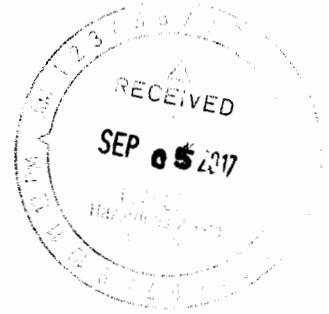




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

ENTERED



SEP - 5 2017

OFFICE OF
AIR AND RADIATION

Mr. J. R. Stroble
Manager, NTP Compliance Division
Carlsbad Field Office
U.S. Department of Energy
P.O. Box 3090
Carlsbad, New Mexico 88221-3090

Dear Mr. Stroble:

On June 19, 2017 the U.S. Environmental Protection Agency approved the Tier 1 change request to allow the assembly of contact-handled transuranic (TRU) waste payloads at the Oak Ridge National Laboratory (ORNL) to include some containers where the radionuclide contents cannot be directly measured for technical reasons. Subsequent to that approval, the Carlsbad Field Office (CBFO) sought clarification of EPA's June 19 letter on the application of Minimum Detectable Activity (MDA) for characterizing TRU waste drums. The EPA and CBFO staff and their respective contractors discussed the issue. On July 19, 2017, the CBFO sent a letter to the EPA outlining the issues discussed and their resolution for concurrence (enclosed). The EPA has reviewed and concurs with the letter's contents as being consistent with our approval and the current version (8.0) of the Waste Isolation Pilot Plant Waste Acceptance Criteria.

If you have any questions regarding this approval, please contact Ed Felcorn 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 EM
Todd Shrader, CBFO
Norma Castaneda, CBFO
Tom Carver, CBFO
Ricardo Maestas, NMED
Site Documents
Ray Lee, EPA





Department of Energy
Carlsbad Field Office
P O Box 3090
Carlsbad, New Mexico 88221
JUL 19 2017

Mr. Tom Peake, Director
Center for Waste Management and Regulations
U.S. Environmental Protection Agency
West-William Jefferson Clinton Building
Office of Air and Radiation
1301 Constitution Ave NW< Mail Code 6606T
Washington, DC 20004

Subject: Clarification of Tier 1 Product Container Assembly at Oak Ridge National Laboratory

Dear Mr. Peake:

The U.S. Department of Energy, Carlsbad Field Office (CBFO) would like to thank you for your staff's prompt review and approval on June 19, 2017 of a submitted Tier 1 change at the Oak Ridge National Laboratory (ORNL). This approval will allow the assembly of contact-handled transuranic (CH-TRU) waste payloads at the ORNL to include some waste drums where the radioactive content cannot be thoroughly characterized for technical reasons. This request affects only a very small portion of the TRU waste streams being processed at ORNL with elevated Minimum Detectable Activity (MDA) values that obscure the determination of the actual transuranic content of the waste drums.

The purpose of this memorandum is to document two clarifications discussed with your staff. The format below presents the statement from the attachment to the U.S. Environmental Protection Agency's approval letter and the subsequent agreed to clarification.

1. "The high MDA containers would be from an approved waste stream and would become part of a certified container, the overpack. The shipped container would have an overall measured TRU concentration of greater than 100 nCi/g, accounting for the mass of the unmeasurable containers but taking no credit for the possible TRU activity content (a conservative approach)."

The CBFO agrees that the high MDA drums will be from an approved waste stream; however, in our original submittal to EPA it was not clearly presented that in some instances there are usually measured results for some TRU radionuclides in waste drums from that waste stream. Other TRU radionuclides that could be present continue to be unreportable due to spectral issues that result in the calculation of elevated MDA values. The Radioassay Datasheet (RDS) generated by Nondestructive Assay (NDA) reports both the measured value (if quantified) for a radionuclide and the associated statistical MDA calculated for that radionuclide (if directly reported) in each waste drum.

The determined clarification is that the clearly reported TRU radionuclides in a waste drum should be reported and used in the calculation of the Total Alpha Activity Concentration (TAAC) for the product container, but not the MDA values calculated for the drum. This is consistent with the WIPP WAC Sections 3.3.1 (*Radionuclide Composition*) and 3.3.3 (*TRU Alpha Activity Concentration*) where MDA values are not allowed to be part of the TAAC calculation.

- 2. "The Waste Data System (WDS) inventory record, however, would account for the possibility of all TRU radionuclides at the MDA (also a conservative approach), since the MDA value would be used for the WDS record. In effect, the reported (MDA) value for each radionuclide represents what is effectively an upper bound of the activity for those radionuclides. The WDS record for all containers subjected to this process would also include both the container's zero contribution to the TRU determination of the SWB and the MDA value for inventory/Performance Assessment purposes."

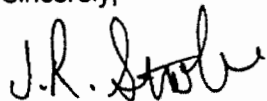
WDS does not now record the minimum detectable activity (MDA) data from the Radioassay Data Sheets (RDSs) generated by Nondestructive Assay. Instead, in accordance with the WIPP WAC Sections 3.3.1 and 3.3.3, any of the ten WIPP-tracked radionuclides, if substantiated by AK or other means and measured at less than the MDA, is assigned "<LLD" in WDS, a value which is not subsequently used in the calculation of the Total Alpha Activity Concentration (TAAC) for the container. In this instance, the MDAs are not recorded, only the measured TRU radionuclides. In fact, three of the ten WIPP-tracked radionuclides (Sr-90, U-234, and Pu-242) will never have an MDA because they are not directly measured, but are derived based on correlations with other measured radionuclides.

The discussed clarification determined that the MDA data should not be collected and recorded in WDS since these MDA data are not used for assessing whether the overpack or product container is actually greater than 100 nCi/g. This clarification conforms to the WIPPWAC.

Furthermore, while these MDA values are considered a conservative (i.e., upper estimate) representation of the amount of radioactive material that could possibly be present, the overall impact on repository radionuclide content by including these MDAs for an estimate of about 200 total drums will be very minor and well within the margin of uncertainty in the overall repository inventory for the Performance Assessment.

If there are any questions regarding this information, please contact Ms. Norma Castaneda, TRU Waste Characterization Manager, CBFO National TRU Program, at (575) 234-7118.

Sincerely,



J.R. Stroble, Director
National TRU Program
Compliance Division

- | | |
|--------------------|------|
| cc: | |
| J. Carswell, CBFO | * ED |
| A. Walker, CBFO | ED |
| N. Castaneda, CBFO | ED |
| T. Carver, CBFO | ED |
| R. Joglekar, EPA | ED |
| E. Feltcorn, EPA | ED |
| J. Ellis, EPA | ED |

Tom Peake

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JUL 19 2017

M. Percy, CCP	ED
R. Lee, CCP	ED
M. Ramirez, CCP	ED
J. Harvill, CCP	ED
J. Knox, CCP	ED
J. Stepzinski, CCP	ED
R. Kantrowitz, CCP	ED
J. Carter, NWP	ED
P. Gilbert, LANL-CO	ED

CBFO M&RC

*ED denotes electronic distribution