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Project Number 5253

Mr. Jim Colter (Code 1823)
Remedial Project Manager
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, MS#82
Lester, Pennsylvania 19113

Reference: Clean Contract No. N62472-90-D-1298,
Contract Task Order No. 0213

Subject: Responses to NYSDEC comments on
AS/SVE Design Analysis Report
NWIRP Bethpage, New York

Dear Mr. Colter:

As discussed with Mr. Steve Lehman, please find enclosed responses to NYSDEC comments on the subject report. These responses incorporate Navy comments.

If you have any questions or require additional information, please call me at (412) 921-8375.

Sincerely

David D. Brayack, P.E.
Project Manager

/DDB

cc: Mr. R. Boucher (Navy) w/o attachment
Mr. S. Lehman (Navy)
Mr. D. Rule (Navy) w/o attachment
Mr. J. Trepanowski (CF Braun)
Mr. D. Hutson (CF Braun)
Ms. M. Price (CF Braun) w/o attachment

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NY (DEC SITE #130003B)
DESIGN ANALYSIS REPORT FOR AIR SPARGING/
SOIL VAPOR EXTRACTION SYSTEM

The NYSDEC has reviewed the above-referenced document and has the following comments. Generally, the DEC concurs with the design parameters established in the report, specifically the number of extraction, injection and monitoring wells and their spacing, and the sizing and specification for transmission piping and process equipment.

1. **Comment:** The DEC's experience is that SVE systems can be operated through the winter, even upstate, with above-ground transmission piping. The Navy should consider operating the SVE system, without the air sparging component, throughout the year. Because remediation of groundwater impacts is a secondary goal of this system, full-time SVE operation could potentially accelerate overall completion of the project.

   Response: Based on the Navy's experience, condensate forms and freezes in non-insulated SVE piping systems. When condensate freezes in a pipe, the pipe could rupture. In addition, as condensate freezes in the piping, vapor flow would be reduced and potentially stopped. Under these conditions, mechanical equipment could be damaged. Note that a pilot study was conducted at a nearby facility on Long Island. During this study, the soil vapor extraction piping was found to be frozen solid by mid-December.

   During the design, the Navy considered burying the pipe network to prevent condensate from forming. However, because of the contaminated soils in this area, the option was not cost effective.

   Also, because low ambient air temperatures would decrease VOC volatility during the winter, VOC removal from the soils would be less than during other seasons.

Therefore, as a result of potential damage to equipment and reduced efficiency, the Navy does not plan to operate the AS/SVE system during the winter.

2. **Comment:** The Preliminary Remediation Goals (PRGs) listed in the document are well below the soil cleanup guidelines which the DEC considers for remediation projects. The ROD modified action levels of three times the PRGs are also below these cleanup guidelines. While achieving these goals would represent a higher degree of contaminant removal, the feasibility of achieving them in a reasonable time frame is questionable. Because groundwater impacts from this area will be addressed in the off-site remedy, and because completion of the SVE/AS process is a prerequisite to beginning the removal of PCB-contaminated soils, extended operation of the system to achieve the PRGs may not be desirable. This issue may need to be discussed further as the performance of the system is evaluated.

   Response: The Navy concurs that it does not want extended operation of the AS/SVE system. This issue is addressed in Section 2.6, and identifies options to be considered in the event that soils remediation is not completed in a timely manner (two years). Provided in this section are several options which allow for the AS/SVE component of the overall remedy to be completed, including a re-evaluation of the PRGs, especially if remaining VOCs are trapped in site clays or organics in the cesspools.

3. **Comment:** The NYSDEC is concerned that the cesspools, a likely source of the VOC contamination, may interfere with the performance of the SVE system, either by short-circuiting subsurface airflow or by creating a barrier to it. The Design Analysis Report references the July 1997 Interim Results letter report, which concludes that the cesspool structures do not appear to restrict air flow through the system. However, the Interim Results letter does not present any discussion or justification of this conclusion. Only one sentence on page 20 reiterates the conclusion. Please provide a narrative evaluation of the data used to justify this statement.

   Response: The information requested is presented in the Results Letter Report, which was forwarded to your agency on November 19, 1997. The Navy acknowledges that there is a level of uncertainty with either flow restrictions or short circuiting within the cesspools.

Also, many of the cesspools which currently contain VOCs will likely have to be addressed in the next phase for PCBs and/or metals.

The goal, however, is to reduce VOC concentrations in the cesspools to levels at which the contents would not be considered hazardous. This would allow the remaining VOCs in the cesspool contents to be excavated along with the PCBs and metals and disposed of in a non-hazardous waste landfill. Also, reducing the VOC concentrations in the most contaminated area would reduce the amount of volatilization that may occur during excavation of the PCB and metal contaminated soils. This action would reduce the possibility of adverse air quality impacts to the nearby residential community.

4. **Comment:** The NYSDEC confirms the statement on page 25 that an air discharge permit is not required, but that an application form and associated information will be necessary. The report correctly states that "Air Guide 1 provides a range of air modeling procedures to correlate stack emissions with ground level concentrations", but does not indicate whether this will be performed. The use of vapor-phase carbon is a Best Available Control Technology, and so a modeling analysis of emissions from the system is not required. If the Navy elects to construct a model for this analysis, the work should begin soon to avoid delays in obtaining approval. Note that in the table presented on page 25, the AGCs for Trichloroethene and Tetrachloroethene should be 0.45 ug/m^3 and 1.2 ug/m^3, respectively.

   The operating criterion listed on page 20 (#3), states that the carbon will be changed if VOC levels exceed Air Guide 1 criteria in the exhaust stack. Although the text does not indicate whether the Short Term Guideline Concentrations (SGCs) or Annual Guideline Concentrations (AGCs) would be used for this determination, this approach may be overly conservative and difficult to implement. The (AGCs) listed in Air Guide 1 are relevant to ambient levels of exposure, not source concentrations. The AGCs may also be difficult to detect by laboratory analysis for certain compounds. To avoid confusion, specific levels indicative of breakthrough should be developed for changing out the carbon.

   Response: In accordance with the Air Guide-1 dated 1991, the values we have listed for TCE and PCE are 0.45 ug/m^3 and 0.075 ug/m^3, respectively. Therefore the O.045 ug/m^3 was a typographical error. As per the discussion between D. Brayack (CF Braun) and G.

Heitzman (NYSDEC) on November 24, 1997, the revised criteria for PCE is 1.2 ug/m^3. Page 25 of the Design Analysis Report will be reissued with the modified TCE and PCE values.

The reference stack criteria for compliance with Air Guide 1 was not intended to set stack concentrations equal to either the AGC or SGC. Rather, this criteria is intended to include site specific modeling and if needed will be performed after the system is operating, and the full range of VOCs have been identified.

5. **Comment:** The proposed groundwater remediation goals listed in Section 2.6 (pg 23) are acceptable only because groundwater impacts are being addressed in the remedy for Operable Unit #2. The proposed goals would not be acceptable if the off-site remedy does not intercept contamination migration from this source area. Also, a third option to consider if VOC removal is ineffective (pg 24) is to operate the SVE/AS system in cyclical mode. This would involve shutting down the system and monitoring rebound concentrations to evaluate desorbtion equilibrium and kinetics, then re-starting the system. In this way, a more informed re-evaluation of achieving the PRGs could be performed.

   Response: Agreed. In the event that soil remediation for VOCs is not accomplished in a reasonable time frame (i.e. 2 years), then a re-evaluation of the PRGs will be considered.