N50092.AR.000059
JEB FORT STORY, VA
5090.3a

LETTER OFFERING COMMENTS ON DRAFT REMEDIAL INVESTIGATION REPORT FIREFIGHTER TRAINING AREA, LIGHTER AMPHIBIOUS RESUPPLY CARGO (LARC) 60 MAINTENANCE AREA, AND AUTO CRAFT AREA FORT STORY VA
2/1/1996
COMMONWEALTH OF VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

F. le: 6C.10

0059

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Peter W. Schmidt
Director

P. O. Box 10009
Richmond, Virginia 23240-0009
(804) 762-4000

February 1, 1996

Commander
US Army Transportation Center
ATZF-PWE (Musel)
Building 1407, Room 111
Fort Eustis, Virginia 23604-5332

Dear Mr. Musel:

Thank you for providing the Department of Environmental Quality, Office of Federal Facilities Restoration and Superfund, the opportunity to review the draft "Remedial Investigation Report Firefighter Training Area, LARC 60 Maintenance Area, Auto Craft Building Area, Fort Story, Virginia, December 1995".

Attached are the staffs' comments concerning the Fort Story Report. If you have any questions concerning these comments please contact me at (804) 698-4192.

Sincerely,

Durwood H. Willis
Office of Federal
Facilities Restoration and
Superfund

Attachments

cc: Erica S. Dameron, DEQ
Larry McBride, DEQ

Comment on the draft "Remedial Investigation Report Firefighter Training Area, LARC 60 Maintenance Area, Auto Craft Building Area, Fort Story" December, 1995.

1. Page 2-10: Section 2.2.10 Investigation Derived Waste Management-Please find attached the Department of Environmental Quality Policy regarding investigation derived wastes.

2. Page 2-14: The PA/SI for several sites included in this RI indicated that pesticides or PCBs were detected. This class of compounds were not evaluated in the RI. Some explanation should be provided as to the reason for not evaluating the pesticide/PCB fraction in this RI. Comments on the ecological risk will also address this point.

3. Page 2-18: It is noted that samples were not collected north of the site. In a comment provided by the staff in October, 1991 it was suggested that the area north of the site be further investigated, even though the contaminant levels were low. Some additional discussion of the determination not to sample in the north area seems appropriate.

4. Page 3-1: Physical Characteristics. This section states that the land features at Fort Story consist of sand ridges, sand flats, and wetland areas. These areas as well as the Chesapeake Bay and Atlantic Ocean are all potential targets and should be addressed in an ecological assessment.

5. Page 3-2, Section 3.1.3: This section states that "surface water on Fort Story is conveyed by drainage ditches or storm water lines to the Chesapeake Bay on the northwestern portion of the facility, to the Atlantic ocean on the northeast portion of the base, to wetland areas adjacent to Broad Bay on the southern portion of the facility". These areas are all potential targets and need to be addressed in an ecological assessment with sampling results included and continued monitoring.

6. Page 3-10: It is not clear why no inorganic analyses were performed for the upgradient well at the Firefighter Training Area.

7. Page 3-11: The first paragraph on this page indicates that arsenic was not detected in the upgradient wells. However, the table on the previous page indicates an arsenic concentration of 40.01 mg/L in well MW-118. The data validation summary table indicates that arsenic was undetected at this well. Please clarify.

8. Page 3-12: Section 3.1.6. Ecology-This section should address fauna as well as flora. It is difficult, or impossible, to know if receptors are exposed to the contaminated media when it is unknown what potential receptors exist on or near the sites. It is recommended that a species inventory be performed at Fort Story to establish potential receptors. Performing site specific inventories would not account for terrestrial animals that range over larger areas.

9. Page 4-1: Section 4 Nature and Extent of Contamination-The results of the quality assurance checks by the U.S. Army Corps of Engineers New England Division (NED) Laboratory should be provided and discussed.

10. Page 4-1: Section 4.1.1 Definition of ARARs-Attached is a preliminary identification of Commonwealth of Virginia ARARs. This information identifies state statutes and regulations which may serve as ARARs. As the site proceeds to the feasibility phase these ARARs may be refined or expanded.

11. Page 4-6: Section 4.3.1 Surface and Subsurface Soils-Is access to this site(s) sufficiently restricted to justify the use of the industrial soil screening criteria?

12. Table 4-5: Fire Training Pit Soils Data-Volatile Organic Compounds. The concentration of acetone in SB04-022 may be sufficient to result in transfer from soil to groundwater.

