

**White Pass & Yukon Route Railroad Dock Dolphin
Installation
Protected Species Final Report
August 2019**

DRAFT

Prepared For:
NMFS Protected Resources Division
P.O. Box 21668
709 West 9th Street
Juneau, AK 99802

August 19, 2019

Table of Contents

Introduction	1
Project Overview and Location	1
Marine Mammal Monitoring Methods	3
Visual Monitoring Methodology	3
Results	5
General Monitoring and Construction Activities	5
Weather Parameters and Water Conditions	5
Marine Mammal Monitoring Results.....	5
Overview	5
Humpback whales	8
Minke whales	8
Killer whales	8
Harbor porpoises	9
Dall's porpoises	9
Steller sea lions	9
Harbor seals	10
References	12

Figures

Figure 1. WP&YR Railroad Dock Dolphin Installation Location, Skagway, Alaska	2
Figure 2. Protected Species Observers Monitoring Locations	3

Tables

Table 1. Marine Mammal Takes Authorized by NMFS	1
Table 2. Level A and Level B Monitoring Zones	2
Table 3. Number of In-Water Work/Marine Mammal Monitoring Days and Piles Driven Per Month.....	5
Table 4. Environmental Conditions During Each Month.....	5
Table 5. Daily and Total Take Numbers by Species.....	7
Table 6. Total Level B Takes Per Species.....	7
Table 7. Humpback Whale Sightings and Takes Per Month	8
Table 8. Killer Whale Sightings and Takes Per Month	9
Table 9. Steller Sea Lion Sightings and Takes Each Month	10
Table 10. Harbor Seal Sightings and Takes Per Month	11

Attachments

Attachment A. Marine Mammal Monitoring and Mitigation Methods Plan

Attachment B: Marine Mammal Sighting Data

Attachment C: Marine Mammal Observation Record Forms

Introduction

On February 13, 2019, the National Marine Fisheries Service (NMFS) issued an Incidental Harassment Authorization (IHA) to White Pass & Yukon Route (WP&YR) for the installation of two new 200-ton pile supporting mooring dolphins at the south end of the company’s existing Railroad Dock in Taiya Inlet near Skagway, Alaska. The IHA is valid from February 15, 2019 to February 14, 2020.

NMFS granted Level A and B harassment of a small number of humpback whales (*Megaptera novaeangliae*), minke whales (*Balaenoptera acutorostra*), killer whales (*Orcinus orca*), harbor porpoises (*Phocoena phocoena*), Dall’s porpoise (*Phocoenoides dalli*), Steller sea lions (*Eumetopias jubatus*), and harbor seals (*Phoca vitulina*) (Table 1). The ‘takes’ granted are generated based upon stock assessments completed by NMFS, direct consultation with NMFS, and observations from knowledgeable local charter boat operators. Action areas specified in the IHA are based on consultation with NMFS, various literary sources, and the *2018 Revision to Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing* (NMFS 2018, Denes *et al.* 2016, and Austin 2016). Mitigation includes NMFS-approved Protected Species Observers (PSOs) monitoring the level A and level B take areas, recording species, and shutting down pile driving if the abovementioned species or any other marine mammal species approaches or appears likely to enter any designated shutdown areas.

Table 1. Marine Mammal Takes Authorized by NMFS During the Dolphin Installation at the WP&YR Railroad Dock, Skagway, Alaska

Species	Stock	Authorized Take	
		Level A	Level B
Humpback whale	Central North Pacific	25	100
Minke whale	Alaska	0	2
Killer whale	Alaska Resident	0	100
	Northern Resident		
	Gulf of Alaska, Aleutian Islands, Bering Sea		
Harbor Porpoise		40	161
Dall’s porpoise		24	98
Steller sea lion (western DPS)		0	35
Steller sea lion (eastern DPS)		0	1,717
Harbor seal		836	3,344

(Source: NMFS 2019)

Work on the new mooring dolphins started on March 1, 2019 and ended on May 11, 2019. This document’s purpose is to meet the final reporting requirements required by NMFS in the IHA issued to WP&YR under the authority of Section 101 (a)(5)(D) of the Marine Mammal Protection Act (MMPA).

Project Overview and Location

The project was conducted in Skagway Harbor, Alaska at the head of Taiya Inlet/Lynn Canal at approximately 59.4420° N, 135.3316° W (Figure 1). Under the IHA, Level A and Level B monitoring zones and Level A shutdown zones were prescribed by species for each method of pile driving employed during construction (Table 2).

Figure 1. WP&YR Railroad Dock Dolphin Installation Location, Skagway, Alaska



Table 2. Level A Shutdown and Level B Monitoring Zones Authorized During Dolphin Installation at the WP&YR Railroad Dock, Skagway, Alaska

Species	Vibratory and Drilling Installation/Removal		Impact Installation	
	Level B Monitoring Zone (m)	Level A Shutdown Zone (m)	Level B Monitoring Zone (m)	Level A Shutdown Zone (m)
Humpback whale	13,000m	150	3,700m	2,000
Minke whale		150		2,000
Killer whale		10		150
Harbor porpoise		150		150
Dall's porpoise		150		150
Steller sea lion		10		150
Harbor seal		80		150

Marine Mammal Monitoring Methods

The PSOs monitoring guidelines followed the mitigation measures detailed in the NMFS-authorized IHA established in order to minimize impacts to marine mammals in the vicinity of the dolphin installation at the WP&YR Railroad Dock. Visual observations allowed for the adherence of the shutdown areas and collection of data to meet reporting requirements.

Visual Monitoring Methodology

Five qualified and NMFS-accepted PSOs scanned the area for marine mammals, recorded and reported sightings, and implemented mitigation actions (shut downs) in accordance with the IHA throughout the project. The PSOs also performed a 30-minute watch prior to the start of and at the conclusion of any in water work and consistently observed the areas while all in water work occurred. The three land-based and two boat-based PSOs were located with a clear view of the action areas and had a full view of Skagway Harbor and Taiya Inlet/Lynn Canal (Figure 2).

The PSOs were equipped with binoculars, a rangefinder, and GPS unit. The head observer also was equipped with a cell phone to communicate with the construction superintendent. Guidelines for observers to mitigate for fatigue were closely followed. If a marine mammal was sighted, the observer would identify and record the species. If the marine mammal appeared to be likely to enter a shutdown area, the superintendent was notified and in water work was halted and delayed until the marine mammal left the area or 15 minutes (pinnipeds) and 30 minutes (cetaceans) had passed after the last sighting within or near the action area.

The PSOs recorded the following information for each protected species observation:

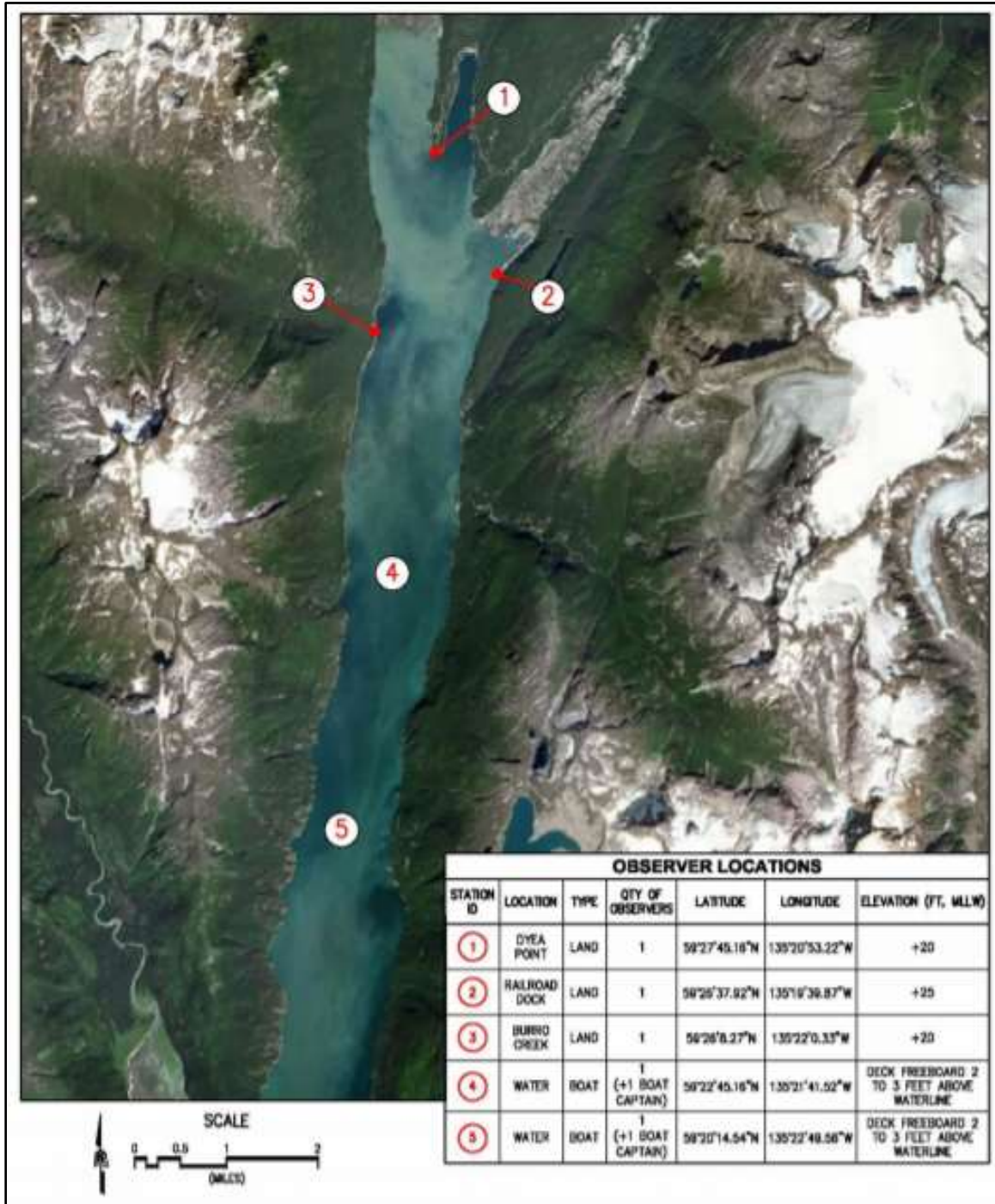
- Species, date, and time for each sighting event.
- Number of animals per sighting event (adults/juveniles/calves).
- Primary, and if observed, secondary behaviors of the marine mammal.
- Geographic coordinates for the observed animals.
- Time of the most recent pile-driving activity or other project activity prior to sighting.
- Weather and water conditions (i.e. sea state, visibility, lighting conditions, etc.).

When a protected species was observed, distance estimates were made using a rangefinder, the naked eye, and by relating the animal's proximity to an object at a known distance. Species and sex determinations were attempted by observing anatomical features and behaviors. Identifications were confirmed and recorded.

Based upon the location, timeframe, behavior, and tracking movement, observers were able to positively determine if an individual or group was being resighted. If an individual or group was resighted, a note was made on the sighting form to ensure that additional takes or sightings were not counted again. If it could not be positively determined whether it was the same individual or group, the individual or group was counted as a new sighting and an additional take, if appropriate.

A detailed description of monitoring methods is documented in *Marine Mammal Monitoring and Mitigation Methods Plan for the Yukon Railroad Dock Dolphin Installation* (Appendix A).

Figure 2. Protected Species Observers Monitoring Locations During During Dolphin Installation at the WP&YR Railroad Dock, Skagway, Alaska



Source: NMFS 2019

Results

General Monitoring and Construction Activities

A total of 53 days of in-water work occurred between March 1, 2019 and May 11, 2019. During that time twelve 36-inch temporary and twelve 42-inch permanent steel pipe piles were installed using a vibratory hammer, impact hammer, and drill (socketing and rock anchor) (Table 3). Three land-based PSOs and two boat-based PSOs were on duty during every day of in-water work. Appendix B details the dates and times of all marine mammal monitoring. Appendix B also documents construction activities that occurred daily during each marine mammal observation, including the pile size and installation method.

Table 3. Number of In-Water Work/Marine Mammal Monitoring Days and Piles Driven Per Month During Dolphin Installation at the WP&YR Railroad Dock, Skagway, Alaska

Month	Number of Days	Number of Piles
March	23	19
April	23	9
May	7	3



Weather Parameters and Water Conditions

Environmental conditions including weather parameters and water conditions were recorded at the start of each monitoring period and when conditions changed. The sea state, visibility, glare, and weather conditions generally did not vary a daily basis but did sometimes vary slightly between monitoring locations. Conditions were generally favorable throughout the duration of the project with visibility only being limited to approximately 1,300 meters for a short period on two days of in-water work in March. Table 4 provides a general overview of conditions during each month of in-water work, and a full log of conditions per day is located in Attachment B.

Table 4. Environmental Conditions During Each Month During Dolphin Installation at the WP&YR Railroad Dock, Skagway, Alaska

Month	Average Temperature	Visibility	Beaufort Sea State (range)	Average Wind Speed (mph)
March	39.2°F	Moderate to Excellent	0-6	8.0
April	42.5°F	Poor to Excellent	0-6	7.3
May	51.1°F	Good to Excellent	1-4	8.5

Source: NOAA 2019

Marine Mammal Monitoring Results

Overview

A summary of marine mammal sightings and take during dolphin installation at the WP&YR Railroad Dock is included below. During the 53 total days of monitoring, there were only 4 days when there were no species sighted. Five of the seven requested species were sighted during the project. A total of 5,557 total takes were authorized, and only 458 individuals were taken, leaving 5,099 available marine mammal species' takes unused. No species for which take was not authorized were sighted during observations. Marine mammals did not travel near any Level A shut down area; therefore, no mitigation measures (shutdowns, delays, etc.) were needed or employed.

In general, most of the sightings occurred in March. There were 196 sightings events (sightings of individuals and groups) over 23 days of observations over the month when most of the piles (19) were driven. During these events, there were 527 harbor seals, 6 Steller sea lions, and 2 killer whales observed. Most of the take (256) also occurred in March; 254 harbor seals and 2 Steller sea lions were taken by level B harassment. There were no sightings or take of any other species in March.

There were 144 sighting events over 23 days of observations in April. One hundred eighty-five (185) harbor seals, 23 killer whales, and 94 Steller sea lions were observed. In April while 9 piles were installed, there were 123 marine mammal takes, included harbor seals (70), Steller sea lions (34), and killer whales (19). No other species were observed or taken during that period.

Over 7 days of monitoring when 3 piles were installed between May 1 and 11, 21 sighting events were recorded. Fifty-one (51) Steller sea lions were observed, 15 harbor seals, and 2 humpback whales were observed. In May, there were 77 individual marine mammals taken. This included 65 Steller sea lions, 10 harbor seals, and 2 humpback whales. No other species were observed or taken in May.

Summary take information for each month per species is in Table 5. Table 6 summarizes total take over the course of the construction and the remaining take when construction ended. A detailed log of sighting data per day is available in Attachment B, and all observation forms are in Attachment C.

