

TA 46



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: April 28, 2010
Refer To: ENV-RCRA-10-076
LA-UR: 10-02548

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, FIRST 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 first quarter (January, February, and March) of 2010.

Table 1.0 presents water quality data from sampling at the TA-46 SWWS Plant reuse wet well, and NPDES Outfalls 001 and 03A027 for the first quarter of 2010. No sample was collected from Cañada del Buey Observation Well (CDBO)-6 due to insufficient water in the well. The water level in CDBO-6 is measured each quarter and a sample will be collected whenever sufficient water is present. All sample results in Table 1.0 are less than the NM WQCC Regulation 3103 standards for groundwater. Enclosure 1.0 presents copies of the analytical reports prepared by General Engineering Laboratories, Inc. for the first quarter of 2010.

Table 2.0 presents the water level in CDBO-6 for the first 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 first 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 January, February, and March 2010.

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/att.
James Bearzi, NMED HWB, Santa Fe, NM, w/att.
Hai Shen, LASO-EO, w/att., A316
Gene Turner, LASO-EO, w/att., A316
Steve Yanicak, LASO-GOV, w/att., M894
Michael B. Mallory, PADOPS, w/o att., A102
J. 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-UI, w/att., K718
Charles Barnett, UI-DO, w/att., J972
ENV-RCRA File, w/att., K490
IRM-RMMSO, w/att., A150

SWWS Plant Groundwater Discharge Plan (DP-857) Report
1st Quarter, 2010

Table 1.0 Water Quality Data: SWWS Plant Reuse Water, NPDES Outfalls 001 and 03A027, and CDBO-6. 1st Quarter, 2010.

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)
SWWS Plant								
SWWS Plant Reuse Wet Well ¹	UF	02/23/10	SWWS46-10-13636	652	216	1.97J	1.26J	<0.077
Sandia Canyon								
NPDES Outfall 001	UF	02/23/10	SWWS46-10-13630	598	37.6	1.38J	<0.051	<0.016
NPDES Outfall 03A027	UF	02/23/10	SWWS46-10-13631	662	119	0.655J	0.551J	<0.035
Canada del Buey								
CDBO-6	F	03/12/10	Dry ⁴	Dry ⁴	Dry ⁴	Dry ⁴		Dry ⁴
CDBO-6	UF	03/12/10					Dry ⁴	
<i>NM WQCC Regulation 3103 Ground Water Standards (mg/L)</i>				1000	250	10 ³	NA	NA

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.

⁴Dry 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
1st Quarter, 2010*

Table 2.0. Water Level in Cañada del Buey Observation Well (CDBO)-6, 1st Quarter 2010

Location	Date	Water Level† (ft)
CDBO-6	3/12/2010	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 SWWS Plant and NPDES Outfall 001, and SWWS Plant Reuse Water to SCC Cooling Towers, 1st Quarter 2010 (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
Jan-2010	6.825	7.263	0	1.092
Feb-2010	6.959	6.173	0	0.876
Mar-2010	8.821	8.543	0	1.182

Notes:

¹In the 1st quarter of 2010, 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 1st quarter of 2010.

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
1/15/2010	All standpipes are dry or contain minimal amounts of water
2/18/2010	All standpipes are dry or contain minimal amounts of water
3/17/2010	All standpipes are dry or contain minimal amounts of water

Analytical Reports

by

General Engineering Laboratories, Inc

Sample Dates:

2/23/2010

Locations:

SWWS Plant Reuse Wet Well

NPDES Outfall 001

NPDES Outfall 03A027

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, Rm111
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL-WQH WQCC Regs

Report Date: March 4, 2010

Client SDG: 10-2050

Page 1 of 2

Client Sample ID: SWWS46-10-13636 Project: ESHL01003
Sample ID: 248074001 Client ID: LANL010
Matrix: Waste Water
Collect Date: 23-FEB-10
Receive Date: 25-FEB-10
Collector: Client

Parameter	Qualifier	Result	Permit Limit	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
<i>EPA 300.0 Chloride in Liquid "As Received"</i>												
Chloride		216		3.30	10.0	mg/L	50	GXM	03/04/10	0849	958781	1
							3					
Nutrient Analysis												
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>												
Nitrogen, Nitrate/Nitrite		1.97		0.050	0.250	mg/L	5	AXH3	03/03/10	1126	958150	3
<i>Nitrogen as Ammonia "As Received"</i>												
Nitrogen, Ammonia		0.077		0.016	0.050	mg/L	1	AXH3	03/01/10	1353	958142	4
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>												
Nitrogen, Total Kjeldahl		1.26		0.033	0.100	mg/L	1	AXH3	03/03/10	1425	958135	5
Solids Analysis												
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>												
Total Dissolved Solids		652		2.38	10.0	mg/L		SDS	02/26/10	1123	958112	6

