

TA46



ENTERCC



Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)
P.O. Box 1663, Mail Stop K490
Los Alamos, New Mexico 87545
(505) 667-7969/FAX: (505) 665-9344

Date: July 30, 2009
Refer To: ENV-RCRA-09-136
LA-UR: 09-04400

Mr. William C. Olson, Bureau Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Mr. Olson:

SUBJECT: GROUNDWATER DISCHARGE PLAN QUARTERLY REPORT, SECOND QUARTER 2009, SANITARY WASTEWATER SYSTEMS PLANT (DP-857)

This letter and attachments are Los Alamos National Laboratory's quarterly report for the TA-46 Sanitary Wastewater Systems (SWWS) Plant Groundwater Discharge Plan (DP-857) for the second quarter (April, May, and June) of 2009.

Table 1.0 presents water quality data from sampling at the TA-46 SWWS Plant reuse wet well, Cañada del Buey Observation Well (CDBO)-6, and NPDES Outfalls 001 and 03A027 for the second quarter of 2009. All sample results in Table 1.0 are less than the NM WQCC Regulation 3103 standards for groundwater. Attachment 1.0 presents copies of the analytical reports prepared by General Engineering Laboratories, Inc. for the second quarter of 2009.

Table 2.0 presents the water level in CDBO-6 for the second quarter of 2009.

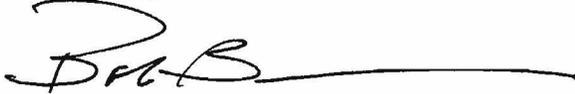
Table 3.0 presents discharge volumes from the SWWS Plant's force main to TA-3, the Power Plant's NPDES Outfall 001, and the Strategic Computing Complex's (SCC) NPDES Outfall 03A027. In addition, Table 3.0 includes the volume of reuse water used by the SCC cooling towers; during the second quarter of 2009, the SCC cooling towers did not use any SWWS Plant reuse water or treated water from the Sanitary Effluent Reclamation Facility (SERF).

Table 4.0 and Attachment 2.0 present the results from monthly inspections of the four leak collection standpipes at the SERF evaporation basins located on Sigma Mesa. The leak collection standpipes were dry or contained de minimis amounts of water during April, May, and June 2009.



Please call me at (505) 667-7969 if you have questions regarding this report.

Sincerely,



Bob Beers
Water Quality & RCRA Group

BB/lm

Attachments: a/s

Cy: Glenn Saums, NMED/SWQB, Santa Fe, NM, w/att.
James Bearzi, NMED HWB, Santa Fe, NM, w/att.
Steve Yanicak, LASO-GOV, w/att., J993
Hai Shen, LASO-EO, w/att., A316
Gene Turner, LASO-EO, w/att., A316
Michael B. Mallory, PADOPS, w/o att., A102
Chris Cantwell, ADESHQ, w/o att., K491
Mike Saladen, ENV-RCRA, w/o att., K490
Walter E. Atencio, ADESHQ, w/att., K760
Mell Smithour, ES-SE, w/att., K718
Charles Barnett, UI-DO, w/att., J972
ENV-DO, w/o att., J978
ENV-RCRA File, w/att., K490
IRM-RMMSO, w/att., A150

*SWWS Plant Ground Water Discharge Plan (DP-857)
2nd Quarter, 2009*

Table 1.0 Water Quality Data: SWWS Plant Reuse Water, NPDES Outfalls 001 and 03A027, and CDBO-6. 2nd Quarter, 2009.

Sampling Location	Field Prep ²	Sample Date	Sample ID No.	TDS (mg/L)	Chloride (mg/L)	NO3+NO2-N (mg/L)	TKN (mg/L)	NH3-N (mg/L)
<u>SWWS Plant</u>								
SWWS Plant Reuse Wet Well ¹	UF	6/2/2009	SWWS46-09-9858	532	158	0.18	0.43	0.02J
<u>Sandia Canyon</u>								
NPDES Outfall 001	UF	6/2/2009	SWWS46-09-9851	448	115	0.45	0.51	0.06
NPDES Outfall 03A027	UF	6/2/2009	SWWS46-09-9852	455	8.95	0.72	0.85	0.02J
<u>Canada del Buey</u>								
CDBO-6	F	5/6/2009	CAMO-09-8141	181	22.6	<0.05		<0.07
CDBO-6	UF	5/6/2009	CAMO-09-8140				<0.1	
<i>NM WQCC Regulation 3103 Ground Water Standards (mg/L)</i>				<i>1000</i>	<i>250</i>	<i>10³</i>	<i>NA</i>	<i>NA</i>

Notes:

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

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

³The NMWQCC Regulation 3103 Ground Water Standard is for NO₃-N.

