



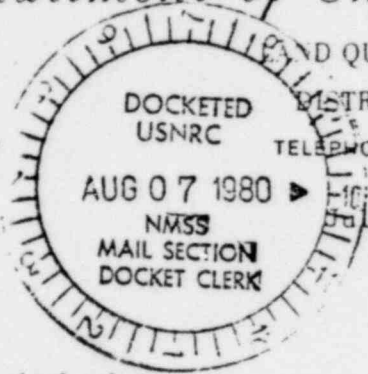
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ED HERSCHLER  
GOVERNOR

# Department of Environmental Quality

30 EAST GRINNELL STREET



LAND QUALITY DIVISION  
DISTRICT IV OFFICE  
TELEPHONE 307-672-6488

SHERIDAN, WYOMING 82801



Mr. Truman Louderback  
Cleveland Cliffs Iron Company  
P.O. Box 3140  
Casper, Wyoming 82602

RE: Leach Field, Collins Draw ISL Uranium R&D License No. RD3

Dear Mr. Louderback:

The leach field at Collins Draw was conditionally approved on April 25, 1980. The following conditions are to be satisfied prior to discharge to the leach field:

1. Baseline Sediment Quality (Table IV, Page 13)
  - a. The baseline core analyses shall be submitted. These analyses shall include the parameters outlined in Jim Wolf's memo of April 16, 1980.
  - b. Soil sample depths shall be included.
  - c. The results of these analyses shall be used to propose limits of sediment contamination beyond which the sediments must be excavated and removed to a licensed tailings disposal area.
2. Moisture Block Monitoring Program (Page 2)
  - a. Notification procedures shall be consistent with Water Quality Division permit condition 5. Land Quality Division shall be notified after verification of any moisture change greater than 5% over established baseline moisture conditions.
  - b. The radius of influence or detection of the moisture blocks shall be provided or estimated.
3. Suction Cup Monitoring (Page 2)

Chemical limits shall be proposed for radium - 226, selenium, arsenic, uranium, ammonia - nitrogen, total dissolved solids, chlorine, and sulfate beyond which control measures must be taken

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or the leach field shut down and cleaned up.

The following additional conditions shall be satisfied within thirty (30) days following the date of initiation of discharge to the leach field:

1. Geologic Cross-Sections

Two detailed geologic cross-sections shall be drawn from the surface to the 50-foot shale using the new core hole data.

2. Soil Bulk Density (Page 7)

Cleveland Cliffs shall provide documentation concerning the applicability of 108 lb/ft<sup>3</sup> as an acceptable value for bulk density. If this bulk density was measured, the method should be provided.

3. Moisture Distribution (Page 9)

The reasons for assuming a uniform 29% saturation shall be addressed. How closely is this assumption met at the site? What data supports this assumption? How sensitive are the calculations to an error in this assumption?

4. Unsaturated Flow

The following comments from Kathy Mueller's June 6, 1980 memo shall be addressed:

- a. The effect of batch discharge on the assumption of unsaturated flow shall be analyzed. This batch process may result in pressure head distributions causing saturated flow.
- b. The effect of hysteresis in the soils shall be addressed in relationship to the flow system.
- c. The effect of sodium discharge and a change in permeability of the drain field shall be considered.

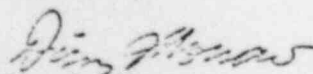
5. Computer Model

The following comments from Kathy Muller's June 6, 1980 memo shall be addressed:

- a. The assumptions made in describing the flow system, by the included equations, shall be clearly enumerated. The degree to which these assumptions are met shall be addressed.
- b. A sensitivity analysis of the error introduced into the results by an error in input parameters shall be included.
- c. All graphs of flow paths shall be labelled.

Please call if you have any questions.

Sincerely,

  
Dennis Morrow  
District Engineer

16275

cc: Jack Rothfleisch