

**From:** Haagenstad, Mark P

**Sent:** Tuesday, December 16, 2014 6:53 PM

**To:** Ryan.Flynn@state.nm.us; Jeff.Kendall@state.nm.us; John Kieling; steve.pullen@state.nm.us; Kliphuis, Trais, NMENV; Timothy.Hall@state.nm.us; siona.briley@state.nm.us; ricardo.maestas@state.nm.us; Gregory.Lauer@state.nm.us; steve.holmes@state.nm.us; coleman.smith@state.nm.us; butch.tongate@state.nm.us

**Cc:** Pete Maggiore; Silas DeRoma; Cummings, Lisa K; Nickless, David J; Bishop, M. Lee; Turner, Gene E; Armijo, Karen (CONTR); Wallace, Terry C; Torres, Enrique; Woitte, Deborah Kay; Clemmons, Steve; Allen, Don; Brandt, Michael Thomas; Sharp-Geiger, Raeanna Racine; Dorries, Alison Marie; Grieggs, Tony; Bacigalupa, Gian A; Vigil-Holterman, Luciana R; Alexander, Rick A; Baumer, Andy; Martinez, Sandra; Sauer, Selena Z; Wood, Yvonne Barbara; Schreiber, Arleen Thorn; Maestas, Pamela Therese; Hargis, Kenneth Marshall; Diaz, Tammy; Juarez, Catherine L; Cabbil, Cheryl Denise; Young, Steven L; Erickson, Randy; Funk, David John; Alexander, Rick A; Frederici, Dave; Diaz, Tammy; Juarez, Catherine L; Robinson, Bruce Alan; Lansing, Michael Alan

**Subject:** Daily Technical Submission - December 16, 2014

Attached is the written daily technical submission for today. The Permittees are submitting the attached information pursuant to: Section 19 of the May 19, 2014, *Administrative Order*; the July 10, 2014 letter from NMED regarding *Modification to May 19, 2014, Administrative Order*; and Section IX of the September 19, 2014, *LANL Nitrate Salt-Bearing Waste Container Isolation Plan, Revision 2*.

Please contact me if additional information would be helpful.

Mark Haagenstad  
Environmental Protection Division  
Compliance and Permitting Group  
Los Alamos National Laboratory  
Office: (505) 665-2014  
Mobile: (505) 699-1733

# NMED / LANL Technical Summary

December 16, 2014

## Participants:

- New Mexico Environment Department: Tim Hall and Siona Briley.
- LANL – Los Alamos Field Office: Dave Nickless and Gene Turner.
- LANL – Los Alamos National Security: Alison Dorries, Randy Erickson, Bruce Robinson, Don Allen, Tony Grieggs, Mark Haagenstad, and Luciana Vigil-Holterman.

## LANL Technical Update:

- **Location of Nitrate Salt-Bearing Wastes**
  - Remediated nitrate salt-bearing waste containers.
    - All containers remain in the 375 Permacon.
  - Unremediated nitrate salt-bearing waste containers.
    - All containers remain in the 231 Permacon.
- **Monitoring - Daily Temperature**
  - Temperatures remain below 90°F.
    - Temperature data available for December 15, 2014 attached.
      - See “Other” section below.
- **Monitoring – Visual Inspections**
  - No abnormal conditions were observed.
    - See “Other” section below.
- **Monitoring – headspace gas (HSG)**
  - Containers (SWBs) 68685 and SB50522.
    - Continue daily head space gas (HSG) sample collection.
      - December 16, 2014 HSG data is not attached due to Dome 375 Permacon continued exhaust fan start up efforts. See section on **Other** below for additional details. Daily HSG will continue upon completion of start up efforts.
  - Other containers
    - A minimum of once per month HSG sampling will be conducted.
      - To date in December, LANL has conducted HSG sampling on 55 SWBs.
- **Additional measures currently underway**
  - As a conservative measure, LANL is currently conducting additional monitoring. This additional monitoring includes:
    - Containers (SWB) 68685 and SB50522.
      - LANL continuing *solid phase micro-extraction*.