Table 5. Daily and Total Take Numbers by Species During \ Dolphin Installation at the WP&YR Railroad Dock, Skagway, Alaska

Species	3/1	3/2	3/3	3/4	3/5	3/6	3/7	3/8	3/9	3/10	3/11	3/12	3/13	3/14	3/15	3/16	3/17	3/18	3/19	3/20	3/21	3/22	3/23	3/24	3/25	3/26	3/27	3/28	3/29	3/30	3/31	Total	
Humpback Whale	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Minke Whale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Killer Whale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Harbor Porpoise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dall's Porpoise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Steller Sea Lion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Harbor Seal	6	26	1	14	15	0	17	26	0	0	9	30	17	7	0	23	14	0	0	4	2	2	0	0	0	11	4	0	16	6	4	254	
Species	4/1	4/2	4/3	4/4	4/5	4/6	4/7	4/8	4/9	4/10	4/11	4/12	4/13	4/14	4/15	4/16	4/17	4/18	4/19	4/20	4/21	4/22	4/23	4/24	4/25	4/26	4/27	4/28	4/29	4/30	Total		
Humpback Whale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Minke Whale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Killer Whale	0	5	0	0	0	0	0	4	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	
Harbor Porpoise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dall's Porpoise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Steller Sea Lion	0	0	9	1	0	0	1	1	1	2	5	0	1	0	1	0	0	0	0	0	1	0	0	1	0	0	8	1	1	0	0	34	
Harbor Seal	8	7	8	8	0	12	15	0	5	0	1	0	4	0	1	1	0	0	0	1	4	0	0	0	0	0	1	0	0	0	0	76	
Species	5/1	5/2	5/3	5/4	5/5	5/6	5/7	5/8	5/9	5/10	5/11	5/12	5/13	5/14	5/15	5/16	5/17	5/18	5/19	5/20	5/21	5/22	5/23	5/24	5/25	5/26	5/27	5/28	5/29	5/30	5/31	Total	
Humpback Whale	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Minke Whale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Killer Whale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Harbor Porpoise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dall's Porpoise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Steller Sea Lion	33	25	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	
Harbor Seal	0	6	0	0	0	0	4	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	

Table 6. Total Level B Takes Per Species During Dolphin Installation at the WP&YR Railroad Dock, Skagway, Alaska

Species	Level B Authorized	Level B Exposures	Remaining Level B Takes
Humpback Whale	100	2	98
Minke Whale	2	0	2
Killer Whale	100	20	81
Harbor Porpoise	161	0	161
Dall's Porpoise	98	0	98
Steller Sea Lion	1,752	101	1,651
Harbor Seal	3,344	345	2,999
Total	5,557	468	5,089

Note: no level A take occurred

Humpback whales

During the 57 days of monitoring, two (2) humpback whales were sighted during dolphin installation at the WP&YR Railroad Dock. The solo individuals were sighted between 3 and 4 kilometers from the pile driving site on May 1 and May 4 during the drilling of 42-inch piles. Both sightings were recorded as Level B take, and no mitigation was needed, since the whales were observed within the Level B take area only. The whales were travelling. The sex and age of the individuals was unable to be determined. The sightings on the two days may have been of the same individual; however, this was not determined. Table 7 details humpback whale sightings and takes per month. Appendix B includes details on each sighting and take.

Table 7. Humpback Whale Sightings and Takes Per Month During Dolphin Installation at the WP&YR Railroad Dock, Skagway, Alaska

Month	Number Sighted	Number Level B Takes
March	0	0
April	0	0
May	2	2
Total	2	2

When in-water work was completed at the WP&YR Railroad Dock in May 2019, 98 authorized humpback whale Level B takes remained. None of the authorized 25 Level A humpback whale takes occurred. During the dolphin installation, it is likely that few whales had returned to Lynn Canal from their wintering areas primarily off the shores of Hawaii or Mexico. It is likely that the project timing (March-May) resulted in few humpback whales observed or taken.

Minke whales

No minke whales were seen during the 57 days of marine mammal monitoring during dolphin installation at the WP&YR Railroad Dock, none of the 2 authorized Level B takes of minke whales occurred.

Killer whales

Twenty-five (26) killer whales were sighted on 4 days during dolphin installation at the WP&YR Railroad Dock. Two of the sightings of swimming killer whales on March 30. The rest of the sightings (24 individuals) were on April 2, 8, and 10 when pods of 1 to 9 individuals were recorded travelling, diving, and swimming. The placement of monitors on boats in Lynn Canal enabled the pod of 5 killer whales on April 2 and a pod of 9 killer whales and a separate pod of 2 killer whales on April 10 to be tracked throughout the monitoring zone. On April 2, a pod travelled within 2,000 meters of the dock and on April 9, a pod travelled within 300 meters of the dock before leaving the monitoring area. There were no sightings in May.

The two of the sightings of swimming killer whales on March 30 were previously recorded as takes in the March monitoring reports; however, the sightings were made during post construction monitoring and were not takes. In early April, a total of 20 humpback whales were recorded as a Level B take. All take occurred when a 42-inch pile was being drilled. No mitigation measures were needed, since the whales were observed no closer than 300 meters from the Railroad Dock. The sex and age of the individuals was

unable to be determined. Sightings and takes per month are detailed in Table 8. Appendix B includes details on each sighting and take.

Table 8. Killer Whale Sightings and Takes Each Month During Dolphin Installation at the WP&YR Railroad Dock, Skagway, Alaska

Month	Individuals Sighted	Level B Takes
March	2	0
April	24	20
May	0	0
Total	26	20

Out of the 100 authorized takes of killer whales, only 20 were needed, primarily in April, and 80 takes remained.

Harbor porpoises

No harbor porpoises were seen during the 57 days of marine mammal monitoring during dolphin installation at the WP&YR Railroad Dock. All of the 40 Level A and 161 Level B takes authorized for harbor porpoises were not used.

Dall's porpoises

No Dall's porpoises were seen during the 57 days of marine mammal monitoring during dolphin installation at the WP&YR Railroad Dock. All of the 24 Level A and 98 Level B takes authorized for Dall's porpoises were not used.

Steller sea lions

A total of 165 individual Steller sea lions were sighted on 27 separate days during the dolphin installation at the WP&YR Railroad Dock. Most of the sightings were during the 23 days of monitoring in April; however, there were 66 sightings recorded over only 7 days at the beginning of May. If observations were to have continued through May, it is likely that May's sighting numbers would have surpassed April's number. Although a few sightings were 500 meters from pile driving activities, most sightings were recorded over 1,000 meters away from the pile driving site. Sightings were of single individuals and rafts up to 25 individuals (May 2). Steller sea lions were observed swimming, traveling, resting, porpoising, looking, sinking, and milling. The sex and age of the individuals was not able to be positively determined. No calves were sighted. Large groups of Steller sea lions were able to be monitored and not counted more than once; however, because of large numbers, individuals taken could have been counted twice by different monitoring stations.

One hundred one (101) sightings were recorded as Level B takes, and no Level A takes occurred. Most takes (62) in May occurred with 1,000 meters of the pile driving site, primarily due to takes on May 1 and 3 of rafts of 15 and 25, respectively. On those days, Steller sea lions were travelling and resting approximately 1,00 meters from the pile driving site while 42-inch piling were socketed. Throughout the project, takes were recorded during all pile driving methods and for all pile sizes. No mitigation measures were needed for Steller sea lions, since none came within 150 meters of the pile driving site. Sightings and takes per month are detailed below (Table 9). Appendix B includes details on each sighting and take.

Table 9. Steller Sea Lion Sightings and Takes Each Month During Dolphin Installation at the WP&YR Railroad Dock, Skagway, Alaska

Month	Individuals Sighted	Level B Takes
March	6	2
April	93	34
May	66	65
Total	165	101

No Level A takes for Steller sea lions were authorized or were needed for Steller sea lions, since no mitigation shut downs occurred. Of the total authorized Level B take of Steller sea lions (35 for the western DPS and 1,717 for the eastern DPS), 1,651 remained when in-water work was completed.

Harbor seals

A total of 735 harbor seals were observed on 46 days of in-water work, and most of the observations were from Yakutania Point. Most of the harbor seal sightings were during the 23 days of monitoring in March (527 sightings) and numbers of sightings decreased during the 23 days of monitoring in April (193 sightings) and the 7 days in May (15 sightings). Most of the sightings in March were of individuals (117 sightings), but group or pod sizes of 2 to 30 seals were observed. The most common group sizes were pods on 2, 3, and 6 seals. The largest pod sizes seen during project construction were on March 13 (20 seals), March 12 (16 seals), and March 8 (14 seals). In April, most sightings were of individuals harbor seals (51). The most common group size in April was 2 and 4 seals, which were observed on 8 separate occasions. One large pod of 15 seals was observed on April 9. Most harbor seal sightings in May were of individuals (7 sightings) pod sizes decreased in May; with the largest pod (5 seals) observed only once.

Harbor seals came within 150 meters of the pile driving site one time. Most of the harbor seals were documented at least 1,000 meters away. In March, harbor seals were observed between 200 meters (March 27) and 5,000 meters from the Railroad Dock (average distance of 1,200 meters away). In April, they were documented between 150 meters (April 14) and 4,200 meters away from the construction site (average distance of 1,300 meters). Harbor seals were observed farther away from the dock in May; between 900 meters and 4,000 meters and an average distance of 1,700 meters away. Throughout the 57-day monitoring period harbor seals were documented travelling, swimming, playing, milling, looking, hauled out, sinking and feeding. The most common behaviors documented were looking or a combination of looking with other another behavior, milling, and travelling.

Three hundred forty-five (345) harbor seals were taken by Level B harassment during dolphin installation at the WP&YR Railroad dock, and no Level A takes occurred. Most of the takes (254) occurred in March and were of individual seals. Larger groups were taken on March 14, when 10 seals were harassed by vibrating a 48-inch pile. On March 8, 13 seals were harassed 1,000 meters from the vibrating in of a 48-inch pile, and on March 12, 16 seals were harassed 1,000 meters from a 36-inch pile being vibrated. In April, there were 76 Level B takes of primarily individual seals; however, a few groups were taken. The largest group (8 seals) were taken on April 1 approximately 1,000 meters away from where a 48-inch pile was being drilled. All of the seals observed (15) in May were also taken. Most of the takes were individual seals; however, a group of 5 was taken on May 2 approximately 1,000 meters from

the pile driving site. All May takes were due to drilling a 42-inch pile and occurred between 900 meters and 4,000 meters of the Railroad Dock. The sex and age of the harbor seals were unable to be determined. No mitigation measures were needed for harbor seals, since none came within 80 meters of the pile driving site. Sightings and takes per month are summarized in Table 10. Appendix B includes details on each sighting and take.

Table 10. Harbor Seal Sightings and Takes Each Month

Month	Individuals Sighted	Level B Takes
March	527	254
April	193	76
May	15	15
Total	735	346

Harbor seals were recorded hauled out on the shoreline at approximately 4,000 meters directly southwest of pile driving operations. NMFS established an in-air noise disturbance threshold of 90 dB rms for harbor seals. However, distances to the in-air noise disturbance threshold for hauled-out harbor seals (90 dB) are not expected to extend more than 53 meters during impact pile driving or 32 meters during vibratory pile driving.¹ Therefore, harbor seals hauled out in the area were not counted as take.

None of the 836 Level A takes for harbor seals were needed, since no seal came within the Level A area (less than 80 meters of the dock). Of the total authorized Level B take of harbor seals (3,344), 2,999 remained when in-water work was completed.

¹ Predicted distances were based on source levels in Washington and Alaska. At Puget Sound, WA, Laughlin (2010) found in-air measurements averaged 96.5 dB root mean square at 15 meters during vibratory installation of 30-inch steel piles. At the Port of Anchorage, AK, Austin et al. (2016) found source levels of 101 dB at 15 meters during impact installation of 48-inch diameter steel piles.

References

- Austin, M., S. Denes, J. MacDonnell, and G. Warner. 2016. Hydroacoustic Monitoring Plan: Anchorage Port Modernization Project Test Pile Program. JASCO Applied Sciences (Alaska) Inc. report to Kiewit Infrastructure West Co. 131 pp + appendices.
- Denes, S. L., G.J. Warner, M.E. Austin, and A.O. MacGillivray. 2016. Hydroacoustic Pile Driving Noise Study – Comprehensive Report. Document 001285, Version 2.0. Technical report by JASCO Applied Sciences for Alaska Department of Transportation & Public Facilities.
- National Marine Fisheries Service (NMFS). 2019. White Pass & Yukon Route Incidental Harassment Authorization. Accessed from <https://www.fisheries.noaa.gov/action/incidental-take-authorization-white-pass-yukon-route-railroad-dock-dolphin-installation> on March 28, 2019.
- NMFS. 2018. 2018 Revision to Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing. NMFS, NOAA, U.S. Dept. of Commerce. NOAA Technical Memorandum NMFS-OPR-59. Accessed from <https://www.fisheries.noaa.gov/webdam/download/75962998> on March 29, 2019
- National Oceanic and Atmospheric Administration (NOAA). 2019. National Weather Service: Skagway. Accessed from <https://w2.weather.gov/climate/index.php?wfo=pajk>

Attachment A. Marine Mammal Monitoring and Mitigation Methods Plan

Marine Mammal Monitoring and Mitigation Plan
for the

Railroad Dock Dolphin Installation

White Pass & Yukon Route

January 18th, 2019

Submitted to:

National Marine Fisheries Service
Office of Protected Resources
1315 East-West Highway
Silver Spring, Maryland 20910-3226

Prepared by:

PND Engineers, Inc.
Designated non-Federal Representative
1736 Fourth Ave S, Suite A
Seattle, Washington 98134
(206) 624-1387

and

Owl Ridge NRC
2121 Abbott Road
Anchorage, Alaska 99507
(907) 344-3448





TABLE OF CONTENTS

SECTION	PAGE
1 Introduction.....	1
2 Project Description.....	3
3 Species Covered Under IHA	3
4 Methods.....	3
4.1 Observer Qualifications.....	4
4.2 Data Collection	4
4.3 Equipment.....	5
4.4 Shutdown and Monitoring Zones.....	5
4.5 Observer Monitoring Locations.....	6
4.6 Monitoring Techniques	8
4.6.1 Pre-Activity Monitoring.....	8
4.6.2 Soft Start Procedures.....	8
4.6.3 During-Activity Monitoring	9
4.6.4 Inclement weather.....	9
4.6.5 Shutdown	9
4.6.6 Breaks in Work.....	9
4.6.7 Post-Activity Monitoring.....	9
5 Reporting.....	10
5.1 Injured or Dead Marine Mammal.....	10
5.2 Monthly Report.....	10

LIST OF TABLES

Table 1. Shutdown and Monitoring Zones – Underwater Sources	6
---	---

LIST OF FIGURES

Figure 1. Project location within Taiya Inlet, Skagway, Alaska	2
Figure 2. Observer Locations.....	7

LIST OF APPENDICES

- Appendix A. Marine Mammal Observation Record
- Appendix B. Beaufort Wind Force Scale



ACRONYMS AND ABBREVIATIONS

- 4MP Marine Mammal Monitoring and Mitigation Plan
- ESA Endangered Species Act
- GPS global positioning system
- IHA Incidental Harassment Authorization
- MMPA Marine Mammal Protection Act
- MSE Mechanically Stabilized Earth
- NMFS National Marine Fisheries Service
- NOAA National Oceanic and Atmospheric Administration
- PND PND Engineers, Inc.
- PTS permanent threshold shift
- SPL sound pressure level
- TTS temporary threshold shift
- WP&YR White Pass & Yukon Route



1 Introduction

White Pass & Yukon Route (WP&YR) is proposing improvements to the Railroad Dock within Taiya Inlet in Skagway, Alaska (Figure 1) to provide safe moorage when both Breakaway and Quantum class cruise ship vessels dock simultaneously at the Railroad Dock (RR Dock) aft berth. The purpose of this Marine Mammal Monitoring and Mitigation Plan (4MP) is to provide a protocol for monitoring affected species during the proposed construction. This 4MP was developed to support the Incidental Harassment Authorization (IHA) application under the Marine Mammal Protection Act, Section 101(a)(5)(D) permitting. The IHA application provides a detailed discussion on determining monitoring zones for the proposed action.