J means the reported result was greater than the Method Detection Limit but less than the Reporting Limit.

All analytical results by General Engineering Laboratories, Inc., Charleston, SC.

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

**SWWS Plant Ground Water Discharge Plan (DP-857)
2nd Quarter, 2009**

Table 2.0. Water Level in Cañada del Buey Observation Well (CDBO)-6, 2nd Quarter 2009

Location	Date	Water Level† (ft)
CDBO-6	5/6/09	36.52

Notes:

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

NA means that no water level measurement was available.

Table 3.0. Discharge Volumes from the SWWS Plant and NPDES Outfall 001, and SWWS Plant Reuse Water to SCC Cooling Towers, 2nd Quarter 2009 (in millions of gallons).

Month	SWWS Plant Effluent to TA-3 ¹	Discharges to NPDES Outfall 001 ²	Reuse Water to SCC Cooling Towers ³ (estimated)	Discharges to NPDES Outfall 03A027 ⁴
Apr-2009	7.334	8.148	0	0.906
May-2009	6.852	7.158	0	1.111
Jun-2009	6.669	6.946	0	1.740

Notes:

¹In the 2nd quarter of 2009, all SWWS Plant effluent was pumped via a force main to TA-3 for reuse or discharge.

²Power plant wastewater and all SWWS Plant reuse water not used by the SCC Cooling Towers are discharged at NPDES Outfall 001.

³The SCC cooling towers can use potable or SWWS Plant reuse water. Table 3.0 contains the estimated volume of SWWS Plant reuse water that the SCC cooling towers used during the 2nd quarter of 2009.

⁴The SCC cooling towers discharge to NPDES Outfall 03A027 at Sandia Canyon.

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

Inspection Date	Inspection Results
4/16/2009	All standpipes are dry or contain minimal amounts of water
5/20/2009	All standpipes are dry or contain minimal amounts of water
6/17/2009	All standpipes are dry or contain minimal amounts of water

Analytical Reports

by

General Engineering Laboratories, Inc

Sample Dates:

6/2/2009

5/6/2009

Locations:

SWWS Plant Reuse Wet Well

NPDES Outfall 001

NPDES Outfall 03A027

CDBO-6

Analytes

Cl, NO₃+NO₂, TDS, TKN, NH₃

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Los Alamos National Laboratory
 Address : PO Box 1663
 TA-03, SM271, Drop Pt. 02U, Rm
 Los Alamos, New Mexico 87545
 Contact: Ms. Joylene Valdez
 Project: LANL-WQH WQCC Regs

Report Date: June 11, 2009

Page 1 of 2

Client Sample ID: SWWS46-09-9858 Project: ESHL01003
 Sample ID: 231000003 Client ID: LANL010
 Matrix: Waste Water
 Collect Date: 02-JUN-09
 Receive Date: 04-JUN-09
 Collector: Client

Parameter	Qualifier	Result	Permit Limit	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography Federal												
<i>EPA 300.0 Chloride in Liquid "As Received"</i>												
Chloride		158		1.32	4.00	mg/L	20	VXP1	06/09/09	2146	873854	2
Nutrient Analysis												
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>												
Nitrogen, Nitrate/Nitrite		0.184		0.010	0.050	mg/L	1	AXH3	06/09/09	1202	873649	3
Nutrient Analysis Federal												
<i>Nitrogen as Ammonia "As Received"</i>												
Nitrogen, Ammonia	J	0.024		0.016	0.050	mg/L	1	AXH3	06/09/09	1503	873644	4
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>												
Nitrogen, Total Kjeldahl		0.430		0.033	0.100	mg/L	1	AXH3	06/10/09	0955	873642	5
Solids Analysis Federal												
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>												
Total Dissolved Solids		532		2.38	10.0	mg/L		NXM	06/08/09	1526	874238	6

