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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

MAY 19 1998

Mr. James F. Harris
Commander Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street
Norfolk, VA 23511-2699

Ref: Final Administrative Order on Consent
U.S. EPA Docket No. RCRA-III-038-CA

Subject: Review and Comments on Draft-Final Work Plan for Groundwater
Remediation Using the NoVOCs In-situ Groundwater Remediation System
at SWMU 24, NAS Oceana (2/3/98)

Dear Mr. Harris:

The United States Environmental Protection Agency (EPA) has completed its review of the Draft-Final Work Plan for Groundwater Remediation Using the NoVOCs In-situ Groundwater Remediation System at SWMU 24, NAS Oceana (2/3/98)(plan). The United States Army Corps of Engineers (USACE) will review the plan as necessary for providing oversight of the monitoring program field activities and therefore will be attending meetings and/or participating in telephone conferences on the subject. The Virginia Department of Environmental Quality (VADEQ) will review the plan to determine the applicable VADEQ permitting requirements and groundwater clean-up standards.

The comments provided in the enclosure to this letter are based on the review of the plan conducted by myself, Mr. Jack Hwang, Hydrologist, EPA, Ms. Gleness R. Knauer, Environmental Engineer Senior, Waste Permitting, VADEQ and Ms. Maria Williams, Hydrologist, VADEQ.

Overall, it appears that the plan was prepared in accordance with the results of the discussions and the conclusions from the November 20, 1997 meeting held at the EPA Region III office. EPA and VADEQ are in agreement with the Department of Navy's proposal to and procedures for expanding the implementation of the NoVOC system pilot study at this SWMU. However, EPA recommends selecting alternate monitoring well locations and monitoring points. It is recommended that a telephone conference between the hydrologists on the project be held to discuss the well placement and any other associated technical issues. It is suggested that this telephone conference be held before the Department of Navy submits the

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Ltr: James F. Harris, Department of Navy

Subj: Review and comments on the Draft-Final Work Plan for Groundwater Remediation Using the NoVOCs In-situ Groundwater Remediation System at SWMU 24, Oceana NAS (2/3/98)

final plan. The final plan shall incorporate the revisions resulting from discussions during the telephone conference and adequate responses to the comments in the enclosure to this letter, in accordance with Task VI. of Attachment A of the Consent Order. EPA is requesting that the Department of Navy submit the final plan to EPA and VADEQ at least thirty (30) days prior to the scheduled date of the field activities. EPA is requesting this additional time, above that required in Paragraph XI. of the Consent Order, to allow EPA and VADEQ ample time to contract field oversight and/or laboratory resources and to schedule a phone conference with all parties involved on the project to coordinate field activities.

If you have any questions or concerns regarding the requirements of this letter, please contact me at (215) 566-3428.

Sincerely,



Linda M. Holden
Remedial Project Manager
RCRA Operations Branch

Enclosure

cc: Michael Jacobi, Acting Branch Chief (3WC23)
Elizabeth Quinn (3WC11)
Jack Hwang (3WC11)
Gleness Knauer, VADEQ
Maria Williams, VADEQ
N. M. Johnson, Department of Navy
Will Bullard, Department of Navy
Jack Robinson, CH2M Hill

ENCLOSURE

Comments on the Draft-Final Work Plan for Groundwater Remediation Using the NoVOC In-situ Groundwater Remediation System at SWMU 24, Oceana NAS (2/3/98)

General Comments

1. Based on the VADEQ's review, it is determined that VADEQ will not require any permits for remediation activities at this SWMU. However, the Department of Navy should evaluate whether a permit is required under the federal Underground Injection Control Program, pursuant to Paragraph A.4. of Task IX of Attachment B of the Consent Order.

Section 1.0-Introduction

2. First Paragraph: Provide the sampling results from the confirmatory soil sampling around the perimeter of the excavation conducted in December 1997. Specify whether the results are indicative of any adverse impact to the proposed groundwater remediation.

3. In detail, specify the location of the re-injected groundwater. For instance, on page 1 it states that "The system creates an extensive groundwater circulation cell by withdrawing groundwater through a bottom screen and reintroducing it through a screen located *near the top* of the saturated zone (italics added)." On page 7 it states that "The standard NoVOCs system extracts contaminated water from the aquifer and releases it through a screen above the water table." A well installation diagram provided by CH2M Hill (Faxed to G. Knauer, 2/23/98) shows the re-injection zone straddling the static water table.

