



Environment, Safety, Health & Quality
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National Nuclear Security Administration
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Date: June 3, 2010
Refer To: ENV-RCRA-10-104
LAUR: 10-03618

Ms. Sonia Hall
U.S. Environmental Protection Agency, Region 6
Compliance Assurance and Enforcement Division
Water Enforcement Branch (6EN)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Dear: Ms. Hall:

SUBJECT: LOS ALAMOS NATIONAL LABORATORY, NPDES PERMIT NO. NM0028355, NOTICE OF PLANNED CHANGE AT NPDES OUTFALL 051

The National Pollutant Discharge Elimination System (NPDES) Permit No. NM0028355 for the National Nuclear Security Administration (NNSA) and Los Alamos National Security, LLC (LANS) requires the permittee(s) to notify the U. S. Environmental Protection Agency (EPA) regarding any physical alterations or additions to the permitted facility that could significantly change the nature or increase the quantity of pollutants discharged (see Part III.D.1.a. *Reporting Requirements*). On August 1, 2010, new copper (Cu) limits of 0.14 µg/L and new zinc (Zn) limits of 2.2 µg/L will be effective. Typical copper and zinc concentrations in the TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF) effluent range from 20-60 µg/L Cu and 5-15 µg/L Zn. The following activities have been completed or are on-going to meet the new copper and zinc limits:

- The RLWTF is performing bench-scale column testing of ion exchange and adsorption media to remove copper and zinc from the RLWTF effluent waters. To date, nine different media have been tested at various flow rates, pH and oxidation conditions. Two of the nine media have reduced copper and zinc concentrations in the RLWTF effluent to below 1 µg/L. Only one media has been able to reduce the copper concentrations to below the 0.14 µg/L NPDES concentration as required on August 1, 2010. Long duration, bench-scale capacity/breakthrough studies are continuing. Study cost to date: \$125K.
- A full-scale ion exchange system has been installed at the RLWTF to treat the effluent waters for removal of copper and zinc. The system will be approved for operation by June 11, 2010. System installation cost: \$519K.

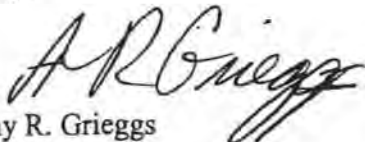
- Copper air lines are presently used for sparging air into the two RLWTF effluent tanks to enhance mixing of the RLWTF effluent. These copper air lines are being removed from the effluent tanks to remove any source of copper in the effluent. Activity cost: \$15K.
- Two types of ion exchange media and vessels have been ordered from a vendor. Expected delivery of one media type is mid-June. The second media type delivery is expected in early July, 2010. Both media are not commercially available. LANS has a non-disclosure agreement with the vendor pertaining to the experimentation with and use of these media. Media cost: \$56K.

In addition to these new ion exchange media, the RLWTF employs strategies to ensure that the effluent waters are in compliance with NPDES requirements. These strategies include Waste Acceptance Criteria (WAC) compliance, treatment of the wastewater through Best Available Technologies and, if needed, reprocessing of off-spec effluent waters. Effluent from the main treatment units is collected in batch mode in a tank. Prior to discharge of the effluent, a representative sample of the effluent is analyzed for indicator constituents to ensure compliance with the NPDES permit. If indicator constituent concentrations exceed permit limits, the water is reprocessed. Reprocessing options include: treatment through the polishing ion exchange (IX) units, retreatment through one or more of the main treatment units (e.g., Reverse Osmosis (RO), or RO and IX), retreatment through the entire main treatment process and/or combining treated water with other in-plant waters. The diagram that accompanies this notice, entitled "LANL Radioactive Liquid Waste Treatment Facility (TA-50) Process Schematic" shows primary RLWTF process flow paths (See Enclosure 1). Dashed outlines indicate a unit operation or tank that is presently not always used, or planned future installation as in the case of the pressure filter, but which could be brought into service, if needed.

The Minimum Quantification Level (MQL) in Part II of the NPDES Permit No. NM0028355 for copper is 10 µg/L, and the MQL for zinc is 20µg/L. As specified in Section A. of PART II – OTHER CONDITIONS of the NPDES permit, a value of zero (0) may be used on the Discharge Monitoring Report (DMR) if the copper and zinc concentrations in the required monthly samples are less than the MQL.

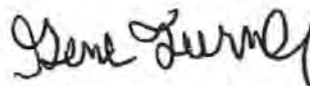
Please contact Marc Bailey at (505) 665-8135 or Mike Saladen at (505) 665-6085 of the Water Quality & RCRA Group (ENV-RCRA) if you have questions.

Sincerely,



Anthony R. Grieggs
Group Leader
Water Quality & RCRA Group (ENV-RCRA)
Los Alamos National Security, LLC

Sincerely,



Gene Turner
Environmental Permitting Manager
Environmental Projects Office
Los Alamos Site Office
National Nuclear Security Administration

ARG:GT:MS/lm

Enclosure: a/s

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