46

ENTERED

Los Alamos NATIONAL LABORATORY

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

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

Date: OCT 2 2 2013
Symbol: ENV-DO-13-0227
LAUR: 13-27655

Mr. Jerry Schoeppner, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2250
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

RECEIVED
OCT 2 5 2013
NMED
Hazardous Waste Bureau

Dear Mr. Schoeppner:

SUBJECT: DISCHARGE PERMIT DP-857 QUARTERLY REPORT, THIRD QUARTER 2013, TA-46 SANITARY WASTEWATER SYSTEMS PLANT

This letter and enclosures from the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are the third quarter 2013 Discharge Permit DP-857 report for the Technical Area (TA)-46 Sanitary Wastewater Systems (SWWS) Plant. Quarterly reports are submitted to the New Mexico Environment Department (NMED), Ground Water Quality Bureau, in accordance with the reporting requirements of the January 7, 1998, renewal letter for Discharge Permit DP-857.

Table 1.0 provides water quality data from sampling conducted at the TA-46 SWWS Plant's reuse wet well and National Pollutant Discharge Elimination System (NPDES) Outfalls 001 and 03A027. No sample was collected from Cañada del Buey Observation Well (CDBO)-6 during the third quarter of 2013 because there was insufficient water in the well. The water level at CDBO-6 is measured each quarter and a sample is collected whenever sufficient water is present. All sample results presented in Table 1.0 are less than the New Mexico Water Quality Control Commission Regulation 3103 standards for groundwater. Chloride results from May 2013 that were not included in the second quarter 2013 report are enclosed in Table 1.0. Enclosure 1 presents copies of the analytical reports submitted to DOE/LANS by GEL Laboratories LLC.

Table 2.0 reports that the water level in CDBO-6 for the third quarter of 2013 was below the top of the pump.

36047

Table 3.0 reports discharge volumes from the SWWS Plant's force main to TA-3, the Power Plant's NPDES Outfall 001, and the Super Computing Complex (SCC) NPDES Outfall 03A027. In addition, Table 3.0 reports the volume of SWWS Plant reuse water used by the SCC cooling towers during the third quarter of 2013.

Table 4.0 and Enclosure 2 present the results from monthly inspections of the leak collection ports at the SERF evaporation basins located on Sigma Mesa for the third quarter of 2013. All leak collection ports were dry except for the northeast SERF evaporation basin. A leak in the primary liner is not indicative of a leak to the environment; all SERF evaporation basins were constructed with primary and secondary liners. The presence of water in northeast SERF evaporation basin's leak collection ports demonstrates that the secondary liner is functioning as intended.

Repairs to the northeast SERF evaporation basin were initiated in late-September 2013. First, the northeast SERF evaporation basin was emptied and the liner cleaned. Next, on October 3-4, 2013, the subcontractor responsible for the original installation located and repaired the leaks. After repairs were completed the northeast SERF basin was returned to service. Enclosure 3 contains photographs of the repair work.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding this quarterly report.

Sincerely,

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

Sincerely,

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

AMD:GET:RSB/lm

Enclosures:

1. GEL Laboratories LLC Certificate of Analysis Reports
2. Monthly inspection photographs of the SERF evaporation basins
3. Photographs of the repairs made to the Northeast SERF Evaporation Basin

Cy: James Hogan, NMED/SWQB, Santa Fe, NM
John E. Kieling, NMED/HWB, Santa Fe, NM
Steven M. Yanicak, NMED/DOE/OB, (E-File)
Hai Shen, NA-OO-LA, (E-File)
Gene E. Turner, NA-OO-LA, (E-File)
Eric L. Trujillo, NA-OO-LA, (E-File)
Carl A. Beard, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
Alison M. Dorries, ENV-DO, (E-File)

Cy (continued):
Andrew W. Erickson, UI-DO, (E-File)
Lawrence V. Chavez, UI-OPS, (E-File)
Pablo F. C De Vaca, UI-OPS, (E-File)
Mell A. Smithour, ES-UI, (E-File)
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LASOmailbox@nnsa.doe.gov, (E-File)
locatesteam@lanl.gov, (E-File)
ENV-CP Correspondence File, K490

Table 1.0 Water Quality Data: SWWS Plant Reuse Water, NPDES Outfalls 001 and 03A027, and CDBO-6. 3rd Quarter, 2013.

