Message

From: John Hammen [john.hammen@metalsus.com]
Sent: 4/18/2018 6:30:03 AM
To: Mark Thompson [MThompson@montanaresources.com]
CC: Dreed@mt.gov; Chapin Storrar [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user608fc9ab]; Greene, Nikia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=32a08a414a4f40199b557c0819eb7d0b-Greene, Nikia]; Tim Hilmo - BP (Tim.Hilmo@bp.com) [Tim.Hilmo@bp.com]; Ted Duaime - MBMG (tduaime@mtech.edu) [tduaime@mtech.edu]; Kelly, Albert [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=08576e43795149e5a3f9669726dd044c-Kelly, Albe]
Subject: Re: New Tech for Cleaning up the Berkeley Pit

Mr. Thompson,

We look forward to working with you to advance the best solution for the Butte community and state of Montana. The Metals US team, and other friends and partners of ours, have invested significant time and interest in understanding the Berkeley Pit situation, chemistry, and possible solutions because we are concerned about the ongoing and possibly escalating impact of the site. We believe our technology could be the missing link that could enable a best possible outcome for everyone, and we feel it is our responsibility as citizens to do what we can to help out. On that basis, we have put together a preliminary plan that I think is feasible, and we would like to engage in a straightforward process to see if it is the right answer. Since every application and solution is different, any advance projections of costs and values is an approximation, no matter how established or well used a technology may be. No doubt you have had to refine your process and therefore costs and economics for the current precipitation process over the course of your ongoing development work.

We work with a number of Fortune 500 companies to provide solutions to problems otherwise difficult to address with conventional technologies. Initial modeling may be done with established rubrics to see if the costs are within the range of feasibility. We have done this with the Berkeley Pit with our internal costing models, and the results are reflected in the document provided. However, since providing very detailed modeling and costing for complicated projects like the Berkeley Pit can take many months of time cost up to hundreds of thousands of dollars in engineering cost and assessment, serious clients generally prefer to first establish that the technology can in fact meet water treatment goals, at least at smaller scale, through basic test work. This provides direct results with the target solution which not only proves technical feasibility, but also provides a framework for more accurate projections. We have always found our clients to be quite willing to provide us solutions for testing, and support our efforts to demonstrate the efficacy of our technology to provide them more options for solving their problem. That is a win/win for everyone.

Our ability to provide real demonstration of not only the effectiveness of the technology, but use those results to justify compelling economics, sets us apart from nearly all of our competition, and I imagine most of the technology providers you have spoken to. We have not contacted any potential purchasers of the zinc metal product. It seems a bit premature to do so, given that we do not yet have zinc production at the Pit, nor do we have a request to build a facility, nor do we even yet, it seems, have a willingness from you to provide small water samples. However, given the fact that zinc is one of the most traded and sought after commodities in the modern metals market, I do not expect surprises as regards either salability or price.

I know that Montana Resources, and other collaborating parties, have worked tirelessly to provide the Best Available Technology solution or the Berkeley Pit, and other environmental impact issues in the area. We are concerned, as I know you are, that any water discharged from the Pit meet or beat all regulatory standards, and, if possible, the water level on the Pit be drawn down so that it does not provide an ongoing threat of seepage into the surrounding water, soil, and air. I think these goals are very obtainable! We appreciate your team's deep pool of knowledge and experience with treating the Pit, and look forward to engaging you in a process that is

clear, straightforward, and transparent to determine if Solid Phase Extraction may be the BAT for at least some aspects of the water processing and solids management.

