



**Brown & Root Environmental**



**Halliburton NUS  
CORPORATION**

Foster Plaza 7  
661 Andersen Drive  
Pittsburgh, Pennsylvania 15220

Telephone Number: 412.921.7090  
Telecopy Number: 412.921.4040  
Bulletin Board: 412.921.8091

TO: Debby Stockdale DATE: 4-26-93

COMPANY: NORTH DIV

LOCATION: Lester, PA.

TELECOPY NUMBER: 215-595-0555

FROM: Will Isner

PAGE 1 OF 15 CHARGE NUMBER: 6199  
(including cover page)

**SPECIAL INSTRUCTIONS:**

Response to Comments for discussion.

**FAX**

X

## Halliburton NUS Corporation

## RESPONSE TO NAVY, EPA, AND CDEP COMMENTS

## ACTION MEMORANDUM FOR BUILDING 31

Naval Submarine Base New London  
Groton, Connecticut

April \_\_\_\_, 1993

Comments from W. Mansfield, NORTEDIV

1. Comment: Spell out NORTEDIV as Northern Division Naval Facilities Engineering Command as it appears throughout document.

Response: The report will be revised accordingly.

2. Comment: Naval Submarine Base New London (note: no comma after Base) should be spelled thusly and abbreviated as SUBASE NLON.

Response: The report will be revised accordingly.

3. Comment to Page 2-1, Section 2.1.1, Second Paragraph: Delete "to comply with RCRA regulations" and substitute "to comply with fire, health, and safety codes." Building 31 is not a hazardous waste storage facility. Only hazardous materials, which are ready for issue are stored in this building.

Response: The text will be revised accordingly.

4. Comment to Page 2-2, Section 2.1.3.1, Fifth Line: Change to read "sometime after the Second World War, the building was converted to use as a hazardous material storage building. Recently, the floor slab was to be replaced to comply with fire, health, and safety codes."

Response: The text will be revised accordingly.

5. Comment to Page 2-4, Section 2.1.3.2, Second Line: Revise to read "Building 31 constructed in approximately 1950."

Response: Will revise to read "The eastern portion of Building 31 was constructed in approximately 1950."

6. Comment to Page 2-19, First Paragraph, Third Line: Should be Providence & Worcester not Penn Central.

Response: The text will be revised accordingly.

7. Comment to Page 2-26: MCL for lead should be 15 µg/L.

Response: Will correct typing error.

8. Comment to Page 2-27, First Paragraph, Fourth Line: Use hazardous waste not hazardous material.

Response: The text will be revised accordingly.

9. Comment to Page 2-27, Last Paragraph: Wording seems to indicate design activities are to start in 1993 for Berth 16 and Pier 33. Should be written to clarify IRMs are for Phase I sites not Berth 16 and Pier 33.

Response: Will revise to read "For Phase I sites (approximately 3), it is anticipated that design activities will be initiated for interim remedial actions in 1993, based... ."

10. Comment to Appendix A, Second Page, Paragraph 2: Reference is made to Appendix \_\_\_\_\_ of this report.

Response: Will revise to read "Appendix A of this report."

11. Comment to Page B-9, Section 3.3, Line 6: Should be Building 31 not 51.

Response: Will correct typing error.

Comments from D. Stockdale, NORTHDIV

1. Comment: When abbreviated, use NORTHNAVFACENCOM for Norther Division Naval Facilities Engineering Command.

Response: The report will be revised accordingly.

2. Comment to Page 2-1, Second Paragraph: Delete sentence.

Response: The sentence will be deleted.

3. Comment to Figure 2-2, Page 2-5: Add legend.

Response: Legend will be added for Figure 2-2.

4. Comment to Figure 2-3, Page 2-8: Add storm sewer M.H.s, C.B.s, and piping at southwest corner of building to agree with Figure 2-2. Also quality of shading not uniform.

