

300 West 5295 South
Suite 120
Murray, Utah, 84107
801-743-4357
801-913-3665

Chairman Michael Jensen
Salt Lake County Council
2001 South State Street, #N2200
Salt Lake City, UT 84190

Ms. Margaret Uzelac
Co-Chair, Kennecott Tailings Impoundment Committee
3035 South 7785 West
Magna, UT 84044

August 19, 2008

Dear Chairman Jensen and Co-Chair Uzelac:

Kennecott Tailings Impoundment Committee

I understand the committee's objective is to develop, commission, and report an analysis of the seismic stability of the Southeast corner of the South Tailings Impoundment (i.e., 1700 South to 9400 West); it is my hope that you will include or consider the following:

1. The South Tailings Impoundment is not a water retention dam. It has been in place for over 100 years, well before today's standards that apply to dam safety were put in place. Although the South Tailings Impoundment is not regulated by *Rule R655-11. Requirements for the Design, Construction and Abandonment of Dams*, Kennecott agreed to meet the standards outlined in the attached letters. As the reports described below indicate, the standards are in the process of being satisfied. In this regard, we would suggest that the second sentence of the third bullet of Section IV read as follows:

The Design Basis Earthquake shall be determined based upon current requirements of Utah State Engineer Division of Dam Safety (<http://www.rules.utah.gov/publicat/code/r655/r655-011.htm#T12>) and may include displacement analyses if determined necessary.

2. It was Kennecott's understanding that the study would focus on the safety of the Magna Meadow Green Estates subdivision in the unlikely event of a maximum credible earthquake (MCE 7.25). We have indicated publicly that in the event of an earthquake of this size, there was potential for limited runout onto Highway 201, but not into Magna neighborhoods.
3. Within the last ten years, KUCC has already conducted five independent studies on the stability of the tailings impoundment by the following engineering consultants:
 - 2006, URS Corporation
 - 2002, AMEC Earth & Environmental
 - 1999, URS Greiner Woodward Clyde
 - 1998, AGRA Earth & Environmental

- 1998, Woodward-Clyde Consultants

We hope that the consultant hired by the committee will review the studies listed above to identify any gaps and then conduct tests of their own, if determined necessary. Kennecott is requesting a statement of confidence or concern regarding the due diligence of the above studies. Most importantly, we hope that the committee comes to the same conclusion as Kennecott, that the Meadow Green Estates community is safe from tailings in the event of significant seismic event.

We at Kennecott are dedicated to the continued safety of our neighboring communities and to working in an open and cooperative manner now and in the future.

Please let me know if you have any questions.

Sincerely,

Gina Crezée
Principal Advisor
Government and Community Relations

Kennecott
Utah Copper
8362 West 10200 South
P.O. Box 525
Bingham Canyon, Utah 84006-0525
(801) 569-6675

Robert E. Dunne
Project Manager

Kennecott

26 August 1992

Richard B. Hall, P.E.
Directing Engineer
Department of Natural Resources
Division of Water Rights
1636 West North Temple, Suite 220
Salt Lake City, Utah 84116-3156

Subject: Statement of Understanding of the Design Requirements for
Tailings Embankments.

This letter summarizes Kennecott's understanding of the design requirements and considerations which are prudent, necessary, and acceptable to the State of Utah, Division of Water Rights for the design of tailings structures. This understanding is based on the State of Utah Statutes and Administrative Rules for Dam Safety and discussions held on 24 April 1992 between the Division of Water Rights and Kennecott.

The Division of Water Rights has indicated that it recognizes the State of Utah Statutes and Administrative Rules for Dam Safety were prepared to primarily address water retention structures. Extending the requirements and criteria established within the administrative rules to tailings structures and tailings retention structures would allow for modifications to the rules based on the unique characteristics and operating requirements of tailings structures.

The primary goal of the existing regulations and any variations deemed acceptable and applicable to tailings structures is the protection of life, public safety, health and property. Based on these prime considerations, tailings structures must be designed to address the following criteria:

- 1) Tailings structures must be designed with a minimum static factor of safety of 1.5.
- 2) Tailings structures must be designed to withstand the Maximum Credible Earthquake (MCE) loading without "catastrophic failure." Catastrophic failure, though difficult to define for tailings, would involve a major tailings release resulting in a threat to public health, property and/or present a public safety risk.
- 3) A dynamic stability analysis would be performed to show that the embankment is stable after an MCE or OBE event with a minimum factor of safety of 1.0, coupled with a "state-of-the-art" dynamic deformation

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August 26, 1992
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analysis. The dynamic deformation design analysis will be required to demonstrate manageable displacement and deformation without threat of loss of life or extensive property damage. A coupled deformation analysis such as TARA-3F or Dynard would be performed to demonstrate anticipated deformations are manageable.

The calculated deformation could exceed the normal freeboard as defined within the Administrative Rules provided that the operating decant pond was kept at an adequate distance from the impoundment perimeter such that "catastrophic" tailings release was precluded.

- 4) The tailings structure should only experience an operational interruption under Operating Basis Earthquake (OBE) loading conditions. The level of acceptable operational interruption can be defined by Owner, provided public health and safety are not at risk.
- 5) A probabilistic design approach may be utilized to identify the OBE provided the tailings structure design ultimately satisfies the deterministic MCE deformation.

The tailings structure design criteria identified above would supersede comparable portions of Section R655-11-5C: Methods of Analysis, Subsection R655-11-5C.D: General Analysis Requirements and R655-11-6A, Factors of Safety. Tailings structure design would conform to the all other applicable sections of the Administrative Rules.



Bob Dunne
Project Manager
Kennecott Corporation

It is agreed that the design requirements identified above in concert with the other applicable sections of the State of Utah Statutes and Administrative Rules for Dam Safety are acceptable and appropriate to the State of Utah Department of Natural Resources, Division of Water Rights for the design of tailings structures.

Richard B. Hall, P.E.
Directing Engineer
Division of Water Rights



Norman H. Bangertter
Governor
Dee C. Hansen
Executive Director
Robert L. Morgan
State Engineer

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER RIGHTS

1636 West North Temple, Suite 220
Salt Lake City, Utah 84116-3156
801-538-7240

September 4, 1992

J. Riley



Bob Dunne
Kennecott Corporation
Kennecott Utah Copper
P O Box 525
Bingham Canyon UT 84006-0525

RE: Statement of Understanding of the Design Requirement for
Tailings Embankments

Dear Mr. Dunne:

We have reviewed the above referenced document from you dated August 26, 1992, as well as your letter of August 25, 1992, with the attached minutes of our meeting of April 24, 1992.

Based on our review, we find your criteria acceptable with the exception of the definition of a "catastrophic tailings release" which will need some additional discussion as your design progresses.

Your cooperation is appreciated. If you have any questions, feel free to contact me.

Sincerely,

Richard B. Hall, P.E.
Assistant State Engineer for
Dam Safety

RBH/sh

pc: Jim Riley - Regional Engineer