

N00109.AR.000177  
NWS YORKTOWN  
5090.3a

LETTER AND COMMENTS FROM VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY  
REGARDING DRAFT SITE SCREENING PROCESS REPORT FOR SITES 1, 6, 7 AND 15  
NWS YORKTOWN VA  
8/3/1995  
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

Peter W. Schmidt  
Director

P. O. Box 10009  
Richmond, Virginia 23240-0009  
(804) 762-4000

August 3, 1995

Commander  
Atlantic Division  
Naval Facilities Engineering Command  
1510 Gilbert Street  
ATTN: CODE 1822, Gregory P. Hatchett  
Norfolk, VA 23511-2699

Re: Draft Site Screening Process Report for Site Screening  
Areas 1, 6, 7, and 15, Naval Weapons Station Yorktown,  
Yorktown Virginia.

Dear Mr. Hatchett:

Thank you for providing the Department of Environmental  
Quality, Federal Facilities Section the opportunity to comment on  
the above referenced Remedial Investigation. Attached are our  
comments on the report.

If you have any questions, please feel free to contact me at  
(804) 762-4202 or Richard Criqui at (804) 762 4013.

Sincerely,

A handwritten signature in blue ink, appearing to read "Stephen Mihalko".

Stephen Mihalko  
Remedial Project Engineer

cc: Rob Thomson, EPA Region III  
Jeff Harlow, NWS Yorktown  
Erica Dameron

Virginia Department Of Environmental Quality  
Waste Division  
Federal Facilities Restoration Program

629 E. Main St., P.O. Box 10009, Richmond, VA 23240-0009

Subject: Naval Weapons Station, Yorktown (NWSY), VA - Draft Site Screening Process Report For Site Screening Areas 1, 6, 7, & 15 - Staff Review Comments

To: Steve Mihalko, Remedial Project Coordinator

From: Richard Criqui, Remedial Project Officer



Date: October 2, 1995

Copies: FFRP File

The Naval Weapons Station, Yorktown (NWSY) draft Site Screening Process (SSP) Report for the Site Screening Areas (SSAs) 1, 6, 7, and 15 dated July 10, 1995, was reviewed by the staff.

In accordance with correspondence from Mr. Robert Thomson, P.E., Office of Superfund, EPA, dated July 17, 1995, the EPA review comment deadline was extended to October 1, 1995. As understood, October 1, 1995, is also the DEQ review comment deadline.

If you have any questions or comments, please contact me.

**INVESTIGATION RESULTS - REPORT SUMMARY & CONCLUSIONS - STAFF COMMENTS**

Investigation results and the summary and conclusions are provided in Section 7.0 of the report. The more significant results and conclusions of the investigation are provided below along with the staff comments.

1. **General - Results** - Inorganics and low level pesticides were detected in the majority of SSA and background samples from all media. **Conclusions** - With the exception of cadmium found in the test pits subsurface soils of SSA 6, neither the inorganics or the low levels of pesticides are believed attributable to the site operations. In general, the inorganics are due to their natural occurrences in the various media. The presence of low concentrations of pesticides are attributable to the historical Station-wide spraying of pesticides.

**Staff Comments** - Agree. Although some inorganic contaminant levels exceeded background levels for shallow groundwater, the groundwater inorganic concentrations were often within the same order of magnitude and range as background samples for total and dissolved inorganics. As expected, the filtered groundwater samples were found to be generally

lower than the unfiltered (or total inorganics) for each sample. This is due to the removal of the fine silt and clay. In addition, as indicated in the report, the groundwater data is most probably skewed to provide higher inorganic results from the SSA groundwater samples in comparison to the background groundwater data. The temporary piezometers used for SSA groundwater monitoring provide very turbid samples in comparison to samples from the existing and permanently installed background monitoring wells. The background wells are generally grouted, screened, and have filter sand adjacent to the screen to help purify the groundwater. (page 5-26) In addition, the samples of the background wells reflect conditions where the well and soil have achieved a higher level of equilibrium. (Generally, new wells have a higher TOC value than older stabilized wells, unless contaminated.) All these factors generally lead to higher quality water in permanent wells. Comparison of data between permanent wells and temporary wells is often misleading and; therefore, often not indicative of true groundwater conditions.