Sampling Location	Field Prep	Sample Date	Sample ID No.	TDS (mg/L)	Chloride (mg/L)	NO3+NO2-N (mg/L)	TKN (mg/L)	NH3-N (mg/L)
SWWS Plant								
SWWS Plant Reuse Wet Well[1]	UF[2]	5/23/2013	SWWS46-13-33505		59.6			
SWWS Plant Reuse Wet Well	UF	8/20/2013	SWWS46-13-41045	363	70.4	0.40	1.09	0.17
Sandia Canyon								
NPDES Outfall 001	UF	5/23/2013	SWWS46-13-33503		30.9			
NPDES Outfall 001	UF	8/20/2013	SWWS46-13-41043	139	16.8	0.30	0.13	0.07
NPDES Outfall 03A027	UF	5/23/2013	SWWS46-13-33504		103			
NPDES Outfall 03A027	UF	8/20/2013	SWWS46-13-41044	551	146	1.5	2.4	0.66
Canada del Buey								
CDBO-6		Dry[5]	Dry[5]	Dry[5]	Dry[5]	Dry[5]	Dry[5]	Dry[5]
NM WQCC Regulation 3103 Groundwater Standards (mg/L)				*1000*	*250*	*10*[3]	*NA*	*NA*

Notes:

[1]Water in the reuse wet well is representative of water in the reuse pond.

[2]UF means a non-filtered sample, F means a filtered sample.

[3]The NM WQCC Regulation 3103 Groundwater Standard is for NO_3-N.

[4]No Sample means that no sample was collected during the quarter.

[5]Dry means that there was insufficient water in the well for sampling.

[6]Pending means that no results were available for this analyte at the time the report was prepared.

NA means that there is no NM WQCC Regulation 3103 groundwater standard for this analyte.

Table 2.0. Water Level in Cañada del Buey Observation Well (CDBO)-6, 3rd Quarter 2013

Location	Date	Water Level† (ft)
CDBO-6	7/18/2013	Below top of pump

Notes:
† Measured in feet from the top of the well casing to the surface of the water.

Table 3.0. Discharge Volumes from the TA-46 SWWS Plant, NPDES Outfalls 001 and 03A027, and Reuse Water to the SCC Cooling Towers (in millions of gallons).

Month	SWWS Plant Effluent to TA-3[1]	Discharges to NPDES Outfall 001[2]	Reuse Water to SCC Cooling Towers	Discharges to NPDES Outfall 03A027[4]
July	7.430	5.700	2.573	0.830
Aug	7.076	4.930	2.568[3]	0.971
Sept	8.942	7.107	0.461[3]	0.585

Notes:
[1]In the 3rd quarter of 2013, all SWWS Plant effluent was pumped via a force main to TA-3 for reuse or discharge.
[2]Power plant wastewater and all SWWS Plant reuse water not used by the SCC Cooling Towers are discharged at NPDES Outfall 001.
[3] The volume of reuse water used by the SCC cooling towers was estimated during the period 8/23/13 – 9/24/13 because the totalizing meter was out of service.
[4]The SCC cooling towers discharge to NPDES Outfall 03A027 at Sandia Canyon.

Table 4.0. Inspection Results, SERF Evaporation Basins, Leak Collection Ports.

SERF Basin	Inspection Date	West Port (#1)	East Port (#2)
Northwest	7/13/2013	dry	dry
Northeast	7/13/2013	96"	93"
Southwest	7/13/2013	dry	dry
Southeast	7/13/2013	dry	dry
Northwest	8/15/2013	dry	dry
Northeast	8/15/2013	100"	99.5"
Southwest	8/15/2013	dry	dry
Southeast	8/15/2013	dry	dry
Northwest	9/5/2013	dry	dry
Northeast	9/5/2013	120"	118"
Southwest	9/5/2013	dry	dry
Southeast	9/5/2013	dry	dry

