

5/24/95-00682



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

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. James Harris
COMLNATNAVFACENGCOM
Naval Facilities Engineering Command
1510 Gilbert Street
Norfolk, VA 23511-2699

May 24, 1995

Ref: Oceana Naval Air Station (Oceana), Virginia Beach, Virginia,
Administrative Order on Consent dated June 6, 1991, EPA ID
No. VA 217 002 4606, Docket No. RCRA-III038-CA.

Subject: Draft Final Addendum Report for the Investigation and
Corrective Measures Analysis of the Building 301.

Dear Mr. Harris,

EPA disapproves Oceana's Draft Final Addendum Report for the
Investigation and Corrective Measures Analysis of the Building
301. Enclosed are EPA's Official Comments for the Draft Final
Addendum Report for the Investigation and Corrective Measures
Analysis of the Building 301. The 60 day response time will
begin upon Oceana's receipt of EPA's official comments by
Certified Mail.

If you have any questions and/or comments I can be contacted
by phone at (215) 597-6688 or FAX at (215) 597-7906.

Sincerely,

David L. Toth
Project Coordinator
Mail Code 3HW61

Attachments

- cc: Betty Ann Quinn, 3HW61
- Harry Daw, Chief, 3HW61
- Patricia Hilsinger, 3RC33
- Joel Hennessy, 3HW61
- Erica Dameron, VADEQ
- Hassan Vakili, VADEQ
- Nina Johnson, Oceana NAS
- John Berard, USACE-Norfolk District

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

of pages 16

To	Jim Harris	From	David Toth
Dept./Agency	LANT DIV	Phone #	(215) 597-6688
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NSN 7540-01-217 728R

**EPA COMMENTS
for
OCEANA DRAFT FINAL ADDENDUM REPORT
for the
INVESTIGATION and CORRECTIVE MEASURES ANALYSIS
of the
BUILDING 301 AREA**

EPA ID NO: VA 217 002 4606
DOCKET NO: RCRA-III-038-CA
(May 24, 1995)

COMPREHENSIVE COMMENT I. All future documents presented to EPA should be presented in three ring binders. All documentation that is in the three ring binder should be punched with the standard U.S. Government 3/8 inch hole. The purpose of this comment is 1) It will facilitate EPA review by allowing the EPA reviewer to remove pertinent documents for copying and/ or reference, e.g., Figures, Tables, etc. and 2). In responding to EPA's comments, Oceana need only revise the appropriate up-dated pages and indicate on the bottom of the page the date the revised sheet supersedes the original. This will also facilitate a complete and organized report for review.

COMPREHENSIVE COMMENT II. All figures in the Draft Final Addendum Report for the Investigation and Corrective Measures Analysis of the Building 301 Area itself are incorrectly designated Sites. The correct designation is Solid Waste Management Unit (SWMU). Oceana continually and incorrectly changes the titles of the SWMU's to Sites. This leads to confusion and misrepresentation. For clarity, Oceana must properly designate the correct SWMU title, e.g., Site 1 will be SWMU 1.

COMPREHENSIVE COMMENT III. All Figures and Tables are to be placed in the Appendix. This will ensure expeditious access to the Figures and Tables. Presently, an EPA reviewer has to page back and forth to find the Figures/Tables.

COMPREHENSIVE COMMENT IV: The layout, legends and designations on the Figures are confusing, e.g.:

- In the LEGEND, the Monitoring Wells must be designated (1-MW) for SWMU 1 Shallow Monitoring Well and (1-MWD) for SWMU 1 Deep Monitoring Well or 1-MW7D, SWMU 1 Piezometer (1-PZ), etc.
 - The background data, inscriptions, e.g., BLDG. 306, 2C-GP9, etc. are not clear. If the location and symbol are on a Figure the symbol must be legible.
 - The contours must be legibly designated and the contour interval must be ascribed and legible on all Figures.
- Oceana needs to correct the Figures as noted.

COMPREHENSIVE COMMENT V: To gather a true base line of piezometric water level measurements, Oceana must select and conduct the following synoptic piezometric water level readings for all the SWMUs at Oceana: 1) A monthly cycle for the first year to be coordinated with rainfall; 2) A bimonthly cycle for the second year; 3) A quarterly cycle for the third year; 4) Semiannually for the fourth year.

COMPREHENSIVE COMMENT VI: All pages in the Appendix must be numbered in relation to their respective Appendix, e.g., A-1, etc.

COMPREHENSIVE COMMENT VII: Copies of all field notes, office produced copies of field generated notes, the location, construction, and current and historical pumping rates for any and all ground water extraction wells within the facility, pump tests, and documents generated in accordance with the Administrative Order on Consent (Consent Order) dated December 4, 1991 must be delivered to EPA within 14 days of their generation. Oceana must provide Moreover, Oceana must indicate where and how any of this water is used.

