terraphase engineering

December 9, 2016

U.S. Environmental Protection Agency, Region 9
Water Enforcement Section II
75 Hawthorne Street (ENF 3-2)
San Francisco, CA 94105-3901

Attention: Juliet Hannafin

Subject: Response to Comments
Sediment Investigation Results and Proposed Additional Sediment Sampling
Sims Group USA Corporation, Redwood City, California

Dear Ms. Hannafin:

On behalf of Sims Group USA Corporation (Sims), Terraphase Engineering Inc. (Terraphase) submitted the *Interim Sediment Investigation Results and Proposed Additional Sediment Sampling* report (dated August 31, 2016) to the United States Environmental Protection Agency (EPA). On October 26, 2016, the EPA provided comments on the report. This letter responds to EPA's comments.

**Background**

The sediment investigation at the Sims facility is being performed in accordance with Paragraph 12 of the Consent Decree between the EPA and Sims, Case 3:14-cv-04209, effective December 1, 2014 ("the Consent Decree"), and the Final Sediment Sampling and Analysis Plan and Quality Assurance Project Plan (SSAP/QAPP), approved by the EPA on April 25, 2016.

The August 31, 2016, interim report included a series of figures, several of which included a dashed line indicating the mean high water line (MHW) estimated from Google Earth imagery. Sims recently commissioned a professional land surveyor to survey the MHW line along the Sims waterfront, and at the three background sampling stations. The revised figures that show proposed sampling locations (Figures 17, 18a, 18b, and 18c), along with the surveyed MHW line, are provided with this letter.

**EPA Comments and Responses**

The EPA comments are reproduced below in *italic* font, followed by our responses.

<u>EPA Comment</u>
*PROJECT AREA SAMPLING*
***Add 8 Core Locations for lateral distribution****: The transect core locations proposed by Sims to the south of Wharf 3 (locations 7, 8, 9, 40) should also include core samples at locations 39 and 38. In addition, the transect core locations proposed by Sims to the north of Wharf 3 (locations 47, 48, 49, 50) should also include location 52. Lastly, in addition to the core samples for locations 5 and 41 proposed by Sims, EPA believes core samples should also be taken at locations 6, 4, 2, 43 and 44.*

Response
The additional core sampling locations requested by the EPA will be added to the scope of work. A total of 18 sediment cores will be collected. The core sample identification numbers are summarized in Table 1. Figure 17 has been revised to indicate planned core sediment sample locations.

EPA Comment
***Core Depths for vertical distribution:*** *Sims has proposed advancing the target depth to 5 feet bss. In order to adequately characterize the nature and extent of the vertical contamination, Sims may have to go deeper than 5 feet bss. Along with analyzing samples down to 5 feet bss, Sims should at least take contingency samples as deep as equipment refusal.*

Response
The vibracore will be fitted with a 10-foot core barrel and driven to the maximum depth possible, based on equipment capability and/or refusal. In addition to the sediment samples collected from the uppermost 5 feet, as described in the August 31, 2016, report (i.e., 1.5-2.0 feet, 2.5-3.0 feet, 3.5-4.0 feet, and 4.5-5.0 feet below the sediment surface), one sample from each sediment core will be collected from the lowermost 1 foot interval of the recovered core (depth will vary depending on actual core recovery). The deeper core sample will be processed and described in the same manner as the primary samples. The deeper core sample will be submitted to the analytical laboratory for archiving as a contingency sample; no analysis of these contingency samples is planned at this time. The sediment core samples are summarized by location in Table 1.

EPA Comment
***Surface Samples****: Sims has proposed taking 5 more surface samples within the project area (3 locations approximately 25 feet south of locations 32, 35, and 38, and 2 locations north of locations 51 and 52). We agree with those 5 locations, but believe that Sims should also take at least one other surface sample south of location 19.*

Response
Figure 17 has been revised to indicate that a surface sediment sample will be collected at location 19 in addition to the previously proposed locations. A total of six surface ponar grab samples will be collected.