ENCLOSURE 1

GEL Laboratories LLC
Certificate of Analysis Reports

ENV-DO-13-0227

LAUR-13-27655

Date: OCT 2 2 2013

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 27, 2013

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL WQH WQCC Regs

Client SDG: 2013-1700

Client Sample ID: SWWS46-13-41043
Sample ID: 331871001
Matrix: Waste Water
Collect Date: 20-AUG-13 11:58
Receive Date: 21-AUG-13
Collector: Client

Project: ESHL00110
Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride		16.8	0.335	1.00	mg/L	5	MAR1	08/27/13	0817	1324293	1
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		0.301	0.017	0.050	mg/L	1	KLP1	08/26/13	1325	1322846	2
Nitrogen as Ammonia "As Received"											
Nitrogen, Ammonia		0.0691	0.017	0.050	mg/L	1	KLP1	08/27/13	1053	1324191	3
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		0.129	0.033	0.100	mg/L	1	KLP1	08/27/13	0937	1324184	4
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		139	3.40	14.3	mg/L		LYG1	08/23/13	1111	1325378	5

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	KLP1	08/26/13	1720	1324190
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	KLP1	08/26/13	1800	1324183

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 353.2	
3	EPA 350.1	
4	EPA 351.2	
5	EPA 160.1	

Notes:

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Report Date: August 27, 2013

Company :	Los Alamos National Laboratory
Address :	TA-03, SM271, Drop Pt. 02U, Rm111
	Los Alamos, New Mexico 87545
Contact:	Mr. Keith Greene
Project:	LANL WQH WQCC Regs

Client SDG: 2013-1700

Client Sample ID:	SWWS46-13-41044	Project:	ESHL00110
Sample ID:	331871002	Client ID:	ARSL001
Matrix:	Waste Water		
Collect Date:	20-AUG-13 11:50		
Receive Date:	21-AUG-13		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride		146	3.35	10.0	mg/L	50	MAR1	08/27/13	0947	1324293	1
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		1.50	0.017	0.050	mg/L	1	KLP1	08/26/13	1329	1322846	2
Nitrogen as Ammonia "As Received"											
Nitrogen, Ammonia		0.663	0.017	0.050	mg/L	1	KLP1	08/27/13	1100	1324191	3
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		2.35	0.033	0.100	mg/L	1	KLP1	08/27/13	0939	1324184	4
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		551	3.40	14.3	mg/L		LYG1	08/23/13	1111	1325378	5

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	KLP1	08/26/13	1720	1324190
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	KLP1	08/26/13	1800	1324183

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 353.2	
3	EPA 350.1	
4	EPA 351.2	
5	EPA 160.1	

Notes:

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Certificate of Analysis

Report Date: August 27, 2013

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL WQH WQCC Regs
Client SDG: 2013-1700

Client Sample ID: SWWS46-13-41045
Sample ID: 331871003
Matrix: Waste Water
Collect Date: 20-AUG-13 11:09
Receive Date: 21-AUG-13
Collector: Client
Project: ESHL00110
Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride		70.4	0.670	2.00	mg/L	10	MAR1	08/27/13	1017	1324293	1
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		0.403	0.017	0.050	mg/L	1	KLP1	08/26/13	1331	1322846	2
Nitrogen as Ammonia "As Received"											
Nitrogen, Ammonia		0.174	0.017	0.050	mg/L	1	KLP1	08/27/13	1101	1324191	3
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		1.09	0.033	0.100	mg/L	1	KLP1	08/27/13	0940	1324184	4
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		363	3.40	14.3	mg/L		LYG1	08/23/13	1111	1325378	5

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	KLP1	08/26/13	1720	1324190
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	KLP1	08/26/13	1800	1324183

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 353.2	
3	EPA 350.1	
4	EPA 351.2	
5	EPA 160.1	

Notes:

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: July 18, 2013

Company :	Los Alamos National Laboratory
Address :	PO Box 1663 TA-03, SM271, Drop Pt. 02U, Rm111 Los Alamos, New Mexico 87545
Contact:	Mr. Keith Greene
Project:	LANL WQH WQCC Regs

Client SDG: 2013-887-1

Client Sample ID:	SWWS46-13-33503	Project:	ESHL00110
Sample ID:	329548001	Client ID:	ARSL001
Matrix:	Waste Water		
Collect Date:	23-MAY-13 10:47		
Receive Date:	24-MAY-13		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride	H	30.9	0.670	2.00	mg/L	10	MAR1	07/17/13	1344	1315191	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	