Response: Figure 2-3 will be revised accordingly.

5. Comment to Figure 2-4, Page 2-9: Revise title to "Well and Cross-Section Location Map."

Response: Figure 2-4 will be revised accordingly.

6. Comment to Figure 2-5, Page 2-12: Fix lower-right-hand corner of drawing.

Response: Figure 2-5 will be revised accordingly.

7. Comment to page 2-16, Third Paragraph: Explain why sampling varied from original sampling plan.

Response: Text will be revised to read "The depth of sampling outside the building varied from that proposed in the Final Sampling Plan because of utility interferences. See Section 2.1.6 for the sampling depths at various locations outside the building."

8. Comment to Page 2-19, First Paragraph: Provide figure that shows location of background well.

Response: The report will be revised accordingly.

9. Comment to Table 2-3, Page 2-21: Add note at bottom of page indicating TCLP values that are considered hazardous.

Response: Note will read: TCLP lead concentrations of 5.0 mg/L or greater are classified as a hazardous waste under RCRA (40 CFR, Part 261.24).

10. Comment to Table 2-5, Page 2-25: Provide baseline or highlight contamination levels of concern.

Response: Organic chemicals are not naturally-occurring and standards for the soil matrix have not been developed to date. Although Preliminary Remediation Goals (PRGs) can be developed for soil, these criteria are risk assessment based and must be calculated. Risk assessment was not included in the scope of work.

11. Comment to Table 2-6, Page 2-26: Under MCLs, check comma and/or decimal placement.

Response: MCL values will be checked.

12. Comment to Page 2-27, Section 2.1.5: Clarify IRAs are limited to approximately 3 areas.

Response: Text will be revised accordingly.

13. Comment to Page 2-28, Section 2.1.6, Second Paragraph: Under West side, fix typo to read "was limited to 4 feet... ."

Response: Text will be revised accordingly.

14. Comment to Page 3-5, Second Paragraph: Explain why it would be difficult to relate lead concentrations in Thames River to Building 31 in particular.

Response: The Thames River is a large tidally-influenced water body. Therefore, a "source" the size of Building 31 could not be related to any measured lead levels without a detailed hydrologic study and definitive data on actual releases or identified, real, contaminant migration pathways from the site. No surface water samples were collected for these reasons.

15. Comment to Page 4-1: Suggest use verbiage similar to Action Memorandum guidance document.

Response: This section will be revised.

16. Comment to Page 5-5, First Paragraph: Revise wording of second sentence.

Response: Sentence will be revised to read "Therefore, assuming that the TCLP requirements are met in the solidified soils, placement of the soils onsite (i.e., backfilling) or offsite disposal in an appropriate landfill could be implemented."

17. Comment to Page 5-7, Section 5.1.5: Check time interval of 6 months.

Response: Section 300.415, Removal Action of the CFR, indicates that for planning periods of 6 months or longer before onsite activities are initiated, an EE/CA shall be prepared.

18. Comment to Page 7-1: Clarify the realignment activities at the submarine base.

Response: The text will be revised accordingly.

19. Comment to Page 8-1: Use proper abbreviation for NORTHDIV (See Comment Number 1). also revise to read "...all funding will be provided by the Navy with Defense Environmental Restoration Account (DERA) Funds.

Response: The text will be revised accordingly.

20. Comment to Page 9-1: Show cost of selected alternative if complies with Action Memorandum guidance document.

Response: Since the funds for the selected alternative are to be provided by the Navy (not EPA), it is not necessary to repeat the cost here.

21. Comment to First Page of Appendix A, Validation: Show EPA equivalents to Navy analysis levels.

Response: Text will be revised accordingly.

22. Comment to Second Page of Appendix A: Complete "Appendix \_\_\_" of this report.

Response: Text will be revised accordingly.

