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NWS EARLE
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NEW YORK 10278-0012

JUN 18 1993

John Kolicius
Naval Facilities Engineering Command
10 Industrial Highway
Code 1821, Mail Stop 82
Lester, PA 19113-2090

Re: NWS Earle - Site Inspection (SI) Report

Dear Mr. Kolicius:

The U.S. Environmental Protection Agency has completed the technical review of the Draft SI Report. Enclosed are the remaining comments dealing with groundwater. These comments, as well as the comments transmitted to the U.S. Navy on March 12 and April 14, 1993 must be addressed by the Navy before the SI Report can be finalized.

If you have any questions concerning this matter, please contact me at 212-264-6609.

Sincerely yours,

Paul G. Ingrisano

Paul G. Ingrisano
Project Manager
Federal Facilities Section

Enclosure

cc: LCDR J. P. Dell, NWS Earle
J. Freudenberg, DEPE

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Attachment

1. Section 5.1 Overview, p. 5-1: The site is located within the boundaries of the New Jersey Coastal Plain Sole Source Aquifer, a groundwater protective designation conferred under Section 1424(e) of the Federal Safe Drinking Water Act (SDWA). Groundwater at the site is therefore classified as at least Class IIA Current Source of Drinking Water. Consequently, Federal and New Jersey Maximum Contaminant Levels (MCLs) are Applicable or Relevant and Appropriate Requirements (ARARs) for groundwater at the site. Promulgated New Jersey Groundwater Quality Criteria are also ARARs. Contaminant concentrations detected in groundwater samples should be compared to both Federal Maximum Contaminant Levels and New Jersey Groundwater Quality Standards.

2. Section 5.1.4 Non-Site Specific Issues: Establishing "Background" Levels for Metals in Soils: Background concentrations should be established both on a regional/soil type, and site specific basis for both soils and groundwater samples. The former establishes overall impact of operations on surface and subsurface environmental media, and discriminates between operations related and natural conditions. The latter establishes whether a particular site is associated with detected contaminants versus another source.

3. ibid: Determining the Significance of Metals Results for Groundwater: The EPA Region II CERCLA protocol for collection of groundwater samples for metals analysis specifically requires that unfiltered samples be collected. Filtered samples are discretionary. Region II considers the unfiltered results to be representative in all site investigations, and strongly supports use of unfiltered samples during characterizations of sites and potential releases to the environment. This requirement is the result of controlled studies which indicate that passing samples through a 0.45 micron filter can eliminate colloidal - yet mobile - metal species from the sample, subsequently biasing the result. In the case of a rapid screening method such as hydropunch, conservative samples are justified since this data is often used to determine whether additional investigation is warranted. The potential bias resulting from sample filtration would render the data inconclusive. Samples collected using rapid techniques (eg. hydropunch) are being subjected to CLP analysis and data validation to increase the universe of data for risk assessment at other sites in Region II. Filtered metals data is not considered suitable for risk assessment purposes. In addition to proper well construction and development, alternative low flow techniques for well purging and collection of groundwater samples have been demonstrated to reduce sample turbidity, the principal concern in the debate between

filtered and unfiltered samples. Purge and sample rates on the order of 100ml/min are appropriate where turbidity is a concern. While this increases the time required to actually perform purge and sampling operations, highly turbid samples usually require a considerable amount of time to filter. Aeration during the process can oxidize some inorganic species further biasing the results.

The second sentence on page 5-2 in this section should be deleted since filtered samples would be less conclusive. From EPAs perspective, the relevant comparison is between background and on-site and downgradient samples under most conditions, not filtered and unfiltered samples. Detection of elevated metal contaminants in the site associated samples is strong evidence of both the source and mobility of the metal contaminant.

4. If future documents are developed in which many sites are addressed collectively, EPA suggests that the format be revised to present all data and discussions for a particular site in a dedicated section of the document. This format will be less cumbersome, and will increase the efficiency of the review process.

5. Site 1

a. Section 5.2.1 <u>Site 1, Ordnance Demilitarization Site: Recommendations</u>: Triangulation is a rough technique for estimating the direction of groundwater flow, but nevertheless suggests that no monitoring wells are located downgradient of the site. The site is over 500 feet long and approximately 500 feet wide. Detection of chromium, TCE, 1,1-DCE, and benzene at concentrations up to almost 20 times their Federal MCLs suggests a significant impact to groundwater. Consequently, a comprehensive groundwater investigation is warranted to determine the direction and rate of groundwater flow and the horizontal and vertical extent of contamination. An RI workplan should be developed to rigorously categorize this site. The workplan should present both a topographic map at the scale of Figure 4.2, and a site detail/topographic map which focuses on the site itself. Former burn areas and other details should be included. If contaminants potentially emanated from the proximate railroad yard, this should be addressed either in conjunction with Site 1 or as a parallel investigation.

b. Figure 4-4, p. 4-15: Four sites are located on this figure along with well/sampling locations. Monitoring wells for different sites are assigned identical designators (eg. MW-1, MW-2, etc.) which could result in confusion regarding sampling location. All monitoring wells at the base should be assigned unique identifiers. This may be accomplished by

assigning a site specific modifier (eg. MW-6-1 for well 1 at site 6), or by another unambiguous method. While this is in a sense a midstream alteration, the potential for the current ambiguity to cause significant problems in the future is the overriding concern.