You mentioned that you and the MBMG have developed protocols for evaluating new proposals and emerging technologies. Could you provide me this written documentation, so that I can better understand your process? Also, if Mr Duaime could provide the most recent analyses from the Pit, that would be most helpful. Thank you for your assistance! Also, our team would look forward to meeting in the near future with your team to further discuss our collaboration. Best Regards,

-John

On Thu, Apr 12, 2018 at 4:14 PM, Mark Thompson <MThompson@montanaresources.com> wrote:

> Mr. Hammen,
>
> As you would expect, we receive numerous proposals to "mine" and/or treat the Berkeley Pit water. With the assistance of the Montana Bureau of Mines and Geology (MBMG), we have developed protocols to evaluate new proposals and emerging technologies. Please contact Mr. Ted Duaime at the MBMG and request the latest sampling results from the B. Pit to ensure that you are working with the most recent water quality information. Then with more detail than the proposal provide to Mr. Greene, explain your recovery and treatment train using the latest WQ results and provide detailed cost analysis. If you propose to offset treatment costs with recovered metal value, please describe in detail the form that the metal is recovered (e.g. elemental Zn, ZnS, ZnO, etc.) and a description of where and how it is marketable. Ultimately we will need written commitment from purchasers of the metals to ensure that the produced products are in fact marketable. Your proposal states that your technology has previously been demonstrated to treat B. Pit water. Could you provide this information? You also state that your technology is in production at other locations. Could you provide references?
>
> The appropriate stakeholders will review these detailed proposals and other information. Assuming that the detailed proposals demonstrate technical merit, we will require that the technology be tested off site at bench scale. Under certain conditions, Mr. Duaime can provide the water for testing. If bench testing is successful, we may allow pilot testing on site at your expense.
>
> Thank you for your interest.
>
> Mark
>
> **Mark Thompson**
>
> **Vice President of Environmental Affairs**

Montana Resources, LLP

600 Shields Ave.

Butte, Montana 59701

Phone:

Cell: Personal Matters / Ex. 6

Montana Resources

From: Greene, Nikia [mailto:Greene.Nikia@epa.gov]
Sent: Thursday, April 12, 2018 10:08 AM
To: Mark Thompson; Tim Hilmo - BP (Tim.Hilmo@bp.com)
Cc: Dreed@mt.gov; Chapin Storrar
Subject: FW: New Tech for Cleaning up the Berkeley Pit

Mark and Tim,

Mr. Hammen caught me after the ROCC/CTEC meeting yesterday and I explained that if MR and AR were interested EPA is interested. So, could you take a look at this and let me know if you are interested in pursuing this technology further or why you would not be.

Thanks,

Nikia Greene

Remedial Project Manager

U.S. EPA, Region 8

(406)-457-5019

greene.nikia@epa.gov

From: John Hammen [mailto:john.hammen@metalsus.com]
Sent: Wednesday, April 11, 2018 7:26 PM
To: Greene, Nikia <Greene.Nikia@epa.gov>
Subject: New Tech for Cleaning up the Berkeley Pit

Dear Nikia:

It was a pleasure to touch bases with you today at the forum about our new technology for remediation of the Pit and surrounding areas. Let me say I admire the balance, compassion, and fortitude you bring to managing this very challenging project, while at the same time working with and bringing along the understandably frustrated Butte community. We have developed the core basis for our Solid Phase Extraction Technology (SPE) - the key part of our remediation strategy, over a few decades, and spent the last several years bringing it to commercialization. Our long vision has been to develop a technology foundation that enables us to help with projects that really have large impact on people and communities. While we have many projects with good profit margins, we have always been particularly interested in the Berkeley Pit because of its significance to Montana and the whole nation. I also believe our experience not only in technology development, but also process testing and implementation, enables us to put together a "whole package" from the science fundamentals to the facility, operations, and big picture impact that most technology imagineers lack. Our Total Metal Recovery/Zero Discharge methodology was developed because it both provides the most economic way to operate the plant, and also is the only way to provide a clean water output without large waste byproducts. I have attached our white paper on the Berkeley Pit, and I hope you find this embodied in the document. It is our hope that we can work with you and others in the EPA, the Butte community, and other related parties, to provide a solution that realizes the best possible environmental and human impact outcome, while also being economically viable and sustainable in the long run. I appreciate any thoughts you may have, and look forward to working together as things advance. With Best Regards,

-John

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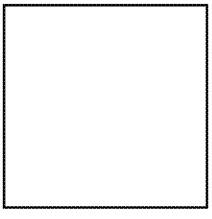
John Hammen | Chief Executive Officer



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