



1423 Third Avenue, Suite 300
Seattle, Washington 98101
Phone 206.287.9130
Fax 206.287.9131
www.anchorqea.com

MEMORANDUM

To: Joyce Mercuri, Washington State Department of Ecology **Date:** September 2, 2009
From: David Templeton and Joy Dunay, Anchor QEA **Project:** 040289-02
Cc: Steve Misiurak, City of Gig Harbor
William Joyce, Salter Joyce Ziker, PLLC
Re: Eddon Boat Park Long-Term Monitoring Plan Year 1 Report

This Long-Term Monitoring Year One (Year 1) memorandum for the Eddon Boat Park Site (Site) was prepared on behalf of the City of Gig Harbor (the City) to comply with the requirements in the Washington State Department of Ecology (Ecology) approved *Long-Term Monitoring Plan* (LTMP; Anchor 2009). The LTMP complies with the requirements described in the Cleanup Action Plan (CAP; Anchor 2008), which is included as an exhibit to the Agreed Order (AO) DE 5597 (Ecology 2008).

The areas included in the LTMP are cap area SMU-3 and enhanced natural recovery (ENR) area SMU-2 (Figure 1). SMU-3 contained three of ten sample locations that exceeded the total mercury sediment quality standard (SQS) cleanup levels. Additionally, three samples in this area contained tributyltin (TBT) above benchmark values as described in the CAP. As part of the cleanup action this area was capped with 12 inches of sand and overlain by 6 inches of habitat mix. SMU-2 contained total mercury above the cleanup screening level (CSL) and TBT porewater above Site cleanup levels (0.15 micrograms per liter [$\mu\text{g/L}$]) and was dredged to 2 feet below mudline and then overdredged to remove possible contaminated residuals. Post-construction, one location in this area (SE-03) exceeded the TBT Site cleanup level, so ENR material consisting of a 1-foot sand layer was placed followed by a 6-inch habitat mix layer.

The objective of the Year 1 monitoring event was to visually inspect and photograph SMU-2 and SMU-3 to verify that the sediment cap has achieved its performance standard. The performance standard is met if the cap has remained in place and has not substantially

eroded over time by natural and anthropogenic forces. This was assessed through visual inspection of the cap surface layer to confirm that the material (i.e., habitat mix) has remained in place. In addition, the visual inspection included the measurement of any accumulations of fine-grained material that have deposited on top of the surface layer (i.e., habitat mix). If greater than 2 centimeters (cm) of fine-grained material was identified on top of the surface layer, further assessment of the cap, consisting of taking hand-cores, was conducted to determine if the cap material has remained in place. Photographs were taken to document the findings of the visual inspection.

Visual inspections were performed on June 23, 2009 between 1200 and 1300 hours. During this time, the tidal elevation was approximately -4.0 feet mean lower low water (MLLW), exposing SMU-2 and part of SMU-3 (including location SE-03 with the TBT exceedance). Digital photographs were taken in each area from locations as marked on Figures 2 and 3. As shown on the photographs, the cap material is present in all areas with minimal (less than 2 cm) accumulation of fine-grained material. The visual inspection did not identify any areas of concern (i.e., areas where cap material is no longer present). Based on the visual survey and associated photographs, the cap and ENR areas are achieving performance standards, and no additional remedial actions are recommended.

In conclusion, Year 1 monitoring was performed in accordance with the Ecology-approved LTMP. Visual inspection confirmed that the cap material is present in SMU-3 and shows no sign of erosion. As expected, fine-grained material is beginning to accumulate, and recolonization is evident. Similarly, the material placed in SMU-2 is present, has not eroded, and is showing signs of deposition. This information confirms that the cleanup action is functioning as desired and in accordance with the CAP.

Visual inspections will occur during spring low tides for the next 4 years. Additionally, in Year 3, chemical monitoring will take place in both SMU-2 and SMU-3.

