



Marine Mammal Monitoring Annual Report - 2022 IHA Compliance

Chevron Point Orient Wharf Removal Project

Chevron Products Company

February 9, 2023

Prepared for:

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Acronyms and Abbreviations

The Bay	San Francisco Bay
CASL	California sea lion
CDFW	California Department of Fish and Wildlife
dB	decibels
°F	degrees Fahrenheit
HASE	Pacific harbor seal
IHA	Incidental Harassment Authorization
m	meters
NMFS	National Marine Fisheries Service
Project	Point Orient Wharf Removal Project
PSO	protected species observer
RMS	root mean square
SEL	sound exposure level
Wharf	Point Orient Wharf

1. Introduction

This 2022 Marine Mammal Monitoring Report is being submitted to the National Marine Fisheries Service (NMFS) in accordance with the Year 1 Incidental Harassment Authorization (IHA) valid from June 1, 2022 through May 31, 2023.

Under the Point Orient Wharf Removal Project (Project), Chevron intends to remove the Point Orient Wharf (Wharf) in its entirety, and restore eelgrass to the subtidal habitat in areas under the Causeway suitable for eelgrass that are currently affected by the shading and scour imposed by the structure. Removing the Wharf would provide the opportunity to increase the extent of eelgrass beds to areas currently covered by the Causeway, enhancing intertidal and subtidal habitat of San Francisco Bay. Monitored Project construction activities (Covered Activities) for the 2022 monitoring year occurred between October 10 and October 13, 2022 at the Point Orient Wharf.

2. Project Area

The Point Orient Wharf is located in central San Francisco Bay (the Bay) on the western side of Point San Pablo, approximately 1.8 miles north of the eastern terminus of the Richmond-San Rafael Bridge in Contra Costa County. The Brothers Islands and Lighthouse lies approximately 800 meters (2,600 feet) to the North of the Wharf. Figure 1 illustrates the Project vicinity and specific location. The overall area of the Wharf is approximately 2 acres and extends approximately 1,300 feet into the Bay. Where the Wharf interfaces with the shoreline, the shoreline is primarily covered in local rock, likely from the cut slope east of the Wharf, and rock slope protection that protects the shore from wave action. East of the shoreline is Stenmark Drive and Chevron Richmond Refinery property east of Stenmark Drive. From shore, the first 485 feet of the structure is located on submerged land owned by Chevron; the remaining portion is on State-owned submerged land leased from the California State Lands Commission (Figure 2).

3. Methods

Marine mammal monitoring efforts consisted of a worker education program for all personnel and visual monitoring for marine mammals during all work activities including vibratory pile extraction.

3.1 Worker Education Program

In accordance with Permit conditions, a worker education program was given on May 23, 2022, before performing any work, to all personnel employed or otherwise working in the Project Area. Materials prepared by the Designated Biologist describing the biology and general behavior of the Covered Species, the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, Covered Species legal protection, recovery efforts, and penalties for violations were provided to all site workers remotely. A brochure and presentation containing this information was provided to all site workers. All trained site workers signed a form stating they completed the training and understand all protection measures. The training materials and signature forms can be found in Appendix A and B.



Figure 1 Project Location

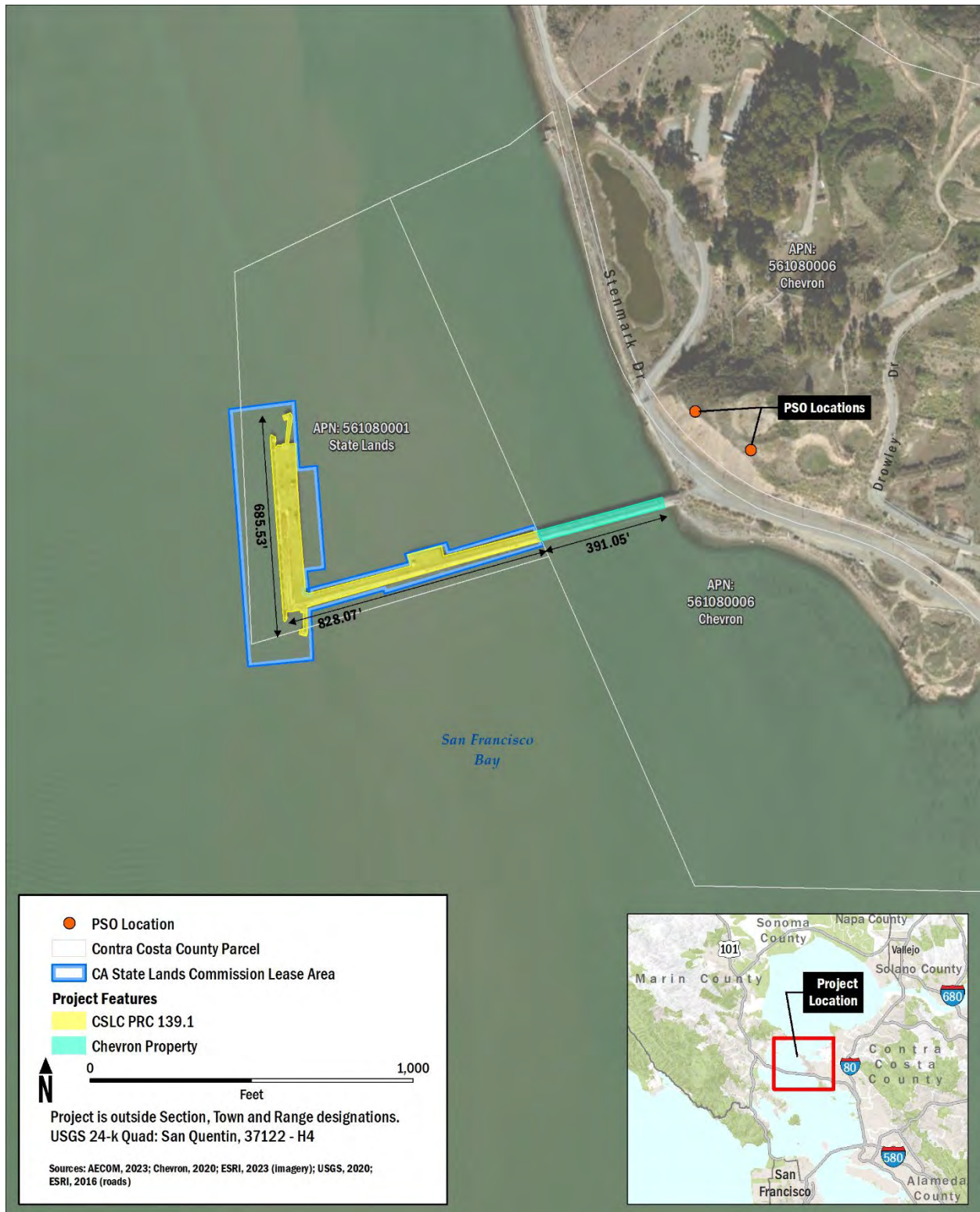


Figure 2 Point Orient Wharf and PSO Locations

3.2 Monitoring during Pile Extraction Activities

3.2.1 Marine Mammal Monitoring

Marine mammal monitoring was conducted in accordance with the Project Marine Mammal Monitoring Plan¹ and the Year 1 IHA. Pile extraction with the vibratory hammer began in October 2022, after all decking was removed from the causeway portion of the wharf. Baseline monitoring took place one hour before the start of vibratory pile extraction on the first day that covered work activities took place (October 10, 2022). Subsequent monitoring during each pile-extraction event started 30 minutes prior to vibratory pile extraction and ended 30 minutes after work was completed for the day, or when there was a pause in the work of 2 hours or more.

Two qualified, NMFS-approved protected species observers (PSOs) were on-site daily during in-water work, for a total of 4 days in the 2022 work window (October 10-13, 2022). Work during this time only took place along the Point Orient Wharf Causeway (Figure 2). The PSOs were stationed at monitoring locations atop a bluff, approximately 100 feet in elevation, just onshore of both the Wharf and Stenmark Drive (Figure 2). Cell phones were used to communicate among the PSOs and the construction team. PSOs used professional quality binoculars to continuously scan the monitoring zone for marine mammals. Field data sheets summarizing environmental conditions, pile-extraction activities, and observations of marine mammals were prepared daily by both PSOs (Appendix C).

4. Monitoring Results

4.1 Marine Mammal Monitoring

4.1.1 Monitoring Conditions and Monitored Activities

Conditions during observation periods were variable but favorable for marine mammal observations. Overall, PSOs were reliably able to observe the waters within 450+ meters of all active pile extraction activities. For a summary of daily work activities, see Table 1.

In October 2022, during the four-day work timespan (October 10-13, 2022) 73 12-inch timber or concrete encased timber piles were attempted to be extracted with a vibratory hammer along the Point Orient Wharf causeway. The total vibratory time for the duration of covered work activities was 336 minutes over the 4 day period. Very few of the total piles removed in 2022 were successfully extracted in their entirety using the vibratory hammer. Due to the condition of the piles, the majority broke during the vibratory extraction process, leaving stubs that had to be cut below the mudline. Due to the low success rate of removing piles with the vibratory hammer, this method was abandoned after October 13 and all subsequent piles removed in 2022 were cut below the mudline and did not require marine mammal monitoring. Table 1 indicates the breakdown of 2022 covered work activities.

¹ AECOM (2022). Marine Mammal Monitoring Plan, Point Orient Wharf Removal Project. April 2022. 32 pp.

Table 1 Summary of 2022 Monitored Covered Activities

Date	Covered Activities
10/10/2022	A total of 14 12" timber and concrete encased timber piles were attempted to be extracted with a vibratory hammer. The total vibratory hammer operation time was approximately 99 minutes.
10/11/2022	A total of 25 12" timber and concrete encased timber piles were attempted to be extracted with a vibratory hammer. The total vibratory hammer operation time was approximately 97 minutes.
10/12/2022	A total of 27 12" timber and concrete encased timber piles were attempted to be extracted with a vibratory hammer. The total vibratory hammer operation time was approximately 116 minutes.*
10/13/2022	A total of 7 12" timber and concrete encased timber piles were attempted to be extracted with a vibratory hammer. The total vibratory hammer operation time was approximately 24 minutes.

Notes:

* Times were reviewed after field work was complete and drive time discrepancies and addition errors on the field data sheets were resolved where possible. However, differences in recorded start and stop times could not be fully resolved so we have conservatively provided the longer of the two recorded drive times.

4.1.2 Marine Mammal Observations and Take

Marine Mammal Observations – The marine mammal Monitoring Period during construction activities was defined as 30 minutes prior to vibratory pile extraction initiation and ended 30 minutes after such work was completed for the day, or when there was a pause in the work of 2 hours or more.

Harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*) were the only marine mammal species observed during the covered work activities. A total of 15 harbor seals and 2 California sea lions were observed and recorded during vibratory pile extraction monitoring. The majority of marine mammals were observed swimming and surfacing through the project area or surrounding vicinity and appeared unaffected by construction activities. No individuals were recorded in the shutdown zone areas before or during hammer operation and no shut downs were required. No other species of marine mammals were observed during the construction season. Data sheets with routine observations are included in Appendix C for completeness but were not used in calculations of take.

Behavioral Changes Observed in Swimming Marine Mammals – Table 2 lists the instances when harbor seals and California sea lions were observed in the water surrounding the Project Area and documented behaviors during active vibratory pile extraction in the work area around the Point Orient Wharf causeway.

Table 2 In-Water Marine Mammal Behavioral Changes During Active Pile Extraction

Date/Time	Species	Time Observed	Distance from Pile (meters)	Bearing from PSO	Behavior
10/10/2022	HASE	7:40AM	92 m	—	Head popped above surface, swam on surface, and disappeared quickly.
10/10/2022	HASE	7:52AM	183 m	—	Head popped above surface, swam on surface, and disappeared quickly.
10/10/2022	HASE	9:55AM	183 m	—	Swimming, briefly stationary.
10/10/2022	CASL	10:15AM	120 m	90°	Porpoising out of water.
10/10/2022	CASL	10:22AM	240 m	130°	Slapped tail on water surface, possibly foraging.
10/10/2022	HASE	12:52PM	183 m	—	Swimming, head popped up above surface, moved about 30 ft before disappearing.
10/11/2022	HASE	9:48AM	122 m	—	Head popped up and quickly disappeared.
10/11/2022	HASE	2:58PM	31 m	—	Swimming, traveling west before diving.
10/12/2022	HASE	9:19AM	800 m	30°	Observed at surface and then dove (south of the piles) and then again emerged to the surface on the far side of the zone (north of piles).
10/12/2022	HASE	9:23AM	500 m	48°	Swimming in the vicinity of the Project Area.
10/12/2022	HASE	2:05PM	500 m	—	Emerged to the surface, bobbed, and then dove.
10/13/2022	HASE	7:37AM	40 m	—	Swimming on surface of water.
10/13/2022	HASE	9:40AM	100 m	—	Swimming on surface of water.
10/13/2022	HASE	10:25AM	150 m	30°	Bobbed at surface, then dove.
10/13/2022	HASE	10:33AM	300 m	150°	Bobbed at surface, then dove.
10/13/2022	HASE	10:45AM	150 m	—	Logging on surface of water.
10/13/2022	HASE	11:20AM	150 m	—	Swimming on surface of water.

Notes:

CASL = California sea lion

HASE = Pacific harbor seal

m = meters

PSO = protected species observer

Estimated Take – Each individual animal observed within the estimated B zones (as reported in the IHA) during active vibratory hammer use was treated as a take event. Multiple sightings of an individual animal were recorded as one observation, provided the animal could be tracked or otherwise individually identified. Table 3 provides a summary of the estimated distances of Level B threshold exceedance, as presented in the IHA.

Table 3 Predicted Underwater Pile Extraction Noise Levels and Distances of Threshold Exceedance

Pile Type	Source Levels at 10 meters (dB)		Distance to Threshold 120 dB RMS (Level B)* meters
	Peak	RMS/SEL	
Vibratory Extraction			
12" Timber pile extraction (includes concrete encased piles)	No Data	152	1,359

Notes:

* 120 dB RMS applies for continuous noise such as vibratory driving/extraction.

dB = decibels

RMS = root mean square

SEL = sound exposure level

Level B takes were recorded for animals observed only during active pile extraction. A summary of take recorded by the PSOs during the Monitoring Period is provided in Table 4. There were no indicators of marine mammal injuries observed during the Monitoring Period. A total of 15 instances of Level B harassment for harbor seal, and two instances of Level B harassment for California sea lion were recorded in the observable portion of the Level B zone (Figure 3).

