

**In the Matter Of:**  
**WURTSMITH RESTORATION ADVISORY BOARD**

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**RAB MEETING**

*May 15, 2024*

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WURTSMITH RESTORATION  
ADVISORY BOARD (RAB) MEETING

Oscoda United Methodist Church  
120 West Dwight Street, Oscoda, Michigan 48750

Wednesday, May 15, 2024

5:00 p.m.

Marcy A. Klingshirn, CER 6924  
Certified Electronic Recorder  
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Firm Registration Number 8035

1 RAB CO-CHAIRS: Mark Henry (virtual)  
Steven Willis, Air Force

2

3 Local Government  
4 Stakeholder RAB  
5 Members Present: Denise Bryan, Local Health Department  
Chelsea Gary, MDHHS  
Amy Handley, EGLE  
Michael Munson, OWAA  
Bill Palmer, Oscoda Township  
Eric Strayer, AuSable Township

6

7 Community RAB  
8 Members Present: Dave Carmona  
William Gaines  
Arnie Leriche  
9 Scott Lingo  
Greg Schulz  
10 Josh Sutton  
Rex Vaughn (virtual)  
11 David Winn  
Cathy Wusterbarth

12

13 Also Present Amy Rauser, Jessie Howard, Cyndi Abbott,  
(In Person): Christine Alexander, Janet Anderson,  
Megan Berry, Matt Boltusis, Paula Bond,  
14 Kalan Briggs, Tarek Buckmaster, Summer  
Cox, Beverly Green, John Janiak, David  
15 Kane, Andrea Keatley, Travis Kirin,  
Tammy Kline, Tisha Lane, Matt Lipiec,  
16 Kelly Lively, Ryan Marish, Wendi  
Michael, Jeremiah Morse, Barry Nelson,  
17 Grace Poudrier, Kirby Tyndall, Roger  
Walton, Lynn Winn

18

19 Also Present Amanda Armbruster, Dorin Bogdan, Grace  
(Virtually): Borst, Cheryl Brewer, Michelle Brown,  
Courtney Carigan, Kevin Cox, Courtney  
20 Fung, Greg Gaines, Greg Gangnuss, Jenny  
Haglund, Cristina Harvey, Kenneth  
21 Heitkamp, Teresa Homs, Stephanie  
Kammer, James Kountzman, Mathew Lipiec,  
22 Mollie Miller, James Mills, Tess Nelkie,  
Rob Pallarito, Natalia Perez, Ravi  
23 Ravichandran, Jim Romer, Sydney Ruhala,  
Matt Siler, Erin Simpson, Tony Spaniola,  
24 Hannah Theodorovich, Aneta Veedmont,  
Nathan Wayne, Mark Weegar

25

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Oscoda, Michigan

Wednesday, May 15, 2024 - 5:00 p.m.

MS. JESSIE HOWARD: Hello, everyone. Here we go.

Hello, everyone, and welcome to the May 15th, 2024, Restoration Advisory Board public meeting. I'm your facilitator, Jessie Howard. Irving Entertainment Studios will be live streaming and documenting tonight's meeting. And we are also joined by our certified court reporter Marcy who also will be documenting. I just want to give a quick reminder to the RAB to remember to speak right into the end of those microphones, the round piece there, and be sure to say your name clearly for people attending virtually. And also real quick for the RAB members, I do have out a copy of the presentation and there is also a copy of the AIs. The top packet are the open ones and the bottom packet are the closed ones. So you do have all those as well. And before we begin, I just want to mention that our typical Community co-chair Mr. Mark Henry is not with us tonight, but we do have Mr. Greg Schulz in his place. And with that, I would like to give our co-chairs the floor for their opening remarks. Mr. Willis?

MR. STEVE WILLIS: Good evening. This is Steve Willis with the Air Force. Welcome, everyone. I see a couple of new faces. It's always nice to see new folks here interested in the restoration activities we've got going at

1 Wurtsmith. We've got a full agenda tonight. We've got a  
2 fairly lengthy presentation on the risk assessment process  
3 that we'll be using for the PFAS remedial investigation and  
4 we've also got an update on some of the recent RI work which  
5 is pretty well wrapped up at this point. And so welcome,  
6 everyone, and look forward to a good meeting.

7 MS. JESSIE HOWARD: Okay.

8 MR. GREG SCHULZ: I, too, would like to thank  
9 everyone for coming. We had a, a real good tech session  
10 yesterday that went over the environmental and health,  
11 ecological risk assessment, and it's certainly a pretty  
12 complicated matter. So with that I will say that C-RAB  
13 members have been working on some thoughts on some simple  
14 low cost capture absence we might be able to use in Clark's  
15 Marsh, particularly the -- where it outflows to the AuSable  
16 River, and hopefully we'll have something to present maybe  
17 as soon as the next RAB to help move along some remedial --  
18 I guess remedial, interim remedial removal of PFAS where the  
19 low-hanging fruit is. So with that I guess ready to go.

20 MS. JESSIE HOWARD: Okay. Next I will take RAB  
21 member attendance. And our RAB coordinator in the back,  
22 Amy, will respond for anybody who is joining us virtually.  
23 I'll begin with the Government RAB. Steven Willis with the  
24 U.S. Air Force?

25 MR. STEVE WILLIS: Present.

1 MS. JESSIE HOWARD: Tim Cummings, Oscoda Township?

2 MR. BILL PALMER: Bill Palmer sitting in for Steve  
3 (sic).

4 MS. JESSIE HOWARD: Thank you, Bill. Eric  
5 Strayer, AuSable Township?

6 MR. ERIC STRAYER: Present.

7 MS. JESSIE HOWARD: Amy Handley, from EGLE?

8 MS. AMY HANDLEY: Present.

9 MS. JESSIE HOWARD: Michael Munson from OWAA?

10 MR. MICHAEL MUNSON: Present.

11 MS. JESSIE HOWARD: Denise Bryan, District Health  
12 #4? No Denise tonight. And Chelsea Gary, from  
13 Department -- Michigan Department of Public Health?

14 MS. CHELSEA GARY: Present.

15 MS. JESSIE HOWARD: And Jessica Stuntebeck with  
16 the USDA Forest Service?

17 MS. AMY RAUSER: No.

18 MS. JESSIE HOWARD: No Jessica tonight? Okay.  
19 Moving on to the Community RAB. Greg Schulz?

20 MR. GREG SCHULZ: Present.

21 MS. JESSIE HOWARD: Mark Henry?

22 MR. MARK HENRY: Here virtually.

23 MS. JESSIE HOWARD: Thank you, Mark. Dave  
24 Carmona?

25 MR. DAVE CARMONA: Here.

1 MS. JESSIE HOWARD: Bill Gaines?

2 MR. BILL GAINES: Here.

3 MS. JESSIE HOWARD: Kyle Jones? No Kyle tonight.  
4 Arnie Leriche?

5 MR. ARNIE LERICHE: Here.

6 MS. JESSIE HOWARD: Scott Lingo?

7 MR. SCOTT LINGO: Here.

8 MS. JESSIE HOWARD: Josh Sutton?

9 MR. JOSH SUTTON: Here.

10 MS. JESSIE HOWARD: Rex Vaughn?

11 MR. REX VAUGHN: Present virtually.

12 MS. JESSIE HOWARD: Thank you. David Winn?

13 MR. DAVID WINN: Here.

14 MS. JESSIE HOWARD: And Cathy Wusterbarth?

15 MS. CATHY WUSTERBARTH: Here.

16 MS. JESSIE HOWARD: All right. Thank you. Next I  
17 will quickly review tonight's agenda. We're currently in  
18 the Welcome and Introductions. Next we will have RAB Member  
19 Updates followed by the RAB Business Update. We'll then  
20 have an update on the PFAS RI and the Alert Area Aircraft  
21 IRA. Then we will have an update on Risk Assessment  
22 Methodology and Species included in the Ecological Risk  
23 Assessment, followed by RAB Member Questions, Public  
24 Comment, and then the Conclusion of tonight's meeting.

25 At this time I would like to ask any local, state,



1 Air Force or DOD officials if they would please introduce  
2 themselves if they're here with us or virtually.

3 MR. ROGER WALTON: Good evening. Roger Walton.  
4 I'm the central branch chief BRAC program for Air Force.  
5 Steve's supervisor. Position previously held by Dan Medina.  
6 You may remember him from the past.

7 MS. JESSIE HOWARD: Thank you, sir. Did we have  
8 anybody else with us virtually or --

9 MR. KALAN BRIGGS: Kalan Briggs, Superfund section  
10 manager.

11 MS. JESSIE HOWARD: Thank you. And virtually?

12 MR. MATT SILER: This is Matt Siler with Water  
13 Resources Division of the Bay City District Office.

14 MS. JESSIE HOWARD: Thank you.

15 MS. CHRISTINE ALEXANDER: Christine Alexander,  
16 Michigan Department of Environment, Great Lakes --

17 MS. ERIN SIMPSON: This is Erin Simpson. I'm  
18 contract support for the Air Force joining virtually.

19 MS. JESSIE HOWARD: Thank you.

20 MS. CHRISTINE ALEXANDER: Christine Alexander with  
21 the Michigan Department of Great Lakes --

22 MR. KEVIN COX: This is Kevin Cox from Water  
23 Resources Division of EGLE, also participating virtually.

24 MS. JESSIE HOWARD: Thank you. He's bringing you  
25 a microphone.

1 MS. STEPHANIE KAMMER: This is Stephanie Kammer  
2 with the Water Resources Division participating virtually.

3 MS. JESSIE HOWARD: Thank you.

4 MS. SYDNEY RUHALA: This is Sydney Ruhala with the  
5 Water Resources Division with EGLE, also participating  
6 virtually.

7 MS. JESSIE HOWARD: Thank you.

8 MS. AMANDA ARMBRUSTER: Amanda Armbruster with the  
9 Remediation and Redevelopment Division of EGLE participating  
10 virtually.

11 MS. JESSIE HOWARD: Could you please repeat your  
12 name for us? We didn't catch the first part.

13 MS. AMANDA ARMBRUSTER: Amanda Armbruster.

14 MS. JESSIE HOWARD: Thanks, Amanda. And we have  
15 one here with us in the room.

16 MS. CHRISTINE ALEXANDER: Christine Alexander with  
17 EGLE, Water Resources Division.

18 MS. JESSIE HOWARD: Thank you.

19 MR. TAREK BUCKMASTER: And Tarek Buckmaster, EGLE,  
20 Water Resources Division.

21 MS. JESSIE HOWARD: Thank you.

22 MS. MEGAN BERRY: Megan Berry, RRD, EGLE, Bay City  
23 District Office.

24 MS. ANDREA KEATLEY: Andrea Keatley, Michigan  
25 Department of Health and Human Services.

1 MS. JESSIE HOWARD: Thank you.

2 MS. SUMMER COX: Summer Cox, Michigan Department  
3 of Health and Human Services.

4 MS. JESSIE HOWARD: Thank you.

5 MS. COURTNEY FUNG: This is Courtney Fung with the  
6 Remediation and Redevelopment Division of EGLE participating  
7 virtually.

8 MS. JESSIE HOWARD: Thank you. Anybody else?

9 MR. JAMES KOUNTZMAN: This is Jim Kountzman. I'm  
10 with Cherokee Federal supporting the Air Force and I'm  
11 virtual.

12 MS. JESSIE HOWARD: Thank you.

13 MS. HANNAH THEODOROVICH: Hannah Theodorovich,  
14 Michigan Department of Health and Human Services.

15 MS. JESSIE HOWARD: Thank you.

16 MR. DORIN BOGDAN: Dorin Bogdan. I'm with AECOM  
17 Consultants supporting EGLE, virtually.

18 MS. JESSIE HOWARD: Thank you.

19 MR. KENNETH HEITKAMP: Kenneth Heitkamp with EGLE  
20 and RRD attending virtually.

21 (RAB Member updates at 5:09 p.m.)

22 MS. JESSIE HOWARD: Thank you. Okay. So before  
23 we begin our RAB member updates I do just need to ask that  
24 everybody please use this time only for updates. We will  
25 have time to answer questions, concerns, things like that

1 later, but for this portion we just need to stick to updates  
2 only. And if we could keep them to three minutes or less,  
3 that would really help us keep things moving along tonight.  
4 We want to be respectful of everybody's time. So we will  
5 begin with an update from the Air Force. Mr. Willis?

6 MR. STEVE WILLIS: Next slide. There we go. So  
7 just a quick update on the -- we're doing a Military  
8 Munitions Response Remedial investigation. We briefed this  
9 at a RAB probably a year ago. Our plan is to start field  
10 work the end of this month or early next month. We're  
11 continuing to finalize the QAPP to start that field work.  
12 We have a vapor intrusion remedial investigation that's  
13 ongoing. We've briefed that at a couple of RABs now. We've  
14 collected the third quarter of sub-slab and indoor air  
15 samples. Those are at the lab. We're waiting for results  
16 to come back from the lab. Once they're validated, we'll  
17 share those with the airport, their tenants, EGLE and the  
18 Health Department. So more to come as we get those results  
19 back. We did have a tech session prior to the last RAB  
20 meeting on the 20th of February and our contractor WSP did  
21 do a presentation on the FT02 treatment system performance.  
22 We did also have a tech session yesterday and our risk  
23 assessors went through a, a much lengthier presentation in  
24 more detail on the risk assessment process for both human  
25 health and ecological receptors. Tonight's version of it

1 will be a streamlined version, just based on the amount of  
2 time we've got available. We are in the process of, of  
3 identifying data gaps for our follow-on data gap  
4 investigation. That will be part of the, the data gap  
5 investigation feasibility study, proposed plan and RODs for  
6 the final remedies for the, for the PFAS investigation. We  
7 are working with EGLE to identify those. We still need the,  
8 the RI report to be written and I expect to have that from  
9 the contractor in July time frame. So once we've got that,  
10 that'll serve as a good basis for identifying and finalizing  
11 our data gaps so we can get that on contract and my plan at  
12 this point is to award a contract in January of '25. And  
13 the next slide?

14 Just outlines the, the next four RAB meetings. I  
15 try and project out basically 12 months at a time just for  
16 planning purpose so everyone can mark it on their calendar.  
17 And the RAB meetings are typically the third Wednesday of  
18 these -- of February, May, August and November. We make  
19 some fluctuations based on holidays. I know last year we  
20 made an adjustment for the start of hunting season, just to  
21 make sure we had enough attendees, but minor deviations.  
22 But this is the general schedule, it's the third Wednesday  
23 of those months. And next slide I think gets over to Amy  
24 with EGLE.

25 MS. AMY HANDLEY: Good evening, everybody. I'm

1 just going to run through some of the recent activities that  
2 EGLE has been up to. We can go to the next slide.

3 So in March we participated in the base  
4 realignment and closure cleanup team meetings which are the  
5 BCT meetings. Those minutes have been made available and  
6 they were just posted on the MPART web site. I believe they  
7 went live on Friday. We also received the second quarter  
8 vapor pin and indoor air data related to the VI immediate  
9 work plan. We've been in ongoing discussions with MDHHS on  
10 the approach and expectations related to that VI work.

11 We've reviewed the fourth five-year review and provided  
12 comments to the Air Force as well as the draft MMRP QAPP.

13 We submitted that back to the Air Force with comments as  
14 well. There was also a, a systematic project planning  
15 meeting for this MMRP work. It kind of just goes over what  
16 was in the QAPP and what the anticipated work is going to  
17 happen out here. So we did that back in I think, I believe  
18 that was actually April 1st we had that meeting. So we  
19 completed a back check of the comments for the PFAS RI QAPP  
20 addendum and that document has since been finalized and will  
21 be available on the administrative record soon. I believe  
22 it was just finalized a couple weeks ago so you should see  
23 that soon on the administrative record. We've also been  
24 working with our Water Resources Division and our Attorney  
25 General's Office for the Aircraft Alert Area IRA substantive

1 requirements document and the applicable or relevant and  
2 appropriate requirements list that we have to submit to the  
3 Air Force. All of those things will be finalized and  
4 submitted to the Air Force by the end of next week. We can  
5 move to the next slide.

6 So these are some upcoming activities that we  
7 have. Again, these are just some of them. It's not  
8 everything, but just to give everyone an idea of what we  
9 have coming up. We're finishing our -- or we're starting  
10 our data review of all of the PFAS IRA work. All of that  
11 data has been provided to us apart from the recent  
12 monitoring wells that were sampled. There were 91  
13 monitoring wells sampled, I believe, in the last week or two  
14 and that stuff is currently with the lab. So once that is  
15 validated and finalized we will have that as well. We have  
16 a BCT meeting next week and we will be covering an upcoming  
17 ESTCP project that is going to be occurring out here at  
18 Wurtsmith.

19 We still have additional VI immediate work plan  
20 data that we'll be getting throughout the rest of this year  
21 which we'll continue to review and discuss with MDHHS on all  
22 that. And we've actually been collaborating with the local  
23 health department district office staff within RRD and MDHHS  
24 staff on possible solutions for homes that are currently on  
25 municipal water but still have an active well, so what

1 options may be available for well abandonment. We're still  
2 in very early stages of that to figure out what options  
3 might be available, but we are having some discussions on  
4 what we might be able to do to kind of assist with that.

5 We've also been gearing up to be able to work with  
6 the Air Force for the data gap investigation and how we're  
7 going to be working with them on putting together stuff for  
8 the -- which data gaps we see and how that RI data kind of,  
9 what we have found that might be a gap or what work we might  
10 want to see within that work plan. We're expecting to be  
11 able to have our early internal conversations about that RI  
12 data in early June, and then move on to being able to start  
13 conversations with the Air Force shortly after that. So  
14 then we have a couple of additional documents that we should  
15 be getting between now and likely our next RAB meeting. The  
16 Aircraft Alert Area interim record of decision and the work  
17 plan, the SS-72 revised feasibility study, along with the  
18 next long term management and the pump and treat system  
19 reports.

20 And that is it for updates on activities from us.  
21 Next up is actually going to be Tarek Buckmaster from WRD to  
22 give a quick update and kind of an overview of how the  
23 substantive requirements documents are kind of put together.  
24 And he will be able to take a couple questions once he  
25 finishes with his presentation. So I will turn it over to



1 him to begin.

2 MS. JESSIE HOWARD: Okay.

3 MR. STEVE WILLIS: While Tarek's coming up,  
4 just -- this presentation is in response to an action item  
5 from the RAB. There was a request for WRD to provide some  
6 discussion of SRDs and the process in general. So this is  
7 based on an action item from the RAB.

8 MR. TAREK BUCKMASTER: Hello, everyone. Again, my  
9 name is Tarek Buckmaster and I supervise the Industrial  
10 Permits Unit, Permits Section on Water Resource Division.  
11 Our Permits Unit is responsible for issuing NPDES permits  
12 and SRDs for all the industrial facilities in the state and  
13 all the groundwater remediation sites in the state. I  
14 myself have been in Permit Section in Water Resource  
15 Division for 25 years. I have been involved with permits  
16 the entire time, issuing permits for similar type discharges  
17 as at the Wurtsmith site. I have been involved with  
18 activities at Wurtsmith since about 2008 and have been  
19 involved in the SRD development for all the treatment  
20 systems at the site. So I have extensive background in all  
21 the SRDs in place currently and all the treatment systems.  
22 Next slide.

23 So today I'm just going to give a brief overview  
24 for the SRD development for the treatment systems at the  
25 site and I'm just going to briefly touch on the role of

1 Water Resource Division, the overview of the treatment  
2 systems, the development of the SRD with the evaluations and  
3 monitoring requirements involved, and then just some example  
4 treatment results from the central treatment system. Next  
5 slide.

6 So Water Resource Division, we cover a wide range  
7 of activities in the state. We ensure the designated uses  
8 are being met in the surface waters, we administer the  
9 discharge permit program, we do water quality assessment and  
10 we manage a permit program for surface water interface,  
11 inland lakes and streams activities, and we make 9,000  
12 permit decisions per year. Next slide.

13 So at the this site, the role of Water Resources  
14 Division, the Great Lakes Watersheds Assessment,  
15 Restoration, and Management Section is responsible for  
16 surface water assessment and fish collection and assessment.  
17 Permit Section is responsible for the development of the  
18 SRDs, and the Bay City District Office and our Emergent  
19 Pollutant Section are going to be responsible for compliance  
20 and enforcement of the SRDs at the site. Next slide.

21 So, again, a brief overview of the treatment  
22 systems. There's three active treatment systems at the site  
23 for FT02, Central, and Mission Street and the fourth  
24 treatment system at the Alert Aircraft Area will be active  
25 by the end of the year. All three of the existing sites are

1 effectively treating for PFAS, and our monitoring being  
2 conducted for the sites in line with the SRDs has  
3 demonstrated that all the systems are in compliance with the  
4 requirements of the SRD. Next slide.