13. Table 4-5: The concentrations of fluoranthene and pyrene at all sampled soils levels in SB04-022 exceed the Biological Technical Assistance Group (BTAG) screening levels for ecological risk (100 ppb for fluoranthene and pyrene).

14. Table 4-5: The total metals data indicate that levels of arsenic in several soil samples at the Fire Training Pit exceed the EPA Region III Risk Based Concentration (RBC) for residential soils.

15. Table 4-5: From an ecological risk perspective chromium, copper, lead and zinc may pose some concern at the Fire Training Pit and should be compared to the BTAG screening levels.

16. Table 4-6: Fire Training Area-Sediment. The concentration of lead exceeds the BTAG screening level for ecological risk in SD04-001.

17. Page 4-16: Fire Training Area-Groundwater. It is indicated that vinyl chloride concentrations detected by onsite methods could not be confirmed by offsite lab analysis. How

did the New England Division Lab data compare to the onsite lab and the Savannah Lab? Vinyl chloride is a degradation product of perchloroethylene (PCE) and trichloroethylene (TCE) and could be present in future samples even if not confirmed at this time.

18. Page 4-20: This section of the report mentions a change in flow direction from previous determinations. Does this statement relate to the issue in the PA/SI on pages 2-37 and 2-38 concerning a groundwater divide? Please clarify.

19. Table 4-9: Soil Results for the LARC 60 Area. While the data indicate the concentrations are less than the industrial screening level, some consideration should be given to the residential level proposed by EPA since Fort Story is not a restricted access Area. This issue of residential versus industrial will be addressed in the risk assessment section.

20. Table 4-9: Levels of methylene chloride greater than 10 ppb would have the potential to transfer from soil to groundwater. A number of soil boring samples contained methylene chloride concentrations greater than this level and the impact on groundwater should be discussed. The levels of TCE in several samples were also at concentrations at which groundwater would be impacted. Please address TCE in the discussion.

21. Table 4-9: The levels of arsenic in SB06-001 (0-1 ft) and (5 -7 ft) exceed the EPA region III RBC for residential exposure in soil of 0.37 mg/kg.

22. Page 4-23: Twenty-nine soil samples had total petroleum hydrocarbons as heavy oils at concentrations greater than the screening level of 100 mg/kg. What is the impact of these concentrations on the site?

23. Table 4-11: Surface Water Results. The surface water data should be compared to Virginia's Surface Water Standards VR 680-21-00, May 20, 1992.

24. Table 4-12: The groundwater data in Table 4-12 indicates tetrachloroethene (PCE) and trichloroethene (TCE) have MCLs of 5 ppb. Concentrations of PCE and TCE in MW-117 exceed the 5 ppb MCL. Please discuss the impact of these compounds.

25. Table 4-12: The concentrations of total and dissolved arsenic in MW-117 exceeds the Virginia Groundwater Standard as well as the EPA Region III RBC. This should be addressed.

26. Page 4-34: Was vinyl chloride detected in the samples sent to the New England Division Laboratory?

27. Table 4-13: The MCLs for cis 1,2-DCE, toluene, TCE and PCE were exceeded in several groundwater samples. Please discuss the significance of these compounds in groundwater.

28. Table 4-13: Metals concentrations in Table 4-13 should be compared to the Virginia Groundwater Standards. The following metals appear to exceed the standards in one or more groundwater samples: arsenic, cadmium, chromium, lead, and zinc.

29. Page 4-38: While the concentration of PCE, TCE, or DCE may not exceed the 1% to 10 % rule of thumb, the level of solvents present would suggest that the groundwater may be contaminated with DNAPL and if the sampling was expanded the non-aqueous phase may be located.

30. Page 4-39: Some discussion of vinyl chloride as a degradation product seems appropriate since vinyl chloride is one of the final breakdown product of PCE and TCE.

31. Table 4-14: The concentration of methylene chloride and TCE in SB07-001 (0-1 ft) would indicate a potential transfer to groundwater.

32. Table 4-14: The levels of semivolatile organic compounds in soil should be compared to the EPA soil screening levels for transfer from soil to groundwater.

33. Table 4-14: Arsenic exceed the residential screening concentrations for soils compared to the EPA Region III RBC Tables.

