

Reemit

# Los Alamos

NATIONAL LABORATORY

Los Alamos National Laboratory  
Los Alamos, New Mexico 87545

Date: September 24, 1999

In Reply Refer To: ESH-18/WQ&H:99-0393

Mail Stop: K497

Telephone: (505) 665-1859

Ms. Diana McDonald  
U.S. Environmental Protection Agency, Region 6  
Compliance Assurance and Enforcement Division  
Water Enforcement Branch (6EN-W)  
1445 Ross Avenue  
Dallas, Texas 75202-2733

RECEIVED

SEP 30 1999

DOE OVERSIGHT BUREAU

**SUBJECT: MONTHLY DISCHARGE MONITORING REPORTS (DMRs) FOR  
AUGUST, 1999 NPDES PERMIT NO. NM0028355**

Dear Ms. McDonald:

Enclosed are Los Alamos National Laboratory's monthly DMRs for August, 1999 as required under NPDES Permit No. NM0028355. There were two effluent limitations exceeded for the industrial outfalls which are listed in the attached table. There were no effluent limitations exceeded for the Sanitary Outfall 13S.

Please contact Carla Jacquez at (505) 665-0450 or Mike Saladen at (505) 665-6085 if you have any questions concerning these DMRs.

Sincerely,



Steven R. Rae  
Group Leader, ESH-18  
Water Quality and Hydrology Group

SR:CJ/rm

- Cy: J. Davis, NMED/SWQB, Santa Fe, New Mexico, w/enc.
- J. Parker, NMED/DOE/OB, Santa Fe, New Mexico, w/enc.
- J. Vozella, DOE/LAAO, w/enc., MS A316
- K. Agogino, DOE/AL, Albuquerque, New Mexico, w/enc.
- C. Soden, DOE/AL, Albuquerque, New Mexico, w/enc.
- T. Gunderson, DIR, w/enc., MS A100
- D. Erickson, LANL, ESH-DO, w/enc., MS K491
- LANL Outfall Owners, w/enc.
- WQ&H File, w/enc., MS K497
- CIC-10, w/enc., MS A150



15803

LANL/Non-HSWA Regulatory/NPDES

# INDUSTRIAL WASTE DEVIATIONS

## AUGUST, 1999

<u>EPA ID</u>	<u>TECH AREA LOCATION</u>	<u>DATE</u>	<u>PARAMETER</u>	<u>RESULTS/LIMIT</u>	<u>UNITS</u>
051	TA-50-1	8/2/99	Zn(daily max.)	2.10/1.83	lbs/day
051	TA-50-1	8/1/99 - 8/31/99	Zn(daily avg.)	0.66/0.62	lbs/day

**University of California  
Los Alamos National Laboratory  
Los Alamos, New Mexico 87545**

**SUBJECT: NONCOMPLIANCE WITH EFFLUENT LIMITATION  
IN NPDES PERMIT NM0028355**

**1. Location of noncompliant discharge**

Serial 051                      TA-50-1

**2. Description of noncompliant discharge**

The average mass loading of 0.66 lbs./day exceeded the daily average permit limit of 0.62 lbs./day for Total Zinc. The maximum mass loading of 2.10 lbs./day exceeded the maximum daily permit limit of 1.83 lbs./day for Total Zinc.

**3. Impact upon the receiving waters**

Outfall 051 discharges into a tributary to Mortandad Canyon. Mortandad Canyon is an ephemeral tributary to the Rio Grande. No adverse environmental impacts were observed.

**4. Cause of noncompliance**

The Laboratory's TA-50 Radioactive Liquid Wastewater Treatment Facility (TA-50 RLWTF) uses zinc in its Chemical Denitrification Treatment Process to meet New Mexico Groundwater Standards for nitrate. Additionally, the TA-50 RLWTF uses Tubular Ultra-Filtration and Reverse Osmosis (R/O) Treatment to meet NPDES Permit limits, and U. S. Department of Energy, Derived Concentration Guidelines for radioactive elements. Reject wastewater from the R/O treatment unit is currently blended back into the headworks of the TA-50 RLWTF. As a result, zinc is continually re-circulated through the TA-50 RLWTF and concentrated in the R/O wastewater.

