Environment Safety & Health
PO Box 1663, MS K491
Los Alamos, New Mexico 87545
(505) 667-4218/Fax (5005) 665-3811

Environmental Management
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87544
(505) 667-5105

Date: FEB 2 5 2016
Symbol: ADESH-16-021
LA-UR: 16-20850
Locates Action No.: N/A

RECEIVED
FEB 2 5 2016
NMED
Hazardous Waste Bureau

Mr. John E. Kieling
Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505

Dear Mr. Kieling:

Subject: Los Alamos National Laboratory Notification of Regulatory Noncompliance at TA-54, Area G, Pit 38

The purpose of this letter is to notify the New Mexico Environment Department-Hazardous Waste Bureau (NMED-HWB) of a regulatory noncompliance by the U.S. Department of Energy (DOE) and Los Alamos National Security, LLC (LANS). The noncompliance concerns the placement of a container of mixed low-level waste within Pit 38, which is a low-level waste disposal unit at LANL's Technical Area 54, Area G Low Level Radioactive Waste Disposal facility (TA-54 Area G). This disposal unit does not have a permit to receive hazardous waste. As explained in the enclosed attachment, the disposal of this mixed waste drum was due to an administrative recordkeeping error and is a noncompliance with the New Mexico Hazardous Waste Regulations at 20.4.1.900 NMAC, incorporating 40 CFR §264.13 and 270.1.(c). This noncompliance does not constitute an immediate threat to human health or the environment.

On February 2, 2016, DOE and LANS representatives spoke with NMED officials and provided verbal notice of this noncompliance. The enclosure provides details about this noncompliance, which was discovered during LANL's annual Site Treatment Plan (STP) review.

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We would like to meet with you at your convenience to discuss this notice and resolution of this matter. If you have questions please contact Mark Haagenstad (LANS) at (505) 665-2014, or David Nickless (DOE) at (505) 665-6448.

Sincerely,

Michael T. Brandt, DrPH, CIH
Associate Director
Environment, Safety & Health
Los Alamos National Security, LLC
Los Alamos National Laboratory

Sincerely,

Douglas E. Hintze
Environmental Manager
Los Alamos Field Office
U.S. Department of Energy

MTB:DEH:MPH:JKS/lm

Enclosures: (1) Los Alamos National Laboratory Noncompliance Notification

Cy: (All copies are in E-File format unless otherwise stated)
Ryan Flynn, NMED, Santa Fe, NM
Kathryn Roberts, NMED, Santa Fe, NM
Neelam Dhawan, NMED/HWB, Santa Fe, NM
Dave Cobrain, NMED/HWB, Santa Fe, NM
Siona Briley, NMED/HWB, Santa Fe, NM
Jody Pugh, LASO-NS
Jordan Arnswald, LASO-NS-PI
David Nickless, EM-WM
Lisa Cummings, LASO-OC
Kirsten M. Laskey, EM-LA
Craig S. Leasure, PADOPS
William Mairson, PADOPS
Randall M. Erickson, ADEM
David J. Funk, ADEM
Cheryl D. Cabbil, ADNHHO
Michael T. Brandt, ADESH
Raeanna Sharp-Geiger, ADESH
John P. McCann, EPC-DO
Leslie K. Sonnenberg, EWMO-DO
Paul N. Newberry, WD-SRS
David E. Frederici, WD-WPE
Deborah K. Woitte, LC-ESH
Kenneth M. Hargis, WD-WPE
Sean B. French, WD-WPE
Mark P. Haagenstad, EPC-CP

Cy (continued):
Deborah L. Guffee, SI-DC
Yvette S. Branch, SI-DC
Luciana Vigil-Holterman, EPC-CP
Saundra Martinez, OIO-DO
lasomailbox@nnsa.doe.gov
emla.docs@em.doe.gov
locatesteam@lanl.gov
env-correspondence@lanl.gov
epccat@lanl.gov
rcra-prr@lanl.gov

ENCLOSURE 1

Los Alamos National Laboratory
Noncompliance Notification

ADESH-16-021

LA-UR-16-20850

Date: FEB 2 5 2016

Los Alamos National Laboratory
Noncompliance Notification

February 2016

1. Introduction

This document was prepared by the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) to provide information related to an instance of noncompliance with the New Mexico Hazardous Waste Regulations, 20.4.1.900 NMAC, incorporating 40 CFR §§270.1(c) and 264.13. DOE/LANS discovered the noncompliance during its annual review of the Site Treatment Plan (STP), which is required by the 1995 LANL Federal Facility Compliance Order.