5           So when Permit Section develops the SRD, we  
6 primarily conduct reviews in two areas: water quality and  
7 technology. For the water quality side we're looking at  
8 site specific limits based upon the discharge meeting water  
9 quality standards for the waters of the state, and the  
10 treatment technology side, we evaluate whether EPA has  
11 promulgated any effluent limitation guidelines which are the  
12 federal minimum level of industry-specific standards for  
13 industry. EPA has not promulgated groundwater remediation  
14 guidelines for PFAS-specific remediation guidelines. So in  
15 the absence of having federal guidelines, the state is  
16 required to establish best professional judgment technology-  
17 based limits. Those are state based, statewide uniform  
18 developed -- uniformly developed standards that we are  
19 applicable for any groundwater remediation, especially for  
20 PFAS remediation in this area. Again, we have those limits  
21 developed. Those are applicable for any remediation that  
22 involves PFAS in the state. And then when we do this  
23 evaluation when setting our final effluent limitations in  
24 the SRD, we always select the most restrictive limitation.  
25 Next slide.

1           So just some examples of the evaluations that  
2 we've done historically for the treatment systems at this  
3 site. Water Resource Division has developed standards for a  
4 number of PFOS analytes. PFOS and PFOA are identified up  
5 here. PFOA has actually been revised to be more  
6 restrictive. Instead of the 12,000 nanograms per liter it  
7 is 170 nanograms per liter, 66 if it's a drinking water  
8 supply. We also have recently established standards for  
9 PFBS, PFHxS and PFNA. So the applicable standards that we  
10 consider for water quality for, like, for PFOS, it's 12  
11 nanograms per liter as a non-drinking water supply and 11  
12 nanograms per liter if it was a drinking water source. We  
13 compare those to the best professional judgment developed  
14 technology-based limits. For PFOS that's 15 nanograms per  
15 liter as a daily maximum, for PFOA it's 40 nanograms per  
16 liter. We have 250 for PFBS and we're currently working on  
17 standards for the other analytes. Next slide.

18           Also, in consideration of the Alert Aircraft Area  
19 treatment system, since it will have a groundwater  
20 infiltration discharge, we are evaluating it for the maximum  
21 contaminant level compliance for groundwater protection and  
22 those standards are listed there. Again, for PFOS it's 16  
23 nanograms per liter and for PFOA it's 8 nanograms per liter.  
24 And, again, when we are setting the applicable limits in the  
25 SRDs, the most restrictive limitation is specified. Next

1 slide.

2 So this slide just shows a basic setup for how the  
3 SRD would include some monitoring requirements for the PFOS  
4 analytes. Just the important things are we set up  
5 monitoring requirements on a regular basis at the influent  
6 monitoring point, any intermediate monitoring stages and the  
7 effluent from the treatment system to monitor the operation  
8 of the treatment system and also to ensure compliance with  
9 the standards at the discharge location. Next slide.

10 This is an example treatment system. This is the  
11 central treatment system that has three -- they're  
12 granulated activated carbon units. So as the wastewater  
13 flows from right to left, the influent enters that first  
14 tank which is often considered to be a sacrificial carbon  
15 tank, it passes through the first intermediate stage into  
16 the second carbon tank, passes through the second  
17 intermediate stage and into the third carbon tank where it's  
18 fully treated and then discharged. Next slide.

19 This last slide is just the, some example  
20 monitoring results from that central treatment system. On  
21 the bottom axis the dates aren't important, but you can look  
22 at the time of passage for this. So the entire treatment  
23 system evaluation that is on this page is 160 days. It's  
24 approximately the lifespan of the carbon unit before it is  
25 changed and rotated. As you can see, the orange line at the

1 top is the influent to the treatment system, the green line  
2 is the data that is received at the first intermediate  
3 stage, the next line is the yellow line, that is the second  
4 intermediate stage, and then the blue line is the effluent  
5 from the system. So over this 160-day period the influent  
6 concentrations remain fairly steady, around 1,000 nanograms  
7 per liter. Then at the first stage following the first  
8 treatment unit, you can see that the treatment was effective  
9 for the first 80 days getting significant removal of PFOS  
10 from that first unit, and then after that 80-day period it  
11 starts to increase where, throughout the rest of that  
12 160-day period you're still seeing some significant  
13 reductions there, it's just not as effective at, as at the  
14 beginning of the treatment system. And then the yellow line  
15 is the second intermediate stage and over time that is  
16 fairly consistently non-detect until the very end of the  
17 160-day period where you do see the, start to see an  
18 increase there also. And then, again, the blue is the last  
19 stage after the third unit and that effectively is non-  
20 detect throughout the 160-day period. So at that point the  
21 carbon unit would be modified and adjusted and then it would  
22 effectively restart that treatment system lifespan. So  
23 that's all I have. Next slide, I guess. And then we can  
24 take questions, too.

25 MR. DAVE CARMONA: Dave Carmona, local RAB. The

1 replacement cycle, you said it tends to go down at the end  
2 of the period. Do you adjust the replacement date based on  
3 whether you're getting detects or not? In other words, if  
4 you go 180 days you get a detect at 162, do you make the  
5 change at that point or do you let it complete the cycle?

6 MR. TAREK BUCKMASTER: So the monitoring and the  
7 SRD is in place to make sure that that is all being  
8 monitored sufficiently so that if there is a change in that  
9 duration, that it is, you know, that the tank replacement  
10 can occur earlier if needed or not as early if needed. So  
11 it's really just based on the data and how that operation of  
12 the treatment system is. Yes?

13 MR. ARNIE LERICHE: Arnie Leriche, Community RAB.  
14 Can you talk about the, the cycle change and -- of the  
15 tanks? I understand I'm pretty sure -- if you can  
16 confirm -- these units at these, each site are basically a  
17 one line of those three tenants; correct?

18 MR. TAREK BUCKMASTER: Yes.

19 MR. ARNIE LERICHE: Okay. So there's no spare  
20 there to bring in so you basically have to shut the system  
21 down, is that true or you leave, you replace one but the  
22 other two are still working, so you're still monitoring? So  
23 that's the question.

24 MR. TAREK BUCKMASTER: Yeah. That'd be better  
25 answered by the operators of the, the treatment system. I'm

1 not exactly sure what they do during their tank changeovers.

2 MR. ARNIE LERICHE: So it's also -- but you allow  
3 them to do in the SRD, is some specific minimum on that?

4 MR. TAREK BUCKMASTER: I'm not sure how the  
5 systems are operated during that tank change out.

6 MR. ARNIE LERICHE: Okay. So I guess if they  
7 won't answer --

8 MR. STEVE WILLIS: They're typically shut down.

9 MR. ARNIE LERICHE: So the line is shut down for  
10 that period of time. So what's the length of time?

11 MR. STEVE WILLIS: Typically takes, I don't  
12 know, --

13 MR. ARNIE LERICHE: To change over the tank?

14 MR. STEVE WILLIS: -- four hours, half a day to,  
15 to swap out the carbon.

16 MR. ARNIE LERICHE: And get it back online, yes.

17 MR. STEVE WILLIS: And, yeah, yeah.

18 MR. ARNIE LERICHE: How many?

19 MR. STEVE WILLIS: About four hours; about half a  
20 day.

21 MR. ARNIE LERICHE: Okay. Less than half a day.  
22 Okay. So there's no spare tank there if --

23 MR. STEVE WILLIS: That's correct.

24 MR. ARNIE LERICHE: -- all of a sudden the tank  
25 cracks or something or --



1 MR. STEVE WILLIS: No. We -- that's why we've got  
2 a redundant system with three tanks in it.

3 MR. ARNIE LERICHE: Okay. Thank you.

4 MR. TAREK BUCKMASTER: Any other questions? Is  
5 there anyone online?

6 MS. AMY RAUSER: No.

7 MR. TAREK BUCKMASTER: Okay.

8 MS. JESSIE HOWARD: Thank you, sir. All right.  
9 So now I'm just going to kind of go down the list and ask  
10 for any additional updates. I will begin with the  
11 government RAB. Mr. Palmer, did we have an update for  
12 Oscoda Township?

13 MR. BILL PALMER: I do have if someone is  
14 interested, our engineers have been working. We've put  
15 together a list of all the water main projects that we have  
16 and we have a list of the, how many residents have been  
17 hooked up, how many wells have been capped and abandoned.  
18 And so I have that information to send if you find that  
19 interesting. There was some talk that we needed, we needed  
20 to have some information so I have that tonight if you would  
21 like to see it.

22 MS. JESSIE HOWARD: Thank you, sir. Eric Strayer,  
23 do we have an update from Oscoda or AuSable Township?

24 MR. ERIC STRAYER: I have no updates tonight.

25 MS. JESSIE HOWARD: All right. Michael Munson

1 from OWAA?

2 MR. MICHAEL MUNSON: Yes. This is Michael Munson  
3 from Oscoda Wurtsmith Airport. I'm not going to give an  
4 update. I'm going to, I'm going to give a concern that we  
5 have right now with one of our --

6 MS. JESSIE HOWARD: Okay. So right now we are  
7 only doing updates. We'll have time for questions,  
8 comments, concerns in just a little bit. Denise, did we  
9 have an update? Ms. Bryan, sorry.

10 MS. DENISE BRYAN: Denise Bryan, health officer  
11 with District 2. The update is we're working with EGLE on  
12 well abandonment. We have identified approximately 68 wells  
13 recommended to be plugged for environmental safety and  
14 public health safety. What I think is really timely is  
15 looking at a recent grant RFP released by the Governor and  
16 the state that will help with quality air and quality water  
17 infrastructure and District 2 would be willing to be a  
18 fiduciary to write for some of the infrastructure costs that  
19 our residents may be experiencing. So our epidemiologist,  
20 health educator, and EH staff will be starting a proposal.  
21 I hope to connect with NOW and the township and any other  
22 ideas for bringing needed funds to this area. And  
23 congratulations, Cathy, read in the paper how remarkable and  
24 impressive you are and you really inspire us, yeah.  
25 Congratulations to Tony. It's, you know, remarkable again

1 the experience and dedication of our members here to  
2 advocate for environmental and public health justice for  
3 residents and visitors to our area. Very proud to know all  
4 of you and work with you on this important issue. I  
5 appreciate all your time. Thank you.

6 MS. JESSIE HOWARD: Thank you very much. And,  
7 Chelsea Gary, did we have an update from Public Health?

8 MS. CHELSEA GARY: Yes. I have a few updates. So  
9 first off for 2024, round five residential well sampling.  
10 That's been under way with about 100 homes sampled so far  
11 and is continuing this month. As with prior years, we have  
12 been attempting to recruit roughly 400 homes. As a  
13 reminder, if you do have municipal water, we do not  
14 recommend using your well water. As another reminder, with  
15 the recreational season coming up, MDHHS recommends avoiding  
16 all foam on Michigan lakes, rivers, streams and other  
17 waterbodies as the foam may contain PFAS or other things  
18 that could be harmful to human health. If you do come into  
19 contact with foam, rinse it off and bathe or shower after  
20 the day's outdoor activities.

21 On a separate note, an update with OAEA. Clinics  
22 are ongoing and scheduling. More appointment slots have  
23 been added for both July and August and most, if not all of  
24 those slots, are currently open. As of April 29th of this  
25 year, 704 participants have enrolled, 564 adults and less

1 than five adolescents have completed appointments.  
2 Additionally, we would like to thank Cathy for promoting  
3 this project and encouraging others to participate,  
4 especially with sharing OAEA information to graduating high  
5 school seniors. So thank you, Cathy. Also, we wanted to  
6 include a reminder about the project on behavioral  
7 adaptability, learning about novel contamination in the  
8 environment also known as The Balance Project. If you do  
9 have questions, let us know and we can connect you with a  
10 study team member. So we just wanted to throw out a  
11 reminder about that.

12 And then lastly, an update on the vapor intrusion  
13 investigation. MDHHS has received the final Q2 sub-slab and  
14 indoor air quality data and we are working on our analysis  
15 and final evaluation of the data. We applaud the building  
16 25 closure and support any additional actions that may be  
17 taken to reduce exposure to VOCs. Closure of buildings 43  
18 and 5067 does not appear to be necessary based on initial  
19 review of the finalized Q2 indoor air data. However, a  
20 plume is identified under the buildings and indoor air data  
21 is limited. So we do encourage steps to be taken to prevent  
22 VI into the buildings and reduce exposure. While we work to  
23 complete our review of the data, we do encourage anyone with  
24 questions about their individual exposure to reach out. And  
25 that is all I have.

1 MS. JESSIE HOWARD: Thank you. Jessica  
2 Stuntebeck, do we have an update from the Forest Service?

3 MS. AMY RAUSER: So it's James Kountzman, I  
4 believe, for the Forest. Do you have an update for us  
5 virtually?

6 MS. JESSIE HOWARD: No update? Okay. So now I  
7 will move on to the Community RAB members and we will begin  
8 with Greg Schulz. Do you have an update for us?

9 MR. GREG SCHULZ: No, I don't.

10 MS. JESSIE HOWARD: Okay. Mr. Henry, do you have  
11 an update for us virtually at all?

12 MR. MARK HENRY: No, I don't.

13 MS. JESSIE HOWARD: Thank you. Dave Carmona?

14 MR. DAVE CARMONA: Nothing. Thank you.

15 MS. JESSIE HOWARD: Bill Gaines?

16 MR. BILL GAINES: Nothing. Thank you.

17 MS. JESSIE HOWARD: Arnie Leriche?

18 MR. ARNIE LERICHE: Just a real quick one. That  
19 over the last two years the national PFAS advocacy groups --  
20 and Cathy and I both belong, and Tony, to that group.  
21 There's been a lot of push on EPA to bring MCLs, maximum  
22 control limitations, enforceable ones, for drinking water.  
23 That happened early April and it followed with the Federal  
24 Register a few days later. So they want a 60-day clock  
25 before they become totally final. And so yesterday -- and

1 sometimes the MCLs in the drinking water do affect the  
2 groundwater standards; most of the time they do affect them  
3 in some way. So federally they promulgated the federal  
4 drinking water standards for utilities, the large and medium  
5 size and small size were fairly small. So trailer parks,  
6 big ones, are still regulated, will be. But for private  
7 wells it's not a federal standard. They're hoping that the  
8 states will pick up and incorporate those numbers like four  
9 parts per trillion for PFOA and PFOS. So I just want you to  
10 know about that because it does -- and also how those MCLs  
11 and the toxicity that make them able -- the agency able to  
12 pass those really low, not as low as we would like, but  
13 they're very low compared to where we were 12 years ago at  
14 9 -- 400 and 200 parts per trillion. So when we hear the,  
15 the risk assessment presentation, I asked this yesterday of  
16 the Air Force's contractor, so I'm hoping that she'll cover  
17 the same thing. What's happening, what are they preparing  
18 for, and when will they be incorporating those into the risk  
19 assessment, at least the human health risk assessment.

20 Okay. Thank you.

21 MS. JESSIE HOWARD: Thank you. Is -- Scott Lingo,  
22 have an update for us?

23 MR. SCOTT LINGO: Not at this time.

24 MS. JESSIE HOWARD: Okay. Josh Sutton, update?

25 MR. JOSH SUTTON: No update.

1 MS. JESSIE HOWARD: Rex Vaughn, do you have an  
2 update for us?

3 MR. REX VAUGHN: No update at this time, please.

4 MS. JESSIE HOWARD: Thank you. David Winn?

5 MR. DAVID WINN: No update at this time.

6 MS. JESSIE HOWARD: Okay. And last but not least,  
7 Cathy Wusterbarth?

8 MS. CATHY WUSTERBARTH: Thanks. I do have just  
9 a -- I was going to mention what Arnie mentioned about the  
10 national drinking water standards that I feel like is going  
11 to change things here. I know for our community it's going  
12 to really help with monitoring our drinking, our drinking  
13 water source which is Lake Huron and we will be hoping to  
14 test that more regularly because it appears the approach at  
15 this site is dilution is the solution for this pollution and  
16 we just don't want our drinking water source to be affected.  
17 So we will be monitoring that closely. And then I just  
18 wanted to give a reminder. Historically this, we're on our  
19 eighth year for this RAB or this Restoration Advisory Board.  
20 This is our 24th meeting. So lots of people are doing lots  
21 of work. We have a lot of different staff that have turned  
22 over both with the state and with the Air Force, but there's  
23 a lot of dedicated community members that have stuck with  
24 this. So I really appreciate -- including Mark Henry who's  
25 on the line, so. It's rare that he misses a meeting, so

1 we're thinking about him.

2 MS. JESSIE HOWARD: Thank you, Cathy. Okay. So  
3 next Mr. Willis will give us an update on RAB business.

4 (RAB Business Update at 5:40 p.m.)

5 MR. STEVE WILLIS: Next slide, please. Next  
6 slide. So as Jessie indicated earlier, all the RAB members  
7 should have a copy of the action items for the RAB. The  
8 first, first packet is the open action items and the second  
9 one is the closed ones. And the closed ones include closed  
10 action items back to the time when we started documenting  
11 these from what I can tell. But I just thought it would be  
12 good for everyone to have kind of the baseline for what's  
13 open and what's been closed over the past number of years.

14 We did have a virtual action item meeting after  
15 the last RAB meeting and it was on the 27th of March, 6:00  
16 o'clock eastern time, and we'll have another one following  
17 this RAB. I've proposed the 12th of June for that, that day  
18 of the week, from the feedback I've gotten seems to be the  
19 best and we've talked about having it about a month after  
20 the RAB meeting. So if that, if that date is a big problem  
21 for most of the RAB members, let me know, but otherwise  
22 we'll work towards having that RAB action item discussion  
23 meeting that evening.

24 Also, this on the slide here is a summary of the  
25 action items since the last meeting. We opened seven new



1 ones at the last meeting, we've closed ten since that  
2 meeting and we've got a total of 39 that are open and still  
3 being worked. One of the action items that is still open  
4 and I mentioned to Mark Henry last night and I know he asked  
5 for it at the last RAB meeting, and so we are going to be  
6 able to provide the RI data set to the RAB members once  
7 we've gotten all that data and it's all been validated.  
8 We're sharing it both with EGLE and with the, the RAB. And  
9 so that'll be out prior to the actual RI report so it'll  
10 give you guys a chance to look at that data. Next slide.

11 Since I put together this slide, there's a quick  
12 update. I did distribute the November and January BCT  
13 meet-, meeting minutes prior to the meeting and yesterday I  
14 did receive the final BCT minutes and distributed those to  
15 the RAB members as well. For the -- excuse me. And then  
16 hard copies of those always go in the library as well, but I  
17 know there's been requests for electronic versions, so I  
18 e-mailed those out.

19 For the March BCT meeting, you've got the minutes  
20 now, but just a quick recap. We had a discussion with, with  
21 EGLE and the other state agencies on MAROS. It's a software  
22 package that's used for system performance and optimization.  
23 It's the Monitoring and Remediation Optimization System  
24 software. It's actually a freeware package and so we  
25 presented to EGLE kind of our thoughts on how we could use

1 it, whether it would be beneficial from their perspective.  
2 We're continuing to have discussions with them on whether or  
3 not we want to actually start implementing that. It's a  
4 fairly easy software to use and maintain, but it's going to  
5 be fairly laborious to initially load all of the Wurtsmith  
6 data. So we want to make sure that we're all onboard and we  
7 all agree that if we use it, that, you know, we can all  
8 benefit from it, agree on the results and the outcome from  
9 that software package and then move forward to implement it.  
10 So, again, we're still in discussions with EGLE on whether  
11 or not we, we find value in it. And that's it for me. Next  
12 slide. Yes.

13 MR. ARNIE LERICHE: We're going to ask questions  
14 at the end of each section or not?

15 MR. STEVE WILLIS: I'm sorry? What?

16 MR. ARNIE LERICHE: Can we ask questions at the  
17 end of the, each section before we go to another or not?

18 MR. STEVE WILLIS: Sure. This -- yeah.

19 MR. ARNIE LERICHE: Well, a quick one is does that  
20 software in any way make it easier to share that, any of  
21 that data or slides or whatever that you present at the BCTs  
22 or anything like that --

23 MR. STEVE WILLIS: The --

24 MR. ARNIE LERICHE: -- to the public, to the RAB,  
25 number one?

1 MR. STEVE WILLIS: Right. I'm not that familiar  
2 with the software to know what --

3 MR. ARNIE LERICHE: Okay.

4 MR. STEVE WILLIS: -- what display capabilities it  
5 has for sharing data. And the real focus is on monitoring  
6 and optimizing the treatment systems.

