STATE OF MICHIGAN

IN RE:
U.S. EPA PUBLIC MEETING FOR THE
PROPOSED CLEAN-UP OPTIONS FOR
SEGMENT 1 of the TITTABAWASSEE RIVER,

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PROCEEDINGS HELD in the above-entitled matter on Tuesday, August 16, 2011 at Saginaw Valley State University, Curtiss Hall 7400 Bay Road, Saginaw, Michigan at 6:34 p.m.

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Saginaw, Michigan
Tuesday, August 16, 2011 -- 6:34 p.m.

MS. KRAUSE: Good evening. We'll get started. My name is Patricia Krause with the U.S. Environmental Protection Agency. Our purpose is to share with you the environmental clean-up options for contaminated sediment in the section of the Tittabawassee River and formally get comments at this public hearing.

Our agenda will begin with presentation. After the presentations we'll take some questions and answers and then take a short break and come back for the public hearing where we'll just be taking your comments. We will not be responding during that time because that's your time to talk.

Your questions and comments during the public hearing will be recorded by the court reporter. Your comments will be presented into a summary that will later be made available. We'd like to go through the presentation all the way through before we take questions.

First, I'd like to make some introductions about who's here tonight. From EPA, there's Diane Russell, Tim Prendiville, Catherine Garypie, Mary Logan, our project manager. From MDEQ there's Al

Taylor and Cheryl Haue and then Joe Haas isn't here today, okay.

Now I'm going to introduce Mary Logan who will be presenting. As most of you know Mary is the project manager for this site. Thank you. Mary?

MS. LOGAN: Good evening, we do not have a big crowd tonight. It's good to see you come out and I appreciate it. I've put together the presentation with the idea that there may be some people in the audience who are unfamiliar with the river and the project and, clearly, many of you are not. And I'm going to go through this relatively quickly because I think a lot of you are quite familiar with the information. And during the question session I'll be happy to go back. I will tell you I'll try to curb my enthusiasm to talk really quickly.

As Patti said we're here to talk about the proposed clean-up options for Segment 1 of the Tittabawassee River. The Tittabawassee River as many of you know, most of you know is EPA sub (inaudible) with Dow as part of the settlement agreement it requires a number of activities.

One of them is dealing with high use properties. One of them is dealing with contaminates, or contaminate migration. But really the crux of what

we're trying to accomplish under the settlement agreement is comprehensively work segment-by-segment upstream to downstream to develop clean-up approaches and to comprehensively make conditions better as we move down the river.

Now Segment 1 starts at the beginning of the Tittabawassee River site, starts upstream near the Tridge and then moves downstream for about three miles, 3.1 miles, adjacent primarily to the Dow site, or Dow plant in Midland. And there's a bit of Consumer's on the other side of the river adjacent to Segment 1.

Some clean-up has occurred in Segment 1 already. And that is primarily done to address Dioxin contamination. And at this point we're proposing clean-up options for six Sediment Management Areas that have been identified, or in some of the presentations you'll see them referred to as SMA. And we are proposing options for those six Sediment Management Areas.

We would expect clean-up to be designed after we finalize a plan and be prepared to have clean-up begin in 2012.

I'm not going to get into detail on this, but this is really the table that was taken out of your fact sheet so let's take -- I just want to give you the

overall layout. What we've done is Sediment Management Areas and we've grouped some of them together.

For each Sediment Management Area we developed three alternatives. EPA proposed alternatives, Alternative 2 in each case and so we will be presenting these alternatives as part of the presentation.

As a result of the investigations that have been conducted in Segment 1 there was a considerable amount of sediment tamp land in the office for chemistry. There was also evaluations of sediment stabilization and how the materials moved within the segment. There was biological evaluations done on both small invertebrate that live on the surface of the sediment or in the sediment as well as fish and other biological evaluation.

And we did some work to look for contaminant called black tar liquid or DNAPL, which is a tarry, oily product-like material that is heavier than water. It does not mix well with water and it sticks to the system to where it hits impermeable air and sits there. We did some work in terms of investigating for DNAPL.

As a result of previous work and the investigations have laid out for us Dioxins and furans in Segment 1 were largely addressed by the clean-up in

Reaches B and D and were not the driver of the basis for clean-up in Segment 1.

The six compounds listed for chemicals listed here are the primary drivers, chlorobenzenes, chlorophenols, PAH's, arsenic, ethyl parathion, o-phenylphenol are some of the contaminants that we are targeting as our, as part of the clean-up option.

