ERID-260172

Environmental Protection Division
Environmental Compliance Programs (ENV-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0666

National Nuclear Security Administration
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87545
(505) 667-5794/Fax (505) 667-5948

Date: AUG 1 1 2014
Symbol: ENV-DO-14-0213
LAUR: 14-25959
Locates Action No.: Not Applicable

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

Dear Mr. Kieling:

Subject: Transmittal of Lessons Learned Information on Nitrate Salt-Bearing Waste Sampling

The purpose of this letter is to transmit information associated with nitrate salt-bearing waste containers as requested by the New Mexico Environment Department (NMED). Written submissions and twice weekly technical phone calls are conducted between the NMED; Los Alamos National Security, LLC (LANS); and the U.S. Department of Energy (DOE) as stipulated by the modified Administrative Order No. 5-19001 issued by the NMED. The enclosed document fulfills the request made during a a technical phone call on July 22, 2014 and tracked as Item # 29 of the *Summary Chart - Requested Information/Pending Issues* which is included as part of the written daily submissions to the NMED from the DOE and LANS, the Permittees.

Enclosure 1 (LA-UR-14-25959) consists of a lessons learned write-up associated with the collection of samples from nitrate salt-bearing waste parent drums that have not been through the remediation process and empty parent drums containing residual unremediated waste.

If you have comments or questions regarding this submittal, please contact Mark P. Haagenstad at (505) 665-2014 or Gene E. Turner at (505) 667-5794.

Sincerely,

Alison M. Dorries
Division Leader
Environmental Protection Division
Los Alamos National Security LLC

Sincerely,

Gene E. Turner
Environmental Permitting Manager
Environmental Projects Office
Los Alamos Field Office
U.S. Department of Energy

AMD:GET:MPH:LVH/ms

Enclosures: (1) Nitrate Salt-Bearing Waste Material Sampling Lessons Learned

Cy: Ryan Flynn, NMED, Santa Fe, NM, (E-File)
Tom Blaine, NMED, Santa Fe, NM, (E-File)
Steve Pullen, NMED/HWB, Santa Fe, NM, (E-File)
Timothy Hall, NMED/HWB, Santa Fe, NM, (E-File)
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COPY

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RECEIVED
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NMED
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ENCLOSURE 1

Nitrate Salt-Bearing Waste Material Sampling Lessons Learned

ENV-DO-14-0213

LA-UR-14-25959

Date: AUG 1 1 2014

Lessons Learned Sharing Tool

QPA-Performance Assurance
lessonslearned@lanl.gov (505) 667-0604

Submit by Email | Print Form

To add an ***attachment***, fill out form, hit Submit by Email, add attachment to email before sending. The Lessons Learned Process Team will merge the form and attachment.

Title: Nitrate Salt-Bearing Waste Material Sampling Lessons Learned

Contact Name: David Frederici | Z Number: 233890 | Email: def@lanl.gov

Phone: 505-665-65 | AD: ADEP | Facility: EWMO/WDI | TA-Bldg-Rm: 54-412 | Current Date: Jul 28, 2014

Date Occurred: Jul 15, 2014 | Auth Derivative Classifier (Unclassified Only): Teri Tingey

Fac/Proj LL #: | ORPS #: N/A | LIMTS/PFITS #: N/A

Lessons Learned Statement *(Summarize in 3 lines or less what action readers should take and why it's important to them)*

Even with considerable up-front planning, new or infrequently performed work evolutions often present challenges. Performing a review after the evolution allows notably positive aspects of the work to be reinforced and opportunities for improvement to be identified for further consideration or action, all serving to make the evolution more successful the next time it is performed.

Background *(Summarize facts & analysis that resulted in initiating Lessons Learned. Use sheets on back for additional information & photos)*

In response to the Waste Isolation Pilot Plant (WIPP) radioactive contamination release event investigation, the Los Alamos National Laboratory (LANL) has taken material samples from several nitrate salt-bearing waste drums. To date, six sets of material samples have been taken from two parent drums that had not been through the remediation process and four empty parent drums containing residual unremediated waste. The sampling evolution took place in TA54-412 in a containment enclosure controlled as a radiologically contaminated area.

This review captures aspects of the sampling process that were notably positive and aspects that presented challenges.