Table 4 Observed Level B Takes

Date	Species	Total Observed During Monitoring Period	Level B Takes Observed During Active Pile Extraction	Distance During Active Extraction (meters)	Pile Type and Amount Removed During Monitoring Period	Hammer Type
10/10/2022	CASL	2	2	120-240	14 - 12" timber and concrete encased timber piles	Vibratory
	HASE	4	4	92-183		
10/11/2022	HASE	2	2	31-122	25 - 12" timber and concrete encased timber piles	Vibratory
10/12/2022	HASE	3	3	500-800	27 - 12" timber and concrete encased timber piles	Vibratory
10/13/2022	HASE	6	6	40-300	7 - 12" timber and concrete encased timber piles	Vibratory
Total Level B Takes Observed						
HASE: 15						
CASL: 2						

Notes:

The count presented in the "Total Observed During Monitoring Period" column is inclusive of the animals observed during active pile extraction.

CASL = California sea lion

HASE = Harbor seal

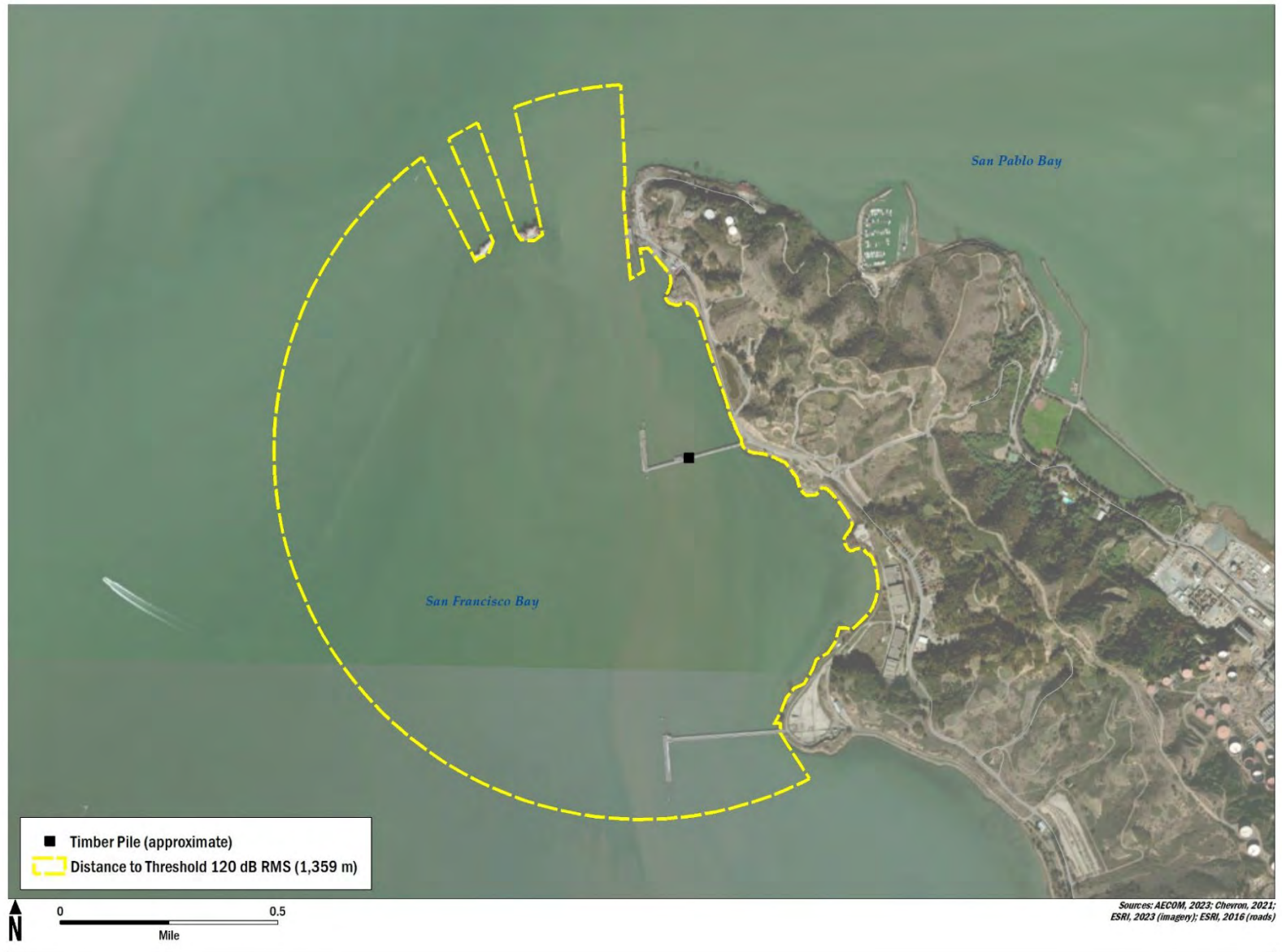


Figure 3 Level B Harassment Zone for Timber Pile Vibratory Extraction

In accordance with the Point Orient Wharf Removal Project Marine Mammal Monitoring Plan, potential takes of marine mammals that occurred outside of the reliably observable portion of the Level B zone (a radius of 500 meters) were extrapolated to account for individual potentially within the Level B zone, but unable to be observed due to the size of the zone. This was done by taking the daily observed take (animals sighted within the observable Level B zone during active vibratory pile extraction) multiplied by the unobservable portion of the Level B zone. The daily observed take density was developed by summing the total number of takes observed on each day divided by the observable area of the Level B zone.

All monitoring dates (October 10-13, 2022) included activity where take needed to be extrapolated since the entire Level B zone was unable to be reliably observed for extraction of the since the Level B zone for this work area was so large (1,359 m; Figure 3).

For example, on October 10, 2022, during extraction of the timber piles (including concrete encased), the observed daily take density for harbor seals is as follows:

$$(4 \text{ harbor seal takes observed} / (\pi \times 0.5^2 \text{ km})) = 5.1 \text{ harbor seals/km}^2 \text{ takes.}$$

To extrapolate daily take, the observed daily take density was multiplied by the area of the unobservable portion of the predicted Level B zone for that pile extraction activity. This value is 3.34 square kilometers for vibratory extraction of the timber and timber encased with concrete piles, as calculated from the distance of threshold exceedance predicted for the 2022 IHA (Table 3). The extrapolated daily take for October 10, 2022, is therefore:

$$5.1 \text{ harbor seals/km}^2 \text{ takes} \times 3.34 \text{ square kilometers} = 17 \text{ extrapolated takes.}$$

Note that land areas and the observable area of water are excluded from the area of the unobservable Level B zone. Table 5 provides a summary of the observed and extrapolated takes for 2022. Extrapolation was only needed for species where take was observed during active pile extraction of the piles. In this case, both harbor seals and California sea lions required extrapolation for each day of covered work activities.

Table 5 Summary of 2022 Level B Take Events

Species	Level B – 2022 Authorized Take	Level B – Recorded	Level B – Extrapolated
Total CASL Takes 2022	22	2 (Vibratory Extraction)	9
Total HASE Takes 2022	4,165	15 (Vibratory Extraction)	64

Notes:

CASL = California sea lion
HASE = Pacific harbor seal

5. Discussion

As presented in the IHA application, harbor seals are the most likely species to occur in the vicinity of the Point Orient wharf and were the most common species observed during all pile extraction and work activities in 2022. No Level A takes of marine mammal species occurred. Level B take of marine mammal species (including extrapolated take) were within the limits of the 2022-2023 IHA issued by NMFS.

The current avoidance and minimization measures, as required in permit conditions, have been demonstrated to effectively minimize take of marine mammals.

Appendix A Worker Environmental Awareness Training

Environmental Awareness Training



Point Orient Wharf Removal Project 2022

May 23, 2022

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Regulatory Permits and Approvals



- **California State Lands Commission:** Environmental Analysis (Initial Study/Mitigated Negative Declaration; IS/MND)
- **California Regional Water Quality Control Board (RWQCB):** Water Quality Certification
- **U.S. Army Corps of Engineers:** Nationwide 27 (Restoration) and Nationwide 13 (Bank Stabilization)
- **National Marine Fisheries Service (NMFS):**
 - Letter of Concurrence (listed fish species)
 - Incidental Harassment Authorization (IHA; for marine mammals))
- **S.F. Bay Conservation & Development Commission (BCDC):** Minor Permit

Copies of the MMRP table and permits must be kept on-site.

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General Protective Measures



▪ Time Restrictions

- Conduct vibratory pile removal only during daylight hours; related in-water work between June 1 and November 30.

▪ Treated Wood Pile Extraction

- All piles shall be removed by direct pull or by vibratory methods. Should a pile break or cannot be removed, the pile shall be cut off, at a minimum, 2 feet below the mudline. No hydraulic jetting.
- Move piles directly to lined barge after pulling. Piles will not be washed, shaken, or otherwise be allowed to drain over Bay waters to remove sediment prior to placement on the debris barge. Do not wash barge decks in a manner that would allow wastewater to enter the Bay.
- Keep all vessels within the marked work area to avoid damage to eelgrass outside of the permitted disturbance area. Avoid excessive vessel thrust to minimize eelgrass damage.
- Accumulated sediment from pile removal is assumed to contain creosote and will be collected, tested and properly disposed.

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General Protective Measures



▪ Debris and Waste Management

- During demolition activities, install floating debris booms to capture floating surface debris to contain releases if they were to occur.
- When cutting materials above water, any debris generated will be contained and prevented from entering the Bay by using platforms or other devices below the work area to catch debris before it enters the Bay.
- If any solid materials or wastes are inadvertently released to the Bay, the contractor will immediately stop all work and use all available resources to assure containment and removal.
- Demolition waste will be collected and transported to an authorized upland disposal or recycle site by a properly licensed transporter (in accordance with the California Code of Regulations, Title 22, Division 4.5)

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General Protective Measures



▪ Spill Prevention and Control.

- Maintain spill cleanup material at the work site and follow the approved spill plan (SPCC).
- Store all hazardous materials (fuels, oils, grease solvents, coolants) according to the SPCC.
- Fuel equipment in accordance with Best Management Practices in the SPCC. Immediately clean up any spills.
- Inspect equipment regularly for leaks or spills; repair leaking equipment promptly.
- Containment booms will be deployed around areas of creosote treated pile removal to contain creosote oil sheen.
- In case of emergency, use contact tree in SPCC

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General Protective Measures



▪ Basic Air Quality and Dust Control Measures

- All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Watering during work on shoreline repair
- Haul trucks transporting loose materials (soil, fill materials) shall be covered
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications.
- Minimize idling times by shutting down or reducing the maximum idle time to 5 minutes (CA air toxics control measure, CCR Title 12, Section 2485).

▪ Additional Protective Measures for Cultural and Biological Resources

- Discussed later in this presentation

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Cultural Resources



- Cultural resources training is required for all persons working in the Project Area prior to the start of work
- Cultural resources and human remains are protected by state and federal law, including:
 - Antiquities Act of 1906
 - National Historic Preservation Act of 1966
 - California Public Resources Code § 5097.5
 - California Health and Safety Code § 7051 and § 7052

The unauthorized removal or intentional disturbance of cultural resources or human remains can result in up to \$100,000 in fines and 5 years imprisonment.

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Cultural Resources



- Cultural resources include precontact and historic-period artifacts and sites
- Precontact Sites
 - Artifacts made from natural materials, including stone, bone, and shells
 - Most common sites in the area are shell mounds, which are the locations of villages and ceremonial sites
 - Contain concentrations of shellfish remains, evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks), concentrations of bone, recognizable California Native American artifacts, and may contain human remains
 - Sites and artifacts in this area may also be Tribal cultural resources, which are important to the Ohlone and are protected by law

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Cultural Resources



- Indicators of a site could include obsidian (black, glassy stone); shell, bone, and stone artifacts; and concentrations of shell in dark soil



- Historic-period sites may also be present. These sites could include:
 - Concentration of bottles, broken dishes, shoes, buttons, cut animal bones, hardware such as horseshoes, household items, barrels, etc.
 - Remains of sunken ships, including wooden planks and hardware

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Cultural Resources



Cultural resources are nonrenewable and important for their scientific, cultural, and aesthetic values. Do your part in protecting these resources!

- If a potential site or artifacts are identified:
 - Stop work immediately within 100 feet of the find
 - Notify the Project Compliance Specialist who will contact a qualified archaeologist who will assess the find with an Ohlone representative
 - If it is significant, you will be asked to avoid the area and continue work in another area.
- If potential human remains are identified:
 - Stop work immediately within 100 feet of the find
 - **Immediately** notify the Project Compliance Specialist
 - No work can proceed in the discovery area until consultation is complete and procedures to avoid or recover the remains have been implemented.

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Biological Resources



- Biological resources training is required for all persons working in the Project Area before performing work.



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Regulatory Requirements



- **Federal Endangered Species Act (ESA)**
 - Prohibits the “take” of any listed species. “Take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”
- **California Endangered Species Act (CESA)**
- **Marine Mammal Protection Act** – protects all marine mammals.
 - Prohibits the “take” (injury or harassment) of marine mammals unless under incidental harassment permit.
 - Illegal to intentionally harass marine mammals
- **California Fish and Game Code §3511** – prohibits take of fully protected birds.

***Violation of federal and/or state environmental laws
may result in fines and/or jail.***

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Covered Species: Fish



- Chinook salmon



- Longfin smelt



- Green sturgeon



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Covered Species: Marine Mammals - Pinnipeds



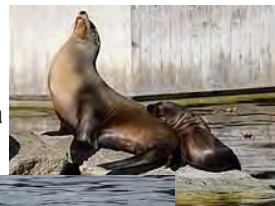
- Pacific harbor seal and California sea lion
 - Sensitive to underwater noise
 - Exclusions zones will be monitored before and during vibratory extraction



Harbor Seal



CA Sea Lion



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Covered Species: Marine Mammals - Cetaceans



- Harbor porpoise and gray whale
 - Very sensitive to underwater noise
 - Larger exclusion zones than seals and sea lions
 - Less likely to be seen in the vicinity of Point Orient Wharf



Harbor Porpoise



Gray Whale

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Biological Issues and Protected Species



- Acoustic Sensitivity
 - Marine mammals and fish are sensitive to underwater sounds
 - Pile Extraction
 - Vibratory hammer (continuous noise) can cause behavioral disruptions, include site avoidance and feeding behavior
 - Sound produced during work can:
 - Confuse and disorient animals
 - Cause physical harm – unlikely to damage to fish tissues and hearing loss in mammals
 - Discourage natural behaviors like feeding and resting
 - Work window between June 1 and November 30 when fewer species are present

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Measures to Protect Marine Mammals



- Shutdown Zones: For all vibratory pile extraction activities, NMFS will specify shutdown zones for marine mammals. 10 meter shutdown zones for all species.
- Monitors will observe zones for 30 min prior to the start of vibratory work and will give the all-clear to start. If animals approach too close, a temporary shutdown of hammer operation may be needed.
- For in-water heavy machinery work other than pile extraction (e.g., standard barges, tugboats, barge-mounted excavators, or clamshell equipment), if a marine mammal comes within 10 meters, operations shall cease, and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions.
- Visual marine mammal monitoring, observation, data collection, and reporting.
- Use of Ramp Up / Soft Start not required in Draft IHA

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Nesting Birds



- Nesting bird survey is required prior to the start of the nesting season April 1 – August 31
- Workers should be observant of possible nests throughout the year and during all construction activities
- Nests must be removed by a qualified biologist

Western gull



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California least tern
(Endangered)

Brown pelican (CFGC
Fully Protected)



Double-crested
cormorant

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Responsibilities



- All workers should always keep an eye open for these species.
- If dead or injured fish or marine mammals are observed, immediately notify the Project Compliance Specialist
- If a bird nest is observed, notify the Project Compliance Specialist
- Remember: it is illegal to intentionally harm or harass marine mammals or remove migratory bird nests



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Contacts during Construction



Environmental Contact	Phone number
Bill Martin (Compliance Specialist)	925-640-4806
Maureen Dunn (Refinery HES Water Specialist)	510-210-2483
Matthew Bettelheim (Designated Biologist)	510-874-3042

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Questions?



