



MEETING MINUTES

JOB TITLE	Wurtsmith BECOS		
PROJECT NUMBER	FA89032002	DATE	28 September 2022
TIME	0900-1040 EDT	VENUE	MS Teams
SUBJECT	September BCT Meeting Minutes		
CLIENT	AFCEC		

ATTENDEES

Steven Willis	AFCEC	Beth Place	EGLE-RRD - Superfund
Bryan Lynch	AFCEC	David Kline	EGLE-RRD - Superfund
Denise Miller	AFCEC	Matt Baltusis	EGLE-RRD - Superfund
Jay Mullett	WSP	Lynn Gosson	EGLE-RRD - Bay City
Saamih Bashir	WSP	Charlie Bauer	EGLE-WRD - Bay City
Jared Walbert	WSP	Puneet Vij	MDHHS
Mitchel Dykla	WSP	Mounica Nandula	MDHHS
Justin Gal	WSP	Andrea Keatley	MDHHS
Nick Robb	CTI	Jeremiah Morse	AECOM
Andrea Stawowy	Cherokee Nation		
Ryan Morrish	Cherokee Nation		
Lee Major	Cherokee Nation		
Paula Bond	Aerostar		
Willy Miley	Bay West		

Note:

AFCEC: Air Force Civil Engineer Center
 EGLE: Michigan Department of Environment, Great Lakes, and Energy
 MDHHS: Michigan Department of Health and Human Services
 RRD: Remediation and Redevelopment Division
 WRD: Water Resources Division

The Base Realignment and Closure (BRAC) Cleanup Team (BCT) meeting was held via teleconference. The meeting began at 0900 hours eastern daylight time (EDT) on 28 September 2022 and adjourned at 1040 hours EDT. The Meeting agenda is attached.

1. Welcome and Introductions

- I. J. Mullett opened the meeting with an introduction and roll call. J. Mullett stated that the acquisition of Wood PLC by WSP¹ USA has been finalized.

¹ Effective 21 September 2022, Wood Environment & Infrastructure Solutions, Inc. was acquired by WSP. Due to the acquisition, we have changed our name to WSP USA Environment & Infrastructure Inc. No other aspects of our legal entity or capabilities have changed for this contract.

SEPTEMBER BCT MEETING MINUTES

2. Critical Air Force Updates

I. Air Force

- a) S. Willis stated that the Air Force should be awarding Task Order 5 for additional work under the BRAC Environmental Construction Optimization Services (BECOS) contract later today.
- b) S. Willis stated that the Air Force are awarding a contract to Aerostar for an additional interim remedial action (IRA) at the alert area that will be signed today. B. Place asked if the pilot study at Three Pipes Ditch was part of the Aerostar's contract. S. Willis replied yes.
- c) S. Willis said the Air Force went to the Army Corps for a follow up contract to conduct additional vapor intrusion (VI) work which should also be awarded later this week. S. Willis said that BB&E will be the contractor for the Army Corps for the VI work.
- d) S. Willis said that the Air Force recently awarded a Military Munitions Response Program Remedial Investigation (RI) project to FPM.
- e) J. Mullett asked to be given contact information for the newly awarded contract companies to be added to upcoming BCT meetings. S. Willis confirmed.
- f) B. Place asked S. Willis on the status of the per- and polyfluoroalkyl substances (PFAS) RI comments. S. Willis stated that they are still working on going through the comments and they will get something to them in a couple of weeks.
- g) B. Place asked S. Willis if they have come to an agreement on the monthly PFAS sampling at the LF30/31 discharge. S. Willis stated that it will be included in the quality assurance protection plan (QAPP) Response to Comments (RTCs) that are forthcoming.

