UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 2 3 2011

OFFICE OF
AIR AND RADIATION

J R Stroble
Manager, National TRU Program
Carlsbad Field Office
U.S. Department of Energy
P.O. Box 3090
Carlsbad, NM 88221-3090

Dear Mr. Stroble:

The U.S. Environmental Protection Agency (EPA) approves the addition of waste containers from the Nuclear Fuel Services (NFS) burial trench soils (S4000) to waste stream OR-NFS-CH-SOIL, characterized by the Central Characterization Project (CCP)'s contact-handled, transuranic waste characterization program at the Oak Ridge National Laboratory (ORNL), for disposal at the Waste Isolation Pilot Plant.

On February 15, 2011, the Carlsbad Field Office (CBFO) submitted a revised request to the U.S. Environmental Protection Agency to dispose of containers of waste from the NFS burial trench as part of waste stream OR-NFS-CH-SOIL (approved by EPA in October 2009) as a Tier 1 change to the baseline approval of the ORNL-CCP's contact-handled, transuranic waste characterization program. EPA evaluated the waste characterization processes implemented by ORNL-CCP for this retrievably-stored waste. The enclosed inspection report (Docket No. A-98-49; II-A4-144), discusses the results of EPA's evaluation and contains a revised tiering table.

If you have any questions regarding this approval, please contact Ed Feltcorn at (202) 343-9422 or Rajani Joglekar at (202) 343-9462.

Sincerely,

Tom Peake, Director
Center for Waste Management and Regulations

Enclosure

cc: Electronic Distribution
Alton Harris, DOE HQ
Norma Castaneda, CBFO
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Mark Pearcy, WTS-CCP
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DOCKET NO: A-98-49; II-A4-144

WASTE CHARACTERIZATION REPORT

TIER 1 CHANGE:
EVALUATION OF ADDING NUCLEAR FUEL SERVICES TRENCH B SOILS TO WASTE STREAM OR-NFS-CH-SOILS AT THE OAK RIDGE NATIONAL LABORATORY

U.S. Environmental Protection Agency
Office of Radiation and Indoor Air
Center for Waste Management and Regulations
1200 Pennsylvania Avenue, NW
Washington, DC 20460

March 2011

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ACRONYMS

AK	acceptable knowledge
AKE	acceptable knowledge expert
AKSR	acceptable knowledge summary report
Am	americium
BDR	batch data report
CBFO	Carlsbad Field Office
CCP	Central Characterization Project
CFR	*Code of Federal Regulations*
CH	contact-handled
DOE	United States Department of Energy
DWAS	drum waste assay system
EPA	United States Environmental Protection Agency
IPAN	imaging passive/active neutron counter
LLD	lower limit of detection
LLW	low-level waste
NDA	non-destructive assay
NDE	non-destructive examination
NFS	Nuclear Fuel Services
ORNL	Oak Ridge National Laboratory
Pu	plutonium
RCRA	*Resource Conservation and Recovery Act*
RFI	RCRA Facility Investigation
RTR	real-time radiography
SCG	summary category group
SGS	segmented gamma scanner
SWMU	Solid Waste Management Unit
T1	Tier 1
T2	Tier 2
TRU	transuranic
U	uranium
VE	visual examination

WDS	WIPP Waste Data System
WIPP	Waste Isolation Pilot Plant
WSPF	waste stream profile form

1.0 EXECUTIVE SUMMARY

This report supports the U.S. Environmental Protection Agency's (EPA's) approval to add retrievably stored, contact-handled (CH) transuranic (TRU) soils/gravel (S4000) from the Nuclear Fuel Services (NFS) Trench B to Waste Stream OR-NFS-CH-SOIL generated at and packaged by the Oak Ridge National Laboratory (ORNL) for disposal at the Waste Isolation Pilot Plant (WIPP). The ORNL Central Characterization Project (ORNL-CCP) was responsible for characterizing this waste using the system of controls the EPA evaluated during a baseline inspection conducted in November 2007 and a Tier 1 (T1) evaluation in August 2009 to approve the S4000 summary category group (SCG).