23. Comment to Fifth Page of Appendix A: How were validated samples selected?

Response: The samples selected for validation were selected randomly. However, care was taken to accommodate a full suite of analysis information centered on those four focal samples, which received Appendix 8 selected metals analyses in addition to the total lead and TCLP lead analysis. Care was also taken to ensure that associated field quality control blanks were included in the validation process.

24. Comment to Page B-10, Fifth Paragraph: Describe the solidified soil product.

Response: Text will be added to describe the solidified matrix.

25. Comment to Appendix C, Figure 2-1: Fix note at bottom of page or use clearer figures from text of report.

Response: These figures will be replaced with more legible drawings.

Comments from EPA, Region I

1. Comment: "The proposed removal action appears to be appropriate for achieving the stated goals of the Navy... ."

Response: None required.

2. Comment: The Navy should evaluate whether metals other than lead should be considered in the removal action. A comparison of the soils data should be made to site-specific background data. Several metals were detected in soil at concentrations, which exceed literature-derived background concentrations (e.g., antimony, copper, mercury, and zinc). Although the selected alternative may concurrently address contaminants in addition to lead, it was not clear from the draft document whether this is intended. Please clarify.

Response: No site-specific background samples were collected for this investigation. However, background soil analytical results were compiled for another investigation of the lower Subbase (Phase I RI). Only, antimony and zinc were found onsite at concentrations that exceed these background values. In addition to these metals, copper was found at a maximum concentration that exceeded a literature value for "typical Eastern U.S. soils." All these samples coincided with areas designated for lead remediation. The selected action will treat antimony, copper, and zinc without any required modifications.

3. Comment: The Action Memorandum needs to evaluate the impact of residual levels of contaminants, which will remain after the removal action is completed. Several metals were detected as concentrations in groundwater, which exceeded applicable standards and guidelines (e.g., aluminum, manganese, mercury, and nickel). In addition, the Navy should provide the methodology for determining if treatment is successful.

Response: Groundwater response to be provided by Navy.

4. Comment: Confirmatory sampling below six feet, within the saturated zone, should be conducted to determine whether metals contamination extends below the depths sampled during the limited sampling investigation. This is especially critical over the apparent high hydraulic conductivities onsite.

Response: Confirmatory sampling will be addressed in the Post Removal Verification Sampling Plan that is to be prepared during the design phase and submitted to EPA for review. The plan will describe the sampling and

analysis work that will be performed after initial excavation to verify that the contaminated soil has been removed to the required cleanup level. However, the depth of remediation is limited at Building 31 by the depth of the footings and the groundwater. Thus, additional sampling below the groundwater is not warranted for the remediation, unless EPA wants to document the residual contaminant levels at approximately the 6-foot depth.

5. Comment: Although the proposed removal action seems reasonable as presented, the Navy should consider redistributing the deeper lead contamination to shallower levels.

Response: Because of the limited working area for the staging of both treated and relatively clean soil within Building 31, this suggestion would be difficult to implement but will be considered during the design of the remediation. Also, solidified soil redistributed would still remain subject to the exposure of fluctuating groundwater during periods of high flow in the Thames River (the lower SUBASE is within the 100-year flood plain).

6. Comment: The draft document makes no mention of air monitoring, whether for worker protection or adjacent receptors although Section 3.1.4 reveals that "These materials [lead contaminated soils], under current site conditions, could be released from the site (e.g., tracked from the site by workers or released via wind from areas outside... ." OSHA/NIOSH-type air monitoring to ensure work protection and ambient air monitoring to assess the exposure of potential receptors, such as other occupants of the base and its neighbors, should be conducted during the removal operation. There also needs to be some contingency plan in place to control fugitive emissions of lead and any other harmful constituent(s) release during the removal operation.

Response: While air monitoring was not discussed in the text of the proposed action, it was included in the cost estimate. Text will be added to Section 5.1.1.1 to address air monitoring.

