

*Reviewed 9/21/09  
E-mail sent 9/21/09*

## **Site Hazard Assessment Recommendation for No Further Action**

**FUDS PSN Ammo Depot  
(aka NAD Marine Park)  
End of Shorewood Dr  
Bremerton, WA 98312  
Facility Site ID No. 77477121  
August 6, 2009**

### **Background**

The Naval Ammunition Depot (NAD) Marine Park is a part of the Puget Sound Navy Ammo Depot site and is considered a Formerly Used Defense Site (FUDS) property. The 27-acre portion of the property addressed by this Site Hazard Assessment (SHA) is currently owned by the City of Bremerton and is used as a municipal park. Other portions of the original 480 acre FUDS site will be addressed in future SHAs or have already been assessed (Jackson Park Housing Complex Superfund Site, Ostrich Bay Superfund Site).

The Puget Sound NAD was established in 1904 as an ammunition manufacturing and storage facility for the United States Navy. The Puget Sound NAD covered 480 acres at the peak of production during World War II, and manufactured naval weapons and ammunition until 1959. Between 1965 and 1975, the site was divided into smaller portions, with the northern 280-acre portion converted to naval housing and the Naval Hospital Bremerton, the southern portion given to the City of Bremerton and a strip through both portions was provided to the Washington State Department of Transportation for construction of Highway 3. Highway 3 now bisects the City of Bremerton's portion into two separate municipal parks: the NAD Marine Park, a 27-acre park east of Highway 3; and NAD Park, a 50-acre park west of Highway 3.

The NAD Marine Park area was primarily used as an ammunition storage facility. Networks of underground bunkers were constructed on the site to safely store a variety of ammunition and small arms. A small gauge railroad ran between the storage bunkers and the loading pier in Ostrich Bay. An area along the northern edge of the NAD Marine Park property was used as an industrial and building debris landfill. Records are incomplete as to the nature of waste accepted at the landfill.

### **Site Description**

The site is located on sloped terrain consisting of unconsolidated glacial deposits. Surface water generally flows east-northeast from the site into Ostrich Bay, which borders the property on the eastern side. A small stream flows along the northern boundary of the NAD Marine Park; this stream passes through the landfill in a culvert. The site is heavily forested, with the former bunkers and roadways mostly overgrown with vegetation.

### **Previous Site Investigations**

The Department of Ecology (Ecology) conducted an Initial Investigation in October 1998. During this Initial Investigation, analytical sampling identified elevated levels of lead, cadmium, and chromium in the soil. The site was placed on Ecology's Confirmed and Suspected Contaminated Sites List (CSCS) on April 13, 1999 based on analytically confirmed contaminated soils.

In 2005, a Munitions and Explosives of Concern Investigation was conducted at the site to identify and remove any surficial munitions from the property and evaluate the potential for subsurface munitions on the properties. This investigation discovered two live bullets, and seven inert munitions on the properties.

### **Site Hazard Assessment**

Sampling activities were conducted on June 16, 2009, at the NAD Marine Park. Samples were taken throughout the property, with a special emphasis on the underground bunker area and the closed landfill area. Sample locations are shown on Figure 1. Twelve soil samples were collected between 2 inches and 2 feet below the ground surface. Five sediment samples were collected; three were collected from between 2 inches and 1 foot below the ground surface in the intertidal zone of Ostrich Bay, two were collected from the stream running along the northern edge of the property. Two surface water samples were also collected from this stream.

All samples were analyzed for the following chemicals of concern: petroleum products (TPH-Dx), semi-volatile organic compounds (SVOCs), metals, and munitions related compounds (Perchlorate, TNT, and RDX).

### **Pathway Information**

The Soils at the site were documented to have low levels of contamination from cadmium, chromium, and lead during the 1998 Ecology Initial Investigation. During the SHA sampling event, all samples were found to be below the MTCA Method A Unrestricted Soil cleanup standards for all analytes, including those samples taken in the same areas as the previous Initial Investigation.