In accordance with 40 *Code of Federal Regulations* (CFR) 194.8(b), the EPA conducted a baseline inspection in November 2007 of the CCP's CH TRU waste characterization program at the ORNL in Oak Ridge, Tennessee. As a result of this baseline inspection, EPA approved the ORNL-CCP CH TRU waste characterization program with specific conditions and limitations, as discussed in the ORNL Baseline Final Inspection Report (see A-98-49; II-A4-103 for details). The August 2008 approval was limited to retrievably stored debris waste, and addition of any wastes outside of this category (i.e., soils/gravel, solids and newly-generated debris) was identified as a T1 change. In an August 2009 T1 review, EPA approved the ORNL-CCP CH TRU waste characterization program for the S4000 SCG (see A-98-49; II-A4-117), but specifically excluded soils from the NFS burial trench. Addition of the NFS burial trench soils remained a T1 change.

On February 15, 2011, the Carlsbad Field Office (CBFO) requested EPA approval of a T1 change to add two containers of NFS burial trench soils from Trench B to Waste Stream OR-NFS-CH-SOIL. EPA conducted a desktop evaluation of the requested T1 change by reviewing Acceptable Knowledge (AK) documents and records related to the subject waste stream. During the evaluation, EPA did not identify any findings or concerns. Based on EPA's evaluation of all aspects of the ORNL-CCP waste characterization program relative to including Trench B soils in Waste Stream OR-NFS-CH-SOIL, EPA approves the addition of Trench B soils to this waste stream.

This EPA approval requires a revision of the T1 and Tier 2 (T2) designations. Minor editorial revisions were made and the revised tiering table is included as Table 1 below.

This report serves as EPA's public notification of the results of the proposed T1 change and its evaluation. This information will be provided through the EPA web site and by sending e-mails to the WIPPNEWS list, in accordance with 40 CFR 194.8(b)(3).

Table 1. Tiering of Contact-Handled Transuranic Waste Characterization Processes Implemented by ORNL-CCP (Updated March 2011)

Waste Characterization Process Elements	ORNL-CCP Waste Characterization T1 Changes	ORNL-CCP Waste Characterization T2 Changes[a]
Acceptable Knowledge and Load Management	Implementation of load management Implementation of AK for wastes other than retrievably stored debris and soils/gravel (i.e., solids or any type of newly generated waste)	The elements listed as T2 changes below apply to all approved ORNL-CCP CH TRU waste streams and waste summary category groups Notification to EPA upon completion of AK accuracy reports and upon completion of new versions or updates/substantive changes[b] of the following: - AK-NDA memoranda - Site AK procedure CCP-TP-005 - AK accuracy reports - AK-AK and AK-NDA/NDE Discrepancy Resolution Reports - Attachments 4 and 6 and associated memoranda - WSPFs and AK summaries and related attachments for all new waste streams, including change notices - "Add Container" memoranda
Non-Destructive Assay	New equipment or physical modifications to approved equipment[c] Extension or changes to approved calibration range for approved equipment	Notification to EPA upon completion of changes to software for approved equipment, operating range(s), and site procedures that require CBFO approval
Real-Time Radiography	None	Notification to EPA upon the following: - Implementation of new RTR equipment or substantive changes[c] to approved RTR equipment - Completion of changes to site RTR procedures requiring CBFO approvals
Visual Examination	None	None
WIPP Waste Data System	Implementation of load management	Notification to EPA upon completion of changes to WDS procedure(s) requiring CBFO approvals

[a] ORNL-CCP will report all T2 changes to EPA at the end of each fiscal quarter

[b] "Substantive changes" are changes with the potential to impact the site's waste characterization activities or documentation thereof, excluding changes that are solely related to Environment, Safety, and Health; nuclear safety; or *Resource Conservation and Recovery Act* (RCRA), or that are editorial in nature

[c] Modifications to approved equipment include all changes with the potential to affect NDA data relative to waste isolation and exclude minor changes, such as the addition of safety-related equipment

2.0 APPROVAL SUMMARY FOR ORNL-CCP CONTACT-HANDLED WASTE CHARACTERIZATION PROGRAM

EPA provided a formal baseline approval of the ORNL-CCP CH waste characterization program in August 2008. Since then, EPA has approved four T1 changes at ORNL-CCP, as summarized in Table 2.