7. Comment to Page 2-3, Figure 2-1: This is an outdated map. In accordance with Appendix III of the NSBNL Federal Facilities Agreement (FFA), several study areas and areas of contamination should be added to the figure.

Response: This figure will be revised accordingly.

8. Comment to Page 2-6, Second Paragraph: Samples from the wood piles should be collected and analyzed to determine if preservatives were in fact used. The results could then be used to determine the feasibility of dewatering.

Response: It is currently not feasible to collect samples from the wood piles during the upcoming planned exploratory excavation because of OSHA safety requirements. The subcontract has been already awarded and there was no provision for providing temporary shoring, which would permit someone to perform hand excavation to expose the piles and collect samples. Samples of the wood piles could be collected during the remediation of Building 31, and this sampling will be addressed in the Post Removal Verification Sampling Plan that will be submitted to EPA for review.

9. Comment to Page 2-11, Third Paragraph: Information obtained from the measurements of the tide elevations and corresponding groundwater elevations should be used to calculate the hydraulic conductivity of the soils. From this and an evaluation of grain-size distribution and effective porosity and hydraulic conductivity, the transportation time of contaminants to the Thames River may be calculated. This information should then be combined with available hydraulic conductivity test results to propose an appropriate period for monitoring groundwater quality to validate the effectiveness of the proposed removal action.

Response: The recent sampling at Building 31 was limited in scope (no slug tests performed) and sufficient data was not collected to accurately calculate the hydraulic conductivity of the soils. However, previous studies conducted at the Lower Subase estimated the hydraulic conductivity of the sediments to be 50 feet per day (based on published values, Freeze and Cherry, 1979) and the groundwater flow velocity was calculated to be 1.3 feet per day.

10. Comment to Page 2-26, Table 2-6: The action level for lead should be 15  $\mu\text{g/L}$ .

Response: Will correct typing error.

11. Comment to Page 2-27, First Paragraph: Please define "elevated concentrations." If concentrations are determined to be "elevated" based on their exceedance of background concentrations derived from published literature rather than from site-specific background concentrations, the report should state that site-specific background concentrations may vary considerably and may be significantly lower. Only site-specific background should be used to perform a comparative analysis.

Response: Site-specific (actually lower Subase-specific) background soil samples were collected for another report. These values will be added to Table 2-4, and the text on this page will be modified to indicate that antimony and zinc were also found onsite at concentrations that exceeded site-specific background concentrations.

12. Comment to Page 2-27, Sixth Paragraph: Please delete the second sentence of this paragraph. This Hazard Ranking System (HRS) rating of 36.53 is misleading as presented. Given the size and multitude of known and potential releases at Federal Facility sites coupled with the issue of limited resources to perform HRS reviews, EPA's policy regarding the HRS ranking of such sites has been to evaluate or "scope" a Federal Facility until it exceeds the 28.5 value, thus warranting its inclusion on the NPL. Although this rating is somewhat useful when evaluating private NPL sites, it does not provide for an accurate picture as to the full extent of contamination at a Federal Facility due to the fact that all areas of contamination were not evaluated for scoring purposes.

Response: This sentence will be deleted.

13. Comment to Page 3-3, First Paragraph: Please delete reference to the September 7, 1989, EPA interim guidance on soil cleanup levels. This earlier version was replaced by OSWER Directive 9355.4-02A, "Supplement to Interim Guidance on Establishing Lead Soil Cleanup Levels at Superfund Sites - January 26, 1990."

Response: This reference will be changed.

14. Comment to Page 3-3, Fifth Paragraph: The first sentence should be deleted. Human exposure to contaminants in unfiltered groundwater can occur through the use of domestic or industrial water wells, which do not contain filtering mechanisms.

Response: Disagree. It is appropriate to at least evaluate both and make a comparison. Even if a well does not have a filter, it probably has a holding tank in which solids settle out. Also, total metals are not considered to be representative of those concentrations that could migrate.

