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MEMORANDUM FOR: Daniel E. Martin, Section Leader
Low-Level Waste and Uranium
Recovery Projects Branch
Division of Waste Management

FROM: Mysore S. Nataraja, Section Leader
Engineering Branch
Division of Waste Management

SUBJECT: WMEG REVIEW OF THE MOISTURE CONTENT NONCOMPLIANCE REPORT AT THE SHIPROCK UMTRA SITE.

As requested by Technical Assistance Request #WM-51064, WMEG has reviewed the subject documentation. We have found the conclusions supported by the RAC's investigations and analyses to be acceptable. Furthermore, we find the corrective actions that have been implemented by the RAC are appropriate and will help preclude repetition of this problem.

Attached to this memorandum is a copy of our review. Any questions regarding this review should be directed to Mr. Steve Smykowski of my staff on x74109.

ORIGINAL SIGNED BY
Mysore S. Nataraja

Mysore S. Nataraja, Section Leader
Engineering Branch
Division of Waste Management

Attachment:
As stated

WM Record File
WM Project 58
Docket No.
PDR ✓
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OFC	:WMEG	:WMEG	:	:	:	:	:
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ATTACHMENT

WMEG REVIEW OF THE MOISTURE CONTENT NONCOMPLIANCE
REPORT AT THE SHIPROCK UMTRA SITE.

On October 1, 1985 Dan Gillen (WMLU) performed an on-site geotechnical engineering construction review of the Shiprock site. As a result of his review, it was discovered that a large percentage of density tests taken in the relocated contaminated material did not comply with the specified moisture range of optimum to 2% below optimum moisture. Accordingly, a nonconformance report was issued by DOE.

WMEG has performed a review of the documentation of investigations, conclusions, and corrective actions resulting from the noncompliance with specifications. Based on the information presented and a telephone conversation between Mr. Steve Smykowski (WMEG) and Mr. Don Summers (RAC) (Jan. 2, 1986), we find that the noncompliance is primarily a result of the following:

a) the use of the nuclear density gauge in rocky material resulted in inaccurate readings, and

b) the values of several field moisture contents at the time of compaction were compared against moisture content values from unrepresentative density curves for the particular material type. This created the misconception that the moisture contents exceeded the upper limit of the specified range.

In this instance, the specified range for moisture content is a tight specification and can be difficult to meet. The RAC has determined that this specification can be changed to include a wider range of values (5% below optimum moisture content to 1% above optimum moisture content) without seriously affecting pile stability. We find this new specification to be more practical and we do not feel this change will restrict the design from meeting the EPA standards. In addition, we find that the corrective actions implemented by the RAC to preclude recurrence of this problem are appropriate and should help ensure that the material is placed according to the revised specifications.