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Appendix B Training Attendance Record

Chevron Richmond Refinery Point Orient Wharf Removal Project 2022 In-water Work Training Acknowledgement

1.0 Introduction and Purpose

CEQA environmental clearance and permits issued by the resources agencies specify that environmental awareness training and education required for the Point Orient Wharf Removal Project. To provide documentation that this training was conducted attendance must be acknowledged by every employee and contract worker involved with the field aspects of the project. This document specifies how the permits conditions will be complied with.

2.0 Acknowledgement

The person completing and signing the Training Session Sign-in Sheet acknowledges that they have attended and successfully completed the required training session and understand all protection measures imposed by the Point Orient Wharf regulatory conditions of approval and mitigation measures required by the environmental document and permits.

3.0 Employee and Contractor Worker Information and Certification

"By signing the Training Meeting Sign-in Sheet, I hereby acknowledge that I have attended the training and education program session that has been developed for the Chevron Richmond Refinery Point Orient Wharf Removal Project, and that I understand all protective measures required by the permits."

**Point Orient Wharf Removal Project
Environmental Awareness Training Meeting
Attendee Sign-In Sheet**

Date: May 23, 2022

The person completing and signing this Sign-in Sheet acknowledges that they have attend and successfully completed the required training session and understand all protection measures imposed by the Point Orient Wharf Project regulatory conditions of approval and mitigation measures required by the project permits.

Name	Company	Email
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**Point Orient Wharf Removal Project
 Environmental Awareness Training Meeting
 Attendee Sign-In Sheet**

Date: May 23, 2022

The person completing and signing this Sign-in Sheet acknowledges that they have attend and successfully completed the required training session and understand all protection measures imposed by the Point Orient Wharf Project regulatory conditions of approval and mitigation measures required by the project permits.

Name	Company	Email
VICENTE CORRAL	PEC	V.corral@1002@yahoo
Omar A Vega	PEC	theomarvega@gmail.com
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Albert Apodaca	PEC	waterboy125@gmail.com

Appendix C Marine Mammal Monitoring Daily Field Datasheets

Date: 10/10/2022

Page 1 of 7

Photo Attached



Daily Marine Mammal Monitoring Summary Log
Point Orient Wharf Removal and Eelgrass Restoration Project

Monitor Name:

TIM MILLIKEN

Weather/Visibility and Sea State - use Beaufort Scale on next page:

1

Tidal Level at Start/End of Work - use Tides app or refer to Richmond Harbor at tidesandcurrents.noaa.gov):

Low 6:35 @ 1' / high 6.17 12:49 PM

General Human Activity in the Area:

Setting out barge / MISC, MOVING DEBRIS BOOM - DIVER IN WATER - General work to remove piles

Monitoring Location(s) - show on diagram and take panoramic photo of field of view:

KNOLL NORTH SIDE

Are Castro Rocks visible (yes/no)? If yes, fill out page A-4: N/A

Berth Number:

N/A

Pile Type - include size and material:

WOOD / concrete encapsulated wood

Total Pile Count for the Day:

14

Equipment: Impact Vibratory

Total Minutes of Pile Driving - enter total time here¹:

99

¹ Note the start and end times for each individual pile on page 7.

Date: 10/10/2022

Monitor Initials: TM

The Beaufort scale

No.	Knots	Mph	Description	Effects at sea	Effects on land
0	0	0	Calm	Sea like a mirror	Smoke rises vertically
1	1-3	1-3	Light air	Ripples but no foam crests	Smoke drifts in wind
2	4-6	4-7	Light breeze	Small wavelets	Leaves rustle; wind felt on face
3	7-10	8-12	Gentle breeze	Large wavelets; crests not breaking	Small twigs in constant motion; Light flags extended
4	11-16	13-18	Moderate wind	Numerous whitecaps Waves 1-4ft high	Dust, leaves and loose paper raised. Small branches move.
5	17-21	19-24	Fresh wind	Many whitecaps, some spray; Waves 4-8 ft high	Small trees sway
6	22-27	25-31	Strong wind	Whitecaps everywhere; Larger waves 8-13 ft high	Large branches move; Difficult to use umbrellas
7	28-33	32-38	V. strong wind	White foam from waves is blown in streaks; waves 13-20ft high	Whole trees in motion
8	34-40	39-46	Gale	Edges of wave crests break into spindrift	Twigs break off trees; Difficult to walk
9	41-47	47-54	Severe gale	High waves; sea begins to roll Spray reduce visibility; 20ft waves	Chimney pots and slates removed
10	48-55	55-63	Storm	V. high waves 20-30 ft blowing foam gives sea white appearance	Trees uprooted
11	56-63	64-72	Severe storm	Exceptionally high waves; 30-45 ft high	Structural damage Widespread damage
12	63	73	Hurricane	Air filled with foam; visibility reduced White sea; waves over 45ft high	Widespread damage; rare

Date: 10/10/2022

Page 4 of 7

Monitor Initials: TM

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

PHOTO LOG

upload photos to network, include date and monitoring position in file name

Photo Number	Photo Taken Before (B), During (D), or After (A) Pile Driving	Description
		Panoramic photo from monitoring location
↑ 7:30 AM	OVERVIEW of WORK AREA (B)	OVERVIEW

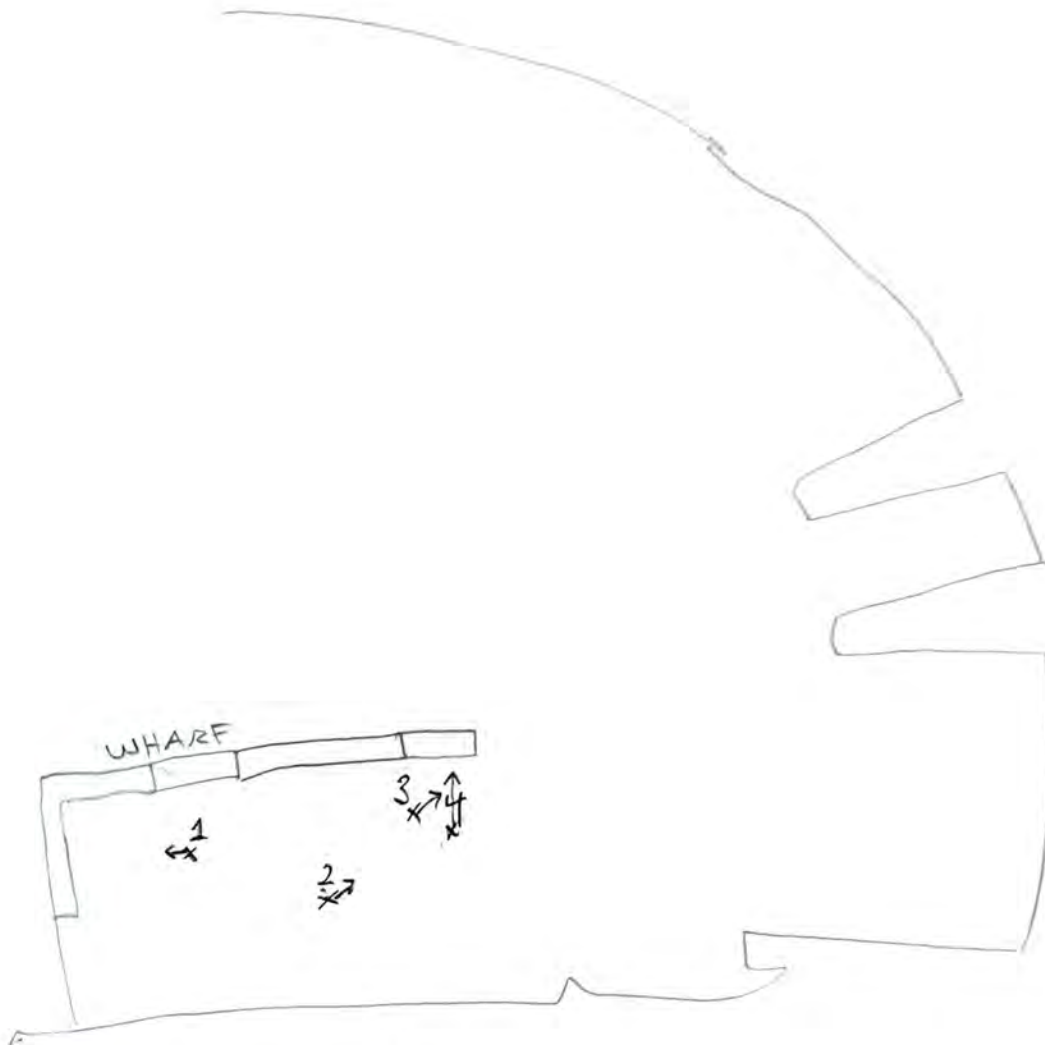
Date: 10/10/2022

Page 5 of 7

Monitor Initials: T.M

Daily Marine Mammal Monitoring Data Sheet
Point Orient Warf Removal and Eelgrass Restoration Project

Diagram



Biological Monitor: T.M M

Signature: *Tim*

Date: 10/10/2022

Page 6 of 7

Monitor Initials: TIM M

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Pile Driving Start and Stop Times²

1. Vibratory hammer start and stop times (include breaks):

(example: Pile 1: start 1030, stop 1035; start 1041, stop 1051; start 1055; stop 1101)

PILE 1 START 8:59 STOP 9:07 (8)
PILE 2 START 9:11 STOP 9:14 (11); start 9:23 stop 9:24 (11); start 9:26 stop 9:26 (11) (5)
PILE 3 Start 9:29 STOP 9:32 (3) 9:38 9:44 (4)
PILE 4 Start 11:27 stop 11:35 (8) -> 1200 Lunch
PILE 5 Start 11:51 stop 11:52 (5); Start 11:54 stop 11:54 (2) -> Lunch
PILE 6 Start 12:53 stop 1:06 (13)
PILE 7 Start 1:09 stop 1:19 (10)
PILE 8 Start 1:23 stop 1:27 (4)
PILE 9 Start 1:30 stop 1:33 (3)
PILE 10 Start 1:36 stop 1:46 (10)
PILE 11 Start 1:48 stop 1:54 (6)
PILE 12 Start 1:57 stop 1:59 (2) -> BREAK
PILE 13 Start 2:18 stop 2:27 (9)
PILE 14 Start 2:43 stop 2:53 (10) -> end using hammer Vibe

2. Impact hammer start and stop times, including any restrikes (only note breaks of 30 minutes or more):

(example: Pile 1: start 1030, stop 1130; restrike pile 1: 1355)

2 For vibratory pile driving, note each time the hammer starts and stops. For impact pile driving, note the start and end time for each pile, unless hammering ceases for >=30 minutes on that pile. Strike counts and times are included in a separate report.

Date: 10/10/2022
Monitor Initials: TIM

Page 7 of 7

Daily Marine Mammal Monitoring Data Sheet
Point Orient Warf Removal and Eelgrass Restoration Project

Additional Notes

Photographs



Daily Marine Mammal Monitoring Summary Log
Point Orient Wharf Removal and Eelgrass Restoration Project

Monitor Name: Taylor Tharaldson

Weather/Visibility and Sea State - use Beaufort Scale on next page:

Foggy and breezy becoming sunny and breezy; Beaufort: 1

Tidal Level at Start/End of Work - use Tides app or refer to Richmond Harbor at tidesandcurrents.noaa.gov:

LOW: 6:35 AM @ 1 ft. ; high: 6.17 ft @ 12:49 PM

General Human Activity in the Area:

power barge gearing up with workers on deck; vessels in water maneuvering debris boom; diver in water inshore of work occurring - looked to be dealing with cut piles

Monitoring Location(s) - show on diagram and take panoramic photo of field of view:

Bluff top - south side

Are Castro Rocks visible (yes/no)? If yes, fill out page A-4: N/A

Berth Number: N/A

Pile Type - include size and material:

timber & timber concrete encased

Total Pile Count for the Day: 14 Equipment: Impact Vibratory

Total Minutes of Pile Driving - enter total time here¹: 99 minutes

¹ Note the start and end times for each individual pile on page 7.

Date: 10/10/22
 Monitor Initials: TMT

The Beaufort scale

No.	Knots	Mph	Description	Effects at sea	Effects on land
0	0	0	Calm	Sea like a mirror	Smoke rises vertically
1	1-3	1-3	Light air	Ripples but no foam crests	Smoke drifts in wind
2	4-6	4-7	Light breeze	Small wavelets	Leaves rustle; wind felt on face
3	7-10	8-12	Gentle breeze	Large wavelets; Crests not breaking	Small twigs in constant motion; Light flags extended
4	11-16	13-18	Moderate wind	Numerous whitecaps Waves 1-4ft high	Dust, leaves and loose paper raised. Small branches move.
5	17-21	19-24	Fresh wind	Many whitecaps, some spray; Waves 4-8 ft high	Small trees sway
6	22-27	25-31	Strong wind	Whitecaps everywhere; Larger waves 8-13 ft high	Large branches move; Difficult to use umbrellas
7	28-33	32-38	V. strong wind	White foam from waves is blown in streaks; waves 13-20ft high	Whole trees in motion
8	34-40	39-46	Gale	Edges of wave crests break into spindrift	Twigs break off trees; Difficult to walk
9	41-47	47-54	Severe gale	High waves; sea begins to roll Spray reduce visibility, 20ft waves	Chimney pots and slates removed
10	48-55	55-63	Storm	V. high waves 20-30 ft; blowing foam gives sea white appearance	Trees uprooted Structural damage
11	56-63	64-72	Severe storm	Exceptionally high waves; 30-45 ft high	Widespread damage
12	63	73	Hurricane	Air filled with foam; visibility reduced White sea; waves over 45ft high	Widespread damage; rare

Date: 10/10/22
 Monitor Initials: TMT

Daily Marine Mammal Monitoring Data Sheet - Point Orient Wharf Removal and Eelgrass Restoration Project

Time of Observation	Observer Initials	Work Activity ¹	Species ²	Observation Number ³	Age Class ⁴	Identifying Marks	Distance from Pile (meters) ⁵	Direction of Travel	Bearing	Behavior ⁶
First: 10:15 AM Last: TMT		A	CASL	1	adult	behavior	400 ft.	E	90°	porpoising out of water
First: 10:22 AM Last: 10:23 TMT		A	CASL	2	adult	behavior	800 ft.	SE	130°	slapped tail on water/possibly foraging
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
¹ Activity: Indicate if observation is: within the 30-minute period before pile-driving (B); during active pile-driving (D); or within the 30-minute period after pile driving (A)	² Species Abbreviations: California Sea Lion = CASL Pacific Harbor Seal = HASE Northern Elephant Seal = NOES Harbor Porpoise = HAPO	³ Examples: HASE 1, HASE 2. Use these numbers for reference on page 6 diagram.	⁴ Species Age Classes: CASL = juvenile, subadult male, adult male HASE = juvenile, adult HAPO = calf, adult	⁵ Distance: Provide an approximate distance from location of pile.	⁶ Behavior examples: Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters. Add a reference number if comments are provided on a separate sheet.					

