Saginaw - Tittabawassee Rivers Contamination Community Advisory Group

Meeting Summary

Memorial Park, Freeland MI
Monday, May 21,2018
6:00 PM – 8:00 PM
DRAFT

CAG Members Present
Peter Bagley
Charles Curtiss
Merri DeSanto
James Krogsrud
Terry Miller
Luis Mulford
Mike Nusbaumer
Kevin Quiggle
David Sommers
Joel Tanner

CAG Members Absent
Pamela Binder
Leonard Heinzman
Joe Kozumplik
Laura Ogar
Bob Wiese
Virginia Thibodeau
Michael Kelly

Ex-Officio Members Present
Todd Konechne, Dow Chemical
Joe Victory, Michigan DEQ

Support Staff Present
Doug Sarno, Facilitator
Janelle Pistro, Dow Chemical

CAG information, materials, recommendations, meeting summaries, and presentations provided at CAG meetings can be found at: http://www.saginawcag.org

David Sommers called the meeting to order at 6:00 PM. Agenda items included:

- New Member Approval
- University of Michigan MiSafeFish app
- Project updates

CAG Activities

At the recommendation of the membership committee, the CAG approved the membership for Ruth Averill and David Fisher for three year terms ending in July 2018.

MiSafeFish App

Brad Upham presented the MSU MiSafeFish app to help people understand the Eat Safe fish guide. It has a variety of tools to help people understand their consumption patterns and what is a reasonable rate of consumption and how to prepare fish safely. It also has tools to help people identify fish and a section on the chemistry of the contaminants. It will also ultimately have guidance by location on which fish can be eaten.

This tool will be evolving as MSU gets agency and public input. Hope to release this in the next few weeks.

Project Updates

Todd Konechne, Dow Chemical, presented the updates.

It is still very early in the season, a lot of moisture on properties, so just getting started on floodplain properties. Bank work will start later in June once river levels are down for good. We did some canopy management over the winter. We are finishing up a few properties in Segment 4 and then will be moving on to Segment 5.

The in-channel work will begin late July/August when river levels are lowest and risk of flooding is lowest.

Other activity is monitoring the work that we did previously. We look at all banks 2-3 times per year. The vegetation was not well established last year. It takes 3-4 years to get good vegetation established. Flooding on young vegetation will have significant impact. After a few years, the vegetation is better able to withstand flood events. We also work to get the vegetation stabilized on floodplains before handing over the vegetation back to property owners

Tittabawassee River Conservation Program (TRCP)
Todd Konechne, Dow Chemical, presented on this topic.

TRCP is a voluntary program offered to owners in the 8-year flooplain. By participating, owners agree to keep their un-maintained areas from becoming maintained areas. This also provides the access agreement to conduct work on that property. This is not free reign, Dow still has to contact the owner and get permission to access the property. Dow offers a payment for participation in the TRCP. The program does not automatically mean agreement to cleanup.

Restrictions included in the agreement:
- Conservation areas will not be converted to maintained residential
- Cannot move soil from the floodplain to outside the floodplain
- No feeding or grazing of livestock
- Provides access to conduct required cleanup activities.

Progress to Date:
- Dow has reached out to the majority of properties eligible for TRCP
- Most owners have already signed up (~70%)
- Some have declined (~5%)
- Others have not decided or not replied
- The program is still available and we continue to add properties.

CAG: Once you sign up can you stop? Or can the new owner?
Dow: No, it is an environmental easement that transfers with the property.

CAG: How is the fee determined?
Dow: A flat fee plus amount for length of property on the river.

CAG: Can new owners still have access when property changes hands?
Dow: Yes, we try to reach out to new owners.

CAG: What happened to the case where a CAG member had a recalcitrant neighbor for cleanup?
Dow: The issue was about access through his property, so another neighbor provided the access and now cleanup is largely complete. Todd noted they Dow was looking for the best way to do the cleanup, but would have provided cleanup to all willing property owners even if the best access was not available. We are not going to refuse anybody. Some properties are very difficult to access without going through other properties and we seek to limit disruption. Nobody will be forced to take a cleanup and nobody will be denied.

There are a lot of dead ash trees out there right now, and Dow takes them all out for the property owner at the beginning of the process. Some of the properties last year were immediately flooded so we had to do some more work.