34. Page 6-3: Ecological Risk Assessment. A significant exposure pathway which has been overlooked includes groundwater to surface water (i.e., Chesapeake Bay and the Atlantic Ocean) where aquatic receptors could be exposed. Groundwater flow information obtained from the monitoring wells (including the direct push technology) indicates contaminated groundwater from the Fire Training Area (FTA) likely discharges to the Chesapeake Bay, and contaminated groundwater from the LARC 60 Area and the Auto Craft Area likely discharge to the Atlantic Ocean. A preliminary evaluation using EPA Region III's interim guidance should be conducted. The groundwater Contaminants of Potential Concern (COPCs) and the BTAG aquatic marine values should be used to calculate an EEQ (or hazard quotient). The calculated EEQ will dictate whether additional studies are necessary (e.g., modelling studies).

35. Page 6-3: Ecological Risk Assessment

The collection of pesticide and PCB data has been excluded from the Remedial Investigation at all three sites. Data presented in the Preliminary Assessment Report Addendum for Fort Story, VA shows DDT and its metabolites were detected in the surface soil at all three sites. It is also noted that PCBs were detected in the sediments at Site 8, which comprises the drainage outfall line for the LARC maintenance area. Since these chlorinated compounds were detected during an earlier study, this by itself is a valid reason to have included these compounds in the RI. These compounds generally play a significant role in the evaluation for ecological risk. This is considered a data gap.

36. Page 6-3: Ecological Risk Assessment
Relative to the number of surface soil samples/soil borings collected at each site, limited samples were analyzed for total metals. This concern is raised since the metals that have been detected in the surface soils and sediments appear to be the COPCs driving the ecological risk. In fact, when EEQ's are calculated for these contaminants, many of the calculated numbers are well above the values established in the Region III guidance which suggest there is potential for moderate (EEQ $\geq$10) to extreme risk (EEQ $\geq$ 100). With limited metals data, the extent of contamination may not be fully delineated.

37. A shortage of metals data also precludes the use of the 95% Upper Confidence Level (UCL). In order to calculate a statistically valid UCL, a minimum of 7 independent data points at each site for that medium are necessary. This is important because the EEQ calculations derived by VDEQ are based on the maximum concentrations which may be overly conservative (unless hot spots exist).

38. Page 6-5: The third paragraph on this page indicates that there is no opportunity for human contact with subsurface soils as long as they are not disturbed. For the future use scenario, it should be assumed that construction activities may occur in the future and subsurface soils could be brought to the surface and be available for direct contact.

39. Table 6-1: The Region III risk based concentrations (RBCs) should be adjusted to a target hazard quotient of 0.1 for noncarcinogens. (Divide noncarcinogen RBCs by 10.)

40. The RBC values for arsenic on this table are for noncarcinogenic effects. The RBC for carcinogenic effects should also be included.

41. Table 6-2: The values shown as the minimum and maximum

detected concentrations for aluminum in filtered samples have been qualified "R" in the data validation summary tables. It is not clear why they have been included on this table.

42. It is not clear why the frequency of detection column shows a total of three dissolved samples. The summary tables show four samples with and "F" suffix. Does the "F" indicate that the samples were filtered?

43. It is not clear why the detected range for barium is shown as 0.021 - 0.052 mg/l. Sample number 4MW-2SF had a detection of barium of 0.14 mg/L. Please clarify.

44. As noted above, the RBCs on this table should also be adjusted to a target hazard quotient of 0.1

45. Table 6-3: The RBCs on this table should also be adjusted to a target hazard quotient of 0.1 and the RBC for carcinogenic effects for arsenic should also be included. The more conservative of the RBCs for the thallium compounds may be used as a surrogate RBC for thallium.

46. Page 6-7: The exposure assessment should also describe site access controls and surrounding land use. For example, is there housing on the installation? Is the site fenced? Could children or other trespassers access the site?

47. Page 6-8 (Current Situation): Since the aquifer is apparently capable of supporting non-potable uses, at a minimum, the risk due to exposure to groundwater during nonpotable use should be assessed quantitatively for any contaminant that exceeds the screening level.

48. Page 6-8 (Future Land Use): Since the decisions concerning base closure are not made by the facility, continued government ownership cannot be assumed. For risk assessment purposes, the most conservative scenario (residential) should be assumed for future use of the installation. In addition, military and civilian workplace scenarios should be assessed.