15. Comment to Page 3-4, First Paragraph: The fact that the site is in an industrialized area is not particularly relevant for purposes of discussing potential threats to the environment. The issue is whether there is a complete exposure pathway for environmental receptors to become exposed and potentially affected by the site contaminants.

Response: There are no identified habitats/ecologic receptors, as stated in the first paragraph of Section 3.2. A complete exposure pathway to surface water has not been identified.

16. Comment to Page 3-4, Second Paragraph: Although lead contaminated groundwater may present the largest threat to environmental receptors, it could be argued that potential threats to the environment via exposure to PAH contamination should be included in this discussion as well. Please explain.

Response: PAHs were only detected in subsurface soils from within the building. As noted on page 3-2, PAHs are not very soluble and are unlikely to migrate to groundwater. Also, no PAHs were detected in the groundwater. No further environmental evaluation of PAHs is necessary.

17. Comment to Page 3-4, Third and Fourth Paragraphs: The discussion regarding concentrations at which lead becomes toxic to plants and animals could be expanded. In Shacklette and Boerngen, 1984, USGS paper, the observed background range for lead in the eastern U.S. is approximately < 10-300 ppm. In addition, there is a great deal of information on lead in Eisler's report, "Lead Hazards to Fish, Wildlife, and Invertebrates," U.S. Fish and Wildlife Service, Biological Report 85 (1.14), April 1988. Contaminant hazard Reviews Report #14.

For terrestrial plants, uptake of lead is limited by the low bioavailability of lead from soils. Adverse effects seem to occur only at total concentrations of several hundred mg lead/kg soils. Among sensitive species of birds, survival was reduced at doses of 5-75 mg lead/kg body weight. In general, forms of lead other than shot are unlikely to cause clinical signs of lead poisoning in birds with no food chain

biomagnification. Since no surface water samples were collected, it would be hard to evaluate this. If surface water samples were collected, however, they could be compared to ambient water quality criteria.

Response: Additional information will be added.

18. Comment to Page 5-2, Third Paragraph: The Navy should consider consolidating contaminated soils to within one specific depth interval. Excavation of deeper contaminated soils, solidification, and replacement of solidified mass at a shallower depth interval may reduce harmful effects of saline water on the solidified material. Alternatively, an additive should be considered for the stabilization/solidification mixture to minimize corrosive effects.

This paragraph states that, "Additional soil sampling may be required outside of the buildings to determine if the lead contamination extends beyond the current remediation limits" and that such sampling could be "implemented during the ongoing Phase II study at the site." Since the Navy anticipates commencement of this time-critical removal action within six months of final approval of the Action Memorandum and completion of the action approximately two months after initiation (page 5.7 and 5.1.5), it seems highly unlikely that these additional soil samples can be collected and analyzed prior to this time due to recent funding cuts and resource shortages that have temporarily postponed Phase II activities. It is suggested, therefore, that the design phase of this action include provisions for the collection of additional soil samples to ensure that the extent of lead soil contamination is completely defined.

Response: See response to EPA Comment Number 5. If the redistribution is found not to be implementable, an additive will be considered to minimize the effects of saline water on the solidified soil.

The scope of this time-critical removal action was limited to the immediate area of Building 31 (10 feet from exterior wall) to permit the design and implementation of the remediation in a timely manner. If the scope of work is increased, the design and implementation of this action will be delayed. The Navy will collect additional soil samples to define the extent of contamination surrounding Building 31. Since approximately 90 percent of this area is paved, the risk to human and environmental receptors is considered minimal.

19. Comment to Page B-2, Second Paragraph: The text states that groundwater contamination at this site is to be addressed "under the groundwater unit of the NPL cleanup." How does the Navy plan to address the groundwater contamination identified at the site? Does the Navy plan to issue an proposed remedial action plan for the groundwater operable unit at this site? If so, has there been a time frame established for this action?

Response: By Navy.

