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Date: October 28, 2010  
Refer To: ENV-RCRA-10-202  
LAUR: 10-06936

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, THIRD QUARTER 2010, TA-50 RADIOACTIVE LIQUID WASTE TREATMENT FACILITY (DP-1132)**

This letter is intended to serve as Los Alamos National Laboratory's quarterly Groundwater Discharge Plan (DP-1132) Report for the TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF) for the third quarter (July, August, September) of 2010. Since the first quarter of 1999, Los Alamos National Laboratory (the Laboratory) has provided your agency with voluntary quarterly reports containing analytical results from effluent and groundwater monitoring.

Quarterly Monitoring Results, Mortandad Canyon Alluvial Groundwater Wells

Table 1.0 presents the analytical results from sampling conducted at three Mortandad Canyon alluvial wells, MCO-4B, MCO-6, and MCO-7, during the third quarter of 2010. No sample was collected from alluvial well MCO-3 because the well was dry. Samples were submitted to General Engineering Laboratories (GEL), Charleston, SC, for analysis. All of the analytical results were below the New Mexico Water Quality Control Commission (NM WQCC) 3103 standards for nitrate-nitrogen (NO<sub>3</sub>-N), fluoride (F), and total dissolved solids (TDS).

Analytical results from the sampling of intermediate and regional aquifer wells in Mortandad Canyon can be accessed online at the Risk Analysis, Communication, Evaluation and Reduction (RACER) Web site ([www.racernm.com](http://www.racernm.com)).



RLWTF Effluent Monitoring Results

Table 2.0 presents the analytical results from the weekly composite sampling of the RLWTF's effluent for the third quarter of 2010. The final weekly composite (FWC) samples are flow-proportioned composite samples prepared from each tank of effluent generated by the RLWTF during a 7-day period. Samples are submitted to GEL for analysis. In addition, the TA-50 RLWTF analytical laboratory analyzes duplicate FWC samples as part of the Laboratory's compliance monitoring program. All of the FWC results presented in Table 2.0 are below the NM WQCC 3103 standards for NO<sub>3</sub>-N, F, and TDS.

It should be noted that no RLWTF effluent was discharged to the environment during August and September due to new stringent effluent limits for copper and zinc that became effective August 1, 2010, at National Pollutant Discharge Elimination System (NPDES) Outfall 051. Since July 31, 2010, treated effluent was stored onsite pending completion of a number of operational changes to reduce concentrations of copper and zinc to below NPDES permit limits. These operational changes were presented to your agency in two minor modification notices on August 25, 2010, and September 27, 2010 (ENV-RCRA-10-162 and ENV-RCRA-10-181, respectively).

Table 3.0 presents the final monthly composite (FMC) sample results for NO<sub>3</sub>-N, ClO<sub>4</sub>, F, and TDS for July 2010. As explained previously, no effluent was discharged during July and August 2010. The FMC samples are flow-proportioned composite samples prepared from each tank of effluent generated by the RLWTF during the month. Analysis is by the TA-50 RLWTF analytical laboratory. All of the analytical results presented in Table 3.0 were below the NMWQCC 3103 standards for NO<sub>3</sub>-N, F, and TDS.

Please contact me at (505) 667-7969 if you would like additional information regarding this quarterly report.

Sincerely,



Robert Beers  
Water Quality & RCRA Group (ENV-RCRA)

BB/lm

Enclosures: a/s

Cy: Glenn Saums, NMED/SWQB, Santa Fe, NM  
James Bearzi, NMED/HWB, Santa Fe, NM  
Steve Yanicak, LASO-GOV, M894

Cy (continued):

Hai Shen, LASO-EO, A316  
Gene Turner, LASO-EO, A316  
Michael Mallory, PADOPS, A102  
J. Chris Cantwell, ADESHQ, K491  
Randy Johnson, ENV-ES, E500  
Mike Saladen, ENV-RCRA, (E-File)  
Robert C. Mason, TA55-DO, E583  
Hugh McGovern, TA-55 RLW, E518  
Pete Worland, TA-55-RLW, E518  
Chris Del Signore, TA-55-RLW, E518  
Steve Hanson, TA-55-RLW, E518  
ENV-RCRA File, K490  
IRM-RMMSO, A150

**Radioactive Liquid Waste Treatment Facility**  
**Ground Water Discharge Plan (DP-1132) Quarterly Report**  
**3rd Quarter, 2010**

**Table 1.0. Mortandad Canyon Alluvial Well Sampling, 3rd Quarter, 2010.**

Sampling Location	Sample Field Prep (F/UF)	Sample Date	Perchlorate (ug/L)	NO <sub>3</sub> -N/NO <sub>2</sub> -N (mg/L)	TKN (mg/L)	NH <sub>3</sub> -N (mg/L)	TDS (mg/L)	F (mg/L)
MCO-3	The well was dry, no sample was collected.							
MCO-4B	F	07/06/10	8.7	0.58J-	0.04J-	0.069J-	431	0.483
MCO-4B Field Duplicate	F	07/06/10	9.1	0.61J-	0.41J-	0.044J-	425	0.481
MCO-6	F	07/07/10	7.3	1.1	0.19	0.033J-	337	0.742
MCO-7	F	07/07/10	8.2	1.3	0.13	0.016J-	292	0.894
NM WQCC 3103 Ground Water Standards			NA <sup>2</sup>	10 mg/L <sup>3</sup>	NA <sup>2</sup>	NA <sup>2</sup>	1000 mg/L	1.6 mg/L

**Notes:**

<sup>1</sup>All samples filtered with the exception of TKN.