Positives:

The various work groups involved, some of which had not previously worked together, worked together as a team to safely, compliantly, and effectively perform the sampling evolutions.

The TA54-412 Containment Enclosure was dedicated for use during the sampling evolution, eliminating the need to coordinate multiple work activities and permitting singular focus on the sampling evolution.

Multiple mockups of the sampling evolution were conducted with participation from the various work groups involved in the sampling evolution, enabling validation of the process, techniques, tools, containers, and interfaces, and identification of contingencies in case a task didn't work as planned.

The drums to be sampled were staged in TA54-412 in advance of the sampling evolution.

The sampling team stayed in a low dose area until the drum was ready to be sampled.

Radioactive contamination controls and cleanup supplies were deployed in advance of the sampling evolution minimizing the spread of contamination during sampling.

(continued on Additional Information Page)

Analysis Method Used: Informal Discussion (Apparent Cause) | Other (Method Used):

Actions *(Summarize actions taken or recommended actions that should be taken as a result of lesson learned)*

These lessons learned should be reviewed when planning for subsequent sampling or similar evolutions.

Extent of Condition *(Identify who may benefit from Lessons Learned; impact; relationship to system/process area)*

Facility

☐ ALL	☐ WFO	☐ WETF
☐ RCO	☐ LANSCE	☐ TA-55
☒ EWMO/WDP	☐ STO	☐ U&IF

Associate Directorate

☐ ADBS	☐ ADEPS	☒ ADNHHO	☐ ADTSC
☒ ADCLES	☒ ADESH	☐ ADPM	☐ ADTIR
☐ ADE	☐ ADIT	☐ ADPSM	☐ ADW
☒ ADEP	☐ ADMIS	☐ ADSSER	☐ ADX

Impact (Cost Savings/Avoidance or work days lost or saved)

N/A

System/Process (Select system(s)/process(es) that best relate your lesson)

System	***Process***	***System***	***Process***
Business Systems		Contractor Assurance	
Emergency Mgt		Environmental Mgt	Radioactive Waste
Facility Mgt & Ops		Mission Delivery	
Nuclear Safety		Occ Safety & Health	
Quality Assurance		Radiation Protection	
Safeguards & Security		Science & Technology	

Recommended Action Priority

☐ Urgent (Immediate action may be needed) ☐ Caution (Timely action may be needed) ☒ Informational (Future action may be needed)

Recommend Submittal to DOE? ☐ Yes ☒ No

To add an ***attachment***, fill out form, hit Submit by Email, add attachment to email before sending. The Lessons Learned Process Team will merge the form and attachment.

Print Form Submit by Email

Additional Information Page - Use if needed

Having the right sampling tools on hand made it easier to obtain the desired samples.

Attention to and compliance with Chain of Custody protocols ensured the integrity of the samples.

Daily teleconferences with the team ensured a good flow of information and enabled timely resolution of issues.

Challenges:

This was the first sampling evolution of this nature conducted by the LANL TRU Program and the first time many of the work groups worked together requiring extra effort to ensure a safe, complaint, and effective sampling evolution.

There was some confusion regarding the correct respirator to use based on procedural instruction which referred to the hazard analysis for the correct respirator which in turn referred to the exposure assessment. The latter two documents are not normally in the used field.

The sampling evolution was delayed when the WCATS material tracking system was not operating correctly. The response time of Area G Operations was affected by sampling being one of many priorities and the IT response time was affected by uncertainty regarding which IT group's equipment was causing the problem.

Technical Safety Requirement controls on sealed containers limited the types of sampling containers that could be used.
Scented baby powder used to facilitate donning and doffing of nitrile gloves during sampling represented a possible source of cross-contamination of the samples.

Placing the sample bags into one larger bag for ease of handling made it harder to receive the samples at the analytical labs. Double bagging each sample and placing that sample into its own transport container is the preferred method. A limited number of transport containers influenced the placement of bagged samples together.

The drum orientation under the drum hood made it harder to retrieve some samples and resulting drum handling may have resulted in contamination getting on one of the sampling team members respirator.

Using a slight wedge under the bottom of the drum would facilitate collection of liquid. A wedge was not used due to concerns that it would impact the air flow in the drum hood and possibly increase the chance of spread of contamination.

