

TECHNICAL REVIEW COMMENTS ON "PLANT 1 COMPLEX -
PHASE I PROJECT COMPLETION REPORT"
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
GENERAL COMMENTS

Commenting Organization: U.S. EPA
Section #: 3.1.2 Page#: Not Applicable (NA)
Original General Comment #: 1

Commentor: Saric
Line#: NA

Comment: This section provides information regarding collection and sampling of wastewater generated during Plant 1 Complex decontamination and dismantlement (D&D) activities. However, the U.S. Department of Energy (DOE) provides limited summary information and no evaluation of the results of the sampling activities. In addition, the wastewater treatment system (WWTS) acceptance criteria and applicable regulatory limits are not provided or cited in the report (see Original Specific Comments 3 and 8). The report should be revised to address these omissions.

Response: Agree.

Action: See response to Original Specific Comments 3 and 8.

Commenting Organization: U.S. EPA
Section #: 3.2 Page#: Not Applicable (NA)
Original General Comment #: 2

Commentor: Saric
Line#: NA

Comment: This section provides information regarding the quantity of debris generated from Plant 1 Complex D&D activities. The Sitewide Waste Information Forecasting and Tracking System (SWIFTS) appears to provide accurate estimates of the total quantity of material and of the quantities of material by category generated from Plant 1 D&D activities. However, no information is provided regarding the estimated total quantity of material stored in interim storage areas or the available capacities (percentages) of the interim storage areas following Plant 1 Complex D&D activities. DOE should provide a summary of this type of information in each project completion report.

Response: Comment acknowledged.

DOE agrees that it would be helpful to the U.S. EPA's understanding of the site's waste management storage activities to provide a separate report identifying site-wide interim storage usage. We will provide a proposed format and submittal dates for the report to you by January 31, 1997.

The site is continually generating material for storage from ongoing programs (i.e., inventory removal, safe shutdown, facility maintenance), and removing material for disposition either on-site or off-site. Since waste management at the FEMP is dynamic, any cumulative material storage information would change several times during a work week. As a result, calculations of available storage capacities following Plant 1 D&D would be out-of-date by the time the calculations are published in the Project Completion Report. This "snapshot in time" information will not be included in Project Completion Reports.

Action: None for the Project Completion Report. A separate SWIFTS report to be negotiated between DOE and U.S. EPA.

December 1997

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: Attachments C and D Page#: Not Applicable (NA)

Line#: NA

Original General Comment #: 3

Comment: Attachments C and D provide analytical results from decontamination water sampling activities and reports generated by SWIFTS. However, the text describing the analytical results and SWIFTS reports is incomplete and does not allow full evaluation of the data (see Original Specific Comments 8, 9, and 11). The text of the attachments should be revised to provide sufficient information to allow a complete review.

Response: Agree.

Action: The text relating to the Original Specific Comments 8, 9, and 11 has been revised to provide explanations to the referenced container and storage location codes. Please refer to the actions described in response to Original Specific Comments 8, 9, and 11 for specific text revisions.

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA
 Section #: 1.0 Page#: 2
 Original Specific Comment #: 1

Commentor: Saric
 Line#: 5-6

Comment: The text states that lessons learned incorporated from Plant 7 and Building 4A Complex D&D activities facilitated Plant 1 Complex project performance. It is not clear what particular lessons learned were incorporated in the project and what type of impact their incorporation had on project performance. DOE should revise the text to summarize the lessons learned that were incorporated in the Plant 1 Complex D&D activities.

Response: Agree.

Action: Page 2, lines 6 and 7, has been revised as follows:

"All of the DCNs in Attachment A were developed from lessons learned and improved work procedures during the field activities for Plant 7 and Building 4A Complex D&D activities."

Commenting Organization: U.S. EPA
 Section #: 3.1.2 Page#: 17
 Original Specific Comment #: 2

Commentor: Saric
 Line#: 20

Comment: The text refers to water being sampled for isotopic uranium analysis. The text should be revised to state the purpose of this sampling and how this sampling activity differs from the other wastewater sampling conducted for Plant 1 Complex wastewater.

Response: Agree.

The Building 67 equipment washwater was collected and sampled in the 165-gallon tanks for uranium enrichment to ensure that the uranium (U-235) concentration and volume was insufficient to approach a nuclear criticality level. This water was then combined with other project wastewater which was then sampled again.

The waste acceptance criteria for the wastewater treatment system is provided in the Advanced Wastewater Treatment (AWWT) Operation Safety Review (FEMP-2404), which states that only material below 1.00% U-235 may be accepted at AWWT for treatment. Currently the U-235 concentration is the only constituent for which a specific acceptance criteria has been established at the Advanced Wastewater Treatment facility.

Action: Page 18, lines 20 to 24, has been revised to read as follows:

"The equipment washwater was collected and sampled in the 165-gallon tanks for uranium enrichment to ensure that the uranium (U-235) concentration and volume did not exceed the 1.00% U-235 limit, which is the only specific acceptance criteria that currently has been established at the Advanced Wastewater Treatment facility."

Commenting Organization: U.S. EPA
Section#: 3.1.2 Page#: 18
Original Specific Comment #: 3

Commentor: Saric
Line#: 8-10

Comment: The text states that review of the analytical results did not reveal any concentrations exceeding the WWTS acceptance criteria. Attachment C provides decontamination water analytical results; however, the WWTS acceptance criteria and applicable regulatory limits are not provided or cited. The WWTS acceptance criteria and applicable regulatory limits should be provide in the report. In addition, DOE should provide a brief discussion and evaluation of the analytical results. For example, DOE should explain some of the high contaminant levels detected in the samples and explain why these levels do not pose a concern.