7 MR. ARNIE LERICHE: Right. Well, that's a very  
8 important thing as we, some of us ask questions of Tarek.  
9 So just think maybe bring a question to the consultant that  
10 developed it, see if the public has a benefit from, from  
11 using it.

12 MR. STEVE WILLIS: I'll look, I'll, I'll look  
13 into, look into whether there's outputs we could use to  
14 share information.

15 MR. ARNIE LERICHE: Thank you.

16 MS. JESSIE HOWARD: So just a real quick reminder  
17 before we begin tonight's presentations to please hold your  
18 questions for the presenter until either she breaks for  
19 questions or the end of her presentation. We will have time  
20 to address all of those. And first up we have Ms. Paula  
21 Bond, project manager with Aerostar to give us an update on  
22 the PFAS RI and the Alert Aircraft Area IRA. Paula?

23 (PFAS RI and the Alert Aircraft Area IRA Update at  
24 5:45 p.m.)

25 MS. PAULA BOND: Thank you. Thanks, everybody,

1 for coming this evening. I like the RABs in the spring and  
2 summer because it's still daylight outside when we're, when  
3 we're talking.

4 So I've got a fairly brief presentation for this  
5 RAB. Since the last RAB we haven't done a whole lot, but I  
6 will give you an update on what we have done and completed  
7 and kind of where we are on both the PFAS RI and the  
8 Aircraft Alert or the Alert Aircraft Area IRA. Next slide,  
9 please.

10 So really quickly -- and Amy hit on this in her  
11 update. We did complete the UFP-QAPP addendum. That was  
12 finalized a couple of weeks ago. And like she said, that  
13 should show up on the administrative record very soon. We  
14 are also complete with the sampling for the RI. So we did  
15 do some extra, not extra, but we did go out and collect some  
16 groundwater samples since the last RAB. We just finished  
17 that task up. We're receiving that data now. So when we  
18 have the next RAB, that will be the presentation of all of  
19 the data that we've collected during the RI so far. And as  
20 we are looking at the data -- and Steve talked a little bit  
21 about this as well -- we're looking at data gaps as we  
22 evaluate that data for a future investigation. Next slide  
23 please.

24 So this slide just shows kind of a summary of  
25 everything that we've done for the RI. So if you look at

1 the bottom of the table, we have sampled over 4,000 samples  
2 for the RI which is really an impressive number, I think,  
3 for all of the samples that we've collected out there.  
4 Groundwater were the most samples that we've collected or  
5 for soil, over 2,000 soil samples that we've collected from  
6 across the base. You know, and I have just a list of the,  
7 you know, 499 soil borings, vertical aquifer sampling at 170  
8 locations, hydraulic profiling at 93 locations, installed 63  
9 new monitoring wells and 20 piezometers and we have  
10 sampled -- and this includes the data we just completed --  
11 230 existing monitoring wells out there. So a lot of  
12 sampling has gone into the RI. We have collected a lot of  
13 data, really good data, so we're excited. We've been  
14 evaluating the data that we have so far, so we're really  
15 excited to put all this into the RI report and get that over  
16 to the Air Force. Next slide, please.

17 So the data that we collected between the last RAB  
18 and this RAB -- I just have a couple of slides. We  
19 collected some supplemental surface water and sediment from  
20 the area near Pierce's Point. It's a little bit difficult  
21 to see on this figure. But we did collect some additional  
22 samples up there, just a couple, based on the data that we  
23 had collected, the groundwater data for the Aircraft Alert  
24 Area and the RI. So we went ahead and grabbed a few more  
25 samples up there. And I don't have a pointer here with me,

1 but if you guys -- it's right in this area here. It's a  
2 little hard to see there. Next slide, please.

3 So we collected groundwater samples from 91  
4 existing monitoring wells out there on the base. We just  
5 recently completed that. Like I said, we're waiting on that  
6 data to come in and once we do, we'll share that with EGLE  
7 and the Air Force. All of this data that we've collected  
8 will be wrapped up. We've provided most of it already to  
9 the risk assessors which you're going to hear about a little  
10 bit later. And this figure shows the existing monitoring  
11 well locations that we sampled. Just to give you an idea,  
12 they were all across the base to give us a, a broad range of  
13 data from a lot of areas, a lot of sites. So next slide,  
14 please.

15 So the ongoing activities. So we have finished  
16 our sample data collection. We still have the transducers  
17 that we installed. They're out there around Van Etten Lake.  
18 We'll continue to collect data from those through November.  
19 They're, they're continuously collecting data for us out  
20 there. We download that data at regular intervals. The  
21 conceptual site model is continuing to be updated. As we  
22 collect new data, it's fed into the conceptual site model.  
23 So once we finish the RI report, all of that data will be  
24 rolled into the CSM and that will be part of the RI. The  
25 Human Health and Ecological Risk Assessments are underway.

1 Again, you'll hear a little bit more about that in just a  
2 few minutes. And the draft RI report, this is something to  
3 keep in mind, too. We'll include the updated conceptual  
4 site model and the risk assessment. So all of that will be  
5 wrapped into one, one nice report and we plan to get that to  
6 the Air Force this summer in the July time frame, the draft  
7 document. Next slide please.

8 We'll move on to the Alert Aircraft Area really  
9 quickly. From the activities that have taken place since  
10 the last RAB, we've not had a lot of activity on this front.  
11 Currently the Record of Decision is being reviewed and  
12 negotiated between the Air Force and EGLE. We're looking at  
13 ARARs right now. So as soon as those are finalized, then  
14 we'll get the ROD, signature on the ROD, get that done and  
15 we can start construction on the actual treatment plant. We  
16 do anticipate that construction will start in late June.  
17 The building has already been delivered. We're starting to  
18 receive materials for the construction of that treatment  
19 system. So everything is moving forward with that and, and  
20 we hope to start in, in June with the actual breaking ground  
21 out there. So next slide, please.

22 We have a couple of schedules in here, the one-  
23 year outlook. We've updated that to include everything that  
24 we have going on. The RI field sampling and the transducer  
25 monitoring, like I said, we're going to monitor those

1 transducers until November of this year and then we'll look  
2 at that data. The RI report you see going out. And then  
3 there's an RI data gap and feasibility study that Steve  
4 mentioned. That is out in '25. We have the Alert Aircraft  
5 Area IRA construction you see on here. We have that  
6 treatment system up and running by the end of this year and  
7 then operations and monitoring will continue on past that.  
8 The Three Pipes Ditch, we are still doing some monitoring,  
9 some flow meter measurements out of Three Pipes Ditch. So  
10 we're still continuing that work and will continue that  
11 through the end of the year. And -- oh, sorry.

12 MR. STEVE WILLIS: Just let me interject.

13 MS. PAULA BOND: Sure.

14 MR. STEVE WILLIS: That, that monitoring data from  
15 Three Pipes we'll use the design in the IRA so that's useful  
16 information. We're not just collecting data to collect it,  
17 but we'll actually be able to feed it into that process.

18 MS. PAULA BOND: Right. We have added to the  
19 schedule the new IRAs for the DRMO and landfill 030/031 to  
20 the schedule. So you can see the way we have it laid out  
21 here for the proposed plans to start in the fall of this  
22 year and move forward and we did put some tentative dates on  
23 here for the public meeting just to kind of give everybody  
24 an idea when that might take place based on the schedule.  
25 And then you can see the 30-day comment period and then the



1 IRA, the Records of Decision moving on out from that. Next  
2 slide please.

3 So the five-year outlook has been updated  
4 similarly. We've added in the end remedial actions for DRMO  
5 and landfill 030/031 down at the bottom. So those will  
6 continue to run on the schedules going forward and we'll  
7 just move everything out. But you can look at the schedule  
8 for the RI and we have the -- it's a little hard for me to  
9 see -- the RI report being finished in 2025, and then the, a  
10 data gap investigation feasibility study going from 2025  
11 over to the second quarter of 2026, and then the proposed  
12 plan, the record decision and all of that on out from there  
13 following the CERCLA process. So the Alert Aircraft Area,  
14 again, once we move into the five-year outlook, we're really  
15 looking at long term monitoring and operation of that system  
16 as we move past 2024 when that system is up and running.  
17 And then again down at the bottom you see the DRMO and  
18 landfill 030/031 out, in the out years and of course ending  
19 in 2028 we're still doing O&M out there and maintenance.  
20 Next slide please.

21 Oh, so we've added a couple of things on here on,  
22 onto a new slide here. So we have the Three Pipes Ditch --  
23 so, Steve, I don't know if you want to say anything about  
24 these newer IRAs for Three Pipes Ditch and the wastewater  
25 treatment plant?

1 MR. STEVE WILLIS: Yeah. At this point these are  
2 notional schedules. As we've indicated in the past, our  
3 plan is to award contracts for these in the FY25. Once  
4 we've got a contractor on board, they'll develop a more  
5 detailed schedule and then we'll update these slides with  
6 that. And just, just at a notional level, this is what we  
7 envision occurring for the schedules of those two projects.

8 MS. PAULA BOND: So these will be added continue,  
9 continuing for our schedules going forward, these two new,  
10 new IRAs here. Next slide please. I think that may be it,  
11 yeah. All right. Any questions?

12 MR. DAVID WINN: I thought we weren't supposed to  
13 ask questions --

14 MR. MARK HENRY: This is Mark Henry. I have a  
15 question please.

16 MS. PAULA BOND: Do you want to do questions now?  
17 Yeah; yeah; yeah.

18 MR. STEVE WILLIS: At the end of each  
19 presentation.

20 MS. PAULA BOND: Yeah, go ahead, Mark.

21 MR. MARK HENRY: Of the transducer wells that you  
22 have already transducers in and piezometers, did those wells  
23 contain PFAS?

24 MS. PAULA BOND: The wells that we -- we sampled  
25 all of the piezometers and off the top of my head -- I don't

1 want to give you an answer because I don't want to  
2 misspeak -- but I believe most of those piezometers that we  
3 sampled, if there was a detection, it was below our  
4 screening criteria. But I will confirm that and check and  
5 let you guys know. It's on the, the, the maps out in the  
6 lobby.

7 MR. MARK HENRY: Okay. Thank you.

8 MS. AMY RAUSER: Rex Vaughn.

9 MR. REX VAUGHN: Paula, this is Rex Vaughn.

10 MS. PAULA BOND: Hi, Rex.

11 MR. REX VAUGHN: Question for you.

12 MS. PAULA BOND: Okay.

13 MR. REX VAUGHN: Do we have any idea how many  
14 pounds of PFAS we can expect to pass through Three Pipes  
15 Ditch and the wastewater treatment plant areas into the  
16 AuSable River during the time it's going to take to get  
17 these treatment systems in place? How, how much pollution  
18 are we just going to let flow unhindered into Lake Huron  
19 while we go through the process of getting these treatment  
20 systems in place for the other two areas?

21 MS. PAULA BOND: I do not have a calculation for  
22 that.

23 MR. STEVE WILLIS: Yeah. We have -- we haven't  
24 done mass calculations for that.

25 MR. REX VAUGHN: Any guesses? Are we, are we, are

1 we passing a lot that we're not even bothering to treat or  
2 is it a small amount? Anybody got any ideas? I -- gut, gut  
3 feel for how much we're just letting go by without even  
4 touching it?

5 MR. STEVE WILLIS: Paula, do you recall the  
6 concentrations at the Three Pipes outfall going into the  
7 river? Concentrations are fairly low so the, so the mass is  
8 not --

9 MS. PAULA BOND: Yeah, at the outfall they're  
10 definitely lower than they are where the discharge comes out  
11 of the, the storm drain. I don't know the numbers right  
12 offhand. I'm afraid -- I don't want to give you a wrong  
13 number here.

14 MR. STEVE WILLIS: They're on the posters here.  
15 And, Rex, you'll have access to the posters on the RAB web  
16 site as well.

17 MR. REX VAUGHN: Okay. I, I'm just concerned that  
18 we've got a couple of big leaks that are pushed out on the  
19 calendar and wondered if they are considered part of the low  
20 hanging fruit that we need to get a hold of and shut down  
21 before it really makes a mess of things in the future. I'm  
22 done. Thanks.

23 MS. CATHY WUSTERBARTH: This is --

24 MR. MICHAEL MUNSON: Yeah. Can I go first?

25 MS. CATHY WUSTERBARTH: Sure. I want, I want to

1 address the lack of data that seem to --

2 MR. MICHAEL MUNSON: Why don't you do that and  
3 then --

4 MS. CATHY WUSTERBARTH: Okay. In the, the, the  
5 posterboard back there, the Three Pipes Ditch area effluent,  
6 PFOS 421 and 657 coming out of those three pipes. You said  
7 it was low.

8 MR. STEVE WILLIS: Is that at the river or is that  
9 --

10 MS. PAULA BOND: Is that out of the --

11 MS. CATHY WUSTERBARTH: The three pipes.

12 MS. PAULA BOND: -- I don't know. Okay.

13 MS. CATHY WUSTERBARTH: F1, yeah. Yeah, that's  
14 not low.

15 MR. REX VAUGHN: No, not at all. I think we're,  
16 we're -- we got a gorilla in the room that's invisible at  
17 the moment and that's Three Pipes and the wastewater  
18 treatment plant. So don't forget that that thing is still  
19 around.

20 MS. CATHY WUSTERBARTH: Yeah, and I do -- I mean,  
21 if I could ask you to go back to slide 36? Yeah, so Rex,  
22 he's talking about that, the Three Parts -- Pipes Ditch,  
23 Ditch monitoring? Yeah, there's nothing after that.  
24 There's no implementation of anything.

25 MS. PAULA BOND: Right. But if you go to slide

1 37, so this is where we start up with the, the IRAs for  
2 Three Pipes Ditch. So that's what Steve was saying is that  
3 the data that we're collecting now is going to feed into  
4 that.

5 MR. STEVE WILLIS: The monitoring was actually  
6 part of the pilot study that we ended up terminating. We  
7 briefed that at a previous RAB meeting where we were going  
8 to put the media in the, in the ditch to remove PFAS in the  
9 surface flow and based on the storm event, it was going to  
10 wash the, the matting away basically defeating the purpose  
11 of it. And so we terminated that, but we did retain the  
12 monitoring portion of that pilot study to gain useful data.  
13 So they're, they're, they're really tied, they're  
14 independent, but we'll use the data for to feed the other.

15 MS. CATHY WUSTERBARTH: Okay. And also I was  
16 hoping that you could clarify -- oh, well, this, this is  
17 regarding two other sites so I will ask that question later.

18 MS. PAULA BOND: Mike?

19 MR. MICHAEL MUNSON: Yeah, okay. I, I want to get  
20 this out because -- again, this is Mike Munson from OWAA.  
21 And MDHS did a great job at about a zillion miles an hour  
22 talking about a concern we had last meeting in regards to  
23 the conflict of building 43. They made it clear that it's  
24 not an issue. I want to make sure that USA Jet understands  
25 that. They're here tonight to make that concern. They got

1 a two-part concern that I think probably the RAB will want  
2 to make this an action item. Because these are basically  
3 businesses just trying to, trying to make money day in and  
4 day out and it's important that the folks in there are safe,  
5 that an action item may be -- if there's any mitigation  
6 required for tenant-occupied spaces, the Air Force needs to  
7 provide really some details. What the nature is, what the  
8 timing is, what the cost and who's going to basically cover  
9 it and any implica- -- or any effect to the occupancy of the  
10 building. And then, too, in 2027 does the Air Force plan to  
11 put in some measurement guidelines on mitigation. I think  
12 those are two important things when we talk about vapor  
13 intrusion. We need a peg in the ground so we don't have the  
14 confusion like we did last time.

15 MR. STEVE WILLIS: A quick clarification. You  
16 said 2027. What's, what's the basis of that date?

17 MR. MICHAEL MUNSON: I think that's just their --  
18 again, they're trying to basically deal with what's  
19 happening down the road and if something happens to their  
20 building, they need to know about that.

21 MR. STEVE WILLIS: Okay.

22 MR. MICHAEL MUNSON: And, and I think what they're  
23 looking for is a long-term plan that, you know, is there, is  
24 there basically something they have to do with their staff  
25 or their business because they're, you know, they're trying

1 to make money day in and day out here. Okay?

2 MR. STEVE WILLIS: Yeah.

3 MR. MICHAEL MUNSON: Thanks.

4 MR. DAVE CARMONA: Paula? Dave Carmona, Community  
5 RAB.

6 MS. PAULA BOND: Yeah.

7 MR. DAVE CARMONA: I know you're going to give us  
8 the data set, but when will we see what you are identifying  
9 as the RI data gaps? When will we be briefed on that?

10 MS. PAULA BOND: I will defer to Steve on that.  
11 We're putting together some data gaps now as we're looking  
12 at the data, but as they actually fall out into a future  
13 contract or work plan or something like that...

14 MR. STEVE WILLIS: Yeah. We should be able to  
15 share those at the November RAB.

16 MR. DAVE CARMONA: Okay. That's okay. And then  
17 the other thing you didn't discuss because you were talking  
18 about remediation at one point. As the new technologies  
19 come online, will you be considering them to replace the  
20 pump and treat? For example, the pilot program failure at  
21 Three Pipes, is there possible for new technology to be used  
22 that's coming online?

23 MS. PAULA BOND: Yeah. When the, the site-wide  
24 feasibility gets underway, that, whatever technology is  
25 available at that time, all of those technologies will be



1 evaluating for addressing the site-wide groundwater, surface  
2 water, sediment, whatever the remedy needs to be based on  
3 the data we collect and the risk assessment. So, yeah, all  
4 technologies available at that time will be evaluated.

5 MR. DAVE CARMONA: Okay. And then the last  
6 question I had was concerning the Three Pipes proposed plan  
7 slipping beyond the feasibility study. My concern is this  
8 is going to fall out of the bottom and through the cracks  
9 because there is no easy solution to that water flow. Will  
10 that be captured separately if it's not in the feasibility  
11 study? I can see this slipping well beyond the end of that  
12 study in '26.

13 MS. PAULA BOND: Yeah, so it will be -- they will  
14 work. So when the IRA for the Three Pipes Ditch, that's  
15 going to get underway before the feasibility study for the  
16 RI. So that will be ahead of the RI, the site-wide  
17 feasibility study. So that remedy can't be inconsistent  
18 with what the site-wide remedy will be. So it will work in  
19 tandem. It will be adjusted, again, depending on the  
20 technologies that are available to us when we get to the  
21 feasibility study, when the Air Force gets to the  
22 feasibility study, everything will be evaluated and it will  
23 be integrated into the IRAs at, at Three Pipes or all of the  
24 other IRAs that have been done.

25 MR. DAVE CARMONA: Thank you.

1 MS. PAULA BOND: You're welcome. Yes, Dave?

2 MR. DAVID WINN: I got a coup- -- I got a couple  
3 questions.

4 MS. PAULA BOND: Okay.

5 MR. DAVID WINN: Slide 29. You're showing that  
6 the data gap investigation anticipated in the summer of  
7 2025, but your time line shows January. Which is it?

8 MS. PAULA BOND: The field work is in the summer  
9 of 2025. Steve had mentioned that he anticipates to have  
10 that contract awarded by January.

11 MR. DAVID WINN: No, hold on.

12 MS. PAULA BOND: Oh, sorry.

13 MR. DAVID WINN: Your R- -- it says, RI sampling  
14 is under this task. "Data gaps identified in the RI will be  
15 filled during the data gap investigation anticipated from  
16 January 20- -- or summer of 2025."

17 MS. PAULA BOND: Right.

18 MR. DAVID WINN: If you go to your time line, your  
19 time line shows the data gaps start -- investigation  
20 starting in January. Which is it?

21 MR. STEVE WILLIS: The contract will be awarded  
22 for the data gap investigation in January, then we write a  
23 work plan and we'll do the field work. The, the time line  
24 shows the full duration of the project. It'll include --  
25 it'll include the work plan, the actual data, the sample

1 collection, the report for it, and then we've also got the  
2 feasibility study and proposed plan and ROD as part of that  
3 activity.

4 MR. DAVID WINN: So the data gap investigation  
5 won't start for another year; is that --

6 MR. STEVE WILLIS: The field work would be another  
7 year, yes.

8 MR. DAVID WINN: I'm, I'm, I'm confused because  
9 aren't you and EGLE supposed to be sitting down and putting  
10 together that plan?

