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**Los Alamos**  
NATIONAL LABORATORY

**memorandum**

*Chemical Science and Technology  
Responsible Chemistry for America*

CST-13 Rad & Industrial Waste Water  
Science, MS E518  
Los Alamos, New Mexico 87545

To/MS: Tori George, General Law, MS A187  
Thru: Steve Hanson, CST-13, MS E518  
From/MS: David Moss, CST-13, MS E518  
Phone/FAX: 667-4301/665-6320  
Symbol: CST-13LW-96-058  
Date: April 18, 1996

**SUBJECT: POSTING OF MORTENDAD CANYON**

The National Pollutant Discharge Elimination System (NPDES) Category 051 Compliance Task Force consists of representatives from the Radioactive and Industrial Wastewater Sciences Group (CST-13), the Water Quality and Hydrology Group (ESH-18), the Department of Energy (DOE), and the New Mexico Environment Department/Agreement in Principle (NMED/AIP). This Task Force was organized to perform a comprehensive technical review of programmatic deficiencies related to the Los Alamos National Laboratory's NPDES-permitted outfall (Outfall 051) at Mortendad Canyon. Provided below is information on the decision reached by the Task Force on the posting of this outfall.

Please inform me of any legal issues you identify related to the Task Force's position on the posting of this outfall. If you have any general questions regarding the posting issue, you may contact me at 667-4301. If you have any questions regarding the radiological survey or ESH-1's position on the recommended posting, contact Brian Scott at (505) 699-2733 (cellular phone) or 104-7343 (pager). Please reply by May 15, 1996.

**TASK FORCE POSITION ON POSTING OF OUTFALL AT MORTENDAD CANYON**

Mortendad Canyon serves as the outfall for the Radioactive Liquid Waste Treatment Facility (RLWTF) at TA-50-1. The RLWTF treats radioactive liquid waste generated throughout the Los Alamos National Laboratory. Radioactive liquid waste is treated through the RLWTF and discharged to the outfall. Before and during the discharge to the outfall, the effluent is analyzed for chemical and radiological components as required by the NPDES permit and best management practices.

On February 1, 1996, the Task Force discussed the possibility that the outfall should be posted to protect the public against radioactive exposure. During this meeting, Brian Scott, the ESH-1 support member of the Task Force, gave an update on the Mortendad Canyon radiological survey data conducted in January and compared them with DOE Order 5400.5 derived concentration guidelines (DCGs).

According to Brian Scott, the results of both the RCRA Facility Investigation (RFI) work plan for Operating Unit (OU) 1147 and ESH-1 surveys indicate that the Mortendad Outfall has both elevated radioactive soil concentrations and radiation exposure levels within portions of the stream bed accessible to the public. Soil concentration data entered into a program designed to implement DOE 5400.5 (RESRAD program, designed by Argonne National Laboratory)

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indicated that a 100 mrem will be exceeded through a combination of soil ingestion, dust inhalation, and exposure after approximately 24 hours/day for two continuous months.

The Task Force discussed the probability of a 100 mrem exposure to the public at these exposure rates and agreed that a 100 mrem exposure would be highly improbable. However, the Task Force also agreed the outfall area easily accessible to the public should be posted to ensure best management practices are followed.

For compliance purposes, it is recommended that the stream bed be posted "CAUTION, SOIL CONTAMINATION AREA". This recommendation was based on Table 2-4 of the *LANL Radiological Control Manual*, which states that "CAUTION, SOIL CONTAMINATION AREA" is to be posted when contaminated soil is not releasable in accordance with DOE Order 5400.5 (pages 2-14). The soil in this stream bed, if released for unrestricted use, may contribute to radiological exposure pathways which may exceed 100 mrem/year to an individual.

Cy.: Alex Gancarz, CST-DO, MS J515  
Joe Graf, ESH-1, MS K487  
Roger Huchton, ESH-1, MS K483  
Brian Scott, ESH-1, MS G776  
Steve Rae, ESH-18, MS K497  
Alex Puglisi, ESH-18, MS K497  
Mike Saladen, ESH-18, MS K497  
Robert King, DOE/LAAO, MS E517  
Ken Zamora, DOE/LAAO, MS A316  
Ralph Ford-Schmid, NMED/AIP, MS E503  
Anna Collery, CST-13/IT Corp., MS E518  
CST-13 Group File