

**Saginaw Tittabawassee Rivers Contamination CAG
Summary of Full CAG Meeting
Saginaw Valley State University – Curtiss Hall
Monday, April 18, 2011**

CAG Members Present

Drummond Black
Jeffrey Bulls
Charles Curtiss
Matthew de Huis
Leonard Heinzman
Deborah Huntley
Ryan Jankoska
Wendy Kanar
Michael Kelly
Rachel Larimore
Judith Lincoln
Janet McGuire
David Meyer
Laura Ogar
Annette Rummel
Joel Tanner
Paul Vasold
William Webber
Bob Weise

CAG Members Absent

Michael Espinoza

Ex-Officio Members Present

Joe Haas, US FWS
Todd Konechne, Dow Chemical
Mary Logan, US EPA
Al Taylor, Michigan DNRE

Support and Agency Staff Present

Don de Blasio, US EPA
Catherine Garypie, USEPA Attorney
Blair Giesken, CAG Volunteer Transcriptionist
Cheryl Howe, Michigan DNRE
Janelle Pistro, Dow Chemical
Tim Prendiville, US EPA
Diane Russell, US EPA
Doug Sarno, Facilitator

Doug Sarno called the meeting to order at 6:06 PM. Agenda items Included:

- Introduce new members and leadership team updates
- EPA Policies on Relocation
- Island MM Cleanup Options

1. New Member Introductions and Leadership Team Updates

The four new CAG members were introduced: Jeffrey Bulls, a security officer at Nexteer Automotive; Matt de Heus, Instructor of Chemical Processing Technology at Delta College; Rachel Larimore, Education Director at the Chippewa Nature Center; and Bob Weise, Thomas Township Supervisor.

The leadership team reported that the incorporation of the CAG should be complete by the next meeting.

The leadership team noted that the CAG will invite experts to present and explain the key reports that exist on dioxin as it relates to the site, particularly from University of Michigan and Michigan State University. There is also interest in hearing from the EPA Science Advisory Board on their dioxin study. One member suggested that the CAG have a full panel of opinions so that all viewpoints are represented, as well as a neutral expert to help understand the various viewpoints. It was noted that it would be very difficult to find someone who would be able to present all sides of the issue at the same time and in an unbiased way. The leadership team also noted that they had received few suggestions of available experts. A question was raised regarding cost. It is hoped that many of these experts will be able to attend a CAG meeting without charge, and video-conferencing can also be explored. CAG technical support funds will be used as necessary.

2. EPA Policies on Relocation

US Environmental Protection Agency attorney Catherine Garypie provided an overview of EPA's policies regarding relocation at Superfund sites. This information was in response to a CAG request to better understand how these decisions are made. The CAG recognized that EPA has no current plans to use relocation at this site.

Many government programs engage in temporary or permanent relocation of citizens when property is required by the government or deemed unsafe. If federal funds are used in any part of relocation, they must follow the Uniform Relocation Assistance and Real Property Acquisition Policies Act and the Uniform Relocation Assistance and Real Property Acquisitions Regulations.

Superfund law does authorize EPA to undertake relocation at Superfund Sites if necessary. A superfund site does not need to be listed on the National Priorities List for acquisition to occur. However, EPA's preference is to address the hazards at a site in such a way as to allow people to remain safely in their homes and businesses.

In cases where EPA determines that relocation is appropriate for a Superfund Site, EPA will select site-specific criteria to use in determining who/what is relocated and whether relocation is temporary or permanent.

Temporary relocation may be used in these instances:

- Health threats: the contamination may pose an unacceptable threat to human health or implementation of the response action may pose an unacceptable health risk to residents,
- Safety of residents: the response action itself may pose an unacceptable risk to residents,
- Efficiency of response action: the response action can be implemented more quickly and at a lower cost if residents are not in the area during implementation.

Permanent relocation may be used to:

- Address an immediate risk to human health (if an engineering or cleanup solution is not readily available),
- Address a situation where houses or buildings are an impediment to implementing a protective cleanup.

To date, the overwhelming majority of Superfund sites located in residential areas are being cleaned up without relocation. Catherine provided a number of examples.

There are a number of issues associated with relocation which lead EPA to limit this tool as a part of cleanup actions:

- Personal disruption, social disruption, and associated stress,
- Residents' unwilling/unpleased with relocation,
- Insufficient housing available in the vicinity of the site,
- Dissatisfaction with the appraisal process,
- Increased taxes/utilities at new residences,
- Decreased local tax base in area where relocation occurs.