**5. Anticipated time of condition if applicable**

The condition was discovered during compliance monitoring at Outfall 051 at 11:20 a. m. on August 2, 1999.

## **6. Duration of condition if uncorrected**

The estimated duration of non-compliance was approximately 30 minutes on August 2, 1999.

## **7. Steps taken to reduce and eliminate condition**

An occurrence investigation was conducted by the Laboratory's Occurrence Investigation Group (ESH-7), Water Quality & Hydrology Group (ESH-18), Analytical Chemistry Group (CST-9), Radioactive Liquid Wastewater Group (FWO-RLW), and the U. S. Department of Energy, Los Alamos Area Office (DOE/LAAO) personnel on August 12, 1999, to discuss findings and corrective actions. The zinc results were validated by an outside contractor. The TA-50 RLWTF does not currently have a Mechanical Evaporator on-line to treat the R/O reject stream. Therefore, zinc has been concentrating in the facility's wastewater because the R/O reject water was being re-circulated through the TA-50 RLWTF. As an interim measure, the clarifiers at TA-50 RLWTF were put back on line on August 10, 1999, to precipitate out the zinc. Additionally, the facility operators are investigating the use of operational sampling equipment to test for zinc, prior to discharge from the effluent tanks.

## **8. Steps taken to prevent a recurrence of the condition**

Listed below are the long term corrective actions at the TA-50 RLWTF to improve effluent quality and to avoid future zinc exceedances:

- Installation of the Electrodialysis Reversal (EDR) Treatment Unit is estimated by October, 1999. The EDR further treats and reduces the volume of the reject stream from the R/O unit.
- The project schedule for the installation and start-up of the Mechanical Evaporator for the TA-50 RLWTF is February 28, 2000. The condensate stream from the Mechanical Evaporator will be piped to RLWTF effluent tanks for eventual discharge to Outfall 051 or future reuse under the RLWTF's Zero Liquid Discharge Project. As currently proposed, the bottoms waste stream from the mechanical evaporator will be shipped to an off-site contractor for solidification and disposal.

**9. Steps taken to minimize any adverse impact to navigable water**

No adverse impact to navigable waters is anticipated, as the discharge did not cross the Laboratory boundary or reach the Rio Grande.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)  
 NAME UNIVERSITY OF CALIFORNIA  
 LOS ALAMOS NATIONAL LABORATORY  
 ADDRESS PO BOX 1663; MAIL STOP K490  
 LOS ALAMOS, NM 87545

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

(2-16) NM0028355 (17-19) 001 A  
 PERMIT NUMBER DISCHARGE NUMBER

MAJOR  
 F - FINAL

FACILITY  
 LOCATION Outfall Owner: D. Padilla

MONITORING PERIOD  
 FROM YEAR MO DAY TO YEAR MO DAY  
 99 08 01 99 08 31  
 (20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

POWER PLANT DISCHARGE  
 \*\*\* NO DISCHARGE \*\*\*

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		3 Card Only) QUANTITY OR LOADING			4 Card Only) QUANTITY OR CONCENTRATION				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS			
PH 00400 1 0 0	SAMPLE MEASUREMENT	*****	*****	*****	7.8	*****	7.8	SU	0	01/30	GRAB
	PERMIT REQUIREMENT	*****	*****		6.0 MINIMUM	*****	9.0 MAXIMUM			01/30	GRAB
TOTAL SUSP. SOLIDS 00530 1 0 0	SAMPLE MEASUREMENT	*****	*****	*****	*****	2	2	MG/L	0	01/30	GRAB
	PERMIT REQUIREMENT	*****	*****		*****	30 DAILY AVG	100 DAILY MAX			01/30	GRAB
FLOW 50050 1 0 0	SAMPLE MEASUREMENT	0.5558	0.5558	MGD	*****	*****	*****	*****		01/30	EST
	PERMIT REQUIREMENT	REPORT DAILY AVG	REPORT DAILY MAX		*****	*****	*****			01/30	EST
FREE AVAIL. CHLORINE 50064 1 0 0	SAMPLE MEASUREMENT	*****	*****	*****	*****	0.0	0.0	MG/L	0	01/30	GRAB
	PERMIT REQUIREMENT	*****	*****		*****	0.2 DAILY AVG	0.5 DAILY MAX			01/30	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE			
Steven R. Rae ESH-18 GROUP LEADER			505 665-0453	99	8	28	
TYPED OR PRINTED			AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)  
 NAME UNIVERSITY OF CALIFORNIA  
 LOS ALAMOS NATIONAL LABORATORY  
 ADDRESS PO BOX 1663; MAIL STOP K490  
 LOS ALAMOS, NM 87545