Carbon Amendment Trial
Todd Konechne, Dow Chemical, presented on this topic.

This is being conducted in the flooplain on the the Tittabawassee River. MSU presented last year on some of the work they are doing on this issue. This has been an area of exploration over the past few years, though not on flloodplains. The science behind it is solid and we have stepped out to explore it for use in floodplains.

We are only looking at this for non-maintained areas. Doing complete removals in natural areas can have a devastating impact by removing much of the vegetation. We don't want to lose the trees and vegetation, but removal is the only solution we have now to have clean soil. What the carbon would do is bind up the dioxins and furan molecules so it is not accessible to humans and wildlife and reduce the exposure concentration.

Activated carbon is used for water purification, air purifiers, some medical treatments and is thought to be generally inert. It is used widely at hazardous waste sites.

The trial will look at"

- Whether a practical approach be used to apply carbon in remote and wooded areas
- Whether activated carbon in the field actually can reduce exposure potential
- Both a lab trial and a field trial using contaminated floodplain soils.

Started trial in the fall of 2015 in an area on Dow property with elevated concentrations and explored different ways of applying the carbon.

- Looked at granulated active carbon (GAC) and powdered activated carbon (PAC) to see if it made any difference
- Looked at different concentration rates of carbon over the top inch of soil—0.5%, 1% and 2%
- Explored aerial application by helicopter (granular only) and ground application with a hydroseeder
- Applied in a variety of plots with several control plots.

Aerial application worked very well, small helicopter took many trips, very good for a wooded area. Did it in the fall when leaves were on the ground.
Ground application also worked well, but would be difficult to get into the heavily wooded areas especially large areas, was more cumbersome and time consuming, and would not be very efficient to get into deeper woods.

CAG: Is the carbon soluble?
Dow: No, it will work its way into the soil with rain and wind. We did this in 2015 and sampled it regularly included after flooding and did not see a lot of loss.

CAG: Could it be used in the water?
Dow: it can be, but the movement of the water here would likely just flush it downstream.

We analyzed the floodplain soil with and without carbon amendments to determine if the carbon reduces the available dioxins/furans. 60 samples per sample area in 1" cores were taken and mixed together. We took samples each year, 7 total sampling events. 1% or greater carbon showed a 50% reduction in exposure potential (additional carbon did not show appreciably greater results).

CAG: Did you see reductions right away, or did it increase over time?
Dow: Saw some results right away, took a little time and then stayed stable at 50% reduction. Have not seen diminished results yet. We did this in the lab as well and got very similar results. Once it is bound up it remains bound up.

CAG: Could you get more reduction if you added more carbon?
Dow: Cannot say for sure but it seems we saturated the effectiveness at 1% carbon.

CAG: Did you see any difference between granular and powder?
Dow: No.

CAG: Can the bonds break over time?
Dow: Studies are showing that those bonds will stay in place.

CAG: How long will it last?
Dow: That is part of what we are studying, will higher concentrations last longer, there are a lot of unknowns.

CAG: Is 50% reduction adequate to make the area safe?
Dow: That depends on the original concentration and the target concentration. If a property owner did not want a cleanup though and they used this it could be better than doing nothing. This is a trial, it is not an approved alternative and may never be, but we are exploring it as an alternative in some situations.

CAG: Are the floodplains similar, is there a lot of silt?
Dow: This river does not have a lot of silt, floodplain is fairly sandy organic soil.

CAG: Does it appear this would be cost effective?
Dow: We don't know yet, probably less effective than soil removal, but don't know how often it might need to be repeated. Our main driver is really to give property owners an option.

CAG: Is this a chemical or physical binding process?
Dow: it is a physical absorption process. Does not change the nature of the dioxin but changes whether the dioxin would be available to your body.

CAG: How do you explain that this stops at 50%?
Dow: We don't know right now, those are the results we are seeing.

CAG: Is there other research going on for this?
Dow: Some others are looking at sediments, but think this is the only one on soils.

CAG: Wouldn't it take a while for the carbon to work its way down into the soil?
Dow: Yes, but don't know exactly how long.

Dow will continue to monitor this study area. Would also like to look at additional study areas, including on a potential floodplain property where the owner is not wanting cleanup.

The meeting adjourned at 7:30 PM.

The next CAG meeting is Monday, July 16