11 MR. STEVE WILLIS: We still don't have all the  
12 data compiled from the RI and that's the basis for  
13 identifying data gaps. I mean, we've got some known gaps  
14 for work that didn't get done as part of the RI that were in  
15 the QAPP addendum. But as we look at the data, we may  
16 identify additional areas that require sampling based on the  
17 information we collected. Those are, those are your,  
18 effectively your data gaps. So we need to compile and look  
19 at all that data collectively to, to finalize our data gap  
20 identification.

21 MR. DAVID WINN: So the east side of Van Etten  
22 Lake and everything else, that's going to wait another year  
23 or so; right? That what you're telling me?

24 MR. STEVE WILLIS: For the actual sample  
25 collection that's correct.

1 MR. DAVID WINN: What a joke. All right. I have  
2 another question. Currently you said the, the ROD is under  
3 Air Force review. EGLE hasn't even received that ROD yet.  
4 Have you, have you been scheduled to see that ROD?

5 MS. AMY HANDLEY: No, we have not.

6 MR. DAVID WINN: Do you have any anticipated idea  
7 when you're going to receive -- when EGLE is going to  
8 receive that for review and how much time are they going to  
9 be given in order to review it?

10 MR. STEVE WILLIS: I expect that we'll have, have  
11 that to EGLE in the next couple weeks. We would expect  
12 probably a turnaround two to four weeks from EGLE.

13 MS. AMY HANDLEY: Yeah, we, we understand that  
14 this document is critical to making this stuff start, so we  
15 are going to be doing everything we can to expedite this  
16 review. We're not going to be sitting on it. So --

17 MR. DAVID WINN: Yeah, I understand that. What  
18 I'm telling you is right now you're showing that the, the,  
19 the start of the construction is June of '24, and, but that  
20 you can't start that with the ROD; right?

21 MS. PAULA BOND: Correct.

22 MR. STEVE WILLIS: Correct.

23 MR. DAVID WINN: So you ain't going to make June  
24 of '24 either.

25 MS. PAULA BOND: We are hopeful that we can. So

1 we are, we are working toward the end of June for start of  
2 construction. So as soon as the ROD is signed, like I said,  
3 we're ready to go. The building has been delivered. We've  
4 got everybody lined up, ready to start breaking ground out  
5 there, so --

6 MR. DAVID WINN: In the meantime PFAS is entering  
7 Van Etten Lake every day; true?

8 MS. PAULA BOND: True.

9 MR. DAVID WINN: Okay. I'm done.

10 MS. PAULA BOND: Arnie?

11 MR. ARNIE LERICHE: I don't know if it's a  
12 question for Steven or for Roger. But you're, you've got a  
13 list that's growing and growing about contracts that you're  
14 awaiting the funding so that you can then go through the  
15 process of finding a contractor and award them and so forth.  
16 And you mentioned a couple was the, two of those IR-, IRAs,  
17 the pipeline down at Three Pipes and there are others. And  
18 so my question is if the federal DOD budget is not passed  
19 and it goes to a continuing resolution in October, are the  
20 funds that you're hoping to get going to not -- will not be  
21 available because in a continuing resolution can on-, can  
22 only spend basically what your budget was last year? Will  
23 it get caught up so that you're going to be stuck on some  
24 portion or all of this list of contracts that you are  
25 planning on awarding?

1 MR. STEVE WILLIS: That, that, that is a  
2 possibility.

3 MR. ARNIE LERICHE: All of them? There's no  
4 money --

5 MR. STEVE WILLIS: I, I would, I would not expect  
6 that everything would come to a screeching halt, no.

7 MR. ARNIE LERICHE: Roger, do you know how that  
8 will work? Because you're already using up the money that  
9 was not spent by teams. You started working on that in  
10 February.

11 MR. ROGER WALTON: Yeah. So typ-, typically what  
12 you executed the prior quarter in the previous fiscal  
13 year -- and I am not a fiscal budget expert by any  
14 stretch -- but that's usually the allotment of money that  
15 will come back to program. So it will be a mirror of what  
16 we did this year. So if there was money in October that was  
17 programmed -- sorry. If there was money that was, that was  
18 programmed in October of last year under continuing  
19 resolution, we would, we would expect the same amount. And,  
20 you know, the problem with continuing resolution is it gets  
21 doled out very slowly so the, the actual ability to spend  
22 it, you know, the -- it's, you know, recurring things that,  
23 that can't be broken: utility bills, keeping the treatment  
24 plants running, things like that. Those, those are, those  
25 are givens. But new starts can get slowed down. It's, it's

1 just, it's impossible for us to predict at our level to, to  
2 what effect that those numbers are going to come down and  
3 what they're going to look like.

4 MR. ARNIE LERICHE: So the sub-question is where  
5 is Wurtsmith on the pecking order in that final quarter and  
6 especially if a continuing resolution and there's no budget,  
7 full budget, and what's the priority list, priority of the  
8 list that you're making now of what contracts and money you  
9 need for these projects? Do you have a priority list if the  
10 money make -- is made, made available?

11 MR. ROGER WALTON: That's all under development.  
12 So our FY- -- or that's all under development. The FY25  
13 planning and the racking and stacking of those projects  
14 across the entire RAB program is still being worked. So  
15 the, the cost to completes are being developed now and then  
16 the racking and stacking will happen later in the year.

17 MR. ARNIE LERICHE: When will you be able to share  
18 it with us?

19 MR. ROGER WALTON: The complete rack and stack  
20 I'm, I'm not sure that I can. But, I mean, we can, we can  
21 certainly tell you where, where the Wurtsmith projects  
22 align.

23 MR. ARNIE LERICHE: Okay. The easier question, I  
24 guess, is can you share the list that your technical people  
25 and managers have already submitted to that full BRAC team?

1 MR. ROGER WALTON: Steve, I'm not --

2 MR. STEVE WILLIS: I, I don't -- I'm not -- I  
3 don't believe that we can share that. But I can, but I --

4 MR. ARNIE LERICHE: But you have made a priority  
5 list of all those projects?

6 MR. STEVE WILLIS: Well, he's -- as Roger just  
7 said, that that's being racked and stacked across the BRAC  
8 program. Wurtsmith is always in the top priority. Has been  
9 and will be.

10 MR. ARNIE LERICHE: Okay. But we still may have  
11 to talk to some congressionals. Thank you.

12 MR. ROGER WALTON: Sure.

13 MS. PAULA BOND: Cathy?

14 MS. CATHY WUSTERBARTH: I, I have a question.  
15 Just a clarification. At the last meeting, Steve, we were  
16 talking about funding for the DRMO and L-, LF 030/031. And  
17 you had made a statement that you did not have any funding  
18 for, for any work this year. And so I think there was a  
19 correction on that after the fact and wondering if you could  
20 just mention that?

21 MR. STEVE WILLIS: So we do actually have funding  
22 for LF 030/031 DRMO. We're planning to award a contract for  
23 that this year. We're already working with our contracting  
24 and we'll have that done by the end of the fiscal year. I  
25 think when I made the comment it was related to wastewater



1 treatment plant and Three Pipes Ditch and I did misspeak.  
2 We do actually have funding. We're, we're working with  
3 Nobles now who did the critical process analysis to help.  
4 In the CPA presentations, they were very top level concept  
5 on IRAs. And so we are working with them to further refine  
6 and define the designs of those so that we can put that at a  
7 scope of work and actually have contractors bid on that  
8 work. So we are, we are working that process now.

9 MS. CATHY WUSTERBARTH: Thanks.

10 MS. PAULA BOND: Any other questions?

11 MR. MARK HENRY: Mark Henry.

12 MS. PAULA BOND: Oh.

13 MR. MARK HENRY: Mark Henry here. I have one  
14 additional question, please.

15 MS. PAULA BOND: Go ahead, Mark.

16 MR. MARK HENRY: As I recall from the February RAB  
17 meeting, I think it was Steve who said that there was some  
18 FY23 money or maybe it was '24, for doing the  
19 characterization of the groundwater for the Three Pipes  
20 Ditch that the CPA process identified as an IRA and also the  
21 wastewater treatment plant in advance of the proposed plans.  
22 I do not see that on slide 37. So is that advanced  
23 characterization not going to be done?

24 MR. STEVE WILLIS: That, that'll be done as part  
25 of that contract. So they'll do the, the pre-design work

1 and they'll do the, the design and construction.

2 MR. MARK HENRY: Okay. Thank you.

3 MS. PAULA BOND: Any other questions? Oh, Arnie?

4 MR. ARNIE LERICHE: Arnie Leriche, a follow-up  
5 question to Mark's. The contractor that's going to be doing  
6 that work has that already been awarded so the money has  
7 already been obligated?

8 MR. STEVE WILLIS: For, for the wastewater  
9 treatment plant at Three Pipes Ditch, no. That is in our  
10 FY25 budget. The DRMO and the LF 030/031 is funded this  
11 year and we're awarding that contract. We'll award the  
12 other two next year.

13 MR. ARNIE LERICHE: That's why the sharing the  
14 list of to make sure that we know which projects are caught  
15 up in the FY25 budget. That would help us a lot, you know,  
16 specific to the contracts and the projects that you need or  
17 can or can't award unless you get the '25 budget.

18 MR. STEVE WILLIS: Yeah. I, I don't anticipate  
19 that the, that the funding would be a problem unless there's  
20 a huge change in the government budget.

21 MR. ARNIE LERICHE: And this is an election year.

22 MR. STEVE WILLIS: The program we've -- well,  
23 that's true. But we've programmed these two IRAs, we've had  
24 them in our program for a while so I, I don't, don't  
25 anticipate that there's going to be a problem with the

1 funding.

2 MR. ARNIE LERICHE: Thank you.

3 MR. STEVE WILLIS: It's not like it's a brand new,  
4 last minute thing that we slipped in, so we've been planning  
5 for additional IRAs.

6 MS. PAULA BOND: Scott?

7 MR. SCOTT LINGO: As Rex had mentioned -- Scott  
8 Lingo with Community RAB -- his concern about Three Pipes  
9 Ditch. And, you know, in looking at the forecast as to when  
10 that's going to start, fourth quarter of '25 they're going  
11 to have a plan. You know, as summer approaches, kids from  
12 the Villages, that is a high use area on the AuSable with  
13 the e-flux immediately upstream of where all the canoers  
14 come down the river and all the kids come out of the  
15 Villages of Oscoda to swim and play and them like myself as  
16 a child will probably be making the beards and the mohawks  
17 and the things that we did on but I'm not allowed to drive.  
18 And as Rex had stated, it just seems like we're taking too  
19 much time there. You know, we, we tried to do the pilot  
20 plan where they said oh, you know, a high rain event is  
21 going to take out these I guess, like, sponges that they had  
22 where the water would go through. I mean, can't we fix them  
23 and put, like, chicken wire across and make a cage where  
24 they stay in that stream? I mean, is there not a way that  
25 we can cut down those numbers even if it's just temporarily

1 and then look to a more permanent remediation process? It  
2 just seems like to me that Three Pipes Ditch is the most  
3 obvious point source that we have that people can see  
4 flowing into the river and we know it's there.

5 MR. STEVE WILLIS: And, and we are working that.  
6 That is, that is in our plan to address that site but it is  
7 a process. Even -- I've got to get a contract awarded,  
8 we've got to write a work plan, get it approved and then  
9 actually implement the remedy. So it, it just takes time.

10 MR. SCOTT LINGO: And time is our enemy and human  
11 health is being destroyed and it's just extending the dates,  
12 "oh, we got to do this, we got to do that." I mean, can't  
13 we cut down some red tape? I mean, jeez, give us the  
14 sponges. We'll get local contractors to put them in the  
15 stream. What do we have to do to get stuff going, you know?  
16 It's just, it seems like it's just put off, put off. I'm  
17 looking at these time lines. We're out to '26, '27 and here  
18 we sit 2024. Just keep hearing more extensions, more  
19 extensions and it's, it's really -- it's depressing. It's  
20 hard to stay pumped up when it seems like things just get  
21 brushed down the stream, so to speak.

22 MS. PAULA BOND: Arnie?

23 MR. ARNIE LERICHE: Arnie Leriche, Community RAB.  
24 A follow up to that is, Steven, last, like, six months ago  
25 the pilot study you were going to put on the Three Pipes

1 outlet it was washed away. I mean, it was unreal how much  
2 water went down there. But that happens at a less extent,  
3 extent, but still significant many times during the year.  
4 So can you give us a status? You did a, a study or you  
5 looked at where the pipe was allowing groundwater to seep  
6 into that so it overloaded that sediment tank that's at the  
7 -- before its outfall and also somewhere in that storm water  
8 system a high volume of water going through might be picking  
9 up AFFF-contaminated groundwater that would never have gone  
10 into the pipe.

11 MR. STEVE WILLIS: Yeah. If you recall from --

12 MR. ARNIE LERICHE: So has it been fixed, the slip  
13 line or, or cracks, whatever, fixed or whatever?

14 MR. STEVE WILLIS: It, it has not. That's what  
15 we're evaluating. If you recall from I think Paula's  
16 presentation at the last reading -- RAB meeting, there is  
17 groundwater getting into that system. She had the pictures  
18 of it basically spraying into the pipes and so we are  
19 working on that.

20 MR. ARNIE LERICHE: Well, that doesn't need an  
21 IRA; right?

22 MR. STEVE WILLIS: Well --

23 MR. ARNIE LERICHE: You've just got to find some  
24 money to do it.

25 MR. STEVE WILLIS: Okay.

1 MR. ARNIE LERICHE: It's basically a short cost, a  
2 lower cost than a full IRA, but it could be significant.  
3 Because I'm really surprised at the numbers that Cathy threw  
4 out. Because it used to be that that outfall way up 1,000  
5 feet before the river was only about 1,000 parts per  
6 trillion. So I don't know what could make it -- I agree  
7 with you -- this dilution between that outfall up there near  
8 the Villages and housing and the river.

9 MR. STEVE WILLIS: Right. That, that's something  
10 we're looking at. I don't have any additional details for  
11 you now. So likely --

12 MR. ARNIE LERICHE: Can you commit to a, a  
13 briefing for us or --

14 MR. STEVE WILLIS: When I have, when I have, yeah,  
15 details that I can share I will.

16 MR. ARNIE LERICHE: Before the next RAB? At least  
17 in writing?

18 MR. STEVE WILLIS: I can't guarantee you it will  
19 be before the next RAB.

20 MR. ARNIE LERICHE: But will try?

21 MR. STEVE WILLIS: Yeah.

22 MS. PAULA BOND: Dave, did you have a question?

23 MR. DAVE CARMONA: Yeah. Dave Carmona, Community  
24 RAB. Reference the budgeting items. Usually about this  
25 time of year the request comes from DOD or whatever agency

1 or department you're with in the government for  
2 discretionary letdown portion of the budget come July. Do  
3 you have a plan for that should you receive any money as to  
4 what you can accelerate?

5 MR. STEVE WILLIS: I do not. I've still got  
6 plenty of money that was budgeted for Wurtsmith that we're  
7 working on getting on contracts.

8 MR. DAVE CARMONA: Okay. But if that additional  
9 money comes down in July through the discretionary letdown  
10 process, do you have a plan for it?

11 MR. STEVE WILLIS: I do not. We, we do not have  
12 contract mechanisms that I could get that funding on  
13 contract before the end of the fiscal year.

14 MR. DAVE CARMONA: Thank you.

15 MS. PAULA BOND: Cathy?

16 MS. CATHY WUSTERBARTH: Cathy Wusterbarth. We had  
17 talked about at the last meeting I think it was, Steve, you  
18 know, you said that you had a lot of work; right? This is a  
19 big project. You were going to get an assistant or have,  
20 having someone to help you. You had -- looked like you had  
21 somebody onboard. Is that still the case? Do you have some  
22 help?

23 MR. STEVE WILLIS: So we, we have advertised the  
24 position, we have had candidates apply and we are evaluating  
25 the candidates at this point.

1 MS. CATHY WUSTERBARTH: Oh, so three months ago  
2 you were doing that I thought, so -- yeah, we're getting a  
3 little impatient here it looks like, so --

4 MR. STEVE WILLIS: Yeah, so am I.

5 MS. CATHY WUSTERBARTH: Yeah. This Three Ditch,  
6 Three, the Three Pipes Ditch seems like it's low hanging  
7 fruit that could be easily taken care of and we are  
8 perplexed why you can't take action on that, so --

9 MR. DAVE CARMONA: Is the blockage for your  
10 staffing from OPM or from inside your own companies?

11 MR. STEVE WILLIS: It's, it's finding appropriate  
12 candidates. We've had candidates decline, decline the  
13 position and so we're still evaluating candidates.

14 MS. PAULA BOND: Any other questions? All right.  
15 Thank you.

16 MS. JESSIE HOWARD: Thank you, Paula. At this  
17 time I would like to break for our ten-minute break and we  
18 will be back for our second presentation in ten minutes.  
19 Thank you so much.

20 (Off the record)

21 MS. JESSIE HOWARD: If I can please have everybody  
22 return to their seats? We do have one more presentation  
23 this evening from GSI Environmental. We have Janet Anderson  
24 and Kirby Tyndall to give us an update on the risk  
25 assessment methodology and the species included in



1 ecological risk assessment.

2 (PFAS Risk Assessment Update at 6:37 p.m.)

3 MS. JANET ANDERSON: All right. Hi, everybody.

4 I'll give us a second to get situated. All right. As was  
5 said, I'm Janet Anderson. I'm a principal toxicologist with  
6 GSI and I'm here with my colleague Kirby Tyndall who is a  
7 senior toxicologist and risk assessor also at GSI. We are  
8 really pleased to finally be able to start talking about our  
9 process for the human health and eco risk assessment. We've  
10 just started getting the data in so we're going to talk more  
11 about the process and how we're moving forward once we  
12 complete the evaluation of the data and what we're going to  
13 be doing to make some decisions. So next slide, please.

14 All right. We're going to talk just real quickly  
15 about the requirements and the framework for risk  
16 assessment. The bottom line is that we follow standard  
17 procedures, policies, protocols, guidance from EPA. There's  
18 nothing fancy, there's nothing special, we're not deviating  
19 from anything. It's a pretty structured framework. EPA has  
20 laid out over decades of experience of how to do both human  
21 and eco risk and so we're going to be following those.  
22 We're going to talk about the data that's come in and our  
23 evaluation process, what data we're going to be using and  
24 what compiles the database and we're going to talk about how  
25 we're going to use that to model some exposures to estimate

1 risk. Next slide.

2 Okay. So the goals of the baseline Human Health  
3 and Eco Risk Assessment. So first of all, baseline means  
4 that we're capturing estimated or potential risk,  
5 hypothetical based on exposure modeling and estimates as of  
6 right now. And that is going to inform then using the  
7 measurements of PFAS that we collected from the RI team, and  
8 that estimates potential human health risk, estimates  
9 potential ecological risk. Importantly we'll help use that  
10 information to characterize what's driving decisions and  
11 then where might be some key uncertainties to go into some  
12 of that data gap discussion. So where might you have a big  
13 uncertainty that matters versus an uncertainty that really  
14 doesn't change a decision or make a decision one way or  
15 another. And so the important aspect is the goal of both  
16 the human and the eco risk assessment is to inform risk  
17 management decisions. Critically important it's not a  
18 public health assessment. That's under the purview of  
19 Department of Health and public health agencies. Our goal  
20 is just to do a baseline theoretical or estimated risk for  
21 human and eco in a way that helps inform decision making  
22 moving forward. So it's really important that we understand  
23 the distinction between those two. Next slide.

24 So why do we do risk assessments? It's required  
25 under CERCLA. DOD follows the EPA by, by policy, by

1 statute, follows the EPA process. Baseline risk assessments  
2 are required under the National Contingency Plan, Superfund,  
3 CERCLA. Next slide.

4 So, again, what risk assessments do. So we're  
5 going to estimate exposures. We do use the measured  
6 empirical data from both the biota and the abiotic  
7 collection, data collection that was done under the RI, but  
8 then we estimate what that means from an exposure from each  
9 receptor. And then we characterize the potential for  
10 adverse effects, we focus on the key chemicals -- in this  
11 case obviously PFAS -- and, again, that helps support risk  
12 management decisions. This does not estimate risk for any  
13 individual person or individual real receptor. It does not  
14 provide any information on disease, causation, health  
15 effects, and it's not going to establish any kind of safe  
16 threshold for, for example, fish consumption or deer  
17 consumption. Again, that's Department of Health. Very  
18 different. Next slide.

