

TA 46



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

Date: October 30, 2007
Refer To: ENV-RCRA-07-243
LA-UR: 07-7015

Mr. Robert George, Domestic Team Leader
Ground Water Pollution Prevention Section
Ground Water Quality Bureau
New Mexico Environment Department
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, New Mexico 87502-6110

SUBJECT: GROUND WATER DISCHARGE PLAN QUARTERLY REPORT, THIRD QUARTER 2007, SANITARY WASTEWATER SYSTEMS PLANT (DP-857)

Dear Mr. George:

This letter and the attachments are Los Alamos National Laboratory's quarterly report for the TA-46 Sanitary Wastewater Systems (SWWS) Plant Ground Water Discharge Plan (DP-857) for the third quarter (July, August, September) of 2007.

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 third quarter of 2007. 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 ground water.

Table 2.0 presents the water level in CDBO-6 for the third quarter of 2007.

Table 3.0 presents discharge volumes from the SWWS Plant's force main, 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 third quarter of 2007, 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 presents the results from monthly inspections of the four leak collection standpipes at the SERF evaporation basins located on Sigma Mesa. No liquid was present in any of the leak collection standpipes during the July, August, and September inspections.



Attachment 1.0 presents copies of the analytical reports prepared by General Engineering Laboratories, Inc. for the third quarter of 2007. Attachment 2.0 presents photographs of the SERF evaporation basins and the leak inspection pipes for the third quarter of 2007.

If you have any questions regarding this submittal please call me at (505) 667-7969.

Sincerely,



Bob Beers
Water Quality & RCRA Group

BB/lm

Attachments: a/s

Cy: Marcy Leavitt, NMED/SWQB, Santa Fe, New Mexico, w/att.
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Richard S. Watkins, ADESHQ, w/o att., K491
Tori George, ENV-DO, w/o att., J978
Tina Sandoval, ENV-RCRA, w/o att., K490
Mike Saladen, ENV-RCRA, w/o att., K490
Doug Hefele, FME-IFCS, w/o att., T084
Steven Hanson, EWMO-RLW, w/att., E518
Crystal Rodarte-Romero, MSS-UI, w/att., K718
Charles Barnett, SSS-UD-M02, w/att., A199
ENV-RCRA, File, w/att., K490
IRM-RMMSO, w/att., A150

**SWWS Plant Ground Water Discharge Plan (DP-857)
3rd Quarter, 2007**

Table 1.0 Water Quality Data: SWWS Plant Reuse Water, NPDES Outfalls 001 and 03A027, and CDBO-6. 3rd Quarter, 2007.

| 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) |
|--------------------------------------------------------------|------------|-------------|----------------|------------|-----------------|------------------|------------|---------------------|
| <u>SWWS Plant</u> | | | | | | | | |
| SWWS Plant Reuse Wet Well ¹ | UF | 8/10/2007 | GU070800OSRW01 | 461 | 120 | 1.26 | 0.94 | 0.07 |
| <u>Sandia Canyon</u> | | | | | | | | |
| NPDES Outfall 001 | UF | 8/10/2007 | GU070801A00101 | 336 | 41.7 | 0.76 | 0.48 | 0.044J ² |
| NPDES Outfall 03A027 | UF | 8/10/2007 | GU070803A02701 | 428 | 16.7 | 1.11 | 1.59 | 0.14 |
| <u>Canada del Buey</u> | | | | | | | | |
| CDBO-6 | | NS | NS | NS | NS | NS | NS | NS |
| <i>NM WQCC Regulation 3103 Ground Water Standards (mg/L)</i> | | | | 1000 | 250 | 10 | NA | NA |

Notes:

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

²J means the reported result was greater than the Method Detection Limit but less than the Reporting Limit.

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

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

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

NS means that no sample was collected from this location because there was not sufficient water in the well.

**SWWS Plant Ground Water Discharge Plan (DP-857) Report
3rd Quarter, 2007**

Table 2.0. Water Level in Cañada del Buey Observation Well (CDBO)-6, 3rd Quarter 2007.

| Location | Date | Water Level† (ft) |
|----------|---------|-------------------|
| CDBO-6 | 8/27/07 | 37.23 |

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, 3rd Quarter 2007 (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 |
|-----------|------------------------------------------|----------------------------------------------|------------------------------------------------------------|-------------------------------------------------|
| July-2007 | 6.712 | 4.850 | 0 | 1.131 |
| Aug-2007 | 6.604 | 6.320 | 0 | 1.095 |
| Sept-2007 | 6.897 | 7.131 | 0 | 0.932 |

Notes:

¹In the 3rd quarter of 2007, 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 3rd quarter of 2007.

