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NIROP FRIDLEY
5090.3a

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

JUL 21 1995

Commanding Officer
Dave Cabiness/Code 1862
SOUTHNAVFACENGCOM
2155 Eagle Drive, P.O. Box 190010
North Charleston, S.C. 29419-9010

HSR-6J

RE: Feasibility Study for Soils Operable Unit, Naval Industrial Reserve Ordnance Plant,
Fridley, Minnesota, April 1995

Dear Dave:

The United States Environmental Protection Agency (U.S. EPA) has completed the review of the Feasibility Study for Soils Operable Unit, Naval Industrial Reserve Ordnance Plant (NIROP), Fridley, Minnesota, April 1995. Attached are review comments addressing U.S. EPA concerns. Please incorporate review comments and submit a Final Feasibility Study for Soils Operable Unit, Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota. U.S. EPA is available to discuss review comments. Please contact me at (312) 886-1967, after the U.S. Navy has had time to comprehend the review comments.



General Comments

U.S. EPA is very disappointed with the U.S. Navy's Feasibility Study for Soils Operable Unit, Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota, April 1995, (FS for OU#2). Remediation strategies discussed during the scoping process have not been properly presented in the FS for OU#2.

U.S. EPA and the Minnesota Pollution Control Agency (MPCA) discussed how the Presumptive Remedies: Policy and Procedures Guidance (9/93), could be used to streamline and accelerate the remedy selection process, and provide a significant cost savings. Prior to suggesting the use of presumptive remedies at NIROP, U.S. EPA and MPCA discussed the applicability of presumptive remedies for Volatile Organic Compounds (VOCs), with the U.S. Navy's consultant. After reviewing the presumptive remedies guidance, U.S. Navy's consultant explained that the three presumptive remedies for VOCs in soils were applicable and that the Soil Vapor Extraction (SVE) remedy may be the most feasible of the three. U.S. EPA and MPCA explained that they would assist the U.S. Navy's consultant with incorporation of the presumptive remedies guidance.

Communications between the U.S. EPA, MPCA, and the U.S. Navy's consultant were frequent during drafting of the FS. At that time, U.S. EPA and MPCA believed that through team effort the U.S. Navy would produce a FS that incorporated presumptive remedies in a way that would be acceptable to U.S. Navy, U.S. EPA, MPCA and the public.

U.S. EPA learned that the draft FS was delivered for internal review, with technical rationale to support a SVE presumptive remedy. However, after the U.S. Navy's internal review, language was changed to indicate that institutional controls would be the most effective method to remediate contaminated soils identified during the remedial investigation. Institutional controls may be used as a component of the complete remedy, but not as a substitute for active response measures. Conclusions made in Section 6.6 of the FS for OU#2 indicating that institutional controls are the most cost-effective method for protecting human health and the environment may be correct, however, U.S. EPA will not agree with a remedy selected solely because of cost effectiveness.

U.S. EPA has several review comments to further address the unacceptability of the FS for OU#2. U.S. EPA would like to meet with U.S. Navy personnel to discuss review comments

regarding: nonuse of agreed upon TCE biodegradation rates (MPCA soil leaching model), not properly addressing cPAH contamination on site, U.S. Navy's use of natural biodegradation as an acceptable means to decrease risks from contamination at NIROP, (without backup documentation), contradictory statements within the FS, and biased writing styles presented in this report.

Specific Comments

1. Page 4, 1st paragraph, 1st sentence: Please explain how the sand and gravel aquifer underlying NIROP is capable of yielding significant quantities of water for residential supplies.
2. P 4, 2nd para, 7th sentence: The St. Peter Sandstone is not continuous under NIROP. Please change.
3. P 5, 1st sentence: The decision to divide the site into operable units by made by U.S. Navy, U.S. EPA, and MPCA. The U.S. Army Corp of Engineers did not participate in that planning phase of the site cleanup strategy. Please reword.
4. P 5, 1st para, last sentence: Please explain how U.S. Navy has determined that unsaturated soil under the manufacturing building is the Final operable unit.
5. P 5, 4th para, 1st sentence: Please be more specific with the description regarding analyses of samples and parameters analyzed for.
6. P.5; 4th para, 2nd sentence: Please be more specific, or remove the word "slight"
7. P 5, 4th paragraph: The removal action (31 drums) implemented during the RI for OU#2 should be included in the narrative portion of the Summary for OU2.
8. P 7, Figure 1-3, Legend: The use of words "excavated" and "unexcavated" is misleading. Some of these anomalies were excavated in the 1992 investigation. The use of a date would clarify, such as "excavated in 1983" or "unexcavated in 1983, excavated in 1992."
9. P 8, 2nd para, 17th sentence: In the sentence starting with "Figure 1-3..." please add

"in shallow soils" before "in Area A."