Response: Agree.

The wastewater treatment system acceptance criteria is addressed in response to Specific Comment # 2 above. The operations of the wastewater treatment system are regulated by site National Pollutant Discharge Elimination System Permit, #11000004*ED, issued by the Ohio EPA. The concentrations stated in Attachment C are within the normal parameters of the water managed in the wastewater treatment system and were treated with other FEMP wastewater in accordance with the site NPDES Permit conditions and limitations.

Action: Page 19, line 9 has been revised to read: "...permit #11000004*ED."

Page 19, line 15 to 17, has been revised to read: " and are within the normal parameters of the water managed in the wastewater treatment system. The decontamination water was treated with other FEMP wastewater in accordance with the site NPDES Permit conditions and limitations."

Commenting Organization: U.S. EPA
Section#: 3.2 Page#: 18
Original Specific Comment #: 4

Commentor: Saric
Line#: NA

Comment: The text provides storage location codes for debris generated during Plant 1 Complex D&D activities. Table 3-1 summarizes the project debris generated and its associated storage locations. However, the text in Section 3.2 does not provide several of the storage location codes listed in the table, including W800002, W800004 and W800005. The text should be revised to identify all the storage location codes listed in the table.

Response: Agree.

Action: Page 20, lines 8 and 9, has been revised to include the following codes:

- W800002 - Plant 1 Pad, Phase E area
- W800004 - Plant 1 Pad
- W800005 - Plant 1 Pad

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Commenting Organization: U.S.EPA
Section#: 3.3 Page#: 21
Original Specific Comment #: 5

Commentor: Saric
Line#: 9-13

Comment: The text indicates that air monitor PI-4 recorded a value of 2.2E-02 picoCuries per cubic meter (pCi/m³) total uranium. The text then states that D&D activities included precutting of structural beams with acetylene torches. However, it is not clear whether DOE intends to identify this activity as the reason for the recorded value of 2.2E-02 pCi/m³. The text should be revised to clarify this matter.

Response: Agree.

Action: Page 22, lines 11 to 16, has been revised as follows:

"The maximum airborne uranium activity during the D&D of the Plant 1 Complex - Phase I was 2.2E-02 pCi/m³. This level was recorded at air monitor P1-4, located due east of Building 1A (see Figure 3-1) during the February 21 to 28, 1997 sampling period. The level was well below the FEMP action level of 0.1 pCi/m³. Based on a review of Plant 1 work activity during this period, the implosion of Building 1A is the most likely cause of the higher airborne uranium levels."

Commenting Organization: U.S. EPA
Section#: 3.3 Page#: 21
Original Specific Comment #: 6

Commentor: Saric
Line#: 14-15

Comment: The text refers to a value of 5.19E-02 pCi/m³ which is attributed to "over pressurization" of a small, white metal box. However, it is not clear what is meant by "over pressurization" and why this activity would result in a high reading. The text should be revised to clarify this matter.

Response: Agree.

Action: Page 22, lines 21 to 25, has been revised as follows:

"Air monitor P1-4 recorded a value of 5.19E-02 pCi/m³ for May 23, 1997. This value is attributed to the rapid pressurization and subsequent venting of a white metal box containing uranium bearing wastes, and is not related to the Plant 1- Phase 1 D&D activities. The white metal box was in Building 30A, adjacent to monitor P1-4 (see Figure 3-1), when the reaction occurred."

Commenting Organization: U.S. EPA
Section#: Table 3-2 Page#: 21
Original Specific Comment #: 7

Commentor: Saric
Line#: NA

Comment: The table provides the minimum, average and maximum air monitoring data obtained during the Plant 1 Complex project. However, neither the Fernald Environmental Management Project action levels nor the DOE regulatory threshold levels are provided. The table should be revised to provide or cite a reference for this information.

Response: Agree.

Action: The following has been inserted as a footnote to Table 3-2 (page 22, lines 8 and 9).

"Based on DOE Order 5400.5, an internal action level of 0.1 pCi/m³ has been set for evaluating the conditions/activities related to increased airborne uranium concentrations."

The following has been inserted on page 22, lines 28 to 31:

"...per year. This level serves as the FEMP internal action level to evaluate the project conditions and activities which are causing the increase in airborne uranium concentrations. Additional..."

Commenting Organization: U.S. EPA
Section#: Attachment C Page#: NA
Original Specific Comment #: 8

Commentor: Saric
Line#: NA

Comment: Attachment C provides decontamination water analytical results; however, the WWTS acceptance criteria and applicable regulatory limits are not provided or cited. In addition, some of the codes used to identify the sampling points are not provided. The codes requiring identification are PLT 1 D&D TA and PLT 1 D&D TR. DOE should revise Attachment C to address these omissions.

Response: Agree.

See response to Original Specific Comment numbers 2 and 3 for discussion on the Advanced Wastewater Treatment System acceptance criteria and specific regulatory limits. PLT 1 D&D TA corresponds to tank #408. PLT 1 D&D TR corresponds to tank #01-728.

Action: Attachment C has been revised to state: " PLT 1 D&D TA corresponds to tank #408 and PLT 1 D&D TR corresponds to tank #01-728."

