



Pennsylvania Department of Environmental Protection

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Rachel Carson State Office Building  
P.O. Box 8469  
Harrisburg, PA 17105-8469  
August 28, 2009

717-787-3720  
Fax 717-783-8965

**Bureau of Radiation Protection**

Mr. William Lenart, Project Manager  
Programs and Project Management Division  
Department of the Army  
Pittsburgh District, Corps of Engineers  
1000 Liberty Avenue  
Pittsburgh, PA 15222

Re: Review of the Final Work Plans for the Shallow Land Disposal Area Site  
Parks Township, Armstrong County, Pennsylvania

Dear Mr. Lenart:

The Pennsylvania Department of Environmental Protection (PADEP) has reviewed the subject Work Plans and is providing the following comments based on our review and the inter-agency meeting held on June 9, 2009. Please note, the Work Plans were independently reviewed by PADEP's Bureau of Radiation Protection and by the PADEP Southwest Regional Office. Both sets of comments have been combined and are being provided to you as an attachment to this letter.

If you have any questions regarding these comments please do not hesitate to contact me by telephone at 717-783-8979.

Sincerely,

Robert C. Maiers, PE  
Chief  
Decommissioning & Surveillance Division

Cc: David Allard, BRP  
Bryan Werner, BRP  
James Yusko, SWRO  
Mike Forbeck, SWRO  
Dwight Shearer, SWRO  
Keith I. McConnell, NRC  
Kareen Milcic, SWRO  
Dave Eberle, SWRO



## SLDA Site Remediation Plans Comments

The accompanying Plans that support the remediation effort under the USACE are the common work plans that are required by the USACE for most of its remediation projects and include: Regulatory Compliance Plan (RCP), Site Operations Plan (SOP), Sampling and Analysis Plan (SAP), Waste Management, Transportation, and Disposal Plan (WMTDP), Radiation Protection Plan (RAP) including the Site Health and Safety Plan, Water Management Plan (WMP), Contractor Quality Control Plan (CQCP) and the Backfill and Restoration Plan (BRP). In general, these Plans appeared to be consistent in form and content with our experience with similar documents on other USACE projects. However, during review of these Plans, a number of comments/questions were identified for consideration.

### Regulatory Compliance Plan

1. Cross-cutting comment on multiple plans including Regulatory Compliance Plan, Site Operations Plan, and Waste Management, Transportation, and Disposal Plan - The Commonwealth's LLRW Disposal Act (Act 1988-12) and the Commonwealth radioactive waste regulations (25 Pa Code Chapter 236) should be identified and incorporated as requirements within the Regulatory Compliance Plan. USACE management and disposition of LLW, which includes mixed LLW, within the Commonwealth of Pennsylvania should be consistent with Commonwealth law and regulations. This is of particular importance where radiologically impacted materials are below DCGLs but above background.
2. Pages 3-20 to 3-24 and Table 3.3 – Commonwealth regulations (25 Pa Code Chapter 299) regarding management of residual waste should be identified as a compliance requirement. This is especially important because there are specific regulations addressing storage and disposal of residual waste.
3. USACE should verify its commitment on the scope of the SLDA FUSRAP site cleanup. Based on review of the SLDA remediation plans, it is the Department of Environmental Protection's (DEP) understanding that the area encompassed by the NRC SLDA license will be considered to be the FUSRAP site. Furthermore, it is understood that USACE will remediate the site consistent with its MOU with the US Nuclear Regulatory Commission (NRC) which establishes standards for the decommissioning of facilities licensed by the NRC to allow for license termination with unrestricted use.

### Site Operations Plan

1. If the on-site lab produces data which is required by the DEP (not just internal use) it needs to have a PA Environmental Laboratory accreditation.
2. Need for a project/site physical protection plan consistent with the requirements of 10 CFR Part 73 - The Site Operations Plan references the potential need for a

DOT Security Plan depending on radionuclide content in waste. However, no reference is made to the need for a physical protection plan that governs project/site activities. Based on the discussion of the quantities and concentrations of SNM that may be remediated, as well as the discussion of the need to implement a MC&A program and material balance areas, it appears that a site physical protection plan will be necessary too.

3. Page 6-9 includes an undefined term, "SNM soil." How does USACE define SNM soil? What are its characteristics? Are SNM soils intended to be remediated, processed and dispositioned consistent with other radiologically impacted materials? If not, describe.
4. Verify USACE's commitment to disposition beryllium. Beryllium is identified as a non-radioactive metal of concern. It is DEP's understanding that beryllium and beryllium materials cross-contaminated with radioactive materials will be dispositioned consistent with 25 Pa Code Chapter 299 or as LLW respectively.
5. In situ radiological characterization, Section 6.2, describes how the material in the trenches will be characterized for radiological/hazardous properties including meeting DCGL, SNM, and waste classification/segregation. This characterization is further discussed in the SAP. DEP requests that USACE provide a detailed briefing on the proposed in-situ radiological characterization methodology. Through receipt of the briefing DEP desires to obtain an in-depth understanding of the proposed characterization methodology and to ascertain that characterization implementation can achieve the stated objectives.

