APPROVED MEETING MINUTES
WATER POLLUTION CONTROL ADVISORY COUNCIL
Friday, September 11, 2015
10:00 AM – 10:45 AM
Metcalf Building
1520 E. Sixth Ave, Helena, MT 59620

PRESENT

Council Members Present:
Keith Smith (by phone)
Karen Sanchez (by phone)
Kathleen Williams (by phone)
Mitchell Leu (by phone)
Earl Salley (by phone)
Trevor Selch

Council Members Absent:
Mack Cole
Dude Tyler
Barbara Chilcott
Stevie Neuman
Michael Wendland

Montana Department of Environmental Quality Staff Members Present:
Amy Steinmetz
Alex Smietanka
Autumn Coleman
Tom Henderson

Guests:
Peggy Trenk

CALL TO ORDER

Chairperson Trevor Selch called the meeting to order at 10:01 a.m.

APPROVAL OF AGENDA

Trevor Selch moved to approve the agenda. There was no opposition; the motion carried.

APPROVAL OF MINUTES

Mr. Keith Smith recommended approval of the June 26, 2015 meeting minutes. There was no opposition; the motion carried.

BREIFING ITEMS

The Belt Creek Cleanup

Mr. Tom Henderson, of DEQ Remediation Division's Abandoned Mine Lands Program (AML), began his presentation with an introduction and a brief overview of the problem in the Lower Belt Creek, and

mitigation alternatives. A big part of the problem the AML is facing is affording the mitigation. He described the Belt Creek as brown, which is a common sight in fall, winter, and spring seasons. This is due to coal mining during the turn of the century. The coal contained pyrite, which reacted with oxygen in the presence of water, creating acid mine drainage. The extent of the mine workings in the area reaches two miles.

Highly acidic water discharges 24/7 out of the mines. Water from the coal mines enters Belt Creek at about 150 gallons per minute. There are problems on the opposite side of Belt Creek where the mines were smaller than the Anaconda Belt Mine. Louis Coulee Creek discharges at about 15 gallons/minute, and the seep that enters Castner Park is about five gallons/minute; both of these have acid drainage. Per month, about 6 million gallons of water come out. The water quality is very poor and is high amounts of metals. Numerous metals exceed water quality standards in Montana, including iron and aluminum.

Mr. Henderson continues his presentation. The area above where the mine water comes in is in full compliance with water quality standards. There is less dilution of the mine water during low flow periods of the year. Both upper and lower Belt Creek have been studied as impaired water bodies (TMDL program from 2011).

Mr. Henderson explains that the AML is funded by taxes from Montana coal mines, and receives approximately $4 million/year. The Belt project is an eligible project for AML funding.

Mr. Henderson identifies three basic approaches to deal with this problem. The first option is to try to get water to stop coming out of the hill, which would involve “bulkheading”: basically sealing the water in the mines. The second option is trying to come up with a way to reduce the amount of water coming up thru the ground and entering the mines. The final option is most expensive and most robust, which is to treat the water with long-term chemical addition neutralization of the acidity of the water and continual maintenance. He goes into further detail for each option.

Mr. Henderson does not recognize the first option as the best. Going into the mine is unsafe and there is a lack of structural integrity to support the bulkhead. Therefore, Mr. Henderson believes this option is not feasible from both a safety point of view, due to the low integrity of the coal and the potential of bulkhead failure.

Treating it as a wetland does not work because of the high acidity of the water and the high metal loading (tons per month), and because of harsh Montana winters. During the winter months, the water is still coming out and killing any of the vegetation they’d be trying to establish in the wetlands. Tom believes this is also not a viable alternative because of the water chemistry.

The last, and best option, in his opinion, is active water treatment. Mixing lime with water to raise the pH has been tested at a bench scale. When the pH comes up, the metals are less soluble and they precipitate out. This is conventional technology applied throughout the Eastern coal basins in America.