19 The key planning documents that are available for  
20 you to review and that help support both the data collection  
21 efforts and then our methods and our approach are listed  
22 here. Importantly the work plan was written in 2020-2021  
23 time frame, '21 time frame finalized in September of 2022.  
24 And obviously things with PFAS move quickly, have changed a  
25 little bit so, but, again, the fundamental approach really

1 hasn't. So it's really just the toxicity values in which  
2 PFAS are being evaluated that have evolved and we are  
3 keeping up with that science. Next slide, please.

4           Okay. Data. Is this still me going through?  
5 Okay. So all of the data was collected through the RI.  
6 Paula and her team are working diligently. We've received  
7 actually most of it. We're going through it still, making  
8 sure that we can categorize it and organize it in a way for  
9 us to use. Paula's really walked through all of that. We  
10 do have collection of fish from the various waterbodies  
11 shown here. We did collect small mammals, so mice and  
12 squirrel and plants, so terrestrial and aquatic plants to  
13 help inform the bottom of the, that food web. We also are  
14 considering any other available data that has been provided  
15 to us, provided that it's really relatively recent, so  
16 within about ten years, and has a good data package with it  
17 that we understand has good quality assurance and quality  
18 controls so we know it's valuable and valid data. So we  
19 need to have that kind of sampling objectives, the QA  
20 documentation. We need to know exactly where it was  
21 collected, how it was collected. But we are incorporating  
22 any of that data. So, importantly, with all of the hard  
23 work and data that's, for example, been collected by some of  
24 the state agencies, they've shared that with us and we are  
25 for sure bringing in the deer data, the fish data, et

1 cetera. Next slide.

2 So this is the, the current list. So you can see  
3 that we are including some of the older site inspection  
4 data. For example, they had some older soil data, the  
5 muskrat data have been provided to us, again, data from the  
6 state fish, deer, muskrat, tree swallows, some older surface  
7 water data collected by EGLE, it's informative. So all of  
8 that important data have been shared and are part of our  
9 database. Okay. Next slide.

10 This was really just to meant that in the risk  
11 assessment we do look carefully at data quality and data  
12 validation from the lab and that's particularly important  
13 for PFAS and we know especially when detection limits are  
14 right at important levels and screening levels. And so  
15 really all of this just means that we do include anything  
16 even if it's estimated, but as long as it's validated from  
17 the lab. So we might see something that has some sort of  
18 lab annotation on it. We are including that as a detection  
19 in the risk assessment. So I just wanted to say that.  
20 That's basically the bottom line of that. But that does  
21 help us understand the data spatially. We are going to look  
22 at the variability and concentrations both temporally,  
23 spatially, vertically, horizontally. We look at different  
24 ways to group the data by different exposure receptors. And  
25 so we'll be looking carefully at the data quality and, and

1 usability of all of our data sets. Okay. Next slide.

2 So the human health specific aspect is the --  
3 moving into the exposure assessment first. So the exposure  
4 assessment is a really important part of the risk  
5 assessment. You don't just take the concentrations found in  
6 either the media or the biota and use that directly. We  
7 have to understand how often human receptors might be in  
8 contact with that media, how often they might ingest a  
9 certain, say, an incidental ingestion of soil or how, how  
10 likely is it that a construction worker might be, you know,  
11 ingesting soil while they're digging a trench, for example.  
12 So those types of exposure assessment factors, we call them  
13 parameters, are pretty standard. Tons of data collected by  
14 EPA, by state agencies, national surveys go into that.  
15 They're all peer reviewed, robust sources of information.

16 We are using some site specific information. For  
17 example, the Forest Service has been great to sit down with  
18 us a few years ago and provide us with some really good  
19 exposure estimates for a hypothetical forest service worker.  
20 So that will be considered. We are considering then  
21 exposures from current and then hypothetical future  
22 scenarios. What that means is hypothetically speaking let's  
23 pretend someone wants to build a house right here. That is  
24 the most conservative assumption about potential long-term  
25 exposure saying you have a, a, you know, young family that

1 starts a family living in a home. So we do consider that  
2 hypothetical future. Or hypothetically say someone wants to  
3 do construction next to the runway; right? I mean, we know  
4 that's not going to happen today, but say they want to  
5 outside of any of these remediation, but like a long-term  
6 construction plan.

7 And then importantly exposures are based on  
8 reasonable maximum exposure consumptions. It's not the max.  
9 It's not -- it's never sort of worst case scenario but is a  
10 reasonable maximum. Meaning it's an upper end assumption  
11 that to be conservative, but still kind of a reasonable  
12 general population. That's what the risk assessments do  
13 both for human and eco. Okay. Next slide.

14 In the work plan there's a much more detailed  
15 conceptual site model. The risk assessors, I don't know,  
16 we're a special kind of crazy where we like complicated  
17 lines and boxes that represent exposure, conceptual site  
18 models. This is my attempt just to simplify it. Again,  
19 we're looking at all age groups, sensitive subpopulations,  
20 forest service worker, construction worker, potential  
21 current occupational worker, future worker, consumption of  
22 wild game, fish, recreational use of the surface  
23 waterbodies.

24 We will consider groundwater as a tap water source  
25 into a home even though the exposure pathway is largely

1 mitigated. But, again, under CERCLA, under EPA guidance,  
2 sort of the baseline assuming no mitigation, assuming  
3 someone has a private well that they're still using, that  
4 will be what our risk assessment considers. But it'll show  
5 the impact of what's the impact of no longer having  
6 groundwater exposure or tap water in your house. Next  
7 slide.

8           So, again, these are the receptors listed here.  
9 Surface soil, subsurface soil are considered. You might ask  
10 yourself why would a resident be subjected to subsurface  
11 soil. During construction of a home we assume that there  
12 might be some of that deeper soil brought to the surface.  
13 So, again, reasonable, hypothetical, future scenario we do  
14 consider. Consideration of surface waterbodies. And then  
15 we are importantly looking at different, all the different  
16 potential age groups. We are considering young children, a  
17 older child, in addition to the adults. That's because  
18 there are different behavior patterns. There are different  
19 exposure assumptions. You do have a different ingestion  
20 rate of water, a different incidental ingestion of soil. We  
21 all know that little kids crawling on the carpet have  
22 different exposure patterns. So those are all different  
23 receptor age groups that will be considered as appropriate.

24           We even are including though conservatively in the  
25 hunter scenario, for example, under the assumption that



1 they're either tagging along with their parents, but also  
2 may be consuming importantly the game that's brought home.  
3 I think next slide. Let me see if I have -- do I have the  
4 next slide? No, I'm sorry. So just real quick. The other  
5 thing that we are assuming is that any one receptor might be  
6 several of these people. So you might have a construction  
7 worker who also recreates in Clark's, Clark's Marsh. Or you  
8 might have a resident who also then swims in Van Etten Lake.  
9 So we will consider cumulatively exposures from several  
10 receptors. Okay. Now we can go to the next slide.

11 So there's a bunch of equations in the work plan,  
12 complicated math. At the end of the day, the first thing we  
13 do is we try to figure out what does that daily exposure  
14 look like. A lot of things go into that: which pathways,  
15 how much, what routes of exposure, how long might someone be  
16 in contact with the surface water/soil, for example. And  
17 for PFAS, the absorption or the uptake, we are  
18 conservatively assuming it's 100 percent. So we assume if  
19 you do ingest PFAS, 100 percent of that is getting into your  
20 body. So I think that if you want more details on the map  
21 or as we work through later presentations with risk  
22 estimates, this will be the fundamental sort of concept of  
23 how that exposure piece is calculated. Okay. Next slide.

24 Toxicity values. So we, again, follow EPA and DOD  
25 policy on the use of toxicity values. This is a tricky

1 topic and a hot button topic for PFAS. But I can assure you  
2 we will use the most up-to-date and approved toxicity  
3 values. And hot off the press, EPA actually updated their  
4 regional screening level or their RSL table yesterday for  
5 PFOA and PFOS. We were anticipating that. We were already  
6 back calculating those numbers anyway. They usually update  
7 their RSL tables every May and November, so they're right on  
8 track. But that came from EPA just yesterday for PFOA and  
9 PFOS. So per policy for DOD, we use EPA toxicity values  
10 first and then consider sort of other tiers to include, for  
11 example, ATSDR that has some toxicity values for PFAS.

12 Those will be included. And state values as well. Okay.

13 Next slide.

14 So once we have that exposure piece, that's simply  
15 in the top of the equation and you divide it by the toxicity  
16 value and you get what's called a hazard quotient. If it's  
17 greater than one, there's an indication there might be  
18 potential risk and further evaluation and kind of a deep  
19 dive might be warranted and consideration of remedial  
20 action. If it's less than one, then we consider the fact  
21 that for non-cancer, that there's no increase in risk. We  
22 will be considering what's called the hazard index which  
23 just is a term that means that we're going to assume  
24 additivity of risk for the different PFAS. So we're going  
25 to assume that if you're exposed to PFOA and your risk is,

1 say, .6 which is less than 1, but you're also assume,  
2 exposed to PFOS and your risk is also .6, now you've  
3 exceeded 1 because you add those two together. That's a  
4 really conservative assumption. We don't really have the  
5 data to support that as far as there truly is additivity in  
6 all doses and target organs, but that is EPA's current  
7 policy and it is a standard kind of screening and  
8 conservative assumption anyway. It's consistent with the  
9 MCLs for the other PFAS that have come out. So that is what  
10 we have proposed to, to present for you in risk assessment.  
11 That's for non-cancer. Please, next slide.

12 Cancer risk is becoming more of a, an important  
13 topic for PFAS. Previously up until the toxicity  
14 information underneath the MCLs it was non-cancer risk that  
15 were driving the conversation. EPA's latest interpretation  
16 of the data has kind of switched that on its head and now  
17 cancer risk is really the driver, meaning it's the most  
18 sensitive or critical effect, especially for PFOA. And so  
19 what that means is we will include a cancer assessment for  
20 both PFOA and PFOS. We have cancer slope factors for both  
21 of those from EPA. So they're a little bit different where  
22 we still consider sort of that lifetime average daily dose.  
23 We think about it as a lifetime of exposure for carcinogens.  
24 And we've used standard risk thresholds of excess or  
25 theoretical cancer above background in one and a million

1 to -- that's  $1 \times 10^{-6}$  to 1 in 10,000,  $1 \times 10^{-4}$ . So we'll be  
2 presenting all of that, that standard again. But I just let  
3 you know that that is kind of a change in the toxicity  
4 narrative and the risk narrative for PFAS and it's important  
5 for us to stay up to date with EPA's values. Okay. Next  
6 slide.

7 So an important part of a baseline risk assessment  
8 is the uncertainty analysis. I know that might seem a  
9 little strange. Isn't the most important part the risk  
10 characterization? Yes. But at the end of the day we know  
11 where the PFAS are especially here at Wurtsmith. We  
12 understand, you know, the media of most concern. The risk  
13 assessment will let us know on a more refined spatial scale  
14 where there might be some concerns and what media are  
15 driving the most important risk so we can prioritize and  
16 focus. But the uncertainty analysis lets us ask the  
17 questions of, well, what if the toxicity value for PFHxS  
18 changes and it's ten fold lower? We can do that in the  
19 uncertainty analysis and give you that information so that,  
20 to help inform decision making.

21 What if we assume different exposure scenario for  
22 a certain receptor? We can do that in the uncertainty  
23 analysis and show you if it impacts decision making. We can  
24 talk about where we might have some data gaps. We can look  
25 spatially where we have data, understand what risks are

1 driving, and then talk about how we had to maybe model  
2 uptake through consumption and gain, for example, and how  
3 that compares to some of the other data. So it's really  
4 important that this uncertainty in session. These are  
5 always done and it's really more of a information for what  
6 data gaps matter and what decisions are being driven on what  
7 quality of data. And so we'll provide both the qualitative  
8 and quantitative assessment of that. I think that's it for  
9 the human health. The next portion is eco. Steve, did you  
10 want me to pause here for questions on human?

11 MR. STEVE WILLIS: Yeah; yeah. Let's go ahead and  
12 open it up to questions on the slides we've covered so far  
13 and then we'll jump into the eco -- oh, and have Q&A after.

14 MS. JANET ANDERSON: Kirby -- yeah. Kirby will  
15 take over and talk through the eco, but I'm happy to  
16 maybe -- we'll pause here since it's a little, little  
17 different. Yes, sir?

18 MR. DAVE CARMONA: Dave Carmona, Community RAB.  
19 Could you go back to slide 50. I need a little more  
20 explanation on that. You have listed on that current and  
21 future hypothetical resident, but no exposure media to  
22 sediment, surface water, wild game or fish.

23 MS. JANET ANDERSON: So, right, the resident is at  
24 their house. So the assumption is that in their path, well,  
25 quarter-acre lot, they're exposed to the soil and then the

1 groundwater being used is tap water. So they may be exposed  
2 to sediment surface water while they recreate and that's  
3 where we'll add those risks together. Does that make sense?

4 MR. DAVE CARMONA: It makes sense but I -- okay.  
5 Next one is slide 52. The toxicity you're talking about, is  
6 that environmental or human toxicity on that slide?

7 MS. JANET ANDERSON: Human health.

8 MR. DAVE CARMONA: Human health. Okay. And then  
9 slide 54. The cancer risk that you're going to do a  
10 analysis of, is that site specific or based on just guide,  
11 general guidance from EPA?

12 MS. JANET ANDERSON: So the cancer risk assessment  
13 will be based on general cancer slope factor for PFOA and  
14 PFOS that we have new from EPA underlying their MCLs. And  
15 it's, again, a theoretical. It's not a cancer assessment  
16 for the community. It is a theoretical what might be an  
17 extra cancer risk above our baseline, you know, cancers that  
18 the community gets.

19 MR. DAVE CARMONA: So as data comes into this  
20 model that you're building, do you have like a team of  
21 toxicologists that review this, the peer review that you're  
22 talking about, or is this just a literature peer review?

23 MS. JANET ANDERSON: The peer review with the  
24 literature work has already been done by EPA's toxicologists  
25 to derive that cancer slope factor. So they have already

1 said there is a risk of whatever the number is, increased  
2 cancer risk for exposure for PFOA. We'll take that number  
3 and figure out what the exposure is here. So we're not  
4 going to re-do the cancer risk assessment, cancer toxicity  
5 assessment part. EPA has done that.

6 MR. DAVE CARMONA: How often does EPA update that  
7 standard?

8 MS. JANET ANDERSON: Oh, my goodness. Not very  
9 often.

10 MR. DAVE CARMONA: Not very often. Okay.

11 MS. JANET ANDERSON: But for PFOA and PFOS, it's  
12 they're brand new numbers that they just came out with. And  
13 if any other PFAS come up with a cancer slope factor, you  
14 know, we'll include it but none of them have, so -- does  
15 that answer your question?

16 MR. DAVE CARMONA: Yep. Thank you.

17 MS. JANET ANDERSON: Okay. You're welcome. Yes.

18 MR. MARK HENRY: Mark Henry with the RAB. I have  
19 a question please.

20 MS. JANET ANDERSON: Sure, Mark.

21 MR. MARK HENRY: Looking at that slide 50 that was  
22 just up, you have the exposure media there. One -- well,  
23 there's a couple of media that are missing from that list in  
24 my opinion. One of them is the foam on the lake and the  
25 other one is the sand on the beach. Young children,

1 infants, tend to eat sand. I think it's like one in four or  
2 one in five consume a significant amount of sand. The sand  
3 on the beaches surrounding Van Etten Lake is known to be  
4 contaminated from the foam that migrates around the lake,  
5 gets deposited on the sand, is blown onto the sand, and then  
6 the foam is broken down through dessication and the PFAS in  
7 that foam becomes part of the beach and yet the, the, that  
8 as a media for transfer of PFAS into human children is not  
9 mentioned here.

10 MS. JANET ANDERSON: So in the child recreator  
11 scenario we do assume a consumption of the "sediment" and I  
12 agree with you that's not quite the same as sand, but it is  
13 a really conservative --

14 MR. MARK HENRY: No; no.

15 MS. JANET ANDERSON: -- assumption that during --

16 MR. MARK HENRY: No.

17 MS. JANET ANDERSON: -- children playing that  
18 there is a ingestion of that.

19 MR. MARK HENRY: The sediment is not really the  
20 same as the sand.

21 MS. JANET ANDERSON: I agree.

22 MR. MARK HENRY: Concentrated PFAS in the foam  
23 gets deposited on the sand and it is not flushed out of the  
24 system. Through rain and stuff it may go back into the lake  
25 where it forms foam again, but as a media that kids are



1 known to consume, somehow it seems to be missing from this  
2 exposure media and I recommend or I request that it be  
3 considered in the risk analysis for human health.

4 MS. JANET ANDERSON: We can definitely include a  
5 discussion about the park sand and the actual beach sand  
6 that you're talking about as it differs from sediment in the  
7 uncertainty analysis and the data gap discussion. And we  
8 can look to see what data we might have available as far as  
9 ingestion rates of that. We don't have sand data in the RI  
10 database.

11 MR. MARK HENRY: Well, I would recommend that  
12 there is a data gap within the RI that should include  
13 analysis of sand on the beaches of all the private  
14 properties around the lake to determine what the  
15 distribution of the PFAS is that is easily accessible to  
16 infants and small children. And that once that data is  
17 collected as it should be considered during the RI, that the  
18 risk assessment include that data during your evaluation.

19 MS. JANET ANDERSON: Yeah. Thank you for the  
20 comment. We'll definitely discuss the sand and the beach in  
21 our uncertainty analysis and we'll see where it goes from  
22 that.

23 MR. STEVE WILLIS: Yeah. Mark, this is Steve. I  
24 did make a note to consider that for the data gap  
25 investigation, beach sand.

1 MR. MARK HENRY: Thank you.

2 MS. CATHY WUSTERBARTH: This is Cathy. I have a  
3 question.

4 MS. JANET ANDERSON: Cathy, yeah.

5 MS. CATHY WUSTERBARTH: Okay. It, it sort of  
6 piggybacks on what Mark Henry was just saying. We believe  
7 that the foam is a glaring omission of this risk assessment.  
8 The data is included in a MDHHS and EGLE sampling that you  
9 have access to and I've just provided it to Steve Willis.  
10 There are more than 50 samples of foam on the waterways that  
11 are very high and fort-, fortunately for you that the data  
12 exists. And you've also have access to a DHHS report that  
13 was provided to the Department of Health in 2019 that breaks  
14 down the hazard quotients for incidental ingestion of foam  
15 which they declared as a -- I'll read it here from the  
16 report.

17 "Incidental ingestion of Van Etten PFAS containing  
18 lake foam can result in a public health hazard to  
19 children and adults. Extended -- also extended  
20 recurring whole body skin contact of Van Etten PFAS  
21 containing lake foam can result in a public health  
22 hazard for children and adults."

23 So, again, this is a glaring omission of this  
24 assessment. You have the data available and it should be  
25 included.

1 MS. JANET ANDERSON: Thank you.

2 MS. CATHY WUSTERBARTH: And I've provided all of  
3 that information to Steve.

4 MR. STEVE WILLIS: Yes, I've got that.

5 MS. JANET ANDERSON: Yes, sir. Go ahead.

6 MR. ARNIE LERICHE: Arnie --

7 MS. JANET ANDERSON: Hi, Arnie. Yeah, go ahead.

8 MR. ARNIE LERICHE: Okay. Could you -- and I  
9 agree with everything that says, especially Mark in that  
10 about making it an AI and part of the study. But yesterday  
11 you answered a similar question to my question, that said  
12 that you already because of two AIs, 120 and 123, that asked  
13 a similar question about foam and one of them was specific  
14 120 to the issue of in the risk assessment. And so can you  
15 say --

16 MS. JESSIE HOWARD: Arnie, can you --

17 MR. STEVE WILLIS: Arnie, can you speak into the  
18 microphone?

19 MS. JESSIE HOWARD: -- thank you. He's trying to  
20 be polite.

21 MR. ARNIE LERICHE: Can you -- okay. The thing --  
22 the point is can you repeat what you said a minute ago but I  
23 think you were over -- someone was talking over you -- that  
24 it's already -- part of the answer is already you've  
25 committed to something and it's in which report that shows

1 the risk assessment work plan does have a look at the foam  
2 but it's after the phase or it's in the phase of  
3 feasibility, not the risk assessment. So I'm not satisfied  
4 with that. I don't think anyone here is, but it is there.  
5 So that we're asking for a change in what you've already  
6 committed to last year.

7 MS. JANET ANDERSON: Correct. If I understand  
8 what you're saying, we do acknowledge the foam, foam exists.  
9 It is listed in our conceptual site model with a dashed line  
10 meaning we're not quantitatively evaluating it. And what  
11 the comments that we're hearing loud and clear here are to  
12 move that into the quantitative assessment. So we haven't  
13 ignored the foam. We acknowledge that it exists and it  
14 already is mentioned and discussed in the work plan.

