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SEP 15 1999

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DOE-1119-99

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Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE FINAL REMEDIAL ACTION PACKAGE FOR OPERABLE UNIT 1

This letter transmits U.S. Department of Energy (U.S. DOE) responses to the U. S. Environmental Protection Agency (U.S. EPA) comments on the Final Remedial Action (RA) Package, received August 18, 1999. No document-specific comments were provided by the Ohio Environmental Protection Agency (OEPA) in their August 23, 1999, approval letter. The subject responses conclude that no action is required, and no change pages to the RA Package are necessary.

In developing plans/procedures to implement specifics from the Sampling and Analysis Plan for Environmental Media (which is a part of the RA Package), it was found that a table was missing from Section 3 providing radiochemical method performance criteria for the Stormwater Management Pond uranium analysis. Accordingly, three change pages impacted by the inclusion of this new table (i.e., Table 3.4) are enclosed to this letter for inclusion in the Final RA Package.

Mr. James A. Saric
Mr. Tom Schneider

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If you have any questions or comments, please contact Dave Lojek at (513) 648-3127.

Sincerely,



Johnny W. Reising
Fernald Remedial Action
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FEMP:Lojek

Enclosures

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**TECHNICAL REVIEW COMMENTS ON
"FINAL WASTE PITS REMEDIAL ACTION PROJECT (WPRAP)
REMEDIAL ACTION PACKAGE"**

GENERAL COMMENT

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Not Applicable (NA) Page #: NA Line: NA
Original General Comment #: 1

Comment: The original comment requests that more consideration of the possibility of enriched uranium and other unexpected events be included in the document. Specifically, contingency plans for analysis of isotopes not currently specified, such as uranium-235 and fission products, should be included for wastewater and stormwater samples. DOE states that the analyses were chosen based upon criticality and meeting the requirements of the National Pollution Discharge Elimination System (NPDES) permits, which are primarily defined as total uranium rather than as isotopic uranium. The basis for the NPDES permit is the potential adverse effects of the discharge on human health and the environment. For radioactive materials, the primary health concern is the radioactivity. Because uranium-235 and fission products cesium-137 and strontium-90 have much higher specific activities (activity per mass) than natural uranium, a release of enriched uranium or of fission products might fall within the letter of the NPDES requirements but far over the implicit health limits that are the rationale for those requirements. If unexpected materials such as enriched uranium and fission products are encountered during the WPRAP operations, excavation water and other waste streams may be significantly contaminated, especially with relatively soluble elements such as cesium and strontium. These contaminants have a high probability of passing through the water treatment systems and being discharged into the Great Miami River. Contingency plans should be available for use in case such an unlikely, but still possible, event occurs.

Response: Comment Acknowledged. The key, however, to the scope and breadth of such a contingency plan, relates to the likelihood of releases of enriched uranium or fission products into the Great Miami River. In this regard, DOE agrees with the conclusion provided in the comment (i.e., that it is "unlikely" that such a release would occur). This conclusion is supported by historical information which indicates that the Uranium at this site should, in the aggregate, be depleted. Specifically, the waste pits was a discard area for materials that met the economic discharge limit, which means that the material did not have enough uranium mass for recovery, or that the material was depleted. In terms of the strontium-90 and cesium-137, this conclusion is supported by the RI/FS data, which shows concentrations of these minor radionuclides up to only 140 and 450 pCi/g for strontium-90 and cesium-137, respectively.

With the expectation that releases of uranium-235, strontium-90, and cesium-137 into the Great Miami River would be an unlikely event, the primary focus becomes one of verification. Verification would occur through two means: sampling of the waste pit materials; and Integrated Environmental Monitoring Plan (IEMP) sampling at Outfall 4001. As indicated in the Sampling and Analysis Plan (SAP) for Waste Pit Materials, waste material will be sampled in the Railcar Loadout Building bins, and analyzed for enrichment and for cesium-137. Although the waste material will not be sampled and analyzed for strontium-90, inferences regarding strontium levels can be derived from the cesium-137 analytical results, in part, because these isotopes are generally found together. As identified in the IEMP, Outfall 4001

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is sampled on a quarterly basis for various constituents, one of which is strontium-90.