Commenting Organization: U.S. EPA
Section#: Attachment D Page#: NA
Original Specific Comment #: 9

Commentor: Saric
Line#: NA

Comment: In Attachment D, the text preceding the SWIFTS reports does not completely identify the codes used in the reports to represent storage locations, areas within the storage locations, material categories and container types. For example, the storage location codes 004B and 0056; the codes for areas within a storage locations, and the container codes 340, 629 and 220 are unidentified. To facilitate the review process, DOE should revise the text in Attachment D to provide a complete summary of the codes used in the SWIFTS reports.

Response: Agree.

Action: Attachment D, Report 1 information has been amended as follows:

- 340 Large White Metal Box
 - 629 Roll-off container returned from offsite use
 - 220 Top-loading White Metal Box
-
- Storage locations
 - 004B Plant 4 gravel area
 - 0056 Building 67 foundation

Commenting Organization: U.S. EPA
Section#: Attachment D Page#: NA
Original Specific Comment #: 10

Commentor: Saric
Line#: NA

Comment: SWIFTS Report #1 ends with the line "Total Containers From Plant 1 D&D (not tracked by OSDf)." It is not clear what is meant by the phrase "not tracked by OSDf." DOE should revise the text at the beginning of Attachment D to clarify this matter.

Response: Agree. The statement was intended to clarify that these containers were not included in the other two SWIFTS reports.

Action: Revised SWIFTS Report#1, as follows:
"Total containers not included in SWIFTS reports number 2 or 3."

Commenting Organization U.S. EPA
Section#: Attachment D Page#: NA
Original Specific Comment #: 11

Commentor: Saric
Line#: NA

Comment: The text before SWIFTS Report #3 lists the remedial investigation and feasibility study (RI/FS) material categories. To facilitate the review process, DOE should revise the text to specifically identify the RI/FS material categories.

Response: Agree. The reference to "RI/FS" category listings has been updated to refer to the "OU3 Debris category" listings. These material categories were defined in Table 2-3 of the Plant 1 Complex - Phase I implementation plan.

Action: The text preceding Report 3 has been revised to replace "RI/FS" with "OU3 Debris", for Column 1 and Column 5 descriptions. Furthermore, following the first use of "OU3 Debris Category" the following reference has been added: "OU3 Debris Categories have been defined in Table 2-3 of the Plant 1 Complex - Phase I implementation plan."

the Implementation Plan (Note: based on the OU3 Integrated Remedial Design/Remedial Action Work Plan, the title "Certification of Field Activities" replaced the term "Certification of Construction Completion" used in the Implementation Plan). There were no lost time accidents or injuries during the D&D activities because of proper training and use of safety equipment. The lessons learned incorporated from Plant 7 and Building 4A D&D activities facilitated project performance. All of the DCNs in Attachment A were developed as lessons learned and improved work procedures during the field activities for Plant 7 and Building 4A Complex D&D activities. Additional lessons learned are discussed in Section 4.0 of this Project Completion Report. Air emission controls and work practices maintained air emissions below Fernald Environmental Management Project (FEMP) project-specific action levels.

1.1 Complex Description

The Plant 1 Complex - Phase I was located between 2nd and 3rd Streets, in the northwest portion of the former production area, as shown (shaded) in Figure 1-1. The historical processes and operations within the Plant 1 Complex - Phase I included the preparation of uranium and thorium ore stock for on-site processing, reconditioning of used storage drums and waste storage. These primary and secondary operations used both radioactive and chemical constituents. During operations, material handling procedures resulted in chemical and radiological contamination to Buildings 1A, 66, 67 and 72. The Ore Silo Size-Reduction Tension Support Structure, and Buildings 1B, 30B, 56B, and 56C were not chemically or radiologically contaminated structures.

Building 1A - Preparation Plant

Building 1A was a four-story, irregularly shaped building located north of 2nd Street and east of A Street. Building 1A was approximately 82 feet x 202 feet x 60 feet, consisting of a steel frame, interior and exterior transite walls (with batt insulation in between), a transite roof and poured reinforced concrete foundation and shielding walls with concrete block walls.

Enriched uranium materials that were to be processed at the FEMP were received at Building 1A. Ore concentrates and recycled materials were weighed, sampled, and milled in Building 1A for distribution to other processes. Higher enrichment uranyl nitrate hexahydrate (UNH) solution was prepared in Building 1A for use in the Ore Refinery Plant (Building 2A) as isotonic sweetener. Other supporting operations that were performed in the plant included drum sampling and washing, solvent recovery, repackaging, and wastewater treatment.

3.0 MATERIAL HANDLING, STAGING AND INTERIM STORAGE

This section focuses on the material generated from the D&D activities, decontamination wastewater, the project-specific air monitoring, and anticipated material disposition.

3.1 Materials Management

3.1.1 Primary Materials Management

Primary materials are the materials removed from the Plant 1 Complex - Phase I structures (e.g., piping, flooring, windows, conduit and wiring). This material was segregated according to the material segregation and containerization criteria in Specification Section 01120 which was revised and reissued as Section 01120, Part 6, Exhibit M. Material handling is discussed in greater detail in Section 3.2.

3.1.2 Secondary Materials Management

Secondary materials are generated from the D&D activity (e.g., cleaning water, personal protective clothing). The metal debris (e.g., conduit, pipe, process and non-process equipment) was cleaned using a high pressure, low volume water wash as described in the Implementation Plan.

