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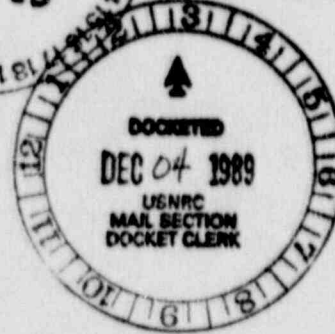
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RETURN ORIGINAL TO PDR, HQ.

November 30, 1989



Mr. Ramon Hall
Director
U.S. Nuclear Regulatory Commission
Uranium Recovery Field Office
Region IV
730 Simms Street, Suite 100A
Golden, Colorado 80401

Re: Docket No. 40-8904, License No. SUA-1472, L-Bar Soil Samples

Dear Mr. Hall:

We are in receipt of your letter of November 2, 1989 pertaining to soil samples at the L-Bar site. On behalf of Kennecott and BP AMERICA we would like to respond to the concerns raised in the letter.

We perceive two concerns presented in the letter. One, that certain areas outside of our agreed upon cleanup contour have been found to contain elevated soil radium concentration (samples 4, 5, 6, and 12). Two, that former ore storage areas contain elevated soil radium concentrations and that NRC analyses show the uranium appears depleted relative to radium, indicating the possible presence of by-product material (samples 7, 8, 9, 10, and 11).

INTERA, and its subcontractors Radiant Energy Management, Inc. and Chem-Nuclear Systems, Inc., expended considerable effort determining the type and extent of by-product contamination prior to, during, and after the reclamation effort. Radiant Energy Management conducted a thorough soil radium and gamma survey to establish background levels and to determine the corresponding $\mu\text{R/hr.}$ contour within which cleanup should be accomplished. The NRC in the letter of May 6, 1988 and in license modification 5 to SUA-1472 accepted the results of our survey and our proposed methodology and schedule of cleanup. Our 20 $\mu\text{R/hr.}$ contour was accepted as the threshold for cleanup.

Prior to reclamation construction, Chem-Nuclear was contracted to verify background, to evaluate the location of the contour, and to stake the contour for excavation. This was done very conservatively to assure cleanup during the construction process. Chem-Nuclear then monitored the scraping to assure that all contaminated material was removed. During

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construction the waste ore piles were removed and these areas scraped even though the ore was not by-product material. Cognizant of the remaining elevated gamma readings in portions of the ore storage areas, Chem-Nuclear was contracted to sample the soil in these areas to establish the radium to uranium ratio and therefore the presence or absence of ore and/or by-product material. The results showed radiometric relationships consistent with the presence of ore material. This was to be expected since the areas were very clearly ore storage areas. At the conclusion of wind blown scraping activities, Chem-Nuclear conducted a verification survey as required by license SUA-1472. The survey results indicated the cleanup was successful and the report was submitted to NRC on June 30, 1989.

Mr. Scott Grace of your office conducted a special inspection of the L-Bar site on August 28 and 29, 1989 for the purpose of verifying our cleanup efforts. Apparently no elevated gamma readings were found within the contour and therefore no soil samples were taken within this contour. For reasons unclear to us, all samples were taken outside of the contour, where no cleanup was attempted or where soil samples indicated the presence of remnant ore.

Our concerns relative to samples 4,5,6, and 12 have to do both with the samples being outside the agreed upon contour and with the improper sampling method by which they were taken. Contouring is an interpolation process. It therefore utilizes data values from selected sample points. It does not require that every location or particle of soil be analyzed. Contouring also does not assume that every point outside the contour is above a threshold and every point inside below it. It is meant to serve as a reasonable statistical estimate of a boundary. Naturally, therefore, outliers can exist. We are not surprised, therefore, that a few samples with elevated readings were reportedly found outside the contour, especially since a gamma meter was used essentially as a white glove in the search for them. The presence of these anomalous areas does not mean the contour was drawn improperly or that the area was inadequately cleaned. We maintain that the contour was arrived at properly and cleanup within it is adequate.

According to 10 CFR 40, Appendix A, Criterion 6, radium concentrations shall not exceed background by more than 5 pCi/g averaged over the first 15 cm. Mr. Grace, however, essentially scraped the surface in taking his samples, obtaining his samples only to a depth of 5 to 7.5 cm. This was observed by three individuals and is documented in a letter to INTERA from Chem-Nuclear dated August 31, 1989. We feel this sampling technique would have the effect of biasing the results since any by-product material would naturally be near the surface.

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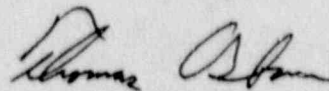
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The ore area samples (7, 8, 9, 10, and 11) were also outside the accepted cleanup area although we did expend considerable time and effort excavating the areas. Our samples indicated the source of remaining gamma activity was from ore material. This was expected since the areas were unquestionably ore storage areas and were quite distant from the rest of the windblown contour. It is confusing and disturbing that Mr. Grace's samples indicate the presence of significant by-product material, even though the samples were improperly taken from only the top 5-7.5 cm. We are not prepared to accept the conclusion that significant by-product contamination exists in these areas and have undertaken steps to help clarify the situation. Splits of Mr. Grace's samples were stored at the L-Bar facility and portions of these have been sent to the laboratory used for our previous analyses, Barringer Laboratory, for a consistency check. We have also returned to the site and taken soil samples from the top fifteen centimeters at each of the locations and submitted them to the lab. The results have not yet been received. They will be forwarded to NRC after we receive them. We will be prepared to discuss this situation further after these results are in.

In summary, INTERA, BP AMERICA, and Kennecott maintain that wind blown cleanup at the L-Bar site was successfully undertaken in accordance with the L-Bar Reclamation Plan and License SUA-1472. We firmly believe that no further cleanup is required.

If you have any questions or comments, please call.

Sincerely,



Thomas G. Osborn
Project Manager

TGO/blm

cc: R.A. DeLeonardis
J. Schurtz
G.E. Grisak
P.J. Quinton

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