Response to NOAA Comments on NWS Earle Revised RI Addendum and FS (OU5 & OU6)

Summary, General Comments

The January 1998 Remedial Investigation (R.I.) Addendum Report was considered a final report. The Navy had answered all comments we had received on the February 1997 draft submission to the satisfaction of the Project Managers from USEPA and NJDEP. The comments received were a May 7, 1997 letter from USEPA (the memo referred to in the NOAA letter) and a June 3, 1997 NJDEP letter. Any other comments which may have been sent to USEPA's Project Manager were not forwarded to the Navy. Our understanding was that he had compiled comments from several sources in his letter. He may have chosen not to forward some comments which he felt weren't applicable based on his knowledge of the sites.

As stated in the R.I. Addendum Report, additional ecological investigation was only performed for Sites 3, 6, and 17 to delineate potential risks which were identified in the previous Remedial Investigation. That study had concluded the ecological risk at the remaining sites was low or negligible. It also found no cumulative effects in a basewide watershed evaluation.

The Feasibility Studies were not meant to present a preferred alternative. The Proposed Plans will be developed from the alternatives evaluated or some combination of alternatives. Based upon the findings of the Remedial Investigation and the R.I. Addendum, any remediation is driven primarily by human health considerations.

Cumulative impacts have been considered in the remedial investigation at NWS Earle but the primary focus has been on the individual sites because of the limited evidence of contaminant migration and the large distances between sites. For example, Site 10 is approximately 1 mile upgradient of Site 13. A geographical information system was developed to help analyze any possible relationships between sites and extensive watershed sampling was conducted at the Station boundaries to determine whether there was any cumulative impact on off-site receptors. No significant impact was found in any of the watershed sampling. A data sharing agreement with Monmouth County has enabled NWS Earle to obtain high resolution digital aerial photographic coverage of the entire Station.

The rationale for the selection of ecological toxicity threshold values was explained in Section 2.6 of the RI Addendum as well as Section 2.6 of the 1996 Remedial Investigation Report. The inconsistency of the values noted for pyrene and fluoranthene is due to the fact that site-specific values were calculated for Site 3 using data collected for the RI Addendum. Since no additional sediment data was collected during the RI Addendum for Site 13, the threshold values were carried forward from the 1996 report.

As pointed out during the March 1999 site visit, additional sediment and surface water samples were not collected at Site 13 because the area referred to as a marsh is actually a forested wetland with no standing water or defined flow channels. Soils in the area are covered with a thick layer of leaf litter. Hydropunch sampling was conducted in the wetlands at various depths to evaluate possible groundwater contaminant migration. Additionally, sediment sample location 13SD01 is actually upgradient of the landfill area.

A total of 12 test pits were dug during the 1995 Remedial Investigation to confirm the extent of fill material discovered during analysis of historic aerial photos. The contents of these test pits were characterized by visual means. The four soil samples referred to in the letter were shallow samples taken during the 1992 Site Investigation when the site was only being evaluated based on its use as a storage yard.

The goal of the 1995 Remedial Investigation at Site 10 was to fill data gaps from a previous Remedial Investigation conducted in 1993. That investigation included soil samples from a shallow test pit. Since no impact on soils was detected in the 1993 investigation, additional soil sampling was not conducted. Based on the limited cover material present, it was assumed some type of additional cover material would be required.

As previously stated, the January 1998 RI Addendum Report was considered a final report. The draft Feasibility Studies (FS) were prepared in conjunction with the finalization of the RI Addendum. This schedule was negotiated as part of the Federal Facilities Agreement between the Navy and the USEPA in an effort to accelerate the remediation process. That was also the reason for looking at presumptive remedies instead of analyzing all potential remedial alternatives.

FS Comments

Aquatic receptors are discussed in the site description because they could potentially be impacted by a release. They are not discussed in detail in later sections because the ecological risk assessments in the Remedial Investigation and/or the RI Addendum concluded there was minimal ecological risk. This is also the reason ecological guidelines are not included in the ARARs and TBCs. Any measures taken to limit contact with or migration of contaminants would benefit ecological receptors but the primary focus is protection of human health. Limited removal of impacted sediments may be considered as part of any remedial action.

The various tables and statistical evaluations are presented for human health risk evaluation.

Test pits at each site were excavated through the fill material to undisturbed soils. Groundwater was not encountered in any of the pits. Groundwater elevations at Site 3 and 10 are well below the base of the fill material. While the groundwater level at Site 13 appears to be closer to the bottom of the fill, its seasonal fluctuation should be buffered by the large adjacent wetland. Groundwater level data logging could be included in any capping design effort. If necessary, the groundwater elevation under the cap could be hydraulically controlled to prevent contact with the fill material.

Preliminary Remediation Goals were developed primarily to minimize the identified human health risk. Ecological Remedial Action Objectives (RAOs) were established along with the Human Health RAOs to identify if a remedy might have a detrimental effect on ecological risk. While the Remedial Investigation and RI Addendum concluded there was minimal ecological risk, any isolation of landfill materials and prevention of contaminant migration would further protect ecological receptors.

