

TA46

ENTERED



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 28, 2010  
Refer To: ENV-RCRA-10-140  
LA-UR: 10-04864

Mr. William C. Olson, Bureau 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

Dear Mr. Olson:

**SUBJECT: GROUNDWATER DISCHARGE PLAN QUARTERLY REPORT, SECOND QUARTER 2010, SANITARY WASTEWATER SYSTEMS PLANT (DP-857)**

This letter and enclosures 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 2010.

Table 1.0 presents water quality data from sampling conducted at the TA-46 SWWS Plant's reuse wet well, NPDES Outfalls 001 and 03A027, and Cañada del Buey Observation Well (CDBO)-6 for the second quarter of 2010. All sample results presented in Table 1.0 are less than the New Mexico Water Quality Control Commission Regulation 3103 standards for groundwater. Enclosure 1.0 presents copies of the analytical reports prepared by General Engineering Laboratories, Inc.

Table 2.0 presents the water level in CDBO-6 for the second quarter of 2010.

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 2010, 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 Enclosure 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 2010.

33833



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

Sincerely,



Robert Beers  
Water Quality & RCRA Group

BB/lm

Enclosures: a/s

- Cy: Glenn Saums, NMED/SWQB, Santa Fe, NM, w/enc.  
James Bearzi, NMED/HWB, Santa Fe, NM, w/enc.  
Hai Shen, LASO-EO, w/enc., A316  
Gene Turner, LASO-EO, w/enc., A316  
Steve Yanicak, LASO-GOV, w/enc., M894  
Michael B. Mallory, PADOPS, w/o enc., A102  
J. Chris Cantwell, ADESHQ, w/o enc., K491  
Mike Saladen, ENV-RCRA, w/o enc., K490  
Walter E. Atencio, ADESHQ, w/enc., K760  
Mell Smithour, ES-UI, w/enc., K718  
Charles Barnett, UI-DO, w/enc., J972  
ENV-RCRA File, w/enc., K490  
IRM-RMMSO, w/enc., A150

*SWWS Plant Groundwater Discharge Plan (DP-857) Report  
2<sup>nd</sup> Quarter, 2010*

**Table 1.0 Water Quality Data: SWWS Plant Reuse Water, NPDES Outfalls 001 and 03A027, and CDBO-6. 2nd Quarter, 2010.**

Sampling Location	Field Prep <sup>2</sup>	Sample Date	Sample ID No.	TDS (mg/L)	Chloride (mg/L)	NO <sub>3</sub> +NO <sub>2</sub> -N (mg/L)	TKN (mg/L)	NH <sub>3</sub> -N (mg/L)
<b><u>SWWS Plant</u></b>								
SWWS Plant Reuse Wet Well <sup>1</sup>	UF	5/28/10	SWWS46-10-19047	467	131	0.79J	0.038J	0.023J-
<b><u>Sandia Canyon</u></b>								
NPDES Outfall 001	UF	5/28/10	SWWS46-10-19045	449	79.2	0.80J	0.384	0.051J-
NPDES Outfall 03A027	UF	5/28/10	SWWS46-10-19046	434	13.8	2.1J	1.16	0.376J-
<b><u>Canada del Buey</u></b>								
CDBO-6	F	6/1/10	CAPA-10-18088	192	20.8	<0.25		<0.05
CDBO-6	UF	6/1/10	CAPA-10-18089				<0.1	
<i>NM WQCC Regulation 3103 Ground Water Standards (mg/L)</i>				<i>1000</i>	<i>250</i>	<i>10<sup>3</sup></i>	<i>NA</i>	<i>NA</i>

**Notes:**

<sup>1</sup>Water in the reuse wet well is representative of water in the reuse pond.

<sup>2</sup>UF means a non-filtered sample, F means a filtered sample.

<sup>3</sup>The NMWQCC Regulation 3103 Ground Water Standard is for NO<sub>3</sub>-N.

<sup>4</sup>Dry means that there was insufficient water in the well for sampling.

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

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

**SWWS Plant Groundwater Discharge Plan (DP-857) Report  
2<sup>nd</sup> Quarter, 2010**

**Table 2.0. Water Level in Cañada del Buey Observation Well (CDBO)-6, 2<sup>nd</sup> Quarter 2010**

Location	Date	Water Level† (ft)
CDBO-6	6/1/2010	38.54

**Notes:**

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

**Table 3.0. Discharge Volumes from the SWWS Plant and NPDES Outfall 001, and SWWS Plant Reuse Water to SCC Cooling Towers, 2<sup>nd</sup> Quarter 2010 (in millions of gallons).**

Month	SWWS Plant Effluent to TA-3 <sup>1</sup>	Discharges to NPDES Outfall 001 <sup>2</sup>	Reuse Water to SCC Cooling Towers <sup>3</sup> (estimated)	Discharges to NPDES Outfall 03A027 <sup>4</sup>
Apr-2010	8.564	8.377	0	1.197
May-2010	9.558	8.919	0	1.302
Jun-2010	7.837	6.994	0	1.441

**Notes:**

<sup>1</sup>In the 2<sup>nd</sup> quarter of 2010, all SWWS Plant effluent was pumped via a force main to TA-3 for reuse or discharge.

