

**HOMESTAKE MINING COMPANY**

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October 23, 1997

UPS NEXT DAY AIR TRACKING LABEL: *0858 087 405 3*

U.S. Nuclear Regulatory Commission  
Division of Waste Management, MST-7-J-9  
Attn. Mr. Joseph J. Holonich, Chief  
High Level Waste and Uranium  
Recovery Projects Branch  
11555 Rockville Pike  
Rockville, MD 20850

Re: **Docket No. 40-8903**  
**License No. SUA-1471**  
**Mine Ion-Exchange Decommissioning**  
**Response to Staff Questions**

Dear Mr. Holonich:

Homestake Mining Company of California (HMC) is pleased to respond to the informal comments by Mr. Ken Hooks and Ms. Elaine Brummet of your staff regarding our submittal of the Decommissioning Report for the Mine Ion-Exchange Plant. In Particular, a question arose regarding four elevated gamma exposure rate readings located approximately 50-75 feet west of the large building housing the ion-exchange processing equipment. The Northing and Easting coordinates of the four points are (13,-15), (14,-15), (14,-16) and (19,-15). The coordinates are referencing the grid system superimposed on Figure 3-1, Post-Reclamation IX Plant Gamma Survey Data Locations, submitted with the decommissioning report. The contact exposure rates for these points ranged from 30 to 68  $\mu$ R/h.

It was noted in the report that the Nuclear Regulatory Commission (NRC) and HMC considered, at the time that the IX plant was decommissioned, that all piping and facilities associated with the raw mine water were not regulated by the NRC. This included the surge pond and all piping between the mine, surge pond, and the ion-exchange plant. The surge pond was directly west of the large building and piping between the surge pond and the building was routed directly between the two facilities, or near the area of concern.

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During the reclamation activities, the piping from the IX plant to the overflow pond was removed for burial at the Grants mill site. The contaminated surface soils associated with the IX plant and piping runs were removed to depths up to three feet. The exposure rates were made and soil samples taken prior to backfilling with local clean soils.

The four elevated gamma sites are located outside the plant building site, and outside both of the former pond sites. The attached Figure 3-2 has the gamma locations shown on the superimposed grid system. At this time, it is impossible to know what was the cause of these higher readings. However, the area with the high gamma values is now covered by approximately two foot of clean soil.

At the time that the exposure rates and soil samples were taken in the area of concern, HMC staff considered that this area was not a part of the ion-exchange decommissioning effort but rather it was considered a part of the mine operations. The fact that the NRC only sampled in the area beneath the two buildings in 1993 may suggest that the NRC staff agreed with this position.

HMC contends that the elevated readings are of little concern for several reasons discussed below:

1. The area in question has been backfilled with local clean soils which attenuate the levels of gamma to near background levels (half-value layer of soil for these gamma emissions is approximately two inches). Any attempt to excavate in the area would likely mix the small amount of contaminated material with the clean material, rendering the mixture indistinguishable from background materials.
2. Elevated exposure rates are prevalent in the area. Some of the sources include waste rock from mining activities used for road base material, ore that has fallen off trucks along the haul routes including state highways, contaminated soils and other surface features such as uranium bearing outcrops, and existing contaminated uranium mine and milling facilities in the area.
3. The only conceivable future use for this land, other than its present use by Quivira Mining Company for uranium mining, is animal grazing, which is currently practiced on the surrounding land.
4. The nearest existing residence is approximately 3 miles northwest of the site. The nearest city or town is the Grants/Milan area located approximately 15 miles south of the site.

As we indicated in the decommissioning report, HMC believes that the remediated site is representative of the general condition of the area which is influenced by previous mining. The current site poses an insignificant health risk

and there is no significant radiation exposure likely in the foreseeable future.

If you have any additional questions regarding this issue, please contact me at the Grants site, 505-287-4456. Thank you.