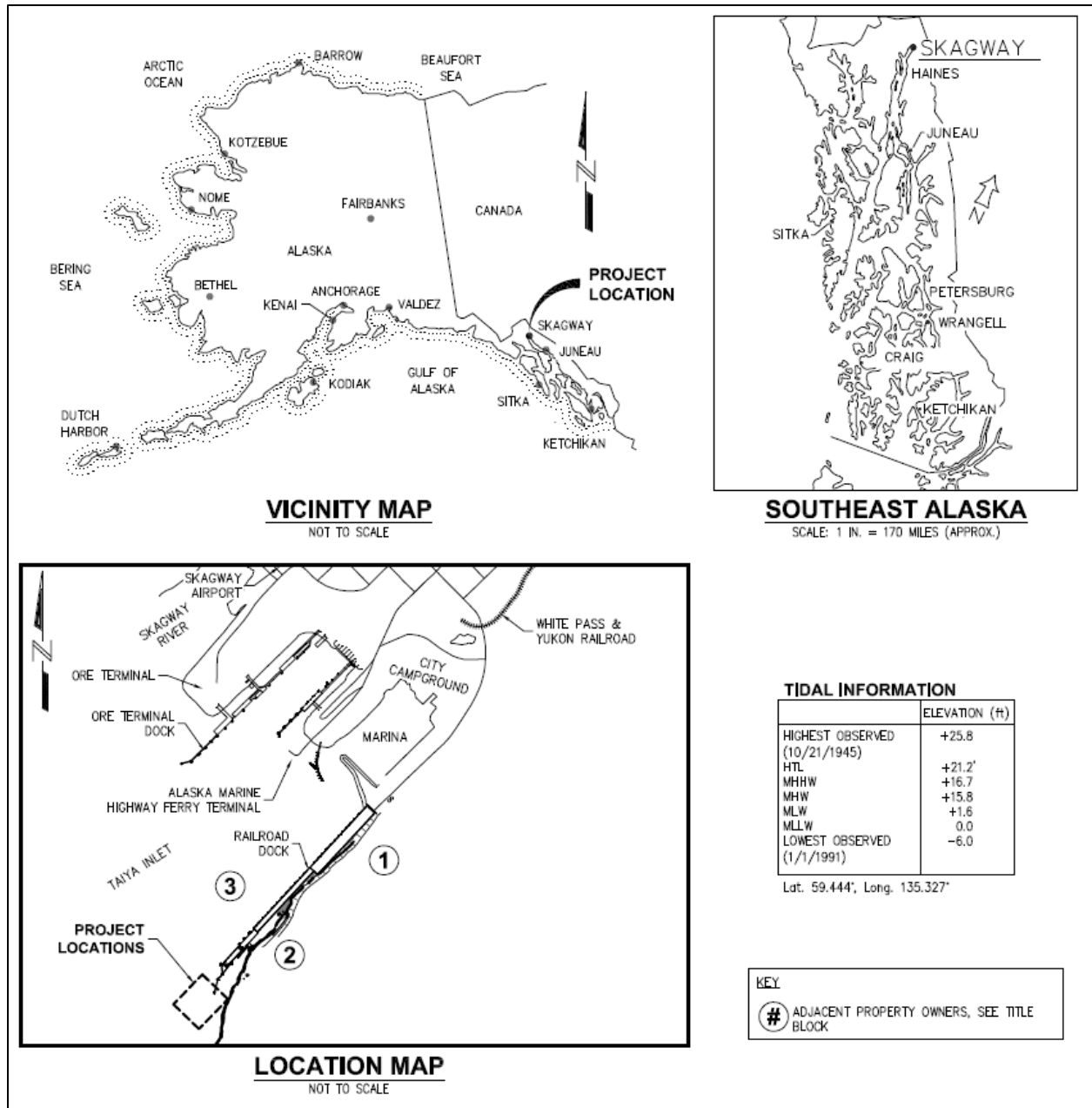


Figure 1. Project location within Taiya Inlet, Skagway, Alaska



A marine mammal monitoring program will be implemented at the start of specified construction activities and will follow the protocols outlined in this 4MP. The primary goals of the monitoring program are to:

- Monitor the proposed shutdown and monitoring zones to estimate the number of marine mammals exposed to noise at or exceeding established thresholds, and to document animal responses;
- Minimize impacts to marine mammal species present in the action area by implementing mitigation measures that include monitoring, ensuring shutdown zones are clear of marine mammals, soft start, and shutdown procedures; and
- Collect data on takes, occurrence, and behavior of marine mammal species in the action area and any potential impacts from the project.

2 Project Description

A complete description of the region, project tasks, project materials, dates and duration, affected species, and anticipated impacts are included in the IHA application (PND 2018) to which this document is attached as an appendix. In general terms, this project will consist of the installation of two 200-ton mooring dolphins (MD#4 and MD#5) and catwalks.

3 Species Covered Under IHA

The species covered under the IHA include the humpback whale (*Megaptera novaeangliae*), Steller sea lion (*Eumetopias jubatus*), harbor seal (*Phoca vitulina*), Dall's porpoise (*Phocoenoides dalli*), harbor porpoise (*Phocoena phocoena*), killer whale (*Orcinus orca*), and minke whale (*Balaenoptera acutorostrata*).

Harbor seals and Steller sea lions are the primary species occurring in Taiya Inlet with humpback whales, harbor porpoises, and killer whales occurring less frequently. Minke whales and Dall's porpoises have been recorded in Taiya Inlet only on rare occasions.

4 Methods

Under directives in the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA), this 4MP is tailored to the project to ensure appropriate documentation and compliance with applicable regulations. Monitoring will be conducted by qualified, trained marine mammal observers (hereafter, "observers"). Land-based observers will be located at established sites appropriate for monitoring before, during, and after in-water construction activity to monitor marine mammals within and approaching the shutdown zones and monitoring zones.

During observation periods, observers will continuously scan the area for marine mammals using binoculars and the naked eye. Observers will work shifts of a maximum four consecutive hours followed by an observer rotation or a 1-hour break and will work no more than 12 hours in any 24-hour period. Observers will collect data including environmental conditions (e.g., sea state, precipitation, glare), marine mammal sightings (e.g., species, numbers, location, behavior, responses to construction activity), construction activity at the time of sighting, and number of marine mammal exposures (takes). Observers will conduct observations, meet training requirements, fill out data forms, and report findings in accordance with this 4MP and requirements outlined in the approved IHA.

Observers will implement mitigation measures including: monitoring of the proposed shutdown and monitoring zones, ensuring shutdown zones are clear of marine mammals prior to starting operations, and shutdown procedures if marine mammals are observed approaching or within the appropriate shutdown zones.



They will be in continuous contact with construction personnel via two-way radio. A cellular phone with local service will be used as back-up communications and for safety purposes.

An employee of the construction contractor will be identified as the monitoring coordinator for observers at the start of each construction day. Observers will report directly to the monitoring coordinator when a shutdown is deemed necessary due to marine mammals approaching or within the applicable shutdown zones during pile driving or drilling activity.

4.1 Observer Qualifications

Monitoring will be conducted by qualified, trained observers. Observers will be independent (i.e. not construction personnel) and that at least one observer will have prior experience working as a marine mammal observer during construction activities. The following requirements must be met for observers to be considered qualified:

- Visual acuity in both eyes (correction is permissible) enough for discernment of moving targets at the water's surface with ability to estimate target size and distance;
- Physical capability of performing essential duties, including sitting or standing for periods of up to four hours, using binoculars or other field aid, and documenting observations;
- Experience and ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals and marine mammal behavior, including the ability to accurately identify marine mammals in Alaskan waters to species;
- Sufficient training, orientation or experience with the construction operation to provide for identification of concurrent activities and for personal safety during observations;
- Writing skills sufficient to prepare reports of observations; and
- Ability to communicate orally, by radio and in person, with project personnel to provide real-time information on marine mammals observed in the area and the appropriate mitigation response for the circumstances.

4.2 Data Collection

Observers will use a National Marine Fisheries Service (NMFS)-approved Observation Record (Appendix A) which will be completed by each observer for each survey day and location. Observation Records will be used by observers to record the following:

- Date and time that permitted construction activity begins or ends;
- Weather parameters (e.g. percent cloud cover, percent glare, visibility) and sea state (the Beaufort Wind Force Scale will be used to determine sea-state);
- Species, numbers, and, if possible, sex and age class of observed marine mammals;
- Construction activities occurring before, during, and after each sighting;
- Marine mammal behavior patterns observed, including bearing and direction of travel;
- Specific focus should be paid to behavioral reactions just prior to, or during, soft-start and shutdown procedures;
- Location of marine mammal, distance from observer to the marine mammal, and distance from dolphin installation and catwalk construction activities to marine mammals; and
- Record of whether an observation required the implementation of mitigation measures, including shutdown procedures and the duration of each shutdown.



4.3 Equipment

The following equipment will be required to conduct observations for this project:

- Appropriate Personal Protective Equipment;
- Portable radios and headsets for the observers to communicate with the monitoring coordinator and other observers;
- Cellular phone as backup for radio communication;
- Contact information for the other observers, monitoring coordinator, and NMFS point of contact;
- Daily tide tables for the action area;
- Watch or chronometer;
- Binoculars (quality 7 x 50 or better) or spotting scope with built-in rangefinder or reticles (rangefinder may be provided separately);
- Hand-held GPS unit, map and compass, or grid map to record locations of marine mammals;
- Copies of 4MP, IHA, and/or other relevant permit requirement specifications in sealed clear plastic covers; and
- Notebook with standardized monitoring Observation Record forms on waterproof paper.

4.4 Shutdown and Monitoring Zones

WP&YR has established shutdown and monitoring zones to delineate areas in which marine mammals may be exposed to injurious underwater sound levels due to in-water construction. Work which could cause noise levels to rise above non-permitted thresholds will shut down if marine mammals are approaching shutdown zones. Observers will also monitor and document activities in areas where animals could be subjected to noise levels at or above the permitted thresholds. The zones are summarized below and are discussed in detail in Section 5 of the IHA request.

Determination of shutdown and monitoring zones was discussed fully in the IHA request. The shutdown zone radii are summarized in Tables 1 below. Selection of the appropriate observation radius depends on concurrent work activities and planned duration. The following shall apply to shutdown and monitoring zones.

- A shutdown safety zone will be established during all over-water construction activities that have the potential to affect marine mammals, and species/activity specific monitoring zones will be monitored to ensure that animals are not endangered by physical interaction with construction equipment. These activities could include, but are not limited to, positioning of the pile on the substrate via a crane (“stabbing” the pile) or the slinging of construction materials via crane.
- Shutdown and monitoring zones will be monitored throughout the permitted in-water construction activities (Table 1).
 - If a permitted marine mammal enters the monitoring zone, an exposure will be recorded, and animal behaviors documented. However, permitted construction activities would continue without cessation unless the animal approaches or enters the applicable shutdown zone.
 - If a marine mammal approaches or enters a shutdown zone, all permitted construction activities will be immediately halted until the marine mammal has been visually observed outside the shutdown zone or 30 minutes have passed without observation.
 - Shutdown safety zones will be limited to a practical monitoring radius of 2 km. Level A take has been requested for animals occurring within the Level A ensonification zone and the shutdown safety zone.



- Take, in the form of Level B harassment, of marine mammals other than permitted species is not authorized and will be avoided by shutting down construction activities before individuals of these species enter the Level B harassment zone.

Table 1. Shutdown and Monitoring Zones – Underwater Sources

Source	Monitoring Zone (m)	Shutdown Zone (m)
Drilling and Vibratory Installation/Removal	13,000	Low- and High-Frequency Cetaceans: 150 Phocid Pinnipeds: 80 Mid-Frequency Cetaceans and Otariid Pinnipeds: 10
Impact Installation	3,700	Low-Frequency Cetaceans: 2,000 All Other Species: 150

4.5 Observer Monitoring Locations

To monitor the shutdown and monitoring zones effectively, observers will be positioned at the best practicable vantage points taking into consideration security, safety, access, and space limitations. Observers will be stationed at locations that provide adequate visual coverage for shutdown and monitoring zones. During all types of installation an observer will be stationed at the Railroad Dock, Yakutania Point, and Dyea Point (Figure 2). These stations will allow full monitoring of the impact hammer monitoring zone and the Level A shutdown zones. The vibratory and drilling monitoring zone will be additionally monitored using PSOs stationed on boats anchored near the shoreline, with each team (of two) stationed approximately 2 km apart.

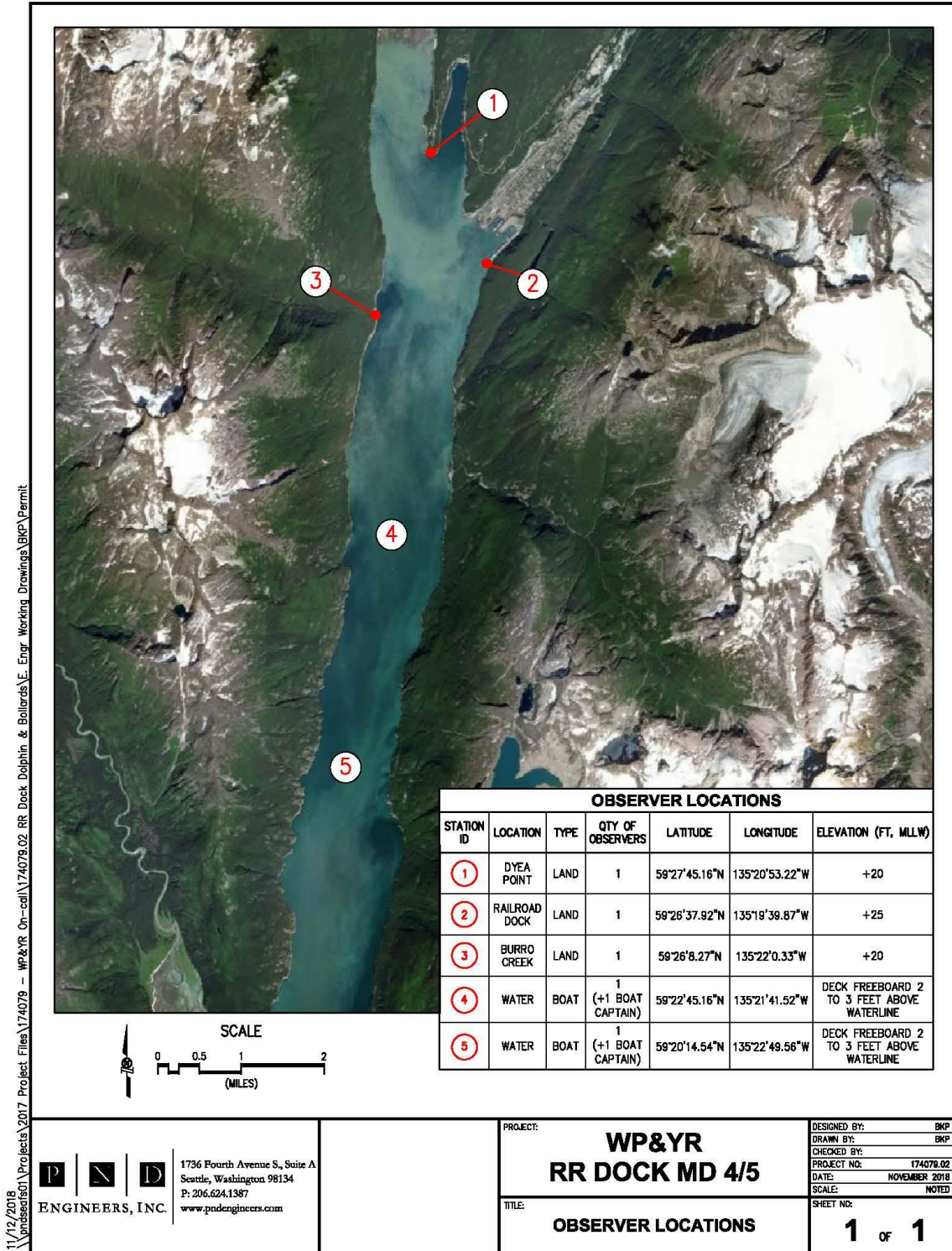


Figure 2. Observer Locations



4.6 Monitoring Techniques

WP&YR observers will collect sighting data and behaviors of marine mammal species that are observed in the shutdown and monitoring zones during construction. All observers will be qualified and trained in marine mammal identification and behaviors, as described in Section 4.1. NMFS requires that the observers have no other construction-related tasks while conducting monitoring.

Observers will actively monitor the shutdown and monitoring zones 30 minutes prior to initiation, during, and 30 minutes post-completion of all permitted activities.

Observation generally necessitates that natural light conditions is sufficient for observers to see the entirety of the shutdown and monitoring zones; monitoring will commence and be completed during daylight hours to the extent possible.