For the Plant 1 Complex - Phase I, except for Building 67 - Thorium Warehouse, wash water from the equipment and debris cleaning process was collected as generated. Using skid mounted pumps, with a 20 micron pre-filter and a 5 micron filter, the water was transferred into twelve 165-gallon tanks for storage and sampling. These twelve tanks were located in a temporary diked area. The water was then sampled for uranium enrichment. The equipment washwater was collected and sampled in the 165-gallon tanks for uranium enrichment to ensure that the uranium (U-235) concentration and volume did not exceed the 1.00% U-235 limit, which is the only specific acceptance criteria that currently has been established at the Advanced Wastewater Treatment facility. After review of the uranium enrichment analysis, the water was transferred to one of the three 3,000-gallon project storage tanks, located in a temporary diked area, using skid mounted pumps.

The wastewater sampling from the 3,000 gallon tanks was conducted as described in the attached Sampling and Analysis Plan (Attachment C). The water was analyzed for Plant 1 Complex - Phase I contaminants of concern: thorium-230, uranium-235 and total uranium.

Quality Assurance/Quality Control samples were collected in accordance with applicable project Data Quality Objectives. Analytical results are provided in Attachment C. Approximately 15,000 gallons of uranium wastewater, includes the water from the LSTD Project as discussed in Section 2.4, was generated during D&D activities (note: Safe Shutdown activities did not generate wastewater). After review of the analytical data, the effluent was then transferred to the FEMP Wastewater Treatment System (WWTS) where it was managed in accordance with the WWTS material handling procedures and discharged in accordance with the FEMP's National Pollutant Discharge Elimination System (NPDES) permit, #11000004*ED.

Building 67 decontamination water, from HWMU No. 25, was collected and stored separately in four 55-gallon drums as described in Section 2.1.3. This water was sampled in accordance with the SAP (Attachment C). The Building 67 water was managed through the FEMP WWTS and discharged in accordance with the FEMP's NPDES permit. Review of the analytical results did not indicate any concentrations exceeding the WWTS acceptance criteria and are within the normal parameters of the water managed in the wastewater treatment system. The decontamination water was treated with other FEMP wastewater in accordance with the site NPDES Permit conditions and limitations.

3.2 Staging, Interim Storage, and Disposition

Prior to D&D activities drummed materials were removed from Buildings 1A and 66 (a total of 271 55-gallon drums). The drums were transported to other locations on-site approved for the storage of the material awaiting off-site disposal.

Except as noted in Table 3-1, the current plan for the disposal of material generated from the Plant 1 Complex - Phase I D&D is for placement in the OSDF. The following table provides a summary of the categories and volume (in cubic feet) of material generated during the Plant 1 Complex - Phase I D&D project. This material is being managed in accordance with the strategy outlined in the OU3 Integrated RD/RA Work Plan, which adopts Removal Action No.

17, material management strategies. The material to be shipped to NTS is also included in Table 3-1. This material is tracked using the Sitewide Waste Information, Forecasting and Tracking System (SWIFTS). Three SWIFTS reports are included as Attachment D. The storage location codes are:

- 004B - is the Plant 4 gravel area
- 0080 - is the Building 80 gravel area
- 02/3 - is the Plant 2/3 Pad
- 0007 - is the Plant 7 gravel area
- W800004 - Plant 1 Pad
- W800006 - Plant 1 Pad - stockpile
- 010A - is the Building 10 Pad
- 0001 - is the Plant 1 Pad
- 026B - is the gravel area across
- W800002 - Plant 1 Pad, Phase E area
- W800005 - Plant 1 Pad
- W800007 - Plant 7 East - stockpile

TABLE 3-1 - OU3 Project Debris Generation Summary

| Material Category | Material Description | Weight (pounds) | Volume cubic feet (ft ³) actual bulk | Location - Container Type and Quantity or Stockpile if in bulk |
|-------------------|-----------------------------------|-----------------------------------|--|---|
| A | Accessible Metal | 868,000 58,000 | 29,597 1,953 | W800004 - Stockpile W800006 - Stockpile |
| B | Inaccessible Metal | 365,980 19,346 4 unweighed | 28,350 | 0001 - 2 ROB's; 0007 - 3 ROB's; 010A - 2 ROB's; 02/3 - 14 ROB's; 026B - 1 ROB; W800002 - Stockpile |
| C | Process Related Metal | 137,150 5 unweighed | 12,035 | 0001 - 4 ROB's & 5 ISOs 0007 - 1 ROB & 1 ISO 004B - 1 ISO 010A - 1 ROB ROB's are currently being repackaged for shipment to NTS |
| D | Painted Light-gauge Metal | 0 | 0 | N/A |
| D | Painted Light-gauge Metals (lead) | 4732 | 182 | 0001 - 2 SWMBs |
| E | Concrete | 281,452 299,040 3 unweighed | 4,674 2,670 | 0001 - 53 SWMB; W800005 - Stockpile |
| F | Acid Brick | 0 | 0 | N/A |
| G | Nonfriable Asbestos | 314,000 | 3,545 | W800007 - Stockpile (Transite Panels) |

TABLE 3-2 - Summary of Project Air Monitoring Data

| AMS Location | Minimum pCi/m ³ | Average pCi/m ³ | Maximum pCi/m ³ |
|--------------|----------------------------|----------------------------|----------------------------|
| P1-1 | 2.33E-05 | 9.35E-04 | 6.10E-03 |
| P1-2 | 3.48E-05 | 8.27E-04 | 4.12E-03 |
| P1-3 | 5.24E-05 | 7.05E-04 | 7.31E-03 |
| P1-4 | 3.06E-04 | 3.73E-03 | 5.19E-02 |

¹ Based on DOE Order 5400.5, an internal action level of 0.1 pCi/m³ has been set for evaluating the conditions/activities related to increased airborne uranium concentrations.