20. Comment to Page B-4, Third Bullet: Will modifications be made to the proposed removal action plan in the event that additional soil sampling activities identify areas of lead contaminated soils outside of this 10-foot boundary (see preceding Section 5.0 comment)?

**Response:** Time restraints would not permit modifications to the proposed removal action plan (see response to EPA Comment Number 18). This time required to prepare Sampling and QA/QC Plans, implement the sampling, complete the analysis, perform validation, and prepare analytical reports, obtain additional topographic mapping, investigate utility and potential building foundation interferences, and modify the design documents (construction plan, specifications, cost estimates, and schedule) would substantially delay the implementation of the proposed action.

21. **Comment to Page B-9, Sixth Paragraph:** The proposed treatability study should also evaluate the unconfined compressive strength (UCS) of the solidified material. Due to the presence of silts and fine sands in the subsurface, achieving sufficient UCS may be difficult. Therefore, the addition of coarser aggregate may be required, such as gravel. Due to the fact that the Navy plans to continue to use this facility as a hazardous materials storage area, the solidified material will be subject to stresses as a result of the use of fork lifts, stacking of drums, etc. Therefore, the solidified material below the building must be capable of supporting these activities without breaking, cracking, or crumbling.

In addition, the moderate to high levels of polyaromatic hydrocarbons (PAHs) and other semivolatile organic compounds (SVOCs) detected at the site may cause problems with the effectiveness of solidification. Therefore, due to the apparent presence of these compounds in the subsurface and the limited number of samples analyzed for organics, additional sampling and analysis may be required to evaluate the presence or absence of organic compounds.

**Response:** Time restraints do not permit the implementation of a formal treatability study or additional sampling during the design of this action. However, the design will establish the strength requirements as well as other parameters of the solidified soil. The solidified material will be more than capable of supporting the dead and live loads imposed by the use of the building as a storage facility. Fine sand (without treatment) has allowable bearing values of 2 to 3 tons per square feet, and the solidification treatment would increase the bearing capacity of the material. Also, the reinforced concrete floor slab will help distribute the loads uniformly to the treated soil.

While a formal treatability study will not be undertaken, it is anticipated that the vendors bidding on the project will be permitted to collect samples for their own testing prior to submitting their bid. The vendors will be provided with the available analytical data and free to collect as many samples as they consider appropriate for testing. They will be required to meet the treatment standards developed during the design. Since many vendors use proprietary treatment processes, this scenario will permit them to adjust their process for the site-specific soils and contamination.

22. **Comment to Page B-10, Third Paragraph:** Excavation in sections, as opposed to removing all soils at once, may negate the need for extensive sheet piling.

**Response:** Agree, but sheet piling will be addressed in the design in such a manner that each potential bidder can modify the approach based on his special equipment.

23. **Comment to Page B-14, First Bullet:** In accordance with EPA EE/CA guidance, this section should also include a discussion on "Use of alternatives to Land Disposal." Since there is a preference in EPA's removal program for remedies other than land disposal, the EE/CA should document consideration of this criteria, even if deemed impracticable.

**Response:** Since this action will be conducted as a time-critical action, an EE/CA report is not required. However, several removal action alternatives were developed for consideration prior to selecting the proposed action. To avoid confusion, the section titled "Engineering Evaluation/Cost Analysis Report" will be retitled "Removal Action Alternatives." Also, the proposed action does comply with the preference for treatment as a principal element and the bias against offsite land disposal of untreated waste.

24. **Comment to Page B-14, Second Bullet:** In accordance with EPA EE/CA guidance, the discussion regarding "Availability" must also include consideration of the following issues as they relate to "Administrative Feasibility":

- likelihood of public acceptance of the alternative, including State and local concerns;
- activities needed to coordinate with other agencies; and
- ability to obtain any necessary approvals of permit.

