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BY ELECTRONIC AND REGULAR MAIL

Eve Vaudo, Esq.
Senior Enforcement Counsel
United States Environmental Protection Agency,
Region I, New England Regional Office
1 Congress Street, Suite 1100 (SES)
Boston, Massachusetts 02114-2023

Re: Request for EPA Consideration in Feasibility Study of Additional Pond Sediment Remedial Alternative - Centredale Manor Restoration Project Superfund Site, North Providence, Rhode Island

Dear Eve:

We are writing on behalf of Emhart Industries, Inc. ("Emhart") to follow up on the discussion held during the June 29, 2009 meeting regarding the remedial alternatives that the United States Environmental Protection Agency ("USEPA") is evaluating in its Feasibility Study for the Centredale Manor Site. In particular, we highlight several of the potential shortcomings of the remediation options under consideration by USEPA for the Allendale and Lyman Mill Sediment Alternatives. We then propose that USEPA consider in its ongoing Feasibility Study an additional remedial alternative that includes an option for the remediation of excavated sediments that is less costly than the upland confined disposal facility ("CDF") or other off-site disposal options that USEPA is considering, and which is as equally protective of human health and the environment.

At the June 29th meeting, USEPA staff expressed concern that the land disposal restrictions may impede implementation of a remedial alternative involving the disposal of excavated sediment in an upland CDF. Given the information provided by USEPA's support team, the land disposal restrictions likely would prohibit placing sediments containing concentrations of dioxins/furans that exceed 1 part per billion (ppb) ("more contaminated sediments") in an upland CDF located outside the area of Site-related contamination. Thus, it appears that an upland CDF would only be viable as a disposal option for sediments with dioxin/furan concentrations less than 1 ppb. Based on the assessment of USEPA's support team, this would limit to approximately 50% the amount of the excavated sediment that could be placed in an upland CDF. Accordingly, if USEPA were to select an upland CDF disposal option, a second disposal option also would have to be selected for the more contaminated sediments that would be excavated from the Allendale and Lyman Mill ponds.

In addition to the impact of land disposal restrictions, there are other shortcomings with the upland CDF disposal option, including the following:

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- The implementability of an upland CDF is uncertain. It presently is unknown whether: (1) the land on which the upland CDF would be constructed is available for purchase; and (2) the permit required to operate and maintain the upland CDF can be obtained.

- USEPA has not prepared an estimate that accurately reflects the total cost of implementing a sediment remedy that includes the upland CDF disposal option. For example, USEPA's calculations do not include the price of purchasing the land on which the upland CDF is to be constructed or other potentially costly items, such as remediation of the upland CDF property and dismantling/relocation costs for the facilities currently operating on that property.

- The upland CDF would not provide additional human health or environmental benefits beyond the benefits that would be realized from implementing several of the less costly on-site disposal options under consideration by USEPA, such as a near-shore CDF, isolation capping, consolidation capping, or some combination thereof.

The other disposal options under consideration by USEPA for the Allendale and Lyman Mill Sediment Alternatives include both off-site and on-site incineration. These incineration disposal options are cost-prohibitive, in addition to suffering from other shortcomings.

In light of the foregoing, Emhart requests that USEPA consider in the Feasibility Study an additional remedial alternative under which sediments containing dioxin/furans that exceed 1 ppb would be excavated and placed in an approximately five acre near-shore CDF along the west bank of Lyman Mill Pond. Sediment that is not excavated would be capped *in-situ*. The sediments to be placed in a near-shore CDF would be excavated in the manner described in USEPA's Alternative 7(b), *Excavation and Confinement in an On-site Near-Shore CDF* (USEPA Draft Feasibility Study Report). Up to 50% of the more contaminated sediments within Allendale Pond would be excavated. These sediments, identified by USEPA using the data obtained during the Remedial Investigation, would be excavated to an average depth of approximately two feet, resulting in the excavation of up to approximately 30,000 cubic yards of sediment. The excavated sediments would be placed in the near-shore CDF.

