From: Vigil-Holterman, Luciana R

Sent: Thursday, January 08, 2015 7:28 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; Cobrain, Dave, NMENV; kathryn.roberts@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; Alexander, Rick A; Baumer, Andy; Martinez, Saundra; Sauer, Selena Z; Wood, Yvonne Barbara; Schreiber, Arleen Thorn; Maestas, Pamela Therese; Hargis, Kenneth Marshall; Juarez, Catherine L; Cabbil, Cheryl Denise; Young, Steven L; Erickson, Randy; Funk, David John; Alexander, Rick A; Frederici, Dave; Juarez, Catherine L; Robinson, Bruce Alan; Lansing, Michael Alan; Diaz, Tammy; Haagenstad, Mark P; Vigil-Holterman, Luciana R

Subject: Daily Technical Submission - January 8, 2015

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 Mark if additional information would be helpful.

Thanks, Luciana Vigil-Holterman for Mark Haagenstad

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

January 8, 2015

Participants:

- New Mexico Environment Department: Tim Hall, Siona Briley
- LANL Los Alamos Field Office:
- LANL Los Alamos National Security: Alison Dorries, Bruce Robinson, Don Allen, Mark Haagenstad, Luciana Vigil-Holterman and Cathy Juarez

LANL Technical Update:

• Location of Nitrate Salt-Bearing Wastes

- o Remediated nitrate salt-bearing waste containers.
 - All containers remain in the 375 Permacon.
- o Unremediated nitrate salt-bearing waste containers.
 - All containers remain in the 231 Permacon.

• Monitoring - Daily Temperature

- o Temperatures remain below 90°F.
 - Previous day's temperature data attached.

• Monitoring – Visual Inspections

o No abnormal conditions were observed.

Monitoring – headspace gas (HSG)

- o Containers (SWBs) 68685 and SB50522.
 - Continue daily head space gas (HSG) sample collection.
 - January 8, 2015 HSG data attached.
 - o H₂, CO, CO₂ and N₂O
- Other containers
 - A minimum of once per month HSG sampling will be conducted.
 - To date in January, LANL has conducted HSG sampling on 23 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.
- January 8, 2015 HSG data attached.
- Anticipated Changes to Nitrate Salt-Bearing Waste Containers (e.g. movement, repackaging)
 - o Currently, no further movements or re-packaging are planned.

Other:

- Verbal and written notifications were provided to NMED-HWB's Steve Pullen on December 29, 2014 regarding the Fire Watch that was established within Dome 231 at 2:30 am on December 29, 2014 after a nitrogen leak was discovered in the dry pipe suppression system located within the Permacon in Dome 231. The Fire Watch will be in effect until the system can be repaired.
 - o Repair of one sprinkler head inside Dome 231 is being planned and will be executed upon completion of planning. No container movements are anticipated at this time. The Permittees will notify NMED if this changes.

Next Call: Tuesday, January 13, 2015

Summary Chart - Requested Information / Pending Issues:

	Requested Information	Actionee	Status	Completion Date
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 ongoing 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 ₂ and LFL analytes).	LANL		Complete June 11, 2014
11.	Discuss potential sampling of HSG for NO _x .	LANL		Complete June 16, 2014

	Requested Information	Actionee	Status	Completion Date
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)

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

	Requested Information	Actionee	Status	Completion Date
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)

	Requested Information	Actionee	Status	Completion Date
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 Response to Request for Information on Management of Waste at LANL.	Complete July 8, 2014
25.	NMED requested an additional discussion on a future technical call regarding CO ₂ , 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 rd 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		Complete September 29, 2014 (meeting held)
35.	Schedule a third update on LANL efforts – including teams.	LANL / NMED		Complete October 20, 2014

	Requested Information	Actionee	Status	Completion Date
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)

	Requested Information	Actionee	Status	Completion Date
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 is 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 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. Submitted RTR Videos 251-300 on December 19, 2014.
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

	Requested Information	Actionee	Status	Completion Date
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.	
48.	Schedule a seventh update on LANL efforts – including teams.	LANL/ NMED	Scheduling in progress.	