As I mentioned, we looked for DNAPL and DNAPL, a recoverable product, was found in some locations. This is a picture of a sample in the, the oily, goopy, black material at the bottom is indicative of some of the nonmixing DNAPL that was found in the system.

The suite of chemicals does not spread throughout Segment I. We have found it in relatively discrete locations and they're not always found together. And we believe that the contaminants found and deposited are due to historical releases, and the waste management facility controls up at the Midland plant are now protecting the river from additional source of contamination.

Now I said that Segment 1 is unique. And part of the reason that it's unique is unlike the remainder of the Tittabawassee downstream, this is highly industrial. This is the Dow Midland facility, I

don't know exactly where, this is part of Consumer's. The banks along the river here have been hardened and structures have been put along these sheet piles, riprap, things like that, very industrial, no green space, no residences, no areas like we see further downstream.

The only dam that we have in the system is the Dow dam, which is up here about one mile down from the Tridge and about two miles up from the bottom of the Segment. And that's some of the things that are unique about this.

So why are we proposing to clean-up in Segment 1? One of the things we found is that some of the chemicals can, when they're on the surface can harm small invertebrate, those that live on the river bottom. And some of the chemicals have a potential to bioaccumulate. So the deeper contaminants we are concerned that if there would be erosion in the future that they could be exposed or they could continue to work as a contaminant source.

Again, this is in your fact sheet that identifies the six Sediment Management Areas that we are targeting for clean-up. It also gives you a feel for where the clean-ups were done previously to address Dioxin contamination here and here.

This is the action that is addressing some DNAPL, water, a sand bar adjacent to the ground water collection system that we're going to talk about.

So to the Sediment Management Area clean-up options. First thing, they have them in groups because of similarities and conditions in the similarities we feel they're appropriate options. So 1 is by itself. 2 and 3 are together, 4 and 5 are together and 6 is by itself.

The type of technologies that we've used include capping, which is placing clean material over contaminated sediment.

Containment systems which would be a system of sheet piles in a low permeability capped to isolated area. And that technology is always combined with either DNAPL removal and treatment or hydraulic control and treatment or both.

And then DNAPL removal and treatment would involve going after the DNAPL material, removing it from the river and treating it to destroy it. Dredging the bottom, removing sediment from the river, moving it to a staging area where it's managed. Water is removed from it. The sediment would be tested, treatment, if necessary, it would be treated and it would be disposed in an approved landfill.

Hydraulic control relies on managing the water within the sediment to ensure that it does not flow away from the contamination, but is captured and treated as well.

And then monitoring natural recovery relies on the natural, physical, chemical or biological process to reduce contaminant levels over time.

So what we did with these technologies, I know you can't see it, but what we did with the technologies is we combined them to make alternatives. So in some cases you'll see one technology to make the alternative. And then in other cases multiple technologies have been combined to create the alternative.

As we have evaluated the alternatives to try to pick out which one we would propose, we are obliged to look at effectiveness, implementability, and cost as we evaluate and compare between alternatives. And in particular, there are subcategories that we consider.

In the case of what we're looking at for Segment 1, some of the major differences between alternatives relate to longterm effectiveness and permanence, the reduction of toxicity, mobility, or volume for treatment, short-term effectiveness. And then we do have some differences in how easy or

technically challenging the different remedies might be to construct.

So let's get into the Sediment Management Area, and I will move relatively quickly through some of these. There's a lot of pictures associated with these.

Conditions in Sediment Management Area 1 we have arsenic and PAH sediment that are near the surface.

I'm sorry, let me step back. The layout of all these pictures is as follows: This is a cross-section of the Tittabawassee River. This is the Dow main plant site over here. This is either owned by Dow or Consumer's. What we have is, as we do in this case as well, have a system that is the ground water protection system, which is called Regis system.

The system is comprised of a collection trench that is a permeable material so water flows into it. There are pipes and trench and pumps at the bottom that pull the material out. And then there's a hydraulic pump that's created that pulls water, contaminated ground water, towards the system. There's a sheet pile log between the Regis trench and the river side, and then there's material and rocks and material placed to protect the sheet pile wall.

So these pictures are all going to look very similar to this in terms of different cut-a-ways. We have sandy sediment at the site and different depths, but we also have the underlying material, till, which is a hard geological formation that is very difficult to cut into and relatively impermeable.

EPA's recommended alternative for SMA 1 is to cap the area with a cap that would both try to isolate and stabilize the material. So again, trying to use this just as an example, we would place material over the contamination and that cap would remain in place. There would be operation, maintenance and monitoring of it to ensure that it would continue to be effective.