49. Page 6-8 (Human Health Evaluation Summary): If the results of the risk-based screen change due to the above comments, a quantitative assessment of risk should be performed for any contaminants that exceed the screening levels. The conclusions should be revised as appropriate.

50. Page 6-10, Section 6, Baseline Risk Assessment FTA site: This section indicates that "because the site has been

highly disturbed from numerous training and operational activities (little or no vegetation is present), and no minimal habitat is available, no pathways for exposure are present. Therefore, no impacts to the environment through contact with surface soils from the site are expected". Due to the lack of vegetative cover, soil contaminants are likely to be transported through the air pathway.

51. Page 6-10, Section 6, Baseline Risk Assessment FTA site: This section indicates that several metals were detected at concentrations above EPA Region III BTAG screening levels in the lowland area. This section also indicates that "because sediment is covered with a minimum of three inches of pine needles and leaves, no exposure pathway is identified for wildlife to the sediment in the lowland area". It is not clear how this would prevent exposure to wildlife. Please provide an explanations to how wildlife and ecological receptors would not be at risk. It is also a valid pathway for the transport and migration of contamination.

52. Page 6-11: The third paragraph on this page indicates that there is no opportunity for human contact with subsurface soils as long as they are not disturbed. For the future use scenario, it should be assumed that construction activities may occur in the future and subsurface soils could be brought to the surface and be available for direct contact.

53. Table 6-7: As noted above, the RBCs on this table should also be adjusted to a target hazard quotient of 0.1 and the RBC for carcinogenic effects for arsenic should also be included. This will effect the conclusion on the top of page 6-12.

54. Table 6-8: As noted above, the RBCs on this table should also be adjusted to a target hazard quotient of 0.1 and the RBC for carcinogenic effects for arsenic should also be included. This will result in additional contaminants exceeding the screening levels.

55. The maximum values listed on Table 6-8 for arsenic, barium, cis-1,2-dichloroethene, trichloroethene, tetrachloroethene, and xylenes could not be verified from the summary tables. Please clarify.

56. It also appears that two detections of 4-methyl-2-pentanone were not included on the hazard assessment table.

57. Table 6-9: As noted above, the RBCs on this table should also be adjusted to a target hazard quotient of 0.1

58. Table 6-10: Summary tables for surface water samples could not be located to verify the table values. Federal Ambient Water Quality Criteria for manganese should also be included on this table.

59. Page 6-14: The third paragraph on this page indicates that additional impacts to groundwater quality due to leaching of tetrachloroethene (PCE) would not be anticipated since the concentration exceeded the soil screening level in only one sample. However, PCE is a contaminant of potential concern in groundwater. Therefore the potential for leaching to groundwater should not be ruled out at this time.

60. Page 6-14, Section 6: This section states that "Methylene chloride is a common laboratory contaminant which may account for the widespread detection in site soils". While it is true that methylene chloride is a common laboratory contaminant, it should not show widespread detection in soils. Was methylene chloride detected in samples sent to the New England Lab? Were lab blanks analyzed which would indicated the level of lab contamination?

61. Page 6-15: The exposure assessment should also describe site access controls and surrounding land use as discussed in a previous comment. Could children or other trespassers wade in the ditch at this site?

62. Page 6-15 (Current Situation): Since the aquifer is apparently capable of supporting non-potable uses, the risk due to exposure to groundwater during nonpotable use should be assessed quantitatively for any contaminants exceeding the screening level.

63. Page 6-16 (Future Land Use): Since the decisions concerning base closure are not made by the facility, continued government ownership cannot be assumed. For risk assessment purposes, the most conservative scenario (residential) should be assumed for future use of the installation. In addition, military and civilian workplace scenarios should be assessed for contaminants that exceed the screening levels.

64. Page 6-16 (Human Health Evaluation Summary): If the results of the risk-based screen change due to the above comments, a quantitative assessment of risk should be performed. The conclusions should be revised as appropriate.

65. Table 6-15: The concentrations shown for fluoranthene, pyrene, and benzo(g,h,i)perylene could not be verified from the summary tables. For metals, it is not clear why there

is only one sample when two are shown on the summary table. If these are duplicate samples, why were they taken on different days? Please discuss how duplicate samples were treated for risk assessment purposes. Why is the nickel detection not included in the hazard assessment? Why is the maximum arsenic concentration shown as 1.3 mg/kg when sample SSB07-004-24 had a detection of 1.5 mg/kg?