- Hourly temperature measurements are currently being performed on SWB 68685 and SB50522.
  - Five (5) other SWB overpacks (containing 55-gallon drums of remediated nitrate salt-bearing waste).
    - Continue twice-weekly HSG sample collection.
- **Anticipated Changes to Nitrate Salt-Bearing Waste Containers (e.g. movement, re-packaging)**
  - Currently, no further movements or re-packaging are planned.

**Other:**

- **Update for repair of broken motor mount for the exhaust fan in Dome 375 Permacon:**
  - Facility personnel continued to address issues associated with the exhaust fan motor mount in the Dome 375 Permacon. A replacement motor mount was installed today and the facility is in the process of completing trouble shooting and start up activities. Trouble shooting and start up efforts will continue this evening (12/16/2014) and tomorrow morning (12/17/2014). HSG and temperature data will be provided upon completion of start-up efforts, sample collection, and final analysis.
  - Required hourly visual inspections continue to be conducted through the window of the Permacon and hourly temperature measurements are being conducted remotely for 68685 and SB50522 and the five other SWBs of interest.
  - LANL provided verbal notifications (voice messages) to NMED-HWB's Tim Hall and John Kieling regarding the matter today (evening of 12/16/2014). Follow up discussions will be completed as necessary and upon completion of start-up efforts.

**Next Call:** Thursday, December 18, 2014

### Summary Chart - Requested Information / Pending Issues:

	<b>Requested Information</b>	<b>Actionee</b>	<b>Status</b>	<b>Completion Date</b>
1.	NMED contact / process for LANL to notify NMED under the Revised Isolation Plan (e.g., 24 hour notices).	NMED	---	Complete June 5, 2014
2.	Keep NMED informed on the status of on-going chemistry / analytical work.	LANL	---	Complete June 9, 2014
3.	On upcoming daily call, provide additional discussion on the potential for liquids in the 350 post-1991 cemented containers (including a discussion of the review of RTR tapes).	LANL	---	Complete July 6, 2014 (Discussion on call) July 18, 2014 (Meeting held)
4.	On upcoming call, provide additional discussion on why 231 and 375 Permacon fire suppression systems are not part of the LANL RCRA Hazardous Waste Facility Permit Contingency Plan.	LANL	---	Complete June 5, 2014
5.	Send copy of June 4, 2014 written daily submission to Trais Kliphuis. Also, include her on future daily submissions.	LANL	---	Complete June 5, 2014
6.	Provide LANL procedures and example records associated with post-1991 TA-55 cementation process discussed on June 6.	LANL	---	Complete July 3, 2014
7.	Provide information on numbers of containers in the post-1991 cemented waste streams from the TA-55 process discussed on June 6. This should include numbers regarding RTR status (RTR'd, meet WIPP criteria, requiring remediation).	LANL	---	Complete June 17, 2014 (Supplemental Info provided July 3)
8.	Provide RTR video and pre-screening information associated with those containers requiring remediation from the post-1991 cemented waste streams from the TA-55 process discussed on June 6.	LANL	---	Complete July 3, 2014
9.	Provide copy of CCP/LANL Interface Document.	LANL	---	Complete June 9, 2014
10.	Provide a list of the analytes for which LANL is sampling HSG (CO <sub>2</sub> and LFL analytes).	LANL	---	Complete June 11, 2014
11.	Discuss potential sampling of HSG for NO <sub>x</sub> .	LANL	---	Complete June 16, 2014

	<b>Requested Information</b>	<b>Actionee</b>	<b>Status</b>	<b>Completion Date</b>
12.	Follow-up with Tim Hall regarding LANL Hazardous Waste Facility Permit and procedures that LANL is developing for possible future sampling of empty parent containers and unremediated nitrate salt-bearing containers at LANL.	LANL	---	Complete  Empty Parent June 16, 2014  Unremediated August 14, 2014 (Supplemental information discussed on sampling of parent containers)  August 26, 2014 (Letter on applicability of LANL HWFP for opening waste containers)