Table 2. Previous ORNL-CCP EPA Approvals

Approved Activity	Approval Dates	Report Docket Number
ORNL-CCP CH Baseline Approval	August 21, 2008	A-98-49, II-A4-103
T1 Change – DWAS SGS Range and Density Extension	January 8, 2009	A-98-49, II-A4-108
T1 Change – DWAS IPAN Range Extension	January 8, 2009	A-98-49, II-A4-109
T1 Change – S4000 SCG	October 7, 2009	A-98-49, II-A4-117
T1 Change – IQ3 NDA System and VE	March 30, 2010	A-98-49, II-A4-125

3.0 PURPOSE OF TIER 1 EVALUATIONS

Any changes to the waste characterization activities from the date of the baseline inspection must be reported to, and, if applicable, approved by EPA according to the tiering requirements set forth in the ORNL Baseline Final Report cited above.

Under the changes to 40 CFR 194.8 promulgated in the July 16, 2004, *Federal Register* notice, EPA must perform a single baseline inspection of a TRU waste generator site's waste characterization program. The rule under which baseline inspections are conducted can be found in the *Federal Register* (Vol. 69, No. 136, pages 42571–42583 of July 16, 2004). The baseline inspection leads to approval of the site's waste characterization program, based on the demonstration that the program's components, with applicable conditions and limitations, can adequately characterize TRU wastes. During the baseline inspection, EPA determines whether the site can adequately comply with the regulatory requirements imposed on TRU wastes destined for disposal at the WIPP. An EPA inspection team conducts an onsite baseline inspection to verify that the site's system of controls is technically adequate and properly implemented.

Following EPA's approval of waste characterization processes evaluated during the baseline inspection, EPA is authorized to evaluate and approve, if necessary, changes to the site's approved waste characterization program by conducting additional inspections under the authority of 40 CFR 194.24(h). Under 40 CFR 194.24, EPA has the authority to conduct continued compliance inspections to verify that the site continues to use only the approved waste characterization processes to characterize the waste and remains in compliance with all the regulatory requirements. Based on the adequacies of the waste characterization processes demonstrated during the baseline inspection, including all conditions and limitations, EPA specifies which subsequent waste characterization program changes or modifications must

undergo further EPA approvals. This is accomplished by assigning a tier level to each aspect of the waste characterization program. Tier 1 activities have more stringent reporting requirements and the U.S. Department of Energy (DOE) must notify EPA of the proposed T1 change which EPA must evaluate and approve prior to implementation.

4.0 PURPOSE OF THIS REPORT

This report presents the results of EPA's evaluation of a T1 change to add NFS Trench B soils to ORNL CH TRU Waste Stream OR-NFS-CH-SOIL. This report documents the basis for EPA's approval decision, and explains the results of the technical evaluation of these wastes. EPA's approval decision regarding the addition of Trench B soils to Waste Stream OR-NFS-CH-SOIL has been conveyed to DOE separately by letter. EPA will also announce the decision on its web site at www.epa.gov/radiation/WIPP, in accordance with 40 CFR 194.8(b)(3).