Date: 10/10/22

Monitor Initials: Tnt

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

PHOTO LOG

upload photos to network, include date and monitoring position in file name

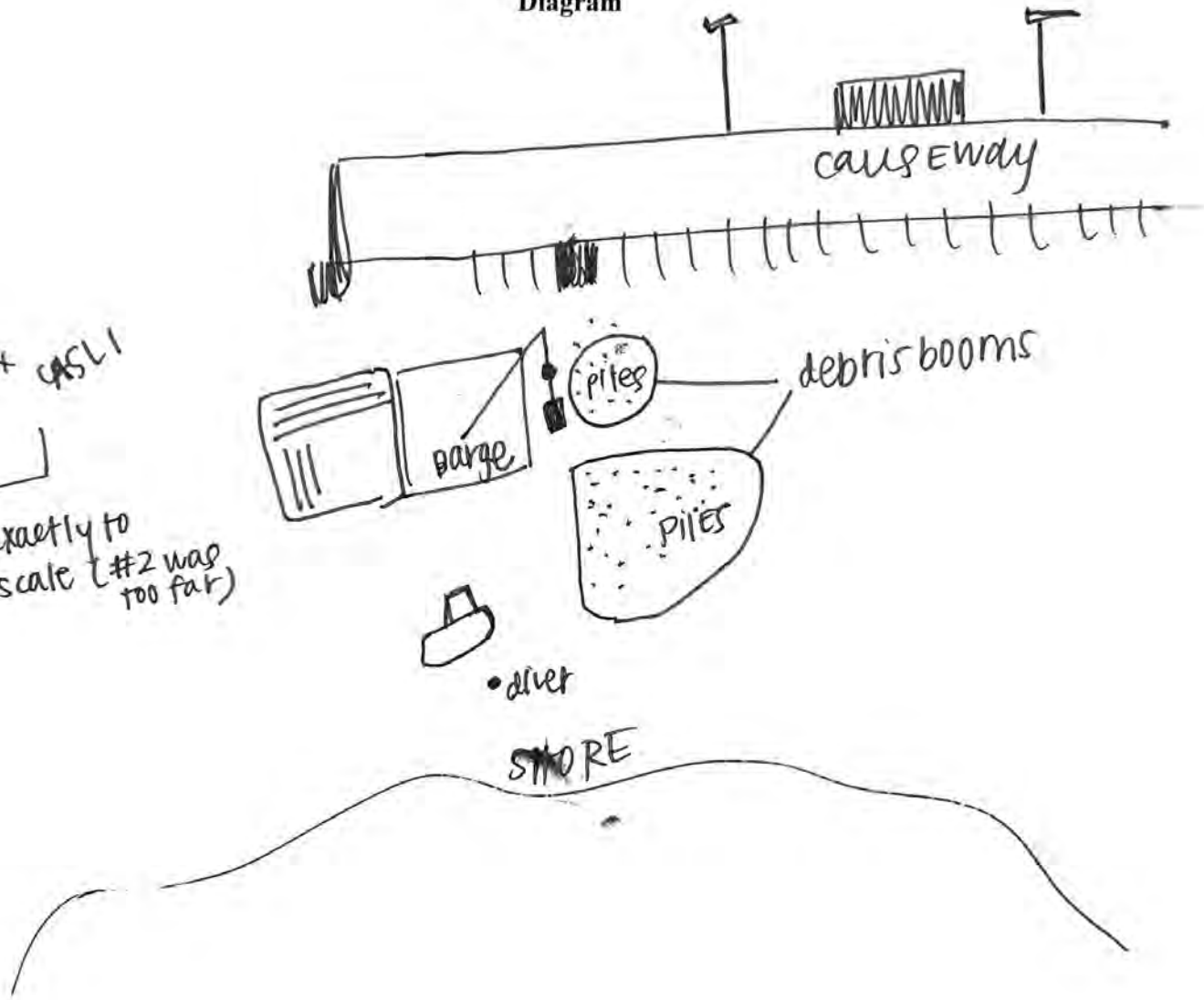
Photo Number	Photo Taken Before (B), During (D), or After (A) Pile Driving	Description
1	B	Panoramic photo from monitoring location
2	B	south monitoring viewed
3	B	north monitoring viewed
4	D	vibratory hammer
5	D	diver in water (inshore of work area)

Date: 10/10/22
Monitor Initials: TMT

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Diagram

+ CASL 2 + CASL 1
not exactly to scale (#2 was too far)



Biological Monitor: Taylor Tharaldson

Signature: *[Handwritten signature]*

Bluff top /
monitoring location

Date: 10/10/22

Page 6 of 7

Monitor Initials: fmf

Daily Marine Mammal Monitoring Data Sheet Point Orient Wharf Removal and Eelgrass Restoration Project

Pile Driving Start and Stop Times²

1. Vibratory hammer start and stop times (include breaks):

(example: Pile 1: start 1030, stop 1035; start 1041, stop 1051; start 1055; stop 1101)

pile #	start time	stop time	
1	8:59 AM	9:07 AM	(8)
2	9:11 AM 9:23 AM 9:26 AM	9:14 AM 9:24 AM 9:26 AM	(5)
3	9:29 AM	9:32 AM	(3)
1	9:38 AM	9:44 AM	(6)
4	11:27 AM	11:35 AM	(8)
5	11:51 AM 11:54 AM	11:52 AM 11:54	(2)
6	12:53 PM	1:06 PM	(13)
8	1:23 PM	1:27 PM	(4)
87	1:09 PM	1:19 PM	(10)
9	1:30 PM	1:33 PM	(3)

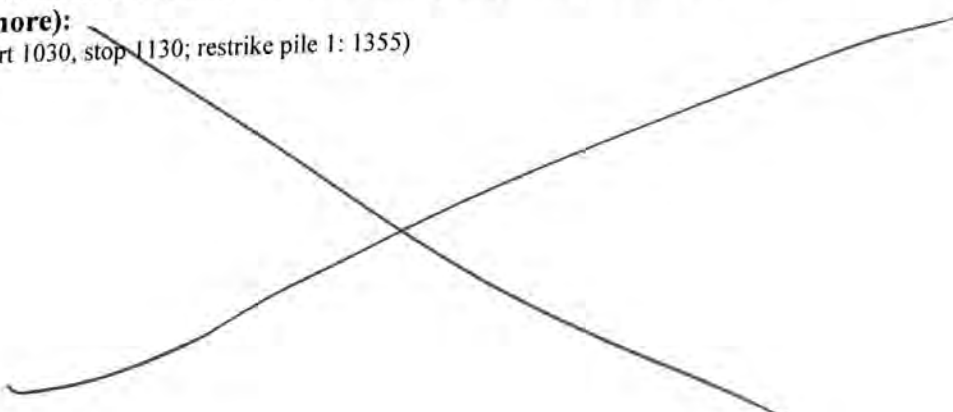
Moved Barge inshore during pile time

Break for lunch

remainder on back

2. Impact hammer start and stop times, including any restrikes (only note breaks of 30 minutes or more):

(example: Pile 1: start 1030, stop 1130; restrike pile 1: 1355)



² For vibratory pile driving, note each time the hammer starts and stops. For impact pile driving, note the start and end time for each pile, unless hammering ceases for ≥30 minutes on that pile. Strike counts and times are included in a separate report.

PILE #	start time	stop time
10	1:36 PM	1:46 PM
11	1:48 PM	1:54 PM
12	1:57 PM	1:59 PM
13	2:18 PM	2:27 PM
14	2:43 PM	2:53 PM

Date: 10/10/22
Monitor Initials: tmt

Page 7 of 7

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Additional Notes

- Arrival at site - 7:03 AM
- Pre-monitoring period - 7:15 - 7:53 AM
- Monitoring location - Bluff top viewing southside of
- 1 diver in water for a ^{wharf} few hours - looked to be attending to cut piles
- moved barge inshore around 11:11 AM
- No real turbidity plume could be seen by monitors w/ the vibratory hammer in action (though not the best vantage point)

Daily Marine Mammal Monitoring Summary Log
Point Orient Warf Removal and Eelgrass Restoration Project

Monitor Name:

David Greenspan

Weather/Visibility and Sea State - use Beaufort Scale on next page:

55 deg F

Sea State – 1 to 2

Light fog – 95% visibility

Tidal Level at Start/End of Work – use Tides app or refer to Richmond Harbor at tidesandcurrents.noaa.gov):

1.49 ft low @ 7:10 am , 6.13 ft high @ 1:16 pm

General Human Activity in the Area:

- No public activity
- Prior to start of work, crews motored in small skiffs to get to the work area and barge.
- Equipment setup and staging
- Piles were cut with a saw attached to the primary crane to trim piles prior to vibrating/removal

Monitoring Location(s) – show on diagram and take panoramic photo of field of view:

Knoll located approximately 300-400 feet above the work area (elevation) and approximately 200 meters set back front the waters edge (See Diagram).

Are Castro Rocks visible (yes/no)? If yes, fill out page A-4: N/A

Berth Number: N/A

Pile Type - include size and material:

Wood/concrete encapsulated wood

Date: 10/11/2022

DG

Total Pile Count for the Day: 25 Equipment: Impact Vibratory

Total Minutes of Pile Driving/Vibrating - *enter total time here*¹: 97

¹ Note the start and end times for each individual pile on page 7.

Date: 10/11/22

Page ___ of ___

Monitor Initials: 06*The Beaufort scale*

<i>No.</i>	<i>Knots</i>	<i>Mph</i>	<i>Description</i>	<i>Effects at sea</i>	<i>Effects on land</i>
0	0	0	Calm	Sea like a mirror	Smoke rises vertically
1	1-3	1-3	Light air	Ripples but no foam crests	Smoke drifts in wind
2	4-6	4-7	Light breeze	Small wavelets	Leaves rustle; wind felt on face
3	7-10	8-12	Gentle breeze	Large wavelets; Crests not breaking	Small twigs in constant motion; Light flags extended
4	11-16	13-18	Moderate wind	Numerous whitecaps Waves 1-4ft high	Dust, leaves and loose paper raised. Small branches move.
5	17-21	19-24	Fresh wind	Many whitecaps, some spray; Waves 4-8 ft high	Small trees sway
6	22-27	25-31	Strong wind	Whitecaps everywhere; Larger waves 8-13 ft high	Large branches move; Difficult to use umbrellas
7	28-33	32-38	V. strong wind	White foam from waves is blown in streaks; waves 13-20ft high	Whole trees in motion
8	34-40	39-46	Gale	Edges of wave crests break into spindrift	Twigs break off trees; Difficult to walk
9	41-47	47-54	Severe gale	High waves; sea begins to roll Spray reduce visibility; 20ft waves	Chimney pots and slates removed
10	48-55	55-63	Storm	V. high waves 20-30 ft; blowing foam gives sea white appearance	Trees uprooted Structural damage
11	56-63	64-72	Severe storm	Exceptionally high waves; 30-45 ft high	Widespread damage
12	63	73	Hurricane	Air filled with foam; visibility reduced White sea; waves over 45ft high	Widespread damage; rare

Date: 10/11/22

Monitor Initials: DG

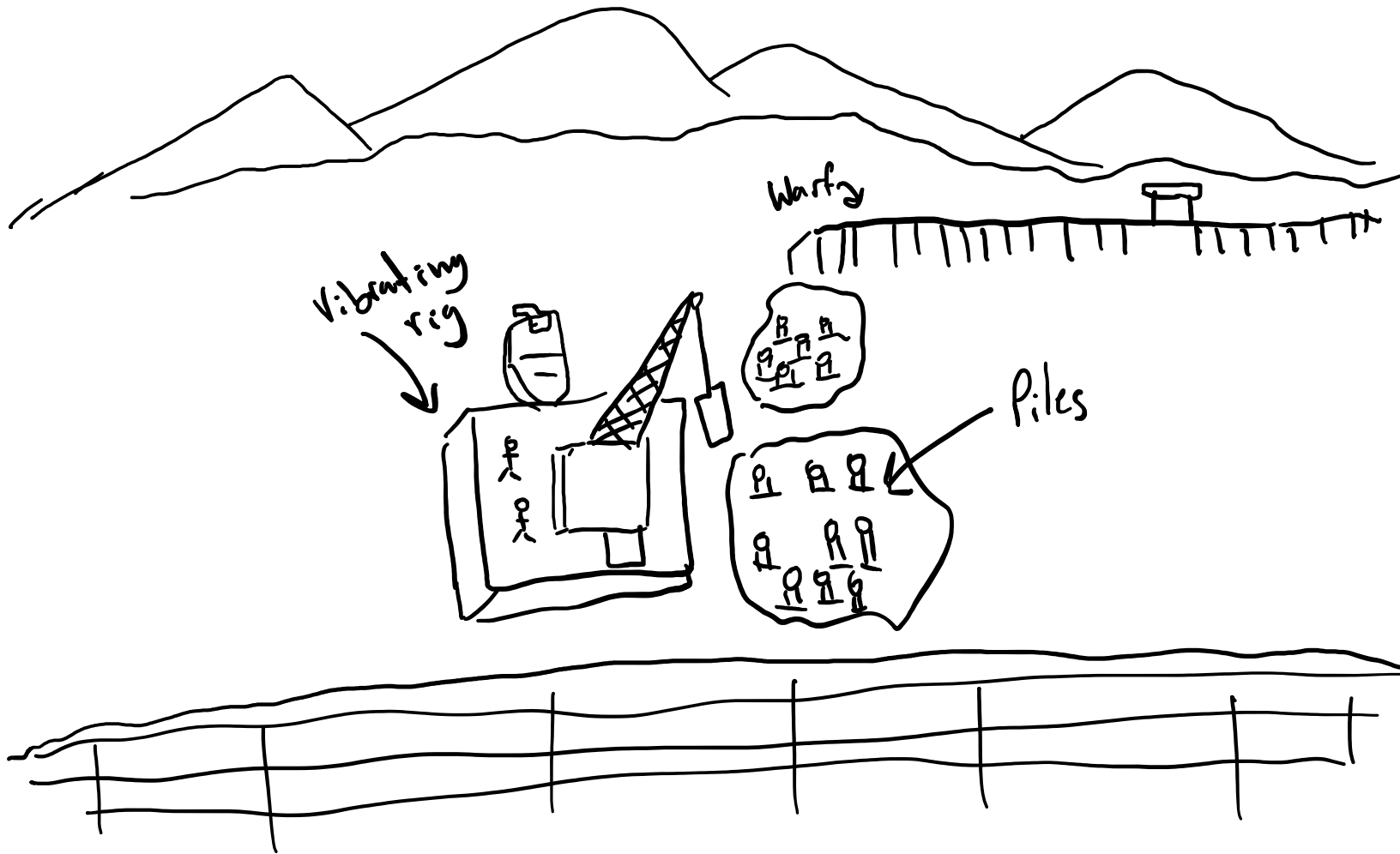
N/A

Daily Marine Mammal Monitoring Data Sheet - Point Orient Wharf Removal and Eelgrass Restoration Project