Remediated Nitrate Salt Container Headspace Gas Analysis

	68685				69!	553			690	515		
Date	H ₂ ppm	CO ppm	CO ₂ ppm	N₂O ppm	H ₂ ppm	CO ppm	CO ₂ ppm	N ₂ O ppm	H ₂ ppm	CO ppm	CO ₂ ppm	N ₂ O ppm
01/08/15	143	382	11155	2968	147	501	14281	1965	96	271	6776	371

Remediated Nitrate Salt Container Headspace Gas Analysis

	69616				SB50	SB50069 SB50452						
Date	H ₂ ppm	CO ppm	CO ₂ ppm	N₂O ppm	H ₂ ppm	CO ppm	CO ₂ ppm	N ₂ O ppm	H ₂ ppm	CO ppm	CO ₂ ppm	N ₂ O ppm
01/08/15	299	807	21347	4470	223	708	16417	2176	644	690	15209	2842

Remediated Nitrate Salt Container Headspace Gas Analysis

	SB50522					
Date	H ₂ ppm	CO ppm	CO ₂ ppm	N ₂ O ppm		
01/08/15	1742	463	39865	1114		

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ATTACHMENT 2

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

6.[6] Date: From <u>1-5-15</u> to <u>1-11-15</u>

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]
_	Start Time: 0853	Start Time: 0928	Start Time: 0973	Start Time:	Start Time:	Start Time:	Start Time:
TA-54-231						BIRE WILLIAM	
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Fluke Model: 56 (Cal. Due Date 7/29/15	Brand: Fluke Model: Stell Cal. Due Date: MM5	Brand: Flukk Model: Stal Cal. Due Date: Mail5	Brand:	Brand: Model: Cal. Due Date:	Brand: Model: Cal. Due Date:	Brand: Model: Cal. Due Date:
1. JH. J/	File Number 101974	File Number 101974	File Number 101914	File Number	File Number	File Number	File Number
Ambient Temperature (6.[7])	27.0 °F	33.4 °F	48.3°F	oF	°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	27.5	34.5	51.3				
S802833	26.7	33.4	46.8				
S801676	26.6	33.	46.8				
S816810	24.7	31.8	48.8				
70069	24.1	31.4	46.8				
S822844	24.5	31.7	46.2				
S825879	24.9	32.0	48.9				
S793724	24.8	31.9	48.5				
S813545	24.9	31.8	48.2				
S822713	26.5	33.4	47.9				
S802739	26.7	33.9	49.0				
69907	26.6	33.8	48.8				
S804995	27.2	34.1	49.5				
S816434	28.2	36.5	50.1				

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6.[6] Date: From 1-5-15 to 1-11-15

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
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])
TA-54-231 (continued	d)						
S805289	28.3	35.0	41.2				
S862888	27.4	34.9	47.2				
70072	27.1	34.3	50.1				
S823184	26.7	34.7	48.8				
S822599	26.7	34.	48.5				
69904	25.4	33.1	48.5				
S805051	25.1	37.7	48.2		Î		
S864213	25.4	32.5	49.0				
S853714	25.2	33.2	50.7				
S803078	25.3	33.5	50.5				
S825878	25.4	33.7	50.0				
S823124	25.6	33.4	49.6				
S804948	27.4	35.1	49.4				
S813385	27.5	35.4	50.0				
S842446	29.1	34.7	48.1				
Ambient Temperature 6.[12])	29.2 °F	35.4 °F	53.7°F	°F	oF	°F	°F
End Time (6.[13])	0859	0933	1027				
6.[13]	Operator: JR	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:
	Operator: 5C	Operator:	Operator: 44	Operator:	Operator:	Operator:	Operator:

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6.[6] Date: From <u>1-5-</u>	10 1-11-15						
5.[2] Comments:							
6.[17] Performed by:							
Jackie Romero	Dackie Romero	1/870661 JR 11-5-15		/	/	/	/
Operator (print)	€ fignature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
Eloy J. Corduna	1 ES 0 h	1114188/26 /11.5.15			/		
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
Issechure Durar	Haburan	115197/10/11/16/15		/	/		
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
THOMAS VIGIL	1 4-10	1236782 140 11615		/	/	/	
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
Issephul Duran	Duran	/ 15197 / 0 / 17 15	0	/	/		
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Alfredo Ageylar	1 M Squar	1293/281 AD11-7-15	0 . (!)	/	/		/
Operator (print) V	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
	/	/		/	/		
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
3.1[2] Reviewed by:							
	/	/ /					
SOM or designee (print)	Signature	Z# Initials Date					