The DOE documents that EPA reviewed for this evaluation are cited in different sections throughout the report and are listed in Attachment A. Any of these documents can be requested from the following address:

Manager, National TRU Program
Carlsbad Field Office
U.S. Department of Energy
P.O. Box 3090
Carlsbad, NM 88221-3090

5.0 SCOPE OF THIS TIER 1 EVALUATION

The scope of the T1 evaluation was the inclusion of Trench B waste to CH TRU Soil Waste Stream OR-NFS-CH-SOIL from ORNL-CCP. These materials were not examined at the ORNL-CCP baseline inspection or subsequent T1 inspection of the S4000 SCG and were identified as a T1 change. This T1 evaluation was a desktop review and EPA inspectors and ORNL-CCP personnel who participated in the T1 evaluation are listed in Table 3, along with each person's affiliation and function during the evaluation.

Table 3. Tier 1 Evaluation Participants

Name	Affiliation – Function
Ed Feltcorn	EPA Headquarters – Lead Inspector
Rajani Joglekar	EPA Headquarters – Inspector
Connie Walker	SC&A – AK Technical Evaluator
Jeff Harrison	ORNL-CCP – AKE

6.0 TECHNICAL EVALUATION OF ADDING NUCLEAR FUEL SERVICES TRENCH B SOILS TO WASTE STREAM OR-NFS-CH-SOIL

NFS, LLC, located near Erwin, Tennessee, performed fuel fabrication work under contract to the U.S. Atomic Energy Commission and for commercial facilities. Fabrication operations in the primary support facility, Building 234, were conducted from 1965 to 1973, after which

operations were placed on standby. The Erwin NFS facility underwent decommissioning from the early 1990s to 2005 and waste was shipped to ORNL for storage.

Waste Stream OR-NFS-CH-SOIL consists of soil excavated from beneath the Building 234 Wet Chemistry Cell and from an area around the Building 110 Laboratory underground waste tank (References C099 and M003). On August 11-13, 2009, EPA conducted a T1 evaluation to add ORNL CH soils to the ORNL-CCP baseline approval and EPA approved the soil SCG as a result of this evaluation. However, CH soil drums originating from the burial trench at NFS were specifically excluded from EPA's approval. This was because CBFO, in preparation for the EPA review of the May 2009 Tier 1 approval request, wanted to add seven drums from a new soil waste stream from the burial trench at Nuclear Fuels Services, Inc. This request came to EPA at the meeting. Even though they had revised the Acceptable Knowledge Summary Report (AKSR) there was not sufficient time for EPA to review the AKSR and was beyond the scope of the planned Tier 1 request. EPA could not approve this newly introduced waste at that time. DOE was informed at that time that they would need to provide complete information for the additional waste in an additional subsequent Tier 1 request.

On February 15, 2011, EPA received a T1 request to add two NFS burial trench CH soil drums to Waste Stream OR-NFS-CH-SOIL. EPA reviewed the documentation provided and determined that the two drums of interest were from Burial Trench B (addressed below). EPA then examined the documentation in detail to determine whether ORNL-CCP demonstrated compliance with 40 CFR 194.8 to add these two drums to Waste Stream OR-NFS-CH-SOIL. EPA concluded that ORNL-CCP continues to appropriately apply the system of controls approved during the Baseline Inspection and therefore, addition of the Trench B soils to Waste Stream OR-NFS-CH-SOIL is adequately supported.

Documents, Waste Containers and Batch Data Reports Reviewed

Source documents and other data were provided to EPA, and the relevant sources were examined as part of this T1 inspection. The listing of all documentation examined is in Attachment A, and the list of Non-destructive Assay (NDA) and Real-Time Radiography (RTR) Batch Data Reports (BDRs) examined is presented in Table 4.

Table 4. Batch Data Reports Examined

Drum Number	NDA BDR No.	RTR BDR No.
X10C0506154A	OR-DWAS-0307	OR-RTR6-0233
X10C0506154G	OR-DWAS-0281	OR-RTR6-0156

6.1 Acceptable Knowledge

EPA examined the AK process and associated information to assess the ORNL-CCP waste characterization program's compliance with the requirements of 40 CFR 194.8 for the inclusion of Trench B soil in Waste Stream OR-NFS-CH-SOIL.