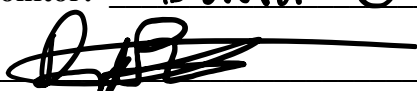
Time of Observation	Observer Initials	Work Activity ¹	Species ²	Observation Number ³	Age Class ⁴	Identifying Marks	Distance from Pile (meters) ⁵	Direction of Travel	Bearing	Behavior ⁶	
First: Last:											
First: Last:											
First: Last:											
First: Last:											
First: Last:											
First: Last:											
First: Last:											
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First: Last:											
First: Last:											
First: Last:											
First: Last:											
¹ Activity: Indicate if observation is: within the 30-minute period before pile-driving (B); during active pile-driving (D); or within the 30-minute period after pile driving (A)		² Species Abbreviations: California Sea Lion = CASL Pacific Harbor Seal = HASE Northern Elephant Seal = NOES Harbor Porpoise = HAPO		³ Examples: HASE 1, HASE 2. Use these numbers for reference on page 6 diagram.		⁴ Species Age Classes: CASL = juvenile, subadult male, adult male HASE = juvenile, adult HAPO = calf, adult		⁵ Distance: Provide an approximate distance from location of pile.		⁶ Behavior examples: Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters. Add a reference number if comments are provided on a separate sheet.	

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Diagram



Biological Monitor: David Green span

Signature: 

Monitor Initials: _____

Daily Marine Mammal Monitoring Data Sheet
Point Orient Warf Removal and Eelgrass Restoration Project

Pile Driving Start and Stop Times²

Pre-Activity 30 Minute Survey/Site Clearance

Start: 7:30 am

Stop: 8:00 am

1. Vibratory hammer start and stop times (include breaks):

(example: Pile 1: start 1030, stop 1035; start 1041, stop 1051; start 1055; stop 1101)

Pile 1

Start: 9:56 am

Stop: 9:59 am

Duration: 3 minutes

Pile 2

Start: 10:03

Stop: 10:04

Duration: 1 minute

Pile 3

Start: 10:07 am

Stop: 10:09 am

Duration: 2 minutes

Pile 4

Start: 10:15

Stop: 10:16

Duration: 1 minute

Pile 5

Start: 10:23 am

Stop: 10:27 am

Duration: 4 minutes

Pile 6

Start: 10:30 am

Stop: 10:32 am

Duration: 2 minutes

Pile 7

Start: 10:36

Stop: 1040

Duration: 4 minutes

² For vibratory pile driving, note each time the hammer starts and stops. For impact pile driving, note the start and end time for each pile, unless hammering ceases for ≥ 30 minutes) on that pile. Strike counts and times are included in a separate report.

Date: _____

Page ___ of ___

Monitor Initials: _____

Pile 8

Start: 10:43 am

Stop: 10:46 am

Duration: 3 minutes

Pile 9

Start: 10:49 am

Stop: 10:51 am

Duration: 2 minutes

Pile 10

Start: 10:54 am

Stop: 10:55 am

Start: 10:56 am

Stop: 10:57 am

Duration: 2 minutes

***Moved barge further inshore to compensate for tide change.**

***Crew took lunch break at approximately 12:15 pm**

Pre Activity 30 minute Survey/Site Clearance

Start: 12:21 pm

End: 12:51 pm

Pile 11

Start: 12:53 pm

Stop: 12:54 pm

Duration: 1 minute

Pile 12

Start: 12:58 pm

Stop: 1:04 pm

Duration: 6 minutes

Pile 13

Start: 1:07 pm

Stop: 1:14 pm

Duration: 7 minutes

Pile 14

Start: 1:18 pm

Stop: 1:23 pm

Duration: 5 minutes

Pile 15

Start: 1:28 pm

Stop: 1:33 pm

Start: 1:40 pm

Stop: 1:44 pm

Duration: 9 minutes

Date: _____

Page ___ **of** ___

Monitor Initials: _____

Pile 16
Start: 1:46 pm
Stop: 1:49 pm
Duration: 3 minutes

Pile 17
Start: 1:52 pm
Stop: 1:56 pm
Duration: 4 minutes

Pile 18
Start: 1:58 pm
Stop: 2:04 pm
Duration: 6 minutes

Pile 19
Start: 2:09 pm
Stop: 2:10 pm
Duration: 1 minute

Pile 20
Start: 2:13 pm
Stop: 2:17 pm
Start: 2:17 pm
Stop: 2:19 pm
Duration: 7 minutes

Pile 21
Start: 2:24 pm
Stop: 2:30 pm
Duration: 6 minutes

Pile 22
Start: 2:33 pm
Stop: 2:38 pm
Duration: 5 minutes

Pile 23
Start: 2:40 pm
Stop: 2:43 pm
Duration: 3 minutes

Pile 24
Start: 2:46 pm
Stop: 2:48 pm
Duration: 2 minutes

Pile 25
Start: 2:51 pm
Stop: 2:57 pm
Start: 2:57 pm
Stop: 2:58 pm

Date: _____

Page ___ of ___

Monitor Initials: _____

Duration: 7 minutes

2. Impact hammer start and stop times, including any restrikes (only note breaks of 30 minutes or more):

(example: Pile 1: start 1030, stop 1130; restrike pile 1: 1355)

N/A

Daily Marine Mammal Monitoring Data Sheet
Point Orient Warf Removal and Eelgrass Restoration Project

Additional Notes

- Tim Milliken observed a HASE on the eastern portion of the monitoring area, inshore of the work area and not within 10 meters of pile vibrating activities – I did not observe the individual and did not include it in my monitoring log but made note here.
- Barge was moved inshore to compensate for tide change

Photo Log

Date: _____

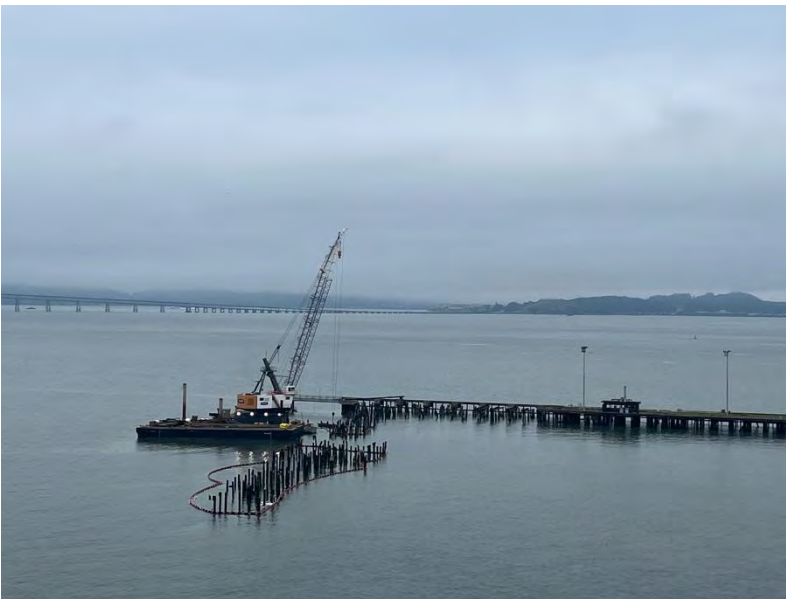
Page ___ of ___

Monitor Initials: _____

Photo 1



Photo 2



Date: _____

Page ___ of ___

Monitor Initials: _____

Photo 3



Photo 4



Date: 10/11/2022

Page 1 of 7

Daily Marine Mammal Monitoring Summary Log
Point Orient Wharf Removal and Eelgrass Restoration Project

Monitor Name: TIM MILLIKEN

Weather/Visibility and Sea State - use Beaufort Scale on next page:

Tidal Level at Start/End of Work - use Tides app or refer to Richmond Harbor at tidesandcurrents.noaa.gov):

6:13 FT
1:49P TIDAL LOW, 1:16PM HIGH

General Human Activity in the Area:

setting up barge, sawing piling tops,

Monitoring Location(s) - show on diagram and take panoramic photo of field of view:

Kwoll

Are Castro Rocks visible (yes/no)? If yes, fill out page A-4: NA

Berth Number: NA

Pile Type - include size and material:

WOOD / concrete encapsulated wood

Total Pile Count for the Day: 25

Equipment: Impact Vibratory

Total Minutes of Pile Driving - enter total time here¹:

97 MINUTES

¹ Note the start and end times for each individual pile on page 7.

Date: 10/11/2022

Monitor Initials: IM

The Beaufort scale

No.	Knots	Mph	Description	Effects at sea	Effects on land
0	0	0	Calm	Sea like a mirror	Smoke rises vertically
1	1-3	1-3	Light air	Ripples but no foam crests	Smoke drifts in wind
2	4-6	4-7	Light breeze	Small wavelets	Leaves rustle; wind felt on face
3	7-10	8-12	Gentle breeze	Large wavelets; crests not breaking	Small twigs in constant motion; Light flags extended
4	11-16	13-18	Moderate wind	Numerous whitecaps Waves 1-4ft high	Dust, leaves and loose paper raised. Small branches move.
5	17-21	19-24	Fresh wind	Many whitecaps, some spray. Waves 4-8 ft high	Small trees sway
6	22-27	25-31	Strong wind	Whitecaps everywhere; Larger waves 8-13 ft high	Large branches move; Difficult to use umbrellas
7	28-33	32-38	V. strong wind	White foam from waves is blown in streaks; waves 13-20ft high	Whole trees in motion
8	34-40	39-46	Gale	Edges of wave crests break into spindrift	Twigs break off trees; Difficult to walk
9	41-47	47-54	Severe gale	High waves; sea begins to roll Spray reduce visibility, 20ft waves	Chimney pots and slates removed
10	48-55	55-63	Storm	V. high waves 20-30 ft; blowing foam gives sea white appearance	Trees uprooted
11	56-63	64-72	Severe storm	Exceptionally high waves; 30-45 ft high	Structural damage Widespread damage
12	63	73	Hurricane	Air filled with foam; visibility reduced White sea; waves over 45ft high	Widespread damage; rare

Date: 10/11/2022

Monitor Initials: IM

Daily Marine Mammal Monitoring Data Sheet
Point Orient Warf Removal and Eelgrass Restoration Project

PHOTO LOG

upload photos to network, include date and monitoring position in file name

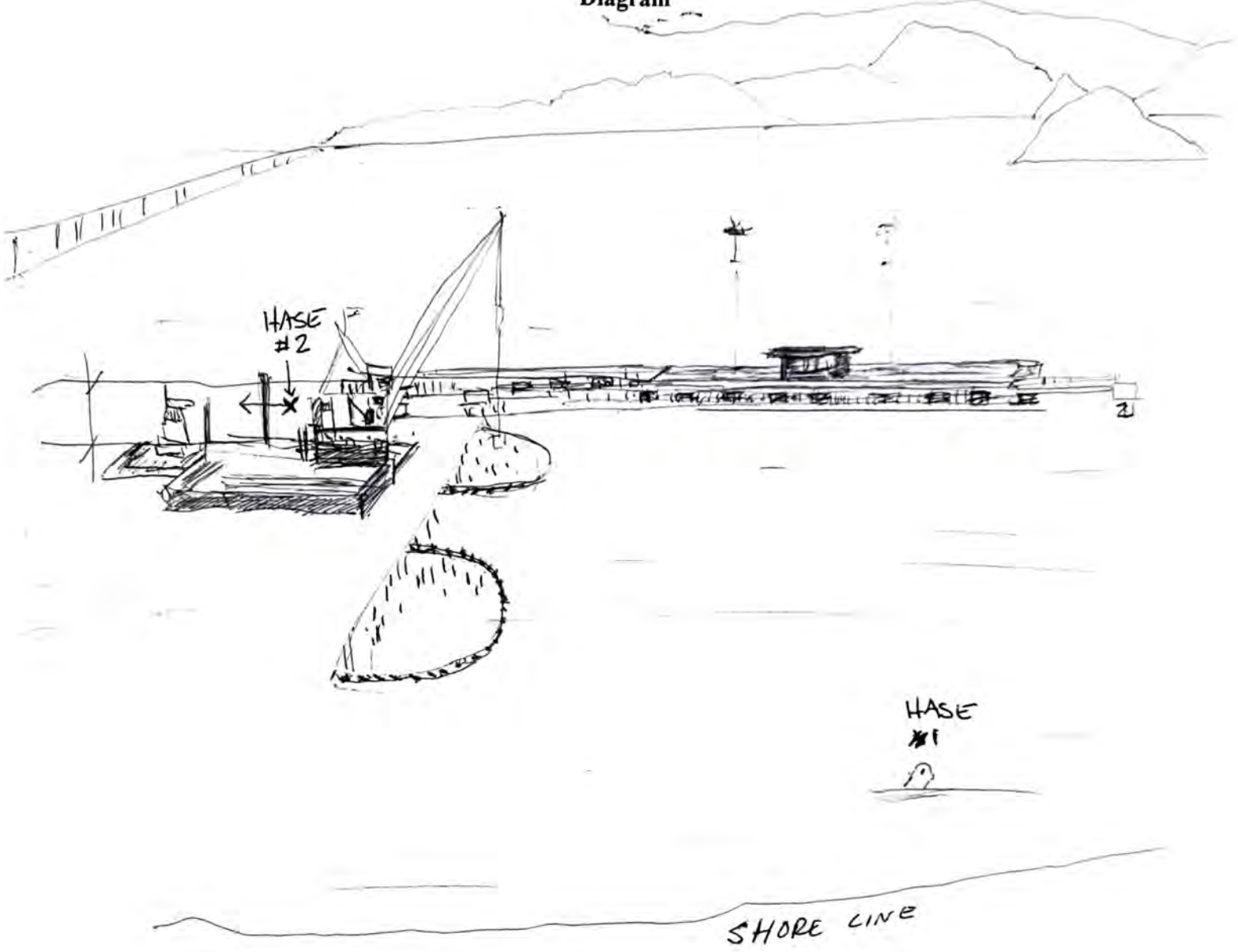
Photo Number	Photo Taken Before (B), During (D), or After (A) Pile Driving	Description
1	B @ 9:12	Panoramic photo from monitoring location overview
2	B @ 9:12	overview zoom
3	D @ 11:24	OVERVIEW
4	A @ 3:28	OVERVIEW