II. WSP/CTI – BECOS (Fieldwork and Documents)

- a) J. Mullett said that the 2022 annual sampling event wrapped up a few weeks ago.
- b) J. Mullett said that they are conducting some additional operation and maintenance over the next month in preparation for the upcoming annual gauging event of the entire base that will be begin on 24 October 2022.
- c) J. Mullett stated that under the new Task Order 5, quarterly sampling will be conducted as part of the IRAs that were being executed by Aerostar. The first event for CTS and for FT002 is scheduled to begin on 31 October 2022. The quarterly sampling event is anticipated to take three to three and a half weeks to complete.
- d) J. Mullett said that WSP/CTI have received comments back from B. Place on the Draft Final QAPP. J. Mullett stated that the RTCs and redline of the Draft Final QAPP was submitted back to the Air Force a month ago for review and backcheck. Once WSP/CTI receives approval from the Air Force, they will send over the Draft Final QAPP RTCs with redline to Michigan Department of Environment, Great Lakes, and Energy (EGLE) for backcheck.
- e) J. Mullett stated that the 2021 Annual Pump and Treatment Systems (PTS) Remedial Action-Operations (RA-O) Report was submitted to the Air Force for review and is expected to be submitted to EGLE in early to late November 2022 (pending Air Force approval of RTCs and backcheck of the redline version).
- f) J. Mullett stated that the 2021 Long Term Monitoring (LTM) Annual RA-O Report was submitted to the Air Force for review and is expected to be submitted to EGLE in mid- to late October 2022 (pending Air Force approval of RTCs and backcheck of the redline version).
- g) J. Mullett said that there will be an addendum to the QAPP under Task Order 5 to incorporate the two new IRAs. The QAPP addendum is not expected to be submitted to EGLE until the beginning of 2023.

SEPTEMBER BCT MEETING MINUTES

- h) B. Place asked if the annual gauging would begin on 24 October 2022. J. Mullett confirmed. B. Place asked if the quarterly sampling that is being taken over from Aerostar will begin on 31 October 2022 and will go for a couple of weeks. J. Mullett confirmed the starting date of 31 October 2022 and stated that the quarterly sampling will continue up until 24 November 2022. B. Place asked if the BECOS QAPP comments will be delivered to EGLE in October. J. Mullett confirmed that this was hopefully the case. S. Willis confirmed EGLE should have the QAPP RTCs in the next week or two. B. Place asked if in early to mid-October, EGLE would receive the 2021 LTM report. J. Mullett confirmed that the delivery date would be closer to mid or late-October. B. Place stated that in late October would EGLE receive the 2021 PTS report. J. Mullett stated that the delivery date of the 2021 PTS report would be closer to early November. B. Place acknowledged.
- i) J. Mullett stated that the letter proposing changes to the substantial requirements document (SRD) is being reviewed by the Air Force legal team and will be submitted to EGLE in late October 2022. Once the letter is submitted, then a meeting can be set up with the Water Resources Division (WRD).
- j) C. Bauer asked if S. Willis is in contact with the permits section about monitoring for the SRD. S. Willis stated that they are not in contact with the permits section and that the letter will be addressed to WRD. S. Willis stated that the changes to the SRD are to incorporate the IRAs and clarify the sampling locations and frequencies to WRD, and to propose changes to the sample frequencies for the Mission Pump and Treat System based on supporting historical data. S. Willis said that the letter will be sent in late October 2022.

III. Bay West – Documents only

- a) W. Miley updated the group on the status of Bay West documents (See attached document tracker).
- b) S. Bashir stated that WSP received comments from EGLE on the VIAP RI Report and that few comments are still not resolved. S. Bashir stated that responses to EGLE comments will be ready to be submitted to the Air Force by 29 September 2022. S. Bashir stated that B. Place suggested a sit-down meeting with Air Force and Bay West to resolve open items. S. Willis concurred.
- c) B. Place stated that if several of the reports are received at the same time then EGLE may have to prioritize and push out the 30-day review period for some of the documents. S. Willis agreed to work together on prioritizing.

