

BASEWIDE INSTALLATION RESTORATION SITE ECOLOGICAL RISK SCREENING, NAVAL INVENTORY CONTROL POINT MECHANICSBURG, PENNSYLVANIA

SUMMARY

NAVICP History

The Navy Ships Parts Control Center (SPCC) in Mechanicsburg, Pennsylvania was placed on the Superfund National Priorities List (NPL) on 31 May 1994. In September 1995 the Navy SPCC changed its name to Navy Inventory Control Point (NAVICP). Thus far, the Navy's Installation Restoration Program (IR Program) has focused on the chemical nature and extent issues as well as human health risks. This Basewide Installation Restoration Site Ecological Risk Screening (BIRSERS) was conducted at On-Base Sites and Areas of Concern at NAVICP, Mechanicsburg.

NAVICP is located in the Hampden Township and the Borough of Mechanicsburg in Cumberland County. NAVICP performs support functions including inventory management of appropriate secondary items for assigned weapons and equipment, specified end items, and non-weapons system related items.

The 823-acre installation is occupied mostly (65 percent) by buildings, pavement, and railroad spurs. Approximately 20 percent of the installation (160 acres) consist of grassy open areas that are routinely mowed. The remaining space is unimproved grounds where maintenance is minimal. This includes approximately 15 acres for the Stormwater Drainage Ditch. Land use surrounding the installation is primarily residential, commercial, or light industrial.

Conceptual Framework and Approach

The first phase of the ecological risk screening process is a conservative exposure screening. The reported concentration of a chemical was compared to one relevant conservative screening value.

Screening values include toxicity threshold effects levels from literature, regulatory standards, and background data. This phase of assessment evaluated whether a chemical was present in sufficient quantity to cause harm under a worst-case scenario. Conservative screening assessments are not sufficient to positively assess that unacceptable risk exists, and should not be used to develop cleanup goals. Chemicals which are found at higher concentrations onsite relative to screening values proceed to a second phase. The second phase of the screening process would involve food uptake modeling. The decision to pursue food uptake modeling will be made in consultation with the regulators and resource trustees.

Initial Screening of IR Program Sites

The Navy, U.S. EPA, PADEP, and the trustees reached the following decisions on the NAVICP sites.

Sites That Require No Further Ecological Evaluation:

The determination that sites require no further ecological evaluation was based on the lack of habitat at the sites and in some cases on the results of previous remedial actions or decisions.

- \$ Site 3 Ball Road Landfill and Burn Pits
- \$ Site 4 Radioactive Waste Disposal Area
- \$ Site 6 Building 306B Underground Storage Tanks (USTs)
- \$ Site 7 Buildings 403/404 Solvent Disposal Area
- \$ Site 10 Building 608 USTs
- \$ Site 12 Building 608 Areas

Sites That Warrant Further Ecological Evaluation Based on Available Data:

- \$ Site 2 Building 904 Landfill
- \$ Site 5 Golf Course Landfill
- \$ Site 8 Ore Storage Areas

Sites That Require Further Sampling and Ecological Evaluation:

- \$ Site 9 Stormwater Drainage Ditch
- \$ Site 11 Ingot Storage Area
- \$ Site 13 Open Pit Incinerator
- \$ Site 14 Water Storage Towers
- \$ Site 15 Building 704 Area Sinkhole
- \$ Trindle Spring Run
- \$ Silver Spring (SSP-08), Trindle Spring Run Spring (TSR-S1), and Skyport Road Spring (SRS-01)

Other Evaluation of Sites:

- \$ Site 1 Carter Road Landfill. Site 1 was subsequently addressed in a U.S. Navy Memorandum dated 19 September 1997 by Diana Bartlett, Ecological Risk Screening for Site 1, Carter Road Landfill, NAVICP Mechanicsburg.

Results of the COPC Screening Analysis

IR Program On-Base Sites

Site 2 Building 904 Landfill - The final COPC remaining at Site 2 included 8 COPC (4 metals, 3 PAH, and 1 SVOC). The highest Screening Index (SI = ratio of maximum site concentration over the screening value) at Site 2 was associated with chromium (5.5).

Site 5 Golf Course Landfill - Site 5 has 8 remaining COPC (6 metals, 1 PCB, and 1 SVOC). The highest SI was associated with Aroclor 1260 (22) and no other SI exceeds 1.9.

Site 8 Ore Storage Areas - Site 8 has 16 COPC in surface soil (5 metals, 1 PCB, 9 PAH, and 1 SVOC). The highest SI was associated with chromium (10.2) and no other SI exceeds 5.4.

Site 11 Ingot Storage Areas - Four metals were retained as COPC at Site 11: arsenic, calcium, lead, and zinc. Lead and zinc had the highest SI (31, 144 respectively).

Site 13 Open Pit Incinerator - Site 13 has 8 COPC (7 metals and 1 PCB). The highest SI was associated with Aroclor 1260 (19) and no other SI exceeds 2.9.