#### Contractor Quality Control Plan

1. Revise and provide additional discussion - Section 4.4.4, Onsite Laboratory, discusses the laboratory analysis and related QC but it does not discuss comparison of onsite and offsite analysis for QC purposes. Nor does it discuss correlation of field and laboratory analysis.
2. Quality Assurance Project Plan, Figure 4-5 Trench soil, page 4-13 - This flowchart indicates that soil not acceptable for use as fill, but below the DCGL, will be stockpiled on site. This contaminated soil should be handled as residual or hazardous waste in accordance with the PADEP waste regulations.
3. Quality Assurance Project Plan, 4.3 Post Remediation Survey and Sampling of Trenches, page 4-15 - DEP's Environmental Cleanup Program requests that they be given the opportunity to split confirmatory samples with the USACE after trench excavation is completed. This can be done in coordination with DEP's Radiation Protection Program who has also indicated that they would like to split confirmatory samples. The ECP samples will be sent to a laboratory for analysis of VOCs, SVOCs, metals, and PCBs.

### Accident Prevention Plan/Radiation Protection Plan/Health and Safety Plan

1. No comments.

### Water Management Plan

1. USACE should consult with the PADEP Southwest Regional Office Water Program regarding the need for a NPDES permit.

### Backfill and Restoration Plan

1. The Backfill and Restoration Plan should state when regulated fill would be used and if and when clean fill would be used.
2. General comment - USACE should consider using immunoassay test kits such as using METHOD 4020 SCREENING FOR POLYCHLORINATED DIBENZODIOXINS AND POLYCHLORINATED DIBENZOFURANS (PCDD/Fs) BY IMMUNOASSAY. Another test could be METHOD 4010A SCREENING FOR PENTACHLOROPHENOL BY IMMUNOASSAY.
3. General comment - METHOD 6200 FIELD PORTABLE X-RAY FLUORESCENCE SPECTROMETRY FOR THE DETERMINATION OF ELEMENTAL CONCENTRATIONS IN SOIL AND SEDIMENT may be useful for screening areas to determine high metal concentrations. USACE should address in some manner if there is any possibility of dibenzofurans and dioxins being present.

### Waste Management, Transportation, and Disposal (WMTD Plan)

1. Section 3.3 should be revised to provide a more comprehensive discussion on the handling of SNM – For example Material Balance Areas (MBAs) actions and discussions are included without introduction, surface SNM limits are implied without reference, and the potential need for a site physical security plan should be included.
2. USACE should provide additional clarification and verification of final disposition/disposal options for any Class B or Class C LLW and wastes that exceed specific SNM disposal site limits. WMTD Plan page 3-8 establishes - Waste streams or packaged waste that is not Class A waste, e.g. Class B or Class C waste, will be set aside for determination of the appropriate disposal option. Each waste stream will also be sampled to determine the U-235 mass per disposal

package and uranium enrichment. Waste that does not meet the disposal site SNM limitations as indicated in the EnergySolutions WAC will also be set aside for determination of the appropriate disposal option.

3. Page F-13, Category 1 SNM - means U-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope). Page F-17 implies that category 1 material could be encountered during the site remediation activities. However, it appears that the highest SNM category discussed in the plan is Category 2 material. Cite or provide additional text that discusses methods and procedures for handling Category 1 SNM.
4. General comment - The plan should identify how the treated wastes are actually sampled and tested. The frequency of testing should be stated.
5. For any waste mixing, there should be a waste compatibility chart - Compatibility tests are listed in the back of the volume. Note if any different solid wastes are mixed together or liquid waste with a solid waste, mixed compatibility testing should also be done on the waste if possible. It appears that the capability tests are mainly for mixing liquid waste together.

#### Sampling and Analysis Plan

1. General Comment, Section 1.3 Contaminants of Concern, Page 1-2 - Paragraph two of this section describes the various waste streams that may have been disposed of into the trenches. It includes liquid wastes in various types of containers. Leaking containers or containers in poor conditions should be immediately overpacked, placed in lined boxes, or otherwise secured.
2. Section 3.0, Page 3-1 – Does field sampling include drilling below trenches and along suspected transport pathways to determine if plumes may have developed and materials may have migrated beyond trench boundaries?
3. Section 3.2 On-site Laboratory Analysis - If the on-site lab produces data which is required by DEP (not just internal use) it needs to have a PA Environmental Laboratory Accreditation.
4. Section 4.2.3 Trench overburden Soil - Item 5 states that flame ionization detector (FID) measurements will be taken after 12 soil samples are collected. The measurements should be taken shortly after each sample is collected in bags or jars (after the sample obtains equilibrium).
5. Section 4.3.2. - Over-packing of the drums should be considered.
6. Section 5.1.3 – Procedure OP-005, *Volumetric and Materials Sampling* and OP-957, *VOC Headspace Monitoring* could not be found either in the paper volumes

or CDs. There is a reference that it is in Appendix A (on CD), but this could not be found.

7. Table 6.1 Analytical Methods - Both Reactive Cyanide and Reactive Sulfide as listed on the table has been withdrawn by the EPA. Total cyanide can be performed and if the results are 50 mg/kg or greater "Free" cyanide should be tested. The method used could be ASTM D4282 - 02 Standard Test Method for Determination of Free Cyanide in Water and Wastewater by Microdiffusion. The method can be modified for soil by doing a high pH extraction.

Reactive sulfide can be performed by the old Chapter 7 Method, although spiked and standard sample recovery needs to be monitored during the analysis and concentration values may need to be corrected for recovery.

8. Thallium, Beryllium and Cobalt should be added to the list of compounds tested for Table 6.1

#### Additional Documents

It is DEP's understanding that additional substantive documents are being developed by USACE, such as the Final Status Survey and a contingency plan for CAT 1 special nuclear material. DEP requests the opportunity to review and comment on these documents.