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

6.[6] Date: From 1-5-15 to 1-11-15

		Monday 6.[6] Start Time: 636	Tuesday 6.[6] Start Time:	Wednesday 6.[6] Start Time: 1035	Thursday 6.[6] Start Time:	Friday 6.[6] Start Time:	Saturday 6.[6] Start Time:	Sunday 6.[6] Start Time:
TA-54-375 Cell 1								
Calibrated Infrarec Thermometer (4.2.1[1][B])		Brand: Fluke Model: School Sch	Brand: FKQ Model: S67 Cal. Due Date: G1215 File Number 10915	Brand: Fluid Model: Sta Cal. Due Date: Cal. 5 File Number 101915	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 Temperat	ture	_\$0.8 °F	₹.5 °F	53.7°F	oF	oF	°F	oF
Container 1D	#	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		52.9	55.4	56.0				
LA0000070503	68540 68553	52.3 52.3	55.2 54.7	55.2 55,4				
69445		57.7 51.3	35.4	55.3				
69618			54.6 55.5	55.3				,
LASB50522	,	52.5 Sy.0	56.	55.5				
LASB50452			563	55.U 56.9				
LASB50431	ı	54.6 34.4	56.6	55.8				
LASB50069	9	52.7	554	55.4				
LASB50073	3	23.4	55.2	N 56.955.6		The last		
69636		54.2 54.0	56.0	56.3				
69417		53.7		50.0 55.5				

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6.[6] Date: From <u>1-5-15</u> to <u>1-11-15</u>

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
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])
TA-54-375 Cell 1 (con							
69620	53.4	SS-3	55.5				
69520	52.4	56.1	56.1		-		
69641	53.8	56.4	56.4				
69298	54.0	56.4	56.4				
LASB02203	53.9	56.7	56.7	-			
Ambient Temperature (6.[12])	49.5 °F	55.3 _{°F}	55.3 °F	°F	°F	°F	oF
End Time (6.[13])	1042	112)	1042				
6.[13]	Operator:	Operator:	Operator: Operator:	Operator:	Operator:Operator:	Operator:	Operator:

6.[2] Comments:			
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6.[6] Date: From <u>1~5</u>	-15 to <u>1-11-15</u>						
6.[17] Performed by:	1 + Not	12363821 1	te 1 / 1 / 1 / 1		/	/	/ /
Operator (print)	Signature	Z# Initia	ils Date	Operator (print)	Signature	Z#	Initials Date
Jartenhoger	/ Alexander	11165931	10/05/5		/	/	/ /
Operator (print)	Signature 0	Z# Initia		Operator (print)	Signature	Z#	Initials Date
- HOMAS/IGIL	-104-17	12363821	116/15		/	/	
Operator (print)	Signature	Z# Initia		Operator (print)	Signature	Z#	Initials Date
Joshual 2002	X Jel	11165981 X	1010615		/	/	
Operator (print)	Signature	Z# Inifia	s Date	Operator (print)	Signature	Z#	Initials Date
Josephine Duro	in Sung	11579711 10	11/1/15		/	/	
Operator (print)	Signature	Z# Initia	ls Date	Operator (print)	Signature	Z#	Initials Date
) ostera logo	U potreca to	NC581X	V100713		/	/	
Operator (print)	Signature	Z# Injilia	ls Date	Operator (print)	Signature	Z#	Initials Date
		1	/		/	/	
Operator (print)	Signature	Z# Initia	ls Date	Operator (print)	Signature	Z#	Initials Date
8.1[2] Reviewed by:							
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SOM or designee (print)	Signature	Z# Initia	ls Date				