Date: 10/11/2022

Monitor Initials: TM

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Diagram



Biological Monitor: Tim M. Hickey

Signature: [Handwritten Signature]

Monitor Initials: TM

30 MIN Clearance Start 7:30 Stop 8:00
 SCANNING continuously Till hammer time
Daily Marine Mammal Monitoring Data Sheet
 Point Orient Wharf Removal and Eelgrass Restoration Project

Pile Driving Start and Stop Times²

1. Vibratory hammer start and stop times (include breaks):

(example: Pile 1: start 1030, stop 1035; start 1041, stop 1051; start 1055; stop 1101)

FILE 1	START 9:56	STOP 10:00	9:59	(3)	
FILE 2	Start 10:03	Stop 10:07		(1)	
FILE 3	Start 10:07	Stop 10:09		(2)	
FILE 4	10:15	10:16		(1)	Pile BROKE off
FILE 5	10:23	10:27		(4)	
FILE 6	10:30	10:32		(2)	
FILE 7	10:36	10:40		(4)	
FILE 8	10:43	10:46		(3)	
FILE 9	10:49	10:51		(2)	
FILE 10	10:54	10:57	start 10:56, stop 10:57	(2)(4)	LUNCH 1215 SCAN start 1221 SCAN stop 1251
FILE 11	1253	1254		(1)	
FILE 12	1258	104		(6)	
FILE 13	107	114		(7)	
FILE 14	118	123		(5)	
FILE 15	128	133		(2)	(9)
FILE 15	140	144		(4)	
FILE 16	146	149		(3)	
FILE 17	152	156		(4)	
FILE 18	158	204		(6)	
FILE 19	209	210		(1)	
FILE 20	213	217	start 217, stop 2:19	(7)	

2. Impact hammer start and stop times, including any Restrikes (only note breaks of 30 minutes or more):

(example: Pile 1: start 1030, stop 1130; restrike pile 1: 1355)

21	224	230	(6)	
22	233	238	(5)	
23	240	243	(3)	
24	246	248	(2)	
25	251	257	(7)	257, 258
				(97) - total HAM

² For vibratory pile driving, note each time the hammer starts and stops. For impact pile driving, note the start and end time for each pile, unless hammering ceases for ≥30 minutes) on that pile. Strike counts and times are included in a separate report.

Date: 10/11/2022

Page 7 of 7

Monitor Initials: TM

Daily Marine Mammal Monitoring Data Sheet
Point Orient Warf Removal and Eelgrass Restoration Project

Additional Notes

Photographs

Photograph 1.
Before work,
10/10/2022
9:17 AM



Photograph
2.
Before work,
10/10/2022
9:17 AM



Photograph
3.
During work,
10/10/2022
11:24 AM



Photograph
4.
After work,
10/10/2022
3:28 PM



Date: 10-12-22

Page 1 of 7

survey start: 0710
end: 15:18

Daily Marine Mammal Monitoring Summary Log
Point Orient Wharf Removal and Eelgrass Restoration Project

Monitor Name: Matthew Bettelheim (Sam Prado)

Weather/Visibility and Sea State - use Beaufort Scale on next page:

57° Beaufort scale = 1

Tidal Level at Start/End of Work - use Tides app or refer to Richmond Harbor at tidesandcurrents.noaa.gov):

2.23ft

General Human Activity in the Area:

pier extraction, usual boating activity

Monitoring Location(s) - show on diagram and take panoramic photo of field of view:

Stennark Dr. Overlook

Are Castro Rocks visible (yes/no)? If yes, fill out page A-4: yes

Berth Number: n/a

Pile Type - include size and material:

12" timber

Total Pile Count for the Day: 27 Equipment: Impact Vibratory

Total Minutes of Pile Driving - enter total time here¹:

110' (determined start/stop times by listening for vibratory hammer)

¹ Note the start and end times for each individual pile on page 7.

Date: 10-12-22

Monitor Initials: SP

The Beaufort scale

No.	Knots	Mph	Description	Effects at sea	Effects on land
0	0	0	Calm	Sea like a mirror	Smoke rises vertically
1	1-3	1-3	Light air	Ripples but no foam crests	Smoke drifts in wind
2	4-6	4-7	Light breeze	Small wavelets	Leaves rustle; wind felt on face
3	7-10	8-12	Gentle breeze	Large wavelets; Crests not breaking	Small twigs in constant motion; Light flags extended
4	11-16	13-18	Moderate wind	Numerous whitecaps Waves 1-4ft high	Dust, leaves and loose paper raised. Small branches move.
5	17-21	19-24	Fresh wind	Many whitecaps, some spray; Waves 4-8 ft high	Small trees sway
6	22-27	25-31	Strong wind	Whitecaps everywhere; Larger waves 8-13 ft high	Large branches move; Difficult to use umbrellas
7	28-33	32-38	V. strong wind	White foam from waves is blown in streaks; waves 13-20ft high	Whole trees in motion
8	34-40	39-46	Gale	Edges of wave crests break into spindrift	Twigs break off trees; Difficult to walk
9	41-47	47-54	Severe gale	High waves; sea begins to roll Spray reduce visibility, 20ft waves	Chimney pots and slates removed
10	48-55	55-63	Storm	V. high waves 20-30 ft; blowing foam gives sea white appearance	Trees uprooted Structural damage
11	56-63	64-72	Severe storm	Exceptionally high waves; 30-45 ft high	Widespread damage
12	63	73	Hurricane	Air filled with foam; visibility reduced White sea; waves over 45ft high	Widespread damage; rare

Monitor Initials: SP

Daily Marine Mammal Monitoring Data Sheet - Point Orient Wharf Removal and Eelgrass Restoration Project

Time of Observation	Observer Initials	Work Activity ¹	Species ¹	Observation Number ²	Age Class ⁴	Identifying Marks	Distance from Pile (meters) ⁵	Direction of Travel	Bearing	Behavior
First: 0930 Last: 0930	SP	B	HASE	1	A		500	NE	48°	Swimming
First: 1405 Last: 1405	SP	D	HASE	2	A		500	-	-	bobbing, then dove
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										

¹Activity: Indicate if observation is:
 within the 30-minute period before pile-driving (B);
 during active pile-driving (D);
 or within the 30-minute period after pile driving (A)

²Examples:
 HASE1,
 HASE 2.
 Use these numbers for reference on page 6 diagram.

³Species Abbreviations:
 California Sea Lion = CASL
 Pacific Harbor Seal = HASE
 Northern Elephant Seal = NOES
 Harbor Porpoise = HAPO

⁴Species Age Classes:
 CASL = juvenile, subadult male, adult male
 HASE = juvenile, adult
 HAPO = calf, adult

⁵Distance: Provide an approximate distance from location of pile.

⁶Behavior examples: Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters.

Add a reference number if comments are provided on a separate sheet.

Date: 10-12-22



Page 4 of 7

Monitor Initials: SP

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

PHOTO LOG

upload photos to network, include date and monitoring position in file name

Photo Number	Photo Taken Before (B), During (D), or After (A) Pile Driving	Description
Stenmark Dr Overlook BEFORE 	B	Panoramic photo from monitoring location
Stenmark Dr Overlook AFTER 	A	

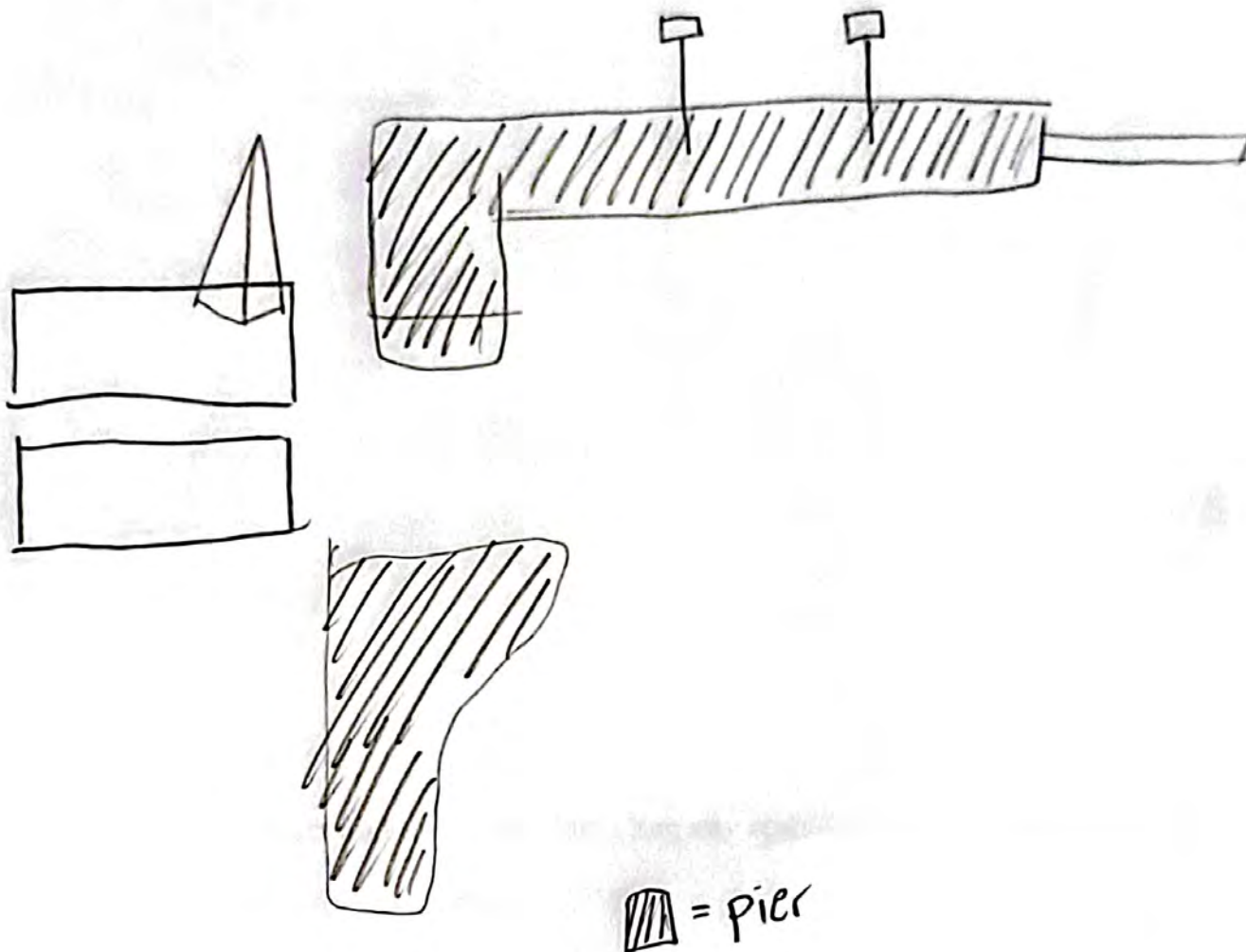
Date: 10-12-22

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Monitor Initials: SP

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Diagram



Biological Monitor: Samantha Prado

Signature: [Handwritten Signature]

Monitor Initials: SP

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Pile Driving Start and Stop Times²

1. Vibratory hammer start and stop times (include breaks):

(example: Pile 1: start 1030, stop 1035; start 1041, stop 1051; start 1055; stop 1101)

- ② S: 0935 E: 0957
- ③ S: 0946 E: 0949
- ⑪ S: 0953 E: 1001
- ④ S: 1002 E: 1006
- ⑤ S: 1008 E: 1013
- ② S: 1015 E: 1017
- ③ S: 1020 E: 1023
- ⑥ S: 1025 E: 1031
- ② S: 1035 E: 1037
- ③ S: 1040 E: 1042
- ③ S: 1045 E: 1047
- ① S: 1255 E: 1256
- ④ S: 1259 E: 1305
- ⑥ S: 1306 E: 1312
- ④ S: 1316 E: 1320
- ② S: 1323 E: 1325
- ③ S: 1329 E: 1334
- ④ S: 1336 E: 1340
- ④ S: 1344 E: 1349
- ③ S: 1354 E: 1357
- ① S: 1426 E: 1427
- ⑤ S: 1430 E: 1435
- ③ S: 1437 E: 1440
- ⑤ S: 1443 E: 1448
- S - E -
- S - E -
- S - E -
- S - E -

= 110 mins*

* start/end times determined by sound of vibratory hammer operation

Pile count
|||||

2. Impact hammer start and stop times, including any restrikes (only note breaks of 30 minutes or more):

(example: Pile 1: start 1030, stop 1130; restrike pile 1: 1355)

² For vibratory pile driving, note each time the hammer starts and stops. For impact pile driving, note the start and end time for each pile, unless hammering ceases for ≥30 minutes) on that pile. Strike counts and times are included in a separate report.

Date: 10-12-22

Page 7 of 7

Monitor Initials: SP

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Additional Notes

Date: Oct 12, 2022

Page 1 of 7

Daily Marine Mammal Monitoring Summary Log
Point Orient Wharf Removal and Eelgrass Restoration Project

Monitor Name:

MATTHEW BETTELHEIM (+ Sam Prado)

Weather/Visibility and Sea State - use Beaufort Scale on next page:

57°, Beaufort Scale = 1, low lying cloud cover, clear visibility
64°, Beaufort Scale = 3, minimal haze on horizon, clear visibility

Tidal Level at Start/End of Work - use Tides app or refer to Richmond Harbor at tidesandcurrents.noaa.gov:

Start: 02.45 ft @ 0710 AM

End: 05.6 ft @ 1518 PM

General Human Activity in the Area:

Pier removal + typical ship activity in the bay

Monitoring Location(s) - show on diagram and take panoramic photo of field of view:

Stenmark Drive overlook

Are Castro Rocks visible (yes/no)? If yes, fill out page A-4: yes

Berth Number: n/a

Pile Type - include size and material:

12 inch timber pile

Total Pile Count for the Day:

27

Equipment: Impact Vibratory

Total Minutes of Pile Driving - enter total time here¹:

116 min

¹ Note the start and end times for each individual pile on page 7.