Notes:

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Certificate of Analysis

Report Date: July 18, 2013

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL WQH WQCC Regs

Client SDG: 2013-887-1

Client Sample ID: SWWS46-13-33504
Sample ID: 329548002
Matrix: Waste Water
Collect Date: 23-MAY-13 11:18
Receive Date: 24-MAY-13
Collector: Client

Project: ESHL00110
Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride	H	103	1.34	4.00	mg/L	20	MAR1	07/17/13	1513	1315191	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	

Notes:

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Certificate of Analysis

Report Date: July 18, 2013

Company :	Los Alamos National Laboratory
Address :	PO Box 1663 TA-03, SM271, Drop Pt. 02U, Rm111 Los Alamos, New Mexico 87545
Contact:	Mr. Keith Greene
Project:	LANL WQH WQCC Regs

Client SDG: 2013-887-1

Client Sample ID:	SWWS46-13-33505	Project:	ESHL00110
Sample ID:	329548003	Client ID:	ARSL001
Matrix:	Waste Water		
Collect Date:	23-MAY-13 10:07		
Receive Date:	24-MAY-13		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Chloride in Liquid "As Received"											
Chloride	H	59.6	0.670	2.00	mg/L	10	MAR1	07/17/13	1543	1315191	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	

Notes:

ENCLOSURE 2

Monthly inspection photographs of the
SERF evaporation basins

ENV-DO-13-0227

LAUR-13-27655

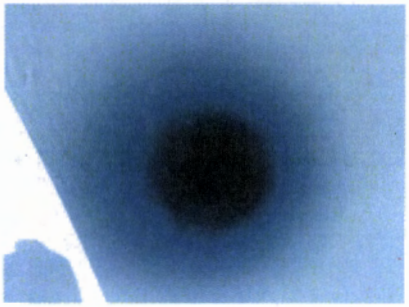
Date: OCT 2 2 2013

SERF Evaporation Basins

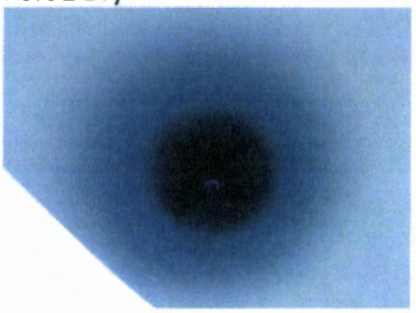
Monthly Inspection Record: July 13, 2013

Northwest Basin and Ports

Port 1 Dry

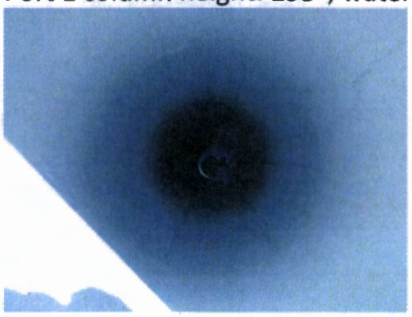


Port 2 Dry

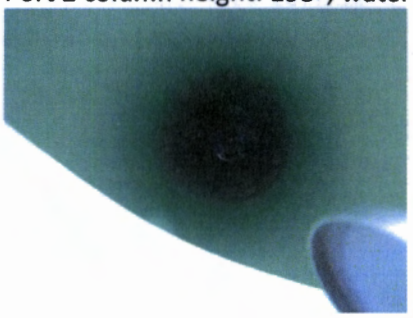


Northeast Basin and Ports

Port 1 column height: 195", water column 96"



Port 2 column height: 198", water column 93"

