



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

John Hendrix
Apache Alaska Corporation
510 L Street
Suite 310
Anchorage, Alaska 99501

MAR 04 2014

Dear Mr. Hendrix:

Enclosed is an Incidental Harassment Authorization (IHA) issued to the Apache Alaska Corporation, under the authority of section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*), to harass small numbers of marine mammals, by Level B harassment, incidental to the marine seismic survey in Cook Inlet from March 4, through December 31, 2014.

You are required to comply with the conditions contained in the IHA. In addition, you must submit reports to the National Marine Fisheries Service's (NMFS) Office of Protected Resources on a weekly and monthly basis during the survey and within 90 days of its completion. The IHA requires monitoring of marine mammals by qualified individuals before, during, and after seismic activities and reporting of marine mammal observations, including species, numbers, and behavioral modifications potentially resulting from this activity.

If you have any questions concerning the IHA or its requirements, please contact Candace Nachman, Office of Protected Resources, NMFS, at 301-427-8429.

Sincerely,

Perry Gayaldo

for Donna S. Wieting
Director
Office of Protected Resources

Enclosures



Incidental Harassment Authorization

Apache Alaska Corporation (Apache), 510 L Street, Suite 310, Anchorage, Alaska 99501, is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)), to harass small numbers of marine mammals incidental to specified activities associated with a marine geophysical (seismic) survey in Cook Inlet, Alaska, contingent upon the following conditions:

1. This Authorization is valid from March 1, 2014, through December 31, 2014.
2. This Authorization is valid only for Apache's activities associated with seismic survey operations that shall occur within the areas denoted as Zone 1 and Zone 2 as depicted in Figure 2 of Apache's November 2013 application to the National Marine Fisheries Service.

3. Species Authorized and Level of Take

(a) The incidental taking of marine mammals, by Level B harassment only, is limited to the following species in the waters of Cook Inlet:

(i) Odontocetes: see Table 1 (attached) for authorized species and take numbers.

(ii) Pinnipeds: see Table 1 (attached) for authorized species and take numbers.

(iii) If any marine mammal species are encountered during seismic activities that are not listed in Table 1 (attached) for authorized taking and are likely to be exposed to sound pressure levels (SPLs) greater than or equal to 160 dB re 1 μ Pa (rms), then the Holder of this Authorization must alter speed or course, power down or shut-down the sound source to avoid take.

(b) The taking by injury (Level A harassment) serious injury, or death of any of the species listed in Table 1 or the taking of any kind of any other species of marine mammal is prohibited and may result in the modification, suspension or revocation of this Authorization.

(c) If the number of detected takes of any marine mammal species listed in Table 1 is met or exceeded, Apache shall immediately cease survey operations involving the use of active sound sources (e.g., airguns and pingers) and notify NMFS.

4. The authorization for taking by harassment is limited to the following acoustic sources (or sources with comparable frequency and intensity) without an amendment to this Authorization:

- (a) Two airgun arrays, each with a capacity of 2,400 in³;
- (b) Two airgun arrays, each with a capacity of 1,200 in³;



- (c) A 440 in³ airgun array;
- (d) A 10 in³ airgun;
- (e) A Scott Ultra-Short Baseline (USBL) transceiver; and
- (f) A Lightweight Release USBL transponder.

5. The taking of any marine mammal in a manner prohibited under this Authorization must be reported immediately to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS or her designee at (301) 427-8401.

6. The holder of this Authorization must notify the Chief of the Permits and Conservation Division, Office of Protected Resources, or her designee at least 48 hours prior to the start of seismic survey activities (unless constrained by the date of issuance of this Authorization in which case notification shall be made as soon as possible) at 301-427-8401 or to Candace.Nachman@noaa.gov.

7. Mitigation and Monitoring Requirements: The Holder of this Authorization is required to implement the following mitigation and monitoring requirements when conducting the specified activities to achieve the least practicable impact on affected marine mammal species or stocks:

(a) Utilize a sufficient number of NMFS-qualified, vessel-based Protected Species Visual Observers (PSVOs) (except during meal times and restroom breaks, when at least one PSVO shall be on watch) to visually watch for and monitor marine mammals near the seismic source vessels during daytime operations (from nautical twilight-dawn to nautical twilight-dusk) and before and during start-ups of sound sources day or night. Two PSVOs will be on each source vessel, and two PSVOs will be on the support vessel to observe the exclusion and disturbance zones. PSVOs shall have access to reticle binoculars (7x50 Fujinon), big-eye binoculars (25x150), and night vision devices. PSVO shifts shall last no longer than 4 hours at a time. PSVOs shall also make observations during daytime periods when the sound sources are not operating for comparison of animal abundance and behavior, when feasible. When practicable, as an additional means of visual observation, Apache's vessel crew may also assist in detecting marine mammals.