4.6.1 Pre-Activity Monitoring

The following monitoring methodology will be implemented prior to commencing permitted activities:

- Prior to the start of permitted activities, observers will monitor the shutdown and monitoring zones for 30 minutes. They will ensure that no marine mammals are present within the shutdown zones before permitted activities begin.
- The shutdown zones will be cleared when marine mammals have not been observed within the zone for that 30-minute period. If a marine mammal is observed within the applicable shutdown zone, a soft-start cannot proceed until the animal has left the zone or has not been observed for 15 minutes (for pinnipeds and cetaceans).
- After all applicable shutdown zones have been cleared, the observers will radio the monitoring coordinator. Permitted activities will not commence until the monitoring coordinator receives verbal confirmation the zones are clear.
- If permitted species are present within the monitoring zone, work will not be delayed, but observers will monitor and document the behavior of individuals that remain in the monitoring zone. Delay will occur however if the authorized take quota is close to being reached.
- In case of fog or reduced visibility, observers must be able to see the entirety of shutdown and monitoring zones before permitted activities can be initiated.

4.6.2 Soft Start Procedures

Soft start procedures will be initiated prior to periods of pile installation to allow marine mammals to leave the area before exposure to maximum noise levels.

- For drilling, the contractor shall run the hammer/drill for no more than 30 seconds followed by a quiet period of at least 60 seconds without hammering or drilling. The process shall be repeated twice more within 10 minutes before beginning driving/drilling operations that last longer than 30 seconds.
- For impact hammers, the soft start technique will initiate several strikes at a reduced energy level, followed by a brief waiting period. This procedure would be repeated two additional times.
- For other heavy equipment operating from barges or nearshore, the equipment will be idled for 15 minutes prior to operation.
- If work ceases for more than 30 minutes, zone clearance (see Section 4.6.1) and soft start procedures must recommence prior to performing additional work.



4.6.3 During-Activity Monitoring

The following monitoring methodology will be implemented during permitted activities:

- If permitted species are observed within the monitoring zone during permitted activities, an exposure will be recorded, and behaviors documented. Work will not stop unless an animal enters or appears likely to enter the applicable shutdown zone.

4.6.4 Inclement weather

During inclement weather or periods of limited visibility, work that has begun with a fully cleared observation zone may continue. In those cases, an assumed rate of observation similar to the daily average rate of observation will be used to estimate the number of sightings to be reported during those periods. This method will only be used if the full observation zone was visible during the start of work and no shutdowns greater than 30 minutes have occurred.

4.6.5 Shutdown

If a marine mammal enters or appears likely to enter the shutdown zone:

- Observers shall immediately radio or call to alert the monitoring coordinator.
- All permitted activities will be immediately halted.
- In the event of a shutdown of pile installation operations, permitted activities may resume only when:
 - The animal(s) within or approaching the shutdown zone has been visually confirmed beyond or heading away from the shutdown zone, or 15 minutes (for pinnipeds) or 30 minutes (for cetaceans) have passed without re-detection of the animal.
 - Observers will then radio or call the monitoring coordinator that activities can re-commence.

4.6.6 Breaks in Work

During an in-water construction delay, the shutdown and monitoring zones will continue to be monitored unless the break extends into several hours. No exposures will be recorded for permitted species in the monitoring zone if there are no concurrent permitted construction activities.

If permitted activities cease for more than 1 hour and monitoring has not continued, pre-activity monitoring (Section 4.6.1) and soft start procedures (Section 4.6.2) must recommence. This includes breaks due to scheduled or unforeseen construction practices or breaks due to permit-required shutdown. Following 15 minutes (for pinnipeds) or 30 minutes (for cetaceans) of monitoring, work can begin according to the pre-activity monitoring protocols. Work cannot begin if an animal is within the shutdown zone or if visibility is not clear throughout the shutdown and monitoring zones.

4.6.7 Post-Activity Monitoring

Monitoring of the shutdown and monitoring zones will continue for 30 minutes following completion of pile installation activities. These surveys will record observations focused on observing and reporting unusual or abnormal behavior of marine mammals. Observation record forms will be used to document observed behavior (Appendix A).



5 Reporting

5.1 Injured or Dead Marine Mammal

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as serious injury, or mortality, WP&YR must immediately cease the specified activities and report the incident to the NMFS Office of Protected Resources (301-427-8401) and Alaska Region Stranding Coordinator (907-586-7209). The report must include the following information:

1. Time and date of the incident;
2. Description of the incident;
3. Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
4. Description of all marine mammal observations and active sound source use in the 24 hours preceding the incident;
5. Species identification or description of the animal(s) involved;
6. Fate of the animal(s); and
7. Photographs or video footage of the animal(s).

Activities must not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with WP&YR to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. WP&YR may not resume their activities until notified by NMFS.

In the event WP&YR discovers an injured or dead marine mammal, and the lead observer 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), WP&YR must immediately report the incident to the Office of Protected Resources, NMFS, and the Alaska Region Stranding Coordinator, NMFS. The report must include the same information identified in 6(b)(i) of this IHA. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with WP&YR to determine whether additional mitigation measures or modifications to the activities are appropriate.

In the event that WP&YR discovers an injured or dead marine mammal, and the lead observer determines that the injury or death is not associated with or related to the specified activities (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), WP&YR must report the incident to the Office of Protected Resources, NMFS, and the Alaska Region Stranding Coordinator, NMFS, within 24 hours of the discovery.

5.2 Monthly Report

WP&YR will submit monthly reports on all marine mammal monitoring conducted under the IHA and a draft final report within ninety calendar days of the completion of marine mammal monitoring or sixty days prior to the issuance of any subsequent IHA for this project, whichever comes first. A final report must be prepared and submitted within thirty days following resolution of comments on the draft report from NMFS. This report must contain the informational elements including, but not limited to:

1. Dates and times (begin and end) of all marine mammal monitoring.
2. Construction activities occurring during each daily observation period, including how many and what type of piles were driven or removed and by what method (*i.e.*, impact or vibratory).
3. Weather parameters and water conditions during each monitoring period (*e.g.*, wind speed, percent cover, visibility, sea state).



4. The number of marine mammals observed, by species, relative to the pile location and if pile driving or removal was occurring at time of sighting.
5. Age and sex class, if possible, of all marine mammals observed.
6. PSO locations during marine mammal monitoring.
7. Distances and bearings of each marine mammal observed to the pile being driven or removed for each sighting (if pile driving or removal was occurring at time of sighting).
8. Description of any marine mammal behavior patterns during observation, including direction of travel.
9. Number of individuals of each species (differentiated by month as appropriate) detected within the monitoring zone, and estimates of number of marine mammals taken, by species (a correction factor may be applied to total take numbers, as appropriate).
10. Detailed information about any implementation of any mitigation triggered (e.g., shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal, if any.
11. Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals.

Additionally, WP&YR will submit a draft acoustic monitoring report seven calendar days after completing field measurements and a final report within sixty calendar days.



Appendix A. Marine Mammal Observation Record

MARINE MAMMAL OBSERVATION RECORD

Project Name: _____

Monitoring Location: _____

Date: _____

Time Effort Initiated: _____

Time Effort Completed: _____

Page _____ of _____

Time	Visibility	Glare	Weather Condition	Wave Height	BSS	Wind	Swell
:	B-P-M-G-E	%	S-PC-L-R-F-OC-SN-HR	Lt/Mod/Hvy		N S E W	N S E W
:	B-P-M-G-E	%	S-PC-L-R-F-OC-SN-HR	Lt/Mod/Hvy		N S E W	N S E W
:	B-P-M-G-E	%	S-PC-L-R-F-OC-SN-HR	Lt/Mod/Hvy		N S E W	N S E W
:	B-P-M-G-E	%	S-PC-L-R-F-OC-SN-HR	Lt/Mod/Hvy		N S E W	N S E W
:	B-P-M-G-E	%	S-PC-L-R-F-OC-SN-HR	Lt/Mod/Hvy		N S E W	N S E W
:	B-P-M-G-E	%	S-PC-L-R-F-OC-SN-HR	Lt/Mod/Hvy		N S E W	N S E W

Event Code	Sight # (1 or 1.1 if re- sight)	Time/Dur (Start/End time if cont.)	WP/ Grid #/ DIR of travel	Zone/ Radius/ Impact Pile #?	Obs.	Sighting Cue	Species	Group Size	Behavior Code (see code sheet)	Construction Type	Mitigation Type	Exposure (Y/N)	Behavior Change/ Response to Activity/Comments/Human Activity/Vessel Hull # or Name/ Visibility Notes
E ON PRE/POST CON S M OR E OFF		:	Grid N or S W or E			BL BO BR DF SA OTHER		Min: Max: Best:		SSV SSI V DR I DP ST OWC NOWC / NONE	SS/BC DE SD None		
E ON PRE/POST CON S M OR E OFF		:	Grid N or S W or E			BL BO BR DF SA OTHER		Min: Max: Best:		SSV SSI V DR I DP ST OWC NOWC / NONE	SS/BC DE SD None		
E ON PRE/POST CON S M OR E OFF		:	Grid N or S W or E			BL BO BR DF SA OTHER		Min: Max: Best:		SSV SSI V DR I DP ST OWC NOWC / NONE	SS/BC DE SD None		
E ON PRE/POST CON S M OR E OFF		:	Grid N or S W or E			BL BO BR DF SA OTHER		Min: Max: Best:		SSV SSI V DR I DP ST OWC NOWC / NONE	SS/BC DE SD None		
E ON PRE/POST CON S M OR E OFF		:	Grid N or S W or E			BL BO BR DF SA OTHER		Min: Max: Best:		SSV SSI V DR I DP ST OWC NOWC / NONE	SS/BC DE SD None		
E ON PRE/POST CON S M OR E OFF		:	Grid N or S W or E			BL BO BR DF SA OTHER		Min: Max: Best:		SSV SSI V DR I DP ST OWC NOWC / NONE	SS/BC DE SD None		
E ON PRE/POST CON S M OR E OFF		:	Grid N or S W or E			BL BO BR DF SA OTHER		Min: Max: Best:		SSV SSI V DR I DP ST OWC NOWC / NONE	SS/BC DE SD None		
E ON PRE/POST CON S M OR E OFF		:	Grid N or S W or E			BL BO BR DF SA OTHER		Min: Max: Best:		SSV SSI V DR I DP ST OWC NOWC / NONE	SS/BC DE SD None		
E ON PRE/POST CON S M OR E OFF		:	Grid N or S W or E			BL BO BR DF SA OTHER		Min: Max: Best:		SSV SSI V DR I DP ST OWC NOWC / NONE	SS/BC DE SD None		

Marine Mammal Observation Record – Sighting Codes

Behavior Codes

Code	Behavior	Definition
BR	Breaching	Leaps clear of water
CD	Change Direction	Suddenly changes direction of travel
CH	Chuff	Makes loud, forceful exhalation of air at surface
DI	Dive	Forward dives below surface
DE	Dead	Shows decomposition or is confirmed as dead by investigation
DS	Disorientation	An individual displaying multiple behaviors that have no clear direction or purpose
FI	Fight	Agonistic interactions between two or more individuals
FO	Foraging	Confirmed by food seen in mouth
MI	Milling	Moving slowly at surface, changing direction often, not moving in any particular direction
PL	Play	Behavior that does not seem to be directed towards a particular goal; may involve one, two or more individuals
PO	Porpoising	Moving rapidly with body breaking surface of water
SL	Slap	Vigorously slaps surface of water with body, flippers, tail etc.
SP	Spyhopping	Rises vertically in the water to "look" above the water
SW	Swimming	General progress in a direction. Note general direction of travel when last seen [Example: "SW (N)" for swimming north]
TR	Traveling	Traveling in an obvious direction. Note direction of travel when last seen [Example: "TR (N)" for traveling north]
UN	Unknown	Behavior of animal undetermined, does not fit into another behavior
AWA	Approach Work	
LWA	Leave Work Area	
Pinniped only		
EW	Enter Water (from haul out)	Enters water from a haul-out for no obvious reason
FL	Flush (from haul out)	Enters water in response to disturbance
HO	Haul out (from water)	Hauls out on land
RE	Resting	Resting onshore or on surface of water
LO	Look	Is upright in water "looking" in several directions or at a single focus
SI	Sink	Sinks out of sight below surface without obvious effort (usually from an upright position)
VO	Vocalizing	Animal emits barks, squeals, etc.
Cetacean only		
LG	Logging	Resting on surface of water with no obvious signs of movement

Sea State and Wave Height: Use Beaufort Sea State Scale for Sea State. This refers to the surface layer and whether it is glassy in appearance or full of white caps. In the open ocean, it also considers the wave height or swell, but in inland waters the wave height (swells) may never reach the levels that correspond to the correct surface white cap number. Therefore, include wave height for clarity.

Glare: Percent glare should be the total glare of observers' area of responsibility. Determine if observer coverage is covering 90 degrees or 180 degrees and document daily. Then assess total glare for that area. This will provide needed information on what percentage of the field of view was poor due to glare.

Swell Direction: Swell direction should be where the swell is coming from (S for coming from the south). If possible, record direction relative to fixed location (pier). Choose this location at beginning of monitoring project.

Wind Direction: Wind direction should also be where the wind is coming from.



Event

Code	Activity Type
E ON	Effort On
E OFF	Effort Off
PRE	Pre-Construction Watch
POST	Post-Construction Watch
CON	Construction (see types)
S	Sighting
M	Mitigation (see types)
OR	Observer Rotation

Sighting Cues

Code	Distance Visible
BL	Blow
BO	Body
BR	Breach
DF	Dorsal Fin
SA	Surface Activity
OTHR	Other

Marine Mammal Species

Code	Marine Mammal Species
HSEA	Harbor Seal
STSL	Steller Sea Lion
HPBK	Humpback Whale
HAPO	Harbor Porpoise
DAPO	Dall's Porpoise
MINK	Minke Whale
ORCA	Killer Whale

Construction Type

Code	Activity Type
V	Vibratory Pile Driving
I	Impact Pile Driving
ST	Stabbing
DR	Drilling
OWC	Over-Water Construction
NOWC	No Over-Water Construction
NONE	No Construction

Mitigation Codes

Code	Activity Type
SS	Soft Start
BC	Bubble Curtain
DE	Delay onset of In-Water Work
SD	Shut down In-Water Work

Visibility

Code	Distance Visible
B	Bad (<0.5km)
P	Poor (0.5 – 0.9km)
M	Moderate (0.9 – 3km)
G	Good (3 – 10km)
E	Excellent (>10km)

Weather Conditions

Code	Weather Condition
S	Sunny
PC	Partly Cloudy
L	Light Rain
R	Steady Rain
F	Fog
OC	Overcast
SN	Snow
HR	Heavy Rain