10. P 11, 1st sentence: This statement is not necessary and makes the report appear to be biased.

11. P 12, 1st sentence: This statement is contradictory to the following statement. Why do on-site workers need protection if the baseline risk assessment does not result in risks to on-site receptors? Please reword or delete.

12. P 12, 1st para, last sentence: Please provide information regarding how OU#2 soil contamination impacts underlying groundwater.

13. P 12, 1st paragraph: Are the restrictions in sentence 3 advocated? The pump-and-treat system is not currently preventing offsite migration of VOCs. To be accurate it could be said "The purpose of the system is to prevent offsite migration." In sentence 4, please reword to show that restrictions control, rather than eliminate, future land use hazards.

14. P 12, 2nd paragraph, 3rd sentence: Please explain, in more detail, how detected metals and pesticides do not appear to be associated with site activities. Were the detected metals and pesticides present before the NIROP was constructed?

15. P 13, Section 1.5: This section does not properly explain the presumptive remedy guidance. Please use specific language from the guidance to better describe. The guidance does not directly address remediation of cPAHs.

16. P 13, Section 1.6: The FS scope and objectives are not totally correct. Please refer to U.S. EPA's RI/FS guidance for generic language regarding the scope of a FS.

17. P 17, 1st para, last sentence: Why is cost effectiveness the only other requirement mentioned? A public reader may think that cost effectiveness is the main requirement being considered. Please change language to address all requirements or delete.

18. P 17, 4th para, last sentence: Chemical specific ARARs for soil were developed by U.S. Navy's consultant using health-based, site-specific information. Please include a statement explaining this.

19. P 18, Table 2-1: Please reword footnote #2. Please remove language referring to "in a limited context".
20. P 19, Table 2-2, SVE Comments: The Fridley NIROP production operations result in hazardous air pollutant emissions that classify the facility as a major source, pursuant to the Clean Air Act Title V requirements under 40 CFR Part 70 (page 101 of the FS for OU#2). The effect of SVE emissions on NIROP's air permit should be considered.
21. P 19, Table 2-2, Citation: Minnesota Statue Chapter 7007: What does the superscript 5 refer to?
22. P 22, Table 2-3, Footnote 1: According to previously generated documents, this task has been completed. Please reword to indicate this.
23. P 26, 2nd para, 1st sentence: The RI for OU#2 was to investigate potential source areas outside of the NIROP. Contaminated soils are a source, however, other sources may be present (31 drums). Please change throughout the document.
24. P 27, 4th paragraph: Please reword this paragraph. It appears to imply that the MPCA's model is not relevant or appropriate. In the ARARs discussion, U.S. Navy explains that the MPCA soil leaching model is to be considered as relevant and appropriate.
25. P 28, sixth bullet: How does the U.S. Navy know that soils represent the only source of contaminants to the groundwater? U.S. Navy is currently conducting geophysical surveys of the North 40, and preliminary results show possible drum anomalies. Please reword or delete.
26. P 35, 1st paragraph: U.S. EPA does not agree with statements in this paragraph. U.S. Navy has not satisfactorily proven that only 13 kg of TCE exists in OU#2 soils.
27. P 40, last sentence: Please explain why PRGs were not adjusted for effects of multiple contaminants and the potential additivity of risk.
28. P 43, 1st para, 2nd sentence: Please explain what "screened" means.
29. P 49 2nd para, 4th sentence: Please remove the language "probably overly conservative".

