



**Department of Energy**  
Carlsbad Field Office  
P. O. Box 3090  
Carlsbad, New Mexico 88221  
July 20, 2007

Mr. Juan Reyes, Director  
Radiation Protection Division  
Office of Radiation and Indoor Air  
Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

**Subject: CBFO Notification to the EPA Regarding a Waste Container Disposed at the Waste Isolation Pilot Plant from the Advanced Mixed Waste Treatment Project**

Dear Mr. Reyes:

The Department of Energy (DOE), Carlsbad Field Office (CBFO) is hereby notifying the Environmental Protection Agency (EPA) that on July 17, 2007, DOE was notified that a Transuranic (TRU) waste drum had been emplaced in the WIPP repository although it had not undergone all EPA required characterization and certification activities. CBFO has determined that this situation has not created a condition that endangers human health or the environment.

Verbal notification of this condition was made to Mr. Tom Peake of the EPA on July 17, 2007.

Bechtel BWXT Idaho (BBWI), the DOE's Advanced Mixed Waste Treatment Project (AMWTP) contractor mistakenly shipped the container on June 23. This container (drum number BN10161094 inside Standard Waste Box number BN10166592) was received at the Waste Isolation Pilot Plant (WIPP) in shipment number IN070356 on June 25, 2007 and was emplaced at WIPP on June 27, 2007. This shipment was tracked on manifest number 000078376GBF.

During the overpacking of four TRU waste drums in waste stream BNINW216 (first/second stage sludge), BBWI personnel selected an incorrect drum. The BBWI Transportation Certification Official (TCO) had selected the following four 55-gallon drums to be overpacked into Standard Waste Box (SWB) number BN10166592:

BN10106194  
BN10147752  
BN10147868  
BN10149070

Instead of drum number BN10106194, BBWI personnel selected and overpacked drum number BN10161094 from waste stream ID-RF-S5300-A (RFETS combustibles and plastics stored at the Idaho National Laboratory (INL)). Although this waste stream is approved, the WIPP program required characterization of the drum was not complete. This container in the standard waste box was emplaced in the WIPP repository on June 27, 2007 at 0844 MDT.

CBFO:OOM:DCM:AJC:07-0073:UFC:5822

The DOE has reviewed information known about the contents of this drum and has concluded that waste in the drum is well within the bounds of the repository performance assessment. As you are aware, the certification and recertification efforts have indicated that there are three key parameters impacting performance assessment analysis:

- Amount of water
- Amount of cellulose, plastics, and rubber (CPR), and
- Radionuclide content.

Data collected on this drum provides a solid basis for concluding that this drum has no detrimental impact upon the repository's performance assessment.

As detailed in Table 4-11 of the Compliance Recertification Application (CRA), the repository limit for free water is 1% of the total waste placed in the repository. An uncertified real-time radiography (RTR) scan of the drum in the last year indicated that the drum contained less than 0.75 cups, total, of water contained in two internal containers.

Table 4-11 of the CRA also provides the repository limit for CPR as  $2.2 \times 10^7$  kilograms. As of the time of the CRA, as is illustrated in Table 4-14, 700,981 kilograms have been emplaced in the repository, thus making it impossible for the CPR in this drum to have an impact upon repository performance even if its entire weight of 62 kilograms is attributed to CPR.

Finally, while radionuclide content can impact final repository performance, CBFO has gathered sufficient information to bound the contents of this drum. As described in Section 5.4.2 of CCP-AK-INL-004, the primary radionuclides processed at the Rocky Flats Plant included weapons-grade plutonium (Pu), americium (Am)-241, enriched uranium, and depleted uranium. The approximate isotopic compositions of these materials are presented in CCP-AK-INL-004, Table 5-2 (Enclosure 1).

Historical waste evaluations and packaging procedures indicate waste was counted to determine Pu content prior to shipment off site. The primary and secondary radionuclides identified for the emplaced drum BN10161094 (identified as drum number RF000107529 in the TRU Waste Management Information System [TWMIS] database, compiled from shipping records for waste containers shipped to INL), are identified as Pu and Am-241, both with values of 0 grams. Per the packaging procedures, a zero value means the isotopic content was below the lower limit of detection of the counting equipment, which was 0.7 grams of weapons-grade Pu. Based on a review of the certified assay data of 136 drums in waste stream ID-RF-S5300-A from the same time frame (Enclosure 2), the isotopics are consistent with weapons-grade Pu.

Accordingly, CBFO will correct the following in the WIPP Waste Information System (WWIS) via the WWIS change log:

- Replace the CPR estimate of the drum that was intended to be shipped with the data for the drum that was emplaced. Because there is not a certified RTR scan or visual examination for the emplaced drum, the contents of this drum will be conservatively assigned as plastics.
- Replace the radiological content of the drum that was intended to be shipped with the data for the drum that was emplaced. As described above, the emplaced drum will be assigned a value of 0.7 grams of weapons-grade Pu.

In terms of being bounded by the repository performance assessment, the CBFO is confident that the waste in this container complies with the terms of the certification.

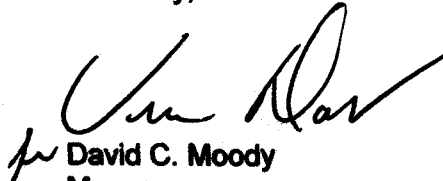
On July 18, 2007, CBFO suspended all TRU waste shipments from AMWTP.

On July 18, 2007, BBWI initiated Corrective Action Report (CAR) number 28920 and Root Cause Analysis (Enclosures 3 and 4, respectively). The CAR specifies immediate corrective actions that will need to be completed and verified by CBFO prior to resumption of TRU waste shipments from AMWTP to WIPP. The Corrective Action Plan (CAP) for CAR number 28920 specifies additional corrective actions and will be provided to EPA after CBFO approval. This CAP will include actions to transition the transportation certification authority from AMWTP to the Central Characterization Project (CCP).

CBFO has determined that the waste, as emplaced, will not impact human health or the environment.

If you have questions or require additional information, please contact me at (505) 234-7300.

Sincerely,

  
David C. Moody  
Manager

Enclosures

cc: w/enclosures

- I. Triay, EM-3 \*ED
- F. Marcinowski, EM-10 ED
- D. C. Gadbury, CBFO ED
- K. Watson, CBFO ED
- M. Navarrete, CBFO ED
- E. Sellers, NE-ID ED
- P. Divjak, BBWI ED
- J. Goldstein, NMED ED
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- J. Bearzi, NMED ED
- S. Zappe, NMED ED
- D. Raaz, WTS ED
- D. Haar, WTS ED
- T. Sellmer, WTS ED
- W. Wierzbicki, WRES ED

WIPP Operating Record, MS 486-06  
CBFO QA File  
CBFO M&RC

\*ED denotes electronic distribution