EPA Comment
*BACKGROUND AREA SAMPLING*
***Surface Samples****: Sims has proposed taking 6 additional surface samples at each of the 3 background areas (Figures 18a, b, and c). In general, we agree with taking those samples, but for comparison, we believe they should be at elevations that are in line with the riprap surface sediments that were taken in the project area. Based on the aerial photos provided in its report, the locations Sims has proposed in the background areas seem closer to the mean high water line than the surface riprap samples within the project area. Please add a mean high water line to Figures 18a, 18b, and 18c and evaluate if the background sample locations need to be adjusted to match the elevation of similar grab samples in the project area.*



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Response
The surveyed MHW line has been added to all figures that depict the background sample locations from the prior phase of investigation, and the proposed additional locations (Figures 18a, 18b and 18c). The proposed background locations are all below the MHW line.

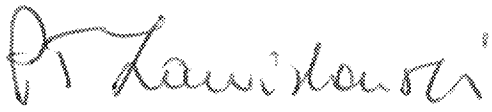
EPA Comment
***SSAP/QAPP:*** *Except for the additional sample locations, we expect the same techniques, procedures and protocol will be followed as was in the conditionally approved SSAP/QAPP with modifications outlined in the email from Juliet Hannafin to Melissa Cohen and Peter Zawislanski on June 9, 2016.*

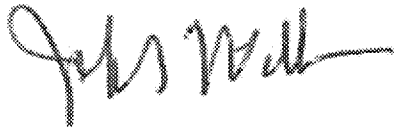
Response
The additional sampling and analysis will be completed in accordance with the SSAP/QAPP, except for the use of the vibracore device for sediment coring instead of the piston core sampler described in the original plan. The vibracore is required to penetrate to the deeper coring depths. A vibracore standard operating procedure that describes the use of this equipment is attached to this letter. This SOP has been slightly revised from the version included with Terraphase's August 31, 2016, letter.

**CLOSING**

Work planning will commence upon receipt of EPA approval. Field work will be implemented within 60 days of approval, pending contractor availability. If you have any questions or comments regarding the information in the letter, please contact Peter Zawislanski at peter.zawislanski@terraphase.com or 510-645-1858.

For Terraphase Engineering Inc.





Peter Zawislanski, PG, CHG
Principal Hydrogeologist

Jeff Wallace, PG
Principal Geologist

Enclosures:

Table 1 - Summary of Planned Additional Core Sampling
Figures:
17 Proposed Additional Surface and Coring Sediment Locations
18a Proposed Additional Background Riprap Sediment Sample Locations – Wharf 2
18b Proposed Additional Background Riprap Sediment Sample Locations – Wharf 4
18c Proposed Additional Background Riprap Sediment Sample Locations – Wharf 5
Standard Operating Procedure – Sediment Sampling with Vibracore

cc: Rich Campbell, EPA
Melisa Cohen, Sims Metal Management
Steven Shinn, Sims Metal Management
Scott Miller, Esq., Sims Metal Management
Margaret Rosegay, Esq., Pillsbury Winthrop Shaw Pittman



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**Table 1**
Summary of Planned Additional Core Sampling
Sims Group USA Corporation, Redwood City, California

| Location | No. of Samples to be Collected | Notes |
|---|---|---|
| *North of Conveyor* | | |
| 41 | 5 | |
| 43 | 5 | |
| 44 | 5 | |
| 47 | 5 | |
| 48 | 5 | |
| 49 | 5 | |
| 50 | 5 | |
| *South of Conveyor* | | |
| 2 | 5 | |
| 4 | 5 | |
| 5 | 5 | |
| 6 | 5 | |
| 7 | 3 | Previously cored to 3 feet; skip the two shallowest sample intervals |
| 8 | 3 | Previously cored to 3 feet; skip the two shallowest sample intervals |
| 9 | 3 | Previously cored to 3 feet; skip the two shallowest sample intervals |
| 38 | 5 | |
| 39 | 5 | |
| 40 | 5 | |
| *North of Vehicle Ramp* | | |
| 52 | 5 | Previous surface sample collected |
| **TOTAL CORE SAMPLES** | **84** | |

**Sediment Core Sample Depths (except as noted above):**
1.5-2.0 feet
2.5-3.0 feet
3.5-4.0 feet
4.5-5.0 feet
Lower 1 foot of recovered core (archive/contingency sample)