30. P 52, 2nd para, 2nd sentence: This approach is not consistent with presumptive remedy guidance. The U.S. Navy's discussion of using SVE to remediate cPAH's is not technically justifiable. The guidance explains that when contaminants other than VOCs are present in soils, presumptive remedies may still be used, in conjunction with other remedies (treatment train methodology) to remediate VOC and non-VOC contamination. U.S. EPA disagrees with the U.S. Navy's rationale presented in this FS regarding remediation of both VOCs and cPAHs with SVE.

31. P 52, last paragraph: U.S. EPA disagrees with this discussion of the no action alternative. It appears to be written to imply that a no action alternative may be acceptable as a remedy for OU#2. Please reword.

32. P 53, 1st paragraph: U.S. EPA disagrees with this discussion of institutional controls. Institutional controls may be used as a component of the complete remedy, but not as a substitute for active response measures. Please reword.

33. P 53, 3rd para, 2nd sentence: Please include the reference used to state that oxidation and precipitation of metals is a secondary treatment mechanism of SVE.

34. P 56, 3rd para, 3rd sentence: Please provide ranges for the thickness and depth of the fine-grained soil layer. Change "west-central" to "east-central."

35. P 57, Figure 4-4; Page G-1, Third Paragraph; Table G-2, Note A; and Appendix G, First Computation Sheet: Pages 58 and G-1 and Table G-2 state that the radius of influence equals depth. Figure 4-4 and the computations state that the radius of influence equals two times depth; reconcile the radius of influence for SVE wells.

36. P 58, 1st para, last sentence: U.S. EPA disagrees with this statement. The lowest levels of soil contamination may be due to VOCs in groundwater, however, concluding that the entire vadose zone (soil column) is influenced by VOCs in groundwater, is not correct.

37. P 58, 2nd para, 2nd sentence: The RCRA corrective action using SVE at Hazardous Waste Storage Areas C can serve as a pilot test. Reference to technical data generated from the SVE of soils under Hazardous Waste Storage Area C, should be included.

38. P 62, Section 4.3.5: see review comment #30 of this review regarding enhanced bioremediation.
39. P 68, 2nd paragraph: U.S. EPA disagrees with this summary. Review comments regarding biodegradation of cPAHs (#30), and groundwater recontaminating the entire vadose zone (#36), are addressed in this review.
40. P 68, last sentence: Why was the installation of a liner to prevent recontamination not discussed? Please include a discussion of liner use relating to prevention of recontamination from underlying groundwater.
41. P 71, 1st sentence: Describe "typical containerization".
42. P 77, Table 4-4: What does footnote "a" refer to?
43. P 82, 3rd sentence, last sentence: The reference to Figure 4-6 is incorrect. Please correct.
44. P 83, 1st para, last sentence: See review comment #40 regarding liner use.
45. P 84, 2nd para, 3rd sentence: See review comment #32 regarding the use of institutional controls as a sole response measure.
46. P 87, Figure 5-1: Overall Protection of Human Health and the Environment - The groundwater capture system is not currently being upgraded to prevent VOCs from contaminating the City of Fridley's drinking water supply. Please change.

The No Action Alternative does not prevent VOC exposure by ingestion of water. Unacceptable levels of TCE are present, due to site operations, in groundwater outside of the capture system, under Anoka County Park. Please correct.

Institutional controls should not be used to explain how the "No Action Alternative" relates to Long-Term Effectiveness and Permanence. Please change.

Reduction of Toxicity, Mobility, and Volume Through Treatment: A natural, unassisted process is not a treatment technology. This evaluation criterion addresses the statutory

preference for selecting remedial actions that employ treatment technologies that permanently and significantly reduce toxicity, mobility, and volume. The threat posed by the contaminants is not reduced by treatment, and this evaluation is incorrect in stating that it is. The correct response is "None." The third bullet should be deleted.

Please include the cost of continued monitoring in this Figure.

47. P 88, Figure 5-2: Overall Protection of Human Health and the Environment - U.S. EPA disagrees with the three bullets in this category. Review comment (#32) regarding institutional controls, explains the rationale for disagreement.

Compliance: Allowing natural biodegradation to achieve chemical specific ARARs, is not acceptable. Please reword.

Language presented in the last bullet is not acceptable. Renegotiating deed restrictions every five years does not assure compliance with chemical specific ARARs. Please reword.

