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# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

**Richard N. Burton**
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January 27, 1994

Ms. Nina M. Johnson, P. E.
Code 18
Department of the Navy
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street
Norfolk, VA 23511-2699

RE: Draft Final Work Plan Addendum for the Phase II RCRA Facility Investigation of Sites 2D, 2E, 15, and 25 Oceana Naval Air Station, Virginia Beach, Virginia

Dear Ms. Johnson:

Thank you for providing the Department of Environmental Quality (DEQ), Waste Division, the opportunity to comment on the "Draft Final Work Plan Addendum for the Phase II RCRA Facility Investigation of Sites 2D, 2E, 15, and 25 Oceana Naval Air Station, Virginia Beach, Virginia".

Attached are comments and questions concerning the draft report. The report was reviewed by representatives of the Water Division Tidewater Regional Office and Waste Division Virginia Beach Regional Office.

If you have any questions concerning these comments or questions, please contact Erica Dameron at (804) 762-4212.

Sincerely,

Scott McMillian

Federal Facilities Program

Attachment

cc: James Harris, LANTDIV
Robert Stroud, EPA Region III, 3HW61
Milt Johnston, Waste Division Regional Office
Lora Fly, Waste Division Regional Office
Amy Webster, Water Division Tidewater Regional Office
K. C. Das, Waste Division Superfund

Comments on Draft Final Work Plan Addendum for
the Phase II RCRA Facility Investigation of
Sites 2D, 2E, 15 and 25
Oceana Naval Air Station
Virginia Beach, Virginia

## General Comments

### Groundwater Sampling

1. The report states, "Sampling will also be from the top of the screened zone." Does this statement infer that the groundwater samples which will be analyzed for metals will be collected from the top of the water table (i.e. Site 15 - monitoring wells will be analyzed for PAHs, VOCs and total and dissolved metals)?

### Handling Investigative Derived Waste

2. The report states, "... the corrosive, reactive and ignitable hazard of the soils will not be tested on the assumption that the soils are inert. Evidence to the contrary in the field will be cause for reevaluation and possible testing." What evidence would cause the soils to be reevaluated based on field observations?

3. The report states, "... NAS Oceana and LANTDIV will review Navy records for these sites to confirm that the discharge wastes and the soils, if they are contaminated by these wastes, should not be considered a listed hazardous waste." These records should also be reviewed to determine if any byproduct produced by degradation would result in a hazardous waste.

## Site Specific Comments

### Site 2D - Line Shack 125 Disposal Area

1. The soils at the project site should be delineated to determine the extent of contamination and to verify the presence or absence of free product.

2. The existing wells should be sampled during the Phase II Investigation to determine if any contaminants are present (i.e. odor or sheen) and analyzed based on field observations.

3. TAL metal analysis should be included in the investigation of Site 2D.

4. Any surface water present in the shallow wetlands depression described on page 2-1 should be sampled due to the potential for transport of contaminants.

**Site 2E - Line Shack 109 Disposal Area**

5. Aquifer characteristics should be determined for this site. Aquifer characteristics include conductivity, transmissivity, hydraulic gradient, and flow velocity/direction.

6. A complete description of the vertical and lateral extent of contamination is needed.

Dissolved phase: In order to delineate the extent of the groundwater contamination, the consultant should consider placing at least two additional wells in the areas to the northeast and northwest of the free product area. The existing wells should be sampled along with the new wells. This is important since total petroleum hydrocarbon (TPH) was not analyzed during the January 1993 sampling event. Also, samples from monitoring wells 2E-MW2 and 2E-MW3 were not analyzed for semi-volatiles.

Adsorbed phase: According to the report, soil borings will assist with the characterization of the free product plume. In addition, soil boring placement and sample depths should be a consideration for determining the vertical and lateral extent of soil contamination.

Will three soil samples located on the outer fringe of the contaminant plume determine the radial extent of contamination? Also, will these soil samples verify the existence of more than one plume?