The following questions and comments were provided on the presentation:

- It was asked if it were true that residents (both those who do desire to be relocated and those who do not) could be potentially relocated if the government required that it be so. Catherine noted that yes, this is true (though no such plans exist at this site), an involuntary relocation is within EPA's authority, but generally does not occur.
- It was asked with regard to a temporary relocation, who determines when the site has been reduced to an "acceptable risk level" and residents can move back into their homes. Catherine noted that the decision documents and alternatives produced by EPA contain that information in it, and that it's a very site-specific determination.
- Mary Logan reminded the CAG that the site has been segmented into manageable pieces (starting at the upstream end), while additional activities are going on in parallel to address more immediate potential risks. EPA will assess

the degree of contamination, types of exposure, potential current risks, and potential future risks in all decisions. The first cleanup segment is different because it's a different set of chemicals (not so much Dioxins and Furans) and contained within the Dow property. For future segments, EPA will look at both chemistry and exposure (how people might come in contact with the contaminants) before creating any proposal for action. From a simplistic standpoint, EPA makes this decision on "who" or "what" gets cleaned up or relocated, based on both a public process and evaluation of site-specific criteria.

- A question was asked about the property appraisal process. Catherine noted that several appraisals are done (both by the property owner and by the government) and then negotiations take place. The entire process must follow federal guidelines.
- It was asked if relocation is a less common process now than it was, perhaps 10 years ago and if it has to do with more sophisticated engineering and cleanup options. Mary Logan responded that relocation is very atypical because of the extensive types of cleanups that can be implemented.

3. Island MM Cleanup Options

Mary Logan provided a brief overview of the Island MM options presented at a previous CAG meeting. The activities involved in controlling potential contaminant movement include:

- Early exposure controls at high-use properties,
- Early control of point of significant contamination,
- Segment-by-segment comprehensive cleanup.

Island MM Island has been identified as having high concentrations of furans (part of the Dioxin family) and is showing erosion over time. Thus it has been identified as a situation where early action is appropriate.

The three response options considered by EPA include:

- i) Stabilization: place heavy object to minimize erosion of existing island (estimated cost = \$250,000)
- ii) Removal of sediment above the low water line with a sturdy cap and post-cap monitoring to stabilize the deposit and allow the island to restore itself naturally (estimated cost = \$500,000)
- iii) Removal of all targeted sediments both above and underwater, coupled with turbidity control and sediment removal and management (estimated cost = \$1,100,000 to 2,000,000)

The following common elements will be analyzed for all options:

- Hydrodynamic assessment
- Additional Pre-construction sampling
- Temporary access roads
- Movement of clean fill to work area
- Removal and disposal of contaminated sediments

- Project Health & Safety Plan.

Under Superfund, EPA must evaluate the following effectiveness criteria:

- Overall protectiveness
- Compliance with laws & regulations
- Short-term effectiveness (protection of community, workers, environmental impacts, time until response objectives are achieved)
- Long-term effectiveness (magnitude of residual risk, adequacy and reliability of controls)
- Reduction of toxicity, mobility, or volume.

EPA is proposing Alternative 2, removal of sediment above the low water line with a sturdy cap and post-cap monitoring, as providing the best balance of evaluation criteria for the short term and long term.

EPA will officially start the public comment period on this proposal on Friday April 22, which will run for 30 days (and can be extend for 15 days if requested). Materials will be posted on the EPA website today and sent to the local repositories. A public session will be held on April 28 where comments can be made on the record. EPA will review and respond to public comments and then finalize the plan. EPA expects Dow to implement this work in the Fall of 2011.

The following questions and comments were provided on the presentation:

- It was asked if the types of underwater challenges at Island MM will also be faced further down the river in future projects. Mary Logan said there's a fair chance of finding debris and logs down the river and that it's a challenge that may be faced at many locations along the site.
- It was asked if option 2 would cause significant erosion and change the flow of the river along the banks considerably. Mary noted that this is something that EPA is concerned about and that it does not want to cause a "butterfly effect." Mary noted they have samples of the chemistry along the banks to ensure that they're not causing erosional forces along the banks that could create a worse problem than what there is now.
- It was asked what the size of the island would become and what materials would be brought in and if it would be big enough to use for a recreational purpose after remediation. Mary noted that they're looking at this as a source control and not a recreational exposure control (the island is very small; about 150' long and 35' wide). The footprint would remain about the same but not be as high initially (just enough to remain above water in most flow regimes) and they would place materials that would resist erosion and allow the island to continue to develop itself. It was further asked if the island even needs to be there. Mary noted that this is a question they have grappled with but can't truly answer.
- It was asked if there is vegetation and wildlife currently on the island of any value. Joe Haas, Fish and Wildlife Service, noted that kingfishers, songbirds, raccoons, mink, and other typical animals found on the bank currently use the

island, but that it's small and not much different than the few other islands on the Tittabawassee.