COMPREHENSIVE COMMENT VIII: In addition to all monitoring wells being surveyed, the compass direction and approximate linear distance from a surveyed point for all geoprobes, surface soil sampling, etc., should be indicated in the field notes and on the appropriate figure as requested by EPA.

COMPREHENSIVE COMMENT IX: For all Figures, the contours must be legibly designated and the contour interval must be ascribed and documented on all the Figures.

COMPREHENSIVE COMMENT X: Isoconcentration contour maps of each constituent detected in ground water which exceeds health-based levels must be included in the CMS. These maps must include ground water sampling from wells and from in-situ ground water samples on the same map.

COMPREHENSIVE COMMENT XI. For all Figures, contour maps showing the extent of ground water and soil contamination for each constituent which exceeds cleanup levels must be generated. Contour maps of classes of constituents (e.g., total VOCs) would also be helpful in evaluating the extent of contamination and the adequacy of the proposed remedies.

COMPREHENSIVE COMMENT XII: Oceana must realize that any field activities taken without EPA approval may not be accepted by EPA. If the location and sampling of an area for the locating of a future MW. etc., are rejected, Oceana will be responsible at additional expense to Oceana for positioning the MW(s), etc., in the EPA approved location.

COMPREHENSIVE COMMENT XIII: Page 1, third Para. - Oceana states that the areas near buildings 301 and 306 ordinarily would not have been included in the CMS of Site 2C because they were not believed to be within or downgradient of the primary areas of ground water and soil contamination. The results of the Building 301 Area investigation clearly demonstrate that significant soil and ground water contamination exists and there are probably significant sources within this area. These results must be included in and evaluated as part of the CMS for Site 2C. In the future, the Investigation and Corrective Measures Analysis of the Building 301 Area must coordinate the investigation and analysis of Building 301 with the Oceana Draft Corrective Measures Study (CMS) for Sites 1, 2B, and 2C.

COMPREHENSIVE COMMENT XIV. Site 2-C includes the area of Building 301. Any remedy selected for Site 2-C must remediate the contamination found at Building 301." The investigation at Building 301 is not yet complete. Although the proposed ground water remediation system seems to cover the area around Building 301, additional source control measures will be needed in addition to the ground water pump and treat remedy proposed.

COMPREHENSIVE COMMENTS XV: EPA Region III does not accept the data generated from composited soil samples for the analysis of volatile organic aromatics (VOA's), volatile organic compounds (VOC's), and Semi-Volatile Organic Aromatics (semi-VOA's).

COMPREHENSIVE COMMENT XVI. Since Oceana is not following the standard EPA RFI practice of doing a complete RFI, each report must be all inclusive. Therefore, any data referenced in previous documents must be included in the document being reviewed. This data can be assembled in the Appendix.

COMPREHENSIVE COMMENT XVII: Oceana is investigating this area, ostensibly because building 301 is at the edge of site 2C, and the Navy planned to construct extensions to buildings 301 and 306 that might cover potentially contaminated areas. However, the building 301 report reveals areas of contamination, particularly in groundwater, that do not suggest that the area of these two buildings is on the edge of a contaminated area. Rather, contamination in MW nos. 2C-5 and 2C-1 (apparently located at the farthest upgradient point of the 2C study area) with up to 210 ug/l of vinyl chloride may suggest that an additional source exists upgradient of the area currently designated as 2C. This area must be included in future investigations of the 2C area.

COMPREHENSIVE COMMENT XVIII: The current report confirms significant groundwater contamination in the building 301/306 area with chlorinated volatile organic compounds (VOCs) such as vinyl chloride (up to 370 ug/l), 1,1-dichloroethane (up to 140 ug/l), total 1,2-dichloroethene (up to 190 ug/l), chloroethane (46 ug/l), and dichlorobenzenes (total 25 ug/l). Fuel-related

organics such as benzene (up to 10 ug/l), toluene (up to 11 ug/l), ethylbenzene (up to 13 ug/l), total xylene (up to 16 ug/l), and TPH (up to 280 ug/l) were also measured in groundwater. Soil analysis revealed high concentrations of TPH (up to 3,900 mg/kg), and lower levels of the chlorinated VOCs vinyl chloride (up to 20 ug/kg), 1,1-dichloroethane (up to 51 ug/kg), total 1,2-dichloroethene (up to 110 ug/kg), chloroethane (4 ug/kg), and trichloroethene (up to 9 ug/kg). Fuel-related organics such as benzene (9 ug/kg), toluene (up to 21 ug/kg), ethylbenzene (up to 20 ug/kg), and xylene (up to 50 ug/kg) were also measured in area soils at low levels. The building 301 report evaluates the TPH, low level chlorinated VOC, and fuel-related contamination of soil in the area. A risk-assessment of soil exposure for construction workers is performed that shows no risk under this particular exposure scenario. Potential risks for groundwater exposure are not evaluated. In future investigations of this area, the source and extent of the significant groundwater contamination must be investigated; in addition, contaminated soils must be evaluated for potential long term exposure and potential contaminant transfer to groundwater.