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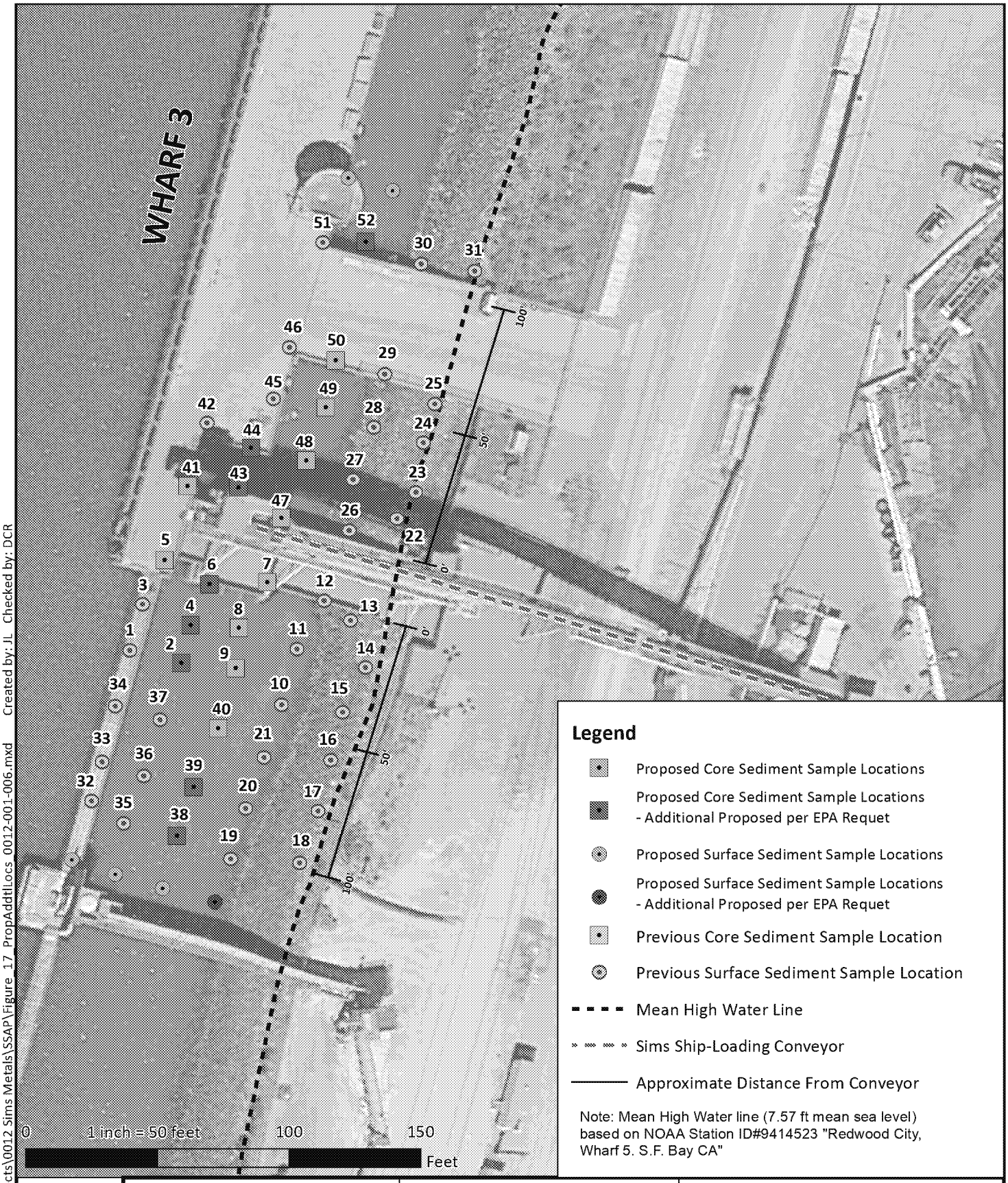