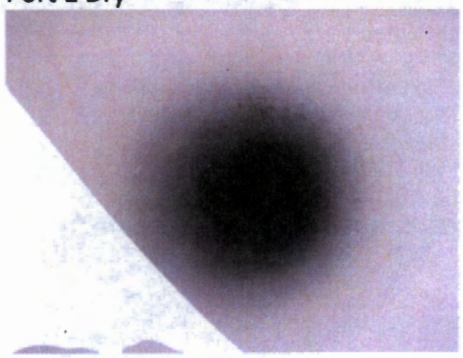


SERF Evaporation Basins

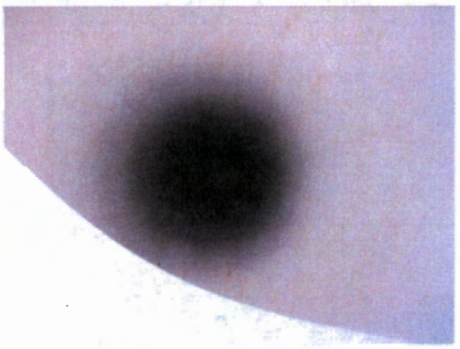
Monthly Inspection Record: July 13, 2013

Southwest Basin and Ports

Port 1 Dry

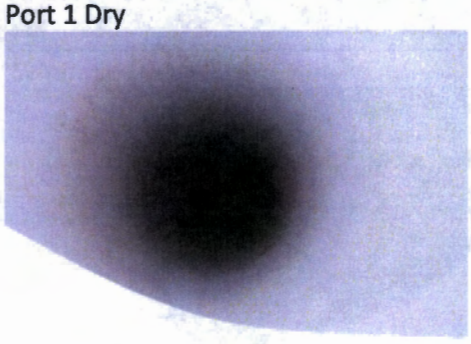


Port 2 Dry

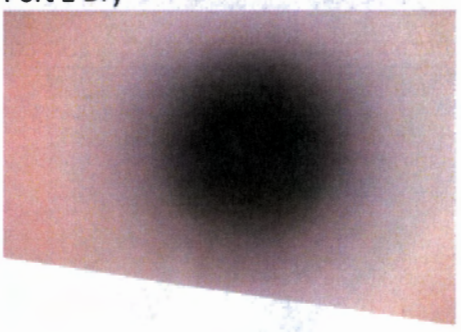


Southeast Basin and Ports

Port 1 Dry



Port 2 Dry

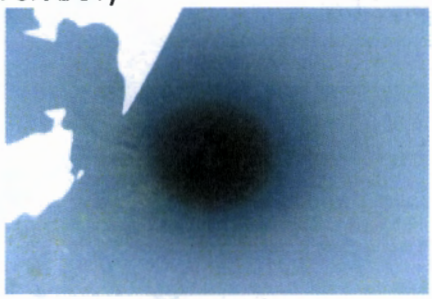


SERF Evaporation Basins

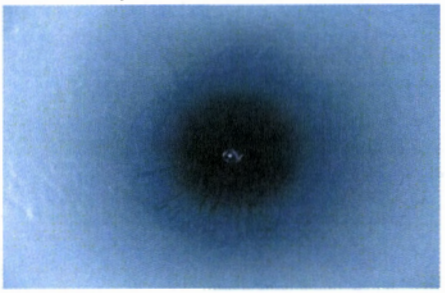
Monthly Inspection Record: August 15, 2013

Northwest Basin and Ports

Port 1 Dry

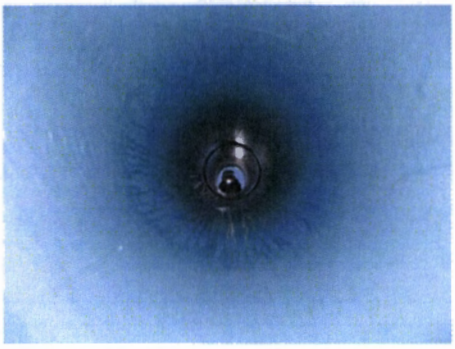


Port 2 Dry

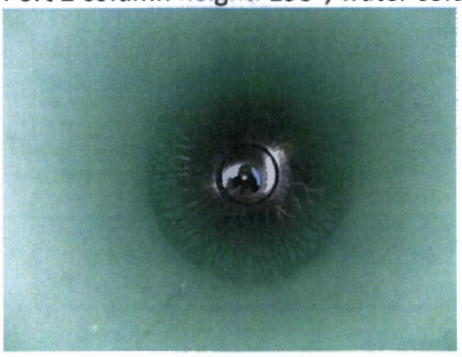


Northeast Basin and Ports

Port 1 column height: 195", water column 100"