	<b>Requested Information</b>	<b>Actionee</b>	<b>Status</b>	<b>Completion Date</b>
13.	<p>Respond to NMED email request for information associated with the nitrate salt-bearing parent and daughter waste containers.</p> <p>WIPP Recovery Daily Meeting Action List item #84 – NMED requested a copy of the LANL remediation records for waste stored in Panel 6 (Trais Kliphuis) – is a subset of the information in item 5 of this action.</p>	LANL	---	<p><b>Complete</b></p> <p>July 9, 2014 (Letter sent addressing items 1-4 and 6-9 of the email request)</p> <p>July 17, 2014 (Letter sent with updated spreadsheet)</p> <p>August 7, 2014 (First submittal in response to item 5)</p> <p>August 14, 2014 (Letter addressing items 2 &amp; 8 - Second submittal in response to item 5)</p> <p>August 18, 2014 (Third submittal in response to item 5)</p> <p>August 21, 2014 (Fourth submittal in response to item 5)</p> <p>August 27, 2014 (Fifth submittal in response to item 5)</p> <p>September 4, 2014 (Sixth submittal in response to item 5)</p> <p>September 9, 2014 (Seventh submittal in response to item 5)</p> <p>September 11, 2014 (Eighth submittal in response to item 5)</p> <p>September 22, 2014 (Ninth submittal in response to item 5)</p> <p>September 23, 2014 (Tenth submittal in response to item 5)</p> <p>October 1, 2014 (Eleventh submittal in response to item 5)</p> <p>October 8, 2014 (Twelfth submittal in response to item 5)</p> <p>October 16, 2014 (Thirteenth submittal in response to item 5)</p> <p>October 23, 2014 (Fourteenth submittal in response to item 5)</p> <p>October 27, 2014 (Fifteenth submittal in response to item 5)</p> <p>October 28, 2014 (Sixteenth submittal in response to item 5)</p> <p>November 3, 2014 (Seventeenth submittal in response to item 5)</p>

	<b>Requested Information</b>	<b>Actionee</b>	<b>Status</b>	<b>Completion Date</b>
14.	NMED will review the Round Sheets (provided in June 11 summary) and inform LANL if these should be attachments to the Revised Plan, or if they fall under the provision in Section I of the Revised Isolation Plan and their identification during this technical call is sufficient.	NMED	NMED has reviewed Round Sheets – no comments / direction at this time. NMED will address any comments in their formal response to Revised Container Isolation Plan.	Complete  June 23, 2014
15.	NMED has requested ‘copies of any waste processing, treatment, characterization stop orders issued since Feb 14, 2014.’	LANL	---	Complete  June 13, 2014 (Included w/ daily summary)  June 16, 2014 (Discussed current TA-54 & WCRRF operations)
16.	NMED requested information on the location of drums 68327 and 68328. Request made June 14.	LANL	---	Complete  June 14, 2014
17.	Update on LANL efforts – including LANL teams. (On June 20 call, LANL offered to schedule an update meeting).	LANL / NMED	---	Complete  July 2, 2014
18.	Neutralizer use in association with container S855793 (parent of 68660 and 68685).	LANL	---	Complete  June 25, 2014
19.	List of nitrate salt-bearing waste containers that LANL records indicate contain absorbed liquids with the same neutralizer, as discussed during June 25 technical call.	LANL	---	Complete  September 30, 2014 (with August 26, 2014 response)
20.	Schedule follow-on update on LANL efforts – including teams.	LANL / NMED	---	Complete  August 14, 2014 (Meeting held)
21.	NMED requested information on document approval / review (as discussed on July 3 call).	LANL	---	Complete  July 29, 2014
22.	What analyses will be conducted on samples taken from empty drums that previously contained nitrate salt-bearing waste.	LANL	---	Complete  July 7, 2014
23.	NMED requested the following information on cemented waste containers generated from TA-55, that are currently stored above-ground at Area G: container id number; location; form (cans or monoliths); and type of concrete. Additionally, NMED requested information on pH adjustment during waste generation process, and information on anticipated pH of free liquids (and rationale).	LANL	---	Complete  July 17, 2014 (Letter sent w/ information)  July 18, 2014 (Meeting held)