Long Term Effectiveness: The second bullet states that institutional controls are permanent. On page 53 of the report, it states that their permanence depends on the power and consistence of local government agencies, as well as the willingness of the U.S. Navy to agree to long-term deed restrictions. This discussion of deed restrictions being permanent solution for protecting human health and the environment at this site, is not correct. Please correct.

Reduction of Toxicity, Mobility, and Volume Through Treatment: See review comment #46 regarding reduction of Reduction of Toxicity, Mobility, and Volume Through Treatment. The correct response is "None."

48. P 89, 2nd para, last sentence: U.S. EPA does not agree with this summary. Institutional controls do not leave little to no risk to humans. The statement that no increased negative impacts to the environment from leaching of very limited source areas to groundwater, is not correct. Please correct.

49. P 90, 3rd para, 5th sentence: What was the duration of the U.S. EPA site demonstration of air stripping by SVE?

50. P 93, 1st para, last sentence: SVE will be effective in decreasing the risk by preventing Please change.
51. P 93, 2nd para, last sentence: See review comment #36 regarding volatilization of VOCs from groundwater.
52. P 94, 2nd para, last sentence: The fine-grained layer is not mentioned in Section 4.3.3. It is in Section 4.3.2. Please reconcile.
53. P 95, 2nd para, 2nd sentence: In the RI, a step-out/ step-in boring method was used to completely define the outermost extent of areas. Please reword or delete.
54. P 100, 3rd para, 1st sentence: The level of protection required for a remedial activity should be evaluated in relation to the short-term effectiveness and costs, rather than with a potentially-inflammatory description of increased risk. Any intrusive work should include appropriate monitoring and all workers should be appropriately trained in health and safety and wearing appropriate personal protective equipment. Please reword.
55. P 100, 4th paragraph, See review comment #36, regarding recontamination of treated soils and review comment #40, about the use of a liner.
56. P 101, 2nd para, 1st sentence: Excavation to 15 feet is mentioned here, but the calculations in Appendix I assume 20 feet. Please reconcile these numbers. Please explain the U.S. Navy's rationale for the statement that a 15 foot excavation would be difficult.
57. P 102, last para, 2nd sentence: See review comment #53 regarding the contamination in outer extent of areas investigated.
58. P 102, last paragraph: The volume of soil excavated is a factor common to only two alternatives; a broader basis for comparison would be the volume of soil remediated, which is common to the three treatment alternatives. The argument is cursory and confusing, and should be expanded or deleted.
59. P 106, 2nd para, 2nd sentence: This statement contradicts previous discussions about leaching of contamination for OU#2 soils. Please reconcile.

60. P 106, 3rd para, last sentence: If the use of a liner under excavated, cleaned, and backfilled soils is evaluated for Alternatives 4 and 5, they could be implemented immediately. Please include a discussion of use of a liner.

61. P 108: In the 2nd paragraph, please provide an estimate of the amount of soil that could not be treated because of disruption of normal plant operations. In the third paragraph, please evaluate the proper disposal of sludges, wastewater, and hazardous residuals. What quantity of residuals is likely to be considered hazardous, based on the results of the 1993 soil investigation? Which hazardous constituents would categorize the residuals as hazardous?

62. P 111, section 6: This section uses rationale discussed in previous sections of this report to compare alternatives. U.S. EPA does not accept rationale presented in previous sections of this report, and explains the reasons, in this review. Many of the comparisons in this section reflect the unacceptable rationale presented in this report. When acceptable rationale replaces, unacceptable rationale, this section will need rewriting.

63. P 113, 2nd paragraph: In the 2nd sentence, please clarify the words "eventually" and "over an extended time." In the third sentence, please change the word "eliminates" to "controls."

64. P 114, 1st paragraph: As identified on page 53 of the FS document, the permanence of legal restrictions would depend on the power and consistency of local government agencies, as well as on the willingness of the U.S. Navy to agree to long-term deed restrictions. These qualifications should be included in the Comparative Analysis.

40 CFR 300.430(e)(7)(i) focuses on the degree which an alternative reduces toxicity, mobility, or volume through treatment. Alternative 2, Institutional Controls, does not include any treatment technology. The magnitude of the residual risk would not be effectively reduced. This should be stated.

