UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910

LETTER OF AUTHORIZATION

Echo Offshore LLC and its designees are hereby authorized under section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(A)) to take marine mammals incidental to geophysical survey activities in the Gulf of America, subject to the provisions of the MMPA and the Regulations Governing Taking Marine Mammals Incidental to Geophysical Survey Activities in the Gulf of America (50 CFR Part 217, Subpart S) (Regulations).

1. This Letter of Authorization (LOA) is valid the date of issuance, through April 19, 2026.

2. This LOA authorizes take incidental to the specified geophysical survey activities (2DHR survey in the Vermillion Area lease block VR178) described in the LOA request.

3. General Conditions

   (a) A copy of this LOA must be in the possession of the Holder of the Authorization (Holder), vessel operator, other relevant personnel, the lead protected species observer (PSO), and any other relevant designees operating under the authority of the LOA.

   (b) The species and/or stocks authorized for taking are listed in Table 1. Authorized take, by Level B harassment only, is limited to the species and numbers listed in Table 1.

   (c) The taking by serious injury or death of any of the species listed in Table 1 or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA. Any taking exceeding the authorized amounts listed in Table 1 is prohibited and may result in the modification, suspension, or revocation of this IHA.

   (d) The Holder must instruct relevant vessel personnel with regard to the authority of the protected species monitoring team (PSO team), and must ensure that relevant vessel personnel and PSO team participate in a joint onboard briefing, led by the vessel operator and lead PSO, prior to beginning work to ensure that responsibilities, communication procedures, protected species monitoring protocols, operational procedures, and LOA requirements are clearly understood. This briefing must be repeated when relevant new personnel join the survey operations before work involving those personnel commences.

   (e) The acoustic source must be deactivated when not acquiring data or preparing to acquire data, except as necessary for testing. Unnecessary use of the acoustic source must be avoided. Notified operational capacity (i.e., total array volume or airgun size) (not including redundant backup airguns) must not be exceeded during the survey, except where unavoidable for source testing and calibration

purposes. All occasions where activated source volume exceeds notified operational capacity must be communicated to the PSO(s) on duty and fully documented. The lead PSO must be granted access to relevant instrumentation documenting acoustic source power and/or operational volume.

(f) PSO requirements:

i. LOA-holders must use independent, dedicated, qualified PSOs, meaning that the PSOs must be employed by a third-party observer provider, must have no tasks other than to conduct observational effort, collect data, and communicate with and instruct relevant vessel crew with regard to the presence of protected species and mitigation requirements (including brief alerts regarding maritime hazards), and must be qualified pursuant to section 5(a) of this LOA.

ii. The Holder must submit PSO resumes for NMFS review and approval prior to commencement of the survey. Resumes should include dates of training and any prior NMFS approval, as well as dates and description of last experience, and must be accompanied by information documenting successful completion of an acceptable training course. NMFS is allowed one week to approve PSOs from the time that the necessary information is received by NMFS, after which PSOs meeting the minimum requirements will automatically be considered approved.

iii. At least one PSO aboard each acoustic source vessel must have a minimum of 90 days at-sea experience working in the role, with no more than eighteen months elapsed since the conclusion of the at-sea experience. One PSO with such experience must be designated as the lead for the entire PSO team. The lead must coordinate duty schedules and roles for the PSO team and serve as the primary point of contact for the vessel operator. (Note that the responsibility of coordinating duty schedules and roles may instead be assigned to a shore-based, third-party monitoring coordinator.) To the maximum extent practicable, the lead PSO must devise the duty schedule such that experienced PSOs are on duty with those PSOs with appropriate training but who have not yet gained relevant experience.

4. Mitigation Requirements

(a) Visual monitoring requirements:

i. During survey operations (i.e., any day on which use of the acoustic source is planned to occur, and whenever the acoustic source is in the water, whether activated or not), a minimum of two PSOs must be on duty and conducting visual observations at all times during daylight hours (i.e., from 30 minutes prior to sunrise through 30 minutes following sunset).

ii. Visual monitoring must begin not less than 30 minutes prior to use of the acoustic source and must continue until one hour after use of the acoustic source ceases or until 30 minutes past sunset.

iii. PSOs must coordinate to ensure 360° visual coverage around the vessel from the most appropriate observation posts, and must conduct visual observations using binoculars and the naked eye while free from distractions and in a consistent, systematic, and diligent manner.