66. As noted above, the RBCs on this table should also be adjusted to a target hazard quotient of 0.1 and the RBC for carcinogenic effects for arsenic should also be included. This will result in additional contaminants exceeding the screening levels.

67. Arsenic, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene should be listed as contaminants of potential concern on this table.

68. Page 6-19: The second paragraph on this page indicates that there is no opportunity for human contact with subsurface soils as long as they are not disturbed. For the future use scenario, it should be assumed that construction activities may occur in the future and subsurface soils could be brought to the surface and be available for direct contact.

69. The last paragraph on this page (and the top of the following page) indicates that PAHs were less than the RBCs although the previous paragraph indicates that some PAHs exceeded RBCs. The last paragraph should be modified accordingly.

70. While it is probably true that the levels of PAHs detected at this site are consistent with leaching from asphalt, the levels would also be consistent with used motor oil. Is there any way to definitively link the contaminants to the asphalt cover? It would be preferable to assess risk for those contaminants that exceed RBCs. However, if the installation chooses not to, it should be noted that any decision document related to this site should include a provision to maintain the integrity of the asphalt cover.

71. Page 6-21: The first paragraph on this page states that there is only minimal potential for barium to impact groundwater quality since it was only detected in one sample above the soil screening level. However, metals were analyzed in only a limited number of samples. It is therefore difficult to justify this statement.

72. Page 6-21: The exposure assessment should also describe site access controls and surrounding land use. For example,

is there housing on the installation? Is the site fenced? Could children or other trespassers access the site?

73. Page 6-21 (Current Situation): Since the aquifer is apparently capable of supporting non-potable uses, the risk due to exposure to groundwater during nonpotable use should be assessed quantitatively for any contaminants exceeding the screening level.

74. Page 6-22 (Future Land Use): Since the decisions concerning base closure are not made by the facility, continued government ownership cannot be assumed. For risk assessment purposes, the most conservative scenario (residential) should be assumed for future use of the installation. In addition, military and civilian workplace scenarios should be assessed for contaminants that exceed the screening levels.

75. Page 6-22 (Human Health Evaluation Summary): If the results of the risk-based screen change due to the above comments, a quantitative assessment of risk should be performed. The conclusions should be revised as appropriate.

76. A section presenting an uncertainty analysis should be added to the risk assessment.

77. Page 6-22: Section 6 Baseline Risk Assessment, Ecological Assessment. According to this section, on-site vegetation and wildlife inventories were not conducted as part of this investigation. Ecological inventories should be developed for all of the sites in this investigation.

78. Page 6-23, Section 6, Groundwater/Soil: This section states that "groundwater probably discharges to the Atlantic Ocean", but that "no impacts to the environment through groundwater contact are expected, and no potential ecological risk will be conducted". Due to the Atlantic Ocean being a potential target, an ecological risk assessment should be done to determine the effect, if any that these contaminants are having on it. This section also states that because the site is partially paved and little vegetative cover exists, that no impact to the environment through contact with the surface soils from the site are expected. Due to the lack of vegetative cover, soil contaminants are possibly transported through the air pathway.

79. Table 6-18: In the ERA portion of Section 6 for the Auto Craft Building Area, Table 6-18 does not identify many of the PAHs as "Potential Concern?" Please note that 10 of

these compounds exceed the Fauna BTAG screening levels plus the majority have EEQs >10.

80. Section 7: This section may need revision after revision of the baseline risk assessment.

81. Section 8: The no further action recommendations cannot be supported until human health risk is adequately assessed at the sites. The groundwater at the LARC 60 site is a particular concern. In the section on fate and transport, it was noted that levels of degradation products of tetrachloroethene (PCE) have increased since the PA/SI. Note that vinyl chloride, a degradation product of PCE, is more toxic than the original compound and may be a concern in the future. Therefore, at the very least, continued groundwater monitoring should be considered.

