From: Vigil-Holterman, Luciana R

Sent: Tuesday, December 30, 2014 5:16 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 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; 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; Haagenstad, Mark P; Vigil-Holterman, Luciana R

Subject: Daily Technical Submission - December 30, 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 Mark Haagenstad if additional information would be helpful.

Have a good one!

Luciana Vigil-Holterman for Mark

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 30, 2014**

#### **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.
    - Note: today's daily temperatures are also included and will be repeated in tomorrow's report.

#### • 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.
      - December 30, 2014 HSG data attached.
        - o H<sub>2</sub>, CO, CO<sub>2</sub> and N<sub>2</sub>O
  - 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.
      - Note: Yesterday's H<sub>2</sub> concentration for SB500069 was misreported – it was actually 497 ppm rather than 197 ppm as reported.

- Anticipated Changes to Nitrate Salt-Bearing Waste Containers (e.g. movement, repackaging)
  - o Currently, no further movements or re-packaging are planned.

#### Other:

• Due to the LANL winter/holiday closure from close of business December 24, 2014 through January 2, 2015, it is anticipated that the Written Daily Submissions for the dates of December 23<sup>rd</sup>, 24<sup>th</sup>, 29<sup>th</sup>, 30<sup>th</sup>, 31<sup>st</sup> and January 2<sup>nd</sup> will be entered into the LANL electronic public reading room (EPRR) on January 5, 2015 when LANL reopens. The daily written submissions for December 23<sup>rd</sup> and 24<sup>th</sup> will enter the LANL hardcopy public reading room (HPRR) during the week of December 29, 2014 as the HPRR location in Pojoaque is not closed during this time.

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 the week of January 5, 2014.

#### As a reminder:

- Twice weekly technical summary conference calls will not occur on December, 23<sup>rd</sup>, 25<sup>th</sup>, 30<sup>th</sup> and January 1<sup>st</sup>, due to NMED availability and LANL winter closure. Calls will resume on January 6, 2015.
- Daily written submissions will be sent on the following days: December 29, 30, 31, and January 2, 2015 during the LANL winter closure.
- All daily inspections and measurements will continue through the winter closure and will be submitted according to the above schedule until January 5, 2015 at which time the normal schedule will resume.

**Next Call:** Tuesday, January 6, 2014

# **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 <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

	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 saltbearing 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 <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

	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 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 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

	Requested Information	Actionee	Status	Completion
				Date
43.	Schedule a fifth update on LANL efforts –	LANL/		Complete
	including teams.	NMED		November 20,
				2014
44.	Schedule a sixth update on LANL efforts –	LANL/		Complete
	including teams.	NMED		December 9, 2014
45.	NMED requested documentation regarding	LANL	In Progress	
	CIN01 drums.		Additions to original	
			questions added during	
			technical phone call	
			December 9, 2014.	
46.	NMED requested documentation regarding	LANL	In Progress	
	duplicate drum number.			
47.	NMED requested the ESS plan for	LANL	Document is currently	
	temperature control and sampling once		in Draft.	
	finalized.			

#### **Remediated Nitrate Salt Container Headspace Gas Analysis**

		686			SB50	0522		
Date	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm
12/30/14	124	364	9214	2514	1857	431	34530	798

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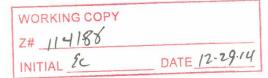
### **ATTACHMENT 2**

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

6.[6] Date: From 12-29-14 to 1-4-15

	Monday 6.[6]	Tuesday 6.[6]	Wednesday 6.[6]	Thursday 6.[6]	Friday 6.[6]	Saturday 6.[6]	Sunday 6.[6]
	Start Time: 0824	Start Time: 6806	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
TA-54-231							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Floto Model: 56/ 2012:29% Cal. Due Date: \$7.25.1 File Number 101974	Brand:	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])	19.8 °F	26.0 °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	20.1	27.2					
S802833	19.1	26.4					
S801676	18.8	26.3					
S816810	17.7	24.1					
70069	17.3	23.6					
S822844	17.9	23.9			1		
S825879	17.2	23.7					
S793724	17-8	24.1					
S813545	17.0	24.4					
S822713	19.3	26.1					
S802739	19.6	26.2					
69907	20-6	26.2					
S804995	19.5	26.4					
S816434	20.9	27.6					



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#### **ATTACHMENT 2**

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6.[6] Date: From 12-29-14 to 1-4-15