Attachments:

- Figure 1 Site Areas and Features
 - Figure 2 SMU-3 Visual Inspection Results
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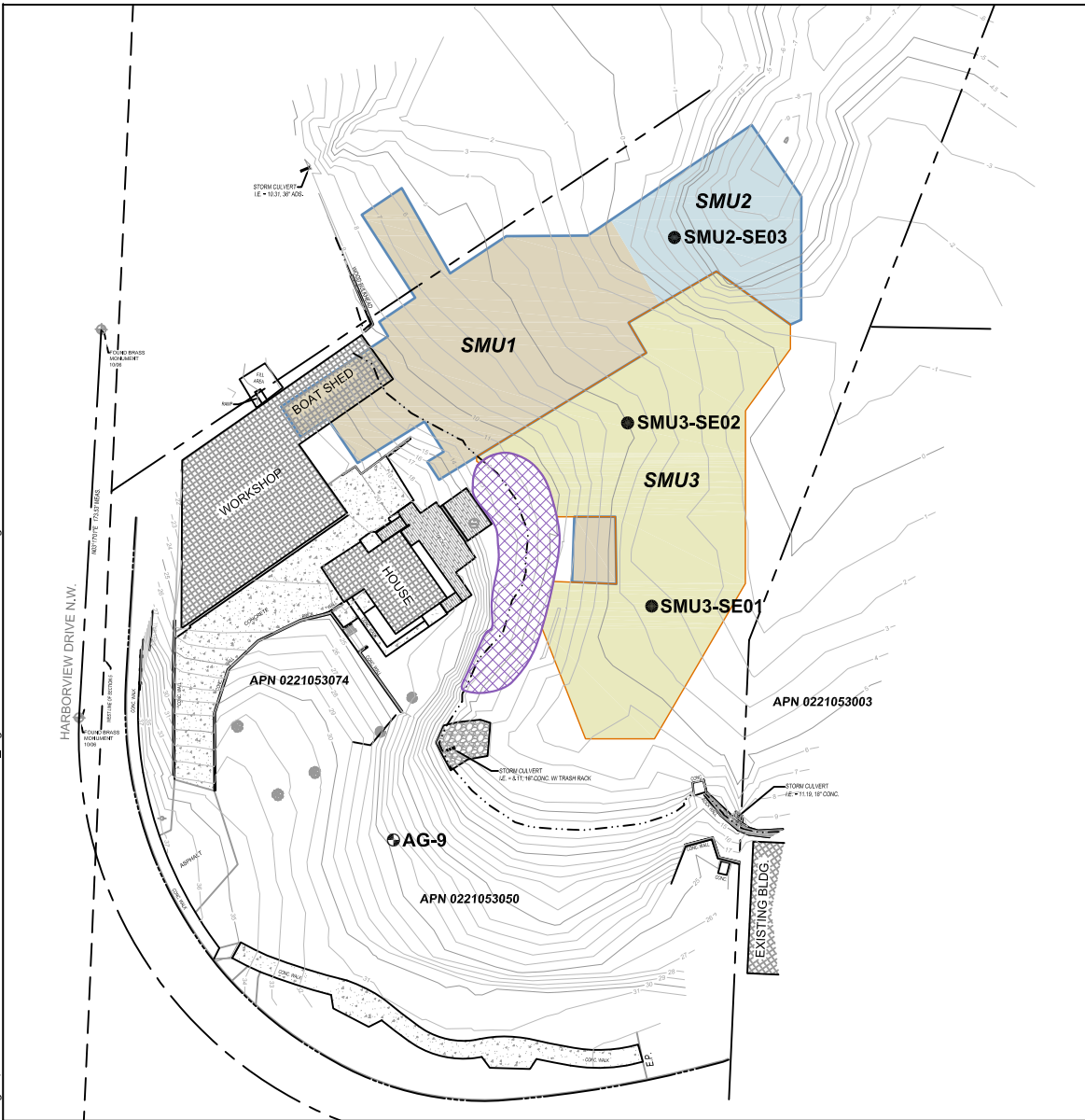
Figure 3 SMU-2 Visual Inspection Results

References

Anchor Environmental, L.L.C. (Anchor). 2008. Exhibit B. Cleanup Action Plan for Eddon Boatyard Site. Gig Harbor, Washington. June.

Anchor. 2009. *Long-Term Monitoring Plan*. Gig Harbor, Washington. January.

Washington State Department of Ecology (Ecology). 2008. Agreed Order No. DE 5597. Ecology.

