

# SERGEANT, HAUSKINS & BECKWITH

CONSULTING SOIL AND FOUNDATION ENGINEERS

APPLIED SOIL MECHANICS • ENGINEERING GEOLOGY • MATERIALS ENGINEERING

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BUD WOODWARD

Report # 22

October 31, 1979

State of New Mexico  
Natural Resources Department  
Water Resources Division  
Bataan Memorial Building  
Santa Fe, New Mexico 87503

SHB Job No. E79-1096

Attention: Mr. S. E. Reynolds  
State Engineer

Re: Church Rock Tailings Dam  
Church Rock, New Mexico

Gentlemen:

In accordance with the request of Mr. Jim Whiteman of your office, transmitted herewith are supplementary data in support of our previously submitted design analysis report, plans and specifications for raising the northern portion of the Church Rock Tailings Dam to the 6980 crest elevation.

Included in this submittal are the following data:

1. Stability analysis calculations.
2. Seepage analysis calculations.
3. Filter design calculations.
4. Flow net of main dam including seepage through the foundation.

9804020107 791031  
PDR ADOCK 04008907  
C PDR

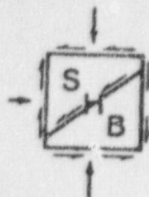
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Church Rock Tailings Dam  
Church Rock, New Mexico  
SHB Job No. E79-1096

5. Liquification potential calculations for the tailings sands.
6. Laboratory permeability test results on proposed drain materials.
7. Data available on proposed pits for the various zones within the embankment.
8. Technical support of the use of the vertical chimney drain as opposed to an inclined drain.
9. Additional stability analysis for the cross dikes using lower strength parameters for the tailings sand.
10. Additional test data on the volcanic cinders proposed for use in the chimney and finger drains as well as any case history information relative to the use of volcanic cinders in zoned embankments.

In order to clarify Addendum No. 1 to Volume 4 of this series of reports, the earthquake magnitudes referred to in that addendum and hereafter are Richter magnitude. This clarification was requested by Mr. Jim Whiteman.

Also included herewith are data that was previously requested by the Nuclear Regulatory Commission. We trust that this additional data will be sufficient to enable your prompt review and acceptance of the design so that construction of the dam can proceed.



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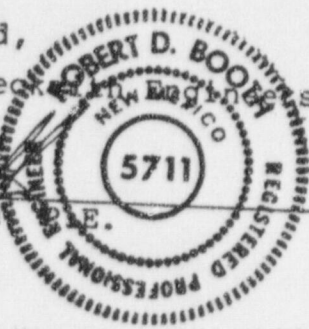
Church Rock Tailings Dam  
Church Rock, New Mexico  
SHB Job No. E79-1096

Should any questions arise concerning the above, please do not hesitate to call.

Respectfully submitted,  
Sergeant, Hauskins & Beckwith

By

*Robert D. Booth*  
Robert D. Booth



Copies: Addressee (1)  
United Nuclear Corporation (3)



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