Sincerely,

**Homestake Mining Company of California**

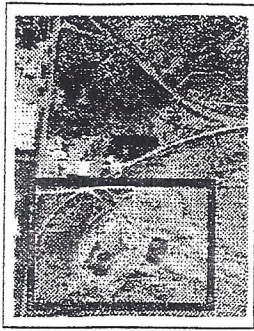
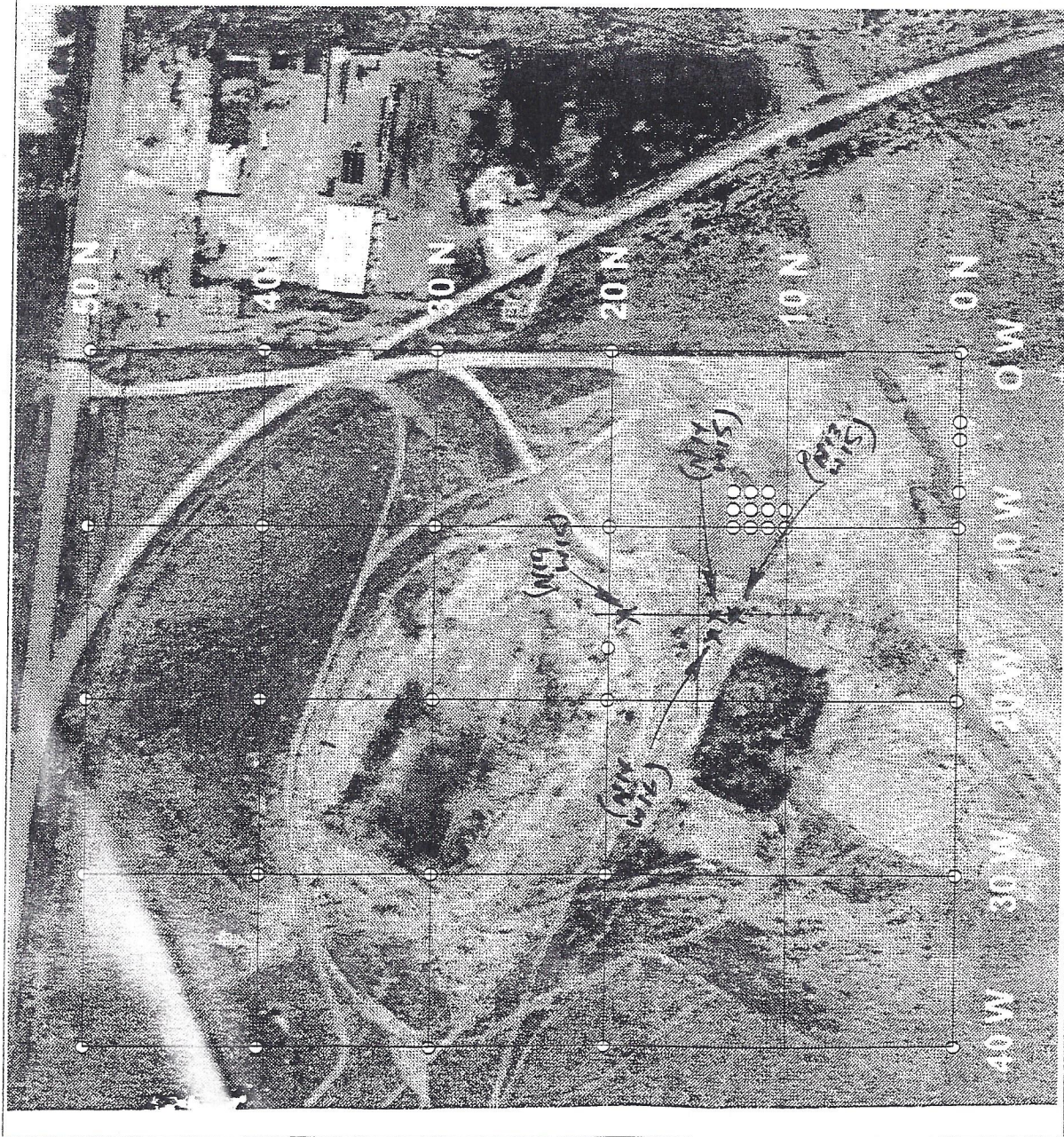


Roy R. Cellan

Corporate Manager of Reclamation

cc: Mr. Ken Hooks, NRC Project Manager ✓  
Ms. Elaine Brummet, NRC Staff Health Physicist  
Mr. C. Cain, NRC Arlington, TX  
Mr. Harold F. Barnes, HMC SFO





○ Soil Sample Locations

X- HIGH GAMMA SITES

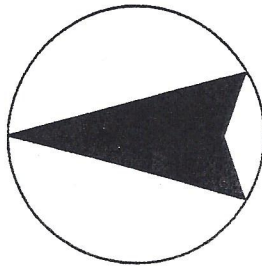


Figure 3-2 HMC - IX Plant Soil Sample Locations