<sup>2</sup>NA means that there is no NM WQCC 3103 standard for this analyte.

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

J- means that the reported value is expected to be more uncertain than usual with a potential negative bias.

J+ means that the reported value is expected to be more uncertain than usual with a potential positive bias.

J means the reported value is greater than the Method Detection Limit (MDL) but less than the Reporting Limit (RL).

**Radioactive Liquid Waste Treatment Facility**  
**Ground Water Discharge Plan (DP-1132) Quarterly Report**  
**3rd Quarter, 2010**

**Table 2.0. RLWTF Final Weekly Composite (FWC) Effluent Sampling, 3rd Quarter, 2010.**

Monitoring Period	Sample Composite Date	Sample ID#	Analysis by RLWTF <sup>1</sup>		Analysis by General Engineering Laboratories, Inc.			
			NO <sub>3</sub> -N (mg/L)	NO <sub>2</sub> -N (mg/L)	NO <sub>3</sub> -NO <sub>2</sub> -N (mg/L)	Perchlorate (ug/L)	Fluoride (mg/L)	TDS (mg/L)
<b>July</b>	7/5/10	No Discharges	----	----	----	----	----	----
	7/13/10	50FWC-10-9954	6.2	1.8	8.10J	<0.2	0.14	154
	7/19/10	50FWC-10-9955	3.9	0.82	4.35	<0.2	0.11J-	149J
	7/26/10	50FWC-10-9956	9.3	0.81	9.58	<0.2	0.17	266HJ-
<b>August</b>	8/2/10	50FWC-10-9957	8.5	1.7	9.63	<0.2	0.25	307
	8/9/10	No Discharges	----	----	----	----	----	----
	8/16/10	No Discharges	----	----	----	----	----	----
	8/23/10	No Discharges	----	----	----	----	----	----
	8/30/10	No Discharges	----	----	----	----	----	----
<b>September</b>	9/6/10	No Discharges	----	----	----	----	----	----
	9/13/10	No Discharges	----	----	----	----	----	----
	9/20/10	No Discharges	----	----	----	----	----	----
	9/27/10	No Discharges	----	----	----	----	----	----
<b>3rd Quarter 2010 Averages<sup>3</sup></b>			<b>7.0</b>	<b>1.3</b>	<b>7.9</b>	<b>&lt;0.2</b>	<b>0.17</b>	<b>219</b>
<i>NM WQCC 3103 Ground Water Standards</i>			<i>10 mg/L</i>	<i>NA<sup>5</sup></i>	<i>10 mg/L<sup>4</sup></i>	<i>NA<sup>5</sup></i>	<i>1.6 mg/L</i>	<i>1000 mg/L</i>

**Notes:**

<sup>1</sup>Analysis by the TA-50 Radioactive Liquid Waste Treatment Facility's analytical laboratory.

<sup>2</sup>No Discharge means that the RLWTF did not discharge any effluent during the 7-day period preceding the composite date.

<sup>3</sup>3rd quarter 2010 averages include the results from June 2010, if applicable.

<sup>4</sup>The NM WQCC Regulation 3103 Ground Water Standard is for nitrate (NO<sub>3</sub>-N).

<sup>5</sup>NA means that there is no NM WQCC 3103 standard for this analyte.

<sup>6</sup>Pending means that the analytical results were pending at the time this report was prepared.

H means that the analytical hold time was exceeded.

J means the reported value is greater than the Method Detection Limit (MDL) but less than the Reporting Limit (RL).

J- means that the reported value is expected to be more uncertain than usual with a potential negative bias.

J+ means that the reported value is expected to be more uncertain than usual with a potential positive bias.

**Radioactive Liquid Waste Treatment Facility  
Ground Water Discharge Plan (DP-1132) Quarterly Report  
3rd Quarter, 2010**

**Table 3.0. RLWTF Final Monthly Composite (FMC) Effluent Sampling, 3rd Quarter, 2010.**

Monitoring Period	RLWTF FMC Results			
	NO <sub>3</sub> -N (mg/L)	Perchlorate by IC <sup>2</sup> (µg/L)	TDS (mg/L)	F (mg/L)
July	6.5	<1	47	0.10
August	---- No Discharges ----			
September	---- No Discharges ----			
NM WQCC 3103 Ground Water Standards	10 mg/L	NA <sup>3</sup>	1000 mg/L	1.6 mg/L

**Notes:**

<sup>1</sup>Analysis by the TA-50 Radioactive Liquid Waste Treatment Facility's analytical laboratory.

<sup>2</sup>IC means EPA Method 314.0, perchlorate analysis by Ion Chromatography.

<sup>3</sup>NA means that there is no NM WQCC 3103 standard for this analyte.