From: Haagenstad, Mark P

**Sent:** Thursday, March 12, 2015 4:25 PM

**To:** Ryan.Flynn@state.nm.us; Jeff.Kendall@state.nm.us; John Kieling; steve.pullen@state.nm.us; 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; Vigil-Holterman, Luciana R; Alexander, Rick A; Baumer, Andy; Martinez, Saundra; Sauer, Selena Z; 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; Tymkowych, John M; Diaz, Tammy; Branch, Yvette S; Guffee, Debi; Haagenstad, Mark P

Subject: Daily Technical Submission - March 12, 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 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

#### March 12, 2015

#### **Participants:**

- New Mexico Environment Department: Tim Hall, Ricardo Maestas and Steve Holmes.
- LANL Los Alamos Field Office: Gene Turner and Dave Nickless.
- LANL Los Alamos National Security: Enrique Torres, Alison Dorries, 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.
- o Newly suspect nitrate salt-bearing waste containers.
  - Two containers are located in Dome 232 and two containers are located Dome 153.
    - All entry into the domes is currently restricted.
  - Planning is underway to move the containers into the 375 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.
    - March 12, 2015 HSG data attached.
      - o H<sub>2</sub>, CO, CO<sub>2</sub> and N<sub>2</sub>O
- o Other containers:
  - A minimum of once per month HSG sampling will be conducted.
    - To date in March, LANL has conducted HSG sampling on 47 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.
    - o March 12, 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 occurring.

#### Other:

As part of the continuing Extent of Conditions review, the Permittees have identified three additional suspect nitrate salt daughter containers. All three containers were shipped to WIPP. NWP/CCP has been notified and concurs with the conclusion to identify the containers as suspect nitrate salt-bearing waste containers. Details on the containers are described below:

- Parent container S825018 was generated in 1982. This container was processed at WCCRF in February 2011 and generated the following daughter container:
  - o Container 88327 shipped to WIPP as MHD-01 in May 2011. This container is located in Panel 5 at WIPP.
- Parent container S825019 was generated in 1982. This container was processed at WCCRF in June 2011 and generated the following two daughter containers:
  - Container 89308 shipped to WIPP as MHD-01 in December 2011 and is located in Panel 6 at WIPP.
  - o Container 89309 was shipped to WIPP as MHD-01 in January 2012 and is located in Panel 6 at WIPP.

Next Call: Tuesday, March 17, 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 <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 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)

13. Respond to NMED email request for information associated with the nitrate saltbearing parent and daughter waste containers.  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.  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.  August 7, 2014 (Items addressing items 2 - August 7, 2014)  (Items addressing items 2 - August 7, 2014)  (Items addressing items 3 - August 14, 2014)  (Items addressing items 5 - August 12, 2014)  (Items addressing items 5 - August 22, 2014)  (Items addressing items 5 - August 22, 2014)  (Items addressing items 5 - August 22, 2014)  (Items administral in response to item 5)  August 22, 2014  (Items administral in response to item 5)  September 4, 2014  (Seventl submittal in response to item 5)  September 2, 2014  (Visith submittal in response to item 5)  September 2, 2014  (Visith submittal in response to item 5)  September 2, 2014  (Visith submittal in response to item 5)  September 2, 2014  (Visith submittal in response to item 5)  Cechober 1, 2014  (Thirteenth submittal in response to item 5)  October 22, 2014  (Visith submittal in response to item 5)  October 27, 2014  (Thirteenth submittal in response to item 5)  October 27, 2014  (Thirteenth submittal in response to item 5)
(Fifteenth submittal in response to item 5) October 28, 2014 (Sixteenth submittal in

	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		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. Submitted RTR Videos 301-312 on January 15, 2015.
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 – 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		Complete Email- February 3, 2015 Letter- February 19, 2015
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		Complete January 29, 2015
49.	Fire suppression repair plan for Dome 231	LANL		This repair plan is no longer necessary because drum movement did not occur during the repair process. Repair is complete.
50.	NMED requested information regarding solution packages 36, 37, 57 and 78.	LANL	Email sent February 17, 2015. Letter to follow.	
51.	NMED requested copies of any procedures regarding cemetation in bags.	LANL	In progress	
52.	NMED requested information on the percentage of the 55 SWBs that, based on SWB HSG data, appear to have chemical reactions occurring within the waste.	LANL	In progress	