iv. Any observations of marine mammals by crew members aboard any vessel associated with the survey must be relayed to the PSO team.

v. During good conditions (e.g., daylight hours; Beaufort sea state (BSS) 3 or less), PSOs must conduct observations when the acoustic source is not operating for comparison of sighting rates and behavior with and without use of the acoustic source and between acquisition periods, to the maximum extent practicable.

vi. PSOs may be on watch for a maximum of two consecutive hours followed by a break of at least one hour between watches and may conduct a maximum of 12 hours of observation per 24-hour period. NMFS may grant an exception for LOA applicants that demonstrate such a "two hours on/one hour off" duty cycle is not practicable, in which case PSOs will be subject to a maximum of four consecutive hours on watch followed by a break of at least two hours between watches.

(b) PSOs must establish and monitor applicable exclusion and buffer zones. During use of the acoustic source (i.e., anytime the acoustic source is active), occurrence of marine mammals within the relevant buffer zone (but outside the exclusion zone) should be communicated to the operator to prepare for the potential shutdown of the acoustic source.

i. Two exclusion zones are defined, depending on the species and context. A standard exclusion zone encompassing the area at and below the sea surface out to a radius of 100 meters from the sound source (0-100 m) is defined. For special circumstances (defined at 4(d)(iv) of this LOA), the exclusion zone encompasses an extended distance of 500 meters (0-500 m).

ii. During pre-start clearance monitoring, the buffer zone acts as an extension of the exclusion zone in that observations of marine mammals within the buffer zone would also preclude airgun operations from beginning. For all marine mammals (except where superseded by the extended 500-m exclusion zone), the buffer zone encompasses the area at and below the sea surface from the edge of the 0-100 meter exclusion zone out to a

radius of 200 meters from the sound source (100-200 m). The buffer zone is not applicable when the exclusion zone is greater than 100 meters, i.e., the observational focal zone is not increased beyond 500 meters.

(c) A 30-minute pre-start clearance observation period must occur prior to activation of the sound source. The Holder must adhere to the following pre-start clearance requirements:

i. The operator must notify a designated PSO of the planned activation of the sound source as agreed upon with the lead PSO; the notification time should not be less than 60 minutes prior to the planned activation.

ii. A designated PSO must be notified again immediately prior to activating the sound source and the operator must receive confirmation from the PSO to proceed.

iii. Activation must not occur if any marine mammal is within the applicable exclusion or buffer zone. If a marine mammal is observed within the exclusion zone or the buffer zone during the 30-minute pre-start clearance period, activation must not occur until the animal(s) has been observed exiting the zones or until an additional time period has elapsed with no further sightings (15 minutes for small delphinids and 30 minutes for all other species).

iv. Activation may occur at times of poor visibility, including nighttime. Acoustic source activation may only occur at night where operational planning cannot reasonably avoid such circumstances.

v. If the acoustic source is shut down for brief periods (i.e., less than 30 minutes) for reasons other than implementation of prescribed mitigation (e.g., mechanical difficulty), it may be activated again without pre-start clearance watch if PSOs have maintained constant visual observation and no detections of any marine mammal have occurred within the applicable exclusion zone. For any longer shutdown, pre-start clearance observation is required.

(d) Shutdown requirements:

i. Any PSO on duty has the authority to delay the start of survey operations or to call for shutdown of the acoustic source pursuant to the requirements of this subpart.

ii. The operator must establish and maintain clear lines of communication directly between PSOs on duty and crew controlling the acoustic source to ensure that shutdown commands are conveyed swiftly while allowing PSOs to maintain watch.

iii. When the airgun is active and a marine mammal appears within or enters the applicable exclusion zone, the acoustic source must be shut down. When shutdown is called for by a PSO, the acoustic source must be immediately deactivated and any dispute resolved only following deactivation.

iv. The extended 500-m exclusion zone must be applied upon detection of a baleen whale, sperm whale, beaked whale, or *Kogia* spp. within the zone.

v. Shutdown requirements are waived for dolphins of the following genera: *Tursiops*, *Stenella*, *Steno*, and *Lagenodelphis*. If a delphinid is visually detected within the exclusion zone, no shutdown is required unless the PSO confirms the individual to be of a genus other than those listed above, in which case a shutdown is required.

vi. If there is uncertainty regarding identification or localization, PSOs may use best professional judgment in making the decision to call for a shutdown.

vii. Upon implementation of shutdown, the source may be reactivated after the marine mammal(s) has been observed exiting the applicable exclusion zone or following a 30-minute clearance period with no further detection of the marine mammal(s).