In addition, the groundwater sampled at the SSAs is of the shallow aquifer. The shallow aquifer is not recommended for drinking water wells. In addition, the depths and locations of the background groundwater wells should be provided and clearly identified in a separate figure and table in the report. The depths of the background groundwater wells should be compared to the groundwater depths of the various SSAs. The staff believes that background wells should have the same relative depths and be of similar aquifers for statistical comparison. If differences between the background wells and the SSAs are significant, then these differences should be noted more clearly in the report.

The staff recommends that further discussion and rationale be provided in the summary and conclusions to justify the recommended action or no action alternative where groundwater data shows anomalies from background conditions or ARARs.

2. **SSA 1 - Results** - Nitramine compounds were detected in samples from soil, groundwater, and surface water at SSA 1. These compounds are believed attributable to the TNT contaminated soil in the eastern part of the SSA. **This TNT contaminated soil has been removed as part of the previous removal action at SSA 1.** Surface soils were associated with the most risk due to the presence of benzo(a)pyrene, dibenz(a,h)anthracene, and arsenic. The EI for the surface water at SSA 1 exceeded unity; iron, lead, and mercury were cited as the constituents contributing the most to the environmental potential risk as indicated by the EI score. The EI for sediments at SSA exceeded unity due to the

presence of benzo(b)fluoranthene, 4,4'-DDT, and mercury.  
**Conclusions** - Additional soil sampling may be required to characterize the nature and extent of PAH contaminants in surface soil. An RI/FS is not recommended at this time.

**Staff Comments** - The staff concurs that additional soil sampling is recommended to characterize the PAH contaminants in the surface soil. The area of concern associated with SSA 1 should be more clearly identified in the summary and conclusions section. Additional narrative and use of figures is recommended.

The staff believes that additional discussion and rationale should be provided addressing the ICRs and EI values in relation to any future action or inaction and conclusions, and recommendations associated with a future RI/FS.

Potential for exposure and restricted access classifications of the site should be discussed in relation to the conservative risk assessment assumptions for human health criteria, etc. Use of a potable water supply on the base should be discussed. The probability of exposure should be addressed in light of the current use of the site and in the event that the site is changed to residential use. Discussion of the restricted area classification is believed appropriate in the conclusion.

Institutional controls should be considered as a precautionary measure in the event the site is used in a capacity other than currently used. If institutional controls are needed to be implemented as a means to minimize future risk, then action to ensure such controls are implemented should be addressed.

A discussion should be provided regarding the fate of the various waste piles. (Will the waste piles remain or will they be disposed in a Class D landfill?) Findings associated with asbestos pipe insulation disposed on-site SSA 1 should also be discussed.

Based upon the report findings, the staff cannot agree with the statement that a RI/FS is not recommended at this time. In accordance with the Site Screening Process Guidelines Workplan and the Federal Facilities Agreement, an RI/FS should be conducted if contamination is found at a SSA if it poses a threat to human health or the environment. The SSP Report summary and conclusions does not sufficiently answer the questions regarding the threat to human health or the environment.

3. **SSA 6 - Results** - Trace levels of VOCs were detected in samples collected from the soil, subsoil, and groundwater. PCBs and cadmium were detected in elevated concentrations in the subsoils obtained from test pits 2 and 3. Total ICRs exceeded groundwater scenarios due to arsenic and Aroclor-1260. Total HIs exceed unity due to arsenic, Aroclor-1254, and cadmium.

**Conclusions** - Additional soil sampling in the vicinity of Test Pits 2 and 3 may be required to characterize the nature and extent of PCB and cadmium contamination in the subsoil. An RI/FS is not recommended at this time.