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

68685				69553				69615				
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	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm
03/12/15	143	356	8902	2283	189	492	12477	1658	111	306	6719	317

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

		69	616			SB50	0069			SB5	0452	
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	N₂O ppm	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm
03/12/15	343	711	16985	3320	541	896	19016	2443	700	723	13459	2454

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

		SB50522							
Date	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm					
03/12/15	2151	532	36573	1083					

Document No.: EWMO-AREAG-FO-

Revision:

5 Effective Date: 11/03/14

Page:

25 of 38

#### **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 3.9.15 to 3.15.15

	Monday 6.[6]	Tuesday 6.[6]	Wednesday 6.[6]	Thursday 6.[6]	Friday	Saturday	Sunday
	Start Time: 0825	Start Time: <u>0933</u>	Start Time: <u>0913</u>	Start Time:	6.[6] Start Time:	6.[6] Start Time:	6.[6] Start Time:
TA-54-231							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Fluke  Model: _56  Cal. Due Date: 7/29/15  File Number 101974	Brand: Fluid  Model: Stel  Cal. Due Date: 17/29/15  File Number / 5/1974	Brand: FWLL Model: 54 Cal. Due Date: 57/1915 File Number 10 774	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])	48.6 °F	555°F	56.D °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	50.9	52.4	73.6				
S802833	50.8	52.	53.3				
S801676	51.7	52.5	54.2				
S816810	56.3	58.6	59.3				
70069	56.6	51.9	59.7				
S822844	57.1	58.5	59.4				
S825879	56.6	58.4	59.3				
S793724	56.8	58.3	59.0				
S813545	56.0	54.4	57.4				
S822713	54.3	55.9	57.4				
S802739	53.1	54.8	55.2				
69907	52.2	53.7	54.5				
S804995	52.8	54.4	55.4				
S816434	53.1	54.1	54.9				

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Z# 114188 INITIAL &C

Document No.:

EWMO-AREAG-FO-

Revision:

Page:

5

Effective Date: 11/03/14 26 of 38

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# ATTACHMENT 2 Page 2 of 3

6.[6] Date: From <u>3-9-15</u> to <u>3-15-15</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-54-231 (continued	d)					(-[-][-]	(0.[0], 0.[0])
S805289	52.9	54.0	55.1				
S862888	53.6	54.1	55.5				
70072	52.9	54.1	11115 <del>53.0</del> 55.0				
S823184	54.0	55.5	56.5				
S822599	54.8	54.4	51.4				
69904	55.8	54.5	58.0				
S805051	56-2	Ste.le	58.3				
S864213	56.4	57.0	58.5				
S853714	56.7	57.5	58.9				
S803078	56.2	57.4	58.8				
S825878	56-1	57./	58.6				
S823124	55.5	54.7	58.1				
S804948 .	53.6	54.5	55.8				
S813385	53.4	53.4	55.3				
S842446	53.7	54.3	55.9				
Ambient Temperature 6.[12])	50.3 °F	55.0°F	56.0°F	°F	°F	°F	°F
Ind Time (6.[13])	0832	0940	0931				
6.[13]	Operator: TR Operator: EC	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator:	Operator:	Operator: Operator:

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Document No.: E

EWMO-AREAG-FO-

-1246

Revision: Effective Date:

Page:

11/0

11/03/14 27 of 38

# ATTACHMENT 2 Page 3 of 3

6.[6] Date: From 3.9.15 to 3.15.15 6.[2] Comments: 6.[17] Performed by: Tackie Romero 1187066 IJR 13-9-15 Operator (print) Signature Z# Initials Operator (print) Initials 1114188186 13.9.15 EloyD. GIGOVA Operator (print) Signature Z# Initials Operator (print) Signature Z# Initials Date 10 saphrae Operator (print) Operator (print) Signature Signature Z# Initials Date 1753821 \$1 3 10 15 Operator (print) Signature Z# Initials Operator (print) Signature Z# Initials Date 115797/ Operator (print) Operator (print) Signature Signature Z# Initials Date Initials Date 12363821 + 13/11/15 THOMS Operator (print) Signature Z# Operator (print) Signature Initials Date Operator (print) Signature Z# Operator (print) Initials Date Signature Z# Initials Date 8.1[2] Reviewed by: SOM or designee (print) Signature Initials Date