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 |
|--------------------|------------------------------------------------------------|
| July 24, 2007 | All standpipes are dry or contain minimal amounts of water |
| August 24, 2007 | All standpipes are dry or contain minimal amounts of water |
| September 21, 2007 | All standpipes are dry or contain minimal amounts of water |

Analytical Reports

by

General Engineering Laboratories, Inc

Sample Date:

August 10, 2007

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 Laboratories
 Address : PO Box 1663
 TA-03, SM271, Drop Pt. 02U, Rm111
 Los Alamos, New Mexico 87545
 Contact: Ms. Joylene Valdez
 Project: ENV-WQH WQCC Regs

Report Date: September 6, 2007

Client Sample ID: GU070800OSRW01
 Sample ID: 191368001
 Matrix: Waste Water
 Collect Date: 10-AUG-07 12:00
 Receive Date: 14-AUG-07
 Collector: Client
 Project: ESHL00801
 Client ID: LANL006

| Parameter | Qualifier | Result | DL | RL | Units | DF | AnalystDate | Time | Batch | Method |
|--------------------------------------------|-----------|--------|-------|-------|-------|----|---------------|------|--------|--------|
| Ion Chromatography Federal | | | | | | | | | | |
| <i>EPA 300.0 Chloride in Liquid</i> | | | | | | | | | | |
| Chloride | | 120 | 0.660 | 2.00 | mg/L | 10 | MAR108/31/07 | 2040 | 660591 | 1 |
| Nutrient Analysis | | | | | | | | | | |
| <i>EPA 353.2 Nitrogen, Nitrate/Nitrite</i> | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 1.26 | 0.010 | 0.050 | mg/L | 1 | KLP1 08/20/07 | 1610 | 660374 | 2 |
| Nutrient Analysis Federal | | | | | | | | | | |
| <i>Nitrogen as Ammonia</i> | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.071 | 0.030 | 0.050 | mg/L | 1 | AXH3 08/20/07 | 1151 | 660504 | 3 |
| <i>Nitrogen, Total Kjeldahl (TKN)</i> | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.940 | 0.029 | 0.100 | mg/L | 1 | AXH3 08/21/07 | 0820 | 660508 | 4 |
| Solids Analysis-Federal | | | | | | | | | | |
| <i>EPA 160.1 Solids, Dissolved-F</i> | | | | | | | | | | |
| Total Dissolved Solids | | 461 | 2.38 | 10.0 | mg/L | | NXM 08/15/07 | 1418 | 660385 | 5 |

The following Prep Methods were performed

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|----------------------------------------|---------|----------|------|------------|
| EPA 350.2 Prep | EPA 350.1 Ammonia Nitrogen Prep | BXM1 | 08/15/07 | 2140 | 660502 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | BXM1 | 08/15/07 | 2142 | 660506 |

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: ENV-WQH WQCC Regs

Report Date: September 6, 2007

Client Sample ID: GU070801A00101
 Sample ID: 191368002
 Matrix: Waste Water
 Collect Date: 10-AUG-07 12:00
 Receive Date: 14-AUG-07
 Collector: Client
 Project: ESHL00801
 Client ID: LANL006

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | Method |
|--------------------------------------------|-----------|--------|-------|-------|-------|----|--------------|----------|--------|--------|--------|
| Ion Chromatography Federal | | | | | | | | | | | |
| <i>EPA 300.0 Chloride in Liquid</i> | | | | | | | | | | | |
| Chloride | | 41.7 | 0.660 | 2.00 | mg/L | 10 | MAR108/31/07 | 2141 | 660591 | | 1 |
| Nutrient Analysis | | | | | | | | | | | |
| <i>EPA 353.2 Nitrogen, Nitrate/Nitrite</i> | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 0.761 | 0.010 | 0.050 | mg/L | 1 | KLP1 | 08/20/07 | 1240 | 660374 | 2 |
| Nutrient Analysis Federal | | | | | | | | | | | |
| <i>Nitrogen as Ammonia</i> | | | | | | | | | | | |
| Nitrogen, Ammonia | J | 0.044 | 0.030 | 0.050 | mg/L | 1 | AXH3 | 08/20/07 | 1152 | 660504 | 3 |
| <i>Nitrogen, Total Kjeldahl (TKN)</i> | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.478 | 0.029 | 0.100 | mg/L | 1 | AXH3 | 08/21/07 | 0824 | 660508 | 4 |
| Solids Analysis Federal | | | | | | | | | | | |
| <i>EPA 160.1 Solids, Dissolved-F</i> | | | | | | | | | | | |
| Total Dissolved Solids | | 336 | 2.38 | 10.0 | mg/L | | NXM | 08/15/07 | 1418 | 660385 | 5 |