65. P 114, 2nd paragraph: The need for interim institutional controls was not mentioned in Chapter 5, Section 5.4.1, Section 5.5.1, Figures 5-4 and 5-5. This should be included and appropriate costs should be added.

66. P 118: The summary only addresses the alternative which is most cost-effective. The alternatives which evaluate the reliability of control, elimination of risk, permanent reduction of toxicity through treatment, irreversibility, and residual toxicity should be addressed. Summarize the alternatives more thoroughly, or delete the summary.

67. Page G-4: According to page 101 of this report, the Fridley NIROP production operations result in hazardous air pollutant emissions that classify the facility as a major source pursuant to the Clean Air Act Title V requirements under 40 CFR Part 70. The SVE system will add to other NIROP air releases and may need off-gas control equipment. The cost for this equipment should be included.

68. Appendix I: On Computation Sheet 1 for Area E, the run on a 34° triangle with a 20 foot rise is not 35 feet. Check computations, or justify value used. The sentence beginning "Because..." is unclear, and should be clarified. The south calculation uses 120 feet, what does this represent?

Please dimension the drawing for Area A3. On the Computation Sheet for Piling, Area A3 appears to omit the sides of the building and the excess for ends.

69. Appendix K: The multipliers for engineering, licensing, and construction oversight are different for each soil remediation alternative. What are the criteria determining these multipliers?

Grammatical and Typographic Comments

1. P 1, bottom: Capitalize "control" in the first paragraph, eleventh line.

Second paragraph, change "were evaluated" to "was made," in the second to last line. Add "c" before "PAH" in the last line.

2. P 6, Table 1-1: Put a page number on this table. Please put page numbers on all tables and figures in the document.

3. P 8, bottom: Change "measured" to "identified." PAH's were measured in every location, but the concentrations were insignificant or undetected. Add a comma after "identified" and after "extent."

4. P 13, 2nd bullet: Add a comma after "apply" and after "soil."
5. P 19, Table 2-2, Citation: NPCA Screening Emission Rates.: Correct NPCA (MPCA).
6. P 27, 2nd bullet: Change "indicative" to "typical."
7. P 29, 2nd line: Delete the second phrase "determined during the RI."
8. P 29, 2nd paragraph, 3rd line: Change "it" to "t."
9. P 55, 3rd paragraph, 3rd sentence: Delete the word "pure."
10. P 61, 2nd paragraph, 5th line: Change to "...hours, to several days, of..."
11. P 68, last sentence: Change "are" to "is."
12. P 78, 2nd paragraph, 2nd line: Add an apostrophe to "vendors."
13. P 80, 2nd paragraph, 4th line: Change "flow" to "flows."
14. P 84, 3rd paragraph, 4th line: Remove parentheses before "40 CFR Part".
15. P 88, Figure 5-2, 4th criterion, 2nd bullet: Change "onec" to "once."
16. P 92, Figure 5-3, 2nd criterion, 4th line: Add an apostrophe to "shouldnt."
17. P 99, Figure 5-4, 2nd criterion, 18th line: Capitalize "a."
18. P 102, 4th line: Change "to" to "of."
19. P 105, Figure 5-5, 3rd criterion, last bullet: Change first and third "of" to "or."
20. P 108 and P 110: Appendix J deals with the incineration alternative, not I.

21. P 113, 3rd paragraph, sentences 2 and 3: Move "groundwater protection" in front of "TCL." Delete "based on."
22. P 113, 4th paragraph, last line: Singularize "Alternatives," change "are" to "is."
23. P 114, 1st paragraph, last line: Change "are" to "is."
24. P 115, Figure 6-1, Institutional Controls, Implementability, Fourth Bullet: Change "to" to "with".
25. P 115, Figure 6-1, Excavation and Thermal Desorption, Effectiveness, Third Bullet: Correct "ordings."

Please contact me at (312) 886-1967, to discuss any questions regarding U.S. EPA's review of the Feasibility Study for Soils Operable Unit, Naval Industrial Reserve Ordnance Plant (NIROP), Fridley, Minnesota, April 1995.

Sincerely,



Thomas R. Bloom

Remedial Project Manager

cc: Dave Douglas, MPCA