Similarly, up to 50% of the more contaminated sediments within Lyman Mill Pond (not including the sediments to be covered by the near-shore CDF) would be excavated. These sediments, also identified by USEPA using the data obtained during the Remedial Investigation, would be excavated to an average depth of approximately 2.5 feet, resulting in the excavation of up to approximately 33,000 cubic yards of sediment. These excavated sediments also would be placed in the near-shore CDF.

The proposed location of the near-shore CDF along the west bank of Lyman Mill Pond is shown in Figure 1, and a schematic of the proposed near-shore CDF is shown in the cross section provided in Figure 2. After the excavated sediments are placed in the near-shore CDF, a cover system would be installed consisting of an impermeable, flexible membrane liner, 20 inches of

sand, and four inches of topsoil. The surface of the cover would be seeded to establish protective vegetation to provide for the long-term effectiveness of this disposal alternative.

Moreover, under the proposed additional alternative, following the excavation and grading of the pond bottoms, the remaining sediments (e.g., the entire area of Allendale Pond and the area of Lyman Mill Pond that is outside the footprint of the near-shore CDF) would be covered *in-situ* with a thick-layer cap comprised of clean imported material placed over the pond sediments. The cap would be constructed as described in USEPA's Alternative 5, *Isolation Capping* (USEPA Draft Feasibility Study Report). The grading of the ponds would allow placement of the thick-layer cap without eliminating surface water area, thereby maximizing pond surface water area.

The *in-situ* cap would consist of two layers: an isolation layer overlain by an erosion control/bioturbation layer. The material type and thickness would be designed to eliminate the potential for hydraulic erosion and to provide chemical isolation between the contaminated sediment and the surface sediment within the biologically active zone. The cap would be placed under de-watered conditions using conventional excavating equipment. It is contemplated that the top 12 inches of the cap would be designed to provide habitat in open water areas and substrate for wetland vegetation in the marsh areas. For cost estimating purposes, it is assumed that the thickness of the cap would be approximately 18 to 24 inches, although the actual cap thickness would be determined during the remedial design.

The excavation of the more contaminated sediment and its placement in a near-shore CDF would yield significant benefits. For example, this additional disposal alternative would: (1) remove a significant mass of contamination from the aquatic system; (2) increase the overall depth of the ponds to allow for an adequate isolation cap; and (3) maximize the final surface area of the ponds by lowering elevation of the sediment prior to isolation capping. Moreover, as noted above, following excavation, the isolation capping portion of the proposed remedial alternative would effectively isolate any contamination remaining in sediment from contact with the sediment biotic zone and the overlying surface water; it also would be designed to effectively eliminate the potential for hydraulic erosion. Thus, this proposed combined disposal alternative would cost-effectively provide long-term protection of human health and the environment while minimizing the dimensions of the near-shore CDF and maximizing the remaining surface area of the ponds.

Furthermore, because any contamination remaining after the excavation would be isolation capped *in-situ*, pre-remediation sediment characterization sampling would not be required. This approach is consistent with USEPA's pre-remedial sediment characterization approach outlined in the June 2009 Draft Appendix J, Table J-1 for the Isolation Capping alternative. Additionally, this approach is conceptually similar to the one implemented by U.S. EPA, Region 1, for the ½-Mile Reach of the Housatonic River, which involved, inter alia, removing a significant mass of contaminated sediments; reducing surficial sediment contaminant levels; and excavating sediments to a sufficient depth to allow for the installation of an appropriate cap/backfill configuration that would effectively prevent the residual contaminants that remain in the underlying sediments from migrating up to the surface sediments or water column.