Waste Characterization Element Description

As part of the evaluation, EPA reviewed the use of AK for waste characterization as impacted by the addition of the Trench B soil containers to Waste Stream OR-NFS-CH-SOIL in the following areas:

- Waste stream identification and definition
- Radionuclide content of Trench B soil
- Physical composition of Trench B soil
- AK data traceability
- AK Summary Report (AKSR) and AK source document sufficiency

Technical Evaluation

EPA evaluated whether it is technically appropriate to include Trench B soils in Waste Stream OR-NFS-CH-SOIL based on documentation pertaining to process origin, radiological and physical characteristics of the waste. EPA examined AK-based documentation to determine whether Trench B soils were traceable to Building 234 and/or Building 110 operations. EPA evaluated elements that could affect pertinent characteristics of the waste stream, i.e., how these data had been integrated and impact on the waste stream, and changes to the radiological and physical characteristics of the waste. Results of the analysis are presented below. When information presented in the text is supported directly by an AK reference, the reference is cited in parentheses.

Several AK technical elements that are typically evaluated for a proposed T1 change were not included in this Trench B T1 evaluation. These elements were assessed as part of EPA's T1 approval of Waste Stream OR-NFS-CH-SOIL and they were not affected by the addition of Trench B soils. Specifically not addressed in this report are:

- The absence of high-level waste and spent nuclear fuel
- Waste defense determinations (Reference C100)
- Preparation of AK accuracy reports

(1) The definition of Waste Stream OR-NFS-CH-SOIL was examined with respect to the addition of Trench B soil and found to be adequate.

Waste Stream OR-NFS-CH-SOIL was generated by excavation activities associated with decommissioning of Building 234 and Building 110. Soil beneath these facilities was contaminated by releases from the buildings' activities, and soil was excavated, packaged, and removed as part of site remediation (References C122, C227, C228, P315, P323 and P1375). Onsite remediation activities, including soil removal at Building 234 and Building 110, took place in phases beginning in 1993, and may continue in the future. Debris and soil were also removed from other areas on site including Solid Waste Management Unit (SWMU) 9, and the North Site Burial Ground, which included 16 burial trenches used for the disposal of on-site generated radioactive and non-radioactive waste (Reference P1375). Waste Box X10C0506154 was generated December 12, 2001, and contained construction debris and soil. It was shipped

from the North Site Burial Ground Trench B to ORNL on September 23, 2005 (Reference C210). The box was later repackaged into 25 55-gallon drums, including five drums of residual soil that was removed from Trench B with construction debris. These five drums are therefore associated with Trench B; three of the five drums were later identified as low-level waste (LLW), leaving two TRU drums from Trench B that are the subject of this T1 request. ORNL-CCP representatives do not anticipate additional Trench B drums, but EPA recognizes that site remediation is ongoing and this approval extends to any other Trench B drums encountered in the future.

Reference P1375 addressed site remediation activities and identified Trench B as part of the North Site Burial Ground. References were not provided that directly link disposal of Building 234 waste to Trench B, but the RCRA Facility Investigation (RFI) Report does not identify any other sources of offsite trench contamination. Reference M132 includes an interview with Richard Moore, an NFS representative, who stated that the trenches were not used for disposal of offsite radiological sources. Several references (References I053 and P1375) state that Building 234 was the only operational facility at NFS; therefore, the available data indicate that radiological contamination in Trench B soils originated from Building 234. See Items (2) and (3) for additional radiological and physical waste information that supports the inclusion of Trench B soil in Waste Stream OR-NFS-CH-SOIL. Also see Item (5) for traceability information.

(2) The radiological characteristics of the Trench B soils were assessed with respect to their similarity to Waste Stream OR-NFS-CH-SOIL and found to be adequate.

