



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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January 24, 2005

Mr. Orlando Monaco
Department of Navy
Engineering Field Activity-Northeast
Code 1823/OM
10 Industrial Highway, Mailstop 82
Lester, PA 19113-2090

Re: Landfills 1 & 3, Operations and Maintenance Manual
Naval Air Station, Brunswick, Maine

Dear Mr. Monaco:

The Maine Department of Environmental Protection (MEDEP) has reviewed the draft "Operations and Maintenance Manual for Sites 1 and 3 Landfill", dated January 2005, prepared by EA Engineering, Science and Technology. Based on that review MEDEP has the following comments and issues.

General Comments:

1. A section should be added that specifically addresses surface water management. This should include the inspection and maintenance of structures designed to remove water that either runs off the landfill surface, or infiltrates through the drainage layer. Both need to outlet freely for the cover system to work as designed. The manual needs to provide that outlet piping, culverts, and drainage swales are inspected regularly and cleaned/repared as needed so that water can drain freely. Maintenance may need to include cleaning silt from culverts and ripped swales, re-bedding culverts which have been moved by frost or erosion, correcting problems with ice blockage during winter, and removing vegetation if it obstructs flow. Several sections hint at this item, but it's important enough to warrant a section of its own.
2. The manual calls for resurveying the gas vents every two years to measure overall settlement (as a supplement to observing depressions for differential settlement during walkovers). Two years may be a good frequency for a landfill that's been closed for ten years, however MEDEP would like to see what past surveys have shown if it has been done in the past.
3. MEDEP would like to accompany the Navy's consultant on their walkover this April in order to see how the maintenance measures are working.

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Specific Comments:

4. Section 1.1, Project Identification, Page 1, para 2:

- a.) Please add when the remedial design was implemented.
- b.) Please refer to the agreement(s) and add the criteria for reactivating the extraction wells.
- c.) "The purpose of this O&M Manual is to provide the necessary steps to document the continuing effectiveness of the selected remedial action instituted at the Sites 1 & 3 landfill."

The effectiveness of the remedy is documented by the Long Term Monitoring Plan. MEDEP recommends the following language: "The purpose of this O&M Manual is *ensure the on-going integrity of the land fill components* to ~~provide the necessary steps to document the continuing effectiveness of the selected remedial action instituted at the Sites 1 & 3 landfill.~~"

- d.) "A Long-Term Monitoring Program is in effect to monitor the effectiveness of the remedy. The Draft Final Long-Term Monitoring Plan (LTMP) for Sites 1 and 3 and Eastern Plume (EA 2005, in preparation) is currently being reviewed by stakeholders. The Final LTMP is anticipated to be submitted in early 2005."

For clarity MEDEP recommends the following language: "A Long-Term Monitoring Program (*Long Term Monitoring Plan for Sites 1 and 3 and Eastern Plume, February 2000*) is in effect to monitor the effectiveness of the remedy. A *revised* ~~the~~ Draft Final Long-Term Monitoring Plan (LTMP) for Sites 1 and 3 and Eastern Plume (EA 2005, in preparation) is currently being reviewed by stakeholders. The *revised* Final LTMP is anticipated to be submitted in early 2005."

5. Section 1.3, History and Background, Page 2:

"Remedial measures were initiated in April 1995."

For clarity MEDEP suggests the following language: "*The Record of Decision (ROD) was signed in 1992 and* remedial measures were initiated in April 1995."

6. Section 2.2, Slurry wall, Page 5:

- a.) "A slurry wall was placed around the landfill waste with the exception of the Weapons Compound that diverts clean groundwater flow around the landfill and prevents groundwater contact with the landfill waste."

The syntax in this sentence must be fixed. MEDEP suggest the following language: *With the exception of the Weapons Compound, a slurry was placed around the landfill waste to divert clean groundwater flow around the fill and prevent groundwater from contact with the landfill waste.*"

- b.) "The results of computer-simulated hydrogeologic tests (ABB-ES 1993a) indicated that excluding these area from the limits of the slurry was had no effect as compared to including the slurry wall along Mere Brook."

Taken out of context this statement has no meaning and begs clarifications of the slurry wall along Mere Brook. MEDEP recommends deleting the entire sentence.

7. Section 2.3, Surface Water Drainage, Page 5, para 2:

“The third watershed drains into a 126 in. diameter discharge pipe.”

This doesn't seem correct. Instead of watershed does the Navy mean the third portion of the landfill? Please check and correct as necessary. Also please identify the discharge location of this 126-in diameter discharge pipe.

8. Low Permeability Cap, Section 3.2, Monitoring and Inspection, Page 6, para 1:

This entire paragraph must be checked. Either the frequencies are contradictory or unclear as to what will be monitored and when. Also be sure that this corresponds to the table in Appendix B.

9. Low Permeability Cap, Section 3.2, Monitoring and Inspection, Page 6, para 2:

Please identify the frequency of inspecting the warning signs.

