Message

**From**: Melgin, Wendy [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DBBB28DF2BDC444AB12EEACF50AD616B-WMELGIN]
**Sent**: 4/19/2016 3:06:09 PM
**To**: Manoyan, Simon [manoyan.simon@epa.gov]
**Subject**: FW: PolyMet NorthMet Project - Brian Branfireun Meeting Follow Up and Methylmercury Assessment
**Attachments**: PolyMetMethylmercuryAssessmentOutline(3-1-16).pdf

FYI

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**From:** Paula Maccabee [mailto:pmaccabee@justchangelaw.com]
**Sent:** Tuesday, March 01, 2016 8:58 PM
**To:** Holst, Linda <holst.linda@epa.gov>; Swenson, Peter <swenson.peter@epa.gov>; Melgin, Wendy <melgin.wendy@epa.gov>; Marko, Katharine <Marko.Katharine@epa.gov>; Doug Bruner <Douglas.W.Bruner@usace.army.mil>; Ralph Augustin <Ralph.J.Augustin@usace.army.mil>; Greg.A.Larson@usace.army.mil
**Subject:** PolyMet NorthMet Project - Brian Branfireun Meeting Follow Up and Methylmercury Assessment

Dear U.S. EPA and Army Corps of Engineers staff:

Brian Branfireun and I greatly appreciated the opportunity to meet with you and confer with you by phone on Friday.

As Dr. Branfireun explained in our meeting, the PolyMet NorthMet project is likely to have a significant impact on increased mercury methylation in wetlands in the headwaters of the local rivers. This methylmercury will also bioaccumulate in the aquatic food chain and propagate downstream.

Dr. Branfireun has emphasized that the mercury "mass loading" calculation used in the PolyMet NorthMet Supplemental Draft and the Final Environmental Impact Statements is scientifically indefensible and creates an artificial illusion of precision. Most importantly, it does not even consider mercury methylation in wetlands at the mine site and tailings site, which poses a serious risk to the aquatic ecosystem, wildlife and human health.

Dr. Branfireun explained that the PolyMet mine site and tailings site are highly sensitive areas for a copper mine, both because they are already highly methylating environments (measured by the percent of the mercury in streams that is methylmercury) and because they are in headwater streams of the St. Louis River, so that resulting methylmercury would enter the food chain and impact downstream fisheries and consumers. He noted that there are multiple ways in which the PolyMet proposal would increase methylmercury, including sulfate discharge to water, sulfur emissions to air, mercury discharge and emissions to air, and wetlands drawdown and rewetting cycles both at the mine site and the tailings site.

Dr. Branfireun described his calculation, using a combination of PolyMet data on sulfur dust at the mine site and peer-reviewed literature, that in wetlands near the mine site sulfur deposition would increase by a factor of 3.76, resulting in nearly a two-fold increase (1.88 times) in methylmercury export to streams from those wetlands. He explained that the Final EIS dismisses the impacts of the project on methylmercury due to failure to understand the role of wetlands. There is a substantial risk that the project could create ecologically significant increases in fish methylmercury concentrations in the Partridge, Embarrass and St. Louis Rivers. Dr. Branfireun emphasized that additional data and modeling targeted at methylmercury is needed to reliably determine the overall methylmercury impacts of the PolyMet project from both the mine site and the tailings site.

Dr. Branfireun explained that proposed wetlands monitoring at the PolyMet site would not address methylmercury concerns. Not only would proposed monitoring fail to address biochemistry, but monitoring without baseline data related to methylmercury in wetlands, sediments and biota (fish and insects) would not allow assessment of the degree to which

methylmercury was increasing. Dr. Branfireun also cautioned that monitoring after methylmercury increases had occurred would result in a time lag and the potential for irreversible harm before a problem was identified and any mitigation planned or implemented.

In response to questions from Ralph Augustin, I explained that evaluation of methylmercury impacts is necessary to determine if a Clean Water Act Section 404 permit would have secondary impacts that violate water quality standards or result in water quality degradation prohibited by law. In addition, minimizing impacts of the PolyMet NorthMet project on mercury methylation and transport must be evaluated to determine what mine site and tailings management alternatives would constitute the least environmentally damaging practicable alternative for the proposed project.

Katy Marko asked Dr. Branfireun if modeling of potential PolyMet methylmercury impacts could be done. Dr. Branfireun explained that although analysis of PolyMet project methylmercury impacts would be complex, it is feasible. Based on his advice, please find attached with this email a preliminary outline to assess the potential impacts of the PolyMet NorthMet project on methylmercury production, transport and bioaccumulation.

Some of the data still needed for this analysis may have been obtained by PolyMet or its consultants, but not disclosed to regulators. Dr. Branfireun suggested that PolyMet be requested to provide full disclosure of any data on baseline mercury, methylmercury or sulfate in mine site and tailings site wetlands and any modeling not disclosed related to water level drawdown due to mine operations and discharge pathways affecting mine site and tailings site wetlands.

Once again, thank you so much for the chance to meet and discuss potential effects of the PolyMet project on mercury methylation, transport and bioaccumulation.

Please let me know if you would like to discuss other issues related to the PolyMet project or if you would like to confer again with Dr. Branfireun.

Sincerely yours,
Paula

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