22343 Filed 10–13–22; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XC442]

Fisheries of the South Atlantic, Gulf of Mexico, and Caribbean; Southeast Data, Assessment, and Review (SEDAR) Public Meeting

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of SEDAR Procedural Workshop 8: Fishery Independent Index Development under Changing Survey Design.

SUMMARY: The SEDAR Procedural Workshop 8 for Fishery Independent Index Development will consist of a series of webinars, and an in-person workshop. See **SUPPLEMENTARY INFORMATION.**

DATES: The SEDAR Procedural Workshop 8 will be held Wednesday, November 2, 2022, from 9 a.m. until 5 p.m., Eastern; Thursday, November 3, 2022, from 9 a.m. until 5 p.m., Eastern; and Friday, November 4, 2022, from 9 a.m. until 3 p.m., Eastern. The established times may be adjusted as necessary to accommodate the timely completion of discussion relevant to the SEDAR process. Such adjustments may result in the meeting being extended from or completed prior to the time established by this notice.

ADDRESSES:

Meeting address: The SEDAR Procedural Workshop 8 meeting will be held at the Gulf of Mexico Fishery Management Council Office, 4107 West Spruce Street Suite 200, Tampa, FL 33607; phone: (888) 833–1844.

SEDAR address: 4055 Faber Place Drive, Suite 201, N. Charleston, SC 29405; *www.sedarweb.org.*

FOR FURTHER INFORMATION CONTACT: Julie A. Neer, SEDAR Program Manager, 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405; phone: (843) 571–4366 or toll free: (866)/SAFMC–10; fax: (843) 769–4520; email: *Julie.neer@safmc.net.*

SUPPLEMENTARY INFORMATION: SEDAR procedural workshops provide an opportunity for focused discussion and deliberation on topics that arise in multiple assessments and are structured to develop best practices for addressing common issues across assessments. The SEDAR Steering Committee agreed that previously completed procedural workshops were effective and that similar workshops should be held to address other issues that affect multiple assessments. Continuing to address such global issues is recognized as important to continuing improvements in efficiency and quality.

The 8th procedural workshop will consider methods of addressing the development for fishery-independent indices of abundance under changing survey designs. Participants will prepare a SEDAR procedures document addressing their recommendations that will be used to guide future SEDAR assessments.

Although non-emergency issues not contained in this agenda may come before this group for discussion, those issues may not be the subject of formal action during this meeting. Action will be restricted to those issues specifically identified in this notice and any issues arising after publication of this notice that require emergency action under section 305(c) of the Magnuson-Stevens Fishery Conservation and Management Act, provided the public has been notified of the intent to take final action to address the emergency.