The highest airborne radiological activity was registered from February 21 to 28, 1997, by the Plant 1 Complex - Phase I project-specific air samplers. The maximum airborne uranium activity during the D&D of the Plant 1 Complex - Phase I was 2.2E-02 pCi/m³. This level was recorded at air monitor P1-4, located due east of Building 1A (See Figure 3-1) during the February 21 to 28, 1997 sampling period. The level was well below the FEMP action level of 0.1 pCi/m³. Based on a review of Plant 1 work activity during this period, the implosion of Building 1A is the most likely cause of the higher airborne uranium levels. Air monitor P1-4 recorded a value of 2.2E-02 pCi/m³ total uranium. P1-4 is located due east of Building 1A and west of Building 30A. This reading is well below any FEMP site action level or DOE regulatory threshold level. During this period, in preparation for the implosion of Building 1A, D&D work activities included precutting structural beams with acetylene torches.

Air monitor P1-4 recorded a value of 5.19E-02 pCi/m³ for May 23, 1997. This value is attributed to the rapid pressurization and subsequent venting of a white metal box containing uranium bearing wastes, and is not related to the Plant 1 - Phase I D&D activities. The white metal box was in Building 30A, adjacent to monitor P1-4 (see Figure 3-1), when the reaction occurred.

The Department of Energy (DOE) Order 5400.5 limit at the boundary fence line, for all pathways, is 100 milliRem/year. Chapter III of this Order, Derived Concentration Guides (DCG) for Air and Water, identifies the U-Natural inhalation DCG as 1 X 10⁻¹³ Curie per milliliter (Ci/ml), which equates to 0.1 pCi/m³ per year. This level serves as the FEMP internal action level to evaluate the project conditions and activities which are causing the increase in airborne uranium concentrations. Additional air monitoring locations and graphical summaries of air monitoring results are provided in Attachment B.