	<b>Requested Information</b>	<b>Actionee</b>	<b>Status</b>	<b>Completion Date</b>
24.	NMED requested the procedure for sampling empty parent drums that previously contained nitrate salt-bearing waste.	LANL	EP-AREAG-WO-DOP-1245 is included in Enclosure 1 to LANL's July 3, 2014 <i>Response to Request for Information on Management of Waste at LANL.</i>	Complete July 8, 2014
25.	NMED requested an additional discussion on a future technical call regarding CO <sub>2</sub> , including data.	LANL	---	Complete August 14, 2014 (Meeting held)
26.	NMED requested additional discussion on CIN-01 waste containers and absorbent, including confirmation and extent of use.	LANL	---	Complete July 18, 2014 (Meeting held)
27.	NMED requested historic analytical information on pH of liquids associated with gypsum cemented waste.	LANL	---	Complete August 7, 2014
28.	NMED requested link to pdf of Actinide Quarterly edition (3 <sup>rd</sup> Q 2008).	LANL	---	Complete July 21, 2014
29.	NMED requested a copy of lessons learned	LANL	---	Complete August 11, 2014
30.	NMED request regarding empty drum sampling presentation.	LANL	Presentation is a pre-decisional draft/working document not for external release	August 25, 2014
31.	Respond to NMED email request dated 8/12/2014 for information associated with the nitrate salt-bearing waste containers.	LANL	---	Complete September 11, 2014
32.	NMED request regarding technical presentation.	LANL	Presentation is a pre-decisional draft/working document not for external release	August 25, 2014
33.	NMED request regarding literature review of catalytic reactions.	LANL	Literature review is a pre-decisional draft/working document not for external release	August 25, 2014
34.	LANL requested to schedule a meeting with NMED on remediation planning and schedules.	LANL / NMED	In Progress Meeting scheduled for Monday September 29th	Complete September 29, 2014 (meeting held)
35.	Schedule a third update on LANL efforts – including teams.	LANL / NMED	---	Complete October 20, 2014



	<b>Requested Information</b>	<b>Actionee</b>	<b>Status</b>	<b>Completion Date</b>
36.	NMED request regarding LANL Causal Analysis associated with processing of nitrate salt-bearing waste at WCRRF – when document is Final.	LANL	Document is currently Draft.	
37.	NMED requested a diagram illustrating the current locations within the 375 Permacon of the 55 SWBs that contain the 57 remediated nitrate salt-bearing waste containers. NMED also requested a list of these 55 SWBs and the waste drums within each SWB (including the container numbers and waste stream type).	LANL	---	Complete October 27, 2014 (Diagram submitted) November 3, 2014 (Table submitted) November 20, 2014 (Revised table submitted)
38.	NMED requested documentation regarding CIN01.001 waste containers that are not part of the September 19, 2014 Nitrate Salts-Bearing Waste Container Isolation Plan, Revision 2.	LANL	In Progress LANL will submit this documentation in batches as it becomes available.	Submitted 100 out of 586 RTRs and documentation on October 3, 2014. Submitted documentation for 101-200 containers on October 10, 2014. Submitted documentation for 201-300 containers on October 16, 2014. Submitted documentation for 301-400 containers on October 23, 2014. Submitted documentation for 401-500 containers on October 27, 2014. Submitted documentation for 501-586 containers on November 12, 2014. Submitted RTR Videos 101-150 on November 12, 2014. Submitted RTR Videos 151-200 on November 20, 2014. Submitted RTR Videos 201-250 on December 1, 2014.

	<b>Requested Information</b>	<b>Actionee</b>	<b>Status</b>	<b>Completion Date</b>
39.	NMED requested a diagram of the location of the thermocouples on 68685 and SB50522.	LANL	---	Complete October 27, 2014
40.	NMED requested a copy of the safety basis document for remediation planning when it is finalized.	LANL	Document is currently in Draft.	
41.	Trending and correlation of temperature and HSG monitoring data.	LANL	In progress	
42.	Schedule a fourth update on LANL efforts – including teams.	LANL/ NMED	---	Complete November 3, 2014
43.	Schedule a fifth update on LANL efforts – including teams.	LANL/ NMED	---	Complete November 20, 2014
44.	Schedule a sixth update on LANL efforts – including teams.	LANL/ NMED	---	Complete December 9, 2014
45.	NMED requested documentation regarding CIN01 drums.	LANL	In Progress Additions to original questions added during technical phone call December 9, 2014.	
46.	NMED requested documentation regarding duplicate drum number.	LANL	In Progress	
47.	NMED requested the ESS plan for temperature control and sampling once finalized.	LANL	Document is currently in Draft.	

Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 25 of 38

UET

**ATTACHMENT 2**  
 Page 1 of 3

**TA-54 AREA G TA-54-231 NITRATE SALT TRU WASTE CONTAINER DAILY TEMPERATURE DATA SHEET**

6.[6] Date: From 12-15-14 to 12-21-14

	Monday 6.[6] Start Time: <u>0910</u>	Tuesday 6.[6] Start Time: _____	Wednesday 6.[6] Start Time: _____	Thursday 6.[6] Start Time: _____	Friday 6.[6] Start Time: _____	Saturday 6.[6] Start Time: _____	Sunday 6.[6] Start Time: _____
<b>TA-54-231</b>							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: <u>Fluke</u> Model: <u>521</u> Cal. Due Date: <u>07/20/15</u> File Number <u>101974</u>	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____
Ambient Temperature (6.[7])	<u>29.8</u> °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F
Container ID #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
S818435	<u>31.1</u>						
S802833	<u>30.5</u>						
S801676	<u>30.6</u>						
S816810	<u>28.3</u>						
70069	<u>28.9</u>						
S822844	<u>28.8</u>						
S825879	<u>28.4</u> <u>28.5</u>						
S793724	<u>28.7</u> <u>28.4</u>						
S813545	<u>30.6</u> <u>28.7</u>						
S822713	<u>30.7</u> <u>30.6</u>						
S802739	<u>30.7</u>						
69907	<u>30.6</u>						
S804995	<u>31.1</u>						
S816434	<u>32.8</u>						

WORKING COPY  
 Z# 187066  
 INITIAL JR DATE 12-15-14



Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-1-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 27 of 38

UET

**ATTACHMENT 2**  
 Page 3 of 3

6.[6] Date: From 12-15-14 to 12-21-14

6.[2] Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

6.[17] Performed by:

Operator (print)	Signature	Z#	Initials	Date
Isaiah...		15971	IA	12/10/14
Thomas...		23381	TK	12/15/14
Operator (print)	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	/	/	/	/

Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date

8.1[2] Reviewed by:

SOM or designee (print)	Signature	Z#	Initials	Date
-------------------------	-----------	----	----------	------

Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 28 of 38

UET

**ATTACHMENT 3**

Page 1 of 3

**TA-54 AREA G TA-54-375 CELL 1 NITRATE SALT TRU WASTE CONTAINER DAILY TEMPERATURE DATA SHEET**

6.[6] Date: From 12-15-14 to 12-21-14

	Monday 6.[6] Start Time: _____	Tuesday 6.[6] Start Time: _____	Wednesday 6.[6] Start Time: _____	Thursday 6.[6] Start Time: _____	Friday 6.[6] Start Time: _____	Saturday 6.[6] Start Time: _____	Sunday 6.[6] Start Time: _____
<b>TA-54-375 Cell 1</b>							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____
Ambient Temperature (6.[7])	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F
Container ID #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
68685							
LA00000070503	68540						
	68553						
69445							
69618	NA						
69013							
LASB50522							
LASB50452							
LASB50431							
LASB50069							
LASB50073							
69636							
69616							
69417							

IPC-1

WORKING COPY  
 Z# 187066  
 INITIAL JR DATE 12-15-14

Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 29 of 38

UET

**ATTACHMENT 3**

Page 2 of 3

6.[6] Date: From 12-15-14 to 12-21-14

Container ID #	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
<b>TA-54-375 Cell 1 (continued)</b>							
69620							
69520							
69641							
69298							
LASB02203	ND						
Ambient Temperature (6.[12])	_____°F	_____°F	_____°F	_____°F	_____°F	_____°F	_____°F
End Time (6.[13])	_____	_____	_____	_____	_____	_____	_____
6.[13]	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____

6.[2] Comments: 12/15/14: Due to low D/P alarm unable to enter cell. tv Issue may be ongoing due to maintenance on FE-001

Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 30 of 38

UET

**ATTACHMENT 3**

Page 3 of 3

6.[6] Date: From 12-15-14 to 12-21-14

6.[17] Performed by:

<u>Thomas Vega</u>	<u>[Signature]</u>	<u>232382</u>	<u>tv</u>	<u>12/15/14</u>
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/

/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/

8.1[2] Reviewed by:

/	/	/	/	/
SOM or designee (print)	Signature	Z#	Initials	Date



Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-I-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 31 of 38

UET

**ATTACHMENT 4**  
 Page 1 of 3

**TA-54 AREA G TA-54-375 CELL 2 NITRATE SALT TRU WASTE CONTAINER DAILY TEMPERATURE DATA SHEET**

6.[6] Date: From 12-15-14 to 12-21-14

	Monday 6.[6] Start Time: _____	Tuesday 6.[6] Start Time: _____	Wednesday 6.[6] Start Time: _____	Thursday 6.[6] Start Time: _____	Friday 6.[6] Start Time: _____	Saturday 6.[6] Start Time: _____	Sunday 6.[6] Start Time: _____
<b>TA-54-375 Cell 2</b>							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____
Ambient Temperature (6.[7])	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F
Container ID #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
LASB02198							
68638							
69615							
69635							
69642							
69630							
69633							
68430							
68631	NA						
69634							
68567							
94227							
LASB50442							
69644							
LASB50443							
69638							

WORKING COPY

Z# 187064

INITIAL JR DATE 12-15-14

Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 32 of 38

UET

**ATTACHMENT 4**

Page 2 of 3

6.[6] Date: From 12-15-14 to 12-21-14

Container ID #	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
<b>TA-54-375 Cell 2 (continued)</b>							
68624							
68507							
69568							
69553							
69598							
LASB50559							
69015	N/A						
69639							
69637							
Ambient Temperature (6.[12])	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F
End Time (6.[13])	_____	_____	_____	_____	_____	_____	_____
6.[13]	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____

6.[2] Comments: 12/15/14: Due to low D/P alarm unable to enter cell. tv Issue may be ongoing due to maintenance on FE-001

Nitrate Salt-Bearing TRU Waste Container Monitoring


Document No.: EWMO-AREAG-FO-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 33 of 38

UET

**ATTACHMENT 4**  
 Page 3 of 3

6.[6] Date: From 12-15-14 to 12-21-14

6.[17] Performed by:

<u>Thomas Vigil</u>		<u>173682</u>	<u>TV</u>	<u>12/15/14</u>
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/

/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/

8.1[2] Reviewed by:

/	/	/	/	/
SOM or designee (print)	Signature	Z#	Initials	Date

Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 34 of 38

UET

**ATTACHMENT 5**

Page 1 of 2

**TA-54 AREA G TA-54-375 CELL 3 NITRATE SALT TRU WASTE CONTAINER DAILY TEMPERATURE DATA SHEET**

6.[6] Date: From 12-15-14 to 12-21-14

	Monday 6.[6] Start Time: <u>1046</u>	Tuesday 6.[6] Start Time: _____	Wednesday 6.[6] Start Time: _____	Thursday 6.[6] Start Time: _____	Friday 6.[6] Start Time: _____	Saturday 6.[6] Start Time: _____	Sunday 6.[6] Start Time: _____
<b>TA-54-375 Cell 3</b>							
Calibrated Infrared Thermometer (4.2.1[I][B])	Brand: <u>FLUKA</u> Model: <u>301</u> Cal. Due Date: <u>6/12/15</u> File Number <u>101916</u>	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number _____
Ambient Temperature (6.[7])	<u>53.0</u> °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F
Container ID #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
69519	<u>55.1</u>						
69645	<u>55.1</u>						
94068	<u>54.6</u>						
93605	<u>53.8</u>						
69548	<u>53.9</u>						
69604	<u>54.6</u>						
LASB50529	<u>54.2</u>						
LASB50418	<u>54.5</u>						
69036	<u>54.6</u>						
LASB50451	<u>54.3</u>						
69559	<u>53.8</u>						
LASB50448	<u>53.3</u>						
Ambient Temperature (6.[12])	<u>53.1</u> °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F	_____ °F
End Time (6.[13])	<u>1053</u>	_____	_____	_____	_____	_____	_____
6.[13]	Operator: <u>[Signature]</u> Operator: <u>[Signature]</u>	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____	Operator: _____ Operator: _____