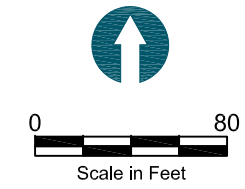


Legend

-  Dredge And Backfill Boundary
-  Enhanced Natural Recovery Area
-  Cap Boundary
-  Existing Salt Marsh Vegetation Restricted Area (No Equipment, Dredging, or Material Placement Allowed)
-  Stormwater Outfall
-  Approximate Ordinary High Water Mark (OHWM)
-  Bathymetric/Topographic Contour (in Feet)
-  Confirmatory Sampling Location - Year 3 Monitoring (2011)

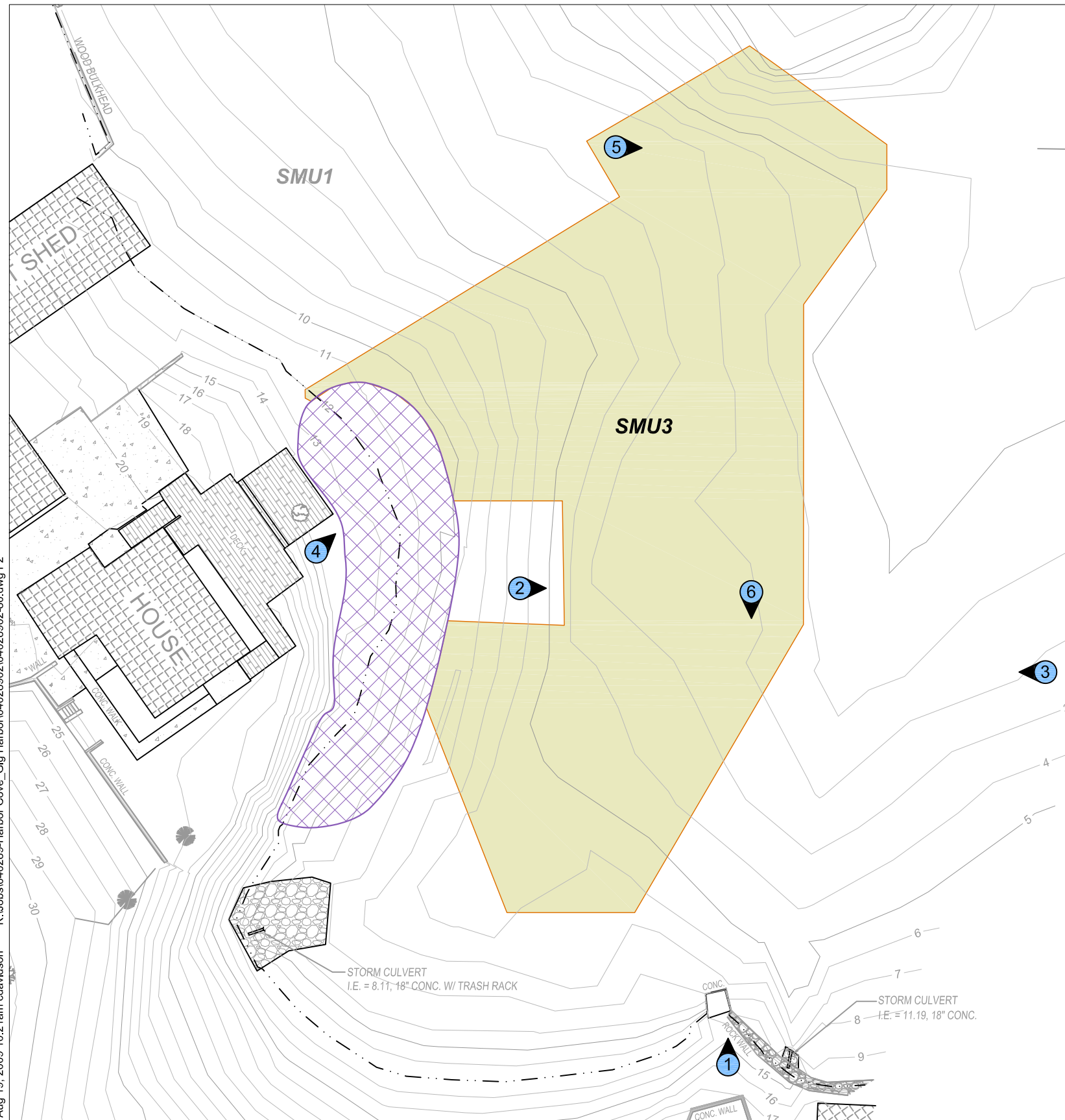
Sample ID	Northing	Easting
SMU2-SE03	736652.569	1122667.978
SMU3-SE01	736488.006	1122657.831
SMU3-SE02	736569.785	1122647.067

Datum: NAD 83 WA SOUTH









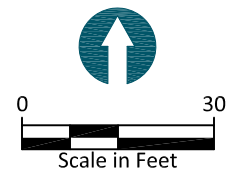
Note: Bathymetric and topographic survey by Prizm Surveying, Inc. dated 12/11/2008.