Wave Height

Code	Wave Height
Light	0 – 3 ft
Moderate	4 – 6 ft
Heavy	>6 ft

Attachment B: Marine Mammal Sighting Data

Date	Start Time	End Time	Construction Type	Pile Type	Pile ID	# of Pile	Visibility	Glare	Weather	Wave Height	BSS	Wind/Swell Direction	Monitoring Location	Construction at Time of Sighting	Species	Group Size	Behavior	Distance from Work	Take?	Mitigation
1-Mar	12:00 PM	5:00 PM	Vibratory Hammer	36-inch Temporary	MD-5	1	E	0%-20%	S	Moderate	2-5	N	Burro Creek	NONE	HSEA	1	MI	2000	N	NONE
1-Mar	12:00 PM	5:00 PM	Impact Hammer	36-inch Temporary	MD-5	1	E	0%-20%	S	Moderate	2-5	N	Burro Creek	NONE	HSEA	1	MI	2000	N	NONE
1-Mar	12:00 PM	5:00 PM	Vibratory Hammer	36-inch Temporary	MD-5	1	E	0%-20%	S	Moderate	2-5	N	Yakutania Point	NONE	HSEA	1	LO/TR	3000	N	NONE
1-Mar	12:00 PM	5:00 PM	Impact Hammer	36-inch Temporary	MD-5	1	E	0%-20%	S	Moderate	2-5	N	RR Dock	Vibratory Hammer	HSEA	6	FO/PL	600	Y	NONE
2-Mar	8:00 AM	5:13 PM	Vibratory Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	RR Dock	NONE	HSEA	1	SP	400	N	NONE
2-Mar	8:00 AM	5:13 PM	Impact Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	RR Dock	NONE	HSEA	1	TR	600	N	NONE
2-Mar	8:00 AM	5:13 PM	Vibratory Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	RR Dock	NONE	HSEA	1	TR	700	N	NONE
2-Mar	8:00 AM	5:13 PM	Impact Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	RR Dock	NONE	HSEA	1	TR	1000	N	NONE
2-Mar	8:00 AM	5:13 PM	Vibratory Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	Burro Creek	NONE	HSEA	1	MI	2000	N	NONE
2-Mar	8:00 AM	5:13 PM	Impact Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	Yakutania Point	NONE	HSEA	1	LO	3000	N	NONE
2-Mar	8:00 AM	5:13 PM	Vibratory Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	Yakutania Point	NONE	HSEA	1	LO	3000	N	NONE
2-Mar	8:00 AM	5:13 PM	Impact Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	RR Dock	Vibratory Hammer	HSEA	1	LO/SI	500	Y	NONE
2-Mar	8:00 AM	5:13 PM	Vibratory Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	RR Dock	Vibratory Hammer	HSEA	1	LO/SI	550	Y	NONE
2-Mar	8:00 AM	5:13 PM	Impact Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	RR Dock	Vibratory Hammer	HSEA	1	LO/SI	750	Y	NONE
2-Mar	8:00 AM	5:13 PM	Vibratory Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	Burro Creek	Vibratory Hammer	HSEA	1	MI	2000	Y	NONE
2-Mar	8:00 AM	5:13 PM	Impact Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	RR Dock	Vibratory Hammer	HSEA	2	TR/LO/SI	500-600	Y	NONE
2-Mar	8:00 AM	5:13 PM	Vibratory Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	RR Dock	Impact Hammer	HSEA	3	FO	1000	Y	NONE
2-Mar	8:00 AM	5:13 PM	Impact Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	RR Dock	Vibratory Hammer	HSEA	5	FO	1000	Y	NONE
2-Mar	8:00 AM	5:13 PM	Vibratory Hammer	36-inch Temporary	MD-5	3	G	0%-10%	OC	Moderate	1-6	N	Yakutania Point	Vibratory Hammer	HSEA	12	MI/PL	1000	Y	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	RR Dock	NONE	HSEA	1	LO/SI	500	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	RR Dock	NONE	HSEA	1	LO	500	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	RR Dock	NONE	HSEA	1	LO	500	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	RR Dock	NONE	HSEA	1	LO/SI	700	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	RR Dock	NONE	HSEA	1	TR	800	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	RR Dock	NONE	HSEA	1	LO	800	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	RR Dock	NONE	HSEA	1	TR	900	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	Yakutania Point	NONE	HSEA	1	LO/MI	1000	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	Yakutania Point	NONE	HSEA	1	LO/MI	1000	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	Yakutania Point	NONE	HSEA	1	MI	1000	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	Yakutania Point	NONE	HSEA	1	MI/PL	1000	N	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	Yakutania Point	Vibratory Hammer	HSEA	1	MI	1000	Y	NONE
3-Mar	9:30 AM	6:21 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-30%	S	Moderate	1-6	N	RR Dock	NONE	HSEA	7	TR/LO	900	N	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	RR Dock	NONE	HSEA	1	LO/SI	700	N	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	RR Dock	NONE	HSEA	1	LO/SI	700	N	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	Yakutania Point	NONE	HSEA	1	MI	1000	N	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	Burro Creek	NONE	HSEA	1	TR	2000	N	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	RR Dock	NONE	HSEA	1	LO/SI/TR	700-800	N	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	Burro Creek	Vibratory Hammer	HSEA	1	MI	2000	Y	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	Yakutania Point	NONE	HSEA	2	MI	1000	N	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	RR Dock	NONE	HSEA	2	LO/TR	700-750	N	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	Yakutania Point	Vibratory Hammer	HSEA	3	MI	1000	Y	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	Yakutania Point	NONE	HSEA	7	MI	1000	N	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	Yakutania Point	Vibratory Hammer	HSEA	10	MI	1000	Y	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	Yakutania Point	NONE	HSEA	11	MI	1000	N	NONE
4-Mar	8:30 AM	6:15 PM	Vibratory Hammer	36-inch Temporary	MD-4	3	E	0%-40%	S	Moderate	1-5	N	2km	NONE	STSL	1	RE	2000	N	NONE
5-Mar	12:30 PM	5:10 PM	Vibratory Hammer	36-inch Temporary	MD-4	2	E	0%-30%	S	Moderate	2-4	N	RR Dock	NONE	HSEA	1	LO/TR	700	N	NONE
5-Mar	12:30 PM	5:10 PM	Vibratory Hammer	36-inch Temporary	MD-4	2	E	0%-30%	S	Moderate	2-4	N	RR Dock	NONE	HSEA	1	LO	700	N	NONE

5-Mar	12:30 PM	5:10 PM	Vibratory Hammer	36-inch Temporary	MD-4 Template	2	E	0%-30%	S	Moderate	2-4	N	Burro Creek	NONE	HSEA	1	MI	2000	N	NONE
5-Mar	12:30 PM	5:10 PM	Vibratory Hammer	36-inch Temporary	MD-4 Template	2	E	0%-30%	S	Moderate	2-4	N	Burro Creek	Vibratory Hammer	HSEA	1	MI	2000	Y	NONE
5-Mar	12:30 PM	5:10 PM	Vibratory Hammer	36-inch Temporary	MD-4 Template	2	E	0%-30%	S	Moderate	2-4	N	Yakutania Point	NONE	HSEA	4	MI	1000	N	NONE
5-Mar	12:30 PM	5:10 PM	Vibratory Hammer	36-inch Temporary	MD-4 Template	2	E	0%-30%	S	Moderate	2-4	N	Yakutania Point	Vibratory Hammer	HSEA	6	MI	1000	Y	NONE
5-Mar	12:30 PM	5:10 PM	Vibratory Hammer	36-inch Temporary	MD-4 Template	2	E	0%-30%	S	Moderate	2-4	N	Yakutania Point	Vibratory Hammer	HSEA	8	MI	1000	Y	NONE
6-Mar	11:45 AM	1:05 PM	Vibratory Hammer	42-inch Permanent	MD-4 Vertical	2	E	0%-30%	S	Light-Moderate	1-6	N	RR Dock	NONE	HSEA	1	LO	700	N	NONE
7-Mar	7:30 AM	10:50 AM	Impact Hammer	36-inch Temporary	MD-4 Vertical	12	E	0%-25%	S	Light-Moderate	0-3	N	RR Dock	NONE	HSEA	1	LO	700	N	NONE
7-Mar	7:30 AM	10:50 AM	Impact Hammer	36-inch Temporary	MD-4 Vertical	12	E	0%-25%	S	Light-Moderate	0-3	N	RR Dock	NONE	HSEA	1	LO/TR	800	N	NONE
7-Mar	7:30 AM	10:50 AM	Impact Hammer	36-inch Temporary	MD-4 Vertical	12	E	0%-25%	S	Light-Moderate	0-3	N	Yakutania Point	NONE	HSEA	1	MI	1000	N	NONE
7-Mar	4:00 PM	5:10 PM	Impact Hammer	36-inch Temporary	MD-4 Vertical	12	E	0%-25%	S	Light-Moderate	0-3	N	Yakutania Point	NONE	HSEA	1	MI	1000	N	NONE
7-Mar	7:30 AM	10:50 AM	Impact Hammer	36-inch Temporary	MD-4 Vertical	12	E	0%-25%	S	Light-Moderate	0-3	N	RR Dock	Vibratory Hammer	HSEA	1	LO	1000	Y	NONE
7-Mar	4:00 PM	5:10 PM	Impact Hammer	36-inch Temporary	MD-4 Vertical	12	E	0%-25%	S	Light-Moderate	0-3	N	Burro Creek	NONE	HSEA	2	MI	2000	N	NONE
7-Mar	4:00 PM	5:10 PM	Impact Hammer	36-inch Temporary	MD-4 Vertical	12	E	0%-25%	S	Light-Moderate	0-3	N	Yakutania Point	Vibratory Hammer	HSEA	3	MI	1000	Y	NONE
7-Mar	4:00 PM	5:10 PM	Impact Hammer	36-inch Temporary	MD-4 Vertical	12	E	0%-25%	S	Light-Moderate	0-3	N	Yakutania Point	NONE	HSEA	6	MI	1000	N	NONE
7-Mar	4:00 PM	5:10 PM	Impact Hammer	36-inch Temporary	MD-4 Vertical	12	E	0%-25%	S	Light-Moderate	0-3	N	Yakutania Point	Vibratory Hammer	HSEA	6	MI	1000	Y	NONE
7-Mar	7:30 AM	10:50 AM	Impact Hammer	36-inch Temporary	MD-4 Vertical	12	E	0%-25%	S	Light-Moderate	0-3	N	RR Dock	Vibratory Hammer	HSEA	7	LO/PL	850-1000	Y	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	RR Dock	NONE	HSEA	1	TR	700	N	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	4km	NONE	HSEA	1	LO	4000	N	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	RR Dock	Impact Hammer	HSEA	1	TR	400	Y	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	RR Dock	Vibratory Hammer	HSEA	1	LO/SI	800	Y	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	Burro Creek	Vibratory Hammer	HSEA	1	MI	2000	Y	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	Burro Creek	Impact Hammer	HSEA	1	TR	2000	Y	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	2km	Vibratory Hammer	HSEA	1	UN	2000	Y	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	Yakutania Point	Vibratory Hammer	HSEA	4	MI	1000	Y	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	Yakutania Point	Vibratory Hammer	HSEA	4	MI	1000	Y	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	Yakutania Point	NONE	HSEA	6	MI	1000	N	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	4km	NONE	HSEA	10	TR	5000	N	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	Yakutania Point	Impact Hammer	HSEA	13	MI	1000	Y	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	Yakutania Point	NONE	HSEA	14	MI	1000	N	NONE
8-Mar	7:30 AM	12:42 PM	Vibratory Hammer	42-inch Permanent	MD-5 Vertical	1	E	0%-10%	S/PC/OC	Light	0-1	N	2km	NONE	STSL	1	UN	1000	N	NONE
11-Mar	2:00 PM	6:20 PM	Drill (socketing)	42-inch Permanent	MD-4 Vertical	2	M/G/E	0%-35%	PC/OC	Moderate	2-5	S	RR Dock	Drill (socketing)	HSEA	1	LO/SI	850	Y	NONE
11-Mar	2:00 PM	6:20 PM	Drill (socketing)	42-inch Permanent	MD-4 Vertical	2	M/G/E	0%-35%	PC/OC	Moderate	2-5	S	Burro Creek	Drill (socketing)	HSEA	1	MI	2000	Y	NONE
11-Mar	2:00 PM	6:20 PM	Drill (socketing)	42-inch Permanent	MD-4 Vertical	2	M/G/E	0%-35%	PC/OC	Moderate	2-5	S	Burro Creek	NONE	HSEA	2	SP	2000	N	NONE
11-Mar	2:00 PM	6:20 PM	Drill (socketing)	42-inch Permanent	MD-4 Vertical	2	M/G/E	0%-35%	PC/OC	Moderate	2-5	S	RR Dock	NONE	HSEA	3	LO	800	N	NONE
11-Mar	2:00 PM	6:20 PM	Drill (socketing)	42-inch Permanent	MD-4 Vertical	2	M/G/E	0%-35%	PC/OC	Moderate	2-5	S	Yakutania Point	Vibratory Hammer	HSEA	7	MI	1000	Y	NONE
12-Mar	2:30 PM	4:40 PM	Drill (socketing)	42-inch Permanent	MD-4 Vertical	2	B/G/E	0%-25%	S/PC/F	Moderate-Heavy	2-5	S	RR Dock	Drill (socketing)	HSEA	1	TR	700	Y	NONE
12-Mar	2:30 PM	4:40 PM	Drill (socketing)	42-inch Permanent	MD-4 Vertical	2	B/G/E	0%-25%	S/PC/F	Moderate-Heavy	2-5	S	Burro Creek	Drill (socketing)	HSEA	2	SP	2000	Y	NONE
12-Mar	2:30 PM	4:40 PM	Drill (socketing)	42-inch Permanent	MD-4 Vertical	2	B/G/E	0%-25%	S/PC/F	Moderate-Heavy	2-5	S	RR Dock	Drill (socketing)	HSEA	4	LO/TR	700-750	Y	NONE
12-Mar	2:30 PM	4:40 PM	Drill (socketing)	42-inch Permanent	MD-4 Vertical	2	B/G/E	0%-25%	S/PC/F	Moderate-Heavy	2-5	S	Yakutania Point	Drill (socketing)	HSEA	7	MI	1000	Y	NONE
12-Mar	2:30 PM	4:40 PM	Drill (socketing)	42-inch Permanent	MD-4 Vertical	2	B/G/E	0%-25%	S/PC/F	Moderate-Heavy	2-5	S	Yakutania Point	Drill (socketing)	HSEA	16	MI	1000	Y	NONE
13-Mar	7:30 AM	5:00 PM	Drill (socketing)	42-inch Permanent	MD-5 Vertical	1	M/G/E	0%-10%	PC/OC/F	Light-Heavy	1-6	S	RR Dock	NONE	HSEA	1	LO/SI	750	N	NONE
13-Mar	7:30 AM	5:00 PM	Drill (socketing)	42-inch Permanent	MD-5 Vertical	1	M/G/E	0%-10%	PC/OC/F	Light-Heavy	1-6	S	RR Dock	NONE	HSEA	1	LO	750	N	NONE
13-Mar	7:30 AM	5:00 PM	Drill (socketing)	42-inch Permanent	MD-5 Vertical	1	M/G/E	0%-10%	PC/OC/F	Light-Heavy	1-6	S	RR Dock	Drill (socketing)	HSEA	1	LO/SI	600	Y	NONE
13-Mar	7:30 AM	5:00 PM	Drill (socketing)	42-inch Permanent	MD-5 Vertical	1	M/G/E	0%-10%	PC/OC/F	Light-Heavy	1-6	S	RR Dock	Drill (socketing)	HSEA	1	LO/SI	700	Y	NONE
13-Mar	7:30 AM	5:00 PM	Drill (socketing)	42-inch Permanent	MD-5 Vertical	1	M/G/E	0%-10%	PC/OC/F	Light-Heavy	1-6	S	RR Dock	Drill (socketing)	HSEA	1	LO/TR	700	Y	NONE
13-Mar	7:30 AM	5:00 PM	Drill (socketing)	42-inch Permanent	MD-5 Vertical	1	M/G/E	0%-10%	PC/OC/F	Light-Heavy	1-6	S	Burro Creek	Drill (socketing)	HSEA	2	SP	2000	Y	NONE
13-Mar	7:30 AM	5:00 PM	Drill (socketing)	42-inch Permanent	MD-5 Vertical	1	M/G/E	0%-10%	PC/OC/F	Light-Heavy	1-6	S	Yakutania Point	Drill (socketing)	HSEA	12	MI	1000	Y	NONE
13-Mar	7:30 AM	5:00 PM	Drill (socketing)	42-inch Permanent	MD-5 Vertical	1	M/G/E	0%-10%	PC/OC/F	Light-Heavy	1-6	S	4km	NONE	HSEA	20	RE	4,200	N	NONE