Waste Stream OR-NFS-CH-SOIL consists of soil-contaminated with radionuclides from Mixed Oxide fuels waste that are composed of uranium (U) and plutonium (Pu). The AKSR states that the two most prevalent radionuclides by mass are ^{238}U and ^{239} Pu, and the two most prevalent radionuclides by activity are ^{239}Pu and ^{241}Pu (Table 6-4). Table 6-2 in the AKSR shows that the total U (predominantly ^{238}U) content of the fuels ranged from 80% - 99% by mass, and the total percentage of Pu (predominantly ^{239}Pu) ranged from <1% - 20% by mass. Table 6-3 of the AKSR shows the transuranic isotopic distribution by fuel type; ^{239}Pu is 76 - 90% of the total Pu/americium (Am) mass and ^{240}Pu is 8% - 16% of the total Pu/Am mass, with the remaining mass attributed to ^{238}Pu, ^{241}Pu, ^{242}Pu and ^{241}Am. Based on this information ORNL-CCP generated a default isotopic distribution to be used by the NDA Expert Analyst if the assay does not yield usable isotopic data (CCP-TP-005, Attachment 7). The following default isotopic distribution is used:

Table 5. **Default Isotopic Distribution**

Isotope	Mass Fraction	Uncertainty
^{238}Pu	0.044%	0.0044%
^{239}Pu	90.837%	9.0837%
^{240}Pu	8.893%	0.8893%
^{241}Pu	0.104%	0.0104%
^{242}Pu	0.122%	0.0122%
^{241}Am	1.115%	0.1115%

The two Trench B soil drums were assayed on the ORNL-CCP Drum Waste Assay System (DWAS) NDA system. Measured isotopics were not acceptable so the default AK isotopic distribution was applied. Therefore, the Trench B and OR-NFS-CH-SOIL soils could not be compared to determine if their radiological compositions were comparable. As noted in Item (1) above, 20 debris drums were also generated from the same source waste box, and it is assumed that the soil and debris would have similar isotopic composition. EPA examined NDA data sheets for two debris daughter drums (X10C0506154S and X10C0506154V1) that also originated from Box X10C0506154. The NDA analyst used measured, not default, isotopic values and the observed values were within the compositional range presented in AKSR Table 6-3, as shown in Table 6 below.

Table 6. **Observed Isotopic Values**

Isotope	X10C0506154S	X10C0506154V1
^{238}Pu	<LLD	<LLD
^{239}Pu	88.28%	89.49%
^{240}Pu	11.35%	11.59%
^{241}Pu	0.14%	0.016%
^{242}Pu	<LLD	<LLD

Based on this information, the radiological composition of Trench B debris and associated soil is comparable to OR-NFS-CH-SOIL, and inclusion of the Trench B soils in OR-NFS-CH-SOIL is appropriate.

(3) Physical characteristics of the Trench B soil were assessed with respect to the physical characteristics of Waste Stream OR-NFS-CH-SOIL and found to be adequate.

Waste Stream OR-NFS-CH-SOIL is composed primarily of soil, rock and gravel with absorbent. The waste stream was homogenized during repackaging and RADSORB absorbent powder was added, so the resultant waste has a texture of semi-coarse sand (References M075, M128 and P315). The waste stream is composed almost entirely of soil with small amounts of plastic and organic matrix, as shown in Table 6-1 of the AKSR. Review of RTR data for the two Trench drums shows these drums are composed almost entirely of soil, with minor amounts of plastic and metal wire. Table 6-1 of the AKSR was modified in a freeze file[1] (Reference C228) to show the presence of trace metal. The physical composition of Trench B soils agrees with Waste Stream OR-NFS-CH-SOIL.

(4) The Acceptable Knowledge Summary Report, support documents, reference lists, and implementation of the acceptable knowledge process were evaluated and found to be adequate.

Waste Stream OR-NFS-CH-SOIL AKSR is CCP-AK-ORNL-001 and Revision 6 includes updates to incorporate Trench B soil. In addition to changes presented in Revision 6, ORNL-

[1] As a result of an inspection-related EPA issue, ORNL-CCP may have to revise a document. ORNL-CCP makes the change(s) and provides the revised document to EPA as a freeze file to serve as objective evidence for the inspection. ORNL-CCP's document control process then generates an official version of the revised document.