(b) In addition to the vessel-based PSVOs, utilize a shore-based station to visually monitor for marine mammals. The shore-based station will follow all safety procedures, including bear safety. The location of the shore-based station will need to be sufficiently high to observe marine mammals; the PSOs would be equipped with pedestal mounted "big eye" (20 x 110) binoculars. The shore-based PSOs would scan the area prior to, during, and after the survey operations involving the use of sound sources, and would be in contact with the vessel-based PSOs via radio to communicate sightings of marine mammals approaching or within the project area.

(c) Weather and safety permitting, aerial surveys shall be conducted on a daily basis when there are any seismic-related activities (including node laying/retrieval and airgun operations). Surveys are to be flown even if the airguns are not being fired. If weather or safety conditions prevent Apache from conducting aerial surveys, seismic survey operations may proceed subject to the terms and conditions of the IHA.

(i) When survey operations occur near a river mouth, Apache shall conduct aerial surveys to identify large congregations of beluga whales and harbor seal haul-outs.

(ii) When operating north or east of a line from Tyonek across to the eastern side of Number 3 Bay of the Captain Cook State Recreation Area, Cook Inlet, Apache will fly daily aerial surveys (safety and weather permitting). Flight paths shall encompass areas from Anchorage, along the coastline of the Susitna Delta to Tyonek, across the inlet to Point Possession, around the coastline of Chickaloon Bay to Burnt Island, and across to Anchorage (or in reverse order). These designations apply when Apache is operating in Zone 1 (see Figure 2 in the IHA application).

(iii) When operating in Zone 2 (see Figure 2 in the IHA application), Apache will conduct aerial surveys, safety and weather permitting, a minimum distance of 30 km (18.6 mi) around the seismic operating area expected for that day.

(iv) Aerial surveys may be conducted from either a helicopter or fixed-wing aircraft. A fixed-wing aircraft may be used in lieu of a helicopter. If flights are to be conducted with a fixed-wing aircraft, it must have adequate viewing capabilities, i.e., view not obstructed by wing or other part of the plane.

(v) Weather and safety permitting, aerial surveys will fly at an altitude of 305 m (1,000 ft). In the event of a marine mammal sighting, aircraft will attempt to maintain a radial distance of 457 m (1,500 ft) from the marine mammal(s). Aircraft will avoid approaching marine mammals from head-on, flying over or passing the shadow of the aircraft over the marine mammal(s).

(d) Record the following information when a marine mammal is sighted:

(i) Species, group size, age/size/sex categories (if determinable), behavior when first sighted and after initial sighting, heading (if consistent), bearing and distance from seismic vessel, sighting cue, apparent reaction to the airguns or vessel (e.g., none, avoidance, approach, paralleling, etc., and including responses to ramp-up), and behavioral pace;

(ii) Time, location, heading, speed, activity of the vessel (including number of airguns operating and whether in state of ramp-up or power-down), Beaufort sea state and wind force, visibility, and sun glare; and

(iii) The data listed under Condition 7(d)(ii) shall also be recorded at the start and end of each observation watch and during a watch whenever there is a change in one or more of the variables.

(e) Establish a 180 dB re 1 μ Pa (rms) and 190 dB re 1 μ Pa (rms) "exclusion zone" (EZ) for marine mammals before the full array (2400 in³) is in operation; and a 180 dB re 1 μ Pa (rms) and 190 dB re 1 μ Pa (rms) EZ before a single airgun (10 in³) is in operation, respectively.

(f) Visually observe the entire extent of the EZ (180 dB re 1 μ Pa [rms] for cetaceans and 190 dB re 1 μ Pa [rms] for pinnipeds) using NMFS-qualified PSVOs, for at least 30 minutes (min) prior to starting the airgun array (day or night). If the PSVO finds a marine mammal within the EZ, Apache must delay the seismic survey until the marine mammal(s) has left the area. If the PSVO sees a marine mammal that surfaces, then dives below the surface, the PSVO shall wait 30 min. If the PSVO sees no marine mammals during that time, they should assume that the animal has moved beyond the EZ. If for any reason the entire radius cannot be seen for the entire 30 min (i.e., rough seas, fog, darkness), or if marine mammals are near, approaching, or in the EZ, the airguns may not be ramped-up.

(g) Implement a “ramp-up” procedure when starting up at the beginning of seismic operations or any time after the entire array has been shut down for more than 10 min, which means start the smallest sound source first and add sound sources in a sequence such that the source level of the array shall increase in steps not exceeding approximately 6 dB per 5-min period. During ramp-up, the PSVOs shall monitor the EZ, and if marine mammals are sighted, a power-down, or shutdown shall be implemented as though the full array were operational. Therefore, initiation of ramp-up procedures from shutdown requires that the PSVOs be able to visually observe the full EZ as described in Condition 7(e) (above).