- Mary Logan further explained that the cap would likely be designed to support at least some level of vegetation. Todd Konechne, Dow Chemical, noted that the island would be built back up in a "bench" type manner where it is out of the water often enough (a majority of the time) that vegetation will be supported and maintained, whether by natural processes or by seeding being performed on the island. He noted that in areas where there are habitat and wildlife present, they will attempt to rebuild that.
- A comment was offered that Reach MM should not detract from the work being done upstream in Midland which is more important. Mary noted that they recognize the importance of the work upstream and that it is the "meat and potatoes" of the work that needs to be done. Mary noted that in places like Island MM are acting as sources, and work needs to be done so they don't spread downstream. She also noted that this will not distract from the main work and they will come back with proposals in a few months for areas upstream in Midland.
- It was asked if the costs Mary proposed for Reach MM are just the costs for removal of sediment and not for rebuilding. Mary noted that Alternative 2 includes cost of capping the island while Alternative 3 does not as it there will be no island left.
- It was asked if work done below the waterline kicks up extra contamination that could potentially move downstream. Mary Logan noted that yes, sometimes these are acceptable short term releases for the longer term benefit, but EPA will need to understand their extent, whether or not there is debris present, and how long such releases might exist.
- It was asked if EPA had identified the building near Reach MM and how it's being used and also about the bridge or river crossing. Todd Konechne noted that they found documentation of an old bridge that has since disappeared. Mary Logan noted they have not yet found out what the building is or how it's being used. Al Taylor noted that the photo in the fact sheet shows more clearly that there are some houses and other structures present in the area. Mary noted that all property owners will be contacted.
- It was asked if the sides of the island would be capped. Mary anticipates that there will need to be some kind of slope on the sides, but that they don't get into this level of design until they've picked which alternative they're going to use. Al Taylor noted that sides would go down to the water line and then be built up to the bank bench height and some capping is likely on the side slope to prevent potential for erosion on the bank face.
- It was asked if one of the advantages of option 2 is that it is a dry removal, and that why we're doing this now is because it's a highly contaminated piece of land and we don't want it to erode downstream. Mary agreed that yes they do not want it to continue to erode and contaminate downstream.
- It was asked where the clean fill comes from. Todd Konechne noted that it would be some type of aggregate natural round stone that would be mined and that

mined sand or other material could also be used. All material will come from a clean source.

- It was asked how the levels of contamination at this site compare with the levels at the site that have been previously remediated. Mary noted that Reach D and Reach O were more highly contaminated and that the levels here. Reach J had a maximum contamination level approximately 4 times as high as at Reach MM. Todd Konechne noted that it's a balancing act. It may not be as high a concentration but is eroding at a fairly high rate and may not be addressed for quite some time.
- It was asked what monitoring will occur and is there some condition under which the action would become the permanent solution. Mary noted that there are multiple types of monitoring (pre-monitoring, monitoring during construction to understand the results of construction, post-monitoring to make sure that there is no erosion and to evaluate long term effectiveness, and residual contamination). Mary noted that this might be the permanent solution, and it would be evaluated when they get to Section 5 to see if the solution was adequate or if something more comprehensive needs to be done at that time.
- It was asked if there is any consideration to not work under wet conditions and do an in-river dredging to get rid of the material, put it on a barge, and take it away for disposal rather than de-watering. Mary noted that working in the dry has been done in other projects (notably at Reach 0) and that water still has to be managed and that neither option will be much cheaper. EPA evaluates cost-effectiveness instead of just cost alone. Mary noted that barging is likely not an effective option due to low water levels.
- It was asked if they anticipate no erosion with Alternative 1 or 2. Todd Konechne noted that they envision that they can design a system to manage the sheer stresses under the full range of flow conditions to prevent erosion. Mary noted that they would need to do a hydrodynamic assessment to see how removing the island entirely could affect the flow of the river and whether this would even be a consideration in terms of cost as this Island is a small piece of the overall project.

4. Discussion of a CAG Recommendation on Island MM

Doug Sarno noted that the CAG will only have one more meeting before the public comment period closes on this issue. He noted that for high use properties, a small group developed the draft recommendation which was then reviewed, amended, and approved by the whole CAG. The CAG agreed they would like to use the committee approach again. Laura Ogar, Charlie Curitss, Wendy Kanar, and Joel Tanner all agreed to serve on this committee. The following issues and comments were presented for the committee's consideration in drafting a recommendation:

- It was clarified that nobody really supported the do nothing position. However, it was noted that contamination upstream has a potential of recontaminating this location and we may have to clean it up again anyway.
- Given this, it was suggested that maybe Alternative 3 is a good option. A long-term remedy should be considered in whatever we do and we should do it and do it right one time. It was questioned why we would re-create or stabilize an

eroding island, it was not clear that nature wanted an island there in the first place.