CCP also prepared the freeze file described in (3), above (Reference C228). The same freeze file included revisions of Sections 4.1 and 4.4.2 to present information about the North Site Burial Ground and associated disposal and remediation activities, since Trench B is in the North Site Burial Ground. EPA reviewed source documents provided by ORNL-CCP, including P1375, the North Site Characterization Report for Nuclear Fuel Services (July 1999). This reference summarized the results of site characterization activities, including Trench B, and showed the Pu contamination in the Trench B area. The document cited other references such as the RCRA Facility Investigation (RFI) Report[2] and RCRA Facility Investigation Work Plan[3]. RFI Reports and RFI Work Plans typically include information about the source of contamination and these two documents addressed Solid Waste Management Unit 9 (SWMU 9) that incorporated the North Site Burial Ground. EPA requested the RFI Report from ORNL-CCP personnel, but ORNL-CCP did not provide this for review. While EPA was able to link the trench soils to Building 234 activities by examining NDA data [see Item (2), above], ORNL-CCP should attempt to locate these documents if additional waste from the Burial Grounds or other remediation areas are added to the waste stream(s). Attachment 4 is the AK Source Document Reference List, but was not updated to include key references, including P1375. Providing an updated Attachment 4 remains a T2 change.

(5) Data traceability of Trench B soil was examined and found to be adequate.

Traceability data for Trench B soils is relatively limited. Trench B soil drums were traceable to the original box No. X10C0506154 from which the soils and associated debris were removed. Twenty five drums of waste were removed from this box, five of which consisted of soil. The original ORNL 2109 Waste Item Description Form documents receipt of this box at ORNL in 2005, and results of a gamma assay performed in 2001 were attached to the form. This assay indicated the box originated from Radioactive Burial Ground Trench B and this is the single piece of information linking the box to the burial ground. ORNL-CCP representatives found no other information regarding original packaging date, configuration, and other pre-ORNL receipt. Repackaging Data Forms for the two soil drums X10C0506154A and X10C0506154G that document their repackaging in 2008 (References M132 and M133) were also provided. Based on this limited information, the drums can be traced to their original source box, and that box can be traced to Trench B. The drums were traceable to the ORNL-CCP BDRs and ORNL-CCP's Container Tracking System. The December 2009 Waste Stream Profile Form (WSPF) was not modified through a change request to include these drums, since the change only required a modification of the number of drums in the waste stream.

Summary of Acceptable Knowledge

Findings or Concerns

The EPA evaluation team did not identify any findings or concerns relative to the addition of Trench B soils to Waste Stream OR-NFS-CH-SOIL during this T1 change evaluation.

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[2] Nuclear Fuel Services, Inc. (NFS). 1995b. RCRA Facility Investigation Report for SWMUs 9 and 10 at Nuclear Fuel Services, Inc., Erwin, TN. October 1995.

[3] Nuclear Fuel Services, Inc. (NFS). 1993a. RCRA Facility Investigation Work Plan for Nuclear Fuel Services, Inc. Erwin, TN. Volume 1 (Work Plans). May 1993.

Tiering Changes

Based on the results of this T1 evaluation, there is a change to the AK T1 designations identified during the Baseline Inspection and subsequent T1 evaluations for approval of the Trench B waste as a T1 request. Table 1 shows the current tiering table.

Conclusions

Based on the results of this evaluation, EPA is approving the T1 request for the addition of Trench B soils to Waste Stream OR-NFS-CH-SOIL.

7.0 SUMMARY OF RESULTS

Findings and Concerns

The EPA evaluation team did not identify any findings or concerns relative to the addition of Trench B soils to Waste Stream OR-NFS-CH-SOIL during this T1 change evaluation.

Tiering Changes

There are no changes to the T1 and T2 designations identified during the ORNL-CCP CH Baseline Inspection and subsequent CH T1 evaluations. Table 1 shows the current ORNL-CCP CH tiering table.