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

6.[6] Date: From <u>1-5-15</u> to <u>1-/1-15</u>

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]
	Start Time: 1043	Start Time: 1127	Start Time: 1045	Start Time:	Start Time:	Start Time:	_ Start Time:
TA-54-375 Cell 2							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: HURE Model: SCI) Cal. Due Date: Q12/15 File Number 10/9/12	Brand: FUKE Model: SS Cal. Due Date: 6 12 S File Number 101912	Brand: FIUC Model: 50 Cal. Due Date: 0115 File Number 101917	Brand:	Brand: Model: Cal. Due Date: File Number	Cal. Due Date:	Brand: Model: Cal. Due Date: File Number
Ambient Temperature (6.[7])			56.3°F	°F	oF	oF	°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	49.5	54,4	55.6				
68638	31.9	56.1	56.0				
69615	52.4	56.7	56.3				
69635	52.4	57.1	56.6		1		
69642	_ 52.8	57.7	57.0				
69630	52.)	56.8	56.2				
69633	57.0	56.9	50.2				
68430	52.7	57,4	57.0	, ,			
68631	51.0	56.5	56.1				
69634	50.2	56.4	56.				
68567	48.6	56.1	<i>5</i> 3.5				
94227	50.1	56-4	55.8				
LASB50442	52.3	56. ?	55.5				
69644	51.3	36.8	55.4				
LASB50443	50, 1	54,4	54.9				
69638	<1.7	55.5	55.8				

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DATE 1-5-15

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ATTACHMENT 4

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6.[6] Date: From <u>1-5-15</u> to <u>1-11-15</u>

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Container 1D #	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])
TA-54-375 Cell 2 (con	tinued)						
68624	51.7	35.6	57.9				
68507	57.5	57.5	559				
69568	49.7	58 6	55.5				
69553	49.5	56.1	53.7				
69598	48.5	57.4	53.9				
LASB50559	50.5	57.5	56.5				
69015	52.3	57.6	57.6				
69639	52.5	56.5	569				
69637	51.	54.9	56.6		İ		
Ambient Temperature 6.[12])	<u>56.8</u> ∘f	56.9 °F	36.0°F	°F	oF	°F	°F
End Time (6.[13])	1049	1128,	1057.				
6.[13]	Operator:	Operator: Operator:	Operator: Operator:	Operator:	Operator:	Operator:	Operator:

6.[2] Comments:			
-			- 67
	20.02		

UET

SOM or designee (print)

Signature

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ATTACHMENT 4 Page 3 of 3

6.[6] Date: From <u>1-5-15</u> to <u>1-11-15</u>					
6.[17] Performed by: John State 1382 7 1 1 1 1 1 1 1 1 1	Operator (print)	/ Signature	/ Z#	/ /	Dat
Operator (print) Signature Z# Initials Date	Operator (print)	Signature	/ Z#	Initials	Dat
Operator (print) Signature 1736362 Tv / 1 6 15 2# Initials Date	Operator (print)	Signature	/ Z#	/ / / Initials	Dat
Operator (print) Signature Z# Initials Date	Operator (print)	Signature	/ Z#	Initials	Dat
pperator (print) Signature 157971 Al 1715	Operator (print)	Signature	/	Initials /	Dat
Operator (print) Signature 1650 1671 1071	Operator (print)	Signature	Z#	Initials	Dat
Operator (print) Signature Z# Initials Date	Operator (print)	Signature	/ Z#	Initials	Dat
8.1[2] Reviewed by:					

Initials Date

Document No.: EWMO-AREAG-FO-, '-1246

Revision:

5 Effective Date: 11/03/14

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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 <u>1-5-15</u> to <u>1-11-15</u>