(e) *Vessel strike avoidance*. The Holder must adhere to the following requirements:

i. Vessel operators and crews must maintain a vigilant watch for all marine mammals and must slow down, stop their vessel, or alter course, as appropriate and regardless of vessel size, to avoid striking any marine mammal. A visual observer aboard the vessel must monitor a vessel strike avoidance zone around the vessel, which shall be defined according to the parameters stated in this subsection. Visual observers monitoring the vessel strike avoidance zone may be third-party observers (i.e., PSOs) or crew members, but crew members responsible for these duties must be provided sufficient training to distinguish marine mammals from other phenomena and broadly to identify a marine mammal as a baleen whale, sperm whale, or other marine mammal;

ii. Vessel speeds must be reduced to 10 kn or less when mother/calf pairs, pods, or large assemblages of marine mammals are observed near a vessel;

iii. All vessels must maintain a minimum separation distance of 500 m from baleen whales;

iv. All vessels must maintain a minimum separation distance of 100 m from

sperm whales;

v. All vessels must, to the maximum extent practicable, attempt to maintain a minimum separation distance of 50 m from all other marine mammals, with an exception made for those animals that approach the vessel; and

vi. When marine mammals are sighted while a vessel is underway, the vessel must take action as necessary to avoid violating the relevant separation distance, e.g., attempt to remain parallel to the animal's course, avoid excessive speed or abrupt changes in direction until the animal has left the area. If marine mammals are sighted within the relevant separation distance, the vessel must reduce speed and shift the engine to neutral, not engaging the engines until animals are clear of the area. This does not apply to any vessel towing gear or any vessel that is navigationally constrained.

vii. These requirements do not apply in any case where compliance would create an imminent and serious threat to a person or vessel or to the extent that a vessel is restricted in its ability to maneuver and, because of the restriction, cannot comply.

5. Monitoring Requirements

(a) PSO qualifications:

i. PSOs must successfully complete relevant, acceptable training, including completion of all required coursework and passing (80 percent or greater) a written and/or oral examination developed for the training program.

ii. PSOs must have successfully attained a bachelor's degree from an accredited college or university with a major in one of the natural sciences, a minimum of 30 semester hours or equivalent in the biological sciences, and at least one undergraduate course in math or statistics. The educational requirements may be waived if the PSO has acquired the relevant skills through alternate experience. Requests for such a waiver must be submitted to NMFS and shall include written justification. Requests will be granted or denied (with justification) by NMFS within one week of receipt of submitted information. Alternate experience that may be considered includes, but is not limited to:

(A) secondary education and/or experience comparable to PSO duties;

(B) previous work experience conducting academic, commercial, or government-sponsored marine mammal surveys; or

(C) previous work experience as a PSO; the PSO should demonstrate

good standing and consistently good performance of PSO duties.

(b) *Equipment*. The Holder is required to:

i. Work with the selected third-party observer provider to ensure PSOs have all equipment (including backup equipment) needed to adequately perform necessary tasks, including accurate determination of distance and bearing to observed marine mammals. (Equipment specified in A. through G. below may be provided by an individual PSO, the third-party observer provider, or the LOA-holder, but the LOA-holder is responsible for ensuring PSOs have the proper equipment required to perform the duties specified herein.) Such equipment, at a minimum, must include:

(A) Reticle binoculars (e.g., 7 x 50) of appropriate quality (at least one per PSO, plus backups);

(B) Global Positioning Unit (GPS) (plus backup);

(C) Digital camera with a telephoto lens (the camera or lens should also have an image stabilization system) that is at least 300 mm or equivalent on a full-frame single lens reflex (SLR) (plus backup);

(D) Compass (plus backup);

(E) Radios for communication among vessel crew and PSOs (at least one per PSO, plus backups); and

(F) Any other tools necessary to adequately perform necessary PSO tasks.