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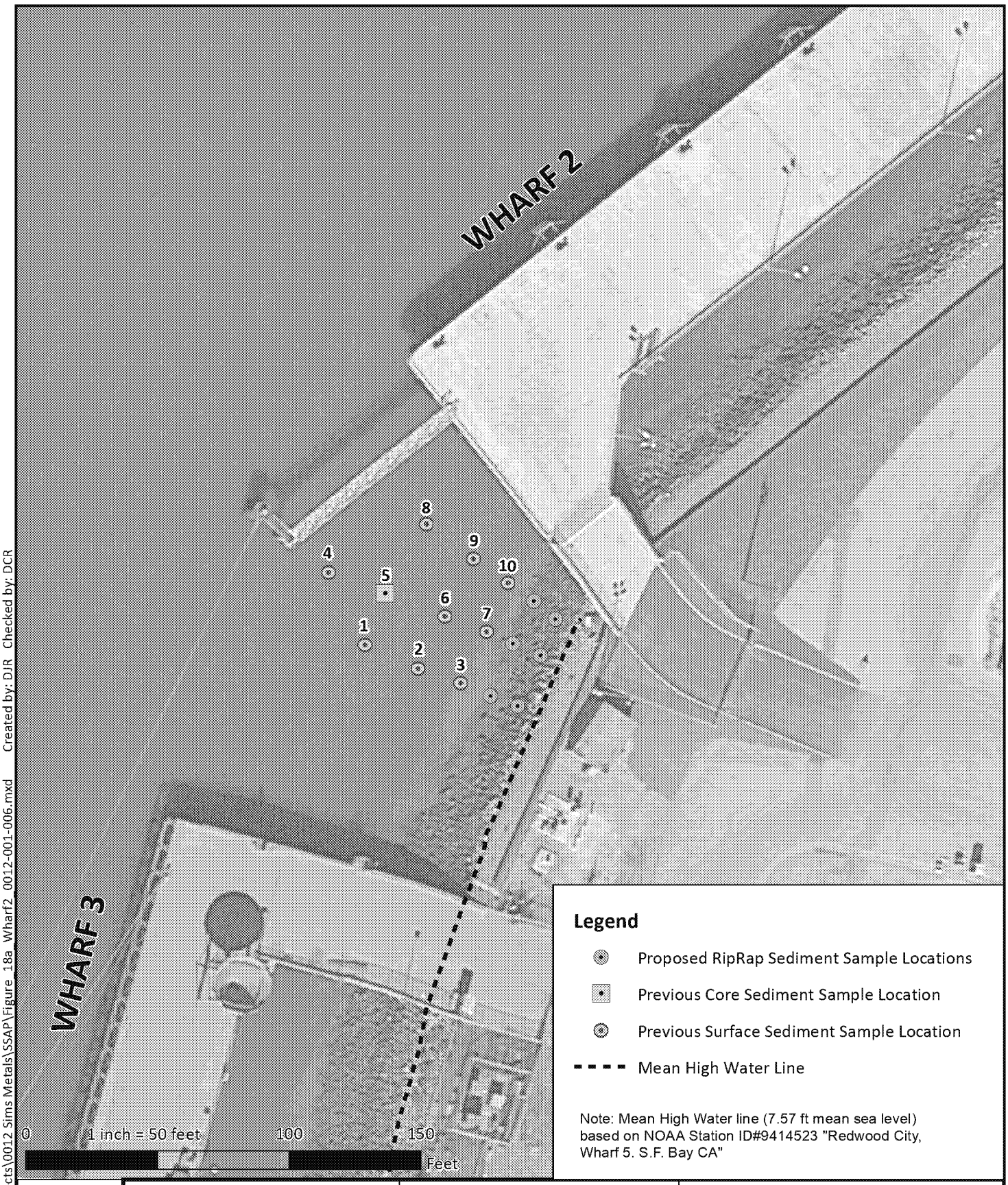
| | |
|---|---|
| CLIENT: Sims Metal Management | **Proposed Additional Surface and Coring Sediment Locations - Wharf 3** |
| PROJECT: Sediment Investigation Report | |
| PROJECT NUMBER: 0012.001.007 | **FIGURE 17** |

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| CLIENT: Sims Metal Management | **Proposed Additional Background Riprap Sediment Sample Locations - Wharf 2** |
| PROJECT: Sediment Investigation Report | |
| PROJECT NUMBER: 0012.001.007 | **FIGURE 18a** |