Our first alternative, which we are not recommending is monitor natural recovery. And that would involve looking over time at the contaminants and see if they were reducing to a level that would reduce the risks.

EPA does not recommend this as a recommended alternative because we have some concerns with the amount of time it might take to reach a level that was appropriate. The process that we anticipate would be, going on here would be either burial with clean material or mixing with clean material. And we did not feel that we reasonably could anticipate what the

timeframe would be.

The third alternative which, again, we are not recommending is to dredge and dispose the sediment. That would involve probably creating a temporary construction ramp into the river. And this is using mechanical, illustrating mechanical, but we'd use mechanical or hydraulic equipment to try to get at the sediment.

Now in this case the sediment because it was near the surface we believe there's clean underlying material that could be cut into, so it would not be a case where we were trying to dredge on the till. And I'm going to talk about that in a minute. But what would happen in this case is sandy material would fill in over time the area that had been dredged. And we are looking to address these chemicals to protect the microorganisms.

Right now the habitat that we have out there is a fairly good habitat for them and the sandy material that would fill in the area is not a good habitat. So we feel that by creating a cap that had rockier material that we would be creating a better habitat than just the sand that would fill in after dredging.

So Sediment Management Areas 2 and 3. In

this case it's been pointed out the picture is little bit deceptive, but we have a suite of chemicals that are associated with a-crem-ally (ph) chlorobenzenes, but also chlorophenols, o-phenylphenol, that's SMA 3, PAH for SMA 3.

We have a case where we have DNAPL sitting on top of the till and we have an entire sediment column. So we don't (inaudible) like this, we really have an entire sediment column of contamination as part of these Sediment Management Areas.

EPA recommended alternatives would be Alternative 2, containment system of sheet pile and low permeability cap would be constructed around the area. Hydraulic control would be provided and then the material, the water material would be treated. DNAPL would be removed and treated. And that is going to be shown in a second here.

Hydraulic control is an element of at least three of our remedies. I'm going to show you a quick set of cartoons about how hydraulic, how we anticipate hydraulic control might be put in place.

Right now the Regis system, the ground water system has sheet pile that run along the river side and so this is illustrating the top of the Regis system, the sheet pile wall and then the materials, the

riprap materials in the river.

If we were looking to create an isolation system, we would want to tie into that existing sheet pile with additional sheet pile, make sure we create a box that was quite complete on all sides. So this is a -- that was a bird's eye view, this is an angle view down.

In this case we got the top of the water surface illustrated here and here, the grey material is the top of the sediment, soft sediment. And so we would anticipate trying to drive sheet pile in so that it penetrates the water, goes through the water, goes into the soft sediment and, essentially, flush with the soft sediment when we're done.

So now we're showing where, real quickly, where they place sheet pile in and then cut through the water to the soft sediment to create, essentially, a box that would then encapsulate the contaminated area. This is just giving you a cut-a-way in terms of how the box is anticipated to surround it. So now we see these views. This is sheet pile and this is sheet pile, but understand that it surrounds the work area.

So a recommended alternative, a well is another mechanism to remove DNAPL to be put in place. A low permeability cap would be put over to complete

the isolation. And then somehow, and we have not decided how we would do it, but we would want to create a connection, we would create a connection directly to the Regis system where I'm going to show you an example later where we would use a well to have hydraulic dams, so not only would we be addressing the DNAPL, but we would be addressing the water that was within the sediment pore.

So this is illustrating a connection, you know, a cartoon fashion with a Regis. We would anticipate then DNAPL is removed via these wells hydraulic control. There would be some inward movement from the river into the encapsulated area. Then that would be managed and treated and controlled. When DNAPL removal is complete, we would still maintain the system and there would be operation and maintenance of that as well.

Alternative 1 is fairly similar, but is a less aggressive approach towards capturing the contaminants within SMA's 2 and 3. So we have a similar containment system that would be built, so it would be the same sort of isolation system. But in this case we would just place the cap. There would not be DNAPL recovery. And the hydraulic control in this case would rely on, there's already some seams or

leakage through the sheet pile and it would be relied on to control the water within the isolated cell.

EPA did not recommend this because we think that there are vast benefits in terms of long-term effectiveness and permanence with removing and destroying the DNAPL. And we think that going after that is technically feasible and reasonable and doable. So we think that Alternative 2 is a more robust approach to treating the contaminants.

