

Meeting Summary
Bonita Peak Mining District Community Advisory Group
October 17, 2024, 5:30 - 7:33 pm
Via Computer Conferencing and In Person
at Kendall Mountain Recreation Center
Silverton, CO

CAG Members attending: Chara Ragland, Parker Newby, Sara Burch, Jason Fast, Terry Morris, Anthony Edwards and David Palmer. Online: Charlie Smith and Susan Livenick.

Also in attendance: Lisa Merrill. Online: Ryan Bennett, Tom Schillaci and Delilah Douglas.

EPA attendees: Online: Meg Broughton, Joy Jenkins, James Hou, Athena Jones and Jessica Dugan.

Introductions and Announcements

Chara announced the next CAG meeting is scheduled for November 21, 2024 in Durango. Jason will arrange for the meeting at the Santa Rita Water Reclamation Facility conference room.

Ty is not present today but will have a presentation at the next meeting.

There is a water seminar next week at Fort Lewis College. The seminar is 5 days long. See the announcement online for more details.

Tom Schillaci announced the loss of Ernie Coleman, former county commissioner.

Chara wanted to thank CAG members for their active participation in the following recent activities: 1) a tour of Gladstone IWTP, and 2) a tour of several water treatment plants around the state.

CAG Working Group Updates

Howardsville Group – Chara Ragland

The group received a document from EPA: *Fluvial Tailings RI Draft, dated 6/28/2024*. Work group members read the document and submitted comments to EPA. The general consensus was that the amount of data provided in the RI was overwhelming.

Chara noted that the CAG got a 17-page summary last week but the draft RI document needs a simple summary and conclusions. The group comments recommended incorporating a 1901 historical map that shows river conditions prior to major tailings dumps and reworking of the channel.

Terry had comments on the possible location of tailings that may not have been moved by SGC during previous remedial actions. The group commented that land ownership may change so any remedial action should look at the site as a whole and in anticipation of future uses.

Chara appreciated the EPA taking our comments in the draft stage of the RI.

Meg commented that the overall impression of the RI report review was that it was not working and the large document needed to be shortened. Not all recipients had the time or ability to digest a large document.

Chara suggested a shorter “summary” document be included in the long document.

Meg will have the contractor prepare an executive summary. She said they can include responses to comments in the final RI document, or do it informally via a memo from EPA to the CAG, or host a separate meeting.

Chara said the earlier meeting with James was productive, so we can do a comment review with James, Joy, etc.

Anthony stated that he would rather look at something in advance rather than have it in the final document without our input.

Meg commented that the comment review and discussion is not a formal process, stating that the review process can be identified as “the community was involved and here it is”.

Sampling Group – Sara Burch and Dave Palmer

Sara is leading the field sampling process and generally following Peter’s sampling efforts in the Animas River Canyon, which began in 2019. The CAG has sampled four times in 2024 and plans two more sampling events this year. The next sampling round will be this coming weekend or early next week depending on scheduling volunteer samplers.

Presentation – BPMG Surface Water Quality General Trends 2019-2023

Dave presented a review and update of general surface water quality trends in the BPMD area. We continue monitoring sample results at locations on the Upper Animas River, Cement Creek and Mineral Creek, which are sampled by other agencies.

Following up on earlier work by Peter Butler, he looked at 5-year averages from 2018 to 2022 at several locations. For this update we looked at dissolved zinc because it is a mining-related contaminant as opposed to naturally occurring and has a significant effect on surface water quality for biological receptors.

CC48 on Cement Creek above the confluence with the Animas River: low flow and base flow zinc ranges from 1500 – 2100 ug/l, while high flow zinc ranges from 400 – 800 ug/l. A graph of dissolved zinc above and below Gladstone IWTP did not show significant reduction of zinc during treatment periods. Terry thought that the plant operated longer than shown on the graph, and will look at finding that information. He also mentioned the American Tunnel bulkhead was put in in 1997 and may have caused some changes.

Joy stated that American Tunnel drainage was treated year-round, while Cement Creek was treated at low flow due to volume limitations. The treated water was good from 1999 – 2003 after the bulkhead was installed, until the treatment plant was shut down in 2004. She said that information was obtained from Peter.

Charlie stated that high flow was not fully treated because the facility could not handle the flow from the entire creek. The bulkheads were installed in 1997 and the flow went down and into a weir at the treatment plant. The weir caught all flow during the winter 1997-1998 but there was too much flow in the summer.

Dave noted he could not find recent data for CC18 and CC20 after 2001, and asked if anyone knew of more recent data.

A68 on the Animas River: above the confluence with Cement Creek - low flow and base flow zinc ranges from 450 - 650 ug/l, while high flow zinc ranges from 100 - 200 ug/l. A noted anomaly occurred in April 2019 that Dave could not explain. Joy commented there was a historic zinc high below the Howardsville tailings in 2019 - 2020. Charlie said there were a lot of avalanches with heavy snow that year that gave funny readings - not normal hydrology. Terry thought it may be scouring from huge slides - a lot of landslide paths ran from mid-March through April. Joy noted that a really high snow melt occurred that would likely transport more material downstream.

M34 on Mineral Creek: above the confluence with the Animas River - low flow and base flow zinc ranges from 170 - 220 ug/l, while high flow zinc is less than 50 ug/l.

A72 downstream: from the above locations and upstream of Priority Reach 1 and Animas River Canyon - the graph appears to show no significant change from previous 5-year periods. EPA's goal is to reduce metals contamination in the Animas River below Elk Creek. EPA estimated the dissolved zinc load needed to achieve TVS at A72 (above Priority Reach 1) during low flow is 140 lbs/day. This is in addition to the 159 lbs/day removed by treatment of Gold King adit on Cement Creek - a total of 299 lbs/day.

