



**DEPARTMENT OF THE NAVY**

INDIAN HEAD DIVISION  
NAVAL SURFACE WARFARE CENTER  
101 STRAUSS AVE  
INDIAN HEAD MD 20640-5035

5090  
Ser 0952/547  
13 Oct 94

Mr. Robert J. Pennington  
United States Fish and Wildlife Service  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401

Dear Mr. Pennington:

We are responding to the August 23, 1994, letter from your office regarding the "Draft Removal Action Design Engineering Reports for Removal of Silver Contaminated Soil at Installation Restoration (IR) Site 5 Indian Head Division, Naval Surface Warfare Center."

Your office expressed several concerns regarding the Removal Action at Site 5, which included whether "the contamination of the swale is migrating in sufficient quantities to impact ecological receptors and their inhabitants." You recommended that we perform an Ecological Risk Assessment to be supported by a well designed biological, chemical, and toxicological sampling program. However, the Activity's response to silver contamination at Site 5 is to perform a Removal Action. The United States Fish and Wildlife Service's (USFWS) recommendations are beyond the scope of the immediate objective of the Removal Action, which is to remove the source of a release or potential release to the environment.

However, a study which is similar to your recommendations was conducted by the USFWS in 1989. Our Activity was examined to determine the effectiveness of our National Pollution Discharge Elimination System (NPDES) permit. The report was published in January 1990 and is titled, "Metals in Sediment and Biota of Mattawoman Creek, Indian Head Naval Ordnance Station, Maryland." The study used three methods to determine the impacts to the environment of metals discharged to the Mattawoman Creek from outfalls, which are in the area of runoff for the silver contaminated site. The study measured metal residues in sediment, fish, clams, and aquatic plants. Additionally, bioassay tests using Mattawoman Creek water were conducted with several different creek biota. As a result of the study, silver was not recommended for monitoring and reduction at Activity discharges.

5090  
Ser 0952/547  
13 Oct 94

Regarding your recommendation that fish tissues be sampled in an attempt to determine if these fish present a potential threat to human health as well as ecological health, we offer the following response. The toxicological effects of silver on humans and ecological receptors is discussed in Chapter 2 of the Engineering Evaluation/Cost Analysis (EE/CA). The EE/CA states that indirect exposure to silver through the consumption of fish is unlikely and supported by the factors below:

1. Sediments in the swale are not discharged at any significant rate to the Mattawoman.
2. Silver concentrations in the soil do not currently pose a threat to human receptors.
3. Silver bioaccumulation in aquatic species is not significant (BF = 0.5).
4. Significant silver contamination in the soil is not believed to have migrated beyond the limits of IR Site 5.

Additionally, the Activity does not believe that any silver contamination has migrated vertically into the groundwater. We do not believe that a groundwater characterization is necessary to determine human or ecological receptor health. As indicated in Section 1.3.2 of the EE/CA, worst case soil samples containing silver were submitted to the Toxic Characteristic Leaching Procedure (TCLP) and none of the samples exhibited the characteristic of toxicity as defined in 40 Code of Federal Regulation (CRF) 261.24. Also, soil samples at two foot depths did not show significant silver contamination. Conclusively, vertical silver migration via leachate is not considered to be contaminating the groundwater.

Further characterization of the site occurred in 1989-1990 during the Site Inspection (SI) of the Olson Road Landfill, which is located down gradient from Site 5. During the SI, groundwater and soil samples were tested for silver contamination that may have migrated from Site 5. All of the groundwater samples were below the Maximum Contaminant Level (MCL) for silver of 50 parts per billion (ppb) with no sample exceeding 10 ppb. Both swales that drain from Site 5 were sampled for surface water and all surface water samples were below the MCL for silver. This convincing data has furthered our belief that significant amounts of silver have not migrated beyond the boundaries of Site 5.

5090  
Ser 0952/547  
13 Oct 94

Finally, your office expressed concerns that we did not contact the USFWS to determine if there were any endangered species on site. Our facility was surveyed during 1991-1992 by the Department of Natural Resources, Maryland Natural Heritage Program. The survey, "Rare, Threatened and Endangered Species and Natural Area Survey for the Naval Surface Warfare Center, Indian Head Division" did not identify Site 5 as a Protection Area. Additionally, our Natural Resources expert has inspected the site and does not believe that any endangered species will be impacted by the Removal Action.

If you have any questions or comments, please contact Thomas Symalla of my staff on (301) 743-6745 or 6746.

Sincerely,



SUSAN P. ADAMS  
Director, Environmental Division  
By direction of the Commander

Copy to:

✓EFACHES (Code 181)  
Haliburton, NUS (K. Donnelly)