- The high cost of Alternative 3 was identified as a concern. However, we don't know how to put the costs of these projects into perspective in the overall remediation budget, and perhaps more knowledge is needed to move forward in our decision making more effectively.
- It was pointed out that it might make more sense to remove it completely as we can't anticipate the future costs of coming back if recontamination occurs if the island is kept in place. We can do something to stabilize in the short term, but may end up spending the same amount of money later to come back and further improve upon or "re-fix" an area that has already had temporary remediation.
- It was noted that on the river tour last year Todd had noted it's often better to stabilize what's in place than to excavate, if they think they can engineer and design the stabilization properly, we should let them try it.
- It was noted that the EPA and Dow have put an extraordinary amount of energy into this one project and it was questioned whether they have more projects just like this. Mary Logan noted that they may discover more banks like this as they move forward that they may find important enough for early response, but that this does not detract from the importance they are placing on work being done on Segment 1. Al Taylor noted that this is being presented as a single project and that if there were more banks, perhaps they would be presented as a bundle. It was noted that in the future, once we begin to understand and develop a better process, perhaps these decisions may become much quicker and more efficiently made.
- Mary noted, in response to a question, that in situations where there is sufficient time to seek public input, it is EPA policy to allow a public comment period.
- It was noted that if recontamination occurs wouldn't it be less concentrated than what was originally released by Dow before they knew or understood how toxic it was? Mary Logan noted that this is a fair statement and that they are monitoring flooding after recontamination to try to assess recontamination information.
- Concern was expressed that while removing the entire island might be worthwhile, we need to seriously consider how it will affect downstream and disperse. It was asked if there is any way to quantify what "more" is in terms of what one alternative "kicks up" versus another. Mary noted that we cannot be definitive about these answers but that we can look to past cases to get some kind of percentage of dispersal that is typically released. Mary added that while it is natural to say "just go in and take it all out," there are 48 miles of riverbank to consider and that this island is a tiny spec in that larger spectrum, and that we need to fit it into the framework of bigger future decisions.
- It was asked that if option 2 would go down to low water level, how many feet of water above the bottom is that? Todd Konechne noted that low water level less than a foot around the footprint of the island. Mary noted that the water and sediment would have to be physically pumped out and that even if sheetpiling is put up as a dewatering barrier, there will still be some particle and contaminant releases.

- It was noted that recommending option 3 would require information about how removal would change the flow of the river and whether this would potentially create another problem.
- It was noted that testing is needed to show contamination all the way down to the till. Al Taylor confirmed that this is a good point and that there could be uncontaminated sediment beneath the contaminated sediment that doesn't need to be removed.
- It was noted that to clean this all up completely is unrealistic and that we need not rush into completely removing it just because the EPA brought it to us and so it must be important. We need to start thinking about some trigger level where we look at complete excavation versus capping. We need to develop some type of system or rule for evaluating these sites in the larger scope of things.

5. Public Comment

- It was noted that it feels like a forced-choice situation that the EPA is presenting with a large gap in information and that it's hard to make a decision. Do we know if there are more contaminants above or below the water line? Mary noted that we do not know that.
- It was asked how much flexibility there is in terms of creating a more complete remediation? Mary Logan responded that pre-response sampling will be required to have a better picture of the footprint both above and below the water. Under the Superfund process there is a lot of flexibility to change course based on new information. If an option is chosen and additional highly contaminated material is found, they can change the approach. She noted that they use this flexibility to refine what they're going after. Mary added that studying everything to a very high degree and never get any action completed is not an option and that they are making this decision based on the information they have at this time.
- It was asked how the partners (MDEQ and Dow) weighed in in the decision-making process. Mary Logan noted that Dow develops the documents to identify alternatives, but EPA working with the State to identifies what ultimately needs to be done. Al Taylor noted that option 2 is a pretty good option given the information we have right now but that if new information develops, the plans are flexible and can be changed.
- It was asked how weighted is the public comment and CAG input? Al noted that the ex-officios are all in listening mode right now to gather a better understanding of the public and the CAG's perspective and bring that back to consider in making the final decision.
- It was asked if the obligated parties are required to do exactly what EPA instructs or advises them to do. Mary noted that under the terms of the law, EPA has to make a decision first before they can obligate Dow to do a certain option. Then, they work with Dow to get them to agree to implementing it, but that she fully expects that they will implement the chosen remedy.

The Meeting was adjourned at 8:54 PM.

Electronic copies of CAG meeting summaries and all presentation materials can be found at www.epa.gov/region5/cleanup/dowchemical/cag.htm