The additional remedial alternative would incorporate the excavation of the more contaminated sediments and confinement in a near-shore CDF, together with an in situ thick-layer cap placed over the remaining pond sediments. The estimated "Present Worth Cost" of the alternative is approximately $37,000,000. Attached is an estimated breakdown of costs for the proposed remedy for inclusion in the draft summary table of Present Worth Costs prepared by USEPA's support team for the Feasibility Study Report.

We look forward to further discussing the proposed additional remedial alternative with you very soon. In the interim, if USEPA's support team has any questions, they should contact Jeff Loureiro or Dave Scotti of Loureiro Engineering Associates, Inc., at 860-747-6181.

Sincerely,

Jeffrey M. Karp/zc

Jeffrey M. Karp

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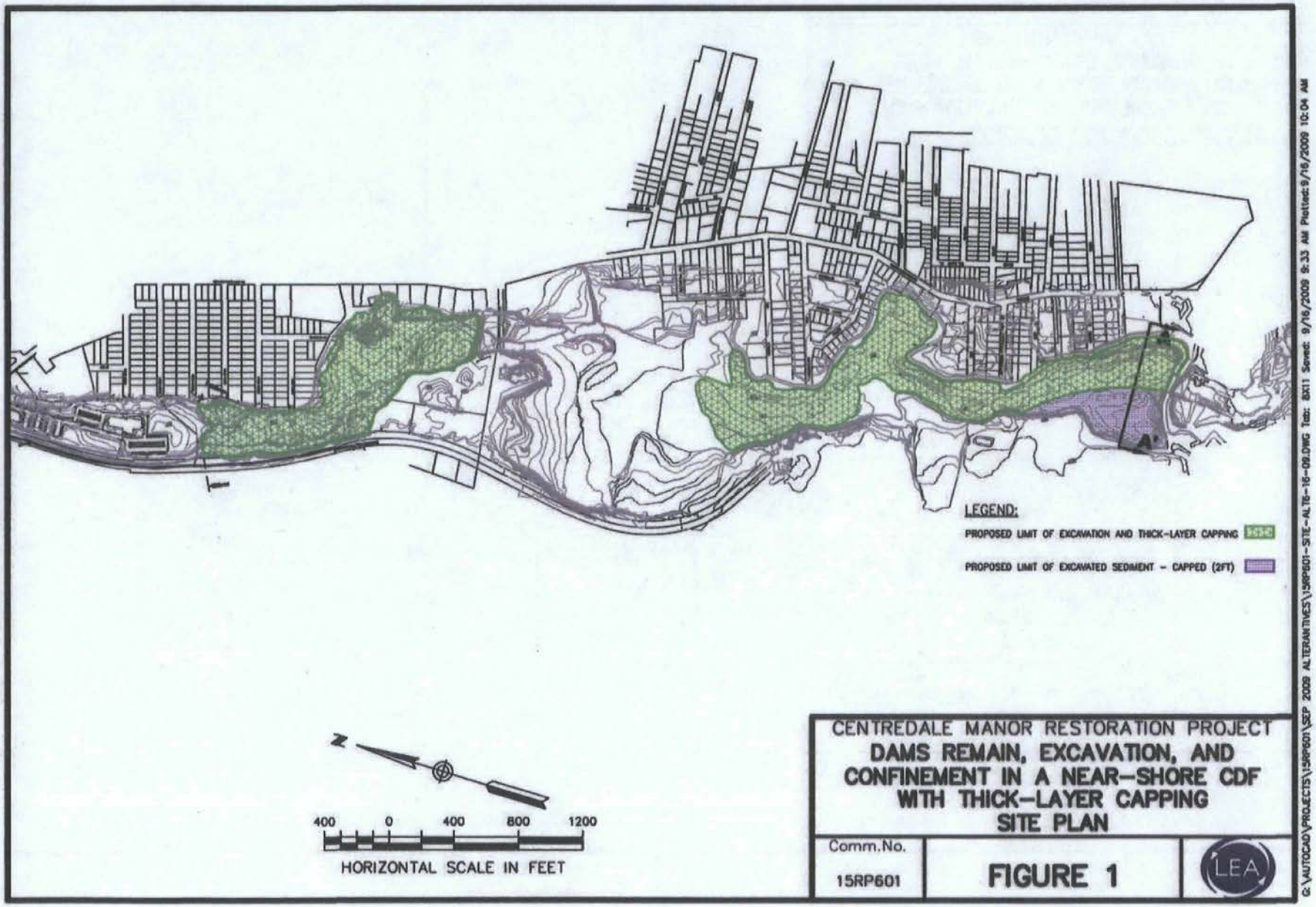
Enclosures