UET

			1				
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]
	Start Time: 1836	Start Time: 1117	Start Time: <u>1078</u>	Start Time:	Start Time:	Start Time:	Start Time:
TA-54-375 Cell 3							
Calibrated Infrared	Brand: FUKe	Brand: Tluke	Brand: Fluke	Brand:	Brand:	Brand:	Brand:
Thermometer	Model: 561	Model: Sal	Model: Sul	Model:	Model:	Model:	Model:
(4.2.1[1][B])	Cal. Due Date: 6 12 15	Cal. Due Date: Cliz LS	Cal. Due Date: 6/12/15	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:
	File Number 101416	File Number 1010/b	File Number <u>101916</u>	File Number	File Number	File Number	File Number
Ambient Temperature (6.[7])	<u>≤0.Z</u> °F	<u>52.5</u> of	<i>5</i> 4.8 °F	°F	°F	oF	oF
Container 1D #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])					
69519	52.4	56.2	56.2				
69645	53 2	56.2	56.1				
94068	53.4	55 U	55.3				
93605	51.8	55.6	55,3				
69548	51.5	54.9	55.1				
69604	Sz. 6	22.6	55.8	71175			
LASB50529	53.0	22.2	53.4				
LASB50418	53.5	52.8	Je. 1				
69036	53.	55.4	55.2				
LASB50451	51.5	55.1	55.				
69559	51.2	55. 3	55.0				
LASB50448	51.2	53.4	54.4				
Ambient Temperature (6.[12])	52.2 °F	53.6 °F	<u>53.8</u> °F	°F	°F	°F	°F
End Time (6.[13])	1635		1034				
6.[13]	Operator: Operator:	Operator:	Operator:	Operator:Operator:	Operator:	Operator:	Operator:

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DATE 1-5-15

UET

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ATTACHMENT 5

Page 2 of 2

6.[6] Date: From <u>1-5-15</u> to <u>1-11-15</u>				
6.[2] Comments:				
		-		
7 6				
6.[17] Performed by:		1	,	, ,
Operator (print) Signature 2# Initials Date	Operator (print)	/ Signature	/	Initials Date
		/	/	/ /
Operator (brint) Signature / 2# Initials Date	Operator (print)	Signature		Initials Date
	1 1 1 1	/	/	/ /
Operator (print) Signature Z# Initials Date	Operator (print)	Signature	Z#	Initials Date
11578 1911 1516		/	/	/ /
Operator (print) Signature Z# Initials Date	Operator (print)	Signature	Z#	Initials Date
		/	/	/ /
Operator (print) Senature (7# Initials Date	Operator (print)	Signature	Z#	Initials Date
() osterologo 116598 / Ste / 5/07/5		/	/	/ /
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:				
o. I[2] Neviewed by.				
SOM or designee (print) Signature Z# Initials Date				
SOM or designee (print) Signature Z# Initials Date				

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

6.[6] Date: From 01-07-15 to 01-07-15 Location: 37.5

				20										
	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] 1.529	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: Model: Calt Cyclinate:	Model: Cal. Due Gate:	Brand: Model: Cal But Date:	Arand: Modul: Cal. Assertance:	Brand: Model: Cal. Dub. da.	Modul: Cal. Due Date:	Model: Cal. Due Date	Brand: Model: Cal. Due One:	Brand: Model:	Brand: Motel: Cal. Dar Date:	Brand: Model: Cal. Div Vi te-	Brand: Model: Cal. Due Pate	Brand: Model: Cal. Due Date:	Brand: Model: Cal. Due Date:
	File Number	File Number	File Number	File Numbel	File Number	File Number	File Number	File Number	Cal. Dur Dite:	File Number	File Number	File Number	File Number	File Number
Ambient Temperature (6.[7])	49.56F	49.22F	50,01F	51.62	5336°F	53.98°F	54,09°F	53.56F	52.47	52.46F	51.26 of	50.48°F	1/4	°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])
69695 tl	51.51	51.19	51.85	53.17	54.31	54.38	54.07	53.42	52,29	53.04	52.37	52.21		
68695 72	5064	50.30	51.08	52.36	53.65	54.35	53.82	52.57	51.45	52.23	51.61	\$1.38		
5052274		50.65	51.1	52,12	52.87	53.44	53,25	52.86	52.08	52,42	51.80	51.61		
5052275	50.58	50.29	50.60	51-69	52.70	53.25	53.13		51.91	52.19	51.48	51.19		
							A							
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ATTACHMENT 6 Page 2 of 3