The third alternative in this case is, in all cases, dredging the sediment. In this case very similar to cartoons, a temporary ramp or road would be built, dredging would occur, pulling material back out of here. Now in this instance, unlike Sediment Management Area 1 we have contaminants that are sitting right on top of the till.

And we believe that based upon experience of a number of other sites that we would have relatively highly contaminant residuals left behind. This material is an oily product and it is not going to be completely removed by dredging. So there would be residuals.

Now one of the things that we talked about at other meetings is, we're showing that there would be some hiccup to the water column from dredging and we

believe that would be the case. We don't really picture some of the things we might do to manage that so we might have self curtains or a sheet pile, but if we were to try to put them on a cartoon, you would basically see a blank, so it's hard to picture that. But there would be some controls that would be put in place to try to manage the release to the water itself.

In terms of the residuals, we would anticipate managing those with a cap post dredging. We did not recommend this alternative because EPA has serious concerns about both the release to the water columns and short-term effectiveness and that the long-term residuals we would expect DNAPL to be relatively highly contaminated and need management.

Now we're going to see a page, go a little bit faster, Sediment Management Areas 4 and 5. In this case we have primarily chlorobenzenes. In this instance we find it sitting on top of the till. We don't see the same pattern of highly contaminated material throughout the sediment and sand column. So we're targeting material at the bottom.

We did not find DNAPL in these areas, but I want to point out that we did a pretty quick study last year so there will be additional work to evaluate

whether there's DNAPL in Sediment Management Areas 4 and 5 -- recoverable DNAPL. Thank you, Al.

EPA's recommended alternative for these areas would be to provide a cap. And in this case it would be primarily an erosion protection layer so. Because these are a little bit more in the center of the river this would be a case where we may need to build a temporary ramp in and then cap material would be placed, again, to primarily prevent erosion. Because if there is sufficient amount of cleaner sand on top of it, we may not need the isolation in the form of a cap.

Alternative 1 in this case was monitor natural recovery. As I mentioned for Sediment Management Area 1 one of the processes is burial or isolation. And in some cases there may be an argument that burial has occurred here. But we don't know what is really going on with the chemical constituents at the bottom. And so we are not clear on some of the processes that are acting on those. There may be some sea crustation or degradation of those products over time.

EPA did not prefer this because, again, we have a lot of concerns with the uncertainty about what might happen over time. And, also, we've seen that certain parts of the river can be pretty mobile so we

wanted to make sure that the material that's there in place stays in place above those contaminated areas.

And then finally, this is, again, the dredging alternative. It's very similar to what you've seen before. We would anticipate both residuals and some releases to the water column that would be managed by best management practices and some residuals that would be managed by a cap.

Again, we didn't prefer this because we think that the trade-offs between the effects of the short-term actions, the releases, are not -- EPA does not warrant this approach.

And finally, Sediment Management Area 6 is a little bit of an odd ball in that both surface contamination of ethyl parathion and deeper contamination of recoverable DNAPL, but not really a profile of contamination in between.

And so we are proposing to dredge and dispose the ethyl parathion contaminant sediment, create a containment system that we've talked about with a low permeability cap with sheet pile and then provide both hydraulic control treatment and DNAPL removal and treatment. So to remove the ethyl parathion from that, would create the isolation system, put in DNAPL recovery wall.

Now this is a case we haven't really decided if we do have highly contaminants, what's our best option, but this would be a case where there would be a well that recovers the water that's in among the sediment, low permeability cap, and then manage the water being pulled into the system through that recovery or the hydraulic control.

Alternative 1 would target the ethyl parathion sediment by dredging it, would remove the DNAPL, would treat the DNAPL, but it would not provide the hydraulic containment so that would be pretty simple, this kind of a system.

And we did not recommend this as a preferred alternative because we believe that the additional protection as provided by containment system and isolation system is valuable in terms of both the long-term effectiveness of the project and managing the material that's out there as we accomplish the removal and treatment.

And finally, the last alternative for Sediment Management 6 is dredge, dredge the whole area. And again, similar to what we've seen before EPA has concerns with releases for column and residuals and did not recommend this because of those concerns. A cap would be placed over it and there you go.

Now all of the alternatives, the ones we're recommending and whether we pick a different one, we would need to do additional work including evaluations as part of the design and engineering process that would look at how big of the footprint of the area it is, and whether there are additional, whether there's DNAPL, additional DNAPL evaluation.

We would anticipate a lot of the work would be done from Dow plant on temporary ramps. A lot of the management of the material, whether it's management to watering treatment, handling would be done at the Dow plant to the extent that it's allowable.