14-Mar	10:45 AM	5:39 PM	Vibratory Hammer Drill (socketing)	42-Inch Permanent	MD-5 Vertical	1	M/G/E	0%-20%	PC/OC/F	Light-Heavy	1-5	S	RR Dock	NONE	HSEA	1	LO/SI	700	N	NONE
14-Mar	10:45 AM	5:39 PM	Vibratory Hammer Drill (socketing)	42-Inch Permanent	MD-5 Vertical	1	M/G/E	0%-20%	PC/OC/F	Light-Heavy	1-5	S	Burro Creek	NONE	HSEA	1	SP	2000	N	NONE
14-Mar	10:45 AM	5:39 PM	Vibratory Hammer Drill (socketing)	42-Inch Permanent	MD-5 Vertical	1	M/G/E	0%-20%	PC/OC/F	Light-Heavy	1-5	S	Yakutania Point	Vibratory Hammer	HSEA	7	MI	1000	Y	NONE
14-Mar	10:45 AM	5:39 PM	Vibratory Hammer Drill (socketing)	42-Inch Permanent	MD-5 Vertical	1	M/G/E	0%-20%	PC/OC/F	Light-Heavy	1-5	S	4km	NONE	HSEA	15	RE	4,200	N	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	RR Dock	NONE	HSEA	1	TR	600	N	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	2km	NONE	HSEA	1	SW	2000	N	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	RR Dock	Vibratory Hammer	HSEA	1	MI	800	Y	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	4km	Vibratory Hammer	HSEA	1	LO/SI	4300	Y	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	RR Dock	Vibratory Hammer	HSEA	2	TR	800	Y	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	Yakutania Point	Vibratory Hammer	HSEA	2	MI/TR	1000	Y	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	Yakutania Point	Vibratory Hammer	HSEA	3	MI	1000	Y	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	Yakutania Point	Vibratory Hammer	HSEA	6	RE/MI/LO/SI/TR	1000	Y	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	RR Dock	Vibratory Hammer	HSEA	8	MI/TR	850-1200	Y	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	2km	Vibratory Hammer	STSL	1	SW	2000	Y	NONE
16-Mar	8:30 AM	2:20 PM	Vibratory Hammer	42-inch Permanent	MD4-SE and MD5		P/M	0%	L/R/OC/SN	Light	0-2	S	4km	Vibratory Hammer	STSL	1	MI/SW/TR	4200-4225	Y	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	RR Dock	NONE	HSEA	1	TR	600	N	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	RR Dock	NONE	HSEA	1	TR	700	N	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	RR Dock	NONE	HSEA	1	TR	800	N	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	Yakutania Point	NONE	HSEA	1	RE/LO/SI/MI	1000	N	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	Burro Creek	NONE	HSEA	1	MI	2000	N	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	RR Dock	NONE	HSEA	1	TR	500-850	N	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	RR Dock	Vibratory Hammer	HSEA	1	TR	400	Y	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	RR Dock	Vibratory Hammer	HSEA	1	TR	700	Y	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	Yakutania Point	Vibratory Hammer	HSEA	1	TR	1000	Y	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	RR Dock	Vibratory Hammer	HSEA	1	LO/SI/TR	400-700	Y	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	Yakutania Point	NONE	HSEA	3	MI/RE/SI	1000	N	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	Yakutania Point	NONE	HSEA	4	TR/MI	1000	N	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	Yakutania Point	Vibratory Hammer	HSEA	4	MI/SI	1000	Y	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	RR Dock	Vibratory Hammer	HSEA	5	TR	600-950m	Y	NONE
17-Mar	8:30 AM	3:55 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	M/G/E	0%	PC/OC/R	Light	0-1	S	Yakutania Point	NONE	HSEA	6	MI/RE	900-1000	N	NONE
20-Mar	10:30 AM	12:30 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-30%	S/PC/OC	Light	1-3	N	RR Dock	NONE	HSEA	1	MI	500	N	NONE
20-Mar	10:30 AM	12:30 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-30%	S/PC/OC	Light	1-3	N	Yakutania Point	NONE	HSEA	1	PL	1000	N	NONE
20-Mar	1:30 PM	3:56 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-30%	S/PC/OC	Light	1-3	N	Burro Creek	NONE	HSEA	1	SP	1900	N	NONE
20-Mar	10:30 AM	12:30 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-30%	S/PC/OC	Light	1-3	N	RR Dock	Vibratory Hammer	HSEA	1	MI	900	Y	NONE
20-Mar	1:30 PM	3:56 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-30%	S/PC/OC	Light	1-3	N	Burro Creek	Vibratory Hammer	HSEA	3	TR	2000	Y	NONE
21-Mar	12:30 PM	4:15 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	M/G/E	0%-30%	S/PC/OC	Light	0-3	N/S	RR Dock	NONE	HSEA	1	LO	750	N	NONE
21-Mar	12:30 PM	4:15 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	M/G/E	0%-30%	S/PC/OC	Light	0-3	N/S	RR Dock	NONE	HSEA	1	SW	800	N	NONE
21-Mar	12:30 PM	4:15 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	M/G/E	0%-30%	S/PC/OC	Light	0-3	N/S	RR Dock	NONE	HSEA	1	SW	1000	N	NONE
21-Mar	12:30 PM	4:15 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	M/G/E	0%-30%	S/PC/OC	Light	0-3	N/S	RR Dock	NONE	HSEA	1	LO	1000	N	NONE
21-Mar	12:30 PM	4:15 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	M/G/E	0%-30%	S/PC/OC	Light	0-3	N/S	Yakutania Point	NONE	HSEA	1	TR	1000	N	NONE
21-Mar	12:30 PM	4:15 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	M/G/E	0%-30%	S/PC/OC	Light	0-3	N/S	Yakutania Point	NONE	HSEA	1	MI	1100	N	NONE
21-Mar	12:30 PM	4:15 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	M/G/E	0%-30%	S/PC/OC	Light	0-3	N/S	RR Dock	NONE	HSEA	1	LO/SI	500-700	N	NONE
21-Mar	12:30 PM	4:15 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	M/G/E	0%-30%	S/PC/OC	Light	0-3	N/S	Yakutania Point	Vibratory Hammer	HSEA	1	MI	1000	Y	NONE
21-Mar	12:30 PM	4:15 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	M/G/E	0%-30%	S/PC/OC	Light	0-3	N/S	RR Dock	Vibratory Hammer	HSEA	1	SW	700-2000	Y	NONE
21-Mar	12:30 PM	4:15 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	M/G/E	0%-30%	S/PC/OC	Light	0-3	N/S	RR Dock	NONE	HSEA	5	SW	1000	N	NONE
22-Mar	3:15 PM	5:22 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	E	0%-5%	OC	Light	0-1	N	RR Dock	NONE	HSEA	1	LO/SI	500	N	NONE
22-Mar	3:15 PM	5:22 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	E	0%-5%	OC	Light	0-1	N	RR Dock	NONE	HSEA	1	SW	1000	N	NONE

22-Mar	3:15 PM	5:22 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	E	0%-5%	OC	Light	0-1	N	Yakutania Point	NONE	HSEA	1	LO/SI	1000	N	NONE
22-Mar	3:15 PM	5:22 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	E	0%-5%	OC	Light	0-1	N	RR Dock	Vibratory Hammer	HSEA	1	SW	800	Y	NONE
22-Mar	3:15 PM	5:22 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	E	0%-5%	OC	Light	0-1	N	Yakutania Point	Vibratory Hammer	HSEA	1	LO/MI/SI	1000-1200	Y	NONE
22-Mar	3:15 PM	5:22 PM	Vibratory Hammer	42-inch Permanent	MD5-SE	1	E	0%-5%	OC	Light	0-1	N	RR Dock	NONE	HSEA	5	SW	800	N	NONE
25-Mar	5:00 PM	7:20 PM	No in-water work (weather)	N/A	N/A	N/A	E	0%-20%	S/PC	Light	1-3	SW	RR Dock	NONE	HSEA	1	LO/SI	800	N	NONE
25-Mar	5:00 PM	7:20 PM	No in-water work (weather)	N/A	N/A	N/A	E	0%-20%	S/PC	Light	1-3	SW	Yakutania Point	NONE	HSEA	1	MI/SLAP	1000	N	NONE
25-Mar	5:00 PM	7:20 PM	No in-water work (weather)	N/A	N/A	N/A	E	0%-20%	S/PC	Light	1-3	SW	2km	NONE	STSL	1	SW	2000	N	NONE
26-Mar	9:30 AM	4:50 PM	Impact Hammer	42-inch Permanent	MD5-SE	1	E	0%-20%	S/PC	Light/Moderate	1-4	N	Yakutania Point	NONE	HSEA	1	LO/SI	1100	N	NONE
26-Mar	9:30 AM	4:50 PM	Impact Hammer	42-inch Permanent	MD5-SE	1	E	0%-20%	S/PC	Light/Moderate	1-4	N	Yakutania Point	NONE	HSEA	1	SL	1100	N	NONE
26-Mar	9:30 AM	4:50 PM	Impact Hammer	42-inch Permanent	MD5-SE	1	E	0%-20%	S/PC	Light/Moderate	1-4	N	4km	NONE	HSEA	1	MI/LO	4300	N	NONE
26-Mar	9:30 AM	4:50 PM	Impact Hammer	42-inch Permanent	MD5-SE	1	E	0%-20%	S/PC	Light/Moderate	1-4	N	Yakutania Point	NONE	HSEA	2	MI/SL	1000	N	NONE
26-Mar	9:30 AM	4:50 PM	Impact Hammer	42-inch Permanent	MD5-SE	1	E	0%-20%	S/PC	Light/Moderate	1-4	N	Yakutania Point	NONE	HSEA	5	MI/SL	1000	N	NONE
26-Mar	9:30 AM	4:50 PM	Impact Hammer	42-inch Permanent	MD5-SE	1	E	0%-20%	S/PC	Light/Moderate	1-4	N	RR Dock	Impact Hammer	HSEA	5	LO/SI	500	Y	NONE
26-Mar	9:30 AM	4:50 PM	Impact Hammer	42-inch Permanent	MD5-SE	1	E	0%-20%	S/PC	Light/Moderate	1-4	N	Yakutania Point	Impact Hammer	HSEA	6	MI/SL	1000	Y	NONE
27-Mar	8:30 AM	11:15 AM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	RR Dock	NONE	HSEA	1	SW	200	N	NONE
27-Mar	8:30 AM	11:15 AM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	RR Dock	NONE	HSEA	1	SW	600	N	NONE
27-Mar	2:00 PM	8:10 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	RR Dock	NONE	HSEA	1	SW	700	N	NONE
27-Mar	2:00 PM	8:10 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	Burro Creek	NONE	HSEA	1	TR	2000	N	NONE
27-Mar	8:30 AM	11:15 AM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	RR Dock	NONE	HSEA	2	SW	700	N	NONE
27-Mar	8:30 AM	11:15 AM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	RR Dock	NONE	HSEA	2	SW	900	N	NONE
27-Mar	8:30 AM	11:15 AM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	RR Dock	NONE	HSEA	3	SW	800	N	NONE
27-Mar	2:00 PM	8:10 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	Yakutania Point	NONE	HSEA	4	MI/SI/SL/RE	900	N	NONE
27-Mar	2:00 PM	8:10 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	Yakutania Point	Drill (socketing)	HSEA	4	MI/SI/SL/RE	1000	Y	NONE
27-Mar	8:30 AM	11:15 AM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	RR Dock	NONE	HSEA	6	SW	850	N	NONE
27-Mar	2:00 PM	8:10 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	Yakutania Point	NONE	HSEA	6	MI/SI	1000	N	NONE
27-Mar	2:00 PM	8:10 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	G/E	0%-40%	S	Light	0-2	N	RR Dock	NONE	HSEA	7	SW	700	N	NONE
29-Mar	2:00 PM	7:32 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	E	0%-35%	S	Light	0-1	SW	RR Dock	NONE	HSEA	1	SW	800	N	NONE
29-Mar	2:00 PM	7:32 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	E	0%-35%	S	Light	0-1	SW	Yakutania Point	NONE	HSEA	1	SI/MI	1100	N	NONE
29-Mar	2:00 PM	7:32 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	E	0%-35%	S	Light	0-1	SW	RR Dock	Impact Hammer	HSEA	1	LO	1000	Y	NONE
29-Mar	2:00 PM	7:32 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	E	0%-35%	S	Light	0-1	SW	4km	Vibratory Hammer	HSEA	1	RE	4,200	Y	NONE
29-Mar	2:00 PM	7:32 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	E	0%-35%	S	Light	0-1	SW	Yakutania Point	Impact Hammer	HSEA	3	SL/MI/SI	1000	Y	NONE
29-Mar	2:00 PM	7:32 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	E	0%-35%	S	Light	0-1	SW	Yakutania Point	Vibratory Hammer	HSEA	4	MI/SI	1000	Y	NONE
29-Mar	2:00 PM	7:32 PM	Vibratory Hammer	42-inch Permanent	MD5-NE	1	E	0%-35%	S	Light	0-1	SW	Yakutania Point	Vibratory Hammer	HSEA	7	MI/RE/SI/SL	1000	Y	NONE
30-Mar	9:00 AM	1:44 PM	Vibratory Hammer	42-inch Permanent	MD5-E	1	G/E	0%-20%	S/PC/OC	Light	1-3	NE/NW	Yakutania Point	NONE	HSEA	1	TR	1000	N	NONE
30-Mar	9:00 AM	1:44 PM	Vibratory Hammer	42-inch Permanent	MD5-E	1	G/E	0%-20%	S/PC/OC	Light	1-3	NE/NW	Yakutania Point	NONE	HSEA	1	TR	1000	N	NONE
30-Mar	9:00 AM	1:44 PM	Vibratory Hammer	42-inch Permanent	MD5-E	1	G/E	0%-20%	S/PC/OC	Light	1-3	NE/NW	Yakutania Point	NONE	HSEA	1	LO/SI	1100	N	NONE
30-Mar	9:00 AM	1:44 PM	Vibratory Hammer	42-inch Permanent	MD5-E	1	G/E	0%-20%	S/PC/OC	Light	1-3	NE/NW	Burro Creek	NONE	HSEA	4	MI	2000	N	NONE
30-Mar	9:00 AM	1:44 PM	Vibratory Hammer	42-inch Permanent	MD5-E	1	G/E	0%-20%	S/PC/OC	Light	1-3	NE/NW	Yakutania Point	Vibratory Hammer	HSEA	6	MI/SL/RE	1000	Y	NONE
30-Mar	9:00 AM	1:44 PM	Vibratory Hammer	42-inch Permanent	MD5-E	1	G/E	0%-20%	S/PC/OC	Light	1-3	NE/NW	Yakutania Point	NONE	HSEA	10	MI/SL	1000	N	NONE
30-Mar	9:00 AM	1:44 PM	Vibratory Hammer	42-inch Permanent	MD5-E	1	G/E	0%-20%	S/PC/OC	Light	1-3	NE/NW	2km	NONE	ORCA	2	SW	2000	N	NONE
31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE and MD4-NE	2	E	0%-10%	S	Light	0-1	N	RR Dock	NONE	HSEA	1	SW	200	N	NONE
31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE and MD4-NE	2	E	0%-10%	S	Light	0-1	N	RR Dock	NONE	HSEA	1	SW	500	N	NONE
31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE and MD4-NE	2	E	0%-10%	S	Light	0-1	N	Yakutania Point	NONE	HSEA	1	TR	1100	N	NONE
31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE and MD4-NE	2	E	0%-10%	S	Light	0-1	N	Yakutania Point	NONE	HSEA	1	TR	1100	N	NONE
31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE and MD4-NE	2	E	0%-10%	S	Light	0-1	N	RR Dock	NONE	HSEA	1	SW	1200	N	NONE
31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE and MD4-NE	2	E	0%-10%	S	Light	0-1	N	Yakutania Point	Vibratory Hammer	HSEA	1	TR	1000	Y	NONE
31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE and MD4-NE	2	E	0%-10%	S	Light	0-1	N	Yakutania Point	Impact Hammer	HSEA	1	LO/SI	1000	Y	NONE
31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE and MD4-NE	2	E	0%-10%	S	Light	0-1	N	RR Dock	Vibratory Hammer	HSEA	1	SW	600-900	Y	NONE