DOE will evaluate trends in the data generated through these various sampling efforts, as it becomes available. If the data reveals an adverse trend, DOE will take one or more of the following steps, as appropriate: 1) confirm the validity of the data; 2) evaluate the cause of the trend; 3) assess the impact of the trend; 4) determine if the trend has long-term implications; 5) identify actions necessary, if any, to address the situation; 6) develop a path forward, as required; and 7) implement whatever actions, if any, are deemed appropriate to address these trends. Throughout this process, DOE will keep the EPAs apprised of developments, and if action is deemed necessary, DOE will discuss the planned path forward with the EPAs prior to implementing the action(s).

Action: No further action required with respect to the RA Package.

**TECHNICAL REVIEW COMMENTS ON
"SAMPLING AND ANALYSIS PLAN FOR WASTE PIT MATERIALS"**

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.6 Page #: 27 Line: NA
Original Specific Comment #: 7

Comment: The original specific comment requests that discrepancies in the peaks used for calibration be clarified. The response states that peaks ranging from approximately 40 kiloelectronvolts (keV) to approximately 2620 keV were intended and that revisions would be made. However, the revised table cites peaks from 36 to 1836 keV. The discrepancy between the table and the response should be clarified.

Response: The range as provided in Table 2-6 (i.e., peaks from 36 to 1836 keV), is the correct range, for both ICV and FCV. The discrepancy came about as a result of a change in the calibration source material. Although the calibration source material originally planned for use did have a range of 40 to 2620 keV, the source material was changed to one with a range of 36 to 1836 keV, as shown in Table 2-6.

Action: No further action required with respect to the RA Package.

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3.4.2 Selection of Appropriate Sampling Frequency

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The FEMP and OEPA have agreed that it will be necessary to sample the SWM Pond water for total uranium prior to discharge, each time a discharge is planned to Paddys Run. In addition, during each discharge, it has been further agreed that a sample will be taken for TSS. Based on discussions with OEPA, it may be possible to adjust this frequency, but this reduction in sampling will need to be based on the results of various sampling efforts, and a modification to this Plan may be required.

3.4.3 Selection of Appropriate Laboratories

In that a quick turnaround of the samples is necessary to support the planned non-contact stormwater discharge program, these samples will be collected and analyzed in IT's on-site laboratory.

3.5 Process Description

As is discussed in Section 3.1, the non-contact stormwater collected in the SWM Pond is collected from the roofs of various WPRAP remediation facilities, as well as other areas outside of remediation activities. Because it is anticipated that this stormwater will not be contaminated, the plan is to discharge this water to Paddys Run, through NPDES Outfall *4005. If, however, it is shown through the sampling and analysis of this water, that the water does not meet the discharge criteria, the water will either be discharged to the Clearwell or the BSL. The decision as to where to discharge in this situation (i.e., the Clearwell or the BSL) will be based to some degree on the process discussed in Section 2.0 of this Plan, and will also be based on the hydraulic capabilities of the various systems (e.g., the BSL, the Clearwell), at the time of discharge. In simple terms, the process is shown in Figure 3.1.

3.6 Analytical Requirements

As discussed in Section 3.4, prior to the discharge non-contact stormwater from the SWM Pond, the water will be sampled for total uranium, with a sample taken during the discharge for TSS. As discussed in Section 3.4.3, the samples to be collected for this waste stream will be analyzed in the IT on-site laboratory. Table 3.1 provides summary information on the sampling requirements associated with these samples, along with information on the proposed chemical and radiological analytical methodology. Tables 3.2 and 3.3 presents the QC checks and method performance criteria for this general chemistry and parameters. Table 3.4 provides the radiochemical method performance criteria for the required uranium analysis. Deviations from the SCQ are incorporated, as appropriate, in the aforementioned tables.

3.7 Sample Collection Approach

A grab sample will be collected each time WPRAP plans to discharge the contents of the SWM Pond into Paddys Run through NPDES Outfall *4005, and each time water is actually discharged. These waters will be sampled for total uranium and TSS as identified in Table 3.1.