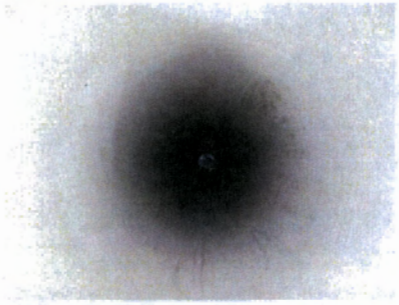


Port 2 column height: 198", water column 99.5"

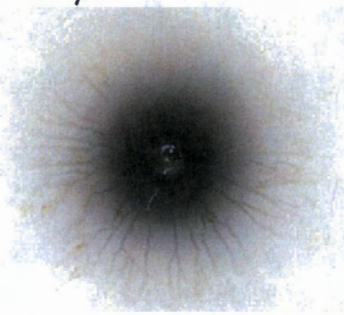


Southwest Basin and Ports

Port 1 Dry

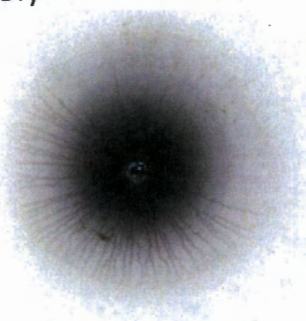


Port 2 Dry

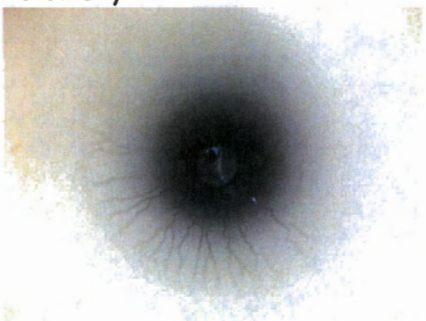


Southeast Basin and Ports

Port 1 Dry



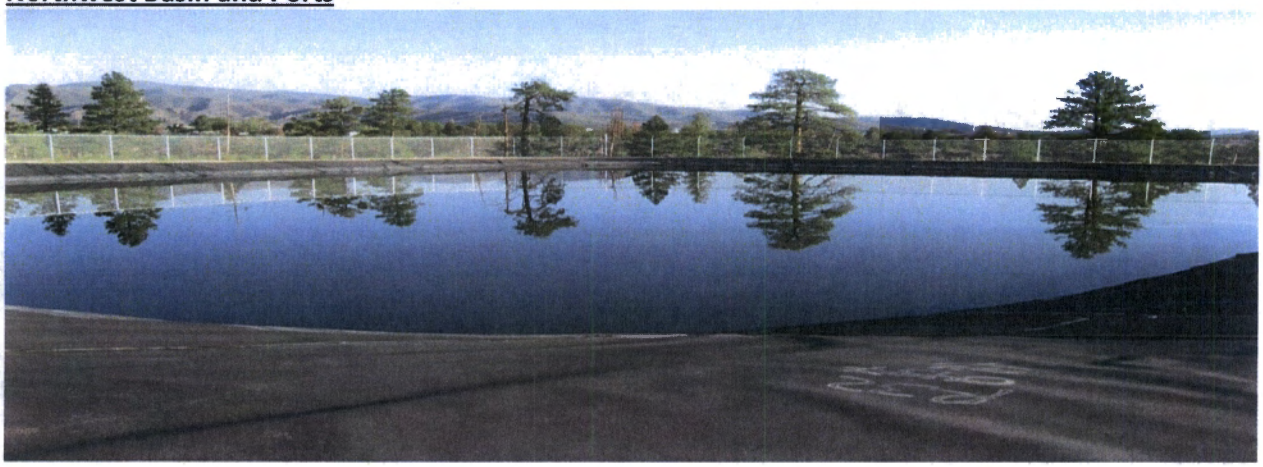
Port 2 Dry



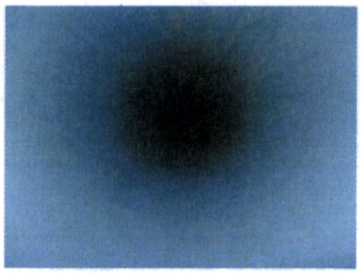