The following Prep Methods were performed

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|----------------------------------------|---------|----------|------|------------|
| EPA 350.2 Prep | EPA 350.1 Ammonia Nitrogen Prep | BXM1 | 08/15/07 | 2140 | 660502 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | BXM1 | 08/15/07 | 2142 | 660506 |

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: ENV-WQH WQCC Regs

Report Date: September 6, 2007

Client Sample ID: GU070803A02701 Project: ESHL00801
 Sample ID: 191368003 Client ID: LANL006
 Matrix: Waste Water
 Collect Date: 10-AUG-07 12:00
 Receive Date: 14-AUG-07
 Collector: Client

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | Method |
|--------------------------------------------|-----------|--------|-------|-------|-------|----|---------|----------|------|--------|--------|
| Ion Chromatography Federal | | | | | | | | | | | |
| <i>EPA 300.0 Chloride in Liquid</i> | | | | | | | | | | | |
| Chloride | | 16.7 | 0.066 | 0.200 | mg/L | 1 | VXP1 | 08/30/07 | 2231 | 660591 | 1 |
| Nutrient Analysis | | | | | | | | | | | |
| <i>EPA 353.2 Nitrogen, Nitrate/Nitrite</i> | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 1.11 | 0.010 | 0.050 | mg/L | 1 | KLP1 | 08/20/07 | 1241 | 660374 | 2 |
| Nutrient Analysis Federal | | | | | | | | | | | |
| <i>Nitrogen as Ammonia</i> | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.140 | 0.030 | 0.050 | mg/L | 1 | AXH3 | 08/20/07 | 1155 | 660504 | 3 |
| <i>Nitrogen, Total Kjeldahl (TKN)</i> | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 1.59 | 0.029 | 0.100 | mg/L | 1 | AXH3 | 08/21/07 | 0824 | 660508 | 4 |
| Solids Analysis Federal | | | | | | | | | | | |
| <i>EPA 160.1 Solids, Dissolved-F</i> | | | | | | | | | | | |
| Total Dissolved Solids | | 428 | 2.38 | 10.0 | mg/L | | NXM | 08/15/07 | 1418 | 660385 | 5 |

The following Prep Methods were performed

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|----------------------------------------|---------|----------|------|------------|
| EPA 350.2 Prep | EPA 350.1 Ammonia Nitrogen Prep | BXM1 | 08/15/07 | 2140 | 660502 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | BXM1 | 08/15/07 | 2142 | 660506 |

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 | |

Photographs

SERF Evaporation Basins and Leak Inspection Pipes

Inspection Dates:

July 24, 2007

August 24, 2007

September 21, 2007



East basin 7/24/07



East basin east inspection pipe 7/24/07



West Basin east inspection pipe 7/24/2007



July '07 Evap Basin Inspection Record



East basin west inspection pipe 7/24/07



West Basin west inspection pipe 7/24/07



West Basin 7/24/07



East basin 8/24/07



East basin east inspection pipe 8/24/07



West Basin east inspection pipe 8/24/2007



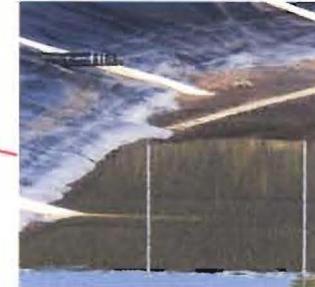
August '07 Evap Basin Inspection Record



East basin west inspection pipe 8/24/07



West Basin west inspection pipe 8/24/07



West Basin 8/24/07



East basin 9/21/07



East basin east inspection pipe 9/21/07



West Basin east inspection pipe
9/21/2007



Sept. '07 Evap Basin Inspection Record



East basin west inspection pipe 9/21/07



West Basin west inspection pipe 9/21/07



West Basin 9/21/07