Site 14 Water Storage Towers - Ten surface soil metals were identified as COPC at Site 14. The only SI exceeding 10 were chromium (33), lead (100), and zinc (48).

Site 15 Building 704 Area Sinkhole - Seven surface soil COPC were identified at Site 15 (4 metals, 1 PCB, 1 PAH, and 1 SVOC) with the highest screening index being 4.1.

IR Program Site 9 Stormwater Drainage Ditch - The final COPC identified in bed surface soil at Segment 1 included 10 metals, Aroclor 1260, 15 PAH, and 4 SVOC. Of these analytes, the highest SIs were associated with Aroclor 1260 (431) and PAH (ranging from 1.9 to 34). The metals and other SVOC all had SI less than 20. Bank surface soil at Segment 1 contains 2 metals, 2 Aroclors, 6 PAH, and 1 SVOC that are final COPC. Of these, the highest SI is associated with Aroclor 1260 (1392). All other SIs are below 10.

The final COPC identified in bed surface soil at Segment 2 included 10 metals, Aroclor 1260, and 13 PAH. Of these analytes, the highest SI were again associated with PAH (ranging from 1.8 to 49) and Aroclor 1260 (2,354). All other analytes have SI less than 20. Bank surface soil at Segment 2 contains 10 metals, Aroclor 1260, 13 PAH, and 2 SVOC that were identified as final COPC. Of these, the highest SI is associated with Aroclor 1260 (1098). All other analytes have SI less than 30.

Segment 3 contains fewer COPC and at lower SI than the other two segments. Bed surface soil includes 11 metals, Aroclor 1260, and 5 PAH. The highest SI is associated with Aroclor 1260 (235).

Bank surface soil at Segment 3 includes 9 metals, Aroclor 1260, 3 PAH and 1 SVOC. The highest SI is associated with Aroclor 1260 (106) and all other SIs are less than 10.

Aroclor and PAH concentrations are highest in Segment 2 samples and lowest in Segment 3 samples.

Grain size analysis shows that the Segments 2 and 3 samples are fine grained whereas Segment 1 contains sand and gravel. These observations, when coupled, are consistent with PAH and Aroclor 1260 being introduced in Segment 1 with deposition predominantly occurring within Segments 2 and 3.

Trindle Spring Run, Trindle Spring Run Floodplain, and Conodoguinet Creek - Aroclor 1260 (SI=18) was the only COPC identified in Trindle Spring Run sediments. Calcium and Aroclor 1260 (SI=10.8) were identified as COPC in floodplain sediments. Nickel was the only COPC identified in Conodoguinet Creek.

Conclusions and Recommendations

IR Program On-Base Sites

Site 2 (Building 904 Landfill) can be characterized as having a low potential for risk due to the presence of metals (chromium, vanadium, and manganese), PAH (benzo[g,h,i]perylene, phenanthrene, and pyrene), and possibly dibenzofuran, calcium, and aluminum. There were no PCB detected at this site. Given the localized nature of the COPC and the limited potential for risk, it is recommended that a food uptake analysis be performed for these COPC to better characterize the potential for risk.

Site 5 (Golf Course Landfill), Site 8 (Ore Storage Areas), Site 13 (Open Pit Incinerator), and Site 15 (Building 704 Area Sinkhole) represent a low potential risk to ecological resources due to some metals and PAH. However, each of these sites also represents a potential risk due to the presence of Aroclor 1260. It is recommended that further risk evaluation measures for these sites be discussed among the stakeholders.

Site 11 (Ingot Storage Areas) showed a potential for risk to the ecological resources due to arsenic, lead, and zinc. The COPC are directly related to the activity of Site 11. The Navy has installed an erosion control system to prevent future releases. No further action is planned while the area is still in use for ingot storage.

Site 14 (Water Storage Towers) indicated a potential for risk due to presence of chromium, zinc, and lead in surface soil. Therefore, further risk evaluation measures should be discussed among the stakeholders.

Stormwater Drainage Ditch, Trindle Spring Run, and Conodoguinet Creek

Site 9 (Stormwater Drainage Ditch) represents the greatest potential for risk to ecological resources. COPC include metals, PAH, and PCB. Screening indices for Aroclor 1260 in particular were so elevated that it is likely that even a food uptake model that realistically represents exposure potential will show unacceptable results without further refinement based on site specific data. Therefore, it is recommended that the nature of further analysis regarding the risk potential related to the ditch be discussed among the stakeholders.

Potential for risk in Trindle Spring Run and Floodplain soils is limited to the presence of Aroclor 1260. Though the screening indices are far lower than found in Site 9, the data available from the PADER fish tissue study indicate that further risk evaluation measures should be discussed among the stakeholders consistent with the treatment of Site 9 (Stormwater Drainage Ditch).

Risk Management Decision

Based on the data reviewed in this BIRSERS, there is no potential for risk to the ecological resources of Conodoguinet Creek due to activities at NAVICP. Therefore, no further action is planned to protect ecological resources of the Creek.

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