Date: Oct 12, 2022

Monitor Initials: MRB

Page 2 of 7

The Beaufort scale

No.	Knots	Mph	Description	Effects at sea	Effects on land
0	0	0	Calm	Sea like a mirror	Smoke rises vertically
1	1-3	1-3	Light air	Ripples but no foam crests	Smoke drifts in wind
2	4-6	4-7	Light breeze	Small wavelets	Leaves rustle, wind felt on face
3	7-10	8-12	Gentle breeze	Large wavelets; Crests not breaking	Small twigs in constant motion; Light flags extended
4	11-16	13-18	Moderate wind	Numerous whitecaps Waves 1-4ft high	Dust, leaves and loose paper raised. Small branches move.
5	17-21	19-24	Fresh wind	Many whitecaps, some spray; Waves 4-8 ft high	Small trees sway
6	22-27	25-31	Strong wind	Whitecaps everywhere; Larger waves 8-13 ft high	Large branches move; Difficult to use umbrellas
7	28-33	32-38	V. strong wind	White foam from waves is blown in streaks; waves 13-20ft high	Whole trees in motion
8	34-40	39-46	Gale	Edges of wave crests break into spindrift	Twigs break off trees; Difficult to walk
9	41-47	47-54	Severe gale	High waves; sea begins to roll Spray reduce visibility, 20ft waves	Chimney pots and slates removed
10	48-55	55-63	Storm	V. high waves 20-30 ft, blowing foam gives sea white appearance	Trees uprooted
11	56-63	64-72	Severe storm	Exceptionally high waves, 30-45 ft high	Structural damage Widespread damage
12	63	73	Hurricane	Air filled with foam, visibility reduced White sea, waves over 45ft high	Widespread damage; rare

Date: Oct 12, 2022

Page 3 of 7

Monitor Initials: MB

Daily Marine Mammal Monitoring Data Sheet - Point Orient Wharf Removal and Eelgrass Restoration Project

Time of Observation	Observer Initials	Piling Activity ¹	Species ²	Age Class ³	Identifying Marks	Distance from Pile ⁴	Direction of Travel	Bearing	Behavior ⁵
First: 9:14 Last: 9:28	MB	0	HASE	Adult	0	800M	N	30°	Obs @ surface, and then dove (south of pile) obs @ surface, far side of zone (north of pile)
First: Last:									
First: Last:									
First: Last:									
First: Last:									
First: Last:									
First: Last:									
First: Last:									
First: Last:									
First: Last:									
First: Last:									
First: Last:									

¹Activity: Indicate if observation is: before (B); during (D); or after (A) pile driving

²Species Abbreviations: California Sea Lion = CASL Pacific Harbor Seal = HASE Northern Elephant Seal = NOES Harbor Porpoise = HAPO

³Species Age Classes: CASL = juvenile, subadult male, adult male HASE = juvenile, adult HAPO = calf, adult

⁴Distance: Provide an approximate distance from location of pile being driven, just driven, or about to be driven. Indicate unit of measurement (meters, feet, etc.).

⁵Behavior examples: Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters. Add a reference number if comments are provided on a separate sheet.

Date: Oct 12, 2022

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Monitor Initials: MB

**Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project**

PHOTO LOG

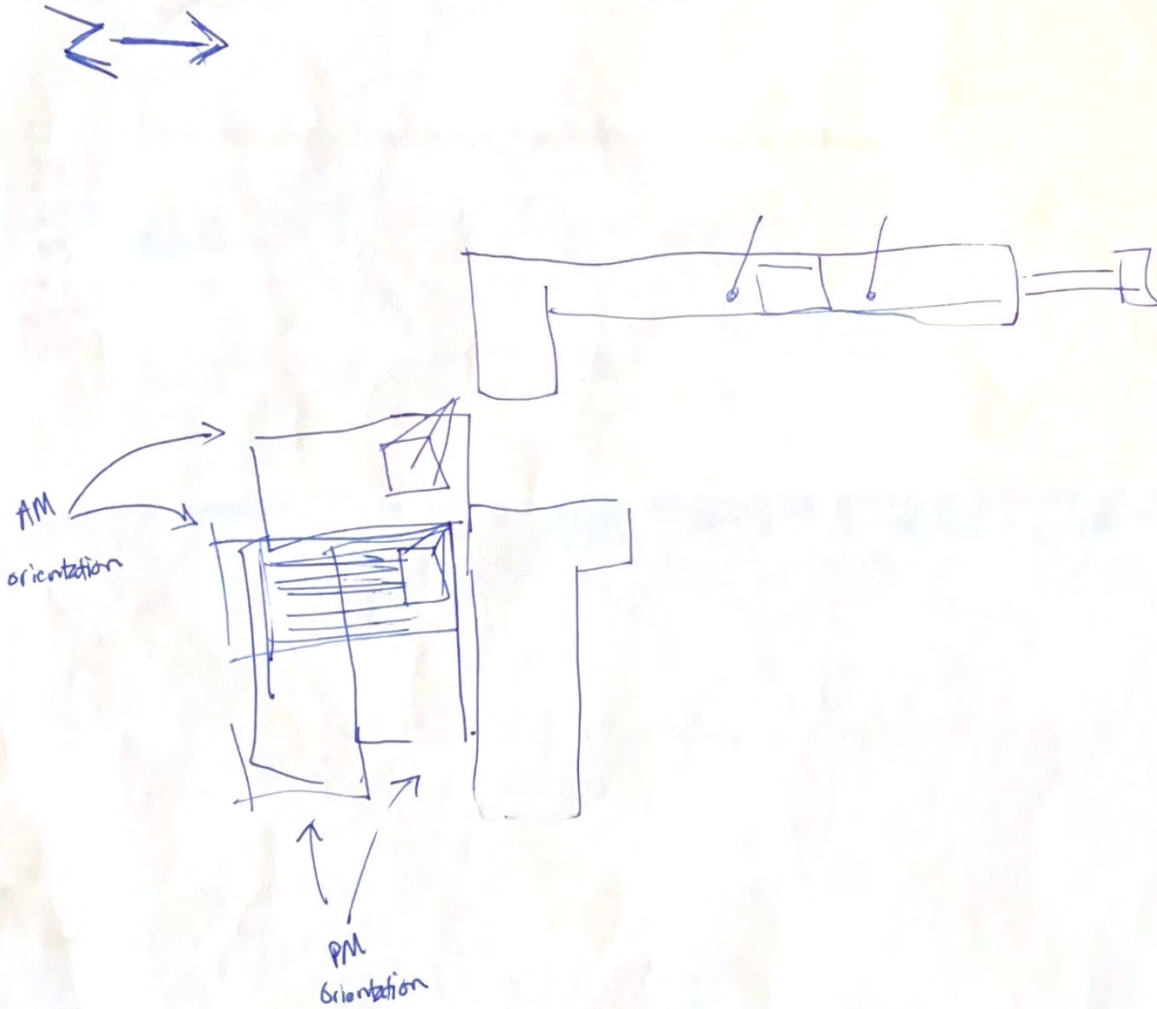
Comment Reference Number	Photo Number	Photo Taken Before (B), During (D), or After (A) Pile Driving	Description
#1	IMG 6508	Before	Work area before work commenced.
#	IMG 6512	After	Work area after work was completed

Date: Oct 12, 2022

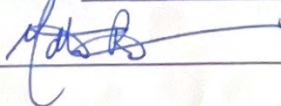
Page 5 of 7

Monitor Initials: MB

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project
Diagram



Biological Monitor: MATHEW BEUTELTERDM

Signature: 

Date: Oct 12, 2022

Page 6 of 7

Monitor Initials: MB

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Pile Driving Start and Stop Times²

1. Vibratory hammer start and stop times (include breaks):
(example: Pile 1: start 1030, stop 1035; start 1041, stop 1051; start 1055; stop 1101)

1
27
25
33
31
116

Total Minutes of Pile Driving/Total Blows of Impact Driving:

27		25		33		31	
2+3+8+4+5+2+3		6+2+2+2+1+6+6		4+12+5+4+3+4+1		7+7+4+1+5+3+4	
#1: start: 9:35 stop: 9:37	#2: start: 9:46 stop: 9:49	#3: start: 9:53 stop: 10:01	#4: start: 10:02 stop: 10:06	#5: start: 10:08 stop: 10:13	#6: start: 10:15 stop: 10:17	#7: start: 10:20 stop: 10:23	
#8: start: 10:25 stop: 10:31	#9: start: 10:35 stop: 10:37	#10: start: 10:40 stop: 10:42	#11: start: 10:45 stop: 10:47	#12: start: 12:55 stop: 12:56	#13: start: 12:59 stop: 13:05	#14: start: 13:00 stop: 13:12	
#15: start: 13:16 stop: 13:20	#16: start: 13:23 stop: 13:25	#17: start: 13:29 stop: 13:31	#18: start: 13:37 stop: 13:41	#19: start: 13:45 stop: 13:48	#20: start: 13:53 stop: 13:57	#21: start: 13:58 stop: 13:58	
Chevron Richmond Refinery Point Orient Wharf Removal and Eelgrass Restoration Project							
#22: start: 14:00 stop: 14:07	#23: start: 14:10 stop: 14:17	#24: start: 14:19 stop: 14:23	#24: start: 14:26 stop: 14:27	#25: start: 14:30 stop: 14:35	#26: start: 14:37 stop: 14:40	#27: start: 14:40 stop: 14:48	

2. Impact hammer start and stop times, including any restrikes (only note breaks of 30 minutes or more):
(example: Pile 1: start 1030, stop 1130; restrike pile 1: 1355)

² For vibratory pile driving, note each time the hammer starts and stops. For impact pile driving, note the start and end time for each pile, unless hammering ceases for ≥30 minutes on that pile. Strike counts and times are included in a separate report.

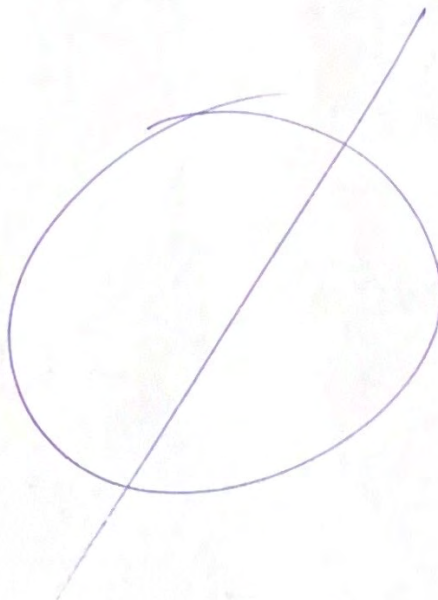
Date: Oct 12, 2022

Page 7 of 7

Monitor Initials: MB

Daily Marine Mammal Monitoring Data Sheet
Point Orient Warf Removal and Eelgrass Restoration Project

Additional Notes



Date: 10/13/2022

Page ___ of ___

7:12 AM Begin SCANNING baseline
12:00 Start 30MIN Post Project SCAN
Daily Marine Mammal Monitoring Summary Log

Point Orient Wharf Removal and Eelgrass Restoration Project

Monitor Name: TIM MILLIKEN

Weather/Visibility and Sea State - use Beaufort Scale on next page:

1



Tidal Level at Start/End of Work - use Tides app or refer to Richmond Harbor at tidesandcurrents.noaa.gov:

Low 2.54FT (m) @ 8:23 AM; High 5.87FT (m) @ 2:14 PM

General Human Activity in the Area:

Setup - Remove piles - set beams, vibrate hammer, running small boats, tug moving DB, collecting debris in water BREAK DOWN FOR WEEK

Monitoring Location(s) - show on diagram and take panoramic photo of field of view:

KNOLL NORTH SIDE

Are Castro Rocks visible (yes/no)? If yes, fill out page A-4: NA

Berth Number: N/A

Pile Type - include size and material:

WOOD / concrete encapsulated wood

Total Pile Count for the Day: 7 Equipment: Impact Vibratory

Total Minutes of Pile Driving - enter total time here¹: 24

¹ Note the start and end times for each individual pile on page 7.

Date: 10/13/2022

Monitor Initials: TM

The Beaufort scale

No.	Knots	Mph	Description	Effects at sea	Effects on land
0	0	0	Calm	Sea like a mirror	Smoke rises vertically
1	1-3	1-3	Light air	Ripples but no foam crests	Smoke drifts in wind
2	4-6	4-7	Light breeze	Small wavelets	Leaves rustle; wind felt on face
3	7-10	8-12	Gentle breeze	Large wavelets; Crests not breaking	Small twigs in constant motion; Light flags extended
4	11-16	13-18	Moderate wind	Numerous whitecaps Waves 1-4ft high	Dust, leaves and loose paper raised. Small branches move.
5	17-21	19-24	Fresh wind	Many whitecaps, some spray. Waves 4-8 ft high	Small trees sway
6	22-27	25-31	Strong wind	Whitecaps everywhere; Larger waves 8-13 ft high	Large branches move; Difficult to use umbrellas
7	28-33	32-38	V. strong wind	White foam from waves is blown in streaks; waves 13-20ft high	Whole trees in motion
8	34-40	39-46	Gale	Edges of wave crests break into spindrift	Twigs break off trees; Difficult to walk
9	41-47	47-54	Severe gale	High waves; sea begins to roll Spray reduce visibility; 20ft waves	Chimney pots and slates removed
10	48-55	55-63	Storm	V. high waves 20-30 ft blowing foam gives sea white appearance	Trees uprooted
11	56-63	64-72	Severe storm	Exceptionally high waves; 30-45 ft high	Structural damage Widespread damage
12	63	73	Hurricane	Air filled with foam; visibility reduced White sea; waves over 45ft high	Widespread damage; rare

Date: 10/13/2022

Monitor Initials: TM

Daily Marine Mammal Monitoring Data Sheet - Point Orient Warf Removal and Eelgrass Restoration Project

Time of Observation	Observer Initials	Work Activity ¹	Species ²	Observation Number ³	Age Class ⁴	Identifying Marks	Distance from Pile (meters) ⁶	Direction of Travel	Bearing	Behavior ⁷
First: 737 Last: 737	TM	B	HASE	1	ADUL		40m	E		SWIMMING
First: 940 Last: 946	TM	B	HASE	2	ADUL		100	EE		SWIMMING
First: 1045 Last:	TM	B	HASE	3	"		150m	W		LOAFING ON SURFACE
First: 1120 Last: 1120	TM	A	HASE	4	"		150m	W		SWIMMING
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
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First: Last:										
First: Last:										
First: Last:										
Footnote 1:	¹ Activity: Indicate if observation is: within the 30-minute period before pile-driving (B); during active pile-driving (D); or within the 30-minute period after pile driving (A)									
Footnote 2:	² Species Abbreviations: California Sea Lion = CASL Pacific Harbor Seal = HASE Northern Elephant Seal = NOES Harbor Porpoise = HAPO									
Footnote 3:	³ Examples: HASE1, HASE2. Use these numbers for reference on page 6 diagram.									
Footnote 4:	⁴ Species Age Classes: CASL = juvenile, subadult male, adult male HASE = juvenile, adult HAPO = calf, adult									
Footnote 5:	⁵ Distance: Provide an approximate distance from location of pile.									
Footnote 6:	⁶ Behavior examples: Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters. Add a reference number if comments are provided on a separate sheet.									