IV. Aerostar – PFAS RI and IRA (Fieldwork and Documents)

- a) P. Bond stated that FT002 at Clark's Marsh IRA started up last month and that the Van Ettan Lake at Ken Ratliff Memorial Park IRA will be up and running in the next couple of weeks. Baseline/first quarter groundwater sampling was conducted on well networks associated with these new IRA systems and will continue to be carried forward under the BECOS contract.
- b) P. Bond stated that the UFP-QAPP Addendum for Biota Sampling was finalized on 27 September 2022 and uploaded to Box.com for EGLE's review. P. Bond stated that the Risk Assessment Work Plan will be issued final with the comment response table in the next couple of weeks. B. Place asked if EGLE could get the comment response table separate for the Risk Assessment Work Plan, so they can easily manipulate it for their records. B. Place also requested to receive the redline. S. Willis and P. Bond agreed that they will provide both.
- c) P. Bond stated that for the PFAS RI fieldwork, they have completed everything that they can do this year, except for collecting some additional data on the north side of the Au Sable River. P. Bond stated that there are some logistical complexities they are working to overcome to be able to get equipment across the Au Sable River. P. Bond stated that due to the logistical complexities of completing vertical aquifer sampling at monitoring well locations to set well screens, they are contemplating proposing to set and sample Geoprobe prepacked monitoring well screens every ten feet in lieu of completing vertical aquifer sampling.
- d) B. Place asked for some clarification on the potential work to be completed near the Au Sable River and whether existing data is present in this area.

SEPTEMBER BCT MEETING MINUTES

- e) P. Bond stated that they have zero data for this area located at the south end of Clark's Marsh and that they are proposing to install wells with prepacked well screens in three locations, every ten feet in depth, until the Geoprobe cannot drill any deeper.
- f) B. Place stated that EGLE would decide after the call and inquired if M. Baltusis had any comments. M. Baltusis stated that EGLE did not have a problem with Geoprobe prepacked monitoring well screens. M. Baltusis clarified that the drilling procedure would be to advance a soil boring to the maximum depth and install the well screens as the drill rig rods were being pulled out. P. Bond confirmed that would be the process. M. Baltusis mentioned that if the lowest sampled unit had concentrations, that the additional sampling would be needed to define the vertical extent. P. Bond concurred and stated that in the interest of wrapping up the PFAS RI, that the proposed process may be sufficient to collect the data that is needed. S. Willis stated that they recognize that there may be some data gaps, but this approach will allow them to acquire some data in that area and be able to construct a plan for how to proceed going forward.
- g) P. Bond stated that Aerostar will post the figures with the data that excludes personal identifiable information (PII) from the 2022 PFAS RI fieldwork to the OneDrive for EGLE to review once they have received approval from the Air Force.
- h) B. Place asked if EGLE will be receiving figures, data tables, laboratory analytical, and location coordinates for the PFAS RI work.
- i) P. Bond stated data from locations on private commercial properties will not be included on the figures. The figures provided to EGLE will include data collected from private properties, municipal properties, state properties and federal properties. S. Willis confirmed that data tables, laboratory analytical, and location coordinates for locations from private properties, municipal properties, state properties and federal properties can be provided to EGLE and must be marked with PII if it contains any personal information. S. Willis clarified that data from commercial properties can only be shared with EGLE through face-to-face meetings and that data must remain in the possession of the Air Force after the meeting is completed. P. Bond stated that the data should be ready to be uploaded in the next week. P. Bond stated that Aerostar has scheduled an in-person meeting to review the PFAS RI data with Air Force and EGLE for 6 and 7 December 2022 at the Aerostar facility in Tennessee. B. Place asked if they would be looking at all soil and groundwater data in the meeting. P. Bond and S. Willis confirmed that both soil and groundwater data would be reviewed.