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

<sup>3</sup>The 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 2<sup>nd</sup> quarter of 2010.

<sup>4</sup>The 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
4/20/2010	All standpipes are dry or contain minimal amounts of water
5/12/2010	All standpipes are dry or contain minimal amounts of water
6/17/2010	All standpipes are dry or contain minimal amounts of water

**Analytical Reports**

by

**General Engineering Laboratories, Inc**

**Sample Dates:**

**5/28/2010**

**6/1/2010**

**Locations:**

**SWWS Plant Reuse Wet Well**

**NPDES Outfall 001**

**NPDES Outfall 03A027**

**CDBO-6**

**Analytes**

**Cl, NO<sub>3</sub>+NO<sub>2</sub>, TDS, TKN, NH<sub>3</sub>**

**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 WQCC Regs

Report Date: June 4, 2010

Client SDG: 10-3286

Client Sample ID: SWWS46-10-19047  
 Sample ID: 253827003  
 Matrix: Waste Water  
 Collect Date: 28-MAY-10 12:00  
 Receive Date: 29-MAY-10  
 Collector: Client  
 Project: ESHL00110  
 Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Ion Chromatography</b>											
<i>EPA 300.0 Chloride in Liquid "As Received"</i>											
Chloride		131	0.660	2.00	mg/L	10	VH1	06/02/10	1702	989741	1
<b>Nutrient Analysis</b>											
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite		0.785	0.050	0.250	mg/L	5	AXH3	06/01/10	1037	989439	2
<i>Nitrogen as Ammonia "As Received"</i>											
Nitrogen, Ammonia	J	0.023	0.016	0.050	mg/L	1	AXH3	06/01/10	1603	989436	3
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl	J	0.038	0.033	0.100	mg/L	1	AXH3	06/02/10	1313	989444	4
<b>Solids Analysis</b>											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		467	2.38	10.0	mg/L		LYG1	06/02/10	0849	990034	5

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	06/01/10	1305	989434
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	06/01/10	0930	989443

**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	

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 Contact: Ms. Joylene Valdez  
 Project: LANL WQH WQCC Regs

Report Date: June 4, 2010

Client SDG: 10-3286

Client Sample ID: SWWS46-10-19045  
 Sample ID: 253827001  
 Matrix: Waste Water  
 Collect Date: 28-MAY-10 12:00  
 Receive Date: 29-MAY-10  
 Collector: Client  
 Project: ESHL00110  
 Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Ion Chromatography</b>											
<i>EPA 300.0 Chloride in Liquid "As Received"</i>											
Chloride		79.2	0.660	2.00	mg/L	10	VH1	06/02/10	1635	989741	1
<b>Nutrient Analysis</b>											
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite		0.800	0.050	0.250	mg/L	5	AXH3	06/01/10	1029	989439	2
<i>Nitrogen as Ammonia "As Received"</i>											
Nitrogen, Ammonia		0.051	0.016	0.050	mg/L	1	AXH3	06/01/10	1607	989436	3
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl		0.384	0.033	0.100	mg/L	1	AXH3	06/02/10	1253	989444	4
<b>Solids Analysis</b>											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		449	2.38	10.0	mg/L		LYG1	06/02/10	0849	990034	5

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	06/01/10	1305	989434
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	06/01/10	0930	989443

**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	

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 Los Alamos, New Mexico 87545  
 Contact: Ms. Joylene Valdez  
 Project: LANL WQH WQCC Regs

Report Date: June 4, 2010

Client SDG: 10-3286

Client Sample ID: SWWS46-10-19046  
 Sample ID: 253827002  
 Matrix: Waste Water  
 Collect Date: 28-MAY-10 12:00  
 Receive Date: 29-MAY-10  
 Collector: Client  
 Project: ESHL00110  
 Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Ion Chromatography</b>										
<i>EPA 300.0 Chloride in Liquid "As Received"</i>										
Chloride		13.8	0.066	0.200	mg/L	1	VH1 06/01/10	1811	989741	1
<b>Nutrient Analysis</b>										
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>										
Nitrogen, Nitrate/Nitrite		2.13	0.050	0.250	mg/L	5	AXH3 06/01/10	1036	989439	2
<i>Nitrogen as Ammonia "As Received"</i>										
Nitrogen, Ammonia		0.376	0.016	0.050	mg/L	1	AXH3 06/01/10	1603	989436	3
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>										
Nitrogen, Total Kjeldahl		1.16	0.033	0.100	mg/L	1	AXH3 06/02/10	1308	989444	4
<b>Solids Analysis</b>										
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>										
Total Dissolved Solids		434	2.38	10.0	mg/L		LYG1 06/02/10	0849	990034	5

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJI	06/01/10	1305	989434
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJI	06/01/10	0930	989443

**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	

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CD30-6  
-filtered-

**Certificate of Analysis**

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 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 17, 2010