COMPREHENSIVE COMMENT XIX: Each table of analytical results must indicate the detection limits for each compound analyzed but not detected. Laboratory data sheets should be provided for all analyses.

The following are EPA'S Specific comments.

COMMENT 1. All tables that present data must include quantitation limits. Some tables in the building 301 report fail to do this; others include detection limits but make no note of quantitation limits.

COMMENT 2. Other Field Activities: In this section, the report notes that well MW-3 was abandoned. Was this done with EPA approval? This well has historical evidence of contamination with vinyl chloride (up to 11 ug/l) and benzene (up to 5 ug/l) at concentrations above health-based limits.

COMMENT 3. Northwestern Building 301 Extension: EPA disagrees that no significant concentration of contaminants were measured in groundwater sample 301-GP1 as noted in the last paragraph of this section. This groundwater sample revealed 2 ug/l vinyl chloride, equivalent to the current MCL for this contaminant, 4 ug/l of benzene, which approaches the MCL of 5 ug/l, and 130 ug/l TPH, which is among the highest TPH levels reported for groundwater in the area. Also, Oceana must provide a groundwater contour map/Figure and data validating their statement that groundwater flows south at Site (SWMU) 2C.

COMMENT 4. Table 5, Constituents Exceeding Potentially Applicable Federal/State Standards and Guidance: The convention for this table appears to be inclusion of contaminants reported at concentrations equivalent to MCLs (e.g., benzene at 5 ug/l). Vinyl chloride, with several detections at 2 ug/l, equal to its MCL, must also be included on this table.

COMMENT 5. Construction Risk Analysis: A limited risk analysis is performed for exposure of construction workers to subsurface soil in this section. The initiation of corrective measures for this area must be preceded by evaluation (either as building 301 area or as part of the investigation of area 2C) of the extent and potential risks associated with exposure to contaminated groundwater and soil in the area. This evaluation must include the extent, thickness, and composition of the free produce encountered in soil boring SS1. The potential for transfer of mobile soil contaminants to groundwater must also be determined. Exposure scenarios must include residential exposure for groundwater and soil. Industrial exposure to soil may also be included in addition to residential exposure.

COMMENT 6. The EPA ECAO memo used as the basis for RfDs for JP-4 and JP-5 in the risk analysis has been withdrawn and cannot be used. The risk evaluation of TPH using these values must be removed from the report.

COMMENT 7. Tables 8 and 9: The concentration of 1,1-dichloroethane listed on these tables (5 ug/kg) does not agree with the concentration listed on Table 4 (51 ug/kg). This discrepancy must be corrected.

COMMENT 8: Figure 1: The locations of MW-1, 6, 7 must be put on this Figure.

COMMENT 9: Past Investigation and Results: A Figure must be included in the Appendix identifying soil borings B1 and B2. A copy of the appropriate documentation that is referenced must be included in the Appendix.

COMMENT 10. Past Investigation and Results, Paragraph (Para.) 5: A map/figure is needed to show the location of the sample the location of which is described as 200 feet southwest of the northwest corner of Building 301.

COMMENT 11. Field Sampling, Para. 2: The second and third sentences are ambiguous. This entire paragraph needs to be rewritten and clarified.

COMMENT 12: Other Field Activities: As built drawings of abandoned Well 2C-MW3 must be provided for review.

COMMENT 13: Other Field Activities: This paragraph is inconclusive and ambiguous. If the Virginia Department of Health (VDH) does not specify chlorination of wells before abandonment for Monitoring Wells, why does the current language belie this. Oceana must include the current a copy of the current regulation in the Appendix and explain their statement "despite the current language of the regulations.

COMMENT 14: Soil Management Alternatives: In addition to EPA not accepting data for VOA's, VOC's and Semi-VOA's, see COMPREHENSIVE COMMENT XV, what is Oceana's rationale for taking a minimum of one (1) sample for every one hundred (100) cubic yards excavated, containerized or stockpiled.

COMMENT 16: Permitted-Lined Industrial Landfill: Prior to disposal tests must be conducted on those constituents that are at and/or above MCL levels, e.g., Benzene, Vinyl Chloride, etc.