Treatment of landfill soils and materials is considered technically impracticable due to the volume of waste material, the depth of the cover (Sites 3 and 13), and the risks inherent to excavation and handling such volumes of waste materials. Human exposure to the waste materials would increase dramatically during the remedial effort. Airborne dispersion of contaminants to the environment would also be difficult to control.

Groundwater contaminant concentrations are near background concentrations for most contaminants. In the case of chlorinated solvents at Site 13, the concentration decreases rapidly away from the landfill edge. Hydropunch sampling also showed decreasing concentrations with depth. Source area control will minimize migration of contaminants into the groundwater.

Specific Comments on FS for OU-5 (Site 13)

Discussion of the downstream sediment and surface water samples from the Hockhockson Brook can be provided. The conclusion that PCB migration would be unlikely is supported by the fact that the PCB concentration in sample 13SD01 is approximately 36 times greater than that in downstream sample 13SD02. Sample 13SD03, which showed the highest PCB concentration, was taken from a washout area immediately adjacent to the landfill.

As noted, the statement on p. 1-22 should refer to chromium. This will be corrected.

While some hazardous materials were undoubtedly disposed at Site 13, test pit analysis determined the vast majority of items placed in the ground were solid waste. Application of the municipal solid waste standards would be protective of human health and the environment.

Removal and off-site disposal of contaminated soil/material was eliminated in the alternative analysis because of the volume involved (approximately 15,000 yd^3), the heterogeneity of the waste materials, and the relatively minimal amount of hazardous materials encountered in the test pits. Excavation of the landfill would increase the chance of exposure to hazardous materials through airborne emissions and disturbance of the relatively stable fill layer. By limiting rainwater percolation through the fill material, contaminant migration would be effectively stopped without the short-term exposure risks caused by excavation.

Groundwater treatment was not considered because groundwater is not used as a potable water source and because modeling indicates contaminants are not likely to reach the nearest surface discharge point. Source area controls would minimize additional contaminant leaching to groundwater. As previously noted, test pit evaluation indicated no fill materials are in direct contact with groundwater.

The fill material is now covered with approximately 3 feet of highly permeable sand. Rainwater regularly percolates through the fill material to the groundwater below. Placement of a barrier layer above the fill will effectively prevent that percolation. Routine maintenance of the cap will preserve its integrity. In the event of cap penetration, a repair could be made to the affected area for significantly less than the cost of a redundant cap layer.

The Removal and Disposal alternative was retained for hot spots because some excavation would be required in the construction of a cap. Any hazardous materials encountered during excavation would be segregated for off-site disposal. At the same time, the washout area around sample 13SD03 could be excavated for removal and the sediments from the adjacent section of stream could be removed. Overland runoff controls would be designed to minimize the impact of the cap on the wetlands area.

Since PCBs were detected in surface washout areas and not in groundwater, it is reasonable to conclude they came from surface runoff from items which were stored on the site. Removal of impacted sediments and capping of the ground surface would eliminate the need for long-term sampling for PCBs.

Methylene chloride, tetrachloroethene and trichloroethene are all compounds which are denser than water and tend to sink through an aquifer until they encounter a confining layer. No confining layer was encountered at Site 13. Hydropunch samples were taken down to 48 feet below the ground surface and well MW-13-06 was drilled to 57 feet. Running sands prevented deeper drilling. Based on these findings, modeling of these compounds would be inappropriate.

While a permeability rate of 0 inches per year may not be absolutely achievable, a low permeability cap would approach that value. The concentrations of all contaminants are estimated at the exposure point because that is where they would be available to receptors. Once a cap is constructed, concentrations within the fill material would remain largely unchanged. Concentrations between the landfill and the stream would gradually decrease due to dispersion.

The overall mass of vinyl chloride in the groundwater will decrease due to natural biodegradation. Since metals don't degrade, the total amount present would not change. Concentrations would decrease over time as groundwater flow disperses the accumulated metals near the landfill. Source area controls will limit additional loading from the fill material.

Specific Comments on FS for OU-6 (Sites 3 and 10)

The rationale for the selection of ecological toxicity threshold values was explained in Section 2.6 of the RI Addendum as well as Section 2.6 of the 1996 Remedial Investigation Report. It should also be noted that site-specific conditions played a role in the decision not to include protection of ecological receptors as a remedial goal at these sites. The small wetlands area near Site 3 is the discharge point for an intermittent drainage ditch northeast of the site. The drainage ditch adjacent to Site 10 is highly

channelized between the site and some railroad tracks. It offers minimal habitat. Metals detected in groundwater on the site were not evident in surface water samples.

Removal and off-site disposal of contaminated soil/material was eliminated in the alternative analysis because of the volumes involved, the heterogeneity of the waste materials, and the relatively minimal amount of hazardous materials encountered in the test pits. Excavation of the landfill would increase the chance of exposure to hazardous materials through airborne emissions and disturbance of the relatively stable fill layer.