HEALTH & ENVIRONMENT department

STATE OF NEW MEXICO
ENVIRONMENTAL IMPROVEMENT DIVISION
P.O. Box 968, Santa Fe, New Mexico 87503
(505) 827-5271
Thomas E. Baca, M.P.H., Director

Bruce King
GOVERNOR

George S. Goldstein, Ph.D.
SECRETARY

Larry J. Gordon, M.S., M.P.H.
DEPUTY SECRETARY

May 4, 1982

Mr. S.E. Reynolds
State Engineer Office
Bataan Memorial Building
Santa Fe, NM 87501

Dear Mr. Reynolds:

Homestake Mining Company-Grants, as part of their Uranium Mill Radioactive Material License Renewal Application, has submitted an Environmental Report. A copy of this report has been delivered to the State Engineer Office.

Please give this report a preliminary review for adequacy and completeness and provide me with any comments you have. I will be writing Mr. Ed Kennedy later this month accepting this report for formal technical review if it is found to be adequate and complete.

Thank you for your cooperation in this matter.

Very truly yours,

L.C. Landauer

L.C. Landauer, Project Manager
Uranium Licensing Section

LCL/dm
Enclosure

cc: Don Lopez, SEO
Ted Brough, Milan

SUBSTANCE: 1) data for MILDOS 2) [illegible] and radiological [illegible] program, [illegible] and monitoring program.

I. Data for MILDOS (Include variations of parameter with time, if possible).

A. PHYSICAL PLANT DATA

1. Detailed site plot plan (overlaid on topgraphic map, with scale and true north arrow) clearly identifying all location of

FIG B1-2. a. Site property boundaries

FIG A2-2 b. Raw ore storage pads

" A2-2 c. Primary crushers

" A2-2 d. Secondary crushers

" A2-2 e. Crushed ore storage areas

" A2-2 f. Ore grinders

" A2-2 g. Yellowcake dryer and yellowcake dryer stack FIG C4-2

" A2-2 h. Yellowcake packaging area exhaust stack FIG C4-2

" C9-1 i. Tailings impoundments and their boundaries ALSO C9-2

NA j. Any heap leach piles and their boundaries

" B1-2 k. Restricted area boundaries if different from site property boundaries

NA l. Some of the above features do not apply to an in-situ leaching project; the applicant should substitute the locations of

1. injection and production wells
2. surge tanks, ion exchange cloumns and evaporation ponds

2. Plant operations data

SECT. C1.2 a. General data ALSO SECT A1.2

" A1.2 1. Ore processing rates for all crushers and grinders, MT/d;

" C4.2.1.1 hr/d and d/yr operational TABLE C4.1

SECT A1.2 2. Raw ore grade, % U_3O_8 by weight, average, and range

" A1.2 3. Measured and/or expected yellowcake purity, % U_3O_8 by weight (average and grade) and MT/yr yellowcake produced

HOMESTAKE REVIEW

PRELIMINARY REVIEW 4-29-82

SECTION 3-300B

SECT A1.1 4. Expected dates of start of ore milling, end of ore milling, and completion of tailings area reclamation

NA 5. For an in-situ leaching project include

a. production rate, in gallons per minute; concentration of U_3O_8 in pregnant lixiviant

b. Concentration of Rn-222 in site well water or pregnant lixiviant

c. Expected dates of start of production, end of production and completion of site reclamation.

d. Locations of vents for production building

b. Ore storage data (Omit for in-situ leaching project)

SECT C1.2.3 TABLE C4.2 1. Area of each pile or bin complex, in m^2, average and range PAGE C4-4

SECT C1.2.1 2. Mass of stored ore stored in each pile, in MT, average and range PAGE C4-7

" C1.2.1 3. Description of ore storage area activities and equipment used

" C1.3.2 4. Antidusting measures routinely implemented PAGE C4-7

TABLE C1.1 5. Anticipated dusting rates, in MT/yr SECT. C4.2.1.3, page C4-6

TABLE C1.2 6. Anticipated Rn-222 released, in Ci/yr

? 7. Fractions of input ore sent to storage PAGE C4-7

C1.2.2.1 8. Description of grizzly or apron feeder

C1.2.2.1 c. Crushing, (grinding data C1.2.4.1) (omit for in-situ leaching project)

C1.3.2 1. Description of ventilation air filtration equipment

C1.3.2 2. Design efficiency of exhaust filters { ORE DRYER 92% PAGE C4-10

PAGE C4-8 3. Minimum efficiencies of exhaust filters

? 4. Filter testing procedures and schedule if applicable PAGE C1-17

? 5. Fraction of time filters not operational or used { ORE DRYER - 50 HRS/YR. PAGE C4-10

? 6. Any measured effluent concentrations

TABLE C4.2 7. Stack and vent heights and air flows (ALSO C4-7 REF.)

TABLE C4.3 (Ci/yr) 8. Anticipated release rates, in kg/hr

TABLE C4.4 9. Anticipated Rn-222 release rate, in Ci/yr

PAGE C4-8 & C4-9. 10. Fractions of ore throughput reaching filters as dust

d. Yellowcake drying and packaging data

/ 1. Processing rates, MT/hr, for drying and packaging if different

SECT A1.2 2. Hr/d and d/yr drying and packaging operatings are carried out

? 3. Description of all ventilation air filtration equipment with design, expected, and minimum efficiencies PAGE C1-17

? 4. Filtration equipment testing procedures and frequencies PAGE C1-17

? 5. Any measured effluent concentrations PAGE C1-17

TABLE C4.2 6. Stack heights and air flows TABLE C4.3 (AVG. EXIT VEL.)