Facility Information

Owner and Operator:
United States Department of Energy
3747 West Jemez Road
Los Alamos, NM 87544

Co-Operator:
Los Alamos National Security, LLC
PO Box 1663
Los Alamos, NM 87545

Facility:
Los Alamos National Laboratory
PO Box 1663
Los Alamos, NM 87545

2. Unpermitted Disposal [40 CFR §270.1(c)]

The instance of noncompliance involves the disposal of a mixed low-level waste (MLLW) drum in Pit 38 at TA-54 Area G. As discussed below, this noncompliance was the result of incomplete recordkeeping and does not pose an immediate threat to human health or the environment. DOE/LANS will notify NMED promptly and update this report, as appropriate, if further investigation reveals additional non-compliances with the regulations.

LANL's Technical Area (TA) 54 consists of 130 acres atop Mesita del Buey and is used for storage of hazardous and mixed waste generated throughout the Laboratory. A principal mission of TA-54 is to manage Laboratory waste safely and efficiently, consistent with federal and state regulations and DOE requirements. TA-54 has three separate areas where hazardous and mixed wastes (both MLLW and mixed transuranic [MTRU]) are stored, including Area G. There are nine units at Area G that are permitted under the LANL Hazardous Waste Facility Permit. These nine units are used to store containers of hazardous, mixed low level, and mixed transuranic wastes in solid and liquid form. Non-permitted units within Area G are used for non-hazardous transuranic (TRU) radioactive waste storage, low-level radioactive waste (LLW) storage, and LLW disposal. Pit 38 is a LLW disposal unit that is not permitted for MLLW disposal.

In December 2015, LANL Operating Records were being reviewed as part of the annual Site Treatment Plan (STP) process required by Section VII of the LANL Federal Facility Compliance Order (dated October 4, 1995). Reviewers identified a records discrepancy that led to the recent discovery that a drum

of mixed waste had been reclassified as LLW and subsequently disposed of in Pit 38. Upon discovery of the discrepancy, DOE/LANS initiated a records review to investigate the discrepancy and to determine if a noncompliance occurred.

The drum in question (W801560) holds a contaminated glove bag that was used on the TA-54, Area G, Building 412 processing line from July 3 to July 30, 2012. The TRU waste containers processed while the glove bag was in use are identified as collectively holding waste that had the following U.S. Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWNs): D004, D005, D006, D007, D008, D009, D010, D011, D019, D021, D022, D035, D039, D040, F001, F002, and F005.

A factual investigation revealed that the waste container was originally determined to carry EPA HWNs and was recorded on the appropriate spreadsheet. However, due to an operator error this information was not properly entered from the spreadsheet into the LANL Waste Compliance and Tracking System (WCATS). The records show that when the glove bag was removed, it was put into the container subsequently numbered W737586, managed as MTRU waste, and placed on the STP. On July 30, 2012, LANS personnel entered the container into WCATS under a TRU-TBD (To Be Determined) waste profile. The use of TBD profiles allowed personnel to assign EPA HWNs to individual containers based on the parent containers processed through Building 412 during the applicable time frame. This process was utilized rather than assigning all possible HWNs from the whole population of containers that were to be processed or performing analytical characterization of each glove bag as it came off the process line. LANS personnel maintained operating records for containers that fell under this type of waste profile on a spreadsheet at the site. After the discrepancy was identified during the STP review, this documentation was used to determine the applicable EPA HWNs for drum W737586.