SERF Evaporation Basins

Monthly Inspection Record: September 5, 2013

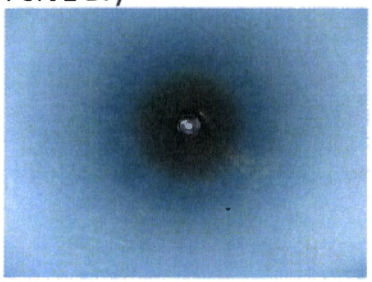
Northwest Basin and Ports



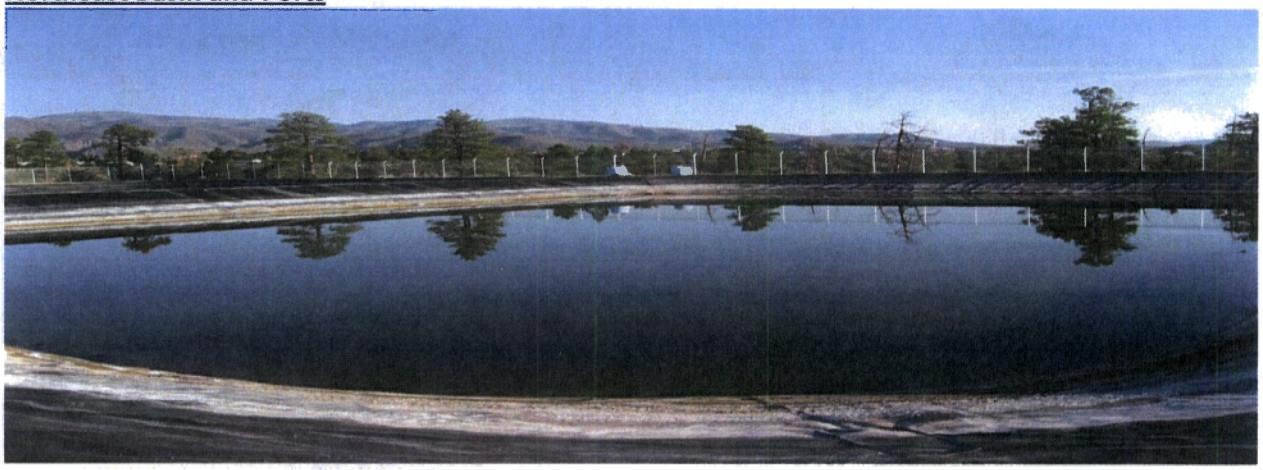
Port 1 Dry



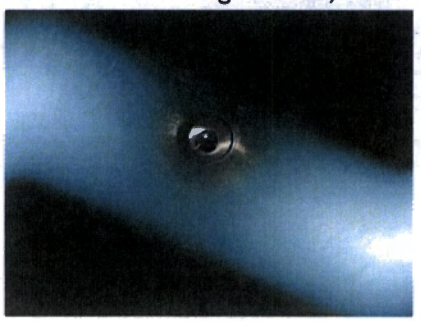
Port 2 Dry



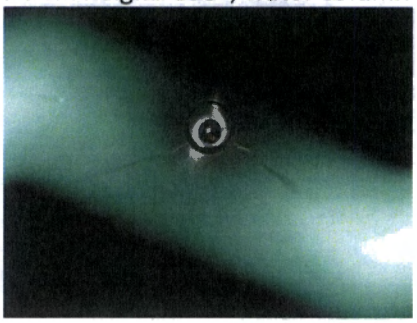
Northeast Basin and Ports



Port 1 column height: 195", water column 120"



Port 2 column height: 198", water column 118"