3. Critical EGLE Updates

I. EGLE Remediation and Redevelopment Division (RRD) – Superfund Section Updates

- a) B. Place stated that EGLE is eliminating the Part 201 groundwater surface water interface protection criteria for soil. S. Willis sought clarification if the generic criteria would be replaced by a requirement to generate a site-specific criteria, or if EGLE eliminating the groundwater surface water interface pathway for soil all together was a concern. B. Place stated that there was ongoing internal discussion and that it was believed it would be replaced by the requirement to generate site-specific criteria. S. Willis inquired if there would be guidance on how to generate the site-specific criteria. D. Kline stated that there will be guidance coming regarding site-specific criteria, but that it would not be published anytime soon. S. Willis asked if the guidance would be published during the 2022 calendar year. D. Kline responded that he does not anticipate that it would be published during the 2022 calendar year.
- b) B. Place stated that RRD plans to attend the technical meetings and tour of FT002 at Clark's Marsh IRA and Van Ettan Lake at Ken Ratliff Memorial Park IRA that are being conducted at the end of October.

II. EGLE – Bay City District Updates

- a) L. Gosson stated that there are no significant updates at this time.

SEPTEMBER BCT MEETING MINUTES

III. EGLE – WRD Updates

- a) C. Bauer stated that WRD has revised the perfluorooctanoic acid (PFOA) surface water quality standard to a lower concentration. The information is available on WRD's website. C. Bauer said that there will be an overall stricter standard for PFOA.

IV. MDHHS – Fieldwork and new data

- a) P. Vij stated that there are no significant updates at this time.
- b) B. Place requested that P. Vij be included in the meeting regarding the comments on the VIAP RI Report. S. Willis agreed.

4. BCT Meeting Discussion – IRA Update and Transitioning

- I. S. Bashir displayed the attached IRA Update and Transitioning presentation. J. Mullett gave an overall introduction of the presentation. P. Bond went through and presented the slides giving updates on the newly installed IRA systems; FT002 at Clark's Marsh IRA and Van Ettan Lake at Ken Ratliff Memorial Park IRA. J. Mullett took over the presentation and talked about the transition of the operation and maintenance to BECOS. Some key questions/comments are presented below:
 - a.) P. Bond asked if there was a way to get the sampling frequency for chlorine discharge reduced. M. Siler responded saying he thinks there is an opportunity to get the frequency reduced; however, they would have to show the results so far to justify the decision. P. Bond stated that Aerostar plans to sample for total residual chlorine daily in the short term and will request a reduced sampling frequency based on this data.
 - b.) M. Baltusis asked P. Bond to give a brief purpose and utilization of the biocide system. P. Bond stated that data gathered from the new extraction wells indicated that the groundwater contained elevated levels of iron and manganese. The Purpose of the biocide system was to precipitate out the iron and manganese as well as eliminate any bacteria that may cause biofouling in the pressure vessels. S. Willis added that the biocide material will flow through three 4,000-pound pressure vessels in parallel followed by two 20,000-pound pressure vessels in series, making a chlorine detection in the effluent highly unlikely.
 - c.) S. Willis stated that there is a tour for the two new IRAs scheduled for 26 October 2022. The tour is set to begin at 1330. J. Mullett asked if Restoration Advisory Board (RAB) members are being invited or if it is just EGLE. S. Willis stated he is inviting RAB members as well.

NEXT BCT MEETING

An invitation will be issued for the following dates:

- I. 30 November 2022 0900-1100 EDT –Virtual via MS Teams.
- II. 25 January 2023 (Proposed) 0900-1100 EDT – Tentatively Virtual.

WURTSMITH BRAC CLEANUP TEAM (BCT) MEETING AGENDA

DATE/TIME: Wednesday, 28 September 2022, 9:00 a.m.-11:00 a.m. EDT
LOCATION: Virtual Meeting – Microsoft Teams
PHONE ACCESS: (866) 670-1764,, 227269656#