Department of Environmental Quality
Waste Operations
Policy for the Handling of
Investigation Derived Waste (IDW)

The Department of Environmental Quality (DEQ), Waste Operations has received a request for guidance from the regulated community concerning the Commonwealth of Virginia's requirements regarding the management and disposal of investigation derived waste (IDW). Because Virginia administers an authorized state RCRA program, the Virginia Solid Waste Management Regulations (VSWMR) and the Virginia Hazardous Waste Management Regulations (VHWMR) will serve as the governing requirements in lieu of Federal RCRA regulations contained in the Code of Federal Regulations (40 CFR 260 - 270) except for the Land Disposal Restrictions of 40 CFR 268. For reference, please see the Virginia Waste Management Act, Code of Virginia §10.1-1400 et seq.; the Virginia Hazardous Waste Management Regulations (VHWMR) (VR 672-10-1); the Virginia Solid Waste Management Regulations (VSWMR) (VR 672-20-10); Federal: the Resource Conservation and Recovery Act (RCRA), 42 USC 6901; and the U. S. Department of Transportation Rules for the Transportation of Hazardous Materials, 49 CFR Part 107, 171.1 - 172.558.

With regard to IDW, it is the site manager's responsibility to determine whether the wastes generated during an investigation meet the definition of a solid or hazardous waste. The site manager will be either the on-scene coordinator (i.e., either the federal official predesignated by the Environmental Protection Agency (EPA) or the U.S. Coast Guard to coordinate and direct federal responses under subpart D or the official designated by the lead agency to coordinate and direct removal actions under subpart E of the National Contingency Plan (NCP)), or the remedial project manager (i.e., the official designated by the lead agency to coordinate, monitor, or direct remedial or other response actions under subpart E of the NCP).

If there is a possibility that either the ground water or the soil at the location where a monitoring well is installed is contaminated, the site manager must determine whether or not the well cuttings, purge water, and/or other IDW are contaminated (i.e., whether they are solid or hazardous wastes). In these cases, the site manager may use knowledge of the contaminated media to declare that the IDW is solid or hazardous waste. If analysis shows that no contamination is present in the soil or the ground water at the location where the monitoring well is installed, neither the well cuttings, nor the purge water would be regulated as a solid waste. An example of a situation where the site manager might use knowledge to determine proper disposition (i.e., testing would not be required) would involve materials generated at locations where wells are installed for the purpose of ascertaining naturally occurring levels of

inorganic constituents and there is no basis to expect contamination, i.e., there is no past history of hazardous waste management activities or releases in these areas. If this is the case, the soils, cuttings, purge water, etc. would not be regulated as solid wastes. Test results or knowledge of the waste should be used to screen the well cuttings, purge water and other IDW to demonstrate that concentrations of contaminants are below or equal to background levels.

Purge water, well cuttings from monitoring wells, and other IDW, if tested, must be done so in accordance with EPA SW-846, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, 3rd edition, 1986, as updated. If contaminant levels are found to be above background levels, the IDW would be considered a solid waste. Should test results further indicate that the IDW contains a listed hazardous waste, or if the IDW exhibits a characteristic of hazardous waste, the IDW is a hazardous waste and must be managed and disposed in accordance with the VHWMR. Alternatively, contaminated IDW that contains a listed hazardous waste must be managed as a hazardous waste until it no longer "contains" the hazardous waste, i.e., until the constituent levels are below site specific risk based levels. This is consistent with EPA's Contained In Policy. The DEQ should be contacted directly to determine the site specific risk based levels that would apply to IDW that contains listed hazardous waste.

If the IDW is not a hazardous waste, but contains levels of contaminants above background levels, the IDW must be managed in accordance with the VSWMR. Solid waste generated from cleanup or investigation activities is considered a special waste under Part VIII of the VSWMR. Prior to acceptance of a special waste for disposal at a solid waste management facility, the operator must obtain prior authorization from the Department. Purge water, on the other hand, must be disposed at a publicly owned treatment works (POTW) or other wastewater treatment system operating in accordance with its Virginia Pollutant Discharge Elimination System (VPDES) permit, provided that all other pertinent criteria are satisfied.

The on-site treatment, storage, or disposal of IDW must be authorized by a permit from the DEQ. A generator of hazardous IDW may accumulate such wastes in tanks or containers in accordance with VHWMR §6.4.E. Treatment of hazardous waste in tanks or containers within the 90 day accumulation period may only occur upon prior written approval from the appropriate DEQ Regional Office.

This policy may be revised or rescinded at any time as Federal and/or State regulations change.

Signed:

Hassan Vakili

Hassan Vakili, Director
Waste Operations

6-28-95
Date

Commonwealth of Virginia ARARs

This is a preliminary identification of Commonwealth of Virginia ARARs. Following a review and discussion of proposed remedial alternatives for a given site, state ARARs and To Be Considered Materials (TBCs) can be more specifically identified.