10. Low Permeability Cap, Section 3.3, Maintenance, Page 6, para 1:

“If the underlying geomembrane or GCL is damaged, repairs will be made by qualified personnel.”

Please identify the timeframe for making these repairs.

11. Low Permeability Cap, Section 3.3. Maintenance, Page 6, para 2:

Please include a statement that the incident will be reported in the next annual report or monitoring event report and to the technical group and that report will include the cause, if known, and the proposed repair, etc.

12. Gas Monitoring System, Section 4.3, Maintenance, Page 7:

a.) “Physical damage to the vent pipes or screens will repaired in a timely manner...”

Please identify what qualifies as a timely manner.

b.) Please include a statement that the incident will be reported to the technical group and in the next annual report or monitoring event report and that report will include the cause, if known, and the proposed repair, etc.

13. Site Access Roads, Section 5.1, System Components, Page 8:

Please name the roads in this section if they have names.

14. Vegetation, Section 6.1, System Components. Page 9:

“The surface of the landfill cap was covered with typical grass seed. No shrubs or trees were planted on the landfill cap surface. Planting of shrubs and trees was not performed to eliminate the potential damaging effects that roots may have to the underlying hydraulic barrier...”

This section is awkward and could be more succinct. MEDEP suggests the following language: "The surface of the landfill cap was covered with typical grass seed *and the growth of shrubs and trees is prohibited to prevent any damaging effects that roots may have to the underlying hydraulic barrier...*"

15. Vegetation, Section 6.2, Monitoring and Inspection, Page 9:

The inspection should include whether the cap is being mowed and whether trees and/or shrubs are growing or encroaching on it.

16. Vegetation, Section 6.3, Maintenance, page 9:

"The surface of the landfill cap will be mowed annually in the early fall."

MEDEP suggests the following language: "The surface of the landfill cap will be mowed annually in the early fall *to discourage the establishment of tree and shrubs.*"

17. Groundwater Monitoring System, Section 7.2, Monitoring and Inspection, Page 10:

Please identify how many wells and which well will be inspected annually.

18. Vegetation, Section 7.4, Maintenance, Page 11:

Any repair or replacement that needs performing should be completed prior to the next monitoring event. Also any problems with the wells should be reported to the technical group. Please add language to this effect to this section.

19. Extraction Well System, Section 8.2, Monitoring and Inspection, Page 12:

The Navy proposes to inspect the extraction wells annually however the monitoring wells are to be inspected semi annually (April and October). What is the purpose of treating the two types of wells differently?

20. Extraction Well System, Section 8.3, Maintenance:

Please add a timeframe for repairing and/or replacing the extraction wells.

21. Long-Term Monitoring Program, Section 9:

This section should reference the current LTMP (February 2000) and the prospective one.

22. Figures:

a.) Either figure 2 or 3 need to include the locations of the following:

- discharge pipes,
- detention basins,
- ripped swales or drainage ways,
- slurry wall showing the gap at the Weapons Compound Area,
- and the access roads identified by name.

b.) Also, if possible, the legend on figure 3 needs to be clearer.

23. Appendix B; Engineering Inspection ...:

MEDEP suggests the following changes to the form: (The bullets follow the existing numbering system on the form.)

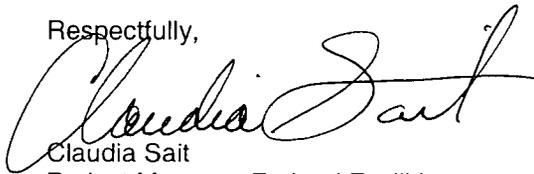
- Describe the condition of the ground surface and note any exposure of the geotextile cover (cap erosion):
- Describe the condition of the ground surface regarding differential settlement resulting in soil cracking or ponded water:
- Describe the condition of the vegetation and note any stressed vegetation:
- Describe any seeps, rooted vegetation (trees) and/or animal burrows:
- Describe the condition of equipment, noting any deterioration (i.e., gas probes, monitoring wells, piezometers, fencing, or drainage structures):
- Describe the condition of Sites 1 and 3 stormwater detention basins, riprapped swales, and pipes, noting erosion, sloughing, flow-through, obstructions, or blockages etc:
- Describe the slope south of the landfill along Mere Brook noting the presence of erosion or sloughing:
- Describe the condition of parking lots, access roads, and pavement structures;
- (NEW) Describe any new construction or activity on or in the area of the landfill:

24. Appendix B, Site Inspection form for Sites 1 and 3:

MEDEP notes that the institutional control inspection is part of the form. That is acceptable however it should not be included in the O&M plan and in the Long Term Monitoring Plan too. Please clarify.

Thank you for the opportunity to review this report. If you have any questions or comments please call me at (207) 287-7713 or email me at claudia.b.sait@maine.gov.

Respectfully,



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