Based on the high concentration of contaminants in the soil near well 2E-MW2 and the presence of free product in well 2E-MW1, a possibility exists that there may be two sources. Will the sources be identified during this investigation?

7. Plume migration direction and rate should be determined for free product and dissolved phases at each site.

8. The risk assessment should be updated to reflect current site assessment information. A site characterization checklist for reference when updating this section is attached.

9. TAL metal analysis should be included in the investigation of Site 2E.

**Site 15 - Abandoned Tank Farm**

10. Aquifer characteristics should also be determined for this site. Aquifer characteristics include conductivity, transmissivity, hydraulic gradient, and flow velocity/direction.

11. A complete description of the vertical and lateral extent of contamination is needed.

    Dissolved phase: Ground water analysis should include TPH.

    Adsorbed phase: Soil sampling to include analysis of TPH is needed to determine lateral and vertical extent of soil contamination.

    Will the groundwater probes be useful in determining the extent of free product if present?

12. Plume migration direction and rate should be determined for free product and dissolved phases at each site.

13. The risk assessment should be updated to reflect current site assessment information. A site characterization checklist for reference when updating this section is attached.

14. Free product recovery and reporting will be required if measurable quantities are detected at Site 15.

15. TAL metal analysis should be included in the investigation of Site 2E.

16. Migration of contaminants into surrounding surface water should be considered based on the potential for transport of contaminants into surface water bodies.

**Site 25 - Inert Landfill**

17. Gene Siudyla, DEQ - Water, stated in his January 16, 1979 report that much of the inert landfill had already been filled, but that he anticipated no groundwater problem since the pit was to be filled with inert demolition debris only. Several inspection reports (June 6, 1980, November 2, 1981 and September 30, 1982) conducted by Harold Winer, DEQ - Waste, noted large quantities of wood waste, cardboard and some paper going into the water. In a conversation with Mr. Siudyla on January 10, 1994, he stated he later visited the site (in the 1980s) and the water in the borrow pit by the landfill was turbulent.

18. Three downgradient wells and one upgradient well should be installed around the landfill to determine the source of metals and pesticide contamination. The report suggests the source of pesticides may be from the adjacent agricultural fields; however, the source of the contamination should be confirmed. If the inert landfill is determined to be the source, groundwater samples should be collected and analyzed based on the Phase I and Phase II monitoring program of the Virginia Solid Waste Management Regulations.

# SITE CHARACTERIZATION REPORT CHECKLIST

Site:_____ PC#_____ Region_____

The following checklist must be filled out by the Responsible Party (RP) and/or the RP's Consultant and included in the Site Characterization Report. **Indicate on the checklist the page and section number where each item is addressed in the attached report.** Also indicate on the checklist the section and page number where justification is given for items omitted from the attached report. The contents of the report should reflect and be commensurate with the nature of the release, degree of contamination and complexity of the site investigation.

**A copy of the Initial Abatement Measures Report must be attached to or included in the Site Characterization Report.**

Items marked with an * are required as part of the CAP Permit Application.

## 1. SITE ASSESSMENT

Page /Section

_____/_____ Nature and quantity of release
_____/_____ *Physical and chemical properties of released product
_____/_____ Free Product Removal Report
_____/_____ Tank information (capacity, location, contents)
_____/_____ Geologic/hydrogeologic site information
- _____/_____ Site geology
- _____/_____ Subsurface conditions (fractures, solution cavities, lenses, depth to ground water)
- _____/_____ Pumping/injection wells
- _____/_____ Drillers/geologic logs and construction details for all wells and boreholes
- _____/_____ Aquifer characteristics
  - _____/_____ Name
  - _____/_____ Thickness
  - _____/_____ Conductivity
  - _____/_____ Transmissivity
  - _____/_____ Hydraulic gradient
  - _____/_____ Flow velocity/direction
  - _____/_____ Hydrogeologic cross section