Figure 3.1 Non-Contact Stormwater Flow and Decision Tree

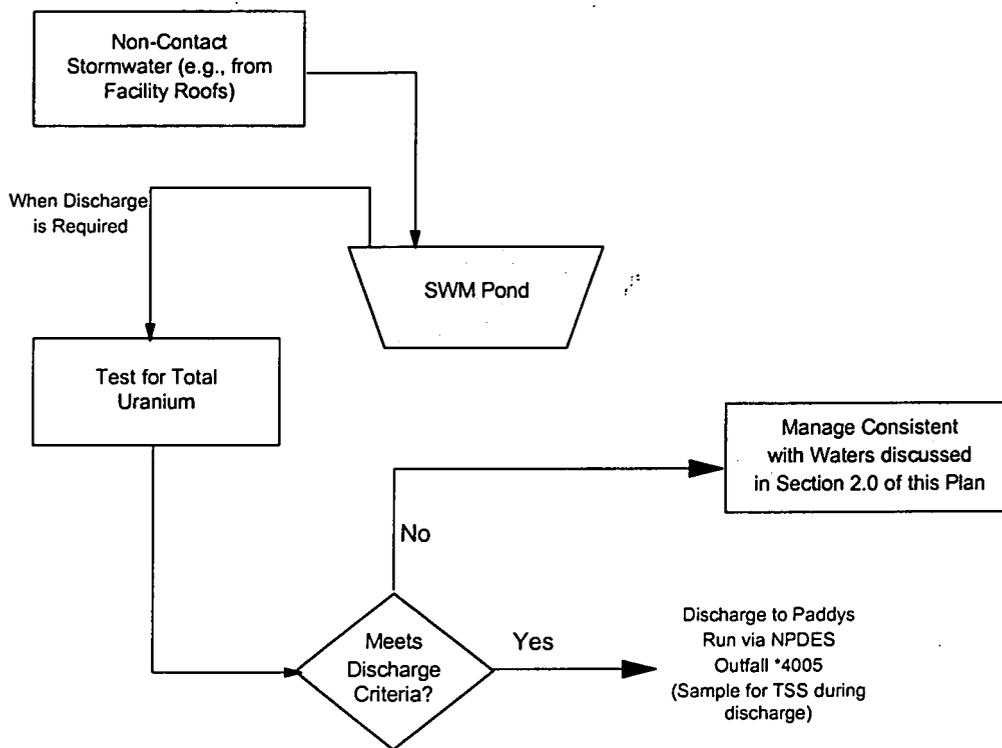


Table 3.1 SWM Pond Discharge - Analytes, Methods, Decision Criteria, and Frequency

Analysis	Method	Decision Level	Frequency	Containers	Preservative	Minimum Sample Volume	Holding Time
Total Uranium	ASTM D5174	20 ug/L	Before each Discharge	1 L Plastic	4° C pH<2 HNO ₃	100 mL	6 Months
Total Suspended Solids	EPA 160.2	N/A	During each Discharge	1 L G(T)	4° C	100 mL	7 days

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Table 3.2 QC Checks and Method Performance Criteria for Total Uranium (ASTM D5174) – SWM Pond

REQUIREMENT	FREQUENCY	ACCEPTANCE LEVELS	CORRECTIVE ACTION	COMMENTS
ICVS	Begin	90-110%	Re-calibrate	
CCVS	1/20	90-110%	Re-calibrate	
LCS	1/20	80-120%	Re-analyze samples since last LCS	
MB	1/20	DR	Qualify Data	Qualified by Data Review
MS	1/20	75-125%	Qualify Data	
DUP	1/20	0-20% RPD	Qualify Data	
Detection Limit	NA	NA	NA	0.1 mg/l

Table 3.3 QC Checks and Method Performance Criteria for TSS (160.2) – SWM Pond

REQUIREMENT	FREQUENCY	ACCEPTANCE LEVELS	CORRECTIVE ACTION	COMMENTS
MB	1/20	<5xRDL	Qualify Data	Qualified by Data Review
DUP	1/20	0-20% RPD	Qualify Data	
LCS	1/20	80-120%	Qualify Data	
Detection Limit	NA	NA	NA	10 mg/l

Table 3.4 Radiochemical Method Performance Criteria – SWM Pond

ANALYTE	ASL ¹	HAMDC ¹	% TRACER RECOVERY	% LCS RECOVERY	MAX BLANK ACTIVITY	METHOD ¹
Total Uranium	B	0.5 ppb	NA	40-160%	<HAMDC	Pulsed Laser Phosphorimetry ASTM D5174-91

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