Figure 4-4 is useful for demonstrating the relative location of the sites and local features. However, sites depicted on the figure are up to 500 feet long, and potentially significant detail is lost at the scale of the figure. Additionally, the scale distorts sample coverage since sampling locations/wells etc. are depicted at scales much larger than actual. Consequently, dedicated, detailed figures should be produced for each site. Groundwater flow contours where applicable should be presented on the site-scale figure.

6. Site 12

a. Section 4.4.2.1, p., 4-23, Site 12: Units associated with the sediment samples are ug/kg, not ug/l.

b. ibid: Detected concentrations of lead should be compared to a background sampling location to determine whether lead is emanating from the site.

c. Section 4.4.3 Summary of Site 12 Characterization, p. 4-23, 1st sentence: The conclusion that contaminated soils are not present at the site is not supported with any information from soil sampling. Additionally, this presumption contradicts the analysis presented in the 1st sentence of the 2nd paragraph of Section 1.5.5 site 12 ... Site Description which notes "... the possible presence of battery acid residue in the soil on and adjacent to this site". The detected metals may also be associated with batteries, and the single samples from sediment and surface water suggests possible mobilization of metals from the site. Additional sampling of site soil, surface water, and sediment is warranted. Background locations should be included in additional investigations to permit evaluation of any contaminant detections.

7. Site 13

a. Section 4.5.3, p. 4-31, 2nd sentence: The detections of PCBs etc. at concentrations exceeding detection limits should be noted.

8. Site 15

a. Section 4.6.5 Summary of Results, p. 4-36: The hydropunch samples were collected from this site, not some other, so the comparison is only relevant with respect to the significant negative impact this site appears to be having on groundwater. A better protocol would have mandated collection of a hydropunch background sample for comparison with the on-site sample. In light of the high concentrations of metals detected in the hydropunch sample, a thorough groundwater characterization is necessary to comprehensively evaluate the nature and extent of groundwater contamination at the site. Also, since the soil borings were limited to a single depth (8 and 7 ft BGS respectively) and to a few organic compounds, the characterization is only preliminary. The low concentrations of generally low mobility organic contaminants detected at depth may indicate the presence of much higher concentrations at shallower depths. Consequently a thorough soils investigation - including metals - is warranted at the site.

9. Site 16

a. Section 5.2.7 Recommendations, p. 5-10: The number of borings and wells required at the site should not be presented as an upper bound. If 12 borings and 4 monitoring wells are recommended, this could be stated. However, the actual number and location will be the purview of USN, USEPA, and NJDEPE, and may exceed the stated upper bound.

Also, the detection limits for BNAs were extremely high suggesting that interference from either identified or unidentified contaminants was significant thereby requiring considerable sample dilution. The data is therefore inconclusive with respect to total potential impacts of the site. Further investigations should utilize more discriminating analytical techniques, including evaluation of tentatively identified compounds (TICS).

10. Site 17

a. Chromium and lead were detected at concentrations exceeding the respective 100ppb and 15ppb federal MCL or action level which are ARARs for groundwater at the site. Detections at MW-1 suggest an offsite source. The investigation should be

extended to identify the source of these metals in groundwater.

11. Site 23

a. Section 5.2.9, p. 5-12: In addition to organic contaminants, cadmium (MCL = 5 ppb), chromium (100 ppb), nickel (100 ppb), and lead (15 ppb action level) were detected in the groundwater sample at concentrations up to 100 times greater than the federal MCL. Pentachlorophenol (1 ppb) was detected at a concentration over 100 times the federal MCL. With the other noted contaminants, significant groundwater contamination appears associated with the site. A comprehensive evaluation of the nature and extent of groundwater contamination is warranted. Installation of a single well will not be sufficient. Additionally, further sampling in the unsaturated zone will be necessary to determine whether an active source is present on-site.

12. Sites 24 and 25

a. Section 4.10.3 Summary, p. 4-57: Justification for the "minimal impacts" assumption should be provided. Also, since spent slugs and cartridges could represent a long term source of metals contamination, determining their prevalence should be the priority for future evaluation.

13. Site 29

a. Soil sample analytical results do not provide detection limits. Consequently, EPA is unable to assess the adequacy of the removal action, or the potential for contamination by other compounds.

b. Figure 4-11 is essentially useless for evaluating the appropriateness of sampling locations. A detailed figure scaled to the site should be presented. Nevertheless, from the figure, it appears that the sampling protocol lacked the rigorous design necessary to assign confidence to the removal action success. A uniform grid spacing based on statistical needs to verify results would have been the most valid approach. An appropriately scaled figure will assist in determining the adequacy of the confirmatory sampling.