Client SDG: 10-3287

Client Sample ID: CAPA-10-18088      Project: ESHL00210  
 Sample ID: 253992009      Client ID: ARSL001  
 Matrix: WG  
 Collect Date: 01-JUN-10 12:00  
 Receive Date: 03-JUN-10  
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Conductivity Analysis</b>											
<i>EPA120.1 Specific Conductivity "As Received"</i>											
Conductivity		223	1.00	1.00	umhos/cm	1	LXA1	06/07/10	1731	991877	1
<b>Electrode Analysis</b>											
<i>EPA 150.1 pH "As Received"</i>											
pH at Temp 22.5C	H	7.01	0.010	0.100	SU	1	LXA1	06/04/10	1730	991038	2
<b>Ion Chromatography</b>											
<i>EPA 300.0 Anions Liquid 28 day "As Received"</i>											
Bromide	U	ND	0.066	0.200	mg/L	1	VH1	06/04/10	1955	990775	3
Fluoride		0.169	0.033	0.100	mg/L	1					
Sulfate		9.72	0.100	0.400	mg/L	1					
Chloride		20.8	0.330	1.00	mg/L	5	VH1	06/07/10	1703	990775	4
<b>Nutrient Analysis</b>											
<i>EPA 350.1 Nitrogen, Ammonia L "As Received"</i>											
Nitrogen, Ammonia	U	ND	0.016	0.050	mg/L	1	AXH3	06/08/10	1318	990865	5
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite	U	ND	0.050	0.250	mg/L	5	AXH3	06/07/10	1126	990871	6
<i>EPA 365.4 Phosphorus, Total in "As Received"</i>											
Phosphorus, Total as P		0.201	0.015	0.050	mg/L	1	AXH3	06/07/10	1014	990870	7
<b>Solids Analysis</b>											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		192	2.38	10.0	mg/L		LYG1	06/08/10	1023	991770	8
<b>Titration Analysis</b>											
<i>EPA 310.1 Total Alkalinty "As Received"</i>											
Alkalinity, Total as CaCO3		57.1	0.725	1.00	mg/L		LXA1	06/03/10	1616	990763	9
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 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	06/04/10	1400	990863
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid PR	SXJ1	06/04/10	0945	990869

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EPA 120.1	

**Certificate of Analysis**

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 Los Alamos, New Mexico 87545  
 Contact : Ms. Joylene Valdez  
 Project : LANL-WQH Water Samples

Report Date: June 17, 2010

Client SDG: 10-3287

Client Sample ID:	CAPA-10-18089	Project:	ESHL00210
Sample ID:	253992008	Client ID:	ARSL001
Matrix:	WG		
Collect Date:	01-JUN-10 12:00		
Receive Date:	03-JUN-10		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Carbon Analysis</b>											
<i>SW 9060 Total Organic Carbon "As Received"</i>											
Total Organic Carbon Average		1.36	0.330	1.00	mg/L	1	TSM	06/07/10	1625	990729	1
<b>Flow Injection Analysis</b>											
<i>WSP-CN(T) "As Received"</i>											
Cyanide, Total	U	ND	1.70	5.00	ug/L	1	SDS	06/07/10	1007	990877	2
<b>Nutrient Analysis</b>											
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl	U	ND	0.033	0.100	mg/L	1	AXH3	06/08/10	1002	990868	3

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
EPA 335.4	EPA 335.4 Total Cyanide	AXS5	06/04/10	1507	990876
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	06/04/10	0945	990867

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	SW846 9060	
2	EPA 335.4	
3	EPA 351.2	

**Photographs**

**SERF Evaporation Basins and Leak Inspection Pipes**

**Inspection Dates:**

**4/20/2010**

**5/12/2010**

**6/17/2010**



West Basin, West Inspection  
Pipe. (4-20-12)



West Basin, East Inspection  
Pipe. (4-20-10)



East Basin, West Inspection  
Pipe. (4-20-10)



East Basin, East Inspection  
Pipe. (4-20-10)



East Basin Influent Pipe.  
(4-20-10)



East Basin Overflow Pipe.  
(4-20-10)



West Basin Overflow Pipe.  
(4-20-10)



West Basin Influent Pipe.  
(4-20-10)

**EVAPORATION POND INSPECTION RECORD  
APRIL 20, 2010**



West basin, West Inspection  
Pipe. (5/12/2010)



West Basin, East Inspection  
Pipe.(5/12/2010)



East Basin, West Inspection  
Pipe. (5/12/2010)



East Basin, East Inspection  
Pipe. (5/12/2010)



East Basin Influent Pipe.  
(5/12/2010)



East Basin Overflow Pipe.  
(5/12/2010)



West Basin Overflow Pipe.  
(5/12/2010)



West Basin Influent Pipe.  
(5/12/2010)

**EVAPORATION POND INSPECTION RECORD  
MAY 12, 2010**



West basin, West Inspection pipe.(6/17/2010)



West basin, East inspection pipe. (6/17/2010)



East basin, West Inspection Pipe.(6/17/2010)



East basin, East Inspection Pipe.(6/17/2010)



East basin Influent pipe (6/17/2010)



East basin overflow pipe. (6/17/2010)



West basin overflow pipe (6/17/2010)



West basin influent pipe. (6/17/2010)

**EVAPORATION POND INSPECTION RECORD  
JUNE 17, 2010**