Material would be disposed in an approved site. And there would be, as I mentioned -- or I didn't mention this, but there would be monitoring during construction of the activities to ensure how the short-term construction was going as well as longterm monitoring and maintenance for the system.

Again, this is too busy to read it now, but this is part of your fact sheet and, really, it's comparing the SMA's, each of the alternatives against the effectiveness, implementability and cost.

And what we're, from EPA's perspective, differentiating is when we have highly contaminated material on top of till, we think that there are both

effectiveness issues in terms of our ability to remove that material but, also, implementation issues in terms of the difficulty in construction.

When we have monitor natural recovery, we have concerns in terms of the time it might take and the reliability of the processes. And so that's some of what went into the differentiation of these evaluation criteria.

Finally, we believe that our alternatives provide a balance of effectiveness, implementability, and cost. We think that they will provide longterm effectiveness and permanence by destroying and removing the highly contaminated material and stabilizing and isolating the remaining material. We think that there will be minimal short-term effect and that they will be technically reliable and feasible to build.

And then finally, switching gears, and I'm sure that most of you know, we're in the middle of a public comment period. EPA is running a comment period from August 1st to August 31st. There's a number of ways that you can submit comments.

One of them is official comments on the record here tonight. But I know that most of you know how to submit comments in writing and Pattie can certainly highlight that if you don't see it in your

fact sheet. And then we will consider the public comments we receive.

We may change the plan and finalize the plan with the expectation that Dow will be designing the work and ready to implement this next year. And that's what I have for you.

So the next speaker tonight is Al Taylor from MDEQ and he will speak on behalf, he's our project coordinator counterpart, and will speak on behalf of MDEQ. Thank you.

MR. TAYLOR: Mary asked me to make brief comments about the proposed remedies. And I think it's accurate to say that MDEQ is in agreement with the proposed release based on the existing information we have. There's, obviously, continuing work that's going to be done over the next year to refine the footprints of these Sediment Management Areas.

Also, we'll be working to determine if there are additional Sediment Management Areas that have not been identified. Just based on where we are in the investigation I think we're in strong agreement that the six areas that have been identified to date do need to be addressed and it's important to get cracking on this thing.

Couple things that Mary mentioned the last

time we talked about this, there's a couple of issues that are being worked on parallel could effect this. One is, there is continuing evaluation going on with respect to sediment clean-up criteria. And the other issue that is ongoing is the active sediment bed depth criteria that is still being evaluated.

These SMA's are based on a two-foot active sediment bed depth and additional work is being conducted now, additional evaluation is being conducted now to see if that two feet is adequately representative of what we see in this river system.

Additional work is also ongoing to refine the footprints of these SMA's. That's going to be going on for the next year.

And I guess finally, there will be careful coordination between the Circa program and the Ret-al (ph) programs. As many of these to proposed remedies rely on hooking into the Regis system, which is an important primary source control component at the Dow plant site. And whatever we do with that, we have to make sure that we're not going to cause any potential problem in the future. And I think everybody is highly sensitive to that issue.

I think that's all I have.

MS. KRAUSE: Deb Huntley or I'm sorry, Judi

Lincoln from our, from the Community Advisory Program is here.

MS. LINCOLN: I was asked to make a few comments to remind everybody, although I think everybody in the room has heard this before several times, just reminding everybody of the CAG and the purpose of the CAG.

The CAG was created as part of the agreement between EPA and Dow and it was selected by a special committee and was intended to represent a broad cross-section of the community that the river represents. So, of course, it involves Midland, Saginaw, and Bay County.

We have tried very hard to establish procedures and templates so that we are in a position to comment when different projects are presented by the EPA. And I think that we have focused and have continued to try very hard to make sure that we give voice to all opinions on the CAG. And we had a very productive meeting last night and will be presenting a comment.

The goal right now is to present it by the end of the comment period. And we have a pretty focused committee who's working on that. And a very productive conversation and I believe that the, all of

the factors or issues, concerns raised by CAG members will be included in that.

So we're all volunteers. We did this because we're dedicated to our community and it really is a good group of people.

MS. KRAUSE: Thank you, Judi. We'll take questions and answers and then we'll take a brief break. If you raise your hand, there's a microphone over there and you can ask your questions. And after that we will start the public hearing. Any questions?

UNIDENTIFIED SPEAKER: Mary, just for clarification, EPA is recommending that the ethyl parathion be removed, correct?

MS. LOGAN: Yes. In all of the alternatives for Sediment Management Areas 6, ethyl parathion removal would be an element.