15 MR. ARNIE LERICHE: Okay. And in one of those AIs  
16 we got a commitment from Steve that by spring of this  
17 year -- this was committed to six months ago -- that you  
18 would contact the authorities and maybe even Jennifer Fields  
19 to have a conversation to see if those experts and with EPA  
20 would have a presentation on this foam to really kick the  
21 thing going with those agencies because EPA has to get  
22 involved before the Air Force is really going to get serious  
23 about this. And could you commit to giving us an update of  
24 the one conversation that you had?

25 MR. STEVE WILLIS: Yeah. So we, we did have a

1 call. The Air Force, EGLE, EPA Region 5 and we also  
2 included Courtney --

3 MR. ARNIE LERICHE: Carigan.

4 UNIDENTIFIED SPEAKER: Carigan.

5 MR. STEVE WILLIS: -- Carigan, thank you, on that  
6 conversation about foam. I did commit previously that we  
7 would put together a panel to discuss foam, but I have not  
8 had the opportunity to -- other than some initial calls, I  
9 have not had a chance to follow up and actually put that  
10 together. Part of that I wanted to wait until we had the,  
11 this risk assessment discussion to get feedback and  
12 discussion here and then we'll work towards some kind of a  
13 panel discussion on foam.

14 MR. ARNIE LERICHE: I wish you had told us that,  
15 that, that the spring one has changed so I -- but can you  
16 give us the, a writeup of what the conversation included  
17 from the agencies?

18 MR. STEVE WILLIS: I can, I can put some, a  
19 summary together, yes.

20 MR. ARNIE LERICHE: Okay. And it could be  
21 attached to the AI so it's in a detail you want.

22 MR. STEVE WILLIS: Yeah, it'll be -- yeah; yeah;  
23 exactly.

24 MR. ARNIE LERICHE: Thank you.

25 MR. DAVID WINN: Janet, I have a question.

1 MS. JANET ANDERSON: Yes, sir.

2 MR. DAVID WINN: This is Dave Winn. You mentioned  
3 yesterday in the tech review that in some cases you were  
4 going to use overall, overall state average for some  
5 portions of this because the data specific to Van or to  
6 Oscoda is not available; is that correct?

7 MS. JANET ANDERSON: If you're referring to the  
8 fish consumption ingestion rate, we're using national survey  
9 data that is specific to the Midwest. And it is shown to be  
10 more conservative than some of the Michigan specific data  
11 that we've reviewed.

12 MR. DAVID WINN: So fish is the only one?

13 MS. JANET ANDERSON: I think so, yes. I mean, the  
14 only -- I mean, outside time, you know, time spent playing  
15 outside is obviously specific to Michigan, but --

16 MR. DAVID WINN: Okay. So just that one specific  
17 item?

18 MS. JANET ANDERSON: I believe so.

19 MR. DAVID WINN: Okay.

20 MS. JANET ANDERSON: I'm trying to think our deer  
21 ingestion, wild game might be from DNR, but I'm not sure.  
22 Yeah. It'll be listed. We can certainly -- we'll -- all of  
23 the sources of the exposure information will be provided in  
24 the table.

25 MS. KIRBY TYNDALL: In the report.

1 MR. DAVID WINN: Thank you.

2 MS. JANET ANDERSON: Yes, sir?

3 MR. SCOTT LINGO: Scott Lingo, Community RAB. In  
4 looking at some of the testing that was done on the fish --  
5 we discussed this briefly in our last meeting. A lot of  
6 fish were not fish that are consumed on a regular basis.  
7 They were shiners, they were chubs, they were minnows, they  
8 were darters, they were, you know. We didn't look at  
9 walleye, we didn't look at perch, we didn't look at, you  
10 know, the fish that local residents are going to consume.  
11 You know, we aren't eating that stuff. We're eating  
12 walleye, we're eating pike. And those two species are  
13 carnivores. They eat all the little fish, you know. And I,  
14 and I didn't see any of those tested. Can you tell us why?

15 MS. JANET ANDERSON: We have an extensive -- I  
16 think it's perch that we have almost from every waterbody.  
17 They're all listed on the table or in the poster in the  
18 back. We do have a lot of perch and we got --

19 MR. SCOTT LINGO: But they weren't Yellow Perch I  
20 don't --

21 MS. JANET ANDERSON: They were Yellow Perch,  
22 that's right.

23 MR. SCOTT LINGO: Were they? Okay.

24 MS. JANET ANDERSON: And we got --

25 MS. KIRBY TYNDALL: We did have some Large Mouth

1 Bass.

2 MS. JANET ANDERSON: -- and some bass, Large Mouth  
3 and Small Mouth Bass we did collect. So for upper levels --

4 MR. SCOTT LINGO: But why no walleye, why no pike?  
5 I don't know anyone -- does anyone in this room go out to  
6 catch and eat bass?

7 MS. JANET ANDERSON: We tried. I mean, you can  
8 talk to our fishermen who went out.

9 MS. KIRBY TYNDALL: Well, and it represents the  
10 carnivore in the food chain of fish and so it may not be  
11 exactly walleye, but it's a representative carnivore that  
12 should have a similar body burden. I, I understand that  
13 they --

14 MR. SCOTT LINGO: But I use different lures to  
15 catch bass than I do walleye.

16 MS. JANET ANDERSON: Right. But the -- we model  
17 the amount of perfluorinated compounds as they go up the  
18 food chain. So where we have data at different trophic  
19 levels, empirical data, help inform for the next higher  
20 level as well. So as long as we have representative species  
21 like the, the bass and the perch, then we can help  
22 understand and that whole trophic level. So everything that  
23 has similar behaviors and foods.

24 MR. SCOTT LINGO: Okay.

25 MS. JANET ANDERSON: And we don't do a risk



1 assessment specific on fish species. So it's going to be  
2 consumption of fish, is there a risk, yes or no.

3 MR. SCOTT LINGO: Okay.

4 MR. DAVE CARMONA: Dave Carmona, Community RAB.  
5 I'd like to go back to your comment about the foam that you  
6 are considering moving into the quantitative model. My  
7 understanding the information we've been given in the past  
8 is there is no standardization for testing and checking  
9 foam. Are you saying that there is now?

10 MS. JANET ANDERSON: No, I am not. I haven't  
11 committed to moving it. That's been part of the Air Force's  
12 concern is the val-, validity of the data. But I haven't  
13 looked at the data that was just provided to Steve. So my  
14 understanding is there are questions about the testing,  
15 standardization of the testing of the foam, there's concerns  
16 about the wide variability and the concentrations that are  
17 often detected. But we'll look at the data.

18 MR. DAVE CARMONA: So this -- okay. I understand  
19 you're going to look at the data. You have literature out  
20 there on how to make foam, three to six percent solution in  
21 a truck to spray it on a fire. So you have base data to  
22 establish the levels that caused the foam out there. Is  
23 there not a scientific way to validate that information in  
24 the environment or to create a model to look at that as to,  
25 to compare what we know from the literature to make foam

1 compared to how it's going on the lake? The level has to  
2 reach that concentration to make foam through aeration. It  
3 seems pretty simple.

4 MS. JANET ANDERSON: The aqueous film forming foam  
5 concentrated solution is very different than the foam that  
6 is forming on surface waterbodies. Those are two different  
7 things. Foam, yes. Foaming through aeration, yes. But  
8 aqueous film forming foam as a solution concentrated, the  
9 chemical product full of a bunch of stuff. And, yes, it's  
10 diluted three or six percent through an aerator as it's  
11 dispersed. That's very different than the foaming behavior  
12 on a surface waterbody.

13 MR. DAVE CARMONA: Is there any way you can build  
14 a model to look at the two based on what your observations  
15 are, the scientific analysis of the foam here? Because it  
16 seems to me unless you have that, Steve's conversation about  
17 the consideration of foam is going to be having "Oh, we  
18 don't have a scientific method, so let's not consider it."  
19 That's not to cast aspersions on you.

20 MS. JANET ANDERSON: Yeah.

21 MR. DAVE CARMONA: But if you don't have  
22 scientific data or a model to build, what's the point of the  
23 conversation or even giving us a hope that you're going to  
24 put this in the quantitative model?

25 MS. JANET ANDERSON: Right. I mean, to my -- I

1 would assume that that would be part of the questions that  
2 Steve would be posing to his panel, can this even be done.  
3 Right?

4 MR. STEVE WILLIS: Yeah. At this point we are not  
5 going to collect foam under the current RI contract. We are  
6 continuing to evaluate foam and if it's a data gap that  
7 needs to be addressed, we can address it in the data gap  
8 investigation. You know, we've already committed to  
9 sampling the soil on, on the edges of the lake where foam  
10 deposition occurs. If, if the data supports collecting foam  
11 and including that in the risk assessment as a follow-on  
12 activity, we can do an update to the, or an addendum to the  
13 risk assessment to incorporate that as appropriate.

14 MS. JANET ANDERSON: And I want to clarify, again,  
15 the point of the risk assessment is to inform remedial  
16 decisions. So the question about whether you include or  
17 exclude foam should be about, well, would it change how  
18 you're approaching a remedial design and that's how we  
19 should approach that kind of discussion not from a public  
20 health risk, again, which has already been well covered by  
21 POH. Does that --

22 MR. DAVE CARMONA: Yep. Thank you.

23 MS. JANET ANDERSON: -- help with a distinction?  
24 Yeah.

25 MS. CATHY WUSTERBARTH: Cathy Wusterbarth again.

1 If you could go back to slide 46? This is where it's, like  
2 I had mentioned, it's glaringly missing off of this media.  
3 Right? You have soil and the sediment and water, all of  
4 that, so but foam is not on there. And some of these people  
5 were not in the meeting yesterday and I made a statement  
6 about how we would like to see the foam included in this  
7 assessment but I don't think it was explained why you're not  
8 including it. And I think you gave me an answer yesterday,  
9 but didn't quite understand it. Maybe you can explain that  
10 again?

11 MS. JANET ANDERSON: Sure. We've been directed to  
12 not include it for some of the reasons we've already  
13 mentioned. One, questions about analytical methodology and  
14 validity of the data; two, the variability in the  
15 concentrations and how representative any data set might be;  
16 three, is the intermittent exposure potential, so would a  
17 given receptor population be exposed in a significant enough  
18 exposure rate and duration that it would impact their  
19 overall exposure to change or risk and how we would estimate  
20 that, model that. It's a, it's an unknown how we would do  
21 that.

22 MS. CATHY WUSTERBARTH: So what I heard you say  
23 yesterday in our technical session about this is that you  
24 would consider any data that came from a reputable source  
25 and in this case it's the State of Michigan and they have

1 thoroughly tested foam across the state. There are hundreds  
2 of results in that report that I gave Steve which I'm  
3 certain you must have because it has the surface water  
4 results in it also. So and it's, it's very unclear to me  
5 why you would not consider the State of Michigan's very  
6 thorough testing on foam.

7 MS. DENISE BRYAN: And health advisory --

8 MS. CATHY WUSTERBARTH: Yes, and the -- and as our  
9 District Health Department person says we have health  
10 advisories. It is clearly a risk and it is -- will just be  
11 incomplete and you can add that now if you want to, if you  
12 choose to, and you're just refusing.

13 MR. DAVE CARMONA: And this goes back to your  
14 initial statement. This is to evaluate potential exposure  
15 paths. This is an exposure path. I've seen kids playing in  
16 this foam. Okay. Scott has played in it, so --

17 MS. CATHY WUSTERBARTH: And, you know, with, with  
18 Steve's boss here -- Roger, is that right? Roger? Yep. I  
19 would ask that you, you address this.

20 MR. REX VAUGHN: This is Rex Vaughn, Community  
21 RAB. I've got a question. I heard a comment a couple  
22 minutes ago about somebody told you not to include foam in  
23 your analysis. Can you tell us who that was that told you  
24 not to do that?

25 MS. JANET ANDERSON: No, I just -- it was not part

1 of the scope of the RI event or the RI component period. We  
2 don't have foam data included in the RI.

3 MR. REX VAUGHN: All right. You -- I did not hear  
4 the complete answer over this virtual connection. Could you  
5 repeat your total answer? My question was who told you not  
6 to include it?

7 MS. JANET ANDERSON: It was not included in the  
8 scope of the RI from the Air Force.

9 MR. REX VAUGHN: Okay. So you're not telling us  
10 who told you not to do it?

11 MS. JANET ANDERSON: Well, it's not a "don't  
12 include it," it's "here's your scope of the RI." Right?  
13 There's a contract that's awarded with the scope.

14 MR. REX VAUGHN: All right. So it's the Air Force  
15 that told you not to do it? I want to make that clear. Who  
16 told you not to include foam in your analysis?

17 MR. STEVE WILLIS: Foam, foam, foam was not  
18 included in their scope of work for evaluation in the risk  
19 assessment. And that came from the Air Force.

20 MR. REX VAUGHN: Okay. So we're back to the Air  
21 Force again. I want to make sure that's clear for everybody  
22 in this meeting. That the Air Force is restricting what  
23 data can be included.

24 MR. DAVE CARMONA: So a question about the scope  
25 issue then. Dave Carmona. Since governmental contracts and

1 work are tied to scope, are you that hide bound to the scope  
2 that you would not consider changing the scope because it  
3 has the potential to change the contract?

4 MR. STEVE WILLIS: Yes. As I indicated earlier,  
5 if -- we'll continue to evaluate foam. And if it is a data  
6 gap that we need to address, we'll address it in the data  
7 gap investigation. It is not in the scope or the funding  
8 for this contract.

9 MS. CATHY WUSTERBARTH: But the work is already  
10 done.

11 MR. REX VAUGHN: I'm going to call BS on that  
12 statement.

13 MS. CATHY WUSTERBARTH: Yeah, the work is already  
14 done, so -- I do have a, a question about sort of what Rex,  
15 Rex's addressing who. One of the action items is -- has  
16 been on the list for a little while, is a chain of command  
17 request for, for BRAC. Are you still working on that? And  
18 when can we see that?

19 MR. STEVE WILLIS: I am and I hope to have  
20 something within the next couple weeks to you.

21 MS. CATHY WUSTERBARTH: Okay. Again, I would ask  
22 Roger to make sure that that gets done because this has  
23 been --

24 MR. STEVE WILLIS: Yep. He and I have been  
25 talking about it.

1 MS. CATHY WUSTERBARTH: -- we've been waiting for  
2 a military chain of command for a very long time.

3 MR. STEVE WILLIS: For, for clarification, is that  
4 chain of command for the BRAC structure?

5 MS. CATHY WUSTERBARTH: For decision making at  
6 this site.

7 MR. STEVE WILLIS: Okay. And do you want --

8 MS. MICHELLE BROWN: So actually -- this is  
9 Michelle Brown, Steve, if, if you don't mind. I believe  
10 that that information is readily available. It's readily  
11 available online. We can provide the link to the members on  
12 the RAB if they need that information. The chain of command  
13 for any Air Force organization is, is available online. We  
14 can provide that link to you. We can put that link in the  
15 chat for this group and we can also provide the, the  
16 document in PDF form if, if that would be helpful as well.

17 MS. CATHY WUSTERBARTH: One other question.  
18 Cathy.

19 MR. ARNIE LERICHE: But on that same issue, that  
20 includes budgeting. It isn't just decision based on  
21 technical whatever, okay, and CERCLA. It's the budgeting  
22 also affects everything. So --

23 MR. STEVE WILLIS: That, that's all within the  
24 organization.

25 MR. ARNIE LERICHE: I'm talking about budgeting



1 above you, getting into the president's budget rather than  
2 wait for crumbs that are left over halfway through the year.  
3 Just a thought.

4 MS. CATHY WUSTERBARTH: Okay. Yeah, I have a, a,  
5 a separate question about the risk assessment in general.  
6 From what I understand this is the public's only opportunity  
7 to have input on this assessment. After this it will be  
8 provided, you know, back to the Air Force and then at that  
9 point it will be put into other documents and then it'll be  
10 published. No, no further public comments. Is that right?

11 MR. STEVE WILLIS: That's correct.

12 MS. CATHY WUSTERBARTH: Okay.

13 MS. JANET ANDERSON: Yes, Arnie?

14 MR. ARNIE LERICHE: Arnie Leriche, the RAB. I  
15 have a different opinion in something you said, Janet, about  
16 that the foam -- you don't see how the foam could affect  
17 anything regarding -- and put these words in -- regarding on  
18 this, on that slide where the receptors or the decision for  
19 remediation. And I have to disagree with that because the  
20 foam comes up to the surface and it's not visible  
21 immediately. It's always there in what's being called as  
22 the micro layer. And the kids are being exposed to that and  
23 the signs do not cover that that the Health Department put  
24 up because they only say wash and it's not blaming anybody.  
25 The science and the acknowledgment that that foam is, that

1 material PFAS, probably mostly PFOS, is on the surface of  
2 the lake almost 100 percent of the time, so therefore the  
3 risk of exposure is a lot higher than what's being assumed  
4 in the risk assessment and it's not as high as the visible  
5 foam that you see. It gets much higher for that. But the  
6 other thing is we've brought up a couple of times over the  
7 last six years that that foam, the currents of the lake and  
8 the wind bring that foam to the dam. It's on the surface.  
9 And ultimately it does go through the dam into Lake Huron.  
10 And we brought up the fact of it should be investigated on  
11 how much pounds per day, pounds per on a mass basis is going  
12 through there in a year to see if it warrants. And I would  
13 say it does warrant some review for reflection as an IRA.  
14 So --

15 MR. STEVE WILLIS: And we have done, as part of  
16 the RI, we have done surface water sampling both in the lake  
17 and in the river downstream of the dam and so we've got that  
18 data available.

19 MR. DAVID WINN: Steve, I want to make a -- the  
20 surface, the surface water data that you've collected around  
21 the, the lake, at what depths, Paula? At what depths were  
22 that surface water taken?

23 MS. PAULA BOND: Six inches and three and a half  
24 feet.

25 MR. DAVID WINN: Okay. Not on the surface of the

1 wa-, of the water?

2 MS. PAULA BOND: The zero to six inch, yes.

3 MR. DAVID WINN: Okay. So not the micro layer?

4 MS. PAULA BOND: Not specifically the micro layer,  
5 no.

6 MR. DAVID WINN: Where all the PFAS is.

7 MR. STEVE WILLIS: But it does include the micro  
8 layer as well as that interval down to six inches.

9 MR. ARNIE LERICHE: But that guidance is going to  
10 be changing if anyone in DOD looks at Jennifer Fields' study  
11 because they did two reports out to the public that say  
12 there's a high bias when samplers go out to sample surface  
13 water if they're not below the surface before they start any  
14 sampling because it gets concentrated on the surface. It's  
15 constantly coming through the waterbody column to the  
16 surface.

17 MR. STEVE WILLIS: I'll, I'll look at her latest  
18 data. I saw a presentation by her that indicated that --  
19 she did a field evaluation of sample collection and sampled  
20 it with a sample container right at the micro surface, she  
21 sampled it putting the, the sample container down below the  
22 surface and opening it and she also did it with a open  
23 container going through the micro layer and down into the  
24 water and collecting the sample. And statistically there  
25 was no signif- -- no significant difference between the

1 three methods. Now I don't know if she's changed that since  
2 that time or not.

3 MR. ARNIE LERICHE: And that's sampling from Van  
4 Etten Lake?

5 MR. STEVE WILLIS: That I -- no, I don't believe  
6 it was specific to here.

7 MR. ARNIE LERICHE: No, I don't think so, either.

8 MR. STEVE WILLIS: I think it was just PFAS  
9 sampling, surface water sampling in general.

10 MR. SCOTT LINGO: You need to do it here.

11 MR. ARNIE LERICHE: Well, the foam's got to be  
12 there for it to ever indicate a difference. We got to be  
13 careful here. I appreciate you mentioning that. I'd like  
14 to get a copy of that, please.

15 MS. JANET ANDERSON: Yeah.

16 MS. DENISE BRYAN: Denise Bryan, Public Health,  
17 Health Officer. I just wanted to say that I do feel the  
18 hazard quotient will be significantly statistically under  
19 reported for the risk to human health and I understand it's  
20 not a public health study. But what I really want to say is  
21 I did a literature search in 2013, and there was, there was  
22 a void of information and data on PFC's. That, that's what  
23 it was called back then. And that our residents and  
24 veterans really are looking for this data and we understand  
25 it doesn't have public health implications. But in the

1 limbo with no data, having it be reliable becomes really  
2 important factor for decision making. But also for  
3 extrapolation for the veterans that were on the base and,  
4 you know, worked with the foam and we did do water testing  
5 of some of the back drains that was water that existed. And  
6 so I just feel as if a accurate hazard quotient would be  
7 calculated with the study which would need to include the  
8 foam, that it also is a then a reliable data that we could  
9 provide to our community members and without it I think  
10 there's going to be a significant, statistical concern with  
11 your data. And reliable data is important to us. Thank  
12 you.