**Response:** See response to EPA Comment Number 23. By issuing a Public Notice, the public will be made aware of the Action Memorandum and the administrative record file and have an opportunity to provide comments for 30 days. The public comments and a written response to all significant comments will be appended to the Action Memorandum after the comment period closes. A separate environmental permit report will be issued during the design phase documenting the permits required for the proposed action.

#### Comments from Connecticut Department of Environmental Protection

##### General Comments:

1. **Pre-Design Studies:** As noted in the cover letter to this attachment, the State has several concerns regarding the durability of a soil/cement mixture within the tidally influenced subsurface environment beneath Building 31. Due to factors such as periodic wetting and drying, freeze/thaw cycles, and exposure to saline groundwater, the soil/cement mixture will be prone to mechanical and structural degradation, which may ultimately mobilize encapsulated contaminants to the environment.

The State believes that the feasibility of implementing solidification technology at this site has not been thoroughly evaluated and, therefore,

may provide to be inappropriate for this time-critical removal action. Numerous data gaps must be addressed before this technology is considered. Existing data gaps include but are not limited to the following:

- a. bench scale testing to determine the strength of the soil/cement mixture (unconfined compressive strength, confined compressive strength, etc.);
- b. index and physical properties of subsurface soil (grain size, moisture content, density, etc.);
- c. freeze/thaw durability (ASTM D4842);
- d. wet/dry durability (ASTM D4843);
- e. evaluation of the deleterious effects of saline water to the soil/cement mixture;
- f. evaluation of the compatibility of the soil-waste matrix vis a vis solidification agents (i.e., will the presence of volatile or semi-volatile organic compounds inhibit setting or curing reactions).

Response: Evaluation of the solidification technology, including conversations with vendors on other sites using solidification, indicates that this technology is widely demonstrated and equipment is readily available.

A limited treatability study will be performed by the bidders during the procurement process to ensure that the minimum treatment requirements are met.

In response to the specific tests listed for treatability testing, the following is provided:

- a. Strength - Strengths of the treated soil will be determined to ensure that the mix which is chosen will minimize settlement and support the concrete cap and live loads, which will be imposed.
- b. Physical properties - Grain size, moisture content, density, material classification, and other necessary parameters will be determined.
- c. Freeze/thaw durability - If the resulting treated soil is a monolithic material (e.g. block) then this standard will be applied during the treatability study. However, since the treated material is to be placed under a concrete slab, which is under a building, freeze/thaw durability is not expected to impact the design mix.
- d. Wet/dry durability - If the resulting treated soil is a monolithic material (e.g. block) then this standard will be applied during the treatability study. However, if the material is of a soil consistency, this standard may be difficult to apply.

- e. Effects of saline environment - Conversations with vendors indicates that the saline environment will not adversely affect the treated soil. However, the use of an additive will be considered during the design to minimize any possible effects of saline water.
  - f. Compatibility of soil and reagents - This evaluation will be performed to ensure that the mix design meets the requirements for treatment.
2. Leachability: Provisions should be made for determining the leachability of the soil/cement mixture to ensure that the solidified matrix is capable of meeting all applicable and relevant or appropriate requirements (ARARs) and To Be Considered (TBCs).

Response: As part of the treatability study discussed in comment 1, the leachability will meet the required treatment standard based on ARARs.

3. Clean Up Levels: The Action Memorandum specifies that the cleanup level for the time-critical removal action will be 500 ppm for lead-based, on-mass analysis. The site is located in an area with a groundwater classification of GB/GA. As such the State will require that the cleanup level achieve 50 ppb based on the toxicity characteristic leaching procedure (TCLP).

Response: Concerning this comment, it is your position that the 50 ppb you advocated is an ARAR for this site. That is, it is an applicable or relevant and appropriate requirement under Section 121 (d) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 usc 9601 et. seq. If that is your position, please provide specific legal citation(s) to promulgated state law(s) or regulation(s) that support the standard.