DATE 12-JUN-97
 TIME 09:09:53

SUMMARY REPORT

PAGE 19

RELEASE NUMBER : 1000013032
 PROJECT NAME : 04.116 PLANT 1 DISMANTLING-DECON WATER

| LAB | SAMPLE ID | USER SAMPLE ID | SAMPLE POINT | SUFFIX | COMPONENT | RESULT | UNITS | LQ | DATE | |
|-----|-----------|----------------|-------------------|--------|----------------------|--------|----------|----|-----------|-----|
| | | | | | | | | | SAMPLED | ASL |
| TOT | 200272856 | 412278 | PLT 1 D & D TA | | 1,1-DICHLOROETHYLENE | 1 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA DL | | 1,1-DICHLOROETHYLENE | 5 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA | | 1,2-DICHLOROETHANE | 1 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA DL | | 1,2-DICHLOROETHANE | 5 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA | | 2-BUTANONE | 1 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA DL | | 2-BUTANONE | 5 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA | | BENZENE | 1 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA DL | | BENZENE | 5 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA | | CARBON TETRACHLORIDE | 1 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA DL | | CARBON TETRACHLORIDE | 5 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA | | CHLOROBENZENE | 1 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA DL | | CHLOROBENZENE | 5 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA | | CHLOROFORM | 1 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA DL | | CHLOROFORM | 5 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA | | TETRACHLOROETHYLENE | 1 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA DL | | TETRACHLOROETHYLENE | 5 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA | | TRICHLOROETHYLENE | 1 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA DL | | TRICHLOROETHYLENE | 5 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA | | VINYL CHLORIDE | 1 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272856 | 412278 | PLT 1 D & D TA DL | | VINYL CHLORIDE | 5 | ug/L | U | 16-DEC-96 | B |
| TOT | 200272857 | 412277 | PLT 1 D & D TA | | AROCLOR 1016 | 1.0 | ug/L | U | 17-DEC-96 | B |
| TOT | 200272857 | 412277 | PLT 1 D & D TA | | AROCLOR 1221 | 1.0 | ug/L | U | 17-DEC-96 | B |
| TOT | 200272857 | 412277 | PLT 1 D & D TA | | AROCLOR 1232 | 1.0 | ug/L | U | 17-DEC-96 | B |
| TOT | 200272857 | 412277 | PLT 1 D & D TA | | AROCLOR 1242 | 1.0 | ug/L | U | 17-DEC-96 | B |
| TOT | 200272857 | 412277 | PLT 1 D & D TA | | AROCLOR 1248 | 1.0 | ug/L | U | 17-DEC-96 | B |
| TOT | 200272857 | 412277 | PLT 1 D & D TA | | AROCLOR 1254 | 1.0 | ug/L | U | 17-DEC-96 | B |
| TOT | 200272857 | 412277 | PLT 1 D & D TA | | AROCLOR 1260 | 1.4 | ug/L | U | 17-DEC-96 | B |
| ALP | 200272858 | 412277 | PLT 1 D & D TA | | ALPHA | 14 | pCi/mL | | 16-DEC-96 | B |
| ALP | 200272858 | 412277 | PLT 1 D & D TA | | ALPHA-LBC | YES | YES/NO | | 16-DEC-96 | B |
| ALP | 200272858 | 412277 | PLT 1 D & D TA | | ALPHA-LCE | 0.96 | 2 sigma | | 16-DEC-96 | B |
| ALP | 200272858 | 412277 | PLT 1 D & D TA | | ALPHA-LMDC | 0.18 | pCi/mL | | 16-DEC-96 | B |
| ALP | 200272858 | 412277 | PLT 1 D & D TA | | ALPHA-LTPU | 3.0 | 2 sigma | | 16-DEC-96 | B |
| ALP | 200272858 | 412277 | PLT 1 D & D TA | | BETA | 11 | pCi/mL | | 16-DEC-96 | B |
| ALP | 200272858 | 412277 | PLT 1 D & D TA | | BETA-LBC | YES | YES/NO | | 16-DEC-96 | B |
| ALP | 200272858 | 412277 | PLT 1 D & D TA | | BETA-LCE | 0.71 | 2 sigma | | 16-DEC-96 | B |
| ALP | 200272858 | 412277 | PLT 1 D & D TA | | BETA-LMDC | 0.31 | pCi/mL | | 16-DEC-96 | B |
| ALP | 200272858 | 412277 | PLT 1 D & D TA | | BETA-LTPU | 2.3 | 2 sigma | | 16-DEC-96 | B |
| AIO | 200272858 | 412277 | PLT 1 D & D TA | | PH | 1.50 | pH Units | | 16-DEC-96 | B |
| AIO | 200272859 | 412277 | PLT 1 D & D TA | | ANTIMONY | 60 | ug/L | U | 16-DEC-96 | B |
| AIO | 200272859 | 412277 | PLT 1 D & D TA | | ARSENIC | 10 | ug/L | U | 16-DEC-96 | B |
| AIO | 200272859 | 412277 | PLT 1 D & D TA | | BARIUM | 200 | ug/L | U | 16-DEC-96 | B |
| AIO | 200272859 | 412277 | PLT 1 D & D TA | | BERYLLIUM | 5 | ug/L | U | 16-DEC-96 | B |
| AIO | 200272859 | 412277 | PLT 1 D & D TA | | CADMIUM | 90.0 | ug/L | | 16-DEC-96 | B |
| AIO | 200272859 | 412277 | PLT 1 D & D TA | | CHROMIUM | 32.5 | ug/L | | 16-DEC-96 | B |
| AIO | 200272859 | 412277 | PLT 1 D & D TA | | COPPER | 153.4 | ug/L | | 16-DEC-96 | B |
| AIO | 200272859 | 412277 | PLT 1 D & D TA | | LEAD | 2349.0 | ug/L | | 16-DEC-96 | B |
| AIO | 200272859 | 412277 | PLT 1 D & D TA | | MERCURY | 2.45 | ug/L | | 16-DEC-96 | B |

*PLT 1 D&D TA corresponds to tank #408 and PLT 1 D&D TR corresponds to tank #01-728

RELEASE NUMBER : 1000013032
PROJECT NAME : 04.116 PLANT 1 DISMANTLING-DECON WATER

| IS | SAMPLE ID | USER SAMPLE ID | SAMPLE POINT | SUFFIX | COMPONENT | RESULT | UNITS | LQ | DATE | |
|-----|-----------|----------------|----------------|--------|----------------------|--------|----------|----|-----------|-----|
| | | | | | | | | | SAMPLED | ASL |
| DO | 200272859 | 412277 | PLT 1 D & D TA | | NICKEL | 163.7 | ug/L | | 16-DEC-96 | B |
| DO | 200272859 | 412277 | PLT 1 D & D TA | | SELENIUM | 5 | ug/L | U | 16-DEC-96 | B |
| DO | 200272859 | 412277 | PLT 1 D & D TA | | SILVER | 10 | ug/L | U | 16-DEC-96 | B |
| DO | 200272859 | 412277 | PLT 1 D & D TA | | ZINC | 2697.0 | ug/L | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 228 | 26 | pCi/L | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 228-LBC | YES | YES/NO | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 228-LCE | 5.5 | 2 sigma | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 228-LMDC | 4.4 | pCi/L | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 228-LTPU | 8.8 | 2 sigma | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 230 | 2800 | pCi/L | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 230-LBC | YES | YES/NO | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 230-LCE | 45 | 2 sigma | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 230-LMDC | 7.7 | pCi/L | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 230-LTPU | 630 | 2 sigma | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 232 | 27 | pCi/L | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 232-LBC | YES | YES/NO | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 232-LCE | 5.5 | 2 sigma | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 232-LMDC | 4.6 | pCi/L | | 16-DEC-96 | B |
| AD | 200272860 | 412277 | PLT 1 D & D TA | | THORIUM 232-LTPU | 9.3 | 2 sigma | | 16-DEC-96 | B |
| RA | 200272861 | 412277 | PLT 1 D & D TA | | URANIUM | 17.8 | mg/L | | 16-DEC-96 | B |
| RA | 200272861 | 412277 | PLT 1 D & D TA | | URANIUM 235 | 0.913 | WT % (U) | | 16-DEC-96 | B |
| RA | 200272861 | 412277 | PLT 1 D & D TA | | URANIUM 235-LBC | YES | YES/NO | | 16-DEC-96 | B |
| RA | 200272861 | 412277 | PLT 1 D & D TA | | URANIUM 235-LCE | | 2 sigma | | 16-DEC-96 | B |
| RA | 200272861 | 412277 | PLT 1 D & D TA | | URANIUM 235-LMDC | | WT % (U) | | 16-DEC-96 | B |
| RA | 200272861 | 412277 | PLT 1 D & D TA | | URANIUM 235-LTPU | | 2 sigma | | 16-DEC-96 | B |
| TCT | 200272862 | 412277 | PLT 1 D & D TR | | 1,1-DICHLOROETHYLENE | 1 | ug/L | U | 17-DEC-96 | B |
| TCT | 200272862 | 412277 | PLT 1 D & D TR | | 1,2-DICHLOROETHANE | 1 | ug/L | U | 17-DEC-96 | B |
| TCT | 200272862 | 412277 | PLT 1 D & D TR | | 2-BUTANONE | 1 | ug/L | U | 17-DEC-96 | B |
| TCT | 200272862 | 412277 | PLT 1 D & D TR | | BENZENE | 1 | ug/L | U | 17-DEC-96 | B |
| TCT | 200272862 | 412277 | PLT 1 D & D TR | | CARBON TETRACHLORIDE | 1 | ug/L | U | 17-DEC-96 | B |
| TCT | 200272862 | 412277 | PLT 1 D & D TR | | CHLOROBENZENE | 1 | ug/L | U | 17-DEC-96 | B |
| TCT | 200272862 | 412277 | PLT 1 D & D TR | | CHLOROFORM | 1 | ug/L | U | 17-DEC-96 | B |
| TCT | 200272862 | 412277 | PLT 1 D & D TR | | TETRACHLOROETHYLENE | 1 | ug/L | U | 17-DEC-96 | B |
| TCT | 200272862 | 412277 | PLT 1 D & D TR | | TRICHLOROETHYLENE | 1 | ug/L | U | 17-DEC-96 | B |
| TCT | 200272862 | 412277 | PLT 1 D & D TR | | VINYL CHLORIDE | 1 | ug/L | U | 17-DEC-96 | B |

*PLT 1 D&D TA corresponds to tank #408 and PLT 1 D&D TR corresponds to tank #01-728

SITEWIDE WASTE INFORMATION, FORECASTING, AND TRACKING SYSTEM SWIFTS

Attached are examples from three different SWIFTS reports. Below is a key to interpret the different reports.

Report 1 - Container Inventory Awaiting Off-site Disposal, Treatment, or Certification Meeting OSDF Requirements for Plant 1 D&D by Location

The first column is the Project Number. Plant 1 D&D was assigned Project Number 383.

The second column is the storage location:

| | |
|----------------------------|-----------------------------------|
| 0001 - Plant 1 Pad | 010A - Building 10 Pad |
| 02/3 - Plant 2/3 Pad | 0056 - Building 67 foundation |
| 004B - Plant 4 Gravel Area | 0079 - Building 79 inside storage |
| 0004 - Plant 4 gravel area | 0080 - Building 80 gravel area |
| 0007 - Plant 7 gravel area | |

The third column is the specific area within a storage location.

The fourth column is the material type:

| | |
|---|---------------------------|
| 011 - Concrete | 028 - Asbestos |
| 015 - Oil | 065 - Scrap process salts |
| 003 - Non-Recoverable Trash, includes paper, plastic, glass, metal, etc. An additional code is used to identify which type(s) of material are inside the container. | |

The fifth column is the container code:

| | |
|------------------|--|
| 030, 055 and 085 | are different sizes of drums |
| 200 | ISO container |
| 220 | Top-loading White Metal Box |
| 300 | Small White Metal Box (SWMB) |
| 340 | Large White Metal Box |
| 616 | Roll-off Box |
| 629 | Roll-off container returned from offsite use |

The sixth column is the container inventory number, this is the site tracking number.

The seventh column is the serial number on the container from the manufacturer.

The eighth column is the net weight in pounds. A "0" indicates that a container has not been weighed yet

**SITEWIDE WASTE INFORMATION, FORECASTING, AND TRACKING SYSTEM
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| 0007 - Plant 7 gravel area | |

The third column is the specific area within a storage location.

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|---|---------------------------|
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| 015 - Oil | 065 - Scrap process salts |
| 003 - Non-Recoverable Trash, includes paper, plastic, glass, metal, etc. An additional code is used to identify which type(s) of material are inside the container. | |

The fifth column is the container code:

| | |
|------------------|--|
| 030, 055 and 085 | are different sizes of drums |
| 200 | ISO container |
| 220 | Top-loading White Metal Box |
| 300 | Small White Metal Box (SWMB) |
| 340 | Large White Metal Box |
| 616 | Roll-off Box |
| 629 | Roll-off container returned from offsite use |

The sixth column is the container inventory number, this is the site tracking number.

The seventh column is the serial number on the container from the manufacturer.

The eighth column is the net weight in pounds. A "0" indicates that a container has not been weighed yet

The ninth column is the container's status (shipped off-site/active stored on-site).

