



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Reply To
Attn Of: ECL-111

December 16, 2005

Frederick Wolf
Regional Remediation Manager
Arkema Chemicals, Inc.
2901 Taylor Way
Tacoma, WA 98421

Charles Ellingson
Pacific Groundwater Group
2377 Eastlake Avenue East
Seattle, WA 98102

Paul Fuglevand
Dalton Olmstead Fuglevand
1827 NE 68th Street, Suite B
Kirkland, WA 98033

Re: EPA Approval of Addendum No. 2 to 2004 Remedial Action (RA) Work Plan
Arkema Southeast Shoreline Subtidal Slope Cap
Design Change Document Dated October 3, 2005
Head of Hylebos RD/RA Consent Decree CO4-5319-RBL

Dear Gentlemen:

EPA has reviewed, with technical assistance from the U.S. Army Corps of Engineers, the document referenced above. As described in the October 3, 2005 submittal letter to EPA, Addendum No. 2 contains three modifications to the Addendum No. 1 cap design (conditionally approved by EPA December 7, 2004). The revised cap has a modified footprint, will be constructed upon a modified dredge cut, and will be installed during the 2005-06 in-water construction season.

The Addendum No. 1 conditional approval letter of December 7, 2004 pointed out that the Subtidal Slope Cap Property Restrictive Covenant was not approved. Likewise, this cap design approval letter does not approve the restrictive covenant, found in Appendix D of the above referenced document. Also, EPA notes that the overall Operation, Maintenance, and Monitoring Plan (OMMP) for the Head of Hylebos Waterway Problem Area, submitted to EPA June 15, 2004, has not been approved, and

some elements of that plan focus upon sediment cap maintenance and monitoring.

As you know, EPA comments provided November 6, 2005 combined with subsequent conversations have served to clarify that the sediment cap needs to be designed, in concert with upland source control measures, to address two related performance criteria. First, sediment quality objectives (SQOs) need to be met. This criterion includes both providing high-quality sediment cover and ensuring that ground water discharging through the cap will not cause recontamination of the sediment matrix material over time within the biologically active zone. Second, the quality of ground water discharging into the upper part of the cap, located within the biologically active zone of the surface sediments, needs to at least meet the level of protection provided by Marine Water Quality Criteria (MWQC). The remedy must meet these performance standards. Attainment of performance standards is a prerequisite for certification of remedial action completion (see paragraph 47. b. of referenced Consent Decree).

Arkema, PGG, DOF, EPA, and the Corps have engaged in some productive conversations regarding how to most effectively and efficiently meet these performance criteria. EPA has also been in conversation with Ecology regarding upland ground water remediation, and has utilized the Corps of Engineers to conduct a cursory review of sediment cap reactive layer materials which might be used to provide passive treatment of discharging ground water. Each of these avenues has led EPA to agree with Arkema that the best course of action is to construct the cap as now designed, and focus upon upland source control measures. EPA's expectation is that Arkema will work rapidly and productively with Ecology to ensure that MTCA soil and ground water cleanup levels are met as soon as practically possible, and thus allow the cap to function effectively.

EPA and Ecology recognize that upland source control has been, and will likely continue to be, a complex endeavor. Based upon current information provided by Arkema and its consultants, continued work to achieve upland source control will be required to meet the MWQC performance criterion. Both the cap and upland areas will be subject to monitoring in order to determine short- and long-term effectiveness at meeting the performance standards. Contingent actions, including but not limited to additional capping, may be required if future monitoring results suggest that upland source control efforts alone will not be sufficient.

Sincerely,

Jonathan Williams
EPA Remedial Project Manager

cc: Mick Easterly, U.S. Corps of Engineers
Emile Pitre, U.S. Corps of Engineers
Dom Reale, Washington Department of Ecology

Russ McMillan, Washington Department of Ecology
Sheila Eckman, EPA ECL
Ted Yackulic, EPA ORC
Tad Cline, PGG
Rob Webb, DOF