ROBERT G.
GERBER, INC.

Consulting Geotechnical Engineers and Geologists

17 West Street • Freeport, Maine • 04032-1133

207-865-6138

August 10, 1993
File #965

Ms. Loukie Lofchie
Brunswick Area Citizens for a Safe Environment
P. O. Box 245
Brunswick, ME 04011

Subject: Review of "Draft Technical Memorandum, Site 9, Neptune Drive Disposal Site", Naval Air Station Brunswick, Brunswick, Maine, June 1993.

Dear Ms. Lofchie:

As requested by the Brunswick Area Citizens for a Safe Environment (BACSE), Robert G. Gerber, Inc., has reviewed the "Draft Technical Memorandum, Site 9, Neptune Drive Disposal Site" for Naval Air Station Brunswick, Brunswick, Maine, dated June 1993. The document was prepared by ABB Environmental Services, Inc., (ABB) for the U. S. Department of the Navy for the Naval Air Station Brunswick (NAS Brunswick) located in Brunswick, Maine. The subject document is intended to summarize site investigation activities and make recommendations for future actions at the Neptune Drive Disposal Site.

Site 9, also known as the Neptune Drive Disposal Site, is located in the central portion of NAS Brunswick. The site initially included three areas of potential contamination: a f rmer incinerator location and ash disposal area; an area reportedly used for burning and disposal of solvents; and two streams exhibiting iron-staining characteristic of leachate. Results of earlier environmental investigations were reported in the August 1990 Draft Final Remedial Investigation (RI) and the April 1991 Draft Final Supplemental RI reports prepared by E. C. Jordan. The June 1993 subject document presents a summary of investigations and analysis conducted through 1993, and recommendations for future activities at the site.

The subject document was discussed during a conference call on July 27, 1993, by representatives of the Navy, ABB, U.S. Environmental Protection Agency, Maine Department of Environmental Protection, and BACSE. The Navy had initiated the conference call to gage the response by th regulatory agencies and BACSE to the results and recommendations

presented in the Technical Memorandum. The Navy had hoped to initiate action at Site 9 prior to receiving written comments on the document. However, based on concerns expressed during the call, including the need to identify the source or sources of the volatile organic compounds (VOCs) detected in groundwater at the site, the Navy decided to withhold further action until written comments were received.

Based on our earlier conversation with Susan Weddle the risk assessment portion of the subject document was reviewed by SafeTech Consultants, Inc., while we focussed our review on the remaining sections of the Technical Memorandum. We are enclosing SafeTech Consultant's comments. Our comments on the subject document are as follows:

1. **Page 1-1.** What do the aerial photographs reveal about changes in topography and drainage and their potential affects on disposal locations and contaminant migration during the evolution of Site 9? Have all available historical aerial photographs been evaluated to determine likely and potential disposal areas and changes in activities at Site 9 during the past half century?

2. **Page 1-1.** The first of the three areas of potential contamination listed in the second paragraph is described as an incinerator and an ash disposal area in the vicinity of Buildings 218, 219, and 220. The description of the disposal site activities on page 11-1 of the August 1990 Draft Final RI report mentions that, in addition to incineration of wastes and subsequent dumping of ash, solvents and other liquids were burned on the ground, and direct disposal of an unknown quantity of solid waste also occurred. The wastes reportedly included solvents, paint sludges and possibly metal shop wastes. During the July 27 conference call, the point was made that VOCs would not be expected to occur in the ash remaining after incineration. However, the description of the waste disposal activities outlined in the August 1990 RI report indicate that unburned solvents and other potential contaminants were likely to have been disposed in the vicinity of the incinerator and ash landfill. These unburned wastes may be a source of the VOCs detected in the groundwater at Site 9.

3. **Page 1-3.** Figure 2-3 (page 2-10) in the August 1990 RI report shows a brook flowing southeasterly approximately 200 feet from the incinerator. On page 11-21 of the same RI report, the "northern" tributary at Site 9 is described as appearing "to be the original channel of a brook that crossed the old dump and was backfilled to accommodate construction of the barracks". On page 1-3 of the subject document, a 42-inch drain is described as running north from Orion Street, past the dump area, under Neptune Drive to a stream. The drain was apparently removed and filled in during the construction of the barracks. However, the trace of the brook shown on Figure 2-3 of the August 1990 RI report and the trend of the former drain shown n Figure 1-2 of the subject document do not appear to coincide. The Navy should evaluate the f rmer brook location and its potential impact on contaminant migration. In addition, th Navy should clarify the initial flow direction of the "northern tributary". On Figure 1-2 of the subject document, the tributary appears to originate almost on line with the end of the former drain. However, several figures in the August 1990 RI report (Figure 11-1 for example) indicate the

tributary enters the drainageway from the northeastern side, approximately 100 feet t the southeast from its origin shown in the subject document. Which location is correct, and how does the correct location relate to the former brook and the former drain?