31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE	2	E	0%-10%	S	Light	0-1	N	RR Dock	Vibratory Hammer	HSEA	1	SW	700-750	Y	NONE
31-Mar	9:00 AM	12:43 PM	Impact Hammer	42-inch Permanent	MD4-NE	2	E	0%-10%	S	Light	0-1	N	Yakutania Point	NONE	HSEA	2	TR	1100	N	NONE
31-Mar	9:00 AM	12:43 PM	Impact Hammer	42-inch Permanent	MD4-NE	2	E	0%-10%	S	Light	0-1	N	Yakutania Point	NONE	HSEA	3	MI/SL	1000	N	NONE
31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE	2	E	0%-10%	S	Light	0-1	N	Yakutania Point	NONE	HSEA	3	MI	1000	N	NONE
31-Mar	9:00 AM	12:43 PM	Vibratory Hammer	42-inch Permanent	MD4-NE	2	E	0%-10%	S	Light	0-1	N	Yakutania Point	NONE	STSL	1	TR	1100	N	NONE
1-Apr	1:30 PM	5:30 PM	Drill (socketing)	42-inch Permanent	MD4-NE	1	E	0%-30%	S	Light	0-2	N	Yakutania Point	Drill (socketing)	HSEA	8	LO/MI/SI/SL/RE	1000	Y	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	Yakutania Point	NONE	HSEA	1	TR	1000	N	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	Yakutania Point	NONE	HSEA	1	LO/SI/RE	1000	N	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	Yakutania Point	NONE	HSEA	1	SW	1000	N	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	Yakutania Point	NONE	HSEA	1	SW/LO	1000	N	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	Yakutania Point	NONE	HSEA	2	MI	1000	N	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	Yakutania Point	NONE	HSEA	2	LO/SI	1100	N	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	Burro Creek	NONE	HSEA	2	SP	2000	N	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	Yakutania Point	NONE	HSEA	4	MI/SL/RE	1000	N	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	Yakutania Point	Drill (socketing)	HSEA	7	SW/PL	1000	Y	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	2km/4km	NONE	ORCA	5	SW	2000-4000	Y	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	Yakutania Point	NONE	STSL	3	SW/TR	1000-2000	N	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	2km	NONE	STSL	4	SW	2000	N	NONE
2-Apr	9:30 AM	5:06 PM	Vibratory Hammer Drill (socketing)	42-inch Permanent	MD4-E	1	E	0%-15%	S	Light	0-1	S	2km/4km	NONE	STSL	6	PO/TR	4000	N	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	Yakutania Point	NONE	HSEA	1	SW	1100	N	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	Burro Creek	NONE	HSEA	1	TR	2000	N	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	Yakutania Point	Vibratory Hammer	HSEA	1	SW	1000	Y	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	Yakutania Point	NONE	HSEA	2	SW/LO	1000	N	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	Yakutania Point	Vibratory Hammer	HSEA	2	RE/LO/SL	1000	Y	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	Yakutania Point	NONE	HSEA	3	LO/SW	1000	N	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	Yakutania Point	NONE	HSEA	3	LO/SW/SI	1000	N	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	Yakutania Point	Vibratory Hammer	HSEA	4	PL	1000	Y	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	Burro Creek	NONE	STSL	2	TR	2000	N	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	4km	Vibratory Hammer	STSL	2	MI/LO	4,200	Y	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	RR Dock	Vibratory Hammer	STSL	3	TR	800	Y	NONE
3-Apr	9:00 AM	7:00 PM	Vibratory Hammer	42-inch Permanent	MD4-N	2	M/G/E	0%-15%	PC/OC	Light	0-3	S	Yakutania Point	Vibratory Hammer	STSL	4	TR	700	Y	NONE
4-Apr	7:30 AM	7:00 PM	Drill (socketing)	42-inch Permanent	MD4-N	1	M/G/E	0%-5%	OC/F	Light	1-5	N	Yakutania Point	NONE	HSEA	1	LO/SI/SL/RE	1000	N	NONE
4-Apr	7:30 AM	7:00 PM	Drill (socketing)	42-inch Permanent	MD4-N	1	M/G/E	0%-5%	OC/F	Light	1-5	N	Yakutania Point	NONE	HSEA	1	LO/SI	1100	N	NONE
4-Apr	7:30 AM	7:00 PM	Drill (socketing)	42-inch Permanent	MD4-N	1	M/G/E	0%-5%	OC/F	Light	1-5	N	Yakutania Point	Vibratory Hammer	HSEA	1	LO/SW	1000	Y	NONE
4-Apr	7:30 AM	7:00 PM	Drill (socketing)	42-inch Permanent	MD4-N	1	M/G/E	0%-5%	OC/F	Light	1-5	N	Yakutania Point	Vibratory Hammer	HSEA	1	LO/SI	1000	Y	NONE
4-Apr	7:30 AM	7:00 PM	Drill (socketing)	42-inch Permanent	MD4-N	1	M/G/E	0%-5%	OC/F	Light	1-5	N	Yakutania Point	Vibratory Hammer	HSEA	6	SI/SL	750-1000	Y	NONE
4-Apr	7:30 AM	7:00 PM	Drill (socketing)	42-inch Permanent	MD4-N	1	M/G/E	0%-5%	OC/F	Light	1-5	N	2km	NONE	STSL	1	LO/SW	4300	N	NONE
4-Apr	7:30 AM	7:00 PM	Drill (socketing)	42-inch Permanent	MD4-N	1	M/G/E	0%-5%	OC/F	Light	1-5	N	4km	Vibratory Hammer	STSL	1	LO	4300	Y	NONE
4-Apr	7:30 AM	7:00 PM	Drill (socketing)	42-inch Permanent	MD4-N	1	M/G/E	0%-5%	OC/F	Light	1-5	N	Yakutania Point	NONE	STSL	2	TR	1000	N	NONE
5-Apr	7:30 AM	5:25 PM	Vibratory Hammer	42-inch Permanent	MD5-N	2	G/E	0%-5%	OC/F	Moderate	4-6	N	NO SIGHTINGS	NONE	HSEA	1	LO/SI	1000	N	NONE
6-Apr	7:30 AM	8:00 PM	Vibratory Hammer	42-inch Permanent	MD4-S	2	G/E	0%-10%	OC/PC	Light-Moderate	1-4	N	4km	NONE	HSEA	1	TR	300	N	NONE
6-Apr	7:30 AM	8:00 PM	Impact Hammer	42-inch Permanent	MD4-S	2	G/E	0%-10%	OC/PC	Light-Moderate	1-4	N	Yakutania Point	NONE	HSEA	1	LO/SL	1000	N	NONE
6-Apr	7:30 AM	8:00 PM	Impact Hammer	42-inch Permanent	MD4-S	2	G/E	0%-10%	OC/PC	Light-Moderate	1-4	N	Yakutania Point	NONE	HSEA	1	LO/SI	1000	N	NONE
6-Apr	7:30 AM	8:00 PM	Impact Hammer	42-inch Permanent	MD4-S	2	G/E	0%-10%	OC/PC	Light-Moderate	1-4	N	Yakutania Point	NONE	HSEA	1	LO/SI	1000	N	NONE
6-Apr	7:30 AM	8:00 PM	Impact Hammer	42-inch Permanent	MD4-S	2	G/E	0%-10%	OC/PC	Light-Moderate	1-4	N	Yakutania Point	NONE	HSEA	1	LO/SI	1100	N	NONE
6-Apr	7:30 AM	8:00 PM	Impact Hammer	42-inch Permanent	MD4-S	2	G/E	0%-10%	OC/PC	Light-Moderate	1-4	N	Yakutania Point	Vibratory Hammer	HSEA	1	LO/SI	1100	Y	NONE
6-Apr	7:30 AM	8:00 PM	Impact Hammer	42-inch Permanent	MD4-S	2	G/E	0%-10%	OC/PC	Light-Moderate	1-4	N	Yakutania Point	NONE	HSEA	5	RE	4500	N	NONE
6-Apr	7:30 AM	8:00 PM	Impact Hammer	42-inch Permanent	MD4-S	2	G/E	0%-10%	OC/PC	Light-Moderate	1-4	N	Yakutania Point	Vibratory Hammer	HSEA	5	SW/SL/MI	1000	Y	NONE

6-Apr	7:30 AM	8:00 PM	Vibratory Hammer	42-inch Permanent	MD4-S	2	G/E	0%-10%	OC/PC	Light-Moderate	1-4	N	Yakutania Point	Impact Hammer	HSEA	6	LO	1000	Y	NONE	
6-Apr	7:30 AM	8:00 PM	Vibratory Hammer	42-inch Permanent	MD4-S and MD4-S	2	G/E	0%-10%	OC/PC	Light-Moderate	1-4	N	Yakutania Point	NONE	STSL	3	SW/TR	1000	N	NONE	
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	Yakutania Point	NONE	HSEA	1	LO/SI	1100	N	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	Yakutania Point	Drill (socketing)	HSEA	1	SW/LO/SI	1000	Y	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	Yakutania Point	Drill (socketing)	HSEA	1	SW	1300	Y	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	Burro Creek	Drill (socketing)	HSEA	1	SP	1900	Y	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	Burro Creek	Drill (socketing)	HSEA	1	SW	2000	Y	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	RR Dock	Drill (socketing)	HSEA	6	SW/SI/LO/MI/SL	1000-1100	Y	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	Yakutania Point	Drill (socketing)	HSEA	6	SW/SI/LO/MI/SL	1000-1100	Y	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	Yakutania Point	NONE	STSL	1	SW	1000	N	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	4km	NONE	STSL	1	MI/TR	4,000m	N	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	4km	Drill (socketing)	STSL	1	MI	4,100	Y	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	Yakutania Point	NONE	STSL	3	SW/LO	1000	N	NONE
7-Apr	9:30 AM	7:55 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-S	1	M/G/E	0%	S/PC/R/OC	Light	0-2	S	4km	NONE	STSL	4	TR	4500	N	NONE
8-Apr	10:30 AM	7:50 PM	Drill (socketing)	42-inch Permanent	MD5-S	1	G/E	0%	OC/R	Light-Moderate	1-5	N	Yakutania Point	NONE	ORCA	1	SW	1000	N	NONE	
8-Apr	10:30 AM	7:50 PM	Drill (socketing)	42-inch Permanent	MD5-S	1	G/E	0%	OC/R	Light-Moderate	1-5	N	2km	NONE	ORCA	3	SW	2000	N	NONE	
8-Apr	10:30 AM	7:50 PM	Drill (socketing)	42-inch Permanent	MD5-S	1	G/E	0%	OC/R	Light-Moderate	1-5	N	RR Dock	NONE	STSL	1	TR	500	N	NONE	
8-Apr	10:30 AM	7:50 PM	Drill (socketing)	42-inch Permanent	MD5-S	1	G/E	0%	OC/R	Light-Moderate	1-5	N	2km	NONE	STSL	1	TR	2000	N	NONE	
8-Apr	10:30 AM	7:50 PM	Drill (socketing)	42-inch Permanent	MD5-S	1	G/E	0%	OC/R	Light-Moderate	1-5	N	4km	Drill (socketing)	STSL	1	TR	3,800	Y	NONE	
9-Apr	7:30 AM	7:00 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD4-S, MD5-N	3	G/E	0%	OC/PC/R	Light-Moderate	1-4	S	Yakutania Point	Drill (socketing)	HSEA	1	LO/SI	1100	Y	NONE
9-Apr	7:30 AM	7:00 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD4-S, MD5-N	3	G/E	0%	OC/PC/R	Light-Moderate	1-4	S	Yakutania Point	NONE	HSEA	2	SW/MI/SL	1000	N	NONE
9-Apr	7:30 AM	7:00 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD4-S, MD5-N	3	G/E	0%	OC/PC/R	Light-Moderate	1-4	S	2km	NONE	HSEA	2	HO	2000	N	NONE
9-Apr	7:30 AM	7:00 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD4-S, MD5-N	3	G/E	0%	OC/PC/R	Light-Moderate	1-4	S	Yakutania Point	Drill (socketing)	HSEA	4	MI/SW	1000	Y	NONE
9-Apr	7:30 AM	7:00 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD4-S, MD5-N	3	G/E	0%	OC/PC/R	Light-Moderate	1-4	S	4km	NONE	HSEA	15	RE	4,200	N	NONE
9-Apr	7:30 AM	7:00 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD4-S, MD5-N	3	G/E	0%	OC/PC/R	Light-Moderate	1-4	S	Yakutania Point	Drill (socketing)	ORCA	4	TR/CO/DI	300-4200	Y	NONE
9-Apr	7:30 AM	7:00 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD4-S, MD5-N	3	G/E	0%	OC/PC/R	Light-Moderate	1-4	S	Yakutania Point	Drill (socketing)	STSL	1	LO/SW	1100	Y	NONE
10-Apr	9:30 AM	7:45 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD5-N	1	M/G/E	0%-25%	S/OC/PC/R	Light-Moderate	0-3	S	Yakutania Point	NONE	HSEA	1	SW	1000	N	NONE
10-Apr	9:30 AM	7:45 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD5-N	1	M/G/E	0%-25%	S/OC/PC/R	Light-Moderate	0-3	S	Yakutania Point	NONE	HSEA	5	MI	1000	N	NONE
10-Apr	9:30 AM	7:45 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD5-N	1	M/G/E	0%-25%	S/OC/PC/R	Light-Moderate	0-3	S	Yakutania Point	NONE	HSEA	6	SW/LO/SI	750	N	NONE
10-Apr	9:30 AM	7:45 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD5-N	1	M/G/E	0%-25%	S/OC/PC/R	Light-Moderate	0-3	S	Yakutania Point, Burro Creek/2kn/4km	NONE	ORCA	2	BR/FO/TR	2000-3000	Y	NONE
10-Apr	9:30 AM	7:45 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD5-N	1	M/G/E	0%-25%	S/OC/PC/R	Light-Moderate	0-3	S	Yakutania Point, Burro Creek/2kn/4km	Drill (socketing)	ORCA	9	TR/SW	1500-4000	Y	NONE
10-Apr	9:30 AM	7:45 PM	Vibratory Hammer (socketing)	Drill	42-inch Permanent	MD5-N	1	M/G/E	0%-25%	S/OC/PC/R	Light-Moderate	0-3	S	Yakutania Point	Drill (socketing)	STSL	2	TR	800	Y	NONE
11-Apr	8:00 AM	10:53 AM	Drill (socketing)	42-inch Permanent	MD4-N	1	E	0%-10%	S	Light	0-1	N/S	Yakutania Point	NONE	HSEA	1	LO/SI	1,100	N	NONE	
11-Apr	8:00 AM	10:53 AM	Drill (socketing)	42-inch Permanent	MD4-N	1	E	0%-10%	S	Light	0-1	N/S	Yakutania Point	NONE	HSEA	1	SW	2000	N	NONE	
11-Apr	8:00 AM	10:53 AM	Drill (socketing)	42-inch Permanent	MD4-N	1	E	0%-10%	S	Light	0-1	N/S	2km	NONE	HSEA	1	SP	2000	Y	NONE	
11-Apr	8:00 AM	10:53 AM	Drill (socketing)	42-inch Permanent	MD4-N	1	E	0%-10%	S	Light	0-1	N/S	Yakutania Point	NONE	HSEA	6	ML/R/R/LO/SI	1000	N	NONE	
11-Apr	8:00 AM	10:53 AM	Drill (socketing)	42-inch Permanent	MD4-N	1	E	0%-10%	S	Light	0-1	N/S	Burro Creek	Drill (socketing)	STSL	2	T	2100	Y	NONE	
11-Apr	8:00 AM	10:53 AM	Drill (socketing)	42-inch Permanent	MD4-N	1	E	0%-10%	S	Light	0-1	N/S	4km	Drill (socketing)	STSL	3	TR	4300	Y	NONE	
13-Apr	9:30 AM	7:32 PM	Drill (rock anchors)	42-inch Permanent	MD-4 Vertical	1	G/E	0%-10%	S/PC	Light	0-2	N/S	Yakutania Point	NONE	HSEA	1	LO/SI	1100	N	NONE	
13-Apr	9:30 AM	7:32 PM	Drill (rock anchors)	42-inch Permanent	MD-4 Vertical	1	G/E	0%-10%	S/PC	Light	0-2	N/S	2km	NONE	HSEA	1	SW	2000	N	NONE	
13-Apr	9:30 AM	7:32 PM	Drill (rock anchors)	42-inch Permanent	MD-4 Vertical	1	G/E	0%-10%	S/PC	Light	0-2	N/S	Yakutania Point	Drill (rock anchors)	HSEA	1	LO	1200	Y	NONE	
13-Apr	9:30 AM	7:32 PM	Drill (rock anchors)	42-inch Permanent	MD-4 Vertical	1	G/E	0%-10%	S/PC	Light	0-2	N/S	Yakutania Point	Drill (rock anchors)	HSEA	1	LO	1200	Y	NONE	
13-Apr	9:30 AM	7:32 PM	Drill (rock anchors)	42-inch Permanent	MD-4 Vertical	1	G/E	0%-10%	S/PC	Light	0-2	N/S	Yakutania Point	Drill (rock anchors)	HSEA	2	LO	1000	Y	NONE	
13-Apr	9:30 AM	7:32 PM	Drill (rock anchors)	42-inch Permanent	MD-4 Vertical	1	G/E	0%-10%	S/PC	Light	0-2	N/S	Yakutania Point	NONE	HSEA	3	RE/LO/MI/SW	1000	N	NONE	
13-Apr	9:30 AM	7:32 PM	Drill (rock anchors)	42-inch Permanent	MD-4 Vertical	1	G/E	0%-10%	S/PC	Light	0-2	N/S	RR Dock	NONE	STSL	1	SW	700	N	NONE	
13-Apr	9:30 AM	7:32 PM	Drill (rock anchors)	42-inch Permanent	MD-4 Vertical	1	G/E	0%-10%	S/PC	Light	0-2	N/S	Yakutania Point	Drill (rock anchors)	STSL	1	SW/LO	1100	Y	NONE	
13-Apr	9:30 AM	7:32 PM	Drill (rock anchors)	42-inch Permanent	MD-4 Vertical	1	G/E	0%-10%	S/PC	Light	0-2	N/S	Yakutania Point	NONE	STSL	3	LO	1200	N	NONE	
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-	2	G/E	0%	PC/R/OC	Light	0-2	N/S	RR Dock	NONE	HSEA	1	LO	150	N	NONE	