cc: Jerome C. Muys, Jr., Esq.
Laura Brust, Esq.
Mr. David N. Scotti (LEA)
Mr. Jeffrey J. Loureiro (LEA)
Dr. Russell Keenan (AMEC)
Mr. Patrick Gwinn (AMEC)



CENTREDALE MANOR RESTORATION PROJECT

DAMS REMAIN, EXCAVATION, AND CONFINEMENT IN A NEAR-SHORE CDF WITH THICK-LAYER CAPPING SITE PLAN

Comm.No.		
15RP601	**FIGURE 1**	LEA

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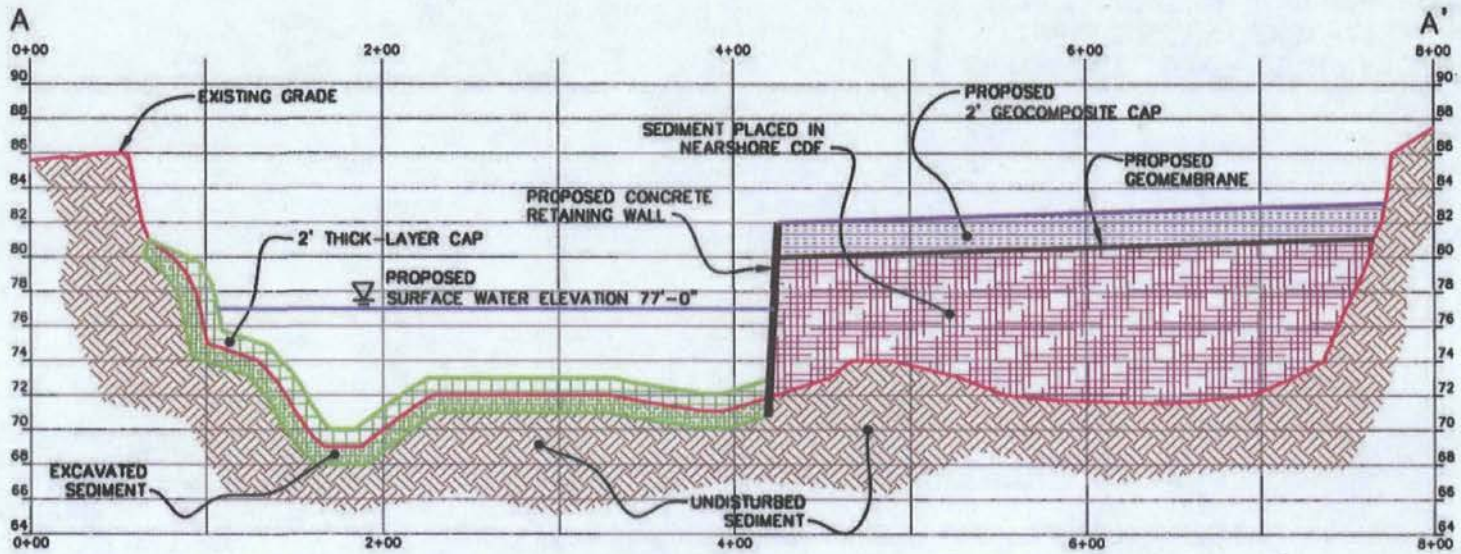