(c) *Data collection*. PSOs must use standardized electronic data forms. PSOs must record detailed information about any implementation of mitigation requirements, including the distance of marine mammals to the acoustic source and description of specific actions that ensued, the behavior of the animal(s), any observed changes in behavior before and after implementation of mitigation, and if shutdown was implemented, the length of time before any subsequent activation of the acoustic source. If required mitigation was not implemented, PSOs must record a description of the circumstances. At a minimum, the following information should be recorded:

i. Vessel names (source vessel and other vessels associated with survey), vessel size and type, maximum speed capability of vessel, port of origin, and call signs;

ii. PSO names and affiliations;

iii. Dates of departures and returns to port with port name;

iv. Dates of and participants in PSO briefings;

v. Dates and times (Greenwich Mean Time) of survey effort and times corresponding with PSO effort;

vi. Vessel location (latitude/longitude) when survey effort began and ended and vessel location at beginning and end of visual PSO duty shifts;

vii. Vessel location at 30-second intervals (if software capability allows) or 5-minute intervals (if location must be manually recorded);

viii. Vessel heading and speed at beginning and end of visual PSO duty shifts and upon any line change;

ix. Environmental conditions while on visual survey (at beginning and end of PSO shift and whenever conditions changed significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon;

x. Vessel location when environmental conditions change significantly;

xi. Factors that may have contributed to impaired observations during each PSO shift change or as needed as environmental conditions change (e.g., vessel traffic, equipment malfunctions);

xii. Survey activity information, such as acoustic source power output while in operation, number and volume of airguns operating in an array, tow depth of an acoustic source, and any other notes of significance (i.e., pre-start clearance, shutdown, testing, shooting, end of operations, streamers, etc.); and

xiii. Upon visual observation of a marine mammal, the following information:

(A) Watch status (sighting made by PSO on/off effort, opportunistic, crew, alternate vessel/platform);

(B) PSO who sighted the animal and PSO location (including height above water) at time of sighting;

(C) Time of sighting;

(D) Vessel coordinates at time of sighting;

(E) Water depth;

(F) Direction of vessel's travel (compass direction);

(G) Speed of the vessel(s) from which the observation was made;

(H) Direction of animal's travel relative to the vessel;

(I) Pace of the animal;

(J) Estimated distance to the animal (and method of estimating distance) and its heading relative to vessel at initial sighting;

(K) Identification of the animal (e.g., genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;

(L) Estimated number of animals (high/low/best);

(M) Estimated number of animals by cohort (adults, juveniles, group composition, etc.);

(N) Description (as many distinguishing features as possible of each individual seen, including length, shape, color, pattern, scars or markings, shape and size of dorsal fin, shape of head, and blow characteristics);

(O) Detailed behavior observations (e.g., number of blows/breaths, number of surfaces, breaching, spyhopping, diving, feeding, traveling; as explicit and detailed as possible; note any observed changes in behavior), including an assessment of behavioral responses to survey activity;

(P) Animal's closest point of approach (CPA) and/or closest distance from any element of the acoustic source;

(Q) Platform activity at time of sighting (e.g., deploying, recovering, testing, shooting, data acquisition, other); and

(R) Description of any actions implemented in response to the sighting (e.g., delays, shutdown) and time and location of the action.

6. Reporting Requirements

(a) Annual reporting:

i. The Holder must submit a summary report to NMFS on all activities and

monitoring results within 90 days of the completion of the survey or expiration of the LOA, whichever comes sooner, and must include all information described above under section 5(c) of this LOA. If an issued LOA is valid for greater than one year, the summary report must be submitted on an annual basis.

ii. The report must describe activities conducted and sightings of marine mammals, must provide full documentation of methods, results, and interpretation pertaining to all monitoring, and must summarize the dates and locations of survey operations and all marine mammal sightings (dates, times, locations, activities, associated survey activities, and information regarding locations where the acoustic source was used). In addition to the report, all raw observational data must be made available to NMFS.

iii. The Holder must provide geo-referenced time-stamped vessel tracklines for all time periods in which airguns (full array or single) were operating. Tracklines must include points recording any change in airgun status (e.g., when the airguns began operating, when they were turned off). GIS files must be provided in ESRI shapefile format and include the UTC date and time, latitude in decimal degrees, and longitude in decimal degrees. All coordinates must be referenced to the WGS84 geographic coordinate system.

iv. The draft report must be accompanied by a certification from the lead PSO as to the accuracy of the report, and the lead PSO may submit directly to NMFS a statement concerning implementation and effectiveness of the required mitigation and monitoring.

v. A final report must be submitted within 30 days following resolution of any comments on the draft report.

(b) *Comprehensive reporting*. The Holder must contribute to the compilation and analysis of data for inclusion in an annual synthesis report addressing all data collected and reported through annual reporting in each calendar year. The synthesis period shall include all annual reports deemed to be final by NMFS in a given one-year reporting period. The report must be submitted to NMFS within 90 days following the end of a given one-year reporting period.