**Staff Comments** - The staff concurs that additional soil sampling in the vicinity of Pits 2 and 3 should be implemented. The staff comments in Item No. 2 above also pertain to the conclusions at SSA 6. More discussion and rationale is needed to leap from the findings to the recommendations/conclusions.

Based upon the report findings, the staff cannot agree with the statement that a RI/FS is not recommended at this time. In accordance with the Site Screening Process Guidelines Workplan and the Federal Facilities Agreement, an RI/FS should be conducted if contamination is found at a SSA if it poses a threat to human health or the environment.

4. **SSA 7 - Results** - VOCs, SVOCs, and nitramine compounds were detected in samples collected from the subsoil and groundwater in the vicinity of the UST. Total ICRs exceeded EPA's target risk range for groundwater due to arsenic, and 1,1-dichloroethene. Total HI values exceeded unity for groundwater also due to arsenic, antimony, and thallium. Manganese contributed predominantly to the surface soil risk. Arsenic and manganese contributed most predominantly to subsurface soil risk; however, these were detected lower than background and are not believed site related. The EI for sediments at SSA 7 exceeded unity due to the presence of 4,4'-DDT and 4,4'-DDD.

**Conclusion** - A removal action for the underground storage tank is recommended for SSA 7. As part of the removal action, an additional three soil borings should be installed in the vicinity of boring SB02 to determine the presence and extent of Aroclor 1260 in the surface and subsurface soil.

**Staff Comments** - The staff concurs with the conclusion above. In addition, groundwater sampling should be performed to assess the groundwater contamination associated with the UST.

Additional conclusions are needed for the findings from the investigations of the areas not associated with the removal action. The staff comments in Item No. 2 above also pertain to the conclusions at SSA 7. More discussion and rationale is needed in Section 7.0 to step from the findings to the recommendations or conclusions.

In accordance with the Site Screening Process Guidelines Workplan and the Federal Facilities Agreement, an RI/FS should be conducted if contamination is found at a SSA if it poses a threat to human health or the environment.

5. **SSA 15 - Results** - Low levels of VOCs were detected in groundwater samples. These compounds and their degradation products also were detected in the surface water and sediment samples. VOC contaminated groundwater appears to be discharging to the surface water and surface water sediment. However, a plume of 1,1-dichloroethene or trichloroethene is not evident in SSA 15 groundwater.

Total ICRs exceed EPAs target cancer risk range. Surface and subsurface soils accounted for 85 percent of the risk with arsenic being the constituent associated with the most risk. HIs exceeded unity for both the groundwater due to manganese and arsenic; however, the background levels in the surface and subsurface soils were higher. Presence of manganese and arsenic may not be site related. The EI for sediments at SSA 15 exceeded unity with 4,4'-DDT and 4,4'-DDD being the constituents associated with the most risk.

**Conclusion** - Because a plume of 1,1-dichloroethene is not evident in SSA 15 groundwater; arsenic is detected sporadically in the surface soil samples above Station background, and ecological concern stem from the presence of relatively low levels of DDT series pesticides and chlordane in sediment, further action is not recommended for SSA 15.

**Staff Comments** - The staff cannot concur with the conclusion that further action is not recommended for SSA 15 on the basis of the conflicting statements in the report (See above). The report findings and rationale should be consistent in its support of the conclusions provided. The staff comments in Item No. 2 above also pertain to the conclusions at SSA 15. More discussion and rationale is needed to step from the findings to the recommendations or conclusions.

In accordance with the Site Screening Process Guidelines Workplan and the Federal Facilities Agreement, an RI/FS should be conducted if contamination is found at a SSA if it poses a threat to human health or the environment.

A discussion of the contents of the Imhoff tank and other abandoned treatment facilities is warranted. If the Imhoff tank has solids remaining, then the contents should be sampled and results provided in the discussion associated with SSA 15. The removal of the abandoned treatment facilities should be considered and discussed versus the impact of leaving facilities as is in its abandoned state.