UNIDENTIFIED SPEAKER: And is there, is there a volume of DNAPL that can be defined in those segments, I mean is there an actual volume?

MS. LOGAN: We don't have that estimate right now. What we did in terms of part of the testing to see if there was recoverable DNAPL is really just simply sink some wells in the system and see if it could be pumped out, but we do not have an estimate of volume at this point.

UNIDENTIFIED SPEAKER: Can I keep asking questions? I don't want to hog the microphone.

MS. LOGAN: People look like they're fighting you to the microphone.

UNIDENTIFIED SPEAKER: I know. What makes -- and maybe I missed it, what makes the DNAPL unrecoverable? I'm not -- you said it was hard to recover. Is it depth or?

MS. LOGAN: It's the -- it could be the tar. And I think I keep saying this wrong. We actually were able to recover DNAPL from some of the Sediment Management Areas so we were able to pump it and get it to flow, but sometimes it's so viscous that it can't flow or move. But in this case we found that we could recover it. I think I'm miscommunicating it.

DNAPL in land base sites is notoriously difficult to find because it's so heavy it kind of follows gravity to where it's going to go. And then once it's there it may bind up, but we did recover DNAPL.

UNIDENTIFIED SPEAKER: Okay.

MS. LOGAN: That picture over there shows it somewhat.

UNIDENTIFIED SPEAKER: I think that was it. Oh, about the dredging part of it. As much as anyone,

I appreciate you're (inaudible) these items, I truly do. But I'm wondering if in the option two dredge, can you utilize vacuum dredging? I know there's a company that's doing that out in New York Harbor. I had a conversation with some folks from NRDC and they're actually using a vacuum, they're putting drapes around it with screen, but they're using the vacuum to do the dredging to pull in, these were PCP's and Dioxins. But I don't know if that's something that you would consider.

MS. LOGAN: When we develop alternatives we don't really specify what equipment's used. I know that there's different products that the people in our Great Lakes National Program also use, it's called a vic-back (ph), that's probably similar to what you're talking about.

What we're dealing with here is a thick material where you have to go through it to begin with, to get top multiple feet off.

We found that other projects, both the work Reach D and then the work in Reach O, that there's a fair amount of debris at the bottom of the river. So what you're talking about is a vacuum, it sounds like you have to have a flat surface, so we have to manage debris in order to do that. And debris removal in and

of itself can cause resuspension or movement of the contaminants.

We don't have an idea of how flat the till is, but it could be something we could consider. The problem we got is the types of projects that I've seen where vic-back's have been used are not DNAPL. They're contaminants, but also sediment particles themselves so you're trying to capture the particle, not vacuum up whatever.

UNIDENTIFIED SPEAKER: Okay. The other question is you talk about the disposal of the DNAPL. Where is -- where -- the treatment, I want to know about the treatment of the DNAPL. Does that mean it's not just the Regis, it could be burned, it could go to a landfill, it could --

MS. LOGAN: This is not the till that can go to a landfill.

UNIDENTIFIED SPEAKER: I didn't think so.

MS. LOGAN: One of the things that I know Al mentioned I really appreciate, this is a project where the state has left worker authority in terms of the land based activity. So we would be working real closely to see whether there was a permanent kind of treatment, the destructive treatment at the Dow facility; if there was not, we would look for

destructive treatment elsewhere, and that would involve some kind of thermo.

UNIDENTIFIED SPEAKER: That's it. Thank you very much.

MS. LOGAN: Thank you.

MS. KRAUSE: Anybody else for questions? Let's take about a five-minute break and then we'll start the public hearing.

(Break taken.)

MS. KRAUSE: We're going to start public hearing, whoever would like to start the public comment for the record.

MS. RIDDICK: My name is Michelle Hurd Riddick and I'm with the Bay City based Loan Tree Council. Thank you very much for the very detailed presentation. We do appreciate it. And Loan Tree Council will be forwarding public comments during public council hearing. Thank you very much.

MS. KRAUSE: Anybody else? Okay, the public hearing has formally ended. Thank you very much.

(Concluded at 7:14 p.m.)

STATE OF MICHIGAN)
) SS
COUNTY OF SAGINAW)

I certify that this transcript, consisting of 31 pages, is a complete, true, and correct record of the EPA public hearing held on August 16, 2011.

I also certify that I am neither counsel for nor related to any party to said action nor in any way interested in the outcome thereof.

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Joanne Kendall, CER-5687
Notary Public, Arenac County
My Commission Expires: July 30, 2012