COMMENT 17. Figure 3: Sample 301-SS14 is shown in a different location than proposed in the workplan. Please explain.

COMMENT 18: Page 5: Why was boring 301-SS4B not sampled?

COMMENT 19: Page 5: Soil boring 301-SS1 encountered free product at 3' to 3.5'. Was the thickness of the free product noted? Oceana must determine the extent and thickness of the floating product, and identify its source. A sample of the floating product should be collected for analysis.

COMMENT 20: Page 6: Oceana indicates that most in-situ ground water samples were collected from 9' to 12', although the depth to ground water was 6' to 8' (even shallower in some areas). Since much of the contamination appears to be petroleum hydrocarbons, sampling should be across the ground water table to determine the presence, thickness, and extent of floating product. Since Oceana has clearly demonstrated that ground water has been contaminated to greater than action levels, Oceana must propose the installation of enough permanent monitoring wells in this area to fully characterize ground water impacts, including the extent of floating product.

COMMENT 21: Page 6: Soil samples for TCLP VOC analysis were collected by taking soil from two borings and placing them without mixing into one sample container. How much of the sample was actually used by the lab for extraction and analysis? Could the lab have analyzed only part of the sample, thus biasing the results towards one sample or another? What was the time lapse between the collection of the two samples?

COMMENT 22: Page 7: Oceana states that augered borings were backfilled with clean, fine sand. This procedure is consistent with the workplan for this area. However, borings should be

grouted if over 3' deep, as EPA stated in its letter granting conditional approval for the work at POL sites.

COMMENT 23: Figure 7: There are many discrepancies in the data listed on this figure relative to the data in Table 4. Please explain the following discrepancies and correct the figure or the table:

Figure 7: Sample 301-SS1 indicates 66 ppb total VOCs, but Table 4 indicates 0 ppb total VOCs.

Figure 7: Sample 301-SS7 indicates 0 ppb total VOCs, but Table 4 indicates 14 ppb total VOCs.

Figure 7: Sample 301-SS11 indicates 191 ppb, but Table 4 indicates 151 ppb.

Figure 7: sample 301-SS14 indicates 0 ppb total VOCs and 0 ppb chlorinated VOCs, but Table 4 indicates 4 ppb total VOCs and 4 ppb chlorinated VOCs.

COMMENT 24: Page 11: Oceana states that the source of the fuel and chlorinated VOCs in soil is not known for the Southeastern Building 301 extension, and that the source or sources may exist in or beneath the southeastern end of the existing building. This possibility must be investigated and the source identified.

COMMENT 25: Page 12: Oceana states that the source of chlorinated VOCs in ground water appears to be within or north of the Building 306 extension and the southern half of the southwestern Building 301 extension. This must be investigated and the source characterized. Moreover, the vertical and horizontal extent of ground water contamination is not defined and must be investigated further.

COMMENT 26: Page 14, Construction Risk Analysis: Oceana states that 3 routes of exposure to soil could occur: ingestion, inhalation of either dust or volatilized compounds, and dermal contact. Oceana states that exposure to ground water would be minimal, since excavation below 4' is not expected and the water table is usually 4' to 8' below the surface. Soil boring 301-SS1, however, encountered free product from 3' to 3.5'. This represents a likely exposure which must be assessed. Free product could be ignitable, as well as posing other risks.

COMMENT 27: Page 14, Construction Risk Analysis: Setting soil cleanup levels only based on construction worker exposure is not acceptable. Soil cleanup levels must be developed which are also protective of ground water. One goal of remediation which Oceana fails to state is the identification of the thickness and lateral extent of free product and its subsequent removal. In addition, Oceana does not state why residential soil clean up levels should

not be considered, or why long term industrial exposure scenarios should not be considered when setting cleanup levels.

COMMENT 28: Page 13: Oceana indicates that several contaminants in ground water exceed potentially applicable federal standards, but does not include ground water in the risk assessment and does not evaluate ground water remediation alternatives. Ground water must be included in the CMS, either for the Building 301 area or as part of Site 2C.

COMMENT 29: Tables 8 & 9: Oceana uses the highest concentration of TPH measured (3900 mg/kg) as the concentration for JP-4 and JP-5 to assess non-carcinogenic risk. Soil boring 301-SS1 encountered free product at 3' to 3.5' although no sample was collected for TPH analysis. If a sample had been collected, it seems likely that TPH would be greater than 3900 mg/kg at that depth. In Table 9, some of the calculated screening concentrations exceed 100%. Although this is the result of the calculation, these physically impossible values should be explained in a footnote, or capped.

Prepared by: David L. Toth
Project Coordinator
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