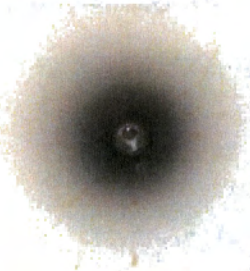
SERF Evaporation Basins

Monthly Inspection Record: September 5, 2013

Southwest Basin and Ports

Port 1 Dry

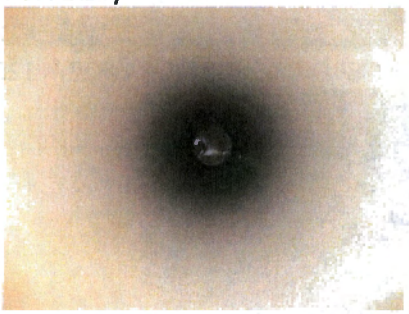
Port 2 Dry



Southeast Basin and Ports

Port 1 Dry

Port 2 Dry



ENCLOSURE 3

Photographs of the repairs made to the
Northeast SERF Evaporation Basin

ENV-DO-13-0227

LAUR-13-27655

Date: OCT 2 2 2013

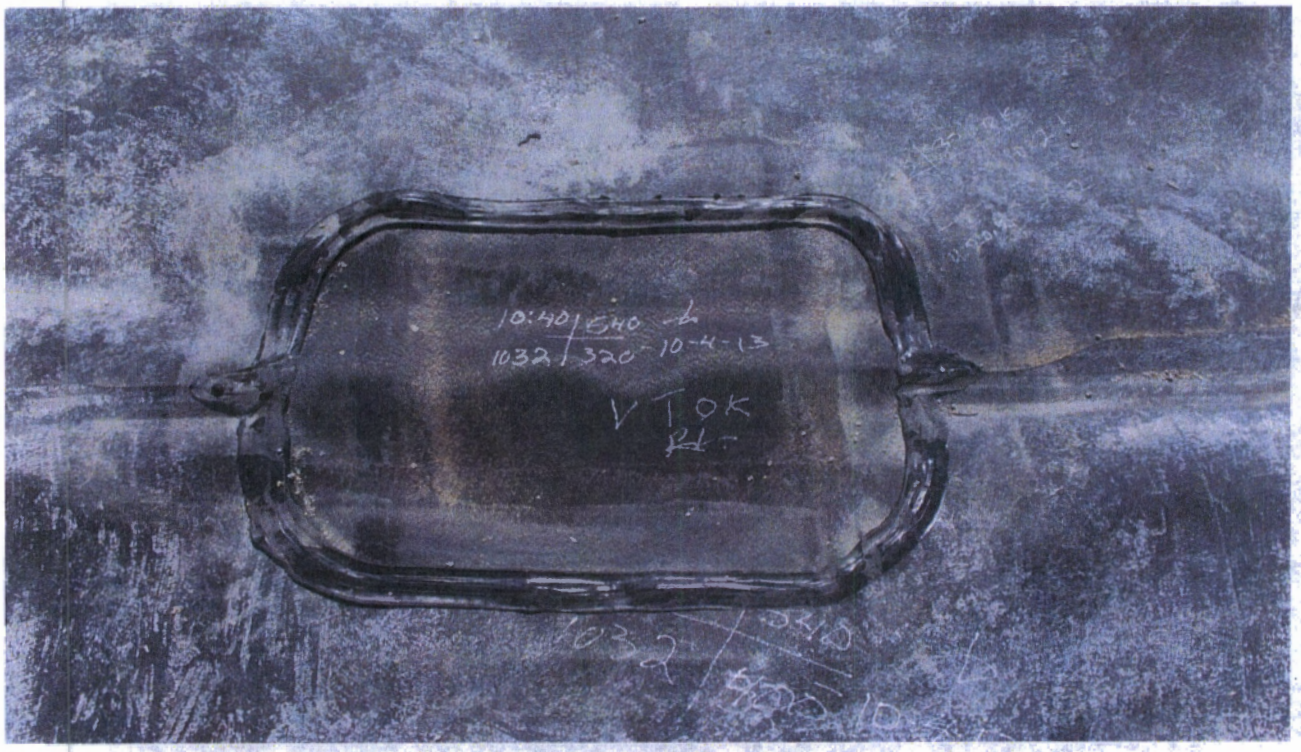


Figure 1. Photograph of a repair patch to the Northeast SERF Evaporation Basin's primary liner.

Figure 2. Photograph of repair work to the Northeast SERF Evaporation Basin's fill pipe.

Figure 3. Photograph of repair work to the Northeast SERF Evaporation Basin's overflow pipe.

Figure 4. Photograph of the Northeast SERF Evaporation Basin following cleaning and repair.