SECTION A–A'
HORIZONTAL SCALE 1" = 100'-0"
VERTICAL SCALE 1" = 10'-0"

CENTREDALE MANOR RESTORATION PROJECT
DAMS REMAIN, EXCAVATION, AND CONFINEMENT IN A NEAR-SHORE CDF WITH THICK-LAYER CAPPING SECTION A–A'

Comm.No.		
15RP601	**FIGURE 2**	LEA

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Present Worth Costs
Allendale and Lyman Mill Sediment Alternatives

Present Worth Costs													
Allendale and Lyman Mill Sediment Alternatives													
		ALT 1 No Action	ALT 5 Isolation Capping	ALT 7a Excavation On-Site CDF	ALT 7d Excavation, On site Incinerate	ALT 7e Excavation, Off-site Disposal	ALT 7b Excavation, Nearshore CDF	ALT 8a Excavation, On-site CDF	ALT 8d Excavation, On-site Incinerate	ALT 8e Excavation Off-site Disposal	ALT 10b Excavation, Nearshore CDF, Rebuilt Dams	ALT 11f Consolidation, Capping, Rebuilt Dams	Proposed Additional Alternative
Remediation Area:	39.2	Acres											
Remediation Volume	156,000	Cubic Yards											
Construction Cost (Excludes Disposal)		$0	$17,447,208	$14,221,751	$14,221,751	$14,221,751	$11,669,127	$17,397,835	$17,397,835	$17,397,835	$11,297,165	$17,699,439	$15,519,833
Disposal				$19,397,776	$79,475,252	$85,438,370	$17,790,855	$8,763,336	$34,076,794	$36,649,119	$18,384,313		$7,787,920
Design Costs		$0	$738,275	$1,441,113	$1,441,113	$1,441,113	$1,441,113	$1,441,113	$1,441,113	$1,441,113	$1,441,113	$1,288,113	$1,441,113
Oversight & QC Costs		$0	$1,363,344	$2,587,290	$2,866,140	$2,866,140	$2,384,815	$2,140,558	$2,254,958	$2,254,958	$2,384,815	$1,139,624	$2,384,815
Contingencies													
Excavation (25%)	25%	$0	$4,887,207	$4,562,539	$4,632,251	$4,632,251	$3,873,764	$5,244,876	$5,273,476	$5,273,476	$3,780,773	$5,031,794	$4,836,440
Disposal (25% for a,b: 10% for d,e)				$4,849,444	$7,947,525	$8,543,837	$4,447,714	$2,190,834	$3,407,679	$3,664,912	$4,596,078		$1,946,980
		$0											
CAPITAL COSTS													
TOTAL		$0	$24,400,000	$47,100,000	$110,600,000	$117,100,000	$41,600,000	$37,200,000	$63,900,000	$66,700,000	$41,900,000	$25,200,000	$33,900,000
Pond Annual Monitoring & Maintenance Years		$26,785	$348,607	$207,923	$207,923	$207,923	$207,923	$348,607	$348,607	$348,607	$207,923	$348,607	$279,623
Disposal Monitoring				$23,330	$0	$0	$23,330				$23,330		$23,300
TOTAL PRESENT WORTH COSTS													
TOTAL		$332,375	$28,700,000	$50,000,000	$113,000,000	$120,000,000	$44,500,000	$41,500,000	$68,000,000	$71,000,000	$44,800,000	$29,500,000	$37,000,000
Present worth factors for 7% discount factor													
Years 1 to 30	12.409												
Costs do not include property acquisition													
* Costs for Options 10a, 10d, and 10e would be same as Alternative 7, except that the capital and present worth costs would increase by approximately $0.65M to account for costs associated with dam													
** Costs for Options 11a, 11b, and 11e would be the same as costs presented for Alternative 8, because the capital and present worth costs would increase for costs associated with dam replacement and decrease for reduction in cap material volume.													