The need to transfer the samples from TA54-412 to TA54-224 for characterization, and subsequently to the Area G gate for transport to the analytical labs, was not effectively planned with the responsible party, resulting in some confusion and delay.

The unknowns in timing for various parts of the sampling evolution made coordination and interfaces more difficult than if sampling were a routine process.

The age and working condition of the cameras (video and stills) used to document the sampling evolution, in addition to lack of experience in taking photos through plastic, resulted in many pictures of poor quality.

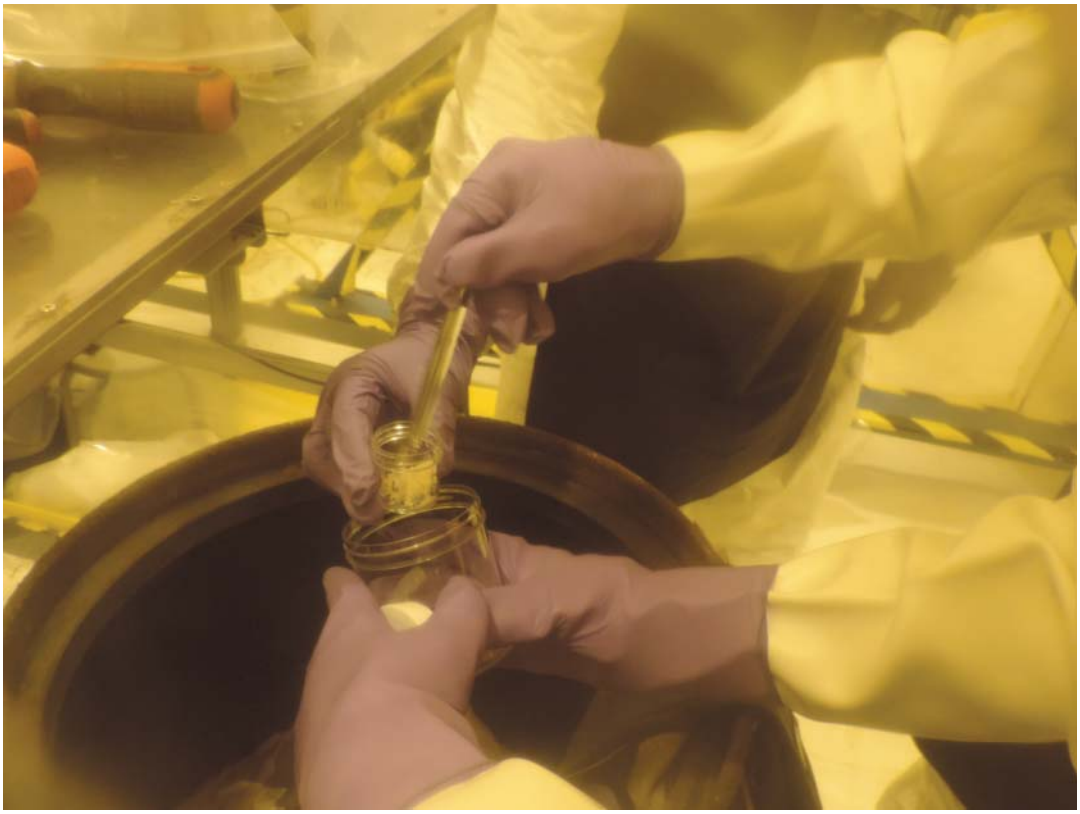
The drum handling equipment inspection date was in the future, and error not identified during the inspection.

This activity came at a time of workforce transition within the LANL TRU program which made it more difficult to maintain focus.

Applicable Photos/Images *(Attach photos or images that may help others take appropriate action for your lesson)*

Picture Title	Unremediated Nitrate Salt-Bearing Waste Drum Sampling

Picture Title	Unremediated Nitrate Salt-Bearing Waste Drum Sampling



Applicable Photos/Images *(Attach photos or images that may help others take appropriate action for your lesson)*

Picture Title	Empty Nitrate Salt-Bearing Waste Parent Drum Sampling

Picture Title	Empty Nitrate Salt-Bearing Waste Parent Drum Sampling

Applicable Photos/Images *(Attach photos or images that may help others take appropriate action for your lesson)*

Picture Title	

Picture Title	