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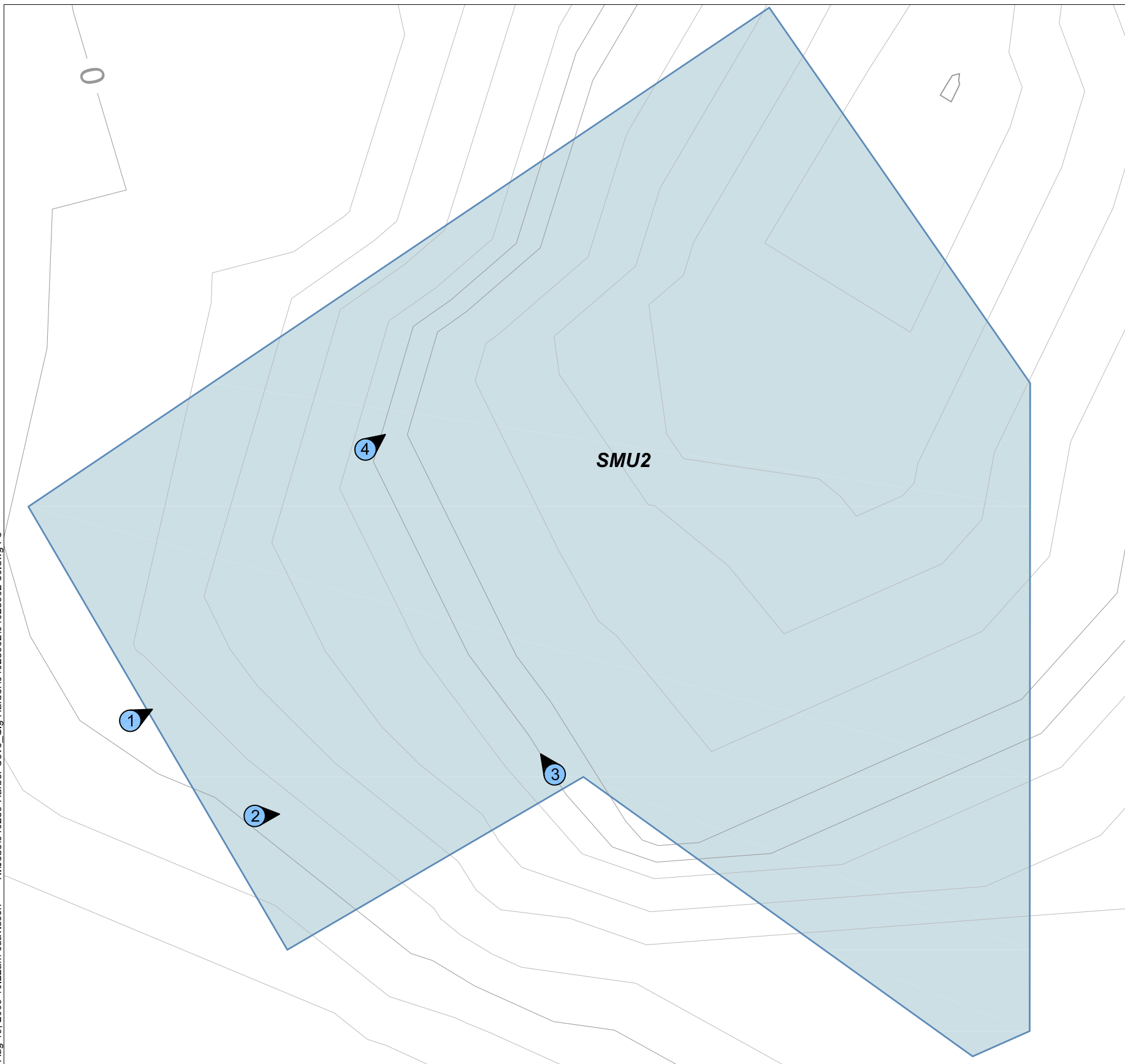
Legend

-  Cap Boundary
-  Existing Salt Marsh Vegetation Restricted Area (No Equipment, Dredging, or Material Placement Allowed)
-  Stormwater Outfall
-  Approximate Ordinary High Water Mark (OHWM)
-  Bathymetric/Topographic Contour (in Feet)
-  Photograph Location and Orientation






Note: Bathymetric and topographic survey by Prizm Surveying, Inc. dated 12/11/2008.

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Legend

-  Enhanced Natural Recovery Area
-  -16 Bathymetric/Topographic Contour (in Feet)
-  Photograph Location and Orientation



Note: Bathymetric and topographic survey by Prizm Surveying, Inc. dated 12/11/2008.

