

September 30, 1996

Daniel Gillen, Acting Chief
Uranium Recovery Branch
Division of Waste Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: **Response to Open Issue on Subsidence**

Dear Mr. Gillen:

In your letter to Richard Blubaugh dated September 5, 1996 (Docket No. 40-3453), you requested a response from Atlas Corporation to information provided by Grand County Councilman, Peter Haney, regarding differential subsidence rates of 1.33 mm/yr for a natural gas pipeline near the Atlas uranium mill tailings pile. We are responding to your request on behalf of Atlas Corporation. The rates presented by Mr. Haney are higher than the maximum subsidence rate of 1 mm/yr we estimated based on geologic data from near the tailings pile. However, the new pipeline survey data does not change our previous conclusions about the stability of the pile in regards to salt-dissolution subsidence presented in our report "Evaluation of potential seismic and salt dissolution hazards at the Atlas uranium mill tailings site, Moab, Utah". There are two principal reasons why we still believe that the potential for surface deformation of the tailings pile cap due to salt-dissolution is low: 1) the large uncertainties in the survey data and interpreting the survey data in regards to subsidence at the pile; and 2) our deformation analysis indicated that even at subsidence rates as high as 2 mm/yr, the potential for surface deformation was low.

There are many uncertainties with the survey data and results. These include potentially large errors in the data from: 1) measurement inaccuracies in the original 1955 survey; 2) error introduced by using a different reference point or benchmark; and 3) error introduced by a possible change of the valves or configuration of valves, such as those associated with any repairs since 1955. Both of the valve flanges actually have higher elevations than in 1955. Other uncertainties are related to interpreting the data. For example, part or all of the differential subsidence of the pipeline could be due to differential compaction of fill and localized settlement of the pipeline, and thus unrelated to salt-dissolution subsidence in the area. Flooding events have deposited sediment in the area, possibly causing localized settlement due to the additional load.

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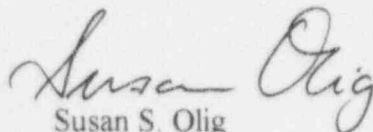
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
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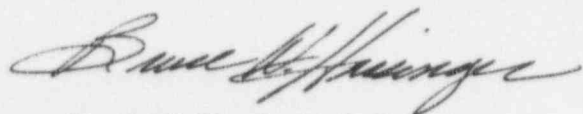
Finally, regardless of the uncertainties in the survey data, even if the 1.33 mm/yr subsidence rate is taken at face value, our sensitivity analysis, using a subsidence rate of 2 mm/yr, indicates a low potential for associated surface displacements (see the Final Report "Evaluation of potential surface deformation related to salt-dissolution subsidence at the Atlas tailings site, Moab, Utah.")

We hope this response addresses any concerns raised by the survey results regarding subsidence rates and the stability of the Atlas tailings pile. If you or your staff have any questions regarding this response, please do not hesitate to contact us.

Sincerely,


Susan S. Olig
Senior Project Geologist


Ivan G. Wong
Vice-President and Manager
Seismic Hazards Branch


Bruce W. Hassinger, P.G.
Project Manager
Smith Environmental Technologies Corporation

SSO:smp

cc: Richard Blubaugh