(c) Reporting of injured or dead marine mammals:

i. In the event that personnel involved in the survey activities discover an injured or dead marine mammal, the Holder must report the incident to the Office of Protected Resources (OPR), NMFS and to the Southeast Regional Stranding Network as soon as feasible. The report must include the following information:

(A) Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);

(B) Species identification (if known) or description of the animal(s) involved;

(C) Condition of the animal(s) (including carcass condition if the animal is dead);

(D) Observed behaviors of the animal(s), if alive;

(E) If available, photographs or video footage of the animal(s); and

(F) General circumstances under which the animal was discovered.

ii. In the event of a ship strike of a marine mammal by any vessel involved in the survey activities, the LOA-holder must report the incident to OPR, NMFS and to the Southeast Regional Stranding Network as soon as feasible. The report must include the following information:

(A) Time, date, and location (latitude/longitude) of the incident;

(B) Species identification (if known) or description of the animal(s) involved;

(C) Vessel's speed during and leading up to the incident;

(D) Vessel's course/heading and what operations were being conducted (if applicable);

(E) Status of all sound sources in use;

(F) Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike;

(G) Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, visibility) immediately preceding the strike;

(H) Estimated size and length of animal that was struck;

(I) Description of the behavior of the marine mammal immediately preceding and following the strike;

(J) If available, description of the presence and behavior of any other

marine mammals immediately preceding the strike;

(K) Estimated fate of the animal (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and

(L) To the extent practicable, photographs or video footage of the animal(s).

7. Actions to Minimize Additional Harm to Live-Stranded (or Milling) Marine Mammals

(a) In the event of a live stranding (or near-shore atypical milling) event within 50 km of the survey operations, where the NMFS stranding network is engaged in herding or other interventions to return animals to the water, the Director of OPR, NMFS (or designee) will advise the Holder of the need to implement shutdown procedures for all active acoustic sources operating within 50 km of the stranding. Shutdown procedures for live stranding or milling marine mammals include the following:

i. If at any time, the marine mammal(s) die or are euthanized, or if herding/intervention efforts are stopped, the Director of OPR, NMFS (or designee) will advise the LOA-holder that the shutdown around the animals' location is no longer needed.

ii. Otherwise, shutdown procedures will remain in effect until the Director of OPR, NMFS (or designee) determines and advises the LOA-holder that all live animals involved have left the area (either of their own volition or following an intervention).

iii. If further observations of the marine mammals indicate the potential for re-stranding, additional coordination with the LOA-holder will be required to determine what measures are necessary to minimize that likelihood (e.g., extending the shutdown or moving operations farther away) and to implement those measures as appropriate.

(b) If NMFS determines that the circumstances of any marine mammal stranding found in the vicinity of the activity suggest investigation of the association with survey activities is warranted, and an investigation into the stranding is being pursued, NMFS will submit a written request to the LOA-holder indicating that the following initial available information must be provided as soon as possible, but no later than 7 business days after the request for information. In the event that the investigation is still inconclusive, the investigation of the association of the survey activities is still warranted, and the investigation is still being pursued, NMFS may provide additional information requests, in writing, regarding the nature and location of survey operations prior to the time period above.

i. Status of all sound source use in the 48 hours preceding the estimated time of stranding and within 50 km of the discovery/notification of the stranding by NMFS; and

ii. If available, description of the behavior of any marine mammal(s) observed preceding (i.e., within 48 hours and 50 km) and immediately after the discovery of the stranding.

8. This Authorization may be modified, suspended or revoked if the Holder fails to abide by the conditions prescribed herein (including, but not limited to, failure to comply with monitoring or reporting requirements), or if NMFS determines: (1) the authorized taking is likely to have or is having more than a negligible impact on the species or stocks of affected marine mammals, or (2) the prescribed measures are likely not or are not effecting the least practicable adverse impact on the affected species or stocks and their habitat.

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Kimberly Damon-Randall
Director,
Office of Protected Resources,
National Marine Fisheries Service.

Table 1. Authorized Incidental Take.

Common name	Scientific name	Level A harassment	Level B harassment
Rough-toothed dolphin	*Steno bredanensis*	0	14
Bottlenose dolphin	*Tursiops truncatus*	0	31
Atlantic spotted dolphin	*Stenella frontalis*	0	26