4. Pages 2-2, 2-30, and 2-31. Because of the apparent shallow gradients at Site 9, additional data are needed to determine more precisely the direction of groundwater flow, the relationship of groundwater to streamflow in the two unnamed tributaries, and seasonal variations of the hydrologic system. In addition, investigators need to define the flow regime in each of the three shallow stratigraphic units at the site (the sand layer, the transition layer, and the clay layer overlying bedrock).

5. Page 2-3. The groundwater flow direction graphically depicted in Figure 2-1 appears to indicate water quality in MW-907 may be affected by a possible source located northwesterly from Building 201. How has the Navy evaluated potential sources in this area?

6. Pages 2-9, 2-20, and 2-23. It is preferable to determine background concentrations on a site-specific basis, rather than use the base-wide background concentrations established during previous remedial investigation (RI) studies. The base-wide background concentrations of inorganic constituents in sandy lithologies were based on samples collected at only four locations (see pages 5-12 through 5-15 in the August 1990 Draft Final RI Report by E. C. Jordan). One of these background samples was collected from MW-908, which is located adjacent to the Building 201 septic system and downgradient from the Site 9 incinerator ash landfill. It would appear that MW-908 does not meet the criteria that a background sample be collected in an area upgradiant of, and unaffected by, a facility, disposal area, or other source. In addition, base-wide background concentrations for clay soils are based on samples collected at seven locations, one of which is MW-905. Monitoring well MW-905 is located down-gradient of VOC detections and in an area where surface debris was reported.

7. Page 2-12. While Table 2-1 lists the results of the cone penetrometer (CP)sampling conducted in April 1991, there is no description of the method or results in the text (pages 2-10 through 2-13). It should be noted that the samples collected at the 1991 CP locations, including the southernmost locations intended to determine the limit of the VOC plume (CP-151, CP-152, and CP-153) were not tested for vinyl chloride, one of the contaminants of concern at Site 9. Therefore, the CP results may not provide sufficient information to delineate the extent of groundwater contamination.

8. Page 2-16. Given the apparent flat groundwater gradient at Site 9, unknown seasonal variations in the groundwater flow regime, and with its location relatively close to the ash/landfill material, MW-916 may not be an appropriate background water quality location.

9. Pages 2-16 and 2-17. Are monitoring wells MW-914 and MW-915 located in the former stream channel (see comment 3 above)? How do their locations compare with th brook location

shown on older plans or maps or historical aerial photographs? How does the former stream location affect groundwater flow and contaminant migration, as well as the water level and quality information collected at MW-914 and MW-915?

10. Pages 2-18, 3-1, and 5-2. The outline indicating the observed extent of ash/landfill material, as shown on Figure 2-4, should not include portions of Buildings 218 and 219, as there are no direct observations of the material beneath either building. In addition, it is incorrect to state at this time that the ash is located in a trench beneath Building 219 (see page 3-1) or that the ash is located beneath an existing barracks (see page 5-2). As was discussed at the latest Technical Review Committee meeting and during the July 27th conference call, the Navy should conduct additional investigations to determine the extent and nature of any ash or landfill material underlying Buildings 218 and 219. The area of former incinerator intersecting the footprint of Building 220 should also be investigated.

11. Pages 2-28, 2-29, and 3-3. What is the significance of the 1,1-DCA and other constituents detected in sample SD-9017 Does the old drain act as a conduit for contaminants?

12. Pages 2-33 and 2-34. Did the appropriate blanks indicate that acetone, 2-butanone, toluene, and bis(2-ethylhexyl)phthalate were likely to be laboratory contaminants in the samples collected at Site 9?

13. Page 3-1. If the sporadic low levels of 1,1-DCA and vinyl chloride are not indicative of a continuing source of VOCs, what do the concentrations indicate? What is the basis for concluding there is no continuing source of VOCs?

14. Pages 5-1 - 5-4. While we agree with the proposed on-going monitoring of groundwater quality in the existing wells at Site 9, we cannot agree that there is no continuing source of VOCs at the site based on currently available information. The sporadic occurrence of VOCs in groundwater samples indicates there may be more than one source. Additional investigations should be conducted, both north and south of Neptune Drive, to respond to the questions and comments outlined above and to identify the source or sources. Once the source(s) is (are) identified, additional remedial actions should be evaluated.

15. General comment. Will remedial actions involving pumping of the Eastern Plume have an effect on groundwater conditions at Site 9?

16. General Comment. We were unable to find any description of the evaluation of radioactive hazards at the site. Please provide specific information concerning how radioactive hazards were evaluated. At a minimum, monitoring for radioactive hazards should be part of the Site Safety Plan to protect site workers' health and safety. If the radioactive hazards have

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not been evaluated, they should be before any additional work is conducted, and the monitoring methods and results should be communicated to the members of the Technical Review Committee.

Please do not hesitate to give us a call if you have any questions on the comments above.

Sincerely,
Robert G. Gerber, Inc.

Carolyn A. Lepage, C.G.
Director of Operations

STATE OF MAINE
CAROLYN A. LEPAGE
#202
CERTIFIED GEOLOGIST

Andrews L. Tolman, C.G.
Chief Hydrogeologist

Enc.