The Office of Surface Mining (OSM) actively deals with water problems caused by coal mines; Pennsylvania has about 350 operations, and members of the Montana AML program have toured some of these. Experts from Pennsylvania have come out to Montana to look at the Belt area, and are actively working with Montana AML staff in this matter.

Mr. Henderson gives a little history of what the AML program has done in the past. In 2010, the federal government increased the amount of money given to the AML program, which is being saved for water treatment. In 2011 and 2012, the AML program has inventoried all acid-mine discharges (in Belt, Sand Coulee and Stockett) and looked for logical groupings to potentially treat multiple sources with one combined plan, determined where to start this treatment, and began doing some bench testing. At that time, Belt was listed as the top priority. In 2013, AML looked harder at the groundwater in the vicinity of the mines to get a handle of how much of the problem was coming from the groundwater as opposed to the groundwater or the adit discharges coming into Belt Creek. In the last year, the AML has been looking at alternatives with treating the groundwater, and is about 90% done with this.

The current estimate of the amount of money required for this treatment is about $20-24 million. The use of this money would cover building a plant, operating it, purchasing chemicals, and paying someone to be there for a 100-year period. This plan mimics how the Pennsylvania projects are operated. Mr. Henderson states that the real expense is in the annual operation. At present time, the Montana AML has about $15 in their treatment account and just put in a grant from the Department of Natural Resources and Conservation (DNRC), which is the top-ranked grant proposal for $.5 million. Mr. Henderson explains they plan to do the science and build the money concurrently.

In the next month or so, the Montana AML will be done with their Draft Engineering Evaluation Cost Analysis (EECA), which will go out for public comment and be finalized with preferred alternative. They are working on property acquisition in Coke Oven Flats. The Montana Department of Transportation (DOT) ended up with that property because taxes weren't being paid on it; this calls for a transfer of ownership from the DOT to the DEQ.

Mr. Henderson stated that the AML webpage is a good resource and is very informative of all the projects the AML has done up to this point. The web address is: http://deq.mt.gov/AbandonedMines/default.mcpx. Even more specifically, to find information on the Belt project, the web address is: http://deq.mt.gov/AbandonedMines/CurrentProjects.mcpx. Information that can be found on this page includes a variety of investigation reports, the 2013 public meeting presentation by the AML, a water treatment assessment, bench testing results, and conceptual water treatment design.

Mr. Henderson concluded his presentation by inviting questions.

Mr. Keith Smith asked that out of the $20-24 million for the 100-year operation, does the AML have enough money now to construct it and get started? He pointed out that the AML receives about $4 million from the federal government per year, so the AML could probably handle the operating costs once it's built. Ms. Autumn Coleman answered, stating that Title IV of Surface Mining Control and Reclamation Act (SMCRA), which is the law that authorizes the AML program, is set to expire in 2021. Because of this, the AML can't realistically anticipate $4 million per year for the 100-year duration. The $20-24 million will be invested in a long-term and short-term investment account, so ideally the plant will operate off of the interest generated on that account. The Montana AML has anticipated a complete rebuild of the plant with some frequency, which will reduce the principal in that account over time; this is why there's a 100-year expiration on it. Ms. Coleman added that they plan to build the plant out of AML's annual grant, and the $20-24 million will be sitting in those investment accounts.

Mr. Smith asked whether the AML has the money to build it now, or if they are trying to save towards that. Ms. Coleman answered that the AML does have the money to build it now.

Ms. Sanchez then asked a question regarding the town of Belt and its permitted discharge. She wondered if that was upstream of the coal mine discharge or downstream, and how do any of the abandoned mines affect the account of wastewater plant discharge? Mr. Henderson explains the discharges are upstream, or south, of the water treatment plant. The discharges occur in Belt Creek and continue downstream to the water treatment plant, which then also discharges. Mr. Henderson states that he was aware of investigations being done to see if any metals were entering the plant, and the results were negative. He is unable to make any connection between the existence of acid mine drainage and the water treatment plant.

