

STATE OF NEW MEXICO
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RADIATION PROTECTION BUREAU

June 22, 1982

Mr. James M. Rose
Ranchers Exploration and Development Corporation
Box 6217
Albuquerque, NM 87197

RE: Your letter of May 11, 1982 concerning the Johnny M Mine

Dear Jim:

The EID's concerns regarding cleanup activities at the Johnny M Mine Site are the NM Radioactive Material Licensed Activities, i.e., two backfill material storage areas. These locations have been identified in person by members of this office and your company and in your correspondence to the Division.

As part of the ALARA Program (As Low As Reasonably Achievable) specified in Part 4-100B of the NM Radiation Protection Regulations (NMRR) and as discussed at the May 7, 1982 meeting, the 25 microroentgens per hour level described in (a) of the April 12, 1982 EID letter is a target level (please note letter stated "... should not exceed ...") that after examination of the site the EID believes your company can achieve in most cases with your suggested program of scraping, clean up and cover. The state policy and regulatory requirement of radiation protection is that any unnecessary radiation exposure should be minimized to the extent feasible (4-100B NMRR). The use of specified target levels and maximum levels is in conformance with this policy and the regulations. The use of these levels also takes into consideration the confidence levels in instrumentation, analysis techniques and human capabilities. Striving to reach the target levels without exceeding the maximum levels will lower the public risk, demonstrate compliance for license termination and be beneficial to your company.

In order to meet the 100 mR annual radiation limitation which is required by Part 4-100 including footnote 9 of the NMRR an external gamma reading of 57 microroentgens per hour plus background is required to be approximately 10 microroentgens (µR/hr) per a radioactive material spill at the backfill storage areas. The spill rate provided in (c) and (d) of the April 12 letter and a maximum of 100 µR/hr (100 µR/hr) and footnote 9 on page 4-100.


Mr. James M. Rosel
June 22, 1982
Page 2

The experience of the EID and other agencies shows a definite relationship between radium, radon and gross gamma radiation levels from specific radioactive areas. For ease of measuring the cleanup progress of the mine site the standards specified in (a), (c) and (d) of the April 12 EID letter can be translated into a radium-226 measurement guide as specified in (b) of the EID letter. The 10 pCi/g radium level of (b) is related to the target of 25 microroentgens and is also an ALARA target level.

Since all situations cannot be rigidly covered by regulations, provisions are contained in the NRRPR to request exemptions or alternative standards based on specific justification under Part 4-150B. "The Division will approve the proposed limits if the applicant (licensee) demonstrates to the satisfaction of the Division that the proposed limits are not likely to cause any individual to receive a dose to the whole body in any period of one calendar year in excess of 0.5 rem." (500 mrem above background).

This letter should clear up any remaining problems concerning your reclamation program for the Johnny W. White Site.

Sincerely,


Thomas B. Christiansen
Environmental Scientist
Uranium Licensing Section

TBC/ac

cc: Groundwater Section - EID
Roger Kaufman - Danclars