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.1	EPA 350.1 Ammonia Nitrogen Liquid	AXH3	03/01/10	1353	958142
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	03/01/10	0930	958141
EPA 351.2	EPA 351.2 Total Kjeldahl Nitrogen	AXH3	03/03/10	1425	958135
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	03/01/10	1100	958133

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

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Client SDG: 10-2050

Report Date: March 4, 2010

Page 2 of 2

Client Sample ID: SWWS46-10-13636

Project: ESHL01003

Sample ID: 248074001

Client ID: LANL010

Parameter	Qualifier	Result	Permit Limit	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	--------------	----	----	-------	----	---------	------	------	-------	--------

< Result is less than value reported

> Result is greater than value reported

A The TIC is a suspected aldol-condensation product

B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range

F Estimated Value

H Analytical holding time was exceeded

J Value is estimated

M Matrix Related Failure

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y QC Samples were not spiked with this compound

Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

d 5-day BOD--The 2:1 depletion requirement was not met for this sample

h Preparation or preservation holding time was exceeded

The above sample is reported on an "as received" basis.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by _____

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Report Date: March 4, 2010

Client SDG: 10-2050

Page 1 of 2

Client Sample ID: SWWS46-10-13631 Project: ESHL01003
 Sample ID: 248074002 Client ID: LANL010
 Matrix: Waste Water
 Collect Date: 23-FEB-10
 Receive Date: 25-FEB-10
 Collector: Client

Parameter	Qualifier	Result	Permit Limit	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
<i>EPA 300.0 Chloride in Liquid "As Received"</i>												
Chloride		119		1.32	4.00	mg/L	20	GXM	03/04/10	1317	958781	1 3
Nutrient Analysis												
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>												
Nitrogen, Nitrate/Nitrite		0.655		0.050	0.250	mg/L	5	AXH3	03/03/10	1130	958150	3
<i>Nitrogen as Ammonia "As Received"</i>												
Nitrogen, Ammonia	J	0.035		0.016	0.050	mg/L	1	AXH3	03/01/10	1414	958142	4
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>												
Nitrogen, Total Kjeldahl		0.551		0.033	0.100	mg/L	1	AXH3	03/03/10	1438	958135	5
Solids Analysis												
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>												
Total Dissolved Solids		662		2.38	10.0	mg/L		SDS	02/26/10	1123	958112	6

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.1	EPA 350.1 Ammonia Nitrogen Liquid	AXH3	03/01/10	1414	958142
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	03/01/10	0930	958141
EPA 351.2	EPA 351.2 Total Kjeldahl Nitrogen	AXH3	03/03/10	1438	958135
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	03/01/10	1100	958133

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 :

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- < Result is less than value reported

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Project: LANL-WQH WQCC Regs

Report Date: March 4, 2010

Client SDG: 10-2050

Page 2 of 2

Client Sample ID: SWWS46-10-13631

Project: ESHL01003

Sample ID: 248074002

Client ID: LANL010

Parameter	Qualifier	Result	Permit Limit	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- h Preparation or preservation holding time was exceeded

The above sample is reported on an "as received" basis.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by _____

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Report Date: March 4, 2010

Client SDG: 10-2050

Page 1 of 2

Client Sample ID: SWWS46-10-13630 Project: ESHL01003
 Sample ID: 248074003 Client ID: LANL010
 Matrix: Waste Water
 Collect Date: 23-FEB-10
 Receive Date: 25-FEB-10
 Collector: Client

Parameter	Qualifier	Result	Permit Limit	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
<i>EPA 300.0 Chloride in Liquid "As Received"</i>											
Chloride		37.6		0.660	2.00	mg/L	10	GXM 03/04/10	1118	958781	1
										3	
Nutrient Analysis											
<i>EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"</i>											
Nitrogen, Nitrate/Nitrite		1.38		0.050	0.250	mg/L	5	AXH3 03/03/10	1131	958150	3
<i>Nitrogen as Ammonia "As Received"</i>											
Nitrogen, Ammonia	J	0.016		0.016	0.050	mg/L	1	AXH3 03/01/10	1415	958142	4
<i>Nitrogen, Total Kjeldahl (TKN) "As Received"</i>											
Nitrogen, Total Kjeldahl	J	0.051		0.033	0.100	mg/L	1	AXH3 03/03/10	1438	958135	5
Solids Analysis											
<i>EPA 160.1 Solids, Dissolved-F "As Received"</i>											
Total Dissolved Solids		598		2.38	10.0	mg/L		SDS 02/26/10	1123	958112	6