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.1	EPA 350.1 Ammonia Nitrogen Liquid Federa	AXH3	06/09/09	1503	873644
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	AXS5	06/09/09	0853	873643
EPA 351.2	EPA 351.2 Total Kjeldahl Nitrogen Federa	AXH3	06/10/09	0955	873642
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	AXH3	06/08/09	1209	873641

The following Analytical Methods were performed

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

Notes:

The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Los Alamos National Laboratory
 Address : PO Box 1663
 TA-03, SM271, Drop Pt. 02U, Rm
 Los Alamos, New Mexico 87545
 Contact: Ms. Joylene Valdez
 Project: LANL-WQH WQCC Regs

Report Date: June 11, 2009

Page 1 of 2

Client Sample ID: SWWS46-09-9851 Project: ESHL01003
 Sample ID: 231000001 Client ID: LANL010
 Matrix: Waste Water
 Collect Date: 02-JUN-09
 Receive Date: 04-JUN-09
 Collector: Client

Parameter	Qualifier	Result	Permit Limit	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography Federal												
<i>EPA 300.0 Chloride in Liquid "As Received"</i>												
Chloride		115		1.32	4.00	mg/L	20	VXP1	06/09/09	2015	873854	2
Nutrient Analysis												
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>												
Nitrogen, Nitrate/Nitrite		0.446		0.050	0.250	mg/L	5	AXH3	06/09/09	1157	873649	3
Nutrient Analysis Federal												
<i>Nitrogen as Ammonia "As Received"</i>												
Nitrogen, Ammonia		0.061		0.016	0.050	mg/L	1	AXH3	06/09/09	1455	873644	4
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>												
Nitrogen, Total Kjeldahl		0.506		0.033	0.100	mg/L	1	AXH3	06/10/09	1100	873642	5
Solids Analysis Federal												
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>												
Total Dissolved Solids		448		2.38	10.0	mg/L		NXM	06/08/09	1526	874238	6

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.1	EPA 350.1 Ammonia Nitrogen Liquid Federa	AXH3	06/09/09	1455	873644
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	AXS5	06/09/09	0853	873643
EPA 351.2	EPA 351.2 Total Kjeldahl Nitrogen Federa	AXH3	06/10/09	1100	873642
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	AXH3	06/08/09	1209	873641

The following Analytical Methods were performed

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

Notes:

The Qualifiers in this report are defined as follows :

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Los Alamos National Laboratory
 Address : PO Box 1663
 TA-03, SM271, Drop Pt. 02U, Rm
 Los Alamos, New Mexico 87545
 Contact: Ms. Joylene Valdez
 Project: LANL-WQH WQCC Regs

Report Date: June 11, 2009

Page 1 of 2

Client Sample ID: SWWS46-09-9852 Project: ESHL01003
 Sample ID: 231000002 Client ID: LANL010
 Matrix: Waste Water
 Collect Date: 02-JUN-09
 Receive Date: 04-JUN-09
 Collector: Client

Parameter	Qualifier	Result	Permit Limit	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography Federal												
<i>EPA 300.0 Chloride in Liquid "As Received"</i>												
Chloride		8.95		0.066	0.200	mg/L	1	VXP1	06/08/09	1712	873854	1
Nutrient Analysis												
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>												
Nitrogen, Nitrate/Nitrite		0.720		0.050	0.250	mg/L	5	AXH3	06/09/09	1201	873649	3
Nutrient Analysis Federal												
<i>Nitrogen as Ammonia "As Received"</i>												
Nitrogen, Ammonia	J	0.016		0.016	0.050	mg/L	1	AXH3	06/09/09	1502	873644	4
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>												
Nitrogen, Total Kjeldahl		0.847		0.033	0.100	mg/L	1	AXH3	06/10/09	0954	873642	5
Solids Analysis Federal												
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>												
Total Dissolved Solids		455		2.38	10.0	mg/L		NXM	06/08/09	1526	874238	6

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.1	EPA 350.1 Ammonia Nitrogen Liquid Federa	AXH3	06/09/09	1502	873644
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	AXS5	06/09/09	0853	873643
EPA 351.2	EPA 351.2 Total Kjeldahl Nitrogen Federa	AXH3	06/10/09	0954	873642
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	AXH3	06/08/09	1209	873641