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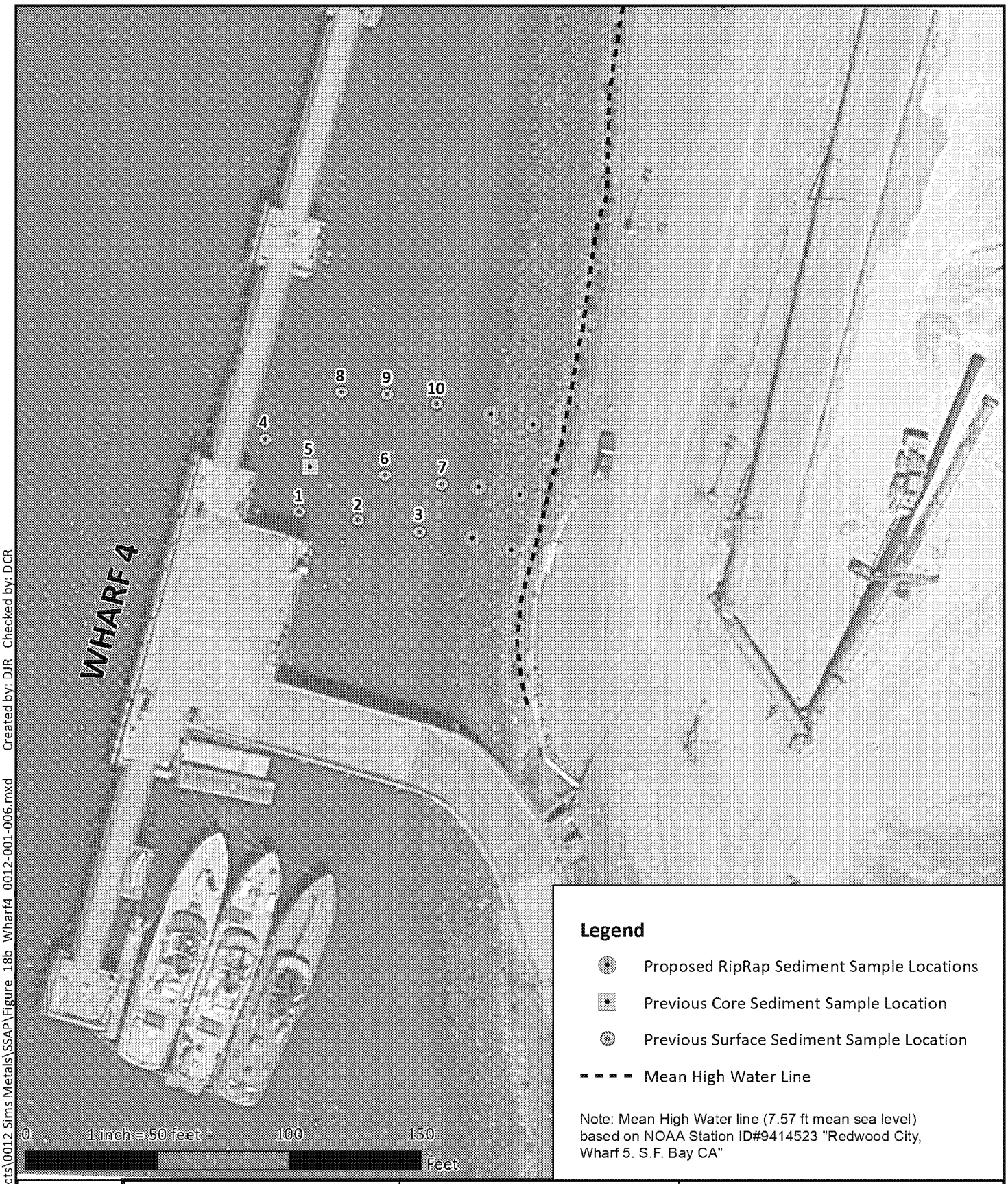


**Legend**

- Proposed RipRap Sediment Sample Locations
- Previous Core Sediment Sample Location
- Previous Surface Sediment Sample Location
- Mean High Water Line

Note: Mean High Water line (7.57 ft mean sea level) based on NOAA Station ID#9414523 "Redwood City, Wharf 5. S.F. Bay CA"

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|---|---|
| CLIENT: Sims Metal Management | **Proposed Additional Background Riprap Sediment Sample Locations - Wharf 4** |
| PROJECT: Sediment Investigation Report | |
| PROJECT NUMBER: 0012.001.007 | **FIGURE 18b** |