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.1	EPA 350.1 Ammonia Nitrogen Liquid	AXH3	03/01/10	1415	958142
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	SXJ1	03/01/10	0930	958141
EPA 351.2	EPA 351.2 Total Kjeldahl Nitrogen	AXH3	03/03/10	1438	958135
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	SXJ1	03/01/10	1100	958133

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 300.0	
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Project: LANL-WQH WQCC Regs

Report Date: March 4, 2010

Client SDG: 10-2050

Page 2 of 2

Client Sample ID: SWWS46-10-13630

Project: ESHL01003

Sample ID: 248074003

Client ID: LANL010

Parameter	Qualifier	Result	Permit Limit	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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- > Result is greater than value reported
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- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
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Reviewed by _____

Photographs

SERF Evaporation Basins and Leak Inspection Pipes

Inspection Dates:

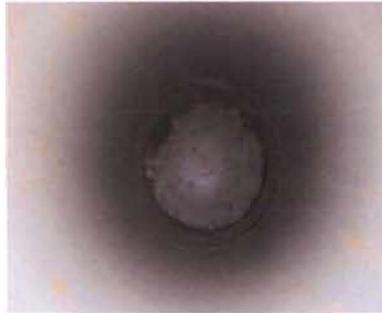
1/15/2010

2/18/2010

3/17/2010



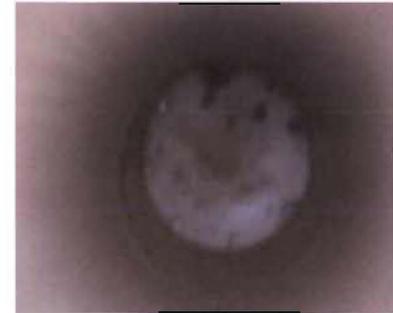
West Basin, Inspection
Pipe. (1-15-10)



West Basin, East Inspection
Pipe. (1-15-10)



East Basin, West Inspection
Pipe. (1-15-10)



East Basin, East Inspection
Pipe. (1-15-10)



East Basin Influent Pipe.
(1-15-10)



East Basin Overflow Pipe.
(1-15-10)



West Basin Overflow Pipe.
(1-15-10)

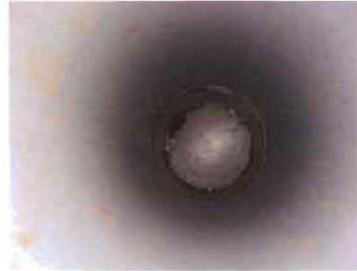


West Basin Influent Pipe.
(1-15-10)

**SERF EVAPORATION BASINS
INSPECTION RECORD
JANUARY 2010**



West Basin, West Inspection
Pipe. (2-18-10)



West Basin, East Inspection
Pipe. (2-18-10)



East Basin, West Inspection
Pipe. (2-18-10)



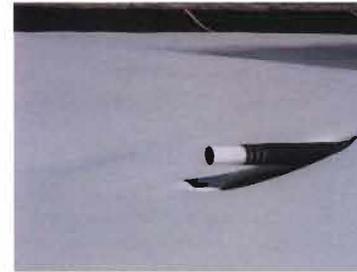
East Basin, East Inspection
Pipe. (2-18-10)



East Basin Influent Pipe
Covered with snow.
(2-18-10)



East Basin Overflow Pipe.
(2-18-10)

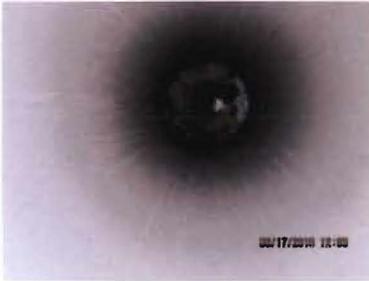


West Basin Overflow Pipe.
(2-18-10)



West Basin Influent Pipe.
Covered with snow.
(2-18-10)

SERF EVAPORATION BASINS INSPECTION RECORD FEBRUARY 2010



West Basin, West Inspection Pipe. (3-17-10)



West Basin, East Inspection Pipe. (3-17-10)



East Basin, West Inspection Pipe. (3-17-10)



East Basin, East Inspection Pipe. (3-17-10)



East Basin Influent Pipe. (3-17-10)



East Basin Overflow Pipe. (3-17-10)



West Basin Overflow Pipe. (3-17-10)



West Basin Influent Pipe. (3-17-10)

**SERF EVAPORATION BASINS
INSPECTION RECORD
MARCH 2010**