Topic	Purpose	Presenter	Time
Introductions			
Welcome and Introductions	<ul style="list-style-type: none"> • Air Force Team Members (WSP-CTI, Aerostar, Bay West, Cherokee Nation) and other attendees • EGLE Team Members (MDHHS) 	AF EGLE MDHHS	9:00-9:10
Critical AF Updates			
Critical AF Updates	<ul style="list-style-type: none"> • AF – Priority Contracting Actions • WSP/CTI – BECOS – Major upcoming field events and critical document reviews • Bay West – PBR – Critical document reviews • Aerostar – Major upcoming field events and critical document reviews • <i>Updated document tracker to be displayed during above discussions</i> 	AF	9:10-9:30
Critical EGLE/MDHSS Updates			
Critical EGLE Updates	<ul style="list-style-type: none"> • EGLE RRD – Superfund Section Updates – Any new critical information • EGLE – Bay City District Updates – Any new critical information • EGLE WRD Updates – Any new critical information • MDHHS Updates – Any new critical information 	EGLE	9:30-9:50
BCT Meeting Discussion/Presentation – IRA Update and Transitioning to BECOS	<ul style="list-style-type: none"> • IRA Update and Transitioning to BECOS <p>2022/2023 Proposed Topics (Target Dates)</p> <ol style="list-style-type: none"> 1) <i>New RA-O Tasks for 2023 (November 2022)</i> 2) <i>PFAS RI Update (January 2023)</i> 3) <i>TBD (2023)</i> 4) <i>Other Topics?</i> 	Aerostar/WSP All	9:50-10:50

Topic	Purpose	Presenter	Time
Schedule Next BCT Meeting			
Future Schedule	<ul style="list-style-type: none"> • 30 November 2022 (proposed) 0900-1100 EDT-Tentatively Virtual • 25 January 2022 (proposed) 0900-1100 EDT – Tentatively Virtual 	Jay Mullett	10:50-11:00
BCT Meeting Adjourns			

Wurtsmith BECOS – IRA Update and Transitioning



BRAC ENVIRONMENTAL CONSTRUCTION OPTIMIZATION SERVICES (BECOS)
MIDWEST REGION



28 Sept 2022

Acronyms

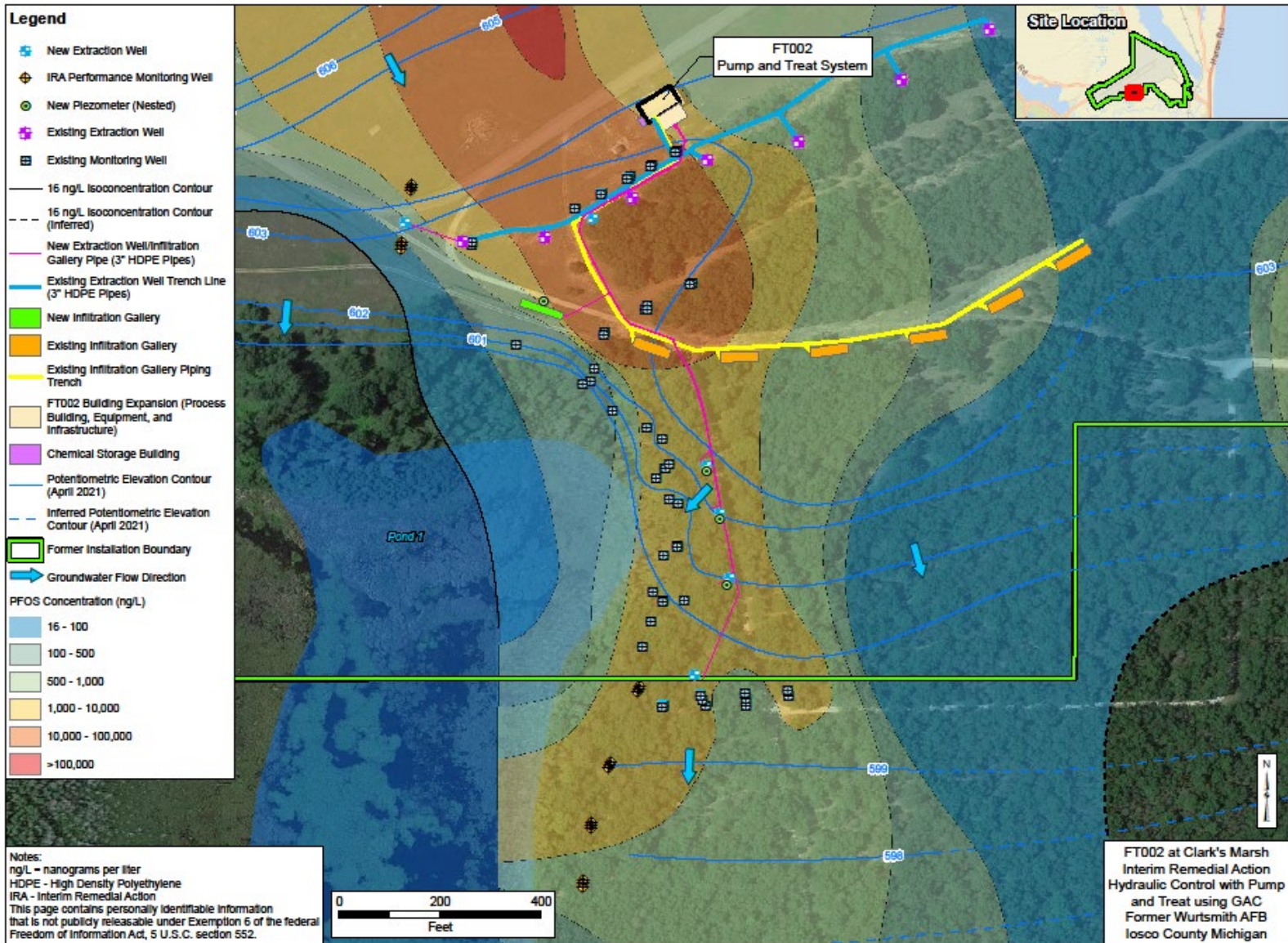
- **BECOS - BRAC Environmental Construction Optimization Services**
- **CTS – Central Treatment System**
- **cy – cubic yard**
- **GAC – granular activated carbon**
- **gpm – gallons per minute**
- **IRA – Interim Remedial Action**
- **lb - pound**
- **O&M – operation and maintenance**
- **PFAS – perfluoroalkyl and polyfluoroalkyl substances**
- **PFOA – perfluorooctanoic acid**
- **PFOS – perfluorooctanesulfonic acid**
- **PTS – pump and treat system**
- **SAC - sacrificial**
- **SRD – Substantial Requirements Document**
- **UFP-QAPP – Uniform Federal Policy for Quality Assurance Project Plan**
- **WRD – Water Resources Division**