14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	RR Dock	NONE	HSEA	1	TR	200	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	RR Dock	NONE	HSEA	1	TR	700	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	RR Dock	NONE	HSEA	1	MI	1000	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	Yakutania Point	NONE	HSEA	1	LO/SI	1100	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	Yakutania Point	NONE	HSEA	3	RE/SI	1000	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	Yakutania Point	NONE	HSEA	3	LO/SI	1100	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	Yakutania Point	NONE	HSEA	4	LO/SI	1000	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	RR Dock	NONE	STSL	1	SW/TR	500	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	2km	NONE	STSL	1	SL	2000	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	Yakutania Point	NONE	STSL	2	LO/SI/TR	1200	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	2km	NONE	STSL	2	SL	2000	N	NONE
14-Apr	7:30 AM	7:20 PM	Drill (rock anchors)	42-inch Permanent	MD4-NE and MD4-NE	2	G/E	0%	PC/R/OC	Light	0-2	N/S	Yakutania Point	NONE	STSL	3	LO/SI/TR	1100	N	NONE
15-Apr	10:30 AM	6:20 PM	Drill (rock anchors)	42-inch Permanent	MD5-E and MD5-E	2	G/E	0%-20%	S/PC	Light	1-2	N/S	RR Dock	NONE	HSEA	1	SW	575	N	NONE
15-Apr	10:30 AM	6:20 PM	Drill (rock anchors)	42-inch Permanent	MD5-E and MD5-E	2	G/E	0%-20%	S/PC	Light	1-2	N/S	Yakutania Point	NONE	HSEA	1	LO/SI	1100	N	NONE
15-Apr	10:30 AM	6:20 PM	Drill (rock anchors)	42-inch Permanent	MD5-E and MD5-E	2	G/E	0%-20%	S/PC	Light	1-2	N/S	Yakutania Point	Drill (rock anchors)	HSEA	1	MI	1200	Y	NONE
15-Apr	10:30 AM	6:20 PM	Drill (rock anchors)	42-inch Permanent	MD5-E and MD5-E	2	G/E	0%-20%	S/PC	Light	1-2	N/S	2km	NONE	STSL	1	SW	2000	N	NONE
15-Apr	10:30 AM	6:20 PM	Drill (rock anchors)	42-inch Permanent	MD5-E and MD5-E	2	G/E	0%-20%	S/PC	Light	1-2	N/S	Burro Creek	Vibratory Hammer	STSL	1	TR	2000	Y	NONE
16-Apr	7:30 AM	12:08 PM	Drill (rock anchors)	42-inch Permanent	MD5-E and MD5-E	2	G/E	0%-10%	OC/PC	Light	1-3	NW/S	Yakutania Point	NONE	HSEA	1	LO/SI	1200	N	NONE
16-Apr	7:30 AM	12:08 PM	Drill (rock anchors)	42-inch Permanent	MD5-E and MD5-E	2	G/E	0%-10%	OC/PC	Light	1-3	NW/S	4km	NONE	HSEA	1	MI	4200	N	NONE
16-Apr	7:30 AM	12:08 PM	Drill (rock anchors)	42-inch Permanent	MD5-E and MD5-E	2	G/E	0%-10%	OC/PC	Light	1-3	NW/S	Yakutania Point	Drill (rock anchors)	HSEA	1	RE/LO/SI	1100	Y	NONE
16-Apr	7:30 AM	12:08 PM	Drill (rock anchors)	42-inch Permanent	MD5-E and MD5-E	2	G/E	0%-10%	OC/PC	Light	1-3	NW/S	Yakutania Point	NONE	HSEA	3	RE	1000	N	NONE
16-Apr	7:30 AM	12:08 PM	Drill (rock anchors)	42-inch Permanent	MD5-E and MD5-E	2	G/E	0%-10%	OC/PC	Light	1-3	NW/S	Yakutania Point	NONE	STSL	2	TR/SW	1200	N	NONE
17-Apr	12:00 PM	3:08 PM	No in-water work (weather)	N/A	N/A	N/A	G/E	0%-20%	S/PC/OC/R	Moderate-Heavy	2-5	S	NO SIGHTINGS	NO SIGHTINGS	NO SIGHTIN	NO SIGHTINGS	NO SIGHTINGS	NO SIGHTINGS	NO SIGHTII	NO SIGHTINGS
18-Apr	8:00 AM	10:18 AM	No in-water work (weather)	N/A	N/A	N/A	P/M	0%	R/OC	Light-Moderate	0-4	S	Yakutania Point	NONE	HSEA	1	LO/SI	1100	N	NONE
18-Apr	8:00 AM	10:18 AM	No in-water work (weather)	N/A	N/A	N/A	P/M	0%	R/OC	Light-Moderate	0-4	S	4km	NONE	HSEA	1	TR	4000	N	NONE
18-Apr	8:00 AM	10:18 AM	No in-water work (weather)	N/A	N/A	N/A	P/M	0%	R/OC	Light-Moderate	0-4	S	Yakutania Point	NONE	HSEA	4	MI/RE/SL	750	N	NONE
18-Apr	8:00 AM	10:18 AM	No in-water work (weather)	N/A	N/A	N/A	P/M	0%	R/OC	Light-Moderate	0-4	S	Yakutania Point	NONE	STSL	1	LO/SI	1000	N	NONE
19-Apr	8:00 AM	9:00 AM	No in-water work (weather)	N/A	N/A	N/A	E	0%-10%	PC	Moderate	6	S	NO SIGHTINGS	Drill (socketing)	NO SIGHTIN	NO SIGHTINGS	NO SIGHTINGS	NO SIGHTINGS	NO SIGHTII	NO SIGHTINGS
20-Apr	9:30 AM	1:30 PM	Drill (socketing)	42-inch Permanent	MD4-E	1	G/E	0%	R/OC	Moderate	4-6	S	RR Dock	Drill (socketing)	HSEA	1	TR	900	Y	NONE
21-Apr	9:30 AM	7:30 PM	Drill (socketing)	42-inch Permanent	MD5-E	1	M/E	0%	R/F/OC	Light	0-2	S	Yakutania Point	Drill (socketing)	HSEA	1	LO/SI	1100	Y	NONE
21-Apr	9:30 AM	7:30 PM	Drill (socketing)	42-inch Permanent	MD5-E	1	M/E	0%	R/F/OC	Light	0-2	S	Yakutania Point	Drill (socketing)	HSEA	3	LO/SI/RE	1000	Y	NONE
21-Apr	9:30 AM	7:30 PM	Drill (socketing)	42-inch Permanent	MD5-E	1	M/E	0%	R/F/OC	Light	0-2	S	Yakutania Point	Drill (socketing)	STSL	1	SW	3,500	Y	NONE
24-Apr	10:00 AM	7:10 PM	Drill (socketing)	42-inch Permanent	MD4-NE	1	M/G/E	0%-10%	S/PC/F/OC	Light-Moderate	1-3	S	4km	Drill (socketing)	STSL	1	SW	3,500	Y	NONE
25-Apr	8:00 AM	5:35 PM	Drill (socketing)	42-inch Permanent	MD5-NE	1	E	0%-10%	S/PC/OC	Light	1-2	S	Yakutania Point	NONE	HSEA	1	TR	1100	N	NONE
25-Apr	8:00 AM	5:35 PM	Drill (socketing)	42-inch Permanent	MD5-NE	1	E	0%-10%	S/PC/OC	Light	1-2	S	Yakutania Point	NONE	HSEA	3	RE/LO/SI	1000	N	NONE
25-Apr	8:00 AM	5:35 PM	Drill (socketing)	42-inch Permanent	MD5-NE	1	E	0%-10%	S/PC/OC	Light	1-2	S	Yakutania Point	NONE	STSL	2	TR	1100	N	NONE
26-Apr	7:30 AM	10:15 AM	Impact Hammer	42-inch Permanent	MD4-NE and MD5-E	2	E	0%-5%	S/OC	Light	1-4	N	NO SIGHTINGS	NO SIGHTINGS	NO SIGHTIN	NO SIGHTINGS	NO SIGHTINGS	NO SIGHTINGS	NO SIGHTII	NO SIGHTINGS
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	Burro Creek	NONE	HSEA	1	TR	2000	N	NONE
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	Burro Creek	NONE	HSEA	1	SP	2000	N	NONE
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	Burro Creek	NONE	HSEA	1	SP	2000	N	NONE
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	2km	Drill (socketing)	HSEA	1	SW	2000	Y	NONE
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	4km	NONE	STSL	1	TR	4,200	N	NONE
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	Yakutania Point	Drill (socketing)	STSL	1	SW	900	Y	NONE
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	2km	Drill (socketing)	STSL	1	SW	2000	Y	NONE
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	2km	Drill (socketing)	STSL	1	SW	2000	Y	NONE
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	Burro Creek	NONE	STSL	2	SP	2000	N	NONE
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	2km	Drill (socketing)	STSL	2	SW	2000	Y	NONE
27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	Burro Creek	Drill (socketing)	STSL	3	PO	2000	Y	NONE

27-Apr	9:15 AM	4:40 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	N/S	4km	NONE	STSL	4	TR/PO	3000-4,000	N	NONE	
28-Apr	1:30 PM	7:30 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	S	Burro Creek	NONE	STSL	1	SW	2000	N	NONE	
28-Apr	1:30 PM	7:30 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-20%	S	Light	0-1	S	2km	Drill (socketing)	STSL	1	SW	2000	Y	NONE	
29-Apr	9:30 AM	4:08 PM	Impact Hammer (socketing)	Drill	42-inch Permanent	MD4-NE, MD4-F	4	M/E	0%-50%	S/F	Light	1	S	Yakutania Point	Impact Hammer	STSL	1	TR	800-1000	Y	NONE
1-May	1:30 PM	9:30 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-25%	S/PC	Moderate	2-3	S	4km	Drill (socketing)	HPBK	1	SW/DI	4000	Y	NONE	
1-May	1:30 PM	9:30 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-25%	S/PC	Moderate	2-3	S	4km	Drill (socketing)	STSL	1	SW	4000	Y	NONE	
1-May	1:30 PM	9:30 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-25%	S/PC	Moderate	2-3	S	4km	Drill (socketing)	STSL	3	SW	4000	Y	NONE	
1-May	1:30 PM	9:30 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-25%	S/PC	Moderate	2-3	S	Yakutania Point	Drill (socketing)	STSL	6	TR/MI	1000	Y	NONE	
1-May	1:30 PM	9:30 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-25%	S/PC	Moderate	2-3	S	4km	Drill (socketing)	STSL	8	SW	4000	Y	NONE	
1-May	1:30 PM	9:30 PM	Drill (socketing)	42-inch Permanent	MD4-SE	1	E	0%-25%	S/PC	Moderate	2-3	S	Yakutania Point	Drill (socketing)	STSL	15	TR/MI	1000	Y	NONE	
2-May	8:00 AM	3:33 PM	Drill (socketing)	42-inch Permanent	MD5-SE	1	E	0%-20%	S/PC	Light-Moderate	1-2	S	Yakutania Point	Drill (socketing)	HSEA	1	RE	1000	Y	NONE	
2-May	8:00 AM	3:33 PM	Drill (socketing)	42-inch Permanent	MD5-SE	1	E	0%-20%	S/PC	Light-Moderate	1-2	S	RR Dock	Drill (socketing)	HSEA	5	TR	1000	Y	NONE	
2-May	8:00 AM	3:33 PM	Drill (socketing)	42-inch Permanent	MD5-SE	1	E	0%-20%	S/PC	Light-Moderate	1-2	S	Yakutania Point	Drill (socketing)	STSL	25	RE	1000	Y	NONE	
4-May	3:30 PM	8:32 PM	Drill (socketing)	42-inch Permanent	MD5-NE	1	G	0%-10%	PC/OC	Light-Moderate	1-3	S	2km	Drill (socketing)	HPBK	1	TR	3000-4000	Y	NONE	
7-May	12:30 PM	8:07 PM	Drill (socketing)	42-inch Permanent	MD5-E	1	G/E	0%-20%	PC	Moderate	2-3	S	2km	Drill (socketing)	HSEA	1	SP	3000	Y	NONE	
7-May	12:30 PM	8:07 PM	Drill (socketing)	42-inch Permanent	MD5-E	1	G/E	0%-20%	PC	Moderate	2-3	S	2km	Drill (socketing)	HSEA	3	SP	3000	Y	NONE	
9-May	4:30 PM	9:37 PM	Drill (rock anchor)	42-inch Permanent	MD5-NE	1	G/E	0%	S/PC	Moderate	2-3	S	Yakutania Point	Drill (rock anchors)	HSEA	1	MI	900	Y	NONE	
9-May	4:30 PM	9:37 PM	Drill (rock anchor)	42-inch Permanent	MD5-NE	1	G/E	0%	S/PC	Moderate	2-3	S	Yakutania Point	Drill (rock anchors)	HSEA	1	TR	1000	Y	NONE	
10-May	8:30 AM	12:30 PM	Drill (rock anchor)	42-inch Permanent	MD5-SE	1	E	0%-20%	S	Light-Moderate	1-3	S	Yakutania Point	Drill (rock anchors)	HSEA	1	TR	800	Y	NONE	
10-May	5:30 PM	9:00 PM	Impact Hammer (rock anchor)	42-inch Permanent	MD5-SE	1	E	0%-20%	S	Light-Moderate	1-3	S	Burro Creek	Drill (rock anchors)	HSEA	1	TR	1300	Y	NONE	
10-May	5:30 PM	9:00 PM	Drill (rock anchor)	42-inch Permanent	MD5-SE	1	E	0%-20%	S	Light-Moderate	1-3	S	4km	NONE	STSL	1	TR	4000	N	NONE	
10-May	5:30 PM	9:00 PM	Impact Hammer (rock anchor)	42-inch Permanent	MD5-SE	1	E	0%-20%	S	Light-Moderate	1-3	S	Burro Creek	Drill (rock anchors)	STSL	1	TR	1200	Y	NONE	
10-May	8:30 AM	12:30 PM	Drill (rock anchor)	42-inch Permanent	MD5-SE	1	E	0%-20%	S	Light-Moderate	1-3	S	Yakutania Point	Impact Hammer	STSL	2	TR	800	Y	NONE	
10-May	8:30 AM	12:30 PM	Drill (rock anchor)	42-inch Permanent	MD5-SE	1	E	0%-20%	S	Light-Moderate	1-3	S	Yakutania Point	Impact Hammer	STSL	4	TR	800	Y	NONE	
11-May	8:30 AM	9:00 PM	Drill (rock anchor)	42-inch Permanent	MD5-SE	1	E	0%-20%	PC	Moderate-Heavy	3-4	S	4km	Drill (rock anchors)	HSEA	1	TR	4000	Y	NONE	

Attachment C: Marine Mammal Observation Record Forms