4. Provide the list of constituents to be analyzed, the that will be employed and the quantitation limits for each constituents. State that the results will be reported for all constituents detected.

Section 2.0-Phase 1: Piezometer Installation

5. Based on an evaluation of Corrective Measures Study for Draft Final Report for SWMUs 2E, 15, and 24, Naval Air Station Oceana-Virginia Beach, Virginia (March 1996), the lateral extent of contaminant plume is not well defined. Please provide cross-sectional plume maps so that the lateral extent of the contaminant plume can be fully characterized.

6. The plume isoconcentration maps provided in the plan are constructed using data from a variety of well screen depths and lengths ranging from 10-foot wells with 5-foot screens to 20-foot wells with 15-foot screens to 25-foot wells with 5-foot screens. Although the entire 25-foot thickness can be considered the uppermost aquifer, in consideration of the potential for driving the contamination down from the treatment well during treatment (plan, p.2), it may be appropriate to provide shallow (1-10 feet b.g.s) and deeper (15-25 feet b.g.s) isoconcentration maps.

7. Provide the final system details following the evaluation of data from the additional wells being installed in the Phase I stage of the plan.

8. The plan states that the deeper piezometers will be logged continuously to identify any clay lenses that may effect the performance of the NoVOCs system. It may be appropriate to specify that revised sections should be included in the Technical Memorandum since the existing cross sections only contain data from well installations up to March 1995 and additional information further characterizing the site geology has been obtained since that time.

Section 3.0-Phase 2: Baseline Groundwater Study at SWMU 24

9. Last Paragraph: Since an objective of the groundwater remediation at SWMU 24 is to collect sufficient data to evaluate the success of groundwater remediation using the NoVOCs system, it would be advisable to use the same analytical method and parameters measurement consistent with the pilot test conducted in 1996. For instance,

- ▶ On page 5, Method 8021 was proposed for chlorinated and aromatic volatile analysis. However, for the analysis conducted for the pilot test in 1996, Method 8020 was used for chlorinated volatile and Method 8010 was used for aromatic hydrocarbons.
- ▶ Total organic carbon (TOC), Total Kjeldahl Nitrogen (TKN)/ammonia ratio and sulfate were not included in the wet chemistry and inorganic parameter list.
- ▶ On page 12, Table 2, the type of monitoring was not specified for the monitoring system. It appears that the method used for the analysis of the well samples should have been Method 8021 for aromatic and chlorinated volatiles analysis. In addition, EPA recommends adding "1 week after the start up" to the proposed sampling frequency.
- ▶ Note that Table 2 is for phase 3. For instance, the schedule provided in Table 2 will most likely apply to both the existing and new NoVOC wells plus the entire monitoring network pending result of the Phase 2 analysis.

10. If additional wells/piezometers are required to establish the plume location, Phases 1 and 2 may need to be repeated based upon the information collected in the Baseline Groundwater Study in this section.

Section 3.0-Phase 3: NoVOCs System Installation and Remediation Procedures

11. The Navy should determine the effect the use of a 14-foot radius constructed infiltration gallery has on the projected 40-foot radius of influence from the treatment well. The *Final Report on the SWMU 24 In-well Aeration Pilot Test* which was done using a similar configuration provided evidence of a down gradient zone of influence. However, with the exception of MW-1, which is up gradient and has a longer screened interval than the other observation wells, there are no wells suitably placed to evaluate the zone of influence to the

northeast east and southwest. Therefore, it is recommended that the Department of Navy install an additional well(s) in this area.

12. Although it is mentioned, no discussion concerning the effect of seasonal groundwater elevation changes on the efficiency of the system is provided. It is assumed that the pumping rate and re-injection rate will be balanced based upon the capacity and hydraulic properties of the infiltration zone. However, this balance may need adjustment if the potentiometric surface rises or falls significantly. It is also assumed that the re-injection screen is being placed above the seasonal high water level for that area to prevent inundation.

13. The NoVOCs system had to be turned off several times during the pilot study when the infiltration gallery was saturated. In addition, the pumping rate from the lower screen had to be reduced to prevent over saturation of the infiltration zone. It is not very clear in the work plan or the pilot study report how that effected the efficiency of the system and what the implications would be to full implementation of the technology at this SWMU. Provide a discussion of the effects of the fluctuation water table on the NoVOCs system.

Section 5.0-Schedule

14. Insert the following additional milestone after the third bullet:

- ▶ Interim report for the baseline groundwater study and the proposed new NoVOC system

15. Provide milestone dates for the items listed in the schedule.