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Container ID #	Temp (°F) (6.[8]/6.[9])						
A-54-231 (continue	d)						
S805289	21.6	27.9					
S862888	19.6	27.0					
70072	19.5	26.2					
S823184	20.3	26.1					
S822599	19.0	25.9					
69904	18.7	Z5.1					
S805051	19.1	25.8					
S864213	17.9	24.3					
S8537I4	17.2	24.7					
S803078	17.6	25.2					
S825878	17.9	25.5					
S823124	19.2	26.5					
S804948	201	74.7					
S813385	21.8	26.5					
S842446	22.8	28.5					
mbient Temperature	21.5 °F	26.1 °F	°F	°F	°F	°F	°F
6.[12])							
nd Time (6.[13])	0830	0808					
6.[13]	Operator: EC	Operator: Jm	Operator:	Operator:	Operator:	Operator:	Operator:
	Operator:	Operator: 17	Operator:	Operator:	Operator:	Operator:	Operator:

UET

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5.[6] Date: From 12-2	9.14 to 1.4.15	-					
5.[2] Comments:							
	Ş nite						
							_
5.[17] Performed by:							
	18222	1/14/188/Ec 112:29.14		/	/	/	/
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
Operator (print) Pancho Mirva	Dims	1235765 / T7 /12-29-14		/	/	/	/
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
JARYD MARQUEZ	1 12 Mm	1286755 / JM / 12/30/14			/	/	/
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
Pancho Miera	1 Kens	1235765 1 77 112-30-14			/	/	/
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
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Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
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Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	2.17	minais	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 12-29-14 to 1-4-15

		Monday 6.[6]	Tuesday 6.[6]	Wednesday 6.[6]	Thursday 6.[6]	Friday 6.[6]	Saturday 6.[6]	Sunday 6.[6]
		Start Time: <u>575</u> 9	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
TA-54-375 Cell 1								
Calibrated Infrared	d	Brand: FLUKE	Brand: FLUKE	Brand:	Brand:	Brand:	Brand:	Brand:
Thermometer		Model: 521	Model: 541	Model:	Model:	Model:	Model:	Model:
(4.2.1[1][B])		Cal. Due Date: 6/12/15	Cal. Due Date: 4/12/15	Cal. Due Date:				
		File Number / 0/ 9/5	File Number / 01915	File Number				
Ambient Tempera (6.[7])	ture	38.5 °F	42.4 °F	°F	°F	oF	°F	°F
Container ID	) #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])				
68685		42.9	46.4					
	68540	42.4	46.0					
LA00000070503	68553	41.0	45.3					
69445		41.4	45.3	**				
69618		48.9	44.5					
69013	-	43.0	45.6					
LASB50522	2	44.0	46-3					
LASB5045	2	43.2	46.3					
LASB5043	1	44-1	47.2	-				
LASB50069	9	43.3	46.7					
LASB5007:	3	43.7	47.8	0.55				
69636		43.8	47.6					
69616		44-3	47.4					
69417		43.8	47.5					

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6.[6] Date: From /2-29-14 to 1-4-15

	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-54-375 Cell 1 (con	tinued)		-				
69620	44.2	47.2					
69520	43.6	47.2					
69641	45-1	48-3					
69298	44.7	44.1					
LASB02203	44-7	48-5					
Ambient Temperature (6.[12])	39.2 °F	42.8 °F	°F	°F	°F	°F	°F
End Time (6.[13])	0802	0846					
6.[13]	Operator:	Operator: Operator:	Operator:	Operator:	Operator:	Operator:	Operator:

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## **ATTACHMENT 3**

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6.[17] Performed by:	1 204			
JARYD MARRUEZ	1/2/20	12867	55/JM	1229 14
Operator (print)	Signature	Z#	Initials	Date
Pancho Miera	Ilams	12357	61 TO	112-29-14
Operator (print)	Signature	Z#	Initials	Date
JARYD MARQUET	1 KMD	1286	755/ Jm	1 12/30/14
Operator (print)	Signature	Z#	Initials	Date
Hancho Minra	11 Lean 5	12351	165, 77	112-30-14
Operator (print)	Signature	Z#	Initials	Date
	1	/	/	/
Operator (print)	Signature	Z#	Initials	Date
	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
8.1[2] Reviewed by:				
on[2] Ronowed by.	/	,	1	/
SOM or designee (print)	Signature	/ 	Initials	Date
bolli of designee (print)	Dibilitary	2_111	minimis	Dur

6.[6] Date: From 12-29-14 to 1-4-15

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

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#### **ATTACHMENT 4**

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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 12-29.14 to 1-4-15