13 MS. JANET ANDERSON: Shall we move on to the eco  
14 portion? It'll go a little faster because similar theme.  
15 So I'll turn it over to Kirby.

16 MS. KIRBY TYNDALL: Great. So we'll start with  
17 there's a lot of parallels between the human health and  
18 ecological risk assessment process so I may kind of go  
19 through these slides pretty quick. But Janet was just  
20 talking about the, the steps that we go through to do the  
21 human health process. This is kind of the big picture,  
22 fundamental elements to the baseline ecological risk  
23 assessment because we were aware that PFAS compounds are  
24 bioaccumulative. We didn't really do the first two out of  
25 the eight-step EPA process which is the screening level

1 evaluation. So we jumped right in to the BERA. We designed  
2 in the problem formulation part of the work plan, the RI  
3 work plan, we indicated what kind of, what the focus of the  
4 assessment would be, developed the conceptual site model in  
5 the work plan and made recommendations for different biota  
6 sampling that would be necessary for our ecological risk  
7 assessment. We looked at exposure for the different  
8 receptors that I'm going to talk about a little more in just  
9 a minute, and then at the end you make estimates about the  
10 adverse effects, potential effects to the various receptors.  
11 So next slide, please.

12 So you start really quick by screening your data  
13 with some standard toxicity values or screening levels by  
14 media, similar to what you do in the human health risk  
15 assessment. EPA does not have -- for example, there's not  
16 any soil screening levels from EPA or the various states for  
17 the PFAS compounds in soil, but SERDP and Argonne National  
18 Laboratory have developed some so we'll be using those in  
19 our evaluation. For surface water EPA proposed in 2022 a  
20 draft water quality criteria, a tier one water quality  
21 criteria, which has a lot more data available for use in the  
22 derivation of it. But California has adopted some, SERDP  
23 has evaluated and provided some, as well as Argonne National  
24 Laboratory and we'll be using those data to screen our  
25 surface water data and the risk assessment. Tier two water

1 quality criteria or water quality standards are, have been  
2 divi-, developed by various states and also by SERDP and  
3 Argonne National Laboratory. And sediment screening levels  
4 have only been developed by SERDP. But we'll be using,  
5 similar to the human health risk assessment, we'll be using  
6 regulatorily-derived values or other values that are  
7 available in the literature, peer reviewed literature.  
8 We're not inventing anything here. We'll be using toxicity  
9 values and benchmarks that are derived by others and have  
10 some regulatory authority behind them generally. Next  
11 slide, please.

12 When we look at our ecological receptors, pathways  
13 and routes, we kind of start at the bottom of the food web  
14 and then build our, our way up. The base of the food web is  
15 generally used for the prey consumption. It's the -- and  
16 it's the plants and the microbes and things like that and  
17 then you work into the other organisms that you might be  
18 concerned about and then for those higher trophic level  
19 organisms, the herbivores, carnivores and omnivores, you'll  
20 look at the environmental media that they eat, and then you  
21 choose indicator species for your evaluation based on the  
22 relationships in the food web and the different feeding  
23 guilds. Next slide, please.

24 And for this site we looked at several terrestrial  
25 ecological receptors. They may not be your exact favorite

1 ones that you, you might want to protect here, but we're  
2 looking at all the different feeding guilds. So we've got a  
3 tree swallow that represents an insectivore, I believe, an  
4 American Robin, that's more of an omnivore. It'll eat  
5 worms, but it eats a lot of seeds. And so we look at  
6 literature-based values from EPA and other things for  
7 ingestion rates for all of these different species. The  
8 Red-tailed Hawk is obviously higher in the food chain and  
9 eats primarily small rodents. And so we collected some  
10 rodent data for this evaluation. We can model uptake into  
11 other foods, food and prey items if we don't have the data.  
12 We collected terrestrial plant data that we'll use. We can  
13 model terrestrial invertebrate concentrations that animals  
14 such as the shrew and the vole will be eating. We've  
15 identified an Eastern Cottontail as well raccoon for our  
16 terrestrial indicator species. Next slide please.

17 So we identified similarly, we identified several  
18 aquatic ecological receptors that'll be evaluated. So  
19 unlike human health where we look at, you know, a human:  
20 child, adult and adolescent, we look at all of these various  
21 species individually with their own assumed ingestion and  
22 der-, contact pathways. So we also are look -- we'll be  
23 considering a Mallard, a Spotted Sandpiper. The Spotted  
24 Sandpiper was chosen because they eat a lot of sediment  
25 while they're feeding so they have an increased exposure



1 through that pathway. The Belted Kingfisher is a, it eats  
2 primarily small fish. So the question was asked about we  
3 don't really eat chub, but this, that information will be  
4 used directly to assess exposure for the Belted Kingfisher.  
5 Likewise, the Bald Eagle, we'll be looking at variable fish.  
6 He eats bigger fish than, say, the kingfisher. So we'll be  
7 looking at a whole body concentration for the fish that we  
8 caught that an eagle might eat. Same with an American Mink.  
9 They'll eat some fish. They'll have some reptiles, they'll  
10 eat frogs and different things. So we're looking at their  
11 exposure by each different indicator species and we have  
12 represented all the different feeding guilds in these var-,  
13 for these various habitats. So we'll look at the  
14 microphytes and algae in the water, as well as the  
15 invertebrates that might be there. We'll model what their  
16 concentrations would be. And then assume, calculate with  
17 the body burden for the pumpkinseed, bluegill, and the trout  
18 will be, too. And, again, that Brown Trout may not  
19 necessarily be the fish that's most prevalent in that area,  
20 but we'll use that body burden that we estimate for the  
21 trout to represent pike and walleye and steelhead because  
22 they're in the same trophic level in the feeding guilds.  
23 Next slide, please.

24 So then we ask part of the assessment, end point  
25 assessment of the BERA is, are a couple of key questions

1 that we're trying to protect or predict in our evaluation.  
2 What concentrations of the COPECs -- the COPEC is an acronym  
3 for Chemicals of Potential Ecological Concern -- on- and  
4 off-base within the Project Boundary sufficient to cause  
5 decreased survival, growth, and reproductive of local  
6 populations of our indicator species? Are the COPEC  
7 exposures and risk estimates significantly greater than the  
8 reference areas? We have col- -- we'll have collected -- we  
9 have collected or I guess Aerostar really did, collected  
10 data in reference areas so that we can compare to kind of do  
11 some ground truthing with what we're estimating using our  
12 uptake models and exposure assumptions. So if yes, is there  
13 an evidence -- is there evidence of an ecological,  
14 biological impairment? And then are risk estimates  
15 dominated by specific COPEC- -- C-O-P-E-C, COPEC, in a  
16 particular exposure medium? Is it in a particular area that  
17 has elevated risk? So this really informs the FS as to what  
18 media and where we should be focusing efforts. Next  
19 question -- or next slide, please.

20 So this, so for the animals that eat other animals  
21 or that eat vegetation, we have to estimate -- if we don't  
22 have the data for it, we will estimate using standard media  
23 to tissue bioaccumulation factors and model what their daily  
24 intake would be. And this has provided the assumptions --  
25 or the bioaccumulation factors are provided in the risk

1 assessment work plan. They're derived generally by EPA or  
2 provided by others from the literature. So those are fully  
3 described in the risk assessment work plan already. Next  
4 slide please.

5 And this is just an overview of the ecological  
6 risk assessment characteriza- -- risk characterization that  
7 we'll go through. We go through the screening level which  
8 we really are not doing because they're bioaccumulative.  
9 Focus those compounds for the, that are the of greatest  
10 concern, greatest potential concern in the ecological --  
11 baseline ecological risk assessment. And then at the end of  
12 the process you look at the risk description that interprets  
13 risk estimates by lines of evidence so you can wrap all of  
14 that in, synthesize it into something that makes sense and  
15 helps guide any remedial activity for ecological receptors.  
16 Next slide, please.

17 And similar to calculating risk for humans, you're  
18 going to divide exposure by the toxicity value that we  
19 identified which, again, they're usually developed by EPA or  
20 another regulatory agency or we'll find appropriate values  
21 in the literature. You'll divide the exposure by that  
22 toxicity value and come out with a hazard quotient. You  
23 will generally if it's less than one, there's a high  
24 likelihood that there's not going to be any impacts to that  
25 ecological receptor. And if the hazard quotient is greater

1 than one, that indicates that there is a potential for  
2 impacts to the ecological receptor and that might warrant  
3 further evaluation. Next slide, please.

4           Similar to the human health risk assessment you  
5 look at your evaluation and identify any uncertainties  
6 because we often will be multiplying a highly conservative  
7 assumption like exposure or ingestion rates to the, the high  
8 end or the 95th percent upper confidence limit of your data.  
9 And these, these uncertainties can compound so you'll want  
10 to look at them, at, at your risk estimates at the end of  
11 your evaluation to identify sources of uncertainty.  
12 Sometimes you'll do a qualitative assessment of that or a  
13 quantitative analysis if you have enough information. And  
14 that just helps inform the confidence of the evaluation.  
15 Next slide, please.

16           So key take home points for both evaluations. The  
17 Air Force follows applicable risk assessment guidance and  
18 policy; human exposure can potentially occur var-, via  
19 various pathways including fish and game. And we feel like  
20 we've got a comprehensive list of exposure receptors and  
21 pathways and they'll be, as Janet indicated, some of them  
22 will be aggregated if you're a resident and you also fish,  
23 those will be added together. Ecological receptors will  
24 include fish, invertebrates, plants, mammals, and birds.  
25 And their exposure of the food chain is evaluated in that,

1 in, in the BERA.

2 And the science and the regulatory landscape  
3 continues to change rapidly as we saw yesterday. EPA came  
4 out with some new values for us to include. So I'm, we're  
5 all very happy that it happened yesterday and not the end of  
6 July or something that we're having to re-run all our  
7 numbers. We stay abreast of that, those changes and it's,  
8 as you can imagine, it's a rapidly evolving field. And then  
9 things to watch: DOD policies, USEPA guidance, changing  
10 PFAS toxicity information. It's -- there's lots to watch  
11 out for and, and keep your eye on, so -- next slide, please.  
12 Any questions for the ecological risk assessment process?

13 MR. DAVE CARMONA: Dave Carmona. How do the biota  
14 receptors HQ information inform the human receptor factors  
15 or are these separate and independent for different uses?

16 MS. KIRBY TYNDALL: They're separate and  
17 independent. I mean, the fish information will be obviously  
18 used in the human health risk assessment. But it, like --  
19 well, for fish for human health you look at the filet data  
20 whereas for an ecological receptor you look at the whole  
21 body concentration since the, the critter that's eating it  
22 eats the whole fish.

23 MR. DAVE CARMONA: Okay. There's no chance that  
24 if you get an HQ less than 1 say in fish, say in the trout  
25 that you sample, is there the possibility that you could

1 eliminate that from HQ's portion of the human factors?

2 MS. KIRBY TYNDALL: No. Those would be completely  
3 different, so --

4 MR. DAVE CARMONA: Okay.

5 MS. KIRBY TYNDALL: So it may be possible that  
6 the, the risk to the fish itself is acceptable, but the ri-,  
7 risk to the human consuming the fish may not be.

8 MR. DAVE CARMONA: Okay.

9 MS. KIRBY TYNDALL: Does that, does that --

10 MR. DAVE CARMONA: Yep, makes sense. Thank you.

11 MS. KIRBY TYNDALL: Uh-huh.

12 MS. AMY RAUSER: Rex Vaughn has a question on the  
13 line.

14 MS. KIRBY TYNDALL: Rex?

15 MR. REX VAUGHN: Yeah, this is Rex Vaughn,  
16 Community RAB. I'm a little puzzled that there's not more  
17 customization in the, in the analysis to the species that  
18 actually exists in the area. You know, and it goes back to  
19 an earlier question about why didn't you include pike and  
20 walleye which they tend to be a very popular species and may  
21 have different, different individual biology that makes them  
22 different in how they absorb PFAS compounds. And I, I don't  
23 think we got any kingfisher around here. Why, why are we  
24 using that bird to be part of the evaluation when, you know,  
25 you ought to be looking at blue heron or some of the other

1 species that are prevalent in the area. Is it because of  
2 lack of data or it a standardization in the procedures? Why  
3 can't you customize the species to the area where you're  
4 actually studying?

5 MS. KIRBY TYNDALL: Well, it, the kingfisher  
6 represents that feeding guild and we will be looking to, you  
7 know, if it, if there's a heron available, he probably eats  
8 about the same amount per body weight. So we pick species  
9 that there's information about their dietary patterns and  
10 consumption rates. So we pick species for that. And then  
11 also smaller home ranges because that means that they're  
12 eating in this area a longer period of time. So all those  
13 things get considered.

14 You know, if there's a specific species that, you  
15 know, is here that wasn't evaluated, I mean, we can  
16 certainly point you to the, the surrogate that we used in  
17 the evaluation. But the kingfisher is often present in, in  
18 areas where there's water.

19 MR. REX VAUGHN: But possibly not around here.  
20 That's the point.

21 MR. GREG SCHULZ: I have them at my house.

22 MR. SCOTT LINGO: Yeah. They're here.

23 MS. KIRBY TYNDALL: I mean, I don't know. I --

24 MR. SCOTT LINGO: Yeah, there are.

25 MR. REX VAUGHN: I've never seen one on my beach.

1 Let me put it that way.

2 MS. JANET ANDERSON: We, we did have the Forest  
3 Service review our species selection and had a discussion  
4 with them, too, to confirm, again, representative species.  
5 We're not trying to pick, you know, every and all species or  
6 the most common. We're trying to make sure we identify  
7 representative species from different feeding guilds and  
8 trophic levels and ones that we have really reliable data on  
9 their consumption patterns.

10 MR. REX VAUGHN: Oh, that's why -- that's what it  
11 comes down to is the availability and reliable data is what  
12 you're really limited by; is that correct?

13 MS. JANET ANDERSON: Well, yes, yeah. But we do  
14 want to make sure it is representative of all the feeding  
15 guilds and trophic levels that are here, and we did solicit  
16 input from the biologist and the Forest Service as well.

17 MS. KIRBY TYNDALL: And we will definitely be  
18 looking at the, the EGLE collects fish data. They have  
19 walleye data. We'll be looking at that and comparing it to  
20 what this, the RI data suggests. But, so it's not that  
21 we're not going to at all look at walleye, but we collected  
22 what we collected, or --

23 MR. REX VAUGHN: Yeah. I, I think, I think the  
24 local community, community would be a lot more confident in  
25 your, in your results if you did include some very popular



1 local species.

2 MS. KIRBY TYNDALL: Okay. Thank you. Yes?

3 MR. SCOTT LINGO: Scott Lingo, Community RAB.

4 When you're mentioning the different fish, the kingfisher,  
5 or, excuse me, the different birds and mammals, the  
6 kingfisher and that, are those species collected here  
7 locally around Wurtsmith Air Force Base or is that a species  
8 list that was given to you by, say, the Forest Service or  
9 MDNR that said these are typical species within our area and  
10 then you have taken data from different locations and  
11 applied that to this area?

12 MS. KIRBY TYNDALL: Yes. I mean, usually  
13 they're -- I mean, the, the kingfisher's ingestion rate is  
14 provided by EPA, like --

15 MR. SCOTT LINGO: Okay. But so you haven't  
16 collected species, those species around Van Etten Lake?  
17 That's just data that you've pulled out that was collected  
18 somewhere in the Midwest and not here within Iosco County,  
19 Oscoda Township, Van Etten Lake area?

20 MS. KIRBY TYNDALL: No, we didn't go collect a  
21 bunch of kingfisher data, but we can model what his body,  
22 body burden is based on the data that we did collect and  
23 that's very typical of an ecological risk assessment. I  
24 don't feel very good collecting a bunch of animal data. I  
25 mean, --

1 MR. SCOTT LINGO: Well, --

2 MS. KIRBY TYNDALL: -- because it kills them.

3 MR. SCOTT LINGO: -- I don't feel very good living  
4 here and knowing that you're pulling data from the Midwest  
5 and not Iosco County, though, you know. That's what we're  
6 all trying to find out is what is the effect of consuming  
7 our local fish, our local deer on human beings and our  
8 children and future generations? We want to know what's  
9 affecting us here locally, not data brought in from South  
10 Dakota, North Dakota, Minnesota, you know. We want to know  
11 what's happening local. So to me, all of this data that  
12 you're talking about doesn't apply to Oscoda.

13 MS. JANET ANDERSON: I'm confused, I think. I'm,  
14 I'm confused about what data doesn't apply to --

15 MR. SCOTT LINGO: Well, you're talking about these  
16 samples and, and you're looking to put together this health  
17 risk quotient but you're not looking at species that are  
18 here, they haven't been collected here to detect.

19 MS. JANET ANDERSON: All of the concentration, all  
20 of the PFAS concentration data from either biotic or abiotic  
21 media are here, local, and we'll use that to model to the  
22 species we don't have data for. What Kirby was talking  
23 about is sort of ingestion rate and, like, the, what the  
24 food web looks like, how much insects does the kingfisher  
25 eat versus water ingestion. That stuff is extrapolated from

1 data everywhere. That's not specific to Oscoda. But the  
2 concentrations of PFAS are all local.

3 MR. REX VAUGHN: All right. Let's remember the  
4 kingfisher is a tropical bird. I don't think Oscoda is  
5 tropical.

6 MR. SCOTT LINGO: Well, I guess I just don't -- my  
7 understanding, when I think of a sample I would think it of,  
8 you know, okay, well, let's see if this substance is found  
9 in a local species that might feed on fish along the Pine  
10 River or Van Etten Lake, you know. I guess that's, that's  
11 what my assumption was.

12 MS. JANET ANDERSON: Right.

13 MR. SCOTT LINGO: So perhaps I misunderstood.

14 MS. JANET ANDERSON: So that --

15 MR. SCOTT LINGO: When you say sampling.

16 MS. JANET ANDERSON: Right.

17 MR. SCOTT LINGO: To me sampling is I go out, I'm  
18 going to troll. I'm going to put -- give you five walleye,  
19 you're going to cut, you know, a chunk of the flesh and test  
20 it and see if that PFAS is there.

21 MS. JANET ANDERSON: Yes; yes. And that, the  
22 Aerostar team and our subcontractors, the biologists, did  
23 that locally here. There is maps back there that show you  
24 where they customized with squirrel --

25 MR. SCOTT LINGO: Yeah, I, I'm familiar with that,

1 but they didn't test the walleye and they didn't test --

2 MS. JANET ANDERSON: They were out fishing. I  
3 mean, --

4 MR. SCOTT LINGO: Well, the wrong guy's doing it.

5 MS. KIRBY TYNDALL: But we'll use the, we'll use  
6 the EGLE's walleye data.

7 MS. JANET ANDERSON: We'll use the EGLE data for  
8 here.

9 MR. SCOTT LINGO: Okay.

10 MS. KIRBY TYNDALL: To make sure it's similar with  
11 the, the Largemouth Bass --

12 MR. SCOTT LINGO: Okay. So EGLE did in fact pull  
13 walleye from Van Etten Lake?

14 MS. KIRBY TYNDALL: Yeah. Well, I don't know  
15 exactly where, but I saw samples of Walleye.

16 MR. SCOTT LINGO: Okay. I'm kind of curious as to  
17 when they did it as well because the Pine River and the  
18 AuSable River is a migratory path for walleye. So they  
19 might have got walleye that typically reside within Lake  
20 Huron and only go up into those tributaries to spawn so  
21 they're there for a relatively short period of time. So if  
22 I were conducting a sample, I'd be on Van Etten Lake  
23 probably in August or July when the likelihood of any  
24 migratory fish being within that body of water are very low.

25 MS. AMY HANDLEY: So I just want to add. The

1 samples that EGGLE collected, that's what WRD has done for  
2 the fish advisories if I'm correct. So I, I can't remember  
3 exactly when, but they, that's been ongoing across the  
4 state. So they do have data from here and many other places  
5 so they, they use it holistically, too. So I just wanted to  
6 add that.