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

(2-16)  
 NM0028355  
 PERMIT NUMBER

(17-19)  
 051 A  
 DISCHARGE NUMBER

MAJOR  
 F - FINAL

FACILITY  
 LOCATION Outfall Owner: S. Hanson

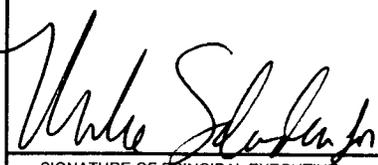
MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
99	08	01	99	08	31

(20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

INDUST. WASTE TREATMENT DISCHARGE  
 \*\*\* NO DISCHARGE \*\*\*

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		3 Card Only QUANTITY OR LOADING (46-53)			4 Card Only QUANTITY OR CONCENTRATION (38-45)				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE (54-61)	MAXIMUM (54-61)	UNITS	MINIMUM (46-53)	AVERAGE (54-61)	MAXIMUM (54-61)	UNITS			
CHEMICAL OXY. DEMAND 00340 1 0 1	SAMPLE MEASUREMENT PERMIT REQUIREMENT	7 94 DAILY AVG	11 156 DAILY MAX	LB/DY	*****	20 125 DAILY AVG	33 125 DAILY MAX	MG/L	0	05/30 01/07	GRAB GRAB
PH 00400 1 0 0	SAMPLE MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****	6.1 6.0 MINIMUM	*****	8.9 9.0 MAXIMUM	SU	0	99/99 99/99	REC REC
TOTAL SUSP. SOLIDS 00530 1 0 0	SAMPLE MEASUREMENT PERMIT REQUIREMENT	0.5 18.8 DAILY AVG	0.7 62.6 DAILY MAX	LB/DY	*****	*****	*****	*****	0	05/30 01/07	GRAB GRAB
TOTAL NITROGEN 00600 1 0 1	SAMPLE MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****	*****	1.3 REPORT DAILY AVG	1.3 REPORT DAILY MAX	MG/L	0	01/30 01/30	GRAB GRAB
AMMONIA (AS N) 00610 1 0 0	SAMPLE MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****	*****	0.5 REPORT DAILY AVG	0.5 REPORT DAILY MAX	MG/L	0	01/30 01/30	GRAB GRAB
NITRATE-NITRITE AS N 00630 1 0 1	SAMPLE MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****	*****	0.1 REPORT DAILY AVG	0.1 REPORT DAILY MAX	MG/L	0	01/30 01/30	GRAB GRAB
TOTAL CADMIUM 01027 1 0 1	SAMPLE MEASUREMENT PERMIT REQUIREMENT	0.00 0.06 DAILY AVG	0.00 0.30 DAILY MAX	LB/DY	*****	0.0 0.2 DAILY AVG	0.0 0.2 DAILY MAX	MG/L	0	05/30 01/07	GRAB GRAB

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Steven R. Rae ESH-18 GROUP LEADER			505 665-0453	99	8	28	
TYPED OR PRINTED			AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)



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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

(2-16) NM0028355 (17-19) 051 A  
 PERMIT NUMBER DISCHARGE NUMBER

MAJOR  
 F - FINAL

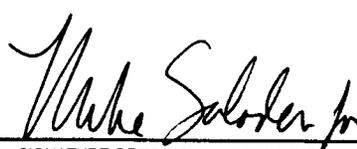
FACILITY  
 LOCATION Outfall Owner: S. Hanson

MONITORING PERIOD  
 FROM YEAR MO DAY TO YEAR MO DAY  
 99 08 01 99 08 31  
 (20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