_____/_____ Information as to water resources within 1000 ft of site (wells, springs, surface water)
_____/_____ Information as to adjacent property owners and potentially affected ground and surface water users (names, addresses, telephone numbers)
_____/_____ Information on historical releases at the site as well as historical releases from USTs located on adjacent property
_____/_____ Construction information on potentially affected wells
_____/_____ Current and projected groundwater/land use
_____/_____ Description of vertical and lateral extent of contamination
- _____/_____ Free product phase
- _____/_____ Dissolved phase
- _____/_____ Residual phase
- _____/_____ Vapor phase

____/____ Plume migration direction and rate
____/____ *Sampling/monitoring results

NOTE: All lab sheets and tables submitted in SCR must have sample media, analytical method used, detection limit method, unit of measure, sample depths, and sample locations. Sampling results from BTEX analysis must be reported individually and totaled.

Site maps/sketches (combine when appropriate and to scale when possible)

____/____ *Locus map on 7 1/2 min. quad. or county highway map
____/____ *Base map with property lines and physical features (buildings, roads, etc.)
____/____ *Location of source(s) of contamination at site
____/____ Sample locations (water, vapor, and/or soil)
- ____/____ Excavation pits
- ____/____ Surficial soils
- ____/____ Surface waters
- ____/____ Basements/conduits (and/or soil vapor surveys)
- ____/____ Monitoring wells
- ____/____ Domestic wells
- ____/____ Public supply wells
- ____/____ Springs

____/____ Boring locations
____/____ Observation well locations
____/____ Ground water flow direction map
____/____ Subsurface conduits (telephone, water, sewer, power, dispenser piping)
____/____ *Potentially affected wells/streams/springs
____/____ *Flood plain designation
____/____ Isoconcentration or plume delineation map for each affected aquifer and/or soil zone for all phases present (cross-sectional and map view)
- ____/____ Free product
- ____/____ Dissolved
- ____/____ Residual
- ____/____ Vapor

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COMMENTS: _____

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## 2. RISK ASSESSMENT

_____/_____ Description of demographics (population)
_____/_____ Impacted and potentially impacted receptors (human/wildlife/ forestry, etc.)
_____/_____ Exposure pathways for receptors
- _____/_____ Ingestion
- _____/_____ Dermal contact
- _____/_____ Inhalation
- _____/_____ Other

_____/_____ Exposure levels for receptors
- _____/_____ Exposure level determination
  - _____/_____ Tap water sample
  - _____/_____ Direct well sample
  - _____/_____ Surface water sample
  - _____/_____ OVA and location of measurement
  - _____/_____ Extrapolation
  - _____/_____ Other

_____/_____ Evaluation of existing/potential risk to receptors (based on contaminant levels, exposure levels, frequency of exposure)
_____/_____ Evaluation of existing/potential risk to environment (based on contaminant levels, fate & transport, etc.)
_____/_____ Evaluation/provision of alternate water supply

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3. REMEDIATION ASSESSMENT

____/____ Remediation feasibility
____/____ Projected remediation endpoints based on site, risk, and remediation assessments
- ____/____ Free product
- ____/____ Dissolved
- ____/____ Residual
- ____/____ Vapor

____/____ Description & evaluation of applicable technologies
- ____/____ Design for each applicable technology
- ____/____ Timeframe for implementation and duration for each applicable technology to achieve projected remediation endpoints
- ____/____ Projected cost for each applicable technology to achieve projected remediation endpoints
- ____/____ Achievable endpoints for each applicable technology
  - ____/_____ Free product
  - ____/_____ Dissolved
  - ____/_____ Residual
  - ____/_____ Vapor
- ____/____ Estimated timeframe for achieving endpoints for each applicable technology
  - ____/_____ Free product
  - ____/_____ Dissolved
  - ____/_____ Residual
  - ____/_____ Vapor
- ____/____ Immediate/future beneficial results for each applicable technology

____/____ Recommendation of most appropriate technologies with costs

____/____ Site Characterization Report submitted within 45 days of release confirmation or extension granted

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COMMENTS: _____

DEFICIENCIES: _____

REVIEWED BY: _____ DATE: _____