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	6.[6]	6.[6] Start Time: 0%47	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]
	Start Time: 6804	Start Time: 08 9 1	Start Time:	Start Time:	Start Time:	Start Time:	_ Start Time:
TA-54-375 Cell 2							
Calibrated Infrared	Brand: FLUKE	Brand: FLUKE	Brand:	Brand:	Brand:	Brand:	Brand:
Thermometer	Model: 541	Model: 561	Model:	Model:	Model:	Model:	Model:
(4.2.1[1][B])	Cal. Due Date: 6/12/15	Cal. Due Date: 6(12) 15	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:		Cal. Due Date:
	File Number 101912	File Number 101912	File Number				
Ambient Temperature (6.[7])	42.0 °F	46.8°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	43.1	47.2					
68638	42-1	48.3					
69615	43.6	44.6					
69635	44-9	50.0					
69642	44.3	49.0					
69630	43.7	49.1					
69633	44.7	49.5					
68430	43.4	48.6					
68631	43.3	48.2					
69634	42.4	47.2					
68567	41-6	47.4					
94227	43.8	47-9					
LASB50442	44.2	49.0					
69644	44.4	49.6					
LASB50443	44.6	49.3					
69638	44.5	48.5					

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6.[6] Date: From 12-29-14 to 1-4-15

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Container ID #	Temp (°F) (6.[8]/6.[9])						
ΓA-54-375 Cell 2 (con	tinued)						
68624	45.4	49.6					
68507	45.4	49.4					
69568	45.3	48.8					
69553	43.5	46.9		31.00			
69598	43.1	46.9					
LASB50559	45.0	48.9					
69015	45.7	49.9					
69639	46.2	50.9					
69637	44.8	48.9					100
Ambient Temperature (6.[12])	42.9 oF	46.5 °F	°F	°F	°F	oF	°F
End Time (6.[13])	0808	0850					
6.[13]	Operator:	Operator: P	Operator:	Operator:	Operator:	Operator:	Operator:Operator:

6.[2] Comments:		 	

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6.[6] Date: From 12.29.11 to 1.4-15

5.[17] Performed by:	14M2	17.867	55/ JM	12/29/14
Operator (print)	Signature	Z#	Initials	Date
Pancho Miera	1 Jums	17.3571	5/77	112-29-14
Operator (print)	Signature	Z#	Initials	Date
JARYD MARQUEZ	1 XM22	12867	55/JM	12/30/14
Operator (print)	Signature	Z#	Initials	Date
Mancho Miera	14 ms	123576	5177	112-30-14
Operator (print)	Signature	Z#	Initials	Date
	/	/	/_	/
Operator (print)	Signature	Z#	Initials	Date
	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
	/	/	/	/
Operator (print)	Signature	Z#	Initials	Date
3.1[2] Reviewed by:				
	/	1	/	/

	/	/	//
Operator (print)	Signature	Z#	Initials Date
	/	/	/ /
Operator (print)	Signature	Z#	Initials Date
	/	 1	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

8.1[2] Reviewed by	8.1[2]	Reviewed	by:
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	/	/	/	/	
SOM or designee (print)	Signature	Z#	Initials	Date	

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#### **ATTACHMENT 5**

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

6.[6] Date: From 12-29-14 to 1-4-15

	Monday 6.[6]	Tuesday 6.[6]	Wednesday 6.[6]	Thursday 6.[6]	Friday 6.[6]	Saturday 6.[6]	Sunday 6.[6]
	Start Time: 0754	Start Time: 0438	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
TA-54-375 Cell 3							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: FLUKE Model: 561 Cal. Due Date: 61215 File Number 201916	Brand: FLUKE  Model: 541  Cal. Due Date: 41215  File Number (31914	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:
Ambient Temperature (6.[7])	43.7 °F	46.6 °F	°F	°F	oF	oF	oF
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	46.5	48.9					
69645	46.4	49.2					
94068	45.9	48.5					
93605	45.5	48.6					
69548	44.8	46.9					
69604	45.3	44.3					
LASB50529	46.4	44.6					
LASB50418	46.0	48.9					
69036	45.2	48.8					
LASB50451	45.1	48.4					
69559	44.5	47.6					
LASB50448	44.4	47.0					
Ambient Temperature (6.[12])	43.6 oF	<u>46.9</u> °F	oF	°F	°F	oF	°F
End Time (6.[13])	0757	0841		,			
6.[13]	Operator: J m	Operator: JM Operator: TD	Operator:	Operator:	Operator:	Operator:	Operator:

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INITIAL EC	DATE 12-29-14

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[2] Comments:									
.[17] Performed by:	1 1/0 4					1	1	,	,
JARYD MARQUET	2		55/JM	12/29/14	Operator (print)	Signature	/	Initials	/ Date
Operator (print)	Signature	Z#	Initials	Date	operator (print)	/	/	/	/
Pancho Miera	IMMS	123576	5/77	112-29-14	Operator (print)	Signature		Initials	Date
Operator (print)	Signature	Z#	Initials	Date	(1 )	/	/	/	/
ARYD MARQUEZ  Aperator (print)	Signature	Z#	5 / J⊶ Initials	/ 12 30 14 Date	Operator (print)	Signature	Z#	Initials	Date
Pancho Miera	b 100 S	tz3576		112-30-14		/	/	/	/
Operator (print)	Signature	7 <u>7</u> 3/6 Z#	Initials	Date	Operator (print)	Signature	Z#	Initials	Date
Operator (print)	/	1	/			/	/	/	/
Operator (print)	Signature	Z#	Initials	Date	Operator (print)	Signature	Z#	Initials	Date
operator (print)	/	/	/	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
1[2] Reviewed by:									
I[2] Reviewed by.	ř.	,	į.	,					

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

6.[6] Date: From 12.29.14 to 12.29.14 Location: Dane 375 cell 1

	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
	0631	0127	(5 827	0924	1028	1127	1222	1324	1423	1524	1623	1221	6.[6]	6.[6]
Calibrated	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand	Brand
Infrared Thermometer	Model A	Model:	Model:	Model: A	Model:	Model:	Model:	Model:	Model:	Model:	Model:	Model:	Model:	Model
(4.2.1[1][B])		Cal. Due Date:	Gal aDua Dale	Gul. Due Date:	Cal. Due Date:	Cal Due Date	CAU Due Date:	Cel. Due Date:	Cal Due Date	Cal. Due Date	Cal. Due Date:	Cal Due Date	Cal Due Date:	Cal Due Date
J	Call Due Date:	Market	Gal. Due Dale:	In /	N.	Cal. Due Date:	QuiDue Date:	V		N		N \		
	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	2000	2910	40.79	43. (°F	4100	U9/2	51,30	51.84	51,34	50,9°F	-1 los	50.34	\	205
Temperature (6.[7])	39.99	39.69	40.11	77.1	4672	11.6	0 47 1	STrong	21124	20, 6	5 LIVE	2017	———•F	°F
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 (°T)	Temp (°F)
(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])	(6.[8]/6.[9])
68685 Tl	4254	42.34	43.37	45.3	48.65	56.36	53,18	53,44		52.64	52.7	52.17	+	1
18182 IS		41.51	42.6	44.72	4802	50.62	52.22		51.9	51.71	51.76	51.2	17	1,
50522 TY		43.11	43.83	45.19	47.68	49.61	51,15	51.55		51.27	51.39		N	1
50532 75	42.92	42.68	43.26	44.76	42.27	49.35	50.72	51.2	50.94	50.28	50.92	50.54		-\-
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6.[6] Date: From 123519 to 12-29-14 Location: Dane 375 call 1

2012.2	-9.14												
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])
				N	)								
					0								
					4	1							R
												N	
													1
39.97	39.69	40.8	43~(°F	4672	49.72	51.3न	51.78	51,3H	50.9	51.09	50.34	°F	•F
0632	0728	0828		1029	1124			1424	1525	1629	1722		
Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:
Operator.	الثقائل	w	حتن	W	السات	Ti-	كتان	W	- W	الثقام	حيا		\
	Temp (°F) (6.[8]/6.[9])  39.97F  0632	39.97 39.67 Ob32 0128 Operator: Operator:	Temp (°F) (6.[8]/6.[9]) (6.[8]/6.[9]) (6.[8]/6.[9])  39.97F 39.167 40.8F  01.32 01.28 0828  Operator: Operator: Operator:	Temp (°F) (6.[8]/6.[9]) (6.[8]	Temp (°F) (6.[8]/6.[9]) (6.[8]	Temp (°F) (6.[8]/6.[9]) (6.[8]	Temp (°F) (6.[8]/6.[9]) (6.[8]	Temp (°F) (6.[8]/6.[9]) (6.[8]	Temp (°F) (6.[8]/6.[9]) (6.[8]	Temp (°F) (6.[8]/6.[9]) (6.[8]	Temp (°F) (6,[8]/6,[9]) (6,[8]	Temp (*F) (6.[8]/6.[9]) (6.[8]	Temp (°F) (6.18/6.19) (6.18/6.