INDUST. WASTE TREATMENT DISCHARGE  
 \*\*\* NO DISCHARGE \*\*\*

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	SAMPLE MEASUREMENT PERMIT REQUIREMENT	3 Card Only QUANTITY OR LOADING (46-53) (54-61)			4 Card Only QUANTITY OR CONCENTRATION (38-45) (46-53) (54-61)				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
FLOW 50050 1 0 0		0.0260	0.0413	MGD	*****	*****	*****	*****		99/99	REC
TOTAL MERCURY 71900 1 0 1		REPORT DAILY AVG	REPORT DAILY MAX		*****	*****	*****			99/99	REC
TOTAL MERCURY 71900 1 0 1		0.000	0.00	LB/DY	*****	0.00	0.00	MG/L	0	05/30	GRAB
TOTAL MERCURY 71900 1 0 1		0.003	0.09		*****	0.01	0.01	MG/L	0	01/07	GRAB
TOTAL TOXIC ORGANICS 78141 1 0 1 *		*****	*****	*****	*****	0.0	0.0	MG/L	0	01/30	GRAB
TOTAL TOXIC ORGANICS 78141 1 0 1 *		*****	*****	*****	*****	1.0	1.0	MG/L	0	01/30	GRAB
	SAMPLE MEASUREMENT PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT PERMIT REQUIREMENT										
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Steven R. Rae ESH-18 GROUP LEADER			505 665-0453	99	8	28	
TYPED OR PRINTED			AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)  
 \* Note: Sample data for Acrolein, Acrylonitrile, Methylene Chloride, Chloroform, 1,2-Dichloroethane (volatiles), 2-Chloronaphthalene (semivolatiles), Gamma-BHC, and Chlordane (pesticides) were Undetected Estimated (U) by Laboratory QA/QC. All other compounds were not detected and were qualified Undetected (U).

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

(2-16) NM0028355 PERMIT NUMBER  
 (17-19) T3S A DISCHARGE NUMBER

MAJOR  
 F - FINAL

TREATED SANITARY SEWAGE EFFLUENT

\*\*\* NO DISCHARGE \*\*\*

FACILITY  
 LOCATION Outfall Owner: D. Padilla

MONITORING PERIOD  
 FROM YEAR MO DAY TO YEAR MO DAY  
 99 08 01 TO 99 08 31  
 (20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

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PARAMETER (32-37)	SAMPLE MEASUREMENT PERMIT REQUIREMENT	3 Card Only QUANTITY OR LOADING (46-53)			4 Card Only QUANTITY OR CONCENTRATION (38-45)				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE (54-61)	MAXIMUM (54-61)	UNITS (54-61)	MINIMUM (38-45)	AVERAGE (46-53)	MAXIMUM (46-53)	UNITS (54-61)			
BIO. OXY. DMD. 5 DAY 00310 1 0 0		6 100 DAILY AVG	***** *****	LB/DY	***** *****	2 30 DAILY AVG	2 45 DAILY MAX	MG/L	0	03/30 03/30	COMP COMP
PH 00400 1 0 0		***** *****	***** *****	*****	7.2 6.0 MINIMUM	***** *****	7.4 9.0 MAXIMUM	SU	0	04/30 01/07	GRAB GRAB
TOTAL SUSP. SOLIDS 00530 1 0 0		11 100 DAILY AVG	***** *****	LB/DY	***** *****	4 30 DAILY AVG	4 45 DAILY MAX	MG/L	0	03/30 03/30	COMP COMP
FLOW 50050 1 0 0		0.3152 REPORT DAILY AVG	0.4340 REPORT DAILY MAX	MGD	***** *****	***** *****	***** *****	*****		99/99 99/99	TOTAL TOTAL
FECAL COL.BAC./100ML 74055 1 0 0		***** *****	***** *****	*****	***** *****	2 500 LOG MEAN	6 500 DAILY MAX	#/100ML	0	03/30 03/30	GRAB GRAB
	SAMPLE MEASUREMENT PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  Steven R. Rae ESH-18 GROUP LEADER  TYPED OR PRINTED	I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  <i>Mike Salas</i>	TELEPHONE	DATE			
			505 665-0453	99	8	28	
			AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)