(h) Alter speed or course during seismic operations if a marine mammal, based on its position and relative motion, appears likely to enter the relevant EZ. If speed or course alteration is not safe or practicable, or if after alteration the marine mammal still appears likely to enter the EZ, further mitigation measures, such as a power-down or shutdown, shall be taken.

(i) Power-down or shutdown the sound source(s) if a marine mammal is detected within, approaches, or enters the relevant EZ. A shutdown means all operating sound sources are shut down (i.e., turned off). A power-down means reducing the number of operating sound sources to a single operating 10 in³ airgun, which reduces the EZ to the degree that the animal(s) is no longer in or about to enter it.

(j) Following a power-down, if the marine mammal approaches the smaller designated EZ, the sound sources must then be completely shut down. Seismic survey activity shall not resume until the PSVO has visually observed the marine mammal(s) exiting the EZ and is not likely to return, or has not been seen within the EZ for 15 min for species with shorter dive durations (small odontocetes and pinnipeds) or 30 min for species with longer dive durations (large odontocetes, including killer whales and beluga whales).

(k) Following a power-down or shutdown and subsequent animal departure, survey operations may resume following ramp-up procedures described in Condition 7(g).

(l) Marine geophysical surveys may continue into night and low-light hours if such segment(s) of the survey is initiated when the entire relevant EZs can be effectively monitored visually (i.e., PSVO(s) must be able to see the extent of the entire relevant EZ).

(m) No initiation of survey operations involving the use of sound sources is permitted from a shutdown position at night or during low-light hours (such as in dense fog or heavy rain).

(n) If a beluga whale is visually sighted approaching or within the 160-dB disturbance zone, survey activity will not commence or the sound source(s) shall be shut down until the animals are no longer present within the 160-dB zone.

(o) Whenever aggregations or groups of killer whales and/or harbor porpoises are detected approaching or within the 160-dB disturbance zone, survey activity will not commence or the sound source(s) shall be shut-down until the animals are no longer present within the 160-dB zone. An aggregation or group of whales/porpoises shall consist of five or more individuals of any age/sex class.

(p) Apache must not operate airguns within 10 miles (16 km) of the mean higher high water (MHHW) line of the Susitna Delta (Beluga River to the Little Susitna River) between April 15 and October 15 (to avoid any effects to belugas in an important feeding and breeding area).

(q) Seismic survey operations involving the use of airguns and pingers must cease if takes of any marine mammal are met or exceeded.

(r) The mitigation airgun will be operated at approximately one shot per minute and will not be operated for longer than three hours in duration during daylight hours and good visibility. In cases when the next start-up after the turn is expected to be during lowlight or low visibility, use of the mitigation airgun may be initiated 30 minutes before darkness or low visibility conditions occur and may be operated until the start of the next seismic acquisition line. The mitigation gun must still be operated at approximately one shot per minute.

8. Reporting Requirements: The Holder of this Authorization is required to:

(a) Submit a weekly field report, no later than close of business (Alaska time) each Thursday during the weeks when in-water seismic survey activities take place. The field reports will summarize species detected, in-water activity occurring at the time of the sighting, behavioral reactions to in-water activities, and the number of marine mammals taken.

(b) Submit a monthly report, no later than the 15th of each month, to NMFS' Permits and Conservation Division for all months during which in-water seismic survey activities occur. These reports must contain and summarize the following information:

(i) Dates, times, locations, heading, speed, weather, sea conditions (including Beaufort sea state and wind force), and associated activities during all seismic operations and marine mammal sightings;

(ii) Species, number, location, distance from the vessel, and behavior of any marine mammals, as well as associated seismic activity (number of power-downs and shutdowns), observed throughout all monitoring activities;

(iii) An estimate of the number (by species) of: (A) pinnipeds that have been exposed to the seismic activity (based on visual observation) at received levels greater than or equal to 160 dB re 1 μ Pa (rms) and/or 190 dB re 1 μ Pa (rms) with a discussion of any specific

behaviors those individuals exhibited; and (B) cetaceans that have been exposed to the seismic activity (based on visual observation) at received levels greater than or equal to 160 dB re 1 μ Pa (rms) and/or 180 dB re 1 μ Pa (rms) with a discussion of any specific behaviors those individuals exhibited.

(iv) A description of the implementation and effectiveness of the: (A) terms and conditions of the Biological Opinion's Incidental Take Statement (ITS); and (B) mitigation measures of this Authorization. For the Biological Opinion, the report shall confirm the implementation of each Term and Condition, as well as any conservation recommendations, and describe their effectiveness, for minimizing the adverse effects of the action on Endangered Species Act-listed marine mammals.