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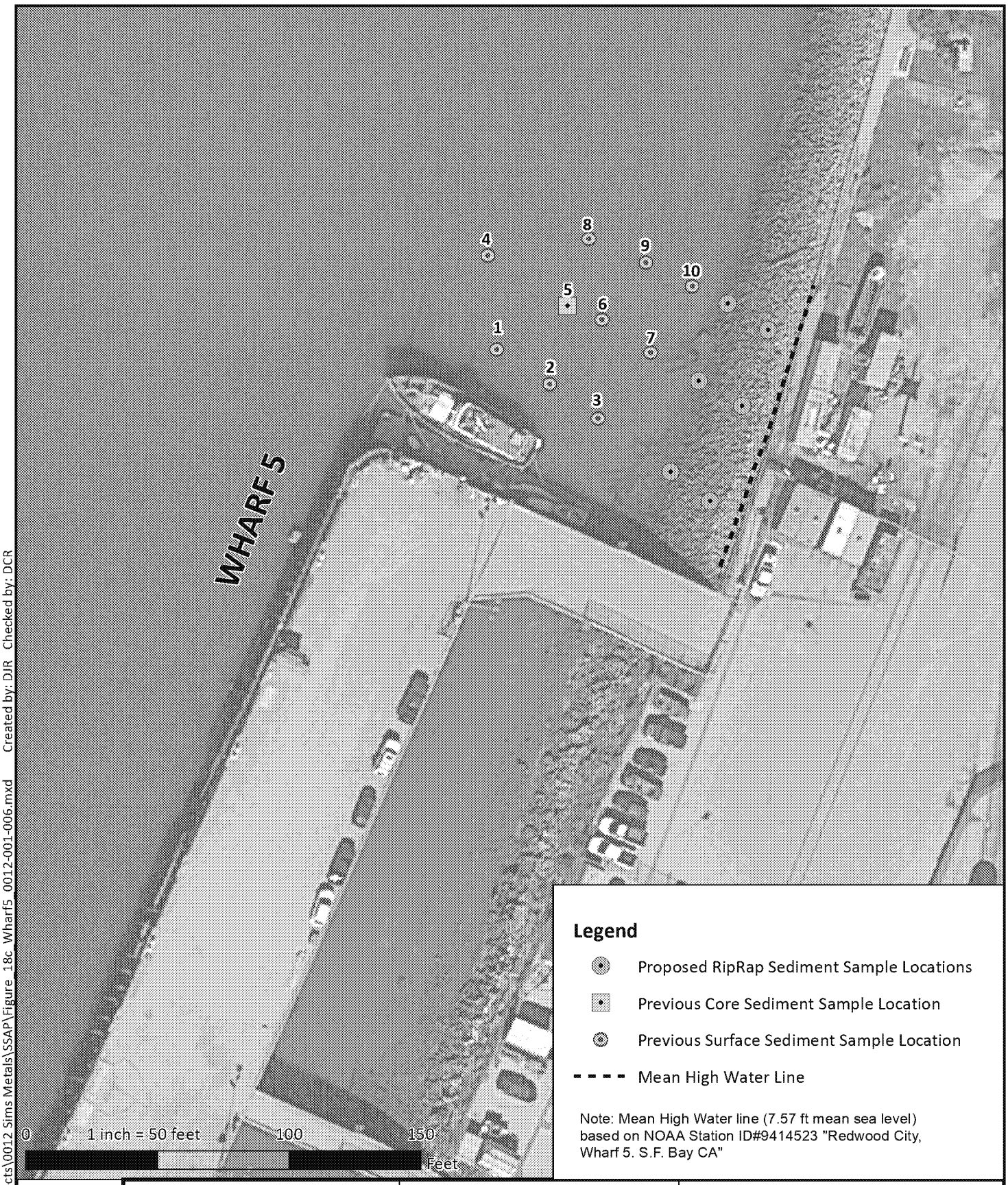


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|---|---|
| CLIENT: Sims Metal Management | **Proposed Additional Background Riprap Sediment Sample Locations - Wharf 5** |
| PROJECT: Sediment Investigation Report | |
| PROJECT NUMBER: 0012.001.007 | **FIGURE 18c** |

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# SEDIMENT SAMPLING WITH VIBRACORE

## 1.0 PERFORMANCE OBJECTIVE

The purpose of this Standard Operating Procedure (SOP) document is to describe the procedures that shall be used for the collection of sediment samples for chemical analysis by vibracore methods.

## 2.0 EQUIPMENT AND MATERIALS

The following is a list of equipment necessary to carry out the procedures contained in this SOP:

- Approved documents, including sampling plan and health and safety plan
- Health and safety equipment
- Sampling plan and sample coordinates
- Camera and cell phone
- Sampling vessel equipped with outboard motor, derrick, winch assembly, spuds, or anchors
- Differential global positioning system (DGPS) navigation
- Vibracore sampling device and associated equipment
- Core tubes and caps
- Decontamination materials
- Lead line
- Tape measure
- Sample processing equipment (stainless steel bowls, sieves, hand tools, etc.)