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6.[6] Date: From /2-75	9.14 to 12-29-14	Location: Dome 375 CV	111			
6.[2] Comments: Did Dada Logge	not enter	Permacon dus	375 Stand	ing Order la	247 R. 2 all Temp	s taken
	74-74		N			
				A		
(112) P. C 11.			vi			
Operator (print)	Signature Signature	2# Initials Date  Z# Initials Date	Operator (print)  Operator (print)	Signature / Signature	Z# Initials Date  / / / Z# Initials Date	
Operator (print)  Operator (print)	Signature / Signature	Z# Initials Date  Z# Initials Date	Operator (print) Operator (print)	Signature Signature	Z# Initials Date / / / Z# Initials Date	
Operator (print)	Signature /	/ / / Z# Initials Date	Operator (print)	Signature / Signature	Z# Initials Date  / / / Z# Initials Date	
Operator (print)	Signature / Signature	Z# Initials Date  / / /  Z# Initials Date	Operator (print)	/ Signature	/ / / / Z# Initials Date	
8.1[2] Reviewed by:  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 (2-29-14 to 12-30-14 Location: 37.5

	Start Time: 6.[6]	Start Time: 6.[6] 1928	Start Time: 6.[6] 2028	Start Time: 6.[6] 2127	Start Time: 6.[6] 2229	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6] 7	Start Time: 6.[6] 0227	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6] 529	Start Time: 6.[6]	Start Time: 6.[6]
Calibrated Infrared Thermometer (4.2.1[1][B])	Model A	Brand: Model:	Brand: Model:	Brand: Model: A	Brand: Model: A	Brand: Model: A	Brand:	Brand: Movel: A	Rrand: Model: A	Brand: Molel:	Brand: Model:	Brand: Model:	Model:	Brand: Model:
	Cal. Due Date:	Cal. Due Qate:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal Due Date	Cal. Due Date:	Cal Due Date	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal Due Date	Cal Due Date:
Ambient Temperature (6.[7])	48,34	46.77	45.61 °F	4487	44.19F	43.57	4332	43.16°F	44.14°F	44.15°F	<u>4417</u> °F	18125014 195 °F 44.18	~F	-\-\-\cdots
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])
68685(TI	50.46	48.92	47.74	47.19	44.44	45.93	45.73	45.59	45.64	4553	46.47	46.54	AA	1/1
68685(12 50522(T4)	49.36	47.89	46.86	46.27	46.58	45,11	44.95	44.82	45.94	45.11	45.72	45.76	NA	/V /rt
50522(13)	1	48.22	47.26	46.76	46.21	45,70		45.38	4548	45.61	45.94	45.96		
						1	4							
						7								



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6.[6] Date: From 12-29-14 to 12-30-14 Location: Dome 375

ontainer ID # 6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])		p (°F) ]/6.[9])		mp (°F) 8]/6.[9]											
											,		1		+	
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							1						1		$\vdash$	
						NH								150		
													M	4	N	A
																-
																F
																1
ient perature	48.39°F	46.76	45.54F	44.87	4412F	43.57	43.32°F	43.16°F	44.14 °F	44.15 or	44.17 op	44.15 °F		oF.		0
2])	1829	1930	2029	2127	2230	2329	6030	0128	0227	0328	0428	0530				+
	Operator:	Operator COSC	Operator:			Operator:	Operato	or:	Operate	or:						
27	Operator:	Operato:	Operfue R	Operator:	Operator: Operator: ASC	Operator:	Operator:		Operator:	Operator:	Operator:	Operator:	Operato	or:	Operato	or:

Initials Date

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SOM or designee (print)

Signature

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			Page 3 of 3	11.0					
		Location: 375							
6.[2] Comments: Do	id not Ente	er permacon Sata logger in	per Stan	ding order	e 3	75	7 R2	All	temps
	7.								
6.[17] Performed by:		7# Initials Date	Operator (print)	/ Signature	/ Z#	/ ////////////////////////////////////	Date		
Operator (print) Operator (print)	Signature Signature	/	Operator (print)	/ Signature	/	/ / /	Date		
Operator (print)	Signature	234253/TR / 12-30-14 Z# Initials Date	Operator (print)	Signature	/ 	Initials	Date		
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature /	Z# /	Initials /			
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature /	1	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:									