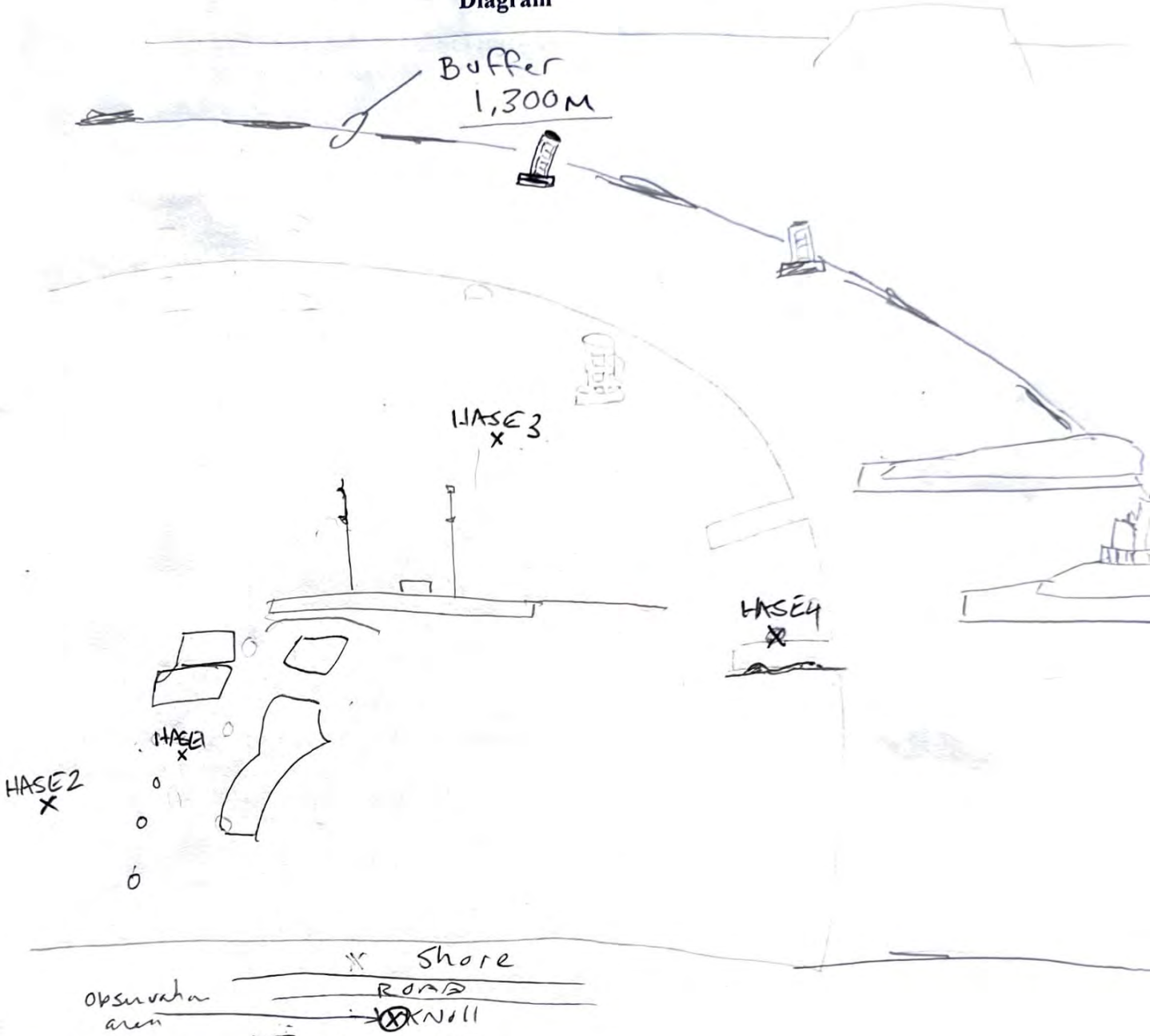
Date: 10/13/2022

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Monitor Initials: TM

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Diagram



Biological Monitor: Tim M. Liken

Signature: TM

Date: 10/13/2022

Page 6 of 7

Monitor Initials: JM

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Pile Driving Start and Stop Times^2

1. Vibratory hammer start and stop times (include breaks):

(example: Pile 1: start 1030, stop 1035; start 1041, stop 1051; start 1055; stop 1101)

Table with 4 columns: PILE, ON, OFF, TYPE. Contains 7 rows of data for pile driving times and types (WOOD).

DONE FOR DAY

24

2. Impact hammer start and stop times, including any restrikes (only note breaks of 30 minutes or more):

(example: Pile 1: start 1030, stop 1130; restrike pile 1: 1355)

^2 For vibratory pile driving, note each time the hammer starts and stops. For impact pile driving, note the start and end time for each pile, unless hammering ceases for >=30 minutes on that pile. Strike counts and times are included in a separate report.

Date: 10/13/2022

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Monitor Initials: TM

Daily Marine Mammal Monitoring Data Sheet
Point Orient Wharf Removal and Eelgrass Restoration Project

Additional Notes



2





Date: Oct 13, 2022

Page 1 of 7

Daily Marine Mammal Monitoring Summary Log
Point Orient Wharf Removal and Eelgrass Restoration Project

Monitor Name:

Matthew Bettelheim (+ Tim Milliken)

(A)

(B)

Weather/Visibility and Sea State - use Beaufort Scale on next page:

55° @ 0710 AM, Beaufort Scale 1, high cloud cover, clear visibility

60° @ 1225 PM, Beaufort Scale 2, high visibility

Tidal Level at Start/End of Work - use Tides app or refer to Richmond Harbor at tidesandcurrents.noaa.gov:

3.24 ft @ 0710 AM

4.92 ft @ 1225 PM

General Human Activity in the Area:

Pier work + typical boat/shipping activity in channel

Monitoring Location(s) - show on diagram and take panoramic photo of field of view:

Spinnaker Drive overlook (A)

Are Castro Rocks visible (yes/no)? If yes, fill out page A-4: yes

Berth Number: n/a

Pile Type - include size and material:

12 in timber

Total Pile Count for the Day:

7 piles

Equipment: Impact Vibratory

Total Minutes of Pile Driving - enter total time here¹:

24 min

¹ Note the start and end times for each individual pile on page 7.

Date: Oct 13, 2022

Monitor Initials: MB

The Beaufort scale

No.	Knots	Mph	Description	Effects at sea	Effects on land
0	0	0	Calm	Sea like a mirror	Smoke rises vertically
1	1-3	1-3	Light air	Ripples but no foam crests	Smoke drifts in wind
2	4-6	4-7	Light breeze	Small wavelets	Leaves rustle; wind felt on face
3	7-10	8-12	Gentle breeze	Large wavelets; Crests not breaking	Small twigs in constant motion;
4	11-16	13-18	Moderate wind	Numerous whitecaps Waves 1-4ft high	Light flags extended Dust, leaves and loose paper raised. Small branches move.
5	17-21	19-24	Fresh wind	Many whitecaps, some spray. Waves 4-8 ft high	Small trees sway
6	22-27	25-31	Strong wind	Whitecaps everywhere; Larger waves 8-13 ft high	Large branches move; Difficult to use umbrellas
7	28-33	32-38	V. strong wind	White foam from waves is blown in streaks; waves 13-20ft high	Whole trees in motion
8	34-40	39-46	Gale	Edges of wave crests break into spindrift	Twigs break off trees; Difficult to walk
9	41-47	47-54	Severe gale	High waves; sea begins to roll Spray reduce visibility, 20ft waves	Chimney pots and slates removed
10	48-55	55-63	Storm	V. high waves 20-30 ft, blowing foam over sea while appearance	Trees uprooted Structural damage
11	56-63	64-72	Severe storm	Exceptionally high waves, 30-45 ft high	Widespread damage
12	63	73	Hurricane	Air filled with foam, visibility reduced White sea; waves over 45ft high	Widespread damage; rare

Chevron Richmond Refinery
Point Orient Wharf Removal and Eelgrass Restoration Project

Date: Oct 13, 2022

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Monitor Initials: MB

Daily Marine Mammal Monitoring Data Sheet - Point Orient Wharf Removal and Eelgrass Restoration Project

Time of Observation	Observer Initials	Work Activity ¹	Species ²	Observation Number ³	Age Class ⁴	Identifying Marks	Distance from Pile (meters) ⁵	Direction of Travel	Bearing	Behavior ⁶
First: 1025 Last: 1025	MB	Shiny side	HASE	#1	Adult	n/a	150m	N	30'	bobbing @ surface, then dove
First: 1033 Last: 1033	MB	Shiny side	HASE	#2	Adult	n/a	300m	S	150'	bobbing @ surface, then dove
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
First: Last:										
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First: Last:										

¹Activity: Indicate if observation is: within the 30-minute period before pile-driving (B); during active pile-driving (D); or within the 30-minute period after pile driving (A)

²Species Abbreviations: California Sea Lion = CASL Pacific Harbor Seal = HASE Northern Elephant Seal = NOES Harbor Porpoise = HAPO

³Examples: HASE1, HASE 2 Use these numbers for reference on page 6 diagram.

⁴Species Age Classes: CASL = juvenile, subadult male, adult male HASE = juvenile, adult HAPO = calf, adult

⁵Distance: Provide an approximate distance from location of pile.

⁶Behavior examples: Stationary at surface, swimming (slow or fast), transiting, foraging, resting, looking around. Note if mammal appears to be attentive to project activities, or displays any behavior changes related to project activities, and describe the project activity. Note any human-caused disturbances such as recreational boating or helicopters. Add a reference number if comments are provided on a separate sheet.

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PHOTO LOG

upload photos to network, include date and monitoring position in file name

Photo Number	Photo Taken Before (B), During (D), or After (A) Pile Driving	Description
#1 6516		Panoramic photo from monitoring location
6516	Before	Pano of survey area
6517	Before	Photo of work site
6523	After	Photo of work site

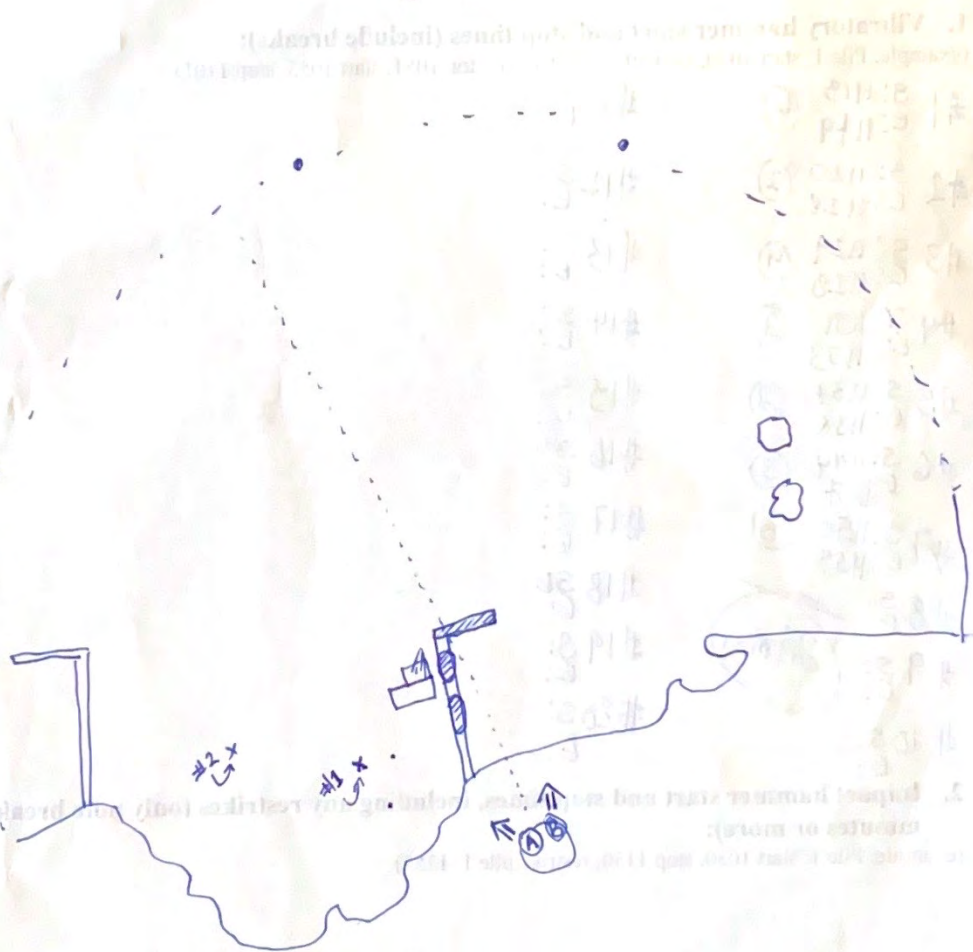
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Diagram



Biological Monitor: MATTHEW BETERHEIM

Signature: *Matthew Beterheim*

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Pile Driving Start and Stop Times²

1. Vibratory hammer start and stop times (include breaks):

(example: Pile 1: start 1030, stop 1035; start 1041, stop 1051; start 1055; stop 1101)

#1 S: 1113 E: 1119 (1)	#11 S: E:
#2 S: 1120 E: 1122 (2)	#12 S: E:
#3 S: 1124 E: 1128 (4)	#13 S: E:
#4 S: 1131 E: 1133 (2)	#14 S: E:
#5 S: 1137 E: 1139 (2)	#15 S: E:
#6 S: 1144 E: 1147 (3)	#16 S: E:
#7 S: 1150 E: 1155 (5)	#17 S: E:
#8 S: E: (24 min)	#18 S: E:
#9 S: E:	#19 S: E:
#10 S: E:	#20 S: E:

2. Impact hammer start and stop times, including any restrikes (only note breaks of 30 minutes or more):

(example: Pile 1: start 1030, stop 1130; restrike pile 1: 1355)



² For vibratory pile driving, note each time the hammer starts and stops. For impact pile driving, note the start and end time for each pile, unless hammering ceases for ≥30 minutes) on that pile. Strike counts and times are included in a separate report.

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Additional Notes

