

# STATE OF COLORADO

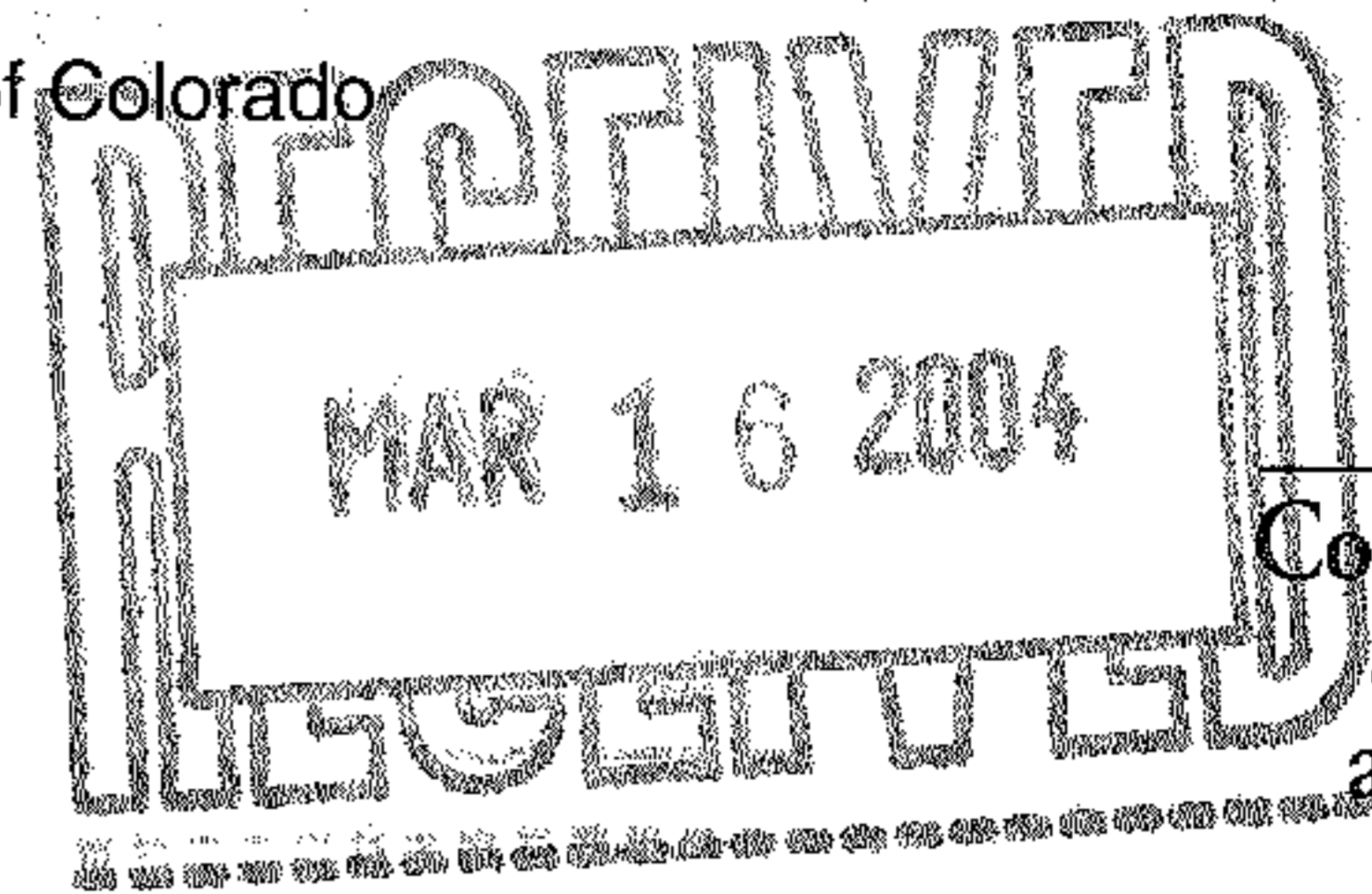
Bill Owens, Governor  
Douglas H. Benevento, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department  
of Public Health  
and Environment

March 10, 2004

Mr. Linn Havelick  
Director of Environmental Health and Safety  
Chauvenet Hall Rm. 194  
1015 14<sup>th</sup> Street  
Golden, CO 80401

Re: RML #617-01, CSMRI- Creekside RI/FS

Dear Mr. Havelick:

The State has reviewed and continues its review of the Remedial Investigation/  
Feasibility Study (RI/FS) and has the following interim comments:

1. Off-site removal using a combination of licensed facilities and solid waste facilities is the preferred alternative of this reviewer.
2. There are some small issues with background that can be addressed as the project moves forward.
3. The Department does not agree with the classification of the material as solid waste presented in Section 4. The Department considers the material to be TENORM.
4. Due to the paucity of groundwater data and uncertainty in the conceptual design with respect to groundwater, it is recommended that sampling continue and the license not be terminated until the site meets all MCLs.
5. It is recommended that groundwater be further studied with some type of falling or rising head tests to better understand the groundwater characteristics and the potential ground water impact on Clear Creek. Monitoring of ground water wells should continue prior to, during, and after any reclamation activity.
6. Due to the uncertainty in risk analysis and risk management at the site, including groundwater, a conservative approach to setting the cleanup limits is suggested – a cleanup limit based on the reasonably maximally exposed individual using the suburban resident scenario coupled with an ALARA approach to remediation in the field.

7. The proposed plan lacks sufficient detail for approval at this time, however the basic approach outlined in the plan is reasonable and acceptable.
8. Since surface water from Clear Creek is diverted twice less than a mile downstream from the site for drinking water, it is imperative that the remedy selection affectively addresses sources of groundwater contamination.
9. Prior to the start of any reclamation activity and during any such activity, Clear Creek should be sampled to evaluate any impacts on the surface water from any such activity. The Work Plan for reclamation should include a description of surface water sampling including locations, sampling parameters and sampling frequency.
10. Page 4-20 et. seq. This portion of the report that queries the Removal Action Options Analysis for uranium, thorium, etc. to make a case for a designation of solid waste is misleading, unconvincing, and unacceptable. Numerous ores listed in the opt-in list (e.g., copper, vanadium, rare earths) contain NORM, and any number of these projects could have contributed to on-site radiological contamination by inadvertently concentrating the NORM in the ores yielding TENORM. Only one example will be given here: Yttrium recovery. This one Creekside project generated copious amounts of radiological wastes.
11. Individual cost estimates will not be reviewed in detail – the relative costs from one option to another are what should be evaluated. All remedial projects end up having more soils than originally anticipated. It is the problem of the School on how to deal with cost recovery.

It should be noted that a detailed review is not yet complete. The above are major comments and further comments may follow.

Please contact me at 303-692-3452 if you have any questions regarding this letter.

Yours Truly,



Philip S. Stoffey  
Project Manager  
Remediation Program  
Hazardous Materials and Waste Management Division

Cf: RML # 617-01 CSMRI - Creekside file # 3