Document No.: EWMO-AREAG-FO-

Revision:

Effective Date: 11/03/14 Page:

28 of 38

## **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 3.9.15 to 3.15.15

		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]
		Start Time: 1557	Start Time: 1320	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
TA-54-375 Cell 1								
Calibrated Infrared Thermometer (4.2.1[1][B])	1	Brand: Fluke Model: 56, Cal. Due Date: 61215	Brand: Fluke Model: 56/ Cal. Due Date: 6/12/15		Brand: Model: Cal. Due Date:	Brand: Model: Cal. Due Date:	Brand: Model: Cal. Due Date:	Brand:
		File Number 101915	File Number	File Number	File Number	File Number	File Number	File Number
Ambient Temperat	ture	55.7 °F	58.9 °F	CZ 8 °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		56.6	59.5	624				( ( ) ( )
1 400000070502	68540	36.6	59.0	624				
LA00000070503	68553	56.8	59.2	67.3				
69445		57.1	59.2	62.2				
69618		56.5	57.1	<u>C1-8</u>				
69013		56.9	59.1	62.4				
LASB50522		S7.0	59.0	67.3				
LASB50452		57.0	58.9	65.3				
LASB50431		57.1	58.9	62.7				
LASB50069		56.6	58.2	67.0				
LASB50073	3	56.6	58.8	61.3				
69636		57.2	58.9	61.9				
69616		57.2	59.4	67.3				
69417		57.7	59.2	62-3				

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Z# 114188

INITIAL &C DATE 3-9-15

Document No.:

EWMO-AREAG-FO-

P-1246

Revision:

5 11/03/14

Effective Date: Page:

29 of 38

#### **ATTACHMENT 3**

Page 2 of 3

6.[6] Date: From 3.9.15 to 3.15.15

	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])				
TA-54-375 Cell 1 (con	tinued)				(([-], ([-])	(6.[6],6.[9])	(0.[0],0.[7])
69620	\$1.0	59.0	01.9				
69520	57.5	59.1	GZ-6				
69641	57.5	58.9	GZ.7				
69298	57.8	58.1	67.5				
LASB02203	57.1	58-8	62.0				
Ambient Temperature (6.[12])	<u>56.3</u> °F	58-8 °F	624°F	°F	oF	°F	°F
End Time (6.[13])	1601	1323	1410				
6.[13]	Operator:	Operator: 75	Operator:	Operator: Operator:	Operator:Operator:	Operator:Operator:	Operator:

	·		<u> </u>
6.[2] Comments:			

Document No.: EWMO-AREAG-FO-

Revision:

5

11/03/14 30 of 38

Effective Date: Page:

# ATTACHMENT 3 Page 3 of 3

6.[6] Date: From 3.9.15 to 3.15.15

Operator (print)  Operator (print)	1 \ \   -	/ 1337 / 4/ / 39 15  Z# Initials Date  /// 278 / 4/ / 0309 ( )  Z# Initials Date
Norman Sanc Operator (print)	Signature / MS	Z# Initials Date  Z# Initials Date  //35/65 / T) / 3-10-15
Operator (print)  Operator (print)	Signature Signature	Z# Initials Date  /23C382 /
Operator (print) Operator (print)	Signature / Signature	Z# Initials Date  / / / 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

Document No.: EWMO-AREAG-FO-

Revision:

Effective Date: 11/03/14 31 of 38

Page:

#### **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 3.9.15 to 3.15.15

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]
	Start Time: 1602	Start Time: <u>1324</u>	Start Time: (91)	Start Time:	Start Time:	Start Time:	Start Time:
TA-54-375 Cell 2							
Calibrated Infrared	Brand Fluke	Brand: FILKE	Brand: 174e	Brand:	Brand:	Brand:	Brand:
Thermometer	Model: S6)	Model: 56	Model: 561	Model:	Model:	Model:	Model:
(4.2.1[1][B])	Cal Due Date: C1715 File Number 10912	Cal. Due Date: 6/12/15 File Number 10/9/2	Cal. Due Date: Grand Strile Number Williams	Cal. Due Date:	Cal. Due Date:		Cal. Due Date:
Ambient Temperature		The Number 101 11 2		File Number	File Number	File Number	_ File Number
(6.[7])	_\$€.2°F	59.6 °F	GZ10 °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	57.0	58.4	60.9			([-][-])	(5.[0], 5.[2])
68638	57.8	59.2	62.0				
69615	58,0	60.0	(2.0				
69635	58.7	60.7	63.0				
69642	58.0	60-3	62.8				
69630	58.0	60.5	63.0				
69633	59.9	60.4	62.8				
68430	59.0	60.0	67.8				
68631	57.9	59.8	6216				
69634	58.0	58.6	619				
68567	57.3	57.6	60.9				
94227	<b>37.8</b>	59.8	61.9				
LASB50442	58.7	59.9	62.5				
69644	58.5	60.0	62.9				
LASB50443	57.9	59-3	621				
69638	7.87	61.7	623				

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Z# 114188

INITIAL EC DATE 3-9-15

Document No.: EWMO-AREAG-FO-.

Revision:

Page:

5

Effective Date:

11/03/14 32 of 38

UET

# ATTACHMENT 4 Page 2 of 3

6.[6] Date: From 3.9.15 to 3.15.15

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Container ID #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])					
A-54-375 Cell 2 (con	tinued)					[ (-(-),(-))	(0.[0],0.[7])
68624	58.5	59.9	63.1				•
68507	58.6	60.7					
69568	58.0	60.4	62.7				
69553	57.3	57.4	60.8				
69598	57.3	58.6	58.6				
LASB50559	57.9	60.0	63.4				
69015	58.7	60.5	67.5				
69639	39.)	60.7	67.C				
69637	58.7	61.4	629				
mbient Temperature .[12])	<u>57.8</u> °F	59.6 °F	67.7°F	°F	°F	°F	°F
nd Time (6.[13])	1607	137-7	1417				
6.[13]	Operator:	Operator: 17	Operator: Operator:	Operator:	Operator:Operator:	Operator:	Operator:

6.[2] Comments:		
	, · ·	
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Page:

Document No.: EWMO-AREAG-FO-,

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Revision:

5

Effective Date:

11/03/14 33 of 38

# ATTACHMENT 4 Page 3 of 3

6.[6] Date: From 3	· 9.15 to 3.15.15				
6.[17] Performed by:	1	22/202 1 2 2 2 2		,	,
Operator (print)	Signature	/ 13/382 / 4~ / 3 9 15  Z# Initials Date	Operator (print)	Signature	/ 
	Cignature of	B.	operator (print)	/	<i>L</i> t
Operator (print)	Signature	/1(c578 / fer / 6309 (5)	Operator (print)	/ Signature	/ /
Norman Sanch		187818/ HS / 3/10/15	x	/	/
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	
Kancha Miera	114 MS	1235765/ TH 13-10-15		/	/
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#
THOMAS VIGI	1/ t-1/	123382 / 40 / 3 11/15		/	/
Operator (print)	Signature	Z# Ipitials Date	Operator (print)	Signature	Z#
Votualoper	1 delice to	1165781 XC 108116			/
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#
	/ \ \	//		/	/_
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#
8.1[2] Reviewed by:					
	/	/ / /			
SOM or designee (print)	Signature	Z# Initials Date			

Document No.:

EWMO-AREAG-FO

Revision:

Effective Date: 11/03/14 Page:

34 of 38

#### **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 3.9.15 to 3.15.15

	Monday	Tuesday	Wednesday	Thursday	Patdon	0.4.1	
	6.[6]	6.[6]	6.[6]	6.[6]	Friday 6.[6]	Saturday	Sunday
	Start Time: 155	Start Time: /3/6	Start Time: 140)	Start Time:	Start Time:	6.[6] Start Time:	6.[6] Start Time:
TA-54-375 Cell 3				Start Time.	Start Time.	Start Time.	_   Start Time:
Calibrated Infrared	Brand: FIJKE	Brand: Fluke	Brand: Duce	Brand:	Brand:	Brand:	Brand:
Thermometer	Model: 56	Model: 561	Model: Sol, I	Model:	Model:	Model:	Brand:
(4.2.1[1][B])	Cal. Due Date: GILIS	Cal. Due Date: (6/12/15	Cal. Due Date: Call US	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:
	File Number 101916	File Number 101916	File Number 104710	File Number	File Number	File Number	File Number
Ambient Temperature (6.[7])	51.7 °F	58.8 °F	67.5°F	°F	°F	°F	
Container ID #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])					
69519	4.86	Ge1.1	62.5				(-(-)-(-)
69645	58.6	59.9	67.7				
94068	58.3	60.0	62.7				
93605	58.)	58-4	67.7				
69548	58.0	59.9	4.53				
69604	58.3	59.2	453				
LASB50529	38.7	59.5	628				
LASB50418	58.0	60.1	67.5				
69036	57.9	60.3	62.9				
LASB50451	57.9	59.7	67.4				
69559	57.9	59.5	63.2				· ·
LASB50448	57.	59-6	61.9				
ambient Temperature 5.[12])	\$7.3 °F	59.7°F	62 D °F	°F	°F	°F	°F
nd Time (6.[13])	1556	1318	1465				
6.[13]	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:
	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:

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DATE 3.9.15

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Document No.: EWMO-AREAG-FO-Revision: 5

Effective Date: Page:

11/03/14 35 of 38

# ATTACHMENT 5 Page 2 of 2

6.[6] Date: From 3.9	15 to 3-15-15							
6.[2] Comments:								
	1							
6.[17] Performed by:			( )					
THOMAS FOR	11 th	1236362/ +	- 1 3 9 15		/	/	/	/
Operator (print)	Signature	Z# Initial	s Date	Operator (print)	Signature	Z#	Initials	Date
( osterboer	/ he he seems	116518120	-1020915		/	/	/	/
Operator (print)	Signature	Z# Indial	s Date	Operator (print)	Signature	Z#	Initials	Date
Norman Sanchez	Soforman Jane	187818 / NS	13/10/15		/		/	/
Operator (print)	Signature	Z# Initial		Operator (print)	Signature	Z#	Initials	Date
Yancho Miera	114-11/5	12357651 17	13-10-15		/	/	/	/
Operator (print)	Signature	Z# Initial:	s Date	Operator (print)	Signature	Z#	Initials	Date
THOMS JER	4+16	136382 1 4	1311/2		/	/	/	/
Operator (print)	Signature	Z# Initials		Operator (print)	Signature	Z#	Initials	Date
Joshera Loper	Alle Wall	116598/ 81			/	/	_/	/
Operator (print)	Signature	Z# Initials	s Date	Operator (print)	Signature	Z#	Initials	Date
		_/		0		/	/	/
Operator (print)	Signature	Z# Initials	s Date	Operator (print)	Signature	Z#	Initials	Date
8.1[2] Reviewed by:								
-	/	/ /	/					
SOM or designee (print)	Signature	Z# Initials	Date					

Document No.: EWMO-AREAG-FO-DOP-1246

Revision:

Effective Date: 11/03/14

Page:

36 of 38

## ATTACHMENT 6 Page 1 of 3

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

6.[6] Date: From 3-11-15 to 3-11-15 Location: 375

UET

	Start Time: 6.[6]	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]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6,[6]	Start Time: 6.[6]
	7629	0128	0825	0924	1028	1126	1226	1327	1427	1527	1952	1724	1	
-Calibrated Infrared	Brand:	Brand:												
Thermometer	Model:	Model:	Model	Model	Modal:	Model:	Mode	Model:	Model:	Model:	Model:	Model:	Model:	Model:
(4.2.1[1][B])	Cal. Du. Dae:	Cal. Dut Date:	Cal. Due Dark	Cal. Due Date:	Cal. Due Date	Cal. Due Dan:	Cal. Due Date	Cal. Dua Data:	Cal. Due Date:	Cal. Due Date	Cal. Due Data	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:
	File Number	File Number												
Ambient Temperature (6.[7])	58.46°F	51.04°F	5148 of	51.94°F	53.50	54,95°F	57.39°F	59.44°F	61.96°F	63.38°F	63.5 F	62.62E	٥F	°F
(6.[7]) [3						9 1 3	01221		01.10	0500	0310 1	ع د مان	————————————————————————————————————	T
Container ID # (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°I) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])											
68685 +1	5227	52.47	52.96	53.13	54.70	55.13	5734	59.70	61.58	62.99	63.25	62.38	(3,0,0,0,7)	(J.[O]/J.[J])
68685 TZ	6 . 53	51.86	52.38	52,62	53.52	54.48	56.50	58.73	60.43	61-81	62.58	61,30	1)/	
50522 74	5239	52.44	52.75	52.93	53.93	54.57	56.16	57.98	59.46	60,61	61.01	60,55	0	
50522 75		32.25	52.53	54.73	53,79		56.25	58.09	5959	60.71	61.03	60.45		
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Document No.: EWMO-AREAG-FO-DOP-1246

Revision:

Effective Date: 11/03/14

Page:

37 of 38

ATTACHMENT 6
Page 2 of 3

6.[6] Date: From 3-11-15 to 3-11-15 Location: 375

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])							
													<del>                                     </del>	
							in	1						
														A
														9
A 11														
Ambient Temperature (6.[12]) 73	50.96 °F	51.07°F	51.52 F	52.03°F	<b>53,50</b> ∘₅	54.98F	57.44°F	59.96°F	61.96F	83.39F	63.50F	62.67	°F	°F
End Time (6.[13])	0629	0129	0826	0925	1098	1127	1227	1328	1427	1527	1626	1724		
6.[13]	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator	Operator	Operator:	Operator	Operator:	Operator	Operator:	Operator:
	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:							

Document No.: EWMO-AREAG-FO-DOP-1246

Revision:

Effective Date: 11/03/14

Page:

38 of 38

ATTACHMENT 6 Page 3 of 3
6.[6] Date: From 3-11-15 to 3-11-15 Location: 375
6.[2] Comments: del vot enter permeron due la area G standing order 1246 RZ all temps were takin from deta logger computer in 375 No Foother entrys
in 375 no Foother entrys
6.[17] Performed by: (1)

.[17] Performed by:	010			
William Jarez	- mell	- 2014	8	73-11-15
Operator (print)	Signature	Z#	Initial	
Jesse Churc	2/1/1	2149	813C	13-11-15
Operator (print)	Gignature	Z#	Initial	s Date
	/	/	/	/
Operator (print)	Signature	Z#	Initial	s Date
	1		_/_	/
Operator (print)	Signature	Z#	Initial	s Date
	1		_/	/
Operator (print)	Signatur	Z#	Initial	s Date
	1 10	/	_/	/
Operator (print)	Signature	Z#	Initial	s Date
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Operator (print)	Signature	ZN	Initial:	s Date

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

Document No.: EWMO-AREAG-FO-DOP-1246

Revision:

Effective Date: 11/03/14 Page:

36 of 38

## ATTACHMENT 6 Page 1 of 3

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

6.[6] Date: From 3-11-15 to 3-12-15 Location: 375

Start Time   G   G   G   G   G   G   G   G   G															
Calibrated Infrared Thermometer (4.2.1[1][B])		6.[6]	1975	6.[6] 2024	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	1.7	
Temperature (6.[7])  Container ID # Temp (°F) (6.[8]/6.[9]	Infrared Thermometer	Model: Cal. Dhe Date:	Model na- Cal. Due Date:	Model: nut Cal. Due Date:	Model NVI Cal. Due Bate:	Model: nA Cal. Due Date:	Model: Cal. Dua Date:	Model: Cal. Dua Date:	Model Cal Due Date	Model NIA  Cal. Due Bate:	Model: Cal. Due Date:	Brand: Model: Cal. Due Pate:	Brand: Model: A Cal. Due Pate:	Model:  Cal. Due Date:	Model:  Cal. Due Date:
Container ID # Temp (°F) (6.[8]/6.[9]) (6.[8	Temperature (6.[7])	60.50°F	58.23 °F	83.90 °F	54.0 °F	52.79°F	52.22°F	53.70°F	52.03°F	5263°F	57.14 °F	53.06°F	51.45°F	°FA	A °F
\$\frac{\frac														Temp (°F)	Temp (°F)
\$052274 59.46 57.78 55.92 54.40 53.46 52.93 54.05 53.06 53.24 53.23 53.63 52.73 \$052275 59.18 57.42 55.58 54.12 53.20 52.70 54.02 52.82 53.12 53.03 53.34 52.46				55.87		5286	52.31		52.47	53.17	52.80	53.72		\	
50512T\$ 59.18 57.42 55.58 54.12 53.20 52.70 54.02 52.82 53.12 53.03 53.34 52.46										52.78		53.34	51.56		\
										53.24					$\perp$
	3037312	57.18	3 7.90	22.28	54.12	53.20	52.70	54.02	52.82	53.12	53.03	53.34	52.46		$\perp$
															$\rightarrow$
	-					NA									
															$\rightarrow$
															$\longrightarrow$

Working Copy Int. WGC 2#112907 3-11-15

Document No.: EWMO-AREAG-FO-DOP-1246

Revision:

5 Effective Date: 11/03/14

Page:

37 of 38

# ATTACHMENT 6 Page 2 of 3

6.[6] Date: From 3-11-15 to 3-12-15 Location: 375

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])
						1								
					NA							-	\n//	9
													\	
Ambient Temperature (6.[12])	60.50F	58.23°F	55.90°F	<i>54.0</i> °F	52.79 °F	52.22 °F	53.70F	5203F	57.63°F	5214°F	53.06°F	57.45°F	°F	°F
End Time (6.[13])	1826	1925	702.4	2130	2231	233/	0031	5/27	0229	0330	0428	0528		
6.[13]	Operator: Operator:	Operator:	Operator: Operator: Operator:	Operator: Operator	Operator: Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator	Operator: Operatory	Operator: Operator:	Operator:	Operator:

Document No.: EWMO-AREAG-FO-DOP-1246

Revision:

5 Effective Date: 11/03/14

Page:

38 of 38

#### **ATTACHMENT 6**

Page 3 of 3

6.[6] Date: From 3-11-15 to 3-12-15 Location: 375	
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6.[2] Comments: Drd not enter denne 375 fermeen for standing order 1747-Rev Z. Tempratures	taken from
Dome 375 Gratio ( pour asing data logger.	
no facther entres @ 3-12-15 and Cola C#112507	
The entire a	
5.12.15 2.50	
Elst 2#1/2907	

6.[17] Performed by:		7					
William. and	m 12057/00	L 1/129	17 LAJC13-11-15			/	_//
Operator (print)	Signature	Z#	Initials Date	Operator (print)	Signature	Z#	Initials Dat
Timmy Kome	50 /1- Km	1254	25-TR 1 3-12-15			/	//
Operator (print)	Signature	Z#	Initials Date	Operator (print)	Signature	Z#	Initials Dat
	/	/	/ /			/	/ /
Operator (print)	Signature	Z#	Initials Date	Operator (print)	Signature	Z#	Initials Dat
	100	. /	/ /		/ NIA	/	/ /
Operator (print)	Signature	Z#	Initials Date	Operator (print)	Signature	Z#	Initials Dat
			/ /				_//
Operator (print)	Signature	2#	Initials Date	Operator (print)	Signature	7.11	Initials Dat
	/	/	1		1		1
Operator (print)	Signature	Z#	Initials Date	Operator (print)	Signature	Z#	Initials Dat
	/	/			/	/	
Operator (print)	Signature	Z#	Initials Date	Operator (print)	Signature	Z#	Initials Date

8.1[2] Reviewed by:

SOM or designee (print)