In addition, please explain why each cited requirement is an ARAR at the site. This explanation should include one of two alternative positions. It should explain how the requirement(s) specifically address a hazardous substance, pollutant, contaminant, or other circumstance under CERCLA. Or, in the alternative it should explain how the requirement(s) address problems or situations sufficiently similar to those at the site that their use is well suited to the site.

Specific Comments:

4. Comment to Page 3-3, Section 3.1.2: The groundwater classification of the site is misstated as GA/GB. Please revise the text to state that the groundwater classification at the site is GB/GA.

Response: The groundwater classification has been revised as stated.

5. Comment to Page 5-1, Section 5.1.1.1

- a. All soil removed from the site must be handled in accordance to federal, state, and local regulations. All appropriate permits and approvals must be secured by NORTHDIV prior to offsite solidification and disposal.

- b. It is estimated that the solidification process will increase the volume of soil to be placed within the building by 15 percent. The Action Memorandum states that the excess solidified soil could be uniformly distributed within the building to accommodate the excess volume. If this option is appropriate, it is estimated that the floor would be raised approximately 4.5 inches from its existing elevation. Further, it is stated that if this option is inappropriate "clean" soil from within the building could be removed and placed elsewhere within the NSBNL site.

Any soil excavated from the building must be thoroughly characterized prior to placement within the NSBNL site. In addition, the Action Memorandum must clearly state "clean" soil criteria.

Connecticut's criteria for reuse of soil from contaminated sites is that the soil be "non-detect" upon mass analysis for the identified contaminants.

- c. The Field Sampling Plan and Quality Assurance/Quality Control Plan, which will be prepared during the design phase must be submitted to the DEP for review and comment.

Response:

- a. Concur. A separate environmental permit report will be issued during the design phase documenting the permits required for the proposed action.
- b. Due to the extent of characterization necessary to allow movement of soil, which is below the action level, to accommodate the increase in volume due to treatment, the floor of the building will be raised.
- c. We concur and the Field Sampling Plan and the Quality Assurance/Quality Control Plan will be submitted for review by CEP.



# Brown & Root Environmental



# Halliburton NUS CORPORATION

Foster Plaza 7  
661 Andersen Drive  
Pittsburgh, Pennsylvania 15220

Telephone Number: 412.921.7090  
Telecopy Number: 412.921.4040  
Bulletin Board: 412.921.8091

TO: Debby Stockdale DATE: 4-29-93

COMPANY: NORTH DIV

LOCATION: Lester, PA.

TELECOPY NUMBER: 215-595-0555

FROM: Will Isnet

PAGE 1 OF 2 CHARGE NUMBER: 6199  
(including cover page)

**SPECIAL INSTRUCTIONS:**

In responding to EPA comments, their letter  
of April 21, 1993 was inadvertently overlooked.  
Our response is attached for your review. Please  
advise if ok, and I will fax the response  
to EPA.

**FAX**

25. Comment to EPA letter dated April 21, 1993, concerning air monitoring.

**Response:** During the remediation of Building 31, a direct reading carbon monoxide monitor will be used to monitor the level of carbon monoxide in side Building 31. The monitor will be selected to carbon monoxide and will be capable of measuring concentrations between 0.0 ppm and 100 ppm. It will be equipped with an alarm and positioned in the work area to represent worst-case exposures. Use of this monitor will only be required while machinery is in operation. No other monitoring equipment is required provided particulate emissions are adequately suppressed with water spray. If water spray is not used to control particulate emissions during excavation and treatment of the soil, the work area will be monitored with a direct-reading particulate monitor. This instrument will provide a real-time, as well as an 8-hour average, measurement of total airborne particulate; therefore, it will be used in estimating the concentration of airborne lead. It is anticipated that work in the exclusion zone (potentially-contaminated areas of the site) will be performed in level D protection; however, the contractor will have the capability to upgrade the level of protection (respiratory protection) if the need arises during the removal action.