TABLE C4.3 7. Anticipated release rates, in kg/hr, for the dryer stack,

PAGE C4-4 the packaging area ventilation exhaust, and any yellowcake storage area ventilation exhaust. PAGE C1-17

SECT C2.0 e. Tailings impoundment system data (or evaporation pond data for In-situ leaching project)

SECT C2.1 & C1.2.5 1. Brief physical, chemical, hydrological, and radiological description

SECT C2.1 2. Total area, surface areas expected to be under water, saturated, moist, and dry (indicate surface moisture contents used as basis of estimates)

SECT C9.1.1 3. Description of antidusting measures routinely implemented, their frequency of application and expected effectiveness

TABLE C1.1 4. Anticipated dusting rates for saturated, moist, and dry surface, areas, in g/m^2 per sec. (TONS/YR)

SECT C9.5 5. Anticipated Rn-222 release rates for underwater, saturated, moist and dry surface areas, Ci/yr per m^2

SECT C9.3 - C9.8 6. Brief description of reclamation plan

SECT. C9.3.2 7. Estimated drying time required prior to initiation of reclamation procedures and basis

? 8. Estimated time required to stabilize and reclaim after drying and basis

? 9. Post-reclamation estimate Rn-222 release rate, Ci/yr per m^2, and basis

SECT B2.0 B. METEOROLOGICAL DATA

SECT. B 2.1.1 1. Joint frequency data

(TAKEN IN VICINITY OF ANACONDA MILL & AT GALLUP)

a. Onsite meteorological data — TEMP. ONLY - SECT B2.1

1. Location and heights of instrumentation - NOT GIVEN

2. Description of instrumentation — NOT GIVEN

? 3. Minimum of 1 full year of onsite frequency distribution data in format used by MILDOS

? 4. Discussion of percent recovery and quality of data.

SECT B2.1.4 b. National Weather Service (NWS) station data (used only if onsite or near-site meteorological data is unavailable)

1. Locations of all NWS stations within 80 km (50 mi) (GRANTS)

TABLE B2.1 & FIG. B2.1 2. Available joint frequency distribution data by wind direction, wind speed, and stability class in format used by MILDOS

3. Period of record by month and year - TEMP, TABLE B2.3, RH. TABLE B2.4 PRECIP, TABLE.

NOT GIVEN 4. Height of data measurement

2. ENVIRONMENTAL DATA

1. A detailed topographic map of the area within 8 km (5 mi) of the site showing the locations of all

FIG. B1.2 a. Site boundaries

FIG B1.2 b. Lands owned, leased, or otherwise controlled (including mill site claims) by the applicant

FIG B1-2 c. Lands privately owned

FIG B1-2 d. Lands under the jurisdiction of the US Bureau of Land Management

? e. Lands otherwise publicly held

No f. Lands currently used for grazing, an those which could be used in the future

No g. Private residences or other structures used by the general public

TABLE C4.5 h. Vegetable or other crops, identified by type

(GWDP) i. Privat , public, ar i industrial water wells and natural spring.

TABLE C4.5 ~~Not~~ j. Milk animals (cows or goats)

2. Regional data (within 80 km)

FIG B1-4 FIG B1-3 a. Population distributions by direction (in each of the 16 compass points) and distance (0.5, 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 60, 70, and 80 km) for a recent year (no earlier than 1970), for the last year of expected milling (approximate), and for the last year prior to completion of tailings area reclamation (approximate)

(1 YR ONLY)

TABLE B1.3

TABLE C4.5 b. Available county food production data, in kg/yr, for vegetables (by type and totals) meat (all types), and milk, and any available future predictions by local governmental, industrial or institutional organizations.

II. PREOPERATIONAL AND OPERATIONAL MONITORING PROGRAMS

Monitoring programs should have been previously approved by the SFOS; a topographical map should be included which shows the site property

No boundaries and the locations of preoperational and operational radiological and meteorological monitoring stations

A. PREOPERATIONAL MONITORING PROGRAM

NA

1. Description of monitoring program using the format from Appendix B of the ULS's Uranium Licensing Application Handbook
2. Description of lower limits of detection for each analysis
3. Tabulation of data in form of annual averages using the format shown in Table 3 of NRC's Reg. Guide 4.14, Revision 1
4. Listing of raw data used to obtain annual averages

B. OPERATIONAL MONITORING PROGRAM

TABLE CB.1 1. Description of monitoring program using the format from Appendix B of the ULS's Uranium License Application Handbook

APPENDIX F 2. Description of lower limits of detection for each analysis

FIG C4-3. 3. Tabulation of data in form of annual averages using the format shown in Table 3 of NRC's Reg. Guide 4.14, Division 1

TO BE MADE AVAILABLE AT MILL OFFICE. 4. Listing of raw data used to obtain annual averages

III. OCCUPATIONAL RADIOLOGICAL MONITORING PROGRAM

This program should conform to the "Plant Radiation Program" Section of the ULS's Uranium License Application Handbook

TABLE CB.2 A. Summary description in tabular form of the monitoring program

ALSO APPENDIX D including personnel monitoring and bioassay

DATA TO BE MADE AVAILABLE AT MILL OFFICE (SEE CB.1) B. Tabulation of Data, including

1. Results broken down by work area, if possible
2. Bioassay results broken down into five categories depending on how many hours per week the worker spends in the yellow-cake area; 0-10 hours, 11-20 hours, 21-30 hours, 31-40 hours and more than 40 hours