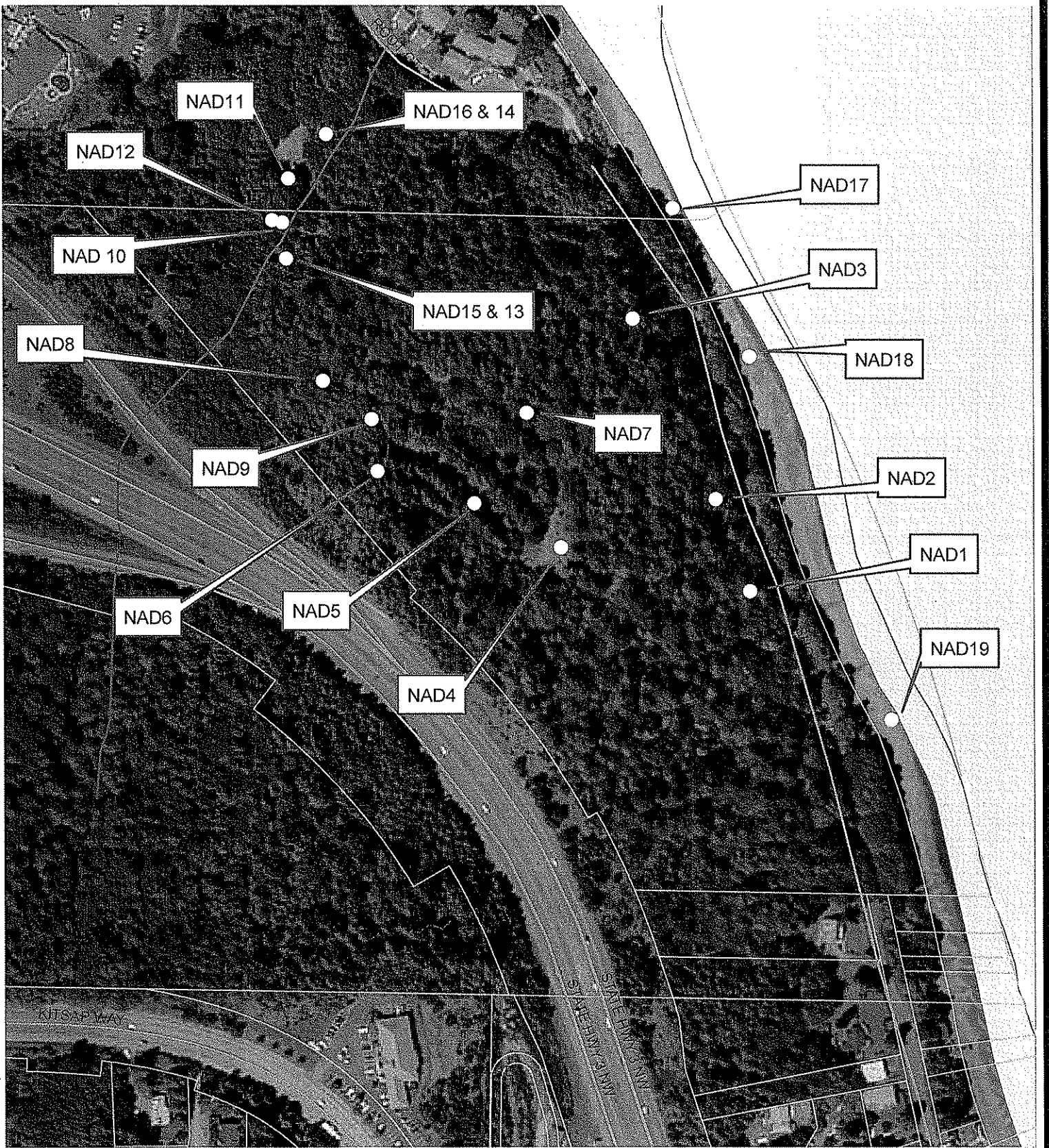
The Surface Water Pathway is not likely to be impacted at this site. All soil, sediment, and surface water samples collected at the site were found to be below the applicable cleanup standards. Also, the surface water is conveyed through the landfill portion of the site in a culvert, and does not come into contact with the landfill waste therein.

Groundwater at the site is not likely to be impacted at this site. Groundwater monitoring has been ongoing at the neighboring sites by Alkai Consultants on behalf of the United States Navy, there has been no indications of contamination resulting from this site.

### **Conclusions/Recommendation**

Over the past 30-plus years, multiple investigations and cleanups have occurred on the NAD Marine Park site. While the previous 1998 Ecology Initial Investigation found some contamination above the applicable cleanup standards, the current SHA did not locate any contamination above the MTCA cleanup standards. Samples that were taken in the same locations as the previous Initial Investigation were below the current MTCA cleanup standards.

It is recommended that this site receive no further action under MTCA, based on WAC 173-340-310(5)(d)(ii): that a hazardous release has occurred at some time in the past at this site, but does not pose a significant threat to human health or the environment.



# NAD Marine Park SHA Sampling Event

Kitsap County Health District

June 17, 2009

- Legend**
- roadcl
  - streams
  - landfill\_061209
  - strpoly
  - water
  - shoreline