## 3.0 PROCEDURES

### 3.1 General

Sediment sampling should be performed in teams of two or more persons for safety. The following are general procedures to be followed when collecting sediment samples.

1. Wear appropriate safety (e.g., flotation vests) and protective gear (e.g., gloves, boots, and glasses).

2. Use DGPS to maneuver to sample target, secure vessel in place with spuds or anchors.

3. Identify the sampling location, describe the core and samples collected, take photographs, and record on sample logs and project-specified field forms.

4. Measure the depth of water.

5. Pre-label sample containers. Use a water-proof marker and include sample number, location, date collected, and initials of sampler.



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Depending on the site conditions, number of cores to be collected, and production rate, consideration should be given to establishing a core processing area off the sampling vessel. However, the field team may elect to process cores on board if practical.

## 3.2 Using the Vibracore

Subsurface sediment core samples will be collected at locations described in the sampling plan. The cores will be collected into a soft polyethylene liner inside a 4-inch-diameter aluminum tube.

Sediment core collection will be performed using the following general procedures:

1. A new polyethylene core liner of the desired length will be placed into the core tube and secured to the vibratory assembly head and deployed from the vessel. The core diameter will be approximately 4 inches. A core catcher will be used.
2. The cable umbilical to the vibrator assembly will be drawn taut and perpendicular, as the core rests on the bottom sediment.
3. The location will be recorded, and depth to sediment will be measured with a survey tape attached to the head assembly and lead line.
4. The core tube will be vibratory-driven into the sediment.
5. A continuous core sample will be collected to the designated coring depth or until refusal.
6. The depth of core penetration will be measured and recorded.
7. The vibrator motor will be turned off and the core barrel will be extracted from the sediment using the winch.
8. While suspended from the tripod or A-frame hoist, sediment adhered to the assembly head and outside of the core barrel will be sprayed off with site water and then placed on the vessel deck. The core catcher will be removed and the core will be extracted from the tube and placed onto a tray for examination and sample collection.
9. The core sample will be evaluated at the visible ends of the core tube, the length of recovered sediment will be recorded, and, if accepted, the core tube will be cut open to facilitate collection of sediment material.

Acceptance criteria for sediment core samples are as follows:

1. Overlying water is present and the surface is intact.
2. The core tube appears intact without obstruction or blocking.
3. Recovery is greater than 75 percent of drive length.



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If sample acceptance criteria are not achieved, the sample is rejected unless modified acceptance criteria are approved by the Field Team Leader and/or multiple attempts have been made at the sampling location.

Personnel will record field conditions and drive notes on a standard core log. Logs will include the following information:

- Sample ID
- Date and time of collection of each sediment core sample
- Names of field personnel collecting and handling the samples
- Geographic position of the actual coring location as determined by DGPS
- Depth to sediment surface
- Length of drive penetration and estimated recovery measurements
- Characteristics of the sediment including:
  - Texture
  - Color (Munsell scale)
  - Presence and type of debris, especially metal debris
  - Visible staining
- Qualitative notation of apparent resistance of sediment column to coring (how the core drove)
- Other observations

## 3.3 Sample Collection

Samples will be collected from the core at the prescribed intervals in accordance with the sampling plan and placed into sample jars. Excess sediment will be containerized and managed as investigation-derived waste.

## 3.4 Equipment Decontamination

Reusable equipment that may come in contact with the sediment samples will be properly decontaminated between sample locations to prevent cross-contamination of samples. Field personnel should first change all personal protective equipment that will come in contact with the equipment being decontaminated and rinse all visible debris (e.g., sediment, leaves, twigs, etc.) from the equipment using site water. The decontamination process will include the following:

- washing the equipment with a laboratory-grade detergent and water solution,
- rinsing with distilled water,
- rinsing (e.g., paper towel wipes) with a 10-percent nitric-acid solution, and
- a final rinse with distilled water.



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After the equipment is decontaminated, if it will not be used immediately, keep the equipment clean by placing it in dedicated plastic or stainless-steel bins, boxes, or other appropriately sized containers.



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