6.[6] Date: From 66-07-15 to 61-07-15 Location: 37.5

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)	Temp (°F)	Temp (°F)				
				(3,(3,3,(5),	(5.[5]5.	(0,[0],0,[3])	(0.[0]/0.[9])	(0.[0]/0.[2]/	(0.[8]/0.[9])	(0.[8]/0.[9])	(0.[8]/0.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9
														/
							D. C.							14
							,							1/4
														/
mbient emperature	419.59	49,20F	50.01	51.62g	53.34°F	53.98°F	54.07	62 64	62 112 -	62 11/	6101		\	
5.[12])		- 7201	0826						52.47	30.40F	51.26F	50.48°F	°F	°]
nd Time 5.[13])	0632	0731	0826	10930	1028	1129	1229	1330	1429	1530	1639	1728		
6.[13]	Operator:	Operator (Operator:	Operator:	Operator	Operator:	Operator:	Operator	Operators	Operator	Operator	Operator:	Operator:	Operator:
	Operator:	Operator:	Operator:	Operator:	Орега от:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Obouter.	Overator:	Operator:
	-		•						-5-					

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ATTACHMENT 6

	Page 3 o	of 3				
6.[6] Date: From 01-07-15 to 01-07-15 Location: 325						
6.[2] Comments: de de NOT enter parnace 1246 l2 all temps were to Control Room inside of 375	, ·	m deler Further		SI	Lowpoter in	
		P				
		-		Sins.		
6.[17] Performed by: SCAR Chare I gally AMSOBISC 11-7-15		1	/	/	1	
Operator (print) Signature Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date	
Operator (primile Signature 2# Initials Date	Operator (print)	Signature	/	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

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

6.[6] Date: From <u>01-82-15</u> to <u>01-08-15</u> Location: <u>375</u>

	r	I	T	T						1		T	7	
	Start Time: 6,[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time:	Start Time:	Start Time:	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]
	1826	1922	2026	2123	2225	2328	0027	0/29	0218	0327	8424	05 23	0.[0]	0,[0]
Calibrated	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand
Infrared Thermometer	Model:	Model.	Model:	Modelina	Model: na	Model:	Model:	Modul.	Model	Model:	Model 1/4	Model:	Model	Model
(4.2.1[1][B])	art	Cal. Due Date:				NIT	NA	A/A	NA	Madel		m/4		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	Cal. Die Date:	Cal. Die Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal. Dive Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal Due Date
	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number
Ambient			4		4	4.6	31/04	182		(1000				
Temperature	49.37°F	48.56°F	47.68°F	47.12°F	46.65 °F	46,44F	7626°F	46d3 of	45.96°F	45.9 °F	45.85	45.93°F		°F
(6.[7]) Container ID #	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	A (Temp (°E)
(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6,[8]/6,[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
TCV 68685	51.4	50,66	49.88	49.37	48.92	48.79	48.54	48.41	48.26	48.15	48.18	48.19		\
T(2) 68685	50.5	49,79	49.01	48.49	48.14	47.96	47.77	47.60	47.45	47.37	47.30	47.34		
T(9) 50522	50.96	50.39	49.76	49.27	48.95	48.81	48.61	48.50	48.29	48.20	48.12	48.18		
-	_	49.94	49.36	48.85	48.83	48.39	48,20	48,11	47.89	47.77		47.73		
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6.[6] Date: From 61-07-15 to 01-08-15 Location: 37.5

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])
						HA_								
						0/1								A
													1	
										J-11				
Ambient Temperature (6,[12])	49.39°F	48.53°F	47.69°F	<u>47.12</u> °F	46.65°F	46.45°F	46.26 _F	46,13°F	45.93°F	45.9 °F	45.85°F	45.9 °F	°F	-_°F
End Time (6.[13])	1827	1923	2027	7174	2225	2329	0027	0129	0219	0377	0424	0524		
6.[13]	Operator: Operator:	Operator: Operator:	Operator: Operator	Operator: Operator:	Operator: Operator	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator:

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	Page 3 of 3					
6.[6] Date: From 0(-07-15 to 01-08-15 Location: 37.5						
6.[2] Comments: Did not enter Permacon Per Standen	order 1247,	lev 2. Tempons	was_	take	n fa	om Dome 375 Control
room using dute confer.						
no s	ath.					
	Endobe 5	0120818	2.			
					-	
6.[17] Performed by:		1	/	/	/	
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	2.44	/ 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:

6 Am Mum

SOM or designee (print)