The material below includes state statutes and regulations that may serve as state ARARs (along with corresponding federal statutes and regulations for informational purposes). The information includes the citation for each source and a short explanation of each item indicating how it may be pertinent with regard to a proposed remedy.

1. Virginia State Water Control Law, Code of Virginia Sections 62.1-44.2 et seq.; Virginia Water Regulations entitled "Water Quality Standards" (VR 680-21-00); "Virginia Pollutant Discharge Elimination System (VPDES) and Virginia Pollution Abatement (VPA) Permit Program" (VR 680-14-01); and "Virginia Water Protection Permit" regulations (VR 680-15-01). Federal: the Water Pollution Control Act, 33 U.S.C. 1251; and the Safe Drinking Water Act, 42 U.S.C. 300(f).

Groundwater underlying the site should be remediated in accordance with CERCLA guidelines. Cleanup levels for potential drinking water sources are typically based on MCLs. In the absence of MCLs, other health-based standards or criteria from the Virginia and/or federal regulations, or best professional judgment based on risk assessment, may be employed. Where groundwater that is a potential drinking water source discharges to surface water, the cleanup level at that discharge point would be the more stringent level between the MCL (or acceptable risk-based level) and a discharge limit based on the state or federal surface water standard or criteria for the protection of aquatic life.

The Virginia Standards for Surface Water (VR 680-21-01.14) should be listed as a Chemical-Specific ARAR along with the National Primary Drinking Water Regulations and the federal Ambient Water Quality Criteria. These standards and criteria will serve as ARARs and TBCs for purposes of developing soil and groundwater cleanup levels. Soil cleanup levels will be developed by using the more stringent concentration level resulting from the following analyses: (1) risk assessment taking into account all potential soil exposure pathways; (2) soil modeling to determine the concentration of contaminants that can remain in the soil such that water in equilibrium with the soil will not result in contaminant concentrations in the groundwater greater than MCLs; and, (3) soil modeling to determine the concentrations of contaminants that can remain in the soil such that water in equilibrium with the soil will not lead to a natural discharge to surface water resulting in an in-stream contaminant concentration greater than its surface water standard.

The Virginia Pollution Discharge Elimination System Regulations (VR 680-14-01) should be referenced along with the National Pollutant Discharge Elimination System Requirements. Any treated groundwater, decontamination water or other wastewater to be discharged to surface waters must meet effluent discharge limits established by the Water Division, Virginia Department of Environmental Quality. These limits are established on a case-by-case determination. Site-specific limits may be established following receipt of initial design and estimated discharge rates of the treatment unit.

The Virginia Water Protection Permit Regulations (VR 680-15-02) delineate the procedures and requirements to be followed in connection with activities such as dredging, filling or discharging any pollutant into, or adjacent to, surface waters, or any activity which impacts the physical, chemical or biological properties of surface waters. (The definition of surface waters includes wetlands.) The standards are typically required in addition to the U.S. Army Corps of Engineers § 404 permit, and are established in coordination with requirements of the Chesapeake Bay Preservation Act administered by local permitting boards or requirements of the Virginia Marine Resources Commission.

2. Virginia Waste Management Act, Code of Virginia Sections 10.1-1400 et seq.; Virginia Hazardous Waste Management Regulations (VHWMR) (VR 672-10-1); Virginia Solid Waste Management Regulations (VSWMR) (VR 672-20-10); Virginia Regulations for the Transportation of Hazardous Materials (VR 672-30-1). Federal: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 CFR Parts 107, 171.1-172.558.

If the remedial response contemplated involves storage, treatment or disposal of a VHWMR/RCRA hazardous waste, various VHWMR/RCRA requirements may need to be complied with as specified in VHWMR and/or the applicable 40 CFR Parts. Because Virginia administers an authorized state RCRA program, the Virginia Hazardous Waste Management Regulations (VHWMR) will serve as the governing ARAR in place of the RCRA regulations contained in the 40 CFR Parts, except for the Land Disposal Restrictions of 40 CFR Part 268. (At this time, Virginia does not have authorization for administering the LDR's.)

Some sample VHWMR Part X Sections corresponding to RCRA regulations of 40 CFR Part 264 are listed below:

	VHWMR §	40 CFR Part 264
Releases from Solid Waste Management Units	10.5	Subpart F
Closure and Post-Closure	10.6	Subpart G
Use and Management of Containers	10.8	Subpart I
Tank Systems	10.9	Subpart J
Surface Impoundments	10.10	Subpart N
Waste Piles	10.11	Subpart L
Land Treatment	10.12	Subpart M
Landfills	10.13	Subpart N

The transportation of hazardous waste must be conducted in compliance with VHWMR Parts VI and VII and the Virginia Regulations for the Transportation of Hazardous Materials.

