

December 23, 2009

U.S. Environmental Protection Agency
Jennifer Lane – Community Involvement
Region 8
1595 Wynkop
Denver, CO 80202

Dear Ms. Lane

Stray Horse Gulch. There has been great discussion and argument on the latest EPA proposals for Stray Horse Gulch (OU6). At this time, I would like to comment on the issues. For background, I am a mining geologist, a geotechnical engineer, and have lived in the community off and on for more than 20 of the last 40 years. I was there when discharge from a blowout at the Yak Tunnel turned the Arkansas River yellow all the way to Pueblo. I was there when my parents opened a “yellow-letter” from the Colorado Department of Public Health informing us that we, as property owners in Leadville, were named in a class action lawsuit to “clean-up” Leadville in the late 1980’s. I was working at the Black Cloud Mine when the Yak Treatment Plant was designed, constructed, and started treating yellow mine waste water. I was present at the September 17, 2009 Public Meeting when the EPA presented the latest remediation plan in the on-going saga of the de-listing of Leadville from Superfund status for OU6.

Based on my understanding and experience with this issue, it seems a few items should be formally addressed prior to choosing a tailings remediation option.

- 1) Based on discussions with the County Commissioners, one of the main issues driving the proposed tailings pile cap and consolidation option is due to the political conflict between the Bureau of Reclamation (BOR) and the Environmental Protection Agency (EPA). The BOR apparently wants to limit treatment of mine waste water. It is believed groundwater infiltration within Stray Horse Gulch is flowing into the Leadville Mine Drainage Tunnel (LMDT) owned and operated by the Bureau of Reclamation (BOR).
- 2) The California Gulch Superfund Site Fact Sheet – June 2009, describes the need to consolidate and cap the waste rock piles in OU 6 in a very general manner. The fact sheet also directs the reader to a Region 8 web site and lists two documents the *Final Focused Feasibility Study, Operable Unit 6, September, 2002, HDR* and *Engineering Evaluation/Cost Analysis for Stray Horse Gulch - June 1997 CDM*. The web site has the HDR study as a pdf, but the other study did not appear to be available at the same web site.
- 3) The September 2002 HDR Study states in section 2.4.1 “No hydrogeologic study exists specifically for OU6” and they reference another report which did not appear to be available on the web site. Section 2.4.1 also goes on to state that based on another report

“Groundwater levels and flow directions indicate the bedrock aquifer is flowing into both the Yak and LMDT”.

- 4) The September 2002 HDR Study in Section 7.3 does provide Detailed Analysis of Remediation Alternatives for OU 6 which include:
 - a. Alt 1. No Further Action
 - b. Alt 2. Acid Rock Drainage Conveyance Storage and Treatment options to either in-place YAK or LMDT treatment facilities.
 - c. Alt 3. In-situ Chemical Stabilization
 - d. Alt 4. Cap and Consolidate (No Shotcrete Option is provided)
 - e. Alt 5. Excavate, Transport and Dispose
- 5) The HDR Study describes many alternatives. It seems the community at this time has been given variations of Alternative 4 – Capping and Consolidation. Is it possible to explore the other alternatives detailed in this report in more detail (specifically Alternative 2 and 3)?
- 6) Alternative 3. In-situ Chemical Stabilization is a very attractive solution especially with likely technological improvements since this report was written in 2002. Can this option be explored further since it would preserve the historical heritage and limit the generation of Acid Rock Drainage (ARD)?
- 7) Alternative 2 – outlines and describes collection of the surface water runoff from OU 6 and conveyance the flow to one of the two mine waste water treatment plants. When the question was asked at the September 17, 2009 Public Meeting, I was told that this is not an option. It seems strange this is not an option since the Yak Treatment Facility and LMDT are both in the business of treating mine waste water whether they like it or not. Why can't they treat an additional fractional percentage of what they already treat? Surely this is a negotiable item with either of the mine water waste operators at some level. However, the June 2009 EPA Fact Sheet states “It is neither cost effective nor efficient to treat diluted acid rock drainage in perpetuity”. This statement is also strange since the design basis for the two treatment facilities is to treat mine waste water in perpetuity. They are in-place, why can't they be used as outlined in the HDR study?
- 8) Greenback crib walls. The greenback crib walls are a very important historic feature when biking or skiing along the mineral belt trail. Initially I was told these walls are not in the current OU 6 remediation plan, but based on the EPA 2009 Fact Sheet they appear to be at the center of the proposed mitigation for the Greenback Area. The crib walls represent history to me. I can bike with my 7 year old and see, touch, smell and really have a connection to the mining past. If these walls are removed and replaced with cribbing that was recently constructed near the Denver City, then the Leadville Community will have lost even more of its mining heritage, and in my opinion, will degrade its historic importance.



Historic Greenback Crib Walls

There are also problems with community involvement at this time. Due to the current breakdown of community involvement and apparent weariness of the community leaders to deal with this issue, it appears that public input has been relegated to an opinion “web-site” that is not well advertised and has a very short comment interval that ends December 24, 2009. There are many pros and cons to the four solutions put forth by the EPA. In my opinion, the shotcrete option to treat the tailings piles will create significant problems in the future for the community leaders due to cracking, staining, efflorescence, and degrading of the shotcrete in a low pH environment, even with concrete admixtures and modifiers. Additionally, the shotcrete option appears to be a recent proposal and was not part of the HDR 2002 so it is unclear how effective this option would be.

I am still hoping that with cohesive and coherent community involvement, the EPA can be encouraged to readdress the basic issues:

- 1) What is the extent of the problem? The HDR report indicates no hydrogeologic study has been conducted for OU 6. Is there other groundwater information for this area driving the proposed mitigation options?
- 2) Why can't the surface water runoff be treated as outlined in Alternative 2 of the HDR report by one of two in-place treatment facilities that were specifically constructed for treating mine water waste (does this involve the federal agency conflict and/or unwillingness to negotiate with the treatment operators)?
- 3) If the in-place treatment plants cannot be used, then temporary portable mine water treatment plants are available that can treat for a designated time period, in this case

typically between April and June. Has a cost comparison been done of portable treatment vs. the proposed tailings options?

- 4) Have other options been reviewed as outlined in Alternative 3 of the HDR report, such as treating the surface of the tailings with neutralizing modifiers? It seems all kinds of polymer technologies are available and would balance historical significance with reduction in runoff of minerals. Have these in-situ options been considered as they would seem to balance community desires with EPA goals?

I like the historical significance of the tailings piles and would like to see them stay. I am concerned that, due to the perceived conflict within the community, the EPA will make the decision based on a limited web site survey, unless the community comes forth with questions or solutions. My intent is to submit this letter as part of the public record to voice my (and hopefully the community's) concerns to the EPA and contribute to the Record of Decision (ROD) process. My fear is that I will get an EPA form letter that does not address my concerns if the community leaders do not support these questions.

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