Chairperson Selch asked if there are maps on the AML website that show where the underground workings, adits and inputs are. Mr. Henderson stated yes, and that he would publish his PowerPoint presentation to the website as well. He noted that the Draft EECA also has a series of maps, and when it is completed, it will also be published to the website. Ms. Coleman added that the map shown in the presentation is showing the major haul routes. Chairperson Selch explained that he and Jason Mullen would be doing bug and fish work out in that area in the next few weeks, and wanted to ensure that they would be capturing all of the right places when doing so; to that, Mr. Henderson offered to provide some GPS coordinates to help.

Next, Ms. Williams asked what the relationship was to drinking water in the nearby areas. Mr. Henderson responded that the community is serviced by two wells in the Madison aquifer. They are on opposite sides of Belt Creek, and the closest one is about 200 feet from where the contaminated water crosses Coke Oven Flats and discharges into Belt Creek. The water quality is recorded on Ground Water Information Center (GWIC), and Mr. Henderson has never seen suspicious water quality on GWIC; it is sampled as a public water supply well. Where it produces in the Madison, the well log indicates that it is 200-300 feet deep, and there are no identified impacts to the drinking water well. Coke Oven Flats groundwater, however, is contaminated. Mr. Henderson goes on to explain that when it was drilled, he found approximately 15 feet of silts and clays, then bedrock. It wasn't a very prolific aquifer.

Ms. Williams next stated that this was apparently an Anaconda site, and was curious why the NRDP was only associated with the SilverBow area. Were other Anaconda properties considered in that process? Ms. Coleman answered that this property hasn't historically been considered; this does not mean that it won't be considered in the future and be linked in with the superfund site. She notes that the AML works through the Office of Surface Mining (OSM), not the EPA, and because it is an abandoned coal mine and not an NPL site, the AML is able to work on it. If it does become listed as an NPL site, the AML funds will not be available for this project. She goes on to describe the process for listing it as a superfund site, which takes a lot longer is a lot more intensive looking for potentially liable parties, and involves several lawsuits. At this point, if the AML wants to proceed with this project, it is best that it stays in the AML Program.

Ms. Williams specified she was more curious about why it was never negotiated back in the 1970s, to which Ms. Coleman answered she was unsure. She speculated it could've been because the last owner was a private citizen.

Ms. Williams then questioned whether upgrading the current Belt treatment plant was an option. Mr. Henderson replied that doing so is not impossible. He believes the characteristics of the waste are very different, and the waste he is looking to neutralize is so bad that it really deserves its own process. The raw acidity involved in the Belt site would require extremely high quantities of neutralization agents in the form of lime, and as a part of that process, Mr. Henderson notes that there are very large volumes

of sludge generated. Considering the sludge would need to be managed, Mr. Henderson struggles coming up with a scenario in which both things could be done. He also stated that another problem with upgrading the current treatment plant exists: the treatment plant is on the opposite side of Belt Creek from where the biggest volume of discharge comes out of the ground.

Mr. Smith followed with another question regarding the sludge: after the use of lime to neutralize the acidity in the water, how do they make sure the sludge won't leach back into the ground or groundwater? Mr. Henderson explained that there are a few options: first, that the sludge just goes to the Great Falls landfill; second, that the AML utilizes property owned by the State as a potential waste management facility or unit; or finally, sending the sludge back into the mine workings. The third option has been successfully performed in Pennsylvania, and they've found that in doing so, some of the unreacted lime generally improves the groundwater by adding alkalinity back in.

Mr. Smith followed up, asking if the metals would get locked back up in the mine, or if they would get re-released? Mr. Henderson answered that it would get into the geochemistry of the acid mine drainage. The reason the metals come out in the first place is because they're bound up in pyrite, which gets oxidized and releases acidity and then causes the other metals to become more mobile. When treating the metals, they become oxidized. Therefore, rather than iron, they would have rust. In the presence of lime and neutral pH water, the metals aren't nearly as mobile. He concludes by saying that the metals basically will stay locked up.