WORKING COPY

Z# 187066

INITIAL JR DATE 12-15-14

Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 35 of 38

UET

**ATTACHMENT 5**  
 Page 2 of 2

6.[6] Date: From 12-15-14 to 12-21-14

6.[2] Comments:

6.[17] Performed by:

Operator (print)	Signature	Z#	Initials	Date
THOMAS SOLWELL		1236382	TS	12/15/14
Operator (print)	Signature	Z#	Initials	Date
JOSHUA HOPE		1165981	JH	12/15/14
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/

Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
/	/	/	/	/

8.1[2] Reviewed by:

SOM or designee (print)	Signature	Z#	Initials	Date
/	/	/	/	/

Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-DOP-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 36 of 38

UET

ATTACHMENT 6

Page 1 of 3

TA-54 AREA G NITRATE SALT TRU WASTE CONTAINER HOURLY TEMPERATURE DATA SHEET

6.[6] Date: From 12-15-14 to 12-15-14 Location: 375

	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>	Brand: <u>NA</u> Model: <u>NA</u> Cal. Due Date: <u>NA</u> File Number: <u>NA</u>
Ambient Temperature (6.7)	<u>45.5°F</u>	<u>45.42°F</u>	<u>46.40°F</u>	<u>48.97</u>	<u>51.19°F</u>	<u>53.21°F</u>	<u>52.20</u>	<u>53.42°F</u>	<u>53.93°F</u>	<u>52.99°F</u>	<u>49.89°F</u>	<u>47.05°F</u>	°F	°F
Container ID # (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]	Temp (°F) (6.8)/6.[9]
<u>68685 T1</u>	<u>42.79</u>	<u>47.71</u>	<u>48.38</u>	<u>50.74</u>	<u>52.78</u>	<u>54.15</u>	<u>52.67</u>	<u>53.83</u>	<u>54.22</u>	<u>53.21</u>	<u>50.34</u>	<u>47.62</u>		
<u>68685 T2</u>	<u>46.92</u>	<u>46.92</u>	<u>47.80</u>	<u>50.21</u>	<u>52.15</u>	<u>53.48</u>	<u>51.56</u>	<u>53.22</u>	<u>53.46</u>	<u>52.43</u>	<u>49.57</u>	<u>47.00</u>		
<u>50522 T4</u>	<u>48.42</u>	<u>48.35</u>	<u>48.85</u>	<u>50.84</u>	<u>52.11</u>	<u>53.1</u>	<u>52.29</u>	<u>53.02</u>	<u>53.58</u>	<u>52.98</u>	<u>50.95</u>	<u>48.87</u>		
<u>50522 T5</u>	<u>48.20</u>	<u>48.10</u>	<u>48.64</u>	<u>50.27</u>	<u>51.82</u>	<u>52.88</u>	<u>52.34</u>	<u>53.10</u>	<u>53.43</u>	<u>52.87</u>	<u>50.89</u>	<u>48.87</u>		

WORKING COPY

Z# 174977

INITIAL DA DATE 12-15-14



Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-DOP-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 38 of 38

UET

ATTACHMENT 6

Page 3 of 3

6.[6] Date: From 12-15-14 to 12-15-14 Location: 375

6.[2] Comments: did not enter permacon due to Area G Standing order 1248 R2  
all temps were taken from data logger computer in 375 no further entries

6.[17] Performed by:

Operator (print)	Signature	Z#	Initials	Date
Jesse Chavez	<i>Jesse Chavez</i>	121458	JC	12-15-14
Operator (print)	Signature	Z#	Initials	Date
Jackie Roman	<i>Jackie Roman</i>	1187066	JR	12-15-14
Operator (print)	Signature	Z#	Initials	Date
Uva Aguirre	<i>Uva Aguirre</i>	1187066	UA	12-15-14
Operator (print)	Signature	Z#	Initials	Date
William Suarez	<i>William Suarez</i>	201458	WS	12-15-14
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date

Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date

8.1[2] Reviewed by:

SOM or designee (print)	Signature	Z#	Initials	Date
Carmy Mays	<i>Carmy Mays</i>	026735	CM	12-15-14



Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREA G-FO-DOP-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 36 of 38

UET

ATTACHMENT 6  
 Page 1 of 3

TA-54 AREA G NITRATE SALT TRU WASTE CONTAINER HOURLY TEMPERATURE DATA SHEET

6 [6] Date: From 12-13-14 to 12-14-14 Location 325

	Start Time: 6.[6] <u>1825</u>	Start Time: 6.[6] <u>1926</u>	Start Time: 6.[6] <u>2027</u>	Start Time: 6.[6] <u>2126</u>	Start Time: 6.[6] <u>2226</u>	Start Time: 6.[6] <u>2327</u>	Start Time: 6.[6] <u>0026</u>	Start Time: 6.[6] <u>0125</u>	Start Time: 6.[6] <u>0227</u>	Start Time: 6.[6] <u>0326</u>	Start Time: 6.[6] <u>0424</u>	Start Time: 6.[6] <u>0527</u>	Start Time: 6.[6]	Start Time: 6.[6]	
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: <u>N/A</u> File Number: _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number: _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number: _____	Brand: _____ Model: _____ Cal. Due Date: _____ File Number: _____
Ambient Temperature (6.[7])	<u>51.6°F</u>	<u>52.24</u>	<u>51.66</u>	<u>52.91</u>	<u>50.99</u>	<u>51.22</u>	<u>51.21</u>	<u>51.51</u>	<u>51.37</u>	<u>51.26</u>	<u>51.18</u>	<u>51.1</u>	°F	°F	
Container ID # (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	
<u>68685+1</u>	<u>51.28</u>	<u>53.07</u>	<u>52.0</u>	<u>53.22</u>	<u>51.72</u>	<u>52.37</u>	<u>52.59</u>	<u>52.77</u>	<u>52.26</u>	<u>52.68</u>	<u>52.68</u>	<u>52.6</u>			
<u>68685+2</u>	<u>52.25</u>	<u>52.72</u>	<u>51.45</u>	<u>53.26</u>	<u>51.06</u>	<u>51.5</u>	<u>51.89</u>	<u>52.1</u>	<u>52.13</u>	<u>52.01</u>	<u>51.98</u>	<u>51.96</u>	<u>N/A</u>	<u>N/A</u>	
<u>50522T4</u>	<u>52.36</u>	<u>53.09</u>	<u>52.54</u>	<u>53.47</u>	<u>52.27</u>	<u>52.59</u>	<u>52.61</u>	<u>52.7</u>	<u>53.62</u>	<u>52.56</u>	<u>52.55</u>	<u>52.51</u>			
<u>50522T5</u>	<u>52.26</u>	<u>53.04</u>	<u>52.38</u>	<u>53.38</u>	<u>52.01</u>	<u>52.39</u>	<u>52.4</u>	<u>52.45</u>	<u>52.38</u>	<u>52.3</u>	<u>52.21</u>	<u>52.2</u>			

WORKING COPY  
 Z# 235765  
 INITIAL TP DATE 12-13-14



Nitrate Salt-Bearing TRU Waste Container Monitoring

Document No.: EWMO-AREAG-FO-DOP-1246  
 Revision: 5  
 Effective Date: 11/03/14  
 Page: 38 of 38

UET

ATTACHMENT 6

Page 3 of 3

6.[6] Date: From 12-13-14 to 12-14-14 Location: 375

6.[2] Comments: Did not enter Permacon due to standing Order 647 B.2  
all Temps were taken in Dome 375 (Data Logger Computer)

NA

6.[17] Performed by:

Operator (print)	Signature	Z#	Initials	Date
<u>Rita Mendez</u>	<u>[Signature]</u>	<u>163216</u>	<u>RM</u>	<u>12/14/14</u>
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date

Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	Z#	Initials	Date

8.1[2] Reviewed by:

SOM or designee (print)	Signature	Z#	Initials	Date
-------------------------	-----------	----	----------	------