Overview

- FT002 at Clark's Marsh IRA – Remedial Action Objective
- FT002 at Clark's Marsh IRA – Remedial Design
- FT002 at Clark's Marsh IRA – Startup, Status, and O&M
- Van Etten Lake at Ken Ratliff Memorial Park IRA – Remedial Action Objective
- Van Etten Lake at Ken Ratliff Memorial Park IRA – Remedial Design
- Van Etten Lake at Ken Ratliff Memorial Park IRA – Startup, Status, and O&M
- Transitioning to BECOS
- O&M of the New Systems
- Updated SRD

FT002 at Clark's Marsh IRA – Remedial Action Objective

- Remedial action objective is to increase the amount of contaminated groundwater that the FT002 treatment system captures and treats, thereby reducing the migration of groundwater containing PFOS and PFOA into Clark's Marsh



FT002 at Clark's Marsh IRA – Remedial Design

- Installation of six additional groundwater extraction wells and one additional infiltration gallery
- Installation of 18 new performance monitoring wells and eight new piezometers
- Installation of three additional GAC vessels for pre-treatment of extracted groundwater
- Installation of a biocide pre-treatment system to suppress biofouling in the pre-treatment GAC vessels
- Installation of additional backwash/settling tanks
- Expansion of the existing FT002 building to provide adequate space for the new equipment

FT002 at Clark's Marsh IRA – Startup, Status, and O&M

- Construction began in November 2021, system started on 16 August 2022
- Baseline groundwater sampling and water level measurements completed in August 2022 on existing and new performance monitoring wells and piezometers
- 18 new performance monitoring wells and eight new piezometers, along with 52 existing monitoring wells were sampled for PFAS