The disposal of any soil, debris, sludge or any other solid waste from a site must be done in compliance with VSWMR.

3. Virginia Air Pollution Control Law, Code of Virginia Sections 10.1-1300 et seq.; Virginia Regulations for the Control and Abatement of Air Pollution (VR 120-01).
Federal: the Clean Air Act, 42 U.S.C. 7401; and 40 CFR Subchapter C.

Any emission from the disturbance of soil at a site, or treatment of soil or water, must meet the Virginia air emission standards for toxic pollutants, particulates and volatile organic compounds.

4. Virginia Erosion and Sediment Control Law, Code of Virginia Sections 10.1-560 et seq., and the Virginia Erosion and Sediment Control Regulations (VR 625-02-00).

Before engaging in any land-disturbing activity, as defined in the statute, an erosion and sediment control plan must be submitted for review by the soil and water conservation district or locality and the plan must be approved by the plan-approving authority.

5. Virginia Board of Game and Inland Fisheries, Code of Virginia Sections 29.1-100 et seq.; Virginia Endangered Species Act, Code of Virginia Sections 29.1-563 et seq.. Federal: the Endangered Species Act, 16 U.S.C. 1531.

Biological assessments should be conducted and submitted to VDEQ for review by the Virginia Board of Game and Inland Fisheries to determine whether endangered species or their habitats are threatened by the site. Certain species of fish and wildlife are identified as being threatened and are entitled to special preservation and protection measures under these statutes.

6. Virginia Wetlands Act, Code of Virginia §§ 62.1-13.1 et seq.; Virginia Wetlands Regulations (VR 450-01-0051); federal Water Pollution Control Act, 33 U.S.C. § 1344(f) (2) (commonly referred to as § 404 of the Clean Water Act); 33 CFR Part 323.2(c) and (e); and federal Executive Order 11990 related to wetlands management.

Any activity to take place in, or impact on, a tidal wetland must meet the provisions of the Virginia Wetlands Act and regulations as applicable. (The Virginia Water Protection Permit regulations cited above is also applicable to activities impacting wetlands, as well as the Chesapeake Bay Preservation Act which is referenced below.)

7. Chesapeake Bay Preservation Act, Code of Va. § 10.1-2100 et seq.; Chesapeake Bay Preservation Area Designation and Management Regulations (CBPA Regulations) (VR 173-02-01).

Require that certain locally designated tidal and nontidal wetlands, as well as other sensitive land areas, be subject to limitations regarding land-disturbing activities, removal of vegetation, use of impervious cover, erosion and sediment control, stormwater management, and other aspects of land use that may have effects on water quality.

8. Virginia Stormwater Management Act, Code of Va. § 10.1-603.1 et seq.; Virginia Stormwater Management Regulations (VR 215-

02-00), and local stormwater management programs.

All land-disturbing activities must be in compliance with local stormwater management programs, where they exist. (The adoption of a program by a locality is optional, but if locality adopts, must meet state requirements.) In the absence of a local program, if impervious surface is to be created by remedy, then state requirements may be relevant and appropriate.

9. Coastal Management Plan, City of _____; Federal: Coastal Zone Management Act, 16 U.S.C. 1451 et seq.; National Oceanic and Atmospheric Administration (NOAA) Regulations on Federal Consistency With Approved State Coastal Zone Management Programs, 40 CFR Part 930.

Activities within a Coastal Management Zone must be in compliance with local requirements.

10. Virginia Historic Resources Law, Code of Va. § 10.1-2200-2214; Virginia Antiquities Act, Code of Va. § 10.1-2300-2306.

Activities impacting resources governed by these statutes must comply with state requirements.

11. Federal Executive Order 11988 related to floodplain management.

Any activity located in a floodplain must comply with the provisions of this Executive Order. The Order requires that federal activities in floodplains must reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and preserve the natural and beneficial values served by floodplains.

As stated above, this list is only a preliminary identification of potential state ARARs. As site-specific information is presented and various remedial alternative are considered, more specific ARARs will be established in conjunction with the appropriate federal or state regulatory division.