The following Analytical Methods were performed

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

Notes:

The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound

CDBO-6

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Los Alamos National Laboratory
 Address : PO Box 1663
 TA-03, SM271, Drop Pt. 02U, Rm111
 Los Alamos, New Mexico 87545
 Contact: Ms. Joylene Valdez
 Project: LANL-WQH Water Samples

Report Date: June 5, 2009

Client SDG: 09-1768

Client Sample ID: CAMO-09-8141 Project: ESHL01000
 Sample ID: 229397004 Client ID: LANL010
 Matrix: Ground Water
 Collect Date: 06-MAY-09 12:00
 Receive Date: 08-MAY-09
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Conductivity Analysis Federal										
<i>EPA 120.1 Specific Conductivity "As Received"</i>										
Conductivity		208	1.00	1.00	umhos/cm	1	RXG2 05/29/09	1331	871154	1
Electrode Analysis Federal										
<i>EPA 150.1 pH Federal "As Received"</i>										
pH at Temp 15.7C	H	6.85	0.010	0.100	SU	1	RXG2 05/11/09	1208	865856	2
Flow Injection Analysis Federal										
<i>EPA 335.3 Cyanide, Total "As Received"</i>										
Cyanide, Total	U	ND	1.66	5.00	ug/L	1	AXC2 05/15/09	1145	866889	3
Ion Chromatography Federal										
<i>EPA 300.0 Anions Liquid 28 day "As Received"</i>										
Fluoride		0.209	0.033	0.100	mg/L	1	VXP1 05/30/09	2120	865989	4
Sulfate		10.7	0.100	0.400	mg/L	1				
Bromide	U	ND	0.066	0.200	mg/L	1	VXP1 06/01/09	2257	865989	5
Chloride		22.6	0.132	0.400	mg/L	2	VXP1 06/02/09	0245	865989	6
Nutrient Analysis										
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>										
Nitrogen, Nitrate/Nitrite	U	ND	0.010	0.050	mg/L	1	AXH3 05/11/09	1720	865635	7
Nutrient Analysis Federal										
<i>EPA 350.1 Nitrogen, Ammonia L "As Received"</i>										
Nitrogen, Ammonia		0.066	0.016	0.050	mg/L	1	AXH3 05/12/09	1604	865642	8
<i>EPA 365.4 Phosphorus, Total in "As Received"</i>										
Phosphorus, Total as P		0.173	0.015	0.050	mg/L	1	AXH3 05/14/09	1417	865648	9
Solids Analysis Federal										
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>										
Total Dissolved Solids		181	2.38	10.0	mg/L		NXM 05/12/09	1043	866131	10
Titration Analysis Federal										
<i>EPA 310.1 Total Alkalinity Federal "As Received"</i>										
Alkalinity, Total as CaCO3		55.2	0.725	1.00	mg/L		TXT1 05/13/09	1316	866573	11
Carbonate alkalinity (CaCO3)	U	ND	0.725	1.00	mg/L					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 335.3	EPA 335.3 Total Cyanide	AXS5	05/14/09	1439	866888
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXX1	05/11/09	1529	865639

Photographs

SERF Evaporation Basins and Leak Inspection Pipes

Inspection Dates:

4/16/2009

5/20/2009

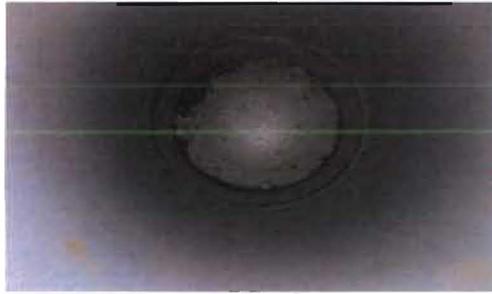
6/17/2009



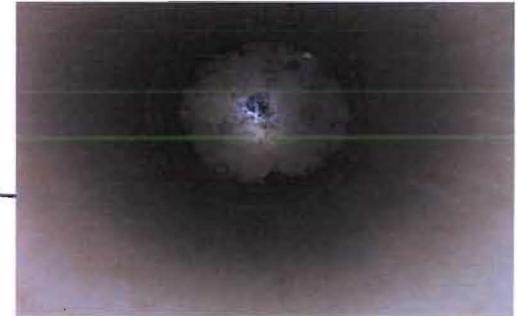
East basin



East basin east inspection pipe



West Basin east inspection pipe



East basin west inspection pipe



West Basin west inspection pipe



West Basin

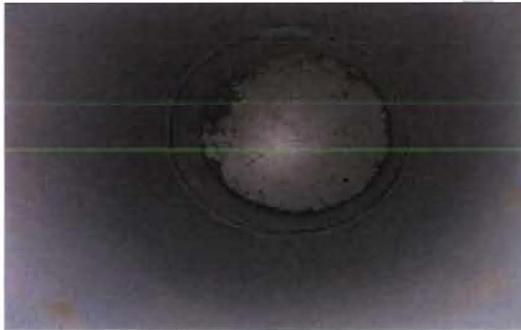
April 16, 2009 Evap Basin Inspection Record



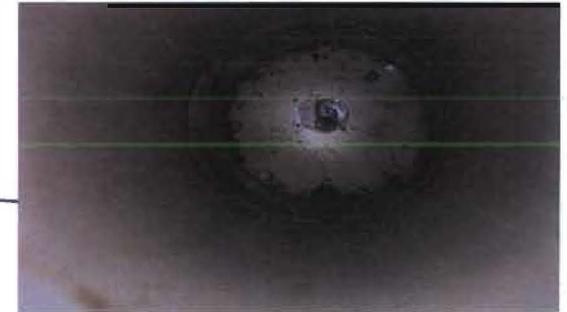
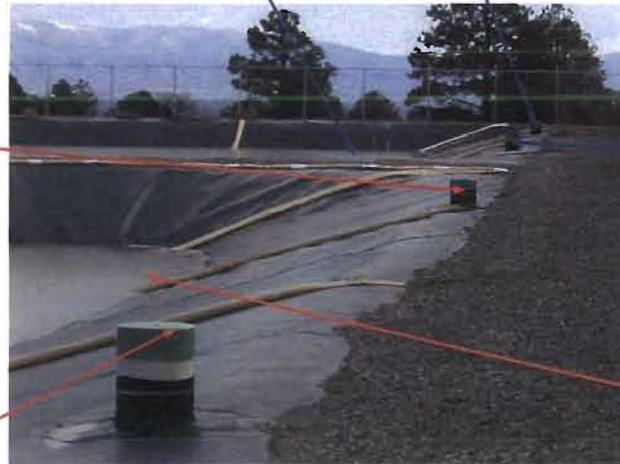
East basin



East basin east inspection pipe



West Basin east inspection pipe



East basin west inspection pipe



West Basin west inspection pipe

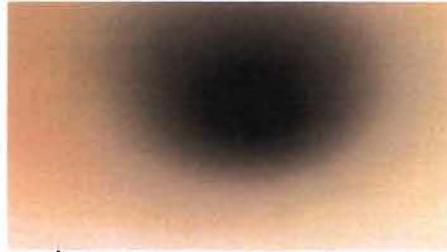


West Basin

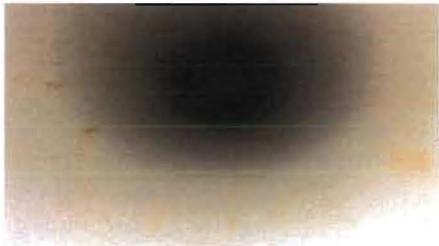
May 20, 2009 Evap Basin Inspection Record



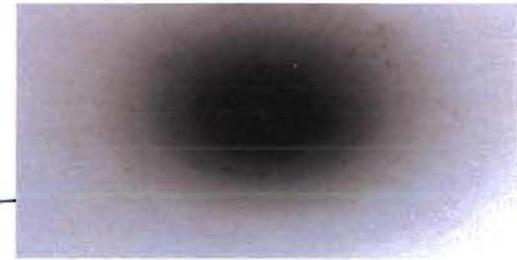
East basin



East basin east inspection pipe



West Basin east inspection pipe



East basin west inspection pipe



West Basin west inspection pipe



West Basin

June 17, 2009 Evap Basin Inspection Record