From:	Axelrad, Don
To:	Gilmour, Cindy
Subject:	RE: Remediation of methylmercury (MeHg) with polysulfides in Florida waters
Date:	Wednesday, March 25, 2009 5:07:07 PM

Cindy,

Thanks for your time and expertise.

Don
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-----Original Message-----
From: Gilmour, Cindy [mailto:gilmourc@si.edu]
Sent: Wednesday, March 25, 2009 5:05 PM
To: Axelrad, Don
Subject: RE: Remediation of methylmercury (MeHg) with polysulfides in Florida waters

I just spoke w. Mike Rowzee. His background seems to be in clean up of contaminants in homes and industrial environments; his thinking comes from his expertise in the chemisty of removing smoke, fumes etc from walls and furniture. In these environments, the polarity of the cleaning agents is a large part of the effectiveness. He's translated this to an approach for Hg remediation.

However, he does not appear to have experience or expertise in remedation of contaminated sediments, soils or natural systems. He does not have knowledge of the basic biogeochemistry of either S or Hg in these environments. In particular, he does not have an understanding of the complexation of Hg or MeHg in the natural environment. Further, he hasn't really considered the biogeochemical S cycle, or the fate of "polysulfides" added to natural waters.

I asked him to define the chemistry of the "polysulfides" he is proposing to use. He did not do so, expect to say to talk about charge and hydrophobicity. I advised him that the addition of any form of S to freshwater aquatic systems would raise concerns with most folks who have knowledge or experience with Hg - mainly because of the well-documented stimulation of sulfate reduction and Hg-methylation by sulfate in low-S ecosystems. I also advised him that "polysulfides" encompasses a large range of complexes, most of which are not stable in the environment, and therefore not suitable for remediation in situ.

From: Axelrad, Don [mailto:Don.Axelrad@dep.state.fl.us]
Sent: Wed 3/25/2009 4:21 PM
To: Gilmour, Cindy
Subject: RE: Remediation of methylmercury (MeHg) with polysulfides in Florida waters

Cindy,

Re Mike Rowzee; I told him to phone you today and keep it to 10 minutes.

He asked what were my reservations re his proposal; I said getting
polysulfides to sediments through an oxic water column.

Don

Office: (850) 245-8072

Mobile: (850) 443-4626

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-----Original Message-----
From: Gilmour, Cindy [mailto:gilmourc@si.edu]
Sent: Wednesday, March 25, 2009 3:17 PM
To: Axelrad, Don
Subject: RE: Remediation of methylmercury (MeHg) with polysulfides in Florida waters

Today is as good a any other. I will be occupied hosting a seminar from about 9:30-2 tomorrow, and will only be available Fri am.

Cindy

From: Axelrad, Don [mailto:Don.Axelrad@dep.state.fl.us]
Sent: Wed 3/25/2009 2:32 PM
To: Gilmour, Cindy
Subject: RE: Remediation of methylmercury (MeHg) with polysulfides in Florida waters

It does not have to be today; are you in the office tomorrow? Friday?

I will tell him to strictly keep the conversation to 10 minutes and you can reinforce that with him, and set a timer! He will talk longer without being reminded....

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-----Original Message-----
From: Gilmour, Cindy [mailto:gilmourc@si.edu]
Sent: Wednesday, March 25, 2009 2:27 PM
To: Axelrad, Don
Subject: RE: Remediation of methylmercury (MeHg) with polysulfides in Florida waters

Argh.... I guess so. I am hiding at home today knocking out another piece of the database.
Does he want to do this today? I get the impression from his email that this might be more than a 10 min call.

He can call me cell if he want to talk briefly today 410-610-7717.

From: Axelrad, Don [mailto:Don.Axelrad@dep.state.fl.us]
Sent: Wed 3/25/2009 1:15 PM
To: Gilmour, Cindy
Subject: FW: Remediation of methylmercury (MeHg) with polysulfides in Florida waters

Cindy,

Can you afford to spend 10 minutes getting Mr. Rowzee on the right path - which may be "forget about MeHg remediation via polysulfides"?

I hate to see him waste his and NOAA's time.....

I will not give him your contact details without your approval.

Don

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on this link to the DEP Customer Survey <http://survey.dep.state.fl.us/?refemail=Don.Axelrad@dep.state.fl.us> . Thank you in advance for completing the survey.

From: Axelrad, Don
Sent: Wednesday, March 25, 2009 1:08 PM
To: Joyner, Daryll
Cc: Frydenborg, Russel; Miller, Denise
Subject: RE: Remediation of methylmercury (MeHg) with polysulfides in Florida waters

Daryll,

See draft 2 attached.

Mr. Rowzee is a nice guy and I hate to rain on his parade, but he really ought to talk to Cindy Gilmour (new bullet point 15) to get a reality check on his ideas re methylmercury remediation, and perhaps come up with new ideas.

My money is still on our mercury TMDLs.....

Don

From: Joyner, Daryll
Sent: Wednesday, March 25, 2009 12:56 PM
To: Axelrad, Don
Cc: Frydenborg, Russel; Miller, Denise
Subject: RE: Remediation of methylmercury (MeHg) with polysulfides in Florida waters

Don,

This looks good and no edits are needed for this memo to me. I'm not sure whether Mimi wants a formal response to Mr. Rowzee, but I'm going to forward your e-mail to Jerry with the following synopsis:

Jerry,

Don contacted Mr. Rowzee and reviewed some documents he mentioned, and Don concluded that the feasibility of methylmercury remediation of coastal waters or lakes via application of polysulfides is sufficiently questionable that we should not submit a letter to the NOAA Restoration Program grants office supporting the project. Some of the reasons for this conclusion include:

1) Application of these polysulfides to aerated surface waters would oxidize them and prevent polysulfides from reaching sediments where mercury methylation occurs.

2) Depending on water and sediment porewater chemistry, sulfur addition could either promote or repress mercury methylation.

3) Even if such a method of remediation was effective, the frequency of treatment (polysulfide) application is unknown, and effective polysulfide application rate is unknown.

4) Sulfur addition to freshwaters could be detrimental

5) The effect of polysulfides on aquatic and marine life is unknown.

Let us know if you would like us to prepare a formal response to Mr. Rowzee.

Daryll

From: Axelrad, Don
Sent: Tuesday, March 24, 2009 7:53 PM
To: Joyner, Daryll
Cc: Frydenborg, Russel; Miller, Denise
Subject: Remediation of methylmercury (MeHg) with polysulfides in Florida waters

Daryll, Russ, Denise,

See attached; edits please.

Don

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