Ms. Sanchez was the next to ask a question: how many years-worth of sludge would fit in the mine? Mr. Henderson replied more than 10, and potentially more than 100. He noted that they don't have a detailed assessment of the inside of the mine because it is not safe to go in there and it's partially flooded. The use of mathematical equations indicates that there is volume to send sludge down there for quite a while. He added that, on the other hand, the landfill disposal alternative seems like a very viable solution.

Tom Henderson gave his email address: thenderson@mt.gov.

There were no further questions for Mr. Henderson, and his portion of the meeting concluded.

CN/SAR Site-specific Criteria for Otter Creek

Ms. Steinmetz gave a brief update of what has been happening since the last meeting in June 2015. The DEQ did go to the board on July 31, 2015 and requested initiation of rulemaking, and the board did not act upon the request. The board did, however, request more information. The DEQ will go back to the board on October 16 and Ms. Steinmetz anticipates it will probably be just a briefing item.

She went on to add that this is a very complicated issue, and although she is comfortable with the science, there is a lot more communication that could be done that would help the level of comfort with the criteria. Internally, the DEQ is working on some examples of what permits might look like. The Department is also working on some documents that are more geared for understanding in layman's terms. Examples of these documents are Natural Conditions Report that will explain Eric Makus' model, or Implementation Guidance, and how that criteria will be used. At this point, Ms. Steinmetz does not have a timeline for when the DEQ will request initiation of rulemaking again. Ms. Steinmetz then concluded her update and opened it up for questions.

Ms. Sanchez asked whether the board specifically stated why it decided not to act upon the DEQ's request. Ms. Steinmetz answered, stating that because this is a very complicated issue and because there were many several new board members and a lot of members of the public present at her presentation that did not have the background knowledge of the issue, there were a lot of questions raised by people that hadn't attended previous meetings.

Ms. Williams then asked what the implications were of DEQ not having a rule. Can the DEQ still move forward on drafting a permit for the proposal? Ms. Steinmetz answered that there are so many complications with the permit application right now that she doesn't believe DEQ is holding anything up at this point. If all the deficiencies in the permit application had already been addressed, then DEQ might run into some issues. DEQ has a statute that says they cannot use the criteria that is currently on the books, which creates a "regulatory tornado". There are standards that cannot be used, which could be an issue. Ms. Steinmetz does not see an issue with waiting for the occurrence of a couple more board meetings and providing more information, but she emphasizes that it is not her call.

Ms. Sanchez then clarified with Ms. Steinmetz that the permit process is expected to be at least six months longer. Ms. Steinmetz agreed with this statement.

ACTION ITEMS

There were no action items.

Public Comment—

There were no public comments.

Agenda Items for Next Meeting—

The next meeting will be held on November 6, 2015.

Ms. Steinmetz stated that she intends to do a more extensive briefing on Otter Creek at the next meeting.

Ms. Steinmetz also mentioned that due to the passing of SB325, the Department is required to write rules to implement that statute. The DEQ does have some draft language for the rule, but there will be a stakeholder outreach. There will be a briefing item on this during the next meeting.

ADJOURN

Chairperson Selch sought a motion to adjourn the meeting. There was no other business; the meeting was adjourned at 10:46a.m.

REFERENCED LINKS FOR MEETING MATERIALS
Materials posted on September 4, 2015

September 11, 2015 Agenda—
http://deq.mt.gov/wqinfo/WPCAC/agendasMinutes/2015/September11/AGENDA_9-11-15.pdf

Agenda Links:
Minutes from June 26, 2015
http://deq.mt.gov/wqinfo/WPCAC/agendasMinutes/2015/June26/6-26-2015APPROVEDMinutes.pdf

Belt Mine Water Treatment Project PowerPoint Presentation