7 MR. SCOTT LINGO: So it's not site specific?

8 MS. KIRBY TYNDALL: Well, no, they --

9 MS. AMY HANDLEY: They do have it from here.

10 MS. KIRBY TYNDALL: Yeah.

11 MS. AMY HANDLEY: But I'm just saying, like, they,  
12 it's not just here. Like they have stuff specific to Van  
13 Etten Lake, they have stuff specific to every lake that they  
14 have collected fish from, so --

15 MR. SCOTT LINGO: Okay. Thank you so much. I  
16 appreciate the clarification.

17 MS. KIRBY TYNDALL: Anybody else?

18 MR. MARK HENRY: Mark Henry. As long as were  
19 asking questions. Could you please turn back to slide 64  
20 where it talks about the ecological risk est-, risk est-,  
21 estimation? You explained the hazard quotient here better  
22 than the description that is provided for the hazard  
23 quotient for human health earlier in the presentation.  
24 Saying that the hazard quotient less than or equal to one,  
25 no great impacts. And if the hazard quotient is greater

1 than one, then there is the potential for impacts. Well, as  
2 I recall, I think it was MDHHS did -- circling back to foam.  
3 MDHHS calculated the hazard quotient for foam on Van Etten  
4 Lake and they did it for humans and they found the hazard  
5 quotient to range from 6 for adults to something like 38 for  
6 children. So the hazard quotient has been calculated for  
7 foam, it is very high and yet it is not included in the risk  
8 assessment. It just seems to be omitted on purpose.

9 MS. KIRBY TYNDALL: I mean, I, I think we  
10 understand everybody's concern about that. We do not have  
11 any -- so the, the risk assessment, the baseline risk  
12 assessment, whether you're talking about ecological or human  
13 health looks at the data that we've got in RI because that's  
14 the effort here that can be tied back to a remedy. We can  
15 qualitatively evaluate it. We can carry over the MDHHS's  
16 recommendations or summary. We can certainly consider it.  
17 It's on our conceptual site model. I don't know that I can  
18 do anything, we can do anything more than that.

19 MR. MARK HENRY: Figure out a way to include it in  
20 the overall evaluation of the risks for the site. It just  
21 seems so glaringly obvious that it is a, a, a mass transport  
22 pathway and that that pathway intersects both ecology and  
23 human health and yet it is omitted from the risk assessment  
24 by the Air Force by design. It was not in your scope of  
25 work. So I would just like to point that out. Thank you.

(RAM Member Questions at 7:57 p.m.)

MS. JESSIE HOWARD: All right. Thank you, ladies. At this time I would like to open the floor to any additional RAB member questions and then we'll do public comment after that. Do we have any other questions from the RAB members at this time? Cathy?

MS. CATHY WUSTERBARTH: I do, yes. Actually, I would like to acknowledge Senator Peters' office is here, Kelly Lively, and we appreciate her taking the trip to come over here. So this, this question about the foam is this is not the last time we're going to talk about that because we do have congressional staff that, that pay attention to what's happening here at Wurtsmith and we'll, we'll be talking about it with them, so -- and I'd also like to acknowledge that senator, State Senator Hoitenga's office is also on the line, online. So appreciate their attendance at our, at the meeting, so --

MS. JESSIE HOWARD: Thank you, Cathy. Yeah, Mr. Palmer?

MR. BILL PALMER: Yes. This is Bill Palmer. I'm Oscoda Township Supervisor. I've been involved with this RAB since its inception. And the primary focus of this RAB has always been PFAS. There's good reason for that. It's a very dan-, dangerous group of chemicals that's affecting our water and everything around us. But there are other

1 chemicals that are on the base that have been identified by  
2 the Air Force before the base closed, hence the various  
3 plants, the Mission Street plant, and the -- oh, what's the  
4 other one? -- the --

5 MR. MARK HENRY: Benzene plant.

6 MR. STEVE WILLIS: Arrow, Arrow and Benzene, yeah.

7 MR. BILL PALMER: -- Benzene plant, yes. These  
8 are related to a group of chemicals called volatile organic  
9 chemicals. These, these were, came from, you know, jet fuel  
10 spills, gasoline spills, diesel spills, hydraulic oil, motor  
11 oil, any of those types of substances that have been used by  
12 the Air Force over the decades that this force, this air  
13 base was in place. And my question, it's a couple of phase  
14 question, and that is we've only been discussing PFAS, but I  
15 believe -- and, Steve, you can correct me if I'm wrong --  
16 that the, that GAT filtration does remove the VOC chemicals  
17 from the groundwater if it, if it's there; is that correct?

18 MR. STEVE WILLIS: That's correct.

19 MR. BILL PALMER: And it does, does it foul up  
20 the, the carbon filtration systems?

21 MR. STEVE WILLIS: It, it does have a tendency to  
22 shorten the life of the carbon, yes.

23 MR. BILL PALMER: Okay. And the other part of the  
24 question is and what brought this to my mind is when we're,  
25 now we're at this step where we're doing a, a health



1 assessment of the, of the, of the base and the only thing  
2 that's being considered are the PFAS. And I'm wondering if  
3 the VOC chemicals are being considered as part of that  
4 investigation or will be at some point because those  
5 chemicals still exist on the base. At one, at one point  
6 they were flowing off the base, was one of the reasons that  
7 the Air Force extended a water main down M-41 across from  
8 the base because people were turning on their taps.

9 The stories I've heard when they turned on their  
10 tap water it smelled like kerosene. So those chemicals --  
11 but the Benzene plant, the Mission Street plant, all the  
12 years that those operated did remove some of those VOC  
13 chemicals, but they are, and my understanding is they're  
14 still present on the base. And so when we're doing a health  
15 assessment, I'm wondering if any of that is taken into  
16 consideration. Thank you.

17 MS. JESSIE HOWARD: Yes, Arnie?

18 MR. ARNIE LERICHE: Arnie Leriche, RAB. I'd like  
19 to look at one of the action items. It's on page 2 of the  
20 handout for ongoing. And this one relates to the storm  
21 sewers, when were they last sampled and how often was the  
22 sampling program basically for those? And that was a year  
23 and a half ago when I asked that. In May of last year  
24 almost to the day, it was the 17th of May last year, Beth  
25 updated us saying that the first round of sampling was done

1 and was done, completed, and they're awaiting the second  
2 round of results, so a second sampling, but that was a year  
3 ago and they're waiting for results and there's not been an  
4 update of this. And somehow I talked to Mike Munson from  
5 the airport representative and, and so who is watching that  
6 and what's the status of it? And if an answer could come  
7 out in the near future unless you have one, you know?

8 MS. AMY HANDLEY: I'll have to check with our WRD  
9 staff because they're involved in, in monitoring that.  
10 That's not my office specifically but I'll check in with  
11 them and see what they have and then I'll get back to you on  
12 that, Arnie.

13 MR. ARNIE LERICHE: I'd also suggest that the Air  
14 Force track who owns which storm sewers and any other  
15 property if it's not obvious in the transfer because your  
16 knowledge about the, that storm sewer is who owns it. Do  
17 you know?

18 MR. STEVE WILLIS: It, it depends on where it is.  
19 Some of it's owned by the airport, some of it's owned by the  
20 township.

21 MR. ARNIE LERICHE: So below the outfall -- I  
22 mean, to the outfall, is that one owner?

23 MR. STEVE WILLIS: I don't think it's that clear  
24 cut.

25 MR. ARNIE LERICHE: No, I mean not to the river.

1 That's a different figure; right? Those?

2 MR. STEVE WILLIS: No. I'm saying the, the storm  
3 water system on the former installation boundary in some  
4 areas is owned by the airport, and some areas is owned by  
5 the township. I think the township owns the predominance of  
6 it, but there --

7 MR. ARNIE LERICHE: Okay.

8 MR. STEVE WILLIS: -- it's not a clear this  
9 belongs to one and this belongs to the other. There's some  
10 segments that span between owners, so --

11 MR. ARNIE LERICHE: Okay. Could there be a color  
12 coded just for that? Map done? Because it's going to be  
13 potentially a problem of which agency of those two is  
14 keeping their thumb on the Air Force to, to get it done to  
15 fix the leaking conduits.

16 MR. STEVE WILLIS: We, yeah, we could put a color  
17 coded map together.

18 MR. ARNIE LERICHE: Appreciate it.

19 MS. JESSIE HOWARD: Did we have any other  
20 questions from the RAB specifically? No? Not at this time?

21 MR. ARNIE LERICHE: One real quick one.

22 MS. JESSIE HOWARD: Okay, Arnie. Go right ahead.

23 MR. ARNIE LERICHE: In the slide 50 on the risk  
24 assessment, there's a term "project boundary." Now we've  
25 heard a lot from the Air Force about the boundary of --

1 property boundary of the Air Force when it was active here;  
2 right?

3 MR. STEVE WILLIS: Uh-huh.

4 MR. ARNIE LERICHE: And that does not include what  
5 may have been leased I don't think, but that's not my  
6 question. My question is the project boundary, what's the  
7 definition of "project" to know where the decisions -- we  
8 would like to know how and where the decisions were made on  
9 where some of these risk assessment, the species and so  
10 forth, the sampling. I know that there's a map that shows  
11 locations, but what drove you to make those based on --

12 MR. STEVE WILLIS: That's -- that is a good  
13 question and we are working on site boundaries. Obviously  
14 the plumes extend beyond installation boundary. And so we  
15 are, we are working on establishing boundaries that'll be  
16 used both for the risk -- the RI and the risk assessment and  
17 then I will use them for funding, to track funding because I  
18 have to track all of my funding against a site.

19 MR. ARNIE LERICHE: Okay.

20 MR. STEVE WILLIS: So, so we are in the process of  
21 establishing the site boundaries for both the RI and the RI  
22 report.

23 MR. ARNIE LERICHE: Because at one time about a  
24 year and a half ago you had a map that showed on the east  
25 side, on the southeast side of the base, the old gate

1 basically, that, that exit from the base, that the plume,  
2 one of the plumes went on the east side of Van Etten Creek  
3 and you had a plume over there. Some of it was estimated --  
4 I don't know if there was a sample taken over there, so that  
5 would become --

6 MR. STEVE WILLIS: So the boundaries will  
7 incorporate all the plume that's been delineated. There's  
8 actually site boundaries in the, in the original UFP QAPP  
9 for the RI. There's a, there's a map in there that's got  
10 several different boundaries. It's got IR -- the legacy IRP  
11 sites. It also identifies all the AFFF areas, and then it  
12 also has four PFAS boundaries but those PFAS boundaries that  
13 are in that QAPP don't incorporate all the plumes now that  
14 we've done all the stepouts and all the delineation. And so  
15 we are in the pos-, process of evaluating the extent of the  
16 contamination and matching up site boundaries with that.

17 MR. ARNIE LERICHE: Amy, is your division involved  
18 in tracking that with them or -- this is not news.

19 MR. STEVE WILLIS: They, they have not -- they,  
20 they have not been involved in those discussions. Those are  
21 all ongoing internal Air Force discussions at this point.  
22 Once we --

23 MR. ARNIE LERICHE: Sounds like a thing, though.  
24 It's something that needs to be done.

25 MR. STEVE WILLIS: Oh, absolutely.

1 MR. ARNIE LERICHE: Okay.

2 MR. STEVE WILLIS: That's why we're doing it. And  
3 when --

4 MR. ARNIE LERICHE: So could it be added to the  
5 BCT meeting next week? So at least --

6 MR. STEVE WILLIS: No. It's not something that  
7 we're ready to discuss yet.

8 MR. ARNIE LERICHE: The concept that you're doing  
9 it is what I'm getting at because we rely on EGLE quite a  
10 bit to protect us from contamination. So, anyways, I'll  
11 stop there.

12 MR. DAVE CARMONA: So, Steve, basically what  
13 you're saying the original boundaries of this were  
14 established in the scope and that was the base outline and  
15 now you've seen where it's moved off the base and so you're  
16 expanding the scope of what you're doing for looking for  
17 PFAS and contamination based on your data stepouts?

18 MR. STEVE WILLIS: So, so at this point we are  
19 establish -- we're working on establishing boundaries based  
20 on the extent of the contamination that has been identified  
21 in the RI. The boundaries that were in the work plan are  
22 much smaller. We now know that contamination in groundwater  
23 extends much further in several directions. We've also  
24 identified PFAS in soil that exceeds criteria that is not  
25 currently captured in a site boundary. We need to expand

1 the boundaries to incorporate that so when they do the risk  
2 assessment they include all those sample locations in the  
3 data.

4 MS. JESSIE HOWARD: Okay. I know that we do have  
5 a question from Mark Henry virtually. Mark, go ahead when  
6 you're ready.

7 MR. MARK HENRY: Oh, good. Sorry, Tony. This  
8 ties right in with Arnie's question about project boundary.  
9 Does the project boundary for the risk assessments include  
10 the area between Van Etten Lake and Lake Huron where  
11 contaminant, PFAS contamination has been found within a  
12 stone's throw of Lake Huron in that direction?

13 MR. STEVE WILLIS: At this point we're still  
14 working on the boundaries. So it, it'll -- the boundaries  
15 will encompass all the, all the data we've collected and are  
16 using for the RI.

17 MR. MARK HENRY: The residential well data that  
18 MDHHS has collected is not part of the RI and as far as I  
19 know, the Air Force has not conducted any investigation to  
20 the east of US-23. So will the project boundary include the  
21 detections of PFAS in residential wells between the east  
22 side of Van Etten Lake and Lake Huron?

23 MR. STEVE WILLIS: I can't answer that question at  
24 this point, Mark. We're still looking at the data.

25 MR. MARK HENRY: Thank you.

(Public Comment at 8:10 p.m.)

MS. JESSIE HOWARD: Okay. So I'm just going to quickly review the public comment guidelines and then we will begin with that portion. Rule number one, please raise your hand either if you're here in person or if you're with us virtually. Number two, when I acknowledge you, someone if you're in the room will bring you a microphone or I will ask you to speak when you're ready if you're with us virtually. Please remember to say and spell your name for the record. Number three, please keep your comment to three minutes or less. And number four, remember that your comment will be addressed at a later time if the RAB members determine that a follow-up is needed. I know that we do have Tony with us virtually who would like to give a public comment. So, Tony, go ahead and address the RAB when you're ready.

TONY SPANIOLA

MR. TONY SPANIOLA: Thank you, Amy (sic). My name is Tony Spaniola. Last name is S-P-A-N-I-O-L-A. And I just want to make some comments to put some things in context. I think that, that many of the concerns that have been raised tonight by the RAB members are eminently reasonable and I think some context will perhaps help even further to illuminate their concerns. With regard to the foam, there is in fact a very detailed health analysis that was done by



1 the Health Department in 2019, and that's been discussed  
2 already. The hazard quotient came in between 6 for adults,  
3 38 for kids. That's astronomically high. And I think that  
4 it's important to understand when you come to Oscoda, when  
5 you live in Oscoda, particularly around the lake, there's  
6 foam everywhere and it's a constant reminder of the fact  
7 that we've been at this now -- we're in the 15th year and  
8 we're still having foam pile up all over the place. And  
9 when we look at the history of what's going on with the foam  
10 discussion -- and this involves people who were not on the  
11 Air Force side of things now, but going back to 2017 when  
12 this originally came out, and we were originally told by the  
13 Air Force that the foam was from washing machine detergent.  
14 And so the concern about the Air Force coming at this with  
15 blinders on is pretty deep seated. So the, the comment here  
16 tonight, and we understand it's not in the scope of work,  
17 but I think what's being said, at least the way I feel about  
18 it is let's -- we have an opportunity to make it right,  
19 let's make it right, let's include it in the analysis and  
20 the analysis will be complete. With regard to the analysis,  
21 the fact that essentially this is it, this is the only  
22 comment we can informally or formally allowed to make  
23 without even seeing it, I would ask the Air Force to  
24 consider providing a draft of the, of a risk assessment to  
25 the RAB and to the community before it's finalized so that

1 we don't get to the end and have questions come up after the  
2 fact that really, you know, could be addressed and resolved  
3 prior to its finalization.

4 I also want to point out the concerns that were  
5 raised tonight about the Three Pipes drain. Again, just  
6 briefly to put it in context. Three Pipes dumping large  
7 amounts of PFAS directly into the AuSable River and those  
8 pipes are located right next to a beach. We're not talking,  
9 you know, a mile away, a half mile away. We're talking  
10 right next to a beach. That's the concern. And as we talk  
11 about beaches and concerns, I switch for a moment -- and I  
12 just want for the record to state that there is a continuing  
13 concern and I hope it's going to be addressed, that the  
14 Alert Aircraft Area interim remedy excludes the beach at the  
15 public campground and doesn't include the entire plume.  
16 That's just for the record just to point out that that's a  
17 continuing concern that we have that we hope is addressed.

18 And, finally, I would just like to say that  
19 there's been an issue brought up before that, again, for the  
20 record we need to do testing under Van Etten Lake. We've  
21 talked to a number of experts, a number of CERCLA experts  
22 and given the situation it is eminently reasonable and in  
23 fact we're, we're being advised required. I hope that's  
24 something that will get incorporated into the, the, the RI  
25 and that action will be taken on it. Thank you and thank

1 you all for coming. Thank you to the RAB members for their  
2 hard work.

3 MS. JESSIE HOWARD: Thank you, Tony. Did we have  
4 any other members of the public who would like to make  
5 comment?

6 MS. KELLY LIVELY: Just a --

7 MS. JESSIE HOWARD: Oh, he's going to bring you a  
8 microphone real quick.

9 KELLY LIVELY

10 MS. KELLY LIVELY: Kelly Lively, L-I-V-E-L-Y, from  
11 Senator Peters' office. And I guess we're talking about the  
12 foam and trying to include it in this scope. My question  
13 would be how do we change the scope? How fast can we change  
14 that scope to include it? Like what is your procedure and  
15 how can you report that back so that the members of the RAB  
16 can be satisfied that that can be done? And then the Three  
17 Pipes. All I can say about the whole Three Pipes thing is  
18 that tonight I kept hearing information go back and forth  
19 that I couldn't really understand and come up with a clear  
20 picture of when the work would be done or when the testing  
21 would be done. The questions -- the answers seemed to ob-,  
22 obfuscate a clear answer.

23 MS. JESSIE HOWARD: Thank you, Kelly.

24 JOHN JANIAC

25 MR. JOHN JANIAC: John Janiak, J-A-N-I-A-K. I

1 work with USA Jet Power on the base. We're a tenant of  
2 OWAA. Our number one concern for the vapor intrusion is the  
3 safety of our people and we will continue to seek clarity  
4 and confirmation that the current situation in the shop  
5 right now is that there is no imminent health hazard or  
6 mitigation required at this point. And we'd, we'd like some  
7 support to hear further from MDHHS, their opinion. We, we  
8 heard your statement this morning or this evening. It was  
9 quick. So I'd ask for a copy of that in writing so that I  
10 can deliver it home and we take a, a good view of what's  
11 going on. So thank you for your time.

12 MS. JESSIE HOWARD: Thank you. Anybody else with  
13 us in the room who would like to make a public comment?  
14 Amy, do we have anybody else virtually who'd like to speak?

15 MS. AMY RAUSER: Nope.

16 MS. JESSIE HOWARD: No? Okay. If there are no  
17 other public comments, I would like to turn this over to our  
18 co-chairs for their closing remarks. Mr. Willis?

19 (Conclusion at 8:17 p.m.)

20 MR. GREG SCHULZ: This is Greg Schulz. I'm --  
21 just want to thank everybody for coming out. We've had some  
22 great discussion tonight and I think that's healthy and look  
23 forward to seeing remedies put in place.

24 MS. JESSIE HOWARD: Thank you.

25 MR. STEVE WILLIS: And I'd also like to thank

1 everyone for coming out. It was good to see a couple new  
2 faces from the community. It's always nice to see  
3 additional people wanting to get involved in this. Thanks,  
4 everyone. Have a great evening.

5 MS. JESSIE HOWARD: Thank you.

6 (Meeting concluded at 8:18 p.m.)

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CERTIFICATE

I, Marcy A. Klingshirn, a Certified Electronic Recorder and Notary Public within and for the State of Michigan, do hereby certify:

That this transcript, consisting of 132 pages, is a complete, true, and correct record given in this RAB meeting on May 15th, 2024.

I further certify that I am not related to any of the parties to this action by blood or marriage; and that I am not interested in the outcome of this matter, financial or otherwise.

IN WITNESS THEREOF, I have hereunto set my hand this 28th day of May, 2024.

*Marcy A. Klingshirn*

Marcy A. Klingshirn, CER 6924  
Notary Public, State of Michigan  
County of Eaton  
My commission expires: March 30, 2029

RAB MEETING  
WURTSMITH RESTORATION ADVISORY BOARD

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