The investigation further revealed that drum W737586 was assayed for radioactivity on April 23, 2013. The results indicated that the contents were TRU waste based on a 55-gallon drum configuration. Subsequently, however, it was determined that the drum configuration was inaccurate because the drum was an 85-gallon container, not a 55-gallon container. As a result, on March 19, 2014, the drum was re-assayed and re-calculated based on the correct drum configuration (e.g., 85-gallon container). These results demonstrated that drum W737586 has approximately 133 nanocuries per gram (nCi/g) of total radioactivity, of which approximately 78 nCi/g are from transuranic radioisotopes. As such, the waste is properly classified as LLW. In light of these findings, LANS personnel changed the waste profile from TRU-TBD to a LLW-TBD profile and created a new container number in WCATS on March 27, 2014. The new container was assigned number W801560. Container W737586 was then canceled in WCATS. Since no EPA HWN had been entered into WCATS for drum W737586, LANS personnel processed drum W801560 as LLW and disposed of it in Pit 38 on May 1, 2014.

Between July 2012 and May 2014, a number of changes occurred at the site that may have contributed to incomplete recordkeeping. At the time, WCATS was used for tracking TRU containers, but had not been upgraded for use as the primary operating record system for TRU waste. WCATS was updated to be the primary operating record system for TRU waste in August 2013 and the spreadsheet system was discontinued. Waste management and environmental compliance personnel responsible for tracking this waste information changed, so there was a loss of informational continuity with respect to drum W737586.

DOE/LANS do not believe that disposal of this drum in Pit 38 poses a threat to human health or the environment. The nature of this mixed LLW is contaminated debris that includes a plastic glove bag residually-contaminated by parent MTRU wastes as they were transferred from the parent containers to the glovebox for processing. It is reasonable to expect that the glove bag picked up chemical

contamination from the parent waste because the bag shows measurable radiological contamination. The application of EPA HWNs to the glove bag waste is also reasonable because this waste was derived from known hazardous waste. There is no information to suggest that this containerized debris waste would cause a breach of the drum or pose a threat to the environment in the event of a breach due to exterior forces.

Further, the WCATS documentation shows that W801560 is in the first layer (or bottom) of the pit. Several layers of LLW have been placed above the drum in question. Layers 2 through 4 of Pit 38 hold approximately 150 roll-off bins of Material Disposal Area B soil waste, some of which was dumped out into the pit while the majority was disposed of intact (the waste and the bins were buried). Those bins that were buried were placed into the pit in a dense-pack configuration (similar to jigsaw puzzle pieces) and void spaces were filled with unconsolidated soil, some of which was radioactively contaminated. Other wastes placed in these layers present criticality concerns if not handled properly. As such, DOE/LANS have determined that excavating drum W801560 from Pit 38 is impractical and could pose associated worker safety concerns.

3. Steps Taken or Planned to Reduce, Eliminate, and Prevent Recurrence

DOE/LANS are undertaking a thorough investigation and evaluation of steps to reduce, eliminate, and prevent recurrence of this type of noncompliance. The following discussion represents immediate steps taken by DOE/LANS toward that goal. After the investigation is complete, they will notify NMED if additional steps are determined to be necessary to ensure that this type of noncompliance does not recur.

DOE/LANS have developed a LANL Nonconformance Report (NCR) for the disposed container W801560. Formal disposition of the NCR will include documenting the waste characterization of the disposed waste in the Laboratory's operating record (WCATS). Characterization will be based on waste generator logbook records and assignment of EPA HWNs will be based on those numbers assigned to the parent containers processed through TA-54 Area G Building 412 while the glove bag was in use.

Based on the results of the preliminary investigation into this event, DOE/LANS have initiated an extent of condition review to determine if other mixed waste containers have been inappropriately disposed of in Pit 38.

In addition, DOE/LANS stopped the use of TBD waste profiles to document newly generated TRU, MTRU, and MLLW wastes in March, 2014. As such, current hazardous waste determinations for process waste such as contaminated glove bags are made at the waste stream level. This means that every MTRU, MLLW, and TRU container assigned to a given waste stream profile also will have consistent EPA HWNs assigned immediately to the container.

Finally, the processing line in Building 412 has been stopped as part of the response to the LANL nitrate-bearing salts waste incident that occurred at the Waste Isolation Pilot Plant (WIPP). While future processing is expected in Building 412, the processing lines are being re-engineered as a result of the LANL drum incident at WIPP with an emphasis on compliance with hazardous waste regulatory and Permit requirements. The waste characterization and documentation weaknesses exposed by this MLLW disposal incident are already being addressed through the re-engineering, re-training, and procedural updates being driven by DOE/LANS' response to the LANL drum incident at WIPP.