(c) Submit a draft Technical Report on all activities and monitoring results to NMFS' Permits and Conservation Division within 90 days of the completion of the seismic survey. The Technical Report will include the following information:

(i) Summaries of monitoring effort (e.g., total hours, total distances, and marine mammal distribution through the study period, accounting for sea state and other factors affecting visibility and detectability of marine mammals);

(ii) Analyses of the effects of various factors influencing detectability of marine mammals (e.g., sea state, number of observers, and fog/glare);

(iii) Species composition, occurrence, and distribution of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover;

(iv) Analyses of the effects of survey operations; and

(v) Sighting rates of marine mammals during periods with and without seismic survey activities (and other variables that could affect detectability), such as: (A) initial sighting distances versus survey activity state; (B) closest point of approach versus survey activity state; (C) observed behaviors and types of movements versus survey activity state; (D) numbers of sightings/individuals seen versus survey activity state; (E) distribution around the source vessels versus survey activity state; and (F) estimates of take by Level B harassment based on presence in the 160 dB harassment zone.

(d) Submit a final report to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, within 30 days after receiving comments from NMFS on the draft report. If NMFS decides that the draft report needs no comments, the draft report shall be considered to be the final report.

(e) Apache must immediately report to NMFS if 25 belugas are detected within the 160 dB re 1 μ Pa (rms) disturbance zone during seismic survey operations to allow NMFS to consider making necessary adjustments to monitoring and mitigation.

9. (a) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this Authorization, such as an injury (Level A harassment), serious injury or mortality (e.g., ship-strike, gear interaction, and/or entanglement), Apache shall immediately cease the specified activities and immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, or

her designees by phone or email (telephone: 301-427-8401 or Candace.Nachman@noaa.gov), the Alaska Regional Office (telephone: 907-271-1332 or Mandy.Migura@noaa.gov), and the Alaska Regional Stranding Coordinators (telephone: 907-586-7248 or Aleria.Jensen@noaa.gov or Barbara.Mahoney@noaa.gov). The report must include the following information:

- (i) Time, date, and location (latitude/longitude) of the incident;
- (ii) The name and type of vessel involved;
- (iii) The vessel's speed during and leading up to the incident;
- (iv) Description of the incident;
- (v) Status of all sound source use in the 24 hours preceding the incident;
- (vi) Water depth;
- (vii) Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- (viii) Description of marine mammal observations in the 24 hours preceding the incident;
- (ix) Species identification or description of the animal(s) involved;
- (x) The fate of the animal(s); and
- (xi) Photographs or video footage of the animal (if equipment is available).

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

(b) In the event that Apache 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 (i.e., in less than a moderate state of decomposition as described in the next paragraph), Apache will immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, her designees, and the NMFS Alaska Stranding Hotline (see contact information in Condition 9(a)). The report must include the same information identified in the Condition 9(a) above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with Apache to determine whether modifications in the activities are appropriate.

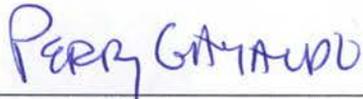
(c) In the event that Apache discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in Condition 2 of this Authorization (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Apache shall report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, her designees, the NMFS Alaska Stranding Hotline (1-877-925-7773), and the Alaska Regional Stranding Coordinators within 24 hours of the discovery (see contact information in Condition 9(a)). Apache shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. Activities may continue while NMFS reviews the circumstances of the incident.

10. Apache is required to comply with the Reasonable and Prudent Measures and Terms and Conditions of the ITS corresponding to NMFS' Biological Opinion issued to both U.S. Army Corps of Engineers and NMFS' Office of Protected Resources.

11. A copy of this Authorization and the ITS must be in the possession of all contractors and PSOs operating under the authority of this Incidental Harassment Authorization.

12. Penalties and Permit Sanctions: Any person who violates any provision of this Incidental Harassment Authorization is subject to civil and criminal penalties, permit sanctions, and forfeiture as authorized under the MMPA.

13. This Authorization may be modified, suspended or withdrawn if the Holder fails to abide by the conditions prescribed herein or if the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals, or if there is an unmitigable adverse impact on the availability of such species or stocks for subsistence uses.



MAR 04 2014

Date

for Donna S. Wieting
Director, Office of Protected Resources
National Marine Fisheries Service

Attachment

Attachment

Table 1. Authorized Take Numbers for Each Marine Mammal Species in Cook Inlet.

Species	Authorized Take in the Cook Inlet Action Area
Odontocetes	
Beluga whale (<i>Delphinapterus leucas</i>)	30
Killer whale (<i>Orcinus orca</i>)	10
Harbor porpoise (<i>Phocoena phocoena</i>)	20
Pinnipeds	
Steller sea lion (<i>Eumetopias jubatus</i>)	20
Harbor seal (<i>Phoca vitulina richardsi</i>)	440