Animas River Canyon: the CAG is sampling at three locations within the canyon since 2019. There does not appear to be a reduction in zinc over this period. Peter calculated the amount of dissolved zinc needed to attain zinc TVS, and concluded TVS is attainable by reducing 80 lbs/day during low or base flow. However, TVS is not attainable during high flow; 150 - 300 lbs/day reduction would be needed. James asked if 150 lbs/day was in addition to the Gold King adit treatment. Yes. - 299 lbs/day includes Gold King and other anticipated treatments above A72 (Howardsville). Charlie stated that Peter's comment is that we cannot achieve these needed reductions so should we look at load reduction?

James said the non-attainable period is short relative to the entire year, and can we meet part of the year, say 85%. Dave commented that Peter's work had estimated 85th percentile loads.

Joy pointed out there are acute versus chronic TVS differences and hardness changes during the year. Maybe we could show a hardness curve over the year in the graphs. Anthony suggested showing data above and below Howardsville as opposed to only below Cunningham Creek.

Other Topics

Sara acknowledged the CAG's awesome technical expertise and suggested future outreach to the public who wants to know what's going on with water quality. The public would like a quick snapshot, i.e., is WQ getting better? What does it all mean? She showed a graph showing a slight decreasing trend in dissolved zinc through the Animas River Canyon. She suggested we need more monitoring but have limited funding. We will put a report on our website showing WQ on the Animas River. Chara noted we should receive money from Southwest Water Coalition through 2025. Sara will explore additional funding and possibly hiring college students for future sampling events.

Lisa had a question for EPA about Howardsville – when will EPA do work at reducing contamination? Regarding her sampling activities for Riverwatch, do we need more sample locations i.e., she added A55 above Howardsville. Additional upstream data may add value to what the CAG is doing.

Presentation - Trace Injection Studies at Mogul Mine

James gave a presentation on progress of tracer studies. The injection study is a passive treatment using a bioreactor in the Mogul Mine, which is upstream from R&B and Gold King mines. (Will ask James for a copy of this study.)

The Mogul mine has a bulkheaded adit but there is some flow around the bulkhead. A bioreactor amendment consists of sulfate-reducing microbes that occur in the mine and observed coming out of the adit. Plans are to drill down and contact the adit but it is difficult getting a driller out there and also tough to hit the target area. They are considering using some surface mine features: a shaft to Mogul level 1 and/or a stope with the grand Mogul mine.

They started with a chloride tracer (salt) to verify a connection with the shaft, then plan to try adding the amendment to the stope.

Anthony requested a general description of the process using microbes.

James said the microbes occur naturally but the treatment can improve their environment for growth such that they proliferate and thus bind up metals out of solution – a metabolic process. The treatment stabilizes metals in situ, and the microbes consume oxygen to reduce acid mine drainage by slowing down the reaction process.

Terry asked if they were injecting into the dry part of the mine.

James said they inject organic carbon in the form of a liquid to allow it to reach down into the mine, thus “supercharging” the process.

Chara asked if it will be finished next year – when will the treatment occur?

James commented that they are currently using bench-scale studies in the lab, and will need to scale up to treat the mine.

Treatment Plant Tour Summary

Chara and Jason gave a presentation showing the several treatment plants they visited in Colorado. There were about 20 attendees, including CAG members and county commissioners. The presentation included statistics on three state-run treatment plants visited.

Blackhawk WTP – 95 MM gallons treated. Town of Blackhawk on Clear Creek.

Argo WTP – 132 MM gallons treated. Town of Idaho Springs on Clear Creek.

Summitville – 378 MM gallons treated. Near Del Norte, seasonal treatment only due to high altitude and remote location. 2000 cu yd sludge generated.

Compare with Gladstone – 176 MM gallons treated.

Group thoughts:

Comparison to what is needed at Gladstone and maybe elsewhere within BPMD.

Chara – when and how to bring a WTP online – what’s the process? A power source is needed (electric); a clean process water source is needed; need year-round operation despite weather conditions = remote operation.

Joy thought that some treated water can be used for process water, depending on the treatment polymer used, but still will need some clean water delivered for human consumption.

Chara said the tour was a very good experience learning about the processes, and thanked Mark Rudolph for the opportunity.

Anthony said the tour was the most thorough one he had been on.

Jason noted some of the lessons learned in design and installation – i.e., an overhead crane is helpful. We need to be better prepared to plan a WTP for Gladstone.

Lisa asked about staffing needs - probably an organization such as CDPHE, with staff trained in advance, 8 to 10 people?

Athena was interested in the chemical treatment at Argo, interested in the stats. She suggested a link to March 2023 slides. (On CAG website as Surface Water Remedy Community Workshop (EPA) – March 2023, under Powerpoints & Presentations)

Anthony commented that remote controls will be important, better than in-person staff in winter, etc.

Charlie mentioned it is important when considering a new permanent WTP at Gladstone to preserve access to the ski area – parking, etc.

Questions:

Delilah suggested an estimate is needed for preventive maintenance and operations. Chara mentioned that most treatment plants have redundancy, probably reflected in 2023 costs.

Susan noted that costs are established by a contractor and include O&M costs as part of the bid process. There is probably no breakdown specific to O&M.

Joy stated that the costs for Blackhawk was \$16MM, and likely closer to \$21 MM for construction, and costs would be higher for a remote location. Then there would be annual O&M costs.

Jason mentioned that lead times were greater since COVID, and costs for labor and materials also are higher.

Administrative Items

Chara reminded the next meeting will be on November 21, 2024, at Durango.

7:33 pm

Adjourn