8.0 CONCLUSIONS

During this T1 change evaluation, EPA examined the addition of Trench B soils to Waste Stream OR-NFS-CH-SOIL. Based on the results of this evaluation, EPA is approving addition of Trench B soils to Waste Stream OR-NFS-CH-SOIL with the limitations discussed above.

ATTACHMENT A

LISTING OF DOCUMENTS REVIEWED FOR THIS EVALUATION

CCP-AK-ORNL-001, Central Characterization Project Acceptable Knowledge Summary Report for Nuclear Fuel Services Contact-Handled Transuranic Waste Stored at Oak Ridge National Laboratory Waste Streams: OR-NFS-CH-HET-A, OR-NFS-CH-SOIL, and OR-NFS-CH-HOM-A, Revision 6, December 8, 2010

CCP-TP-005, Attachment 1, Acceptable Knowledge Documentation Checklist Site(s): Oak Ridge National Laboratory Waste Stream Description: Soil from NFS Stored at ORNL, Revision 18, January 15, 2010

CCP-TP-005, Attachment 4, Acceptable Knowledge Source Document Reference List, Revision 18, January 18, 2010

CCP-TP-005, Attachment 5, Hazardous Constituents, OR-NFS-CH-SOIL, Revision 18, July 19, 2008

CCP-TP-005, Attachment 6, Waste Form, Waste Material Parameters, Prohibited Items, and Packaging, Soil from NFS Stored at ORNL, Revision 18, July 29, 2009

CCP-TP-005, Attachment 7, Radionuclides (including NDA Memorandum), OR-NFS-CH-SOIL, Revision 18, November 16, 2010

CCP-TP-005, Attachment 8, Waste Containers, OR-NFS-CH-Soil, Revision 18, November 17, 2010

CCP-TP-005, CCP Acceptable Knowledge Documentation, Soil from NFS Stored at ORNL, Revision 21, November 29, 2010

Radioassay Data Sheet for Drum X10C0506154V1, approved January 20, 2010

Radioassay Data Sheet for Drum X10C0506154S, approved February 14, 2009

Waste Stream Profile Form, OR-NFS-CH-SOIL, December 8, 2009

C099, Letter to Harold Johnson, CBFO DOE re: KAPL-NFS Transuranic Waste Background Information, Delwiche, D. A., May 3, 2005

C100, Interview with Richard Booth and faxed defense and waste information for NFS, Erwin, TN, Betty Humphrey, February 24, 2005

C122, Building 234 Characterization Results, Memorandum to Heather Little, DCM-03-18, 44T-99-0436, GPC-99-013; September 30, 1999 – NFS Proprietary, Not Approved for Public Release

C210, Record of Communication, Re: NFS TRU Waste Shipped to Oak Ridge National Laboratory, September 12, 2007

C227, Interview with Scott Morie from NFS, J. Harrison, September 23, 2010

I053, KAPL-TN Waste Profile for NFS Building 234 Soil, Document 44G-03-1050, WST-20, JWP-03-009, September 11, 2003

M003, Waste Item Description Record, 2109 Form Box X10C0506154, December 2005

M021, Defense Determination Approval Form, Waste Stream ORNL/NFS-HD-001, Betty Humphrey, May 13, 2005

M075, Contact Handled Waste Packaging Forms, drums X10C0506154A and X10C0506154G, EnergX, February 6, 2008

M128, Evaluation of Additional Containers for Waste Stream OR-NFS-CH-HET, September 5, 2008

M132, Evaluation of Additional Containers for Waste Stream OR-NFS-CH-SOIL, J. Harrison, September 24, 2008

M133, Evaluation of Additional Containers for Waste Stream OR-NFS-CH-HET, J. Harrison, September 24, 2008

P315, Wet Cell Soil Excavation and Mixing, DCM-61, July 5, 1993 – NFS Proprietary, Not Approved for Public Release

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