SWIFTS Report #1

3/97 13.13

SiteWide Waste Information, Forecasting, and Tracking System
 Container Inventory Awaiting Off-Site Disposal, Treatment, or
 Certification Meeting OSDF Requirements for Plant 1 D&D by Location

| # | Loc | Area | Mat | Description | Con | Inv_No | Serial_N | Net Weight | Status |
|-----------------------------------|------|--------|-----|----------------------|-----|---------|----------|------------|--------|
| | 0007 | S | 003 | TYPE H1-PROCESS PIPE | 616 | W151999 | 960031 | 16.360 | ACTIVE |
| | | SOUTH | 004 | CONTAMINATED STEEL A | 200 | W151836 | 500213 | 0 | ACTIVE |
| ii Containers Stored at Location: | | | | 2 | | | | | |
| | 004B | SOUTH | 004 | CONTAMINATED STEEL A | 200 | W151546 | 500206 | 0 | ACTIVE |
| ii Containers Stored at Location: | | | | 1 | | | | | |
| | 0056 | | 049 | | 340 | W157845 | 421829 | 1.604 | ACTIVE |
| | | | 049 | | 340 | W156079 | 421742 | 3.128 | ACTIVE |
| ii Containers Stored at Location: | | | | 2 | | | | | |
| | 010A | N. PAD | 003 | TYPE B-CONSTRUCTION | 616 | W151997 | 960027 | 0 | ACTIVE |
| | | | 003 | NON-RECOVERABLE TRAS | 616 | W154990 | 960037 | 3.630 | ACTIVE |
| | | | 003 | TYPE B-CONSTRUCTION | 616 | W153854 | 960035 | 0 | ACTIVE |
| | | | 003 | TYPE H1-PROCESS PIPE | 616 | W153857 | 960032 | 12.830 | ACTIVE |
| ii Containers Stored at Location: | | | | 4 | | | | | |

Total containers not included in SWIFTS reports number 2 or 3

148

Report 3 - Debris Pile Transaction Information for the Plant 1 D&D Project

This report differs from the previous two reports since this report is on the stockpiled material.

Column 1 is the Pile location:

W800002 - is RI/FS Category B material located at Plant 1 Pad Phase E

W800004 - is RI/FS Category A material located at Plant 1 Pad

W800005 - is RI/FS Category E material located at Plant 1 Pad

W800006 - is RI/FS Category A material located at Plant 1 Pad on B.67 foundation

W000007 - is RI/FS Category G material located at Plant 7 East

Column 2 is the Inventory Number. This is the inventory number of the roll-off box that was emptied at the material stockpile. Roll-off containers may be emptied and re-used. The inventory number is not changed. SWIFTS automatically regenerated the roll-off box as empty when the contents were added to the stockpile.

Column 5 is the RI/FS category listing.

Column 6 is the net weight of the material added to the stockpile.

December 1997

TECHNICAL REVIEW COMMENTS ON "PLANT 1 COMPLEX -
PHASE I PROJECT COMPLETION REPORT"
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

SPECIFIC CHANGE

Changing Organization: U.S. DOE
Section #: 2.1.2 Page#: 11
Original Specific Change #: 1

Commentor: Trygier
Line#: 27

Change: Delete "The certification of closure will be addressed after the slab is excavated in accordance with the Soil Characterization and Excavation Project Group." All RCRA requirements for this hazardous waste management unit are completed.

2.1.3 Hazardous Waste Management Units (Task III)

The Plant 1 Complex - Phase I Implementation Plan identified one solid waste management unit (SWMU) and four inactive HWMUs. These units are listed in Table 2-1.

Table 2-1 Hazardous Waste Management Units Status

| Inactive Units in the Plant 1 Complex | Status |
|---|---|
| HWMU No. 12, Wheelabrator Shotblaster (Bldg. 66) | Reclassified to SWMU March 27, 1995 |
| HWMU No. 13, Wheelabrator Dust Collector (Bldg. 66) | Closure Certification approval received from Ohio EPA April 5, 1996 |
| HWMU No. 26, Detrex Still (Bldg. 1A) | Closure Certification approval received from Ohio EPA November 27, 1995 |
| HWMU No. 53, Safe Geometry Sump (Bldg. 1A) | Closure verbally approved in a meeting with Ohio EPA on March 2, 1995 |
| HWMU No. 25, Plant 1 Storage Building (Bldg.67) -Slab | Remediated in accordance with Attachment A of the Ohio EPA Director's Findings and Orders, June 6, 1996 |

The Plant 1 Storage Building (Bldg.67) foundation was declared HWMU No. 25 due to storage of 35 drums of material meeting RCRA hazardous waste criteria in excess of the 90-day storage limitation per Ohio Administrative Code (OAC) 3745-52-34 and 40 Code of Federal Regulations (CFR) 262.34(b). Thirty-five of the drums stored in Building 67 were designated as RCRA hazardous waste containing EPA hazardous waste identification codes for ignitable (D001), corrosive (D002), chromium (D007), and lead (D008). The drums were removed from Building 67 and placed in an appropriate RCRA interim hazardous waste storage area.

Attachment A of the Ohio EPA Director's Findings and Orders, June 6, 1996, lists HWMU No. 25, Plant 1 Storage Building (Bldg.67) slab as a HWMU to be closed using a RCRA/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) integrated process. The integrated process strategy is described in Section 3.5.3 of the OU3 Integrated RD/RA Work Plan, May 1997. HWMU No. 25 has now been decontaminated in accordance with the requirements of the RCRA/CERCLA integrated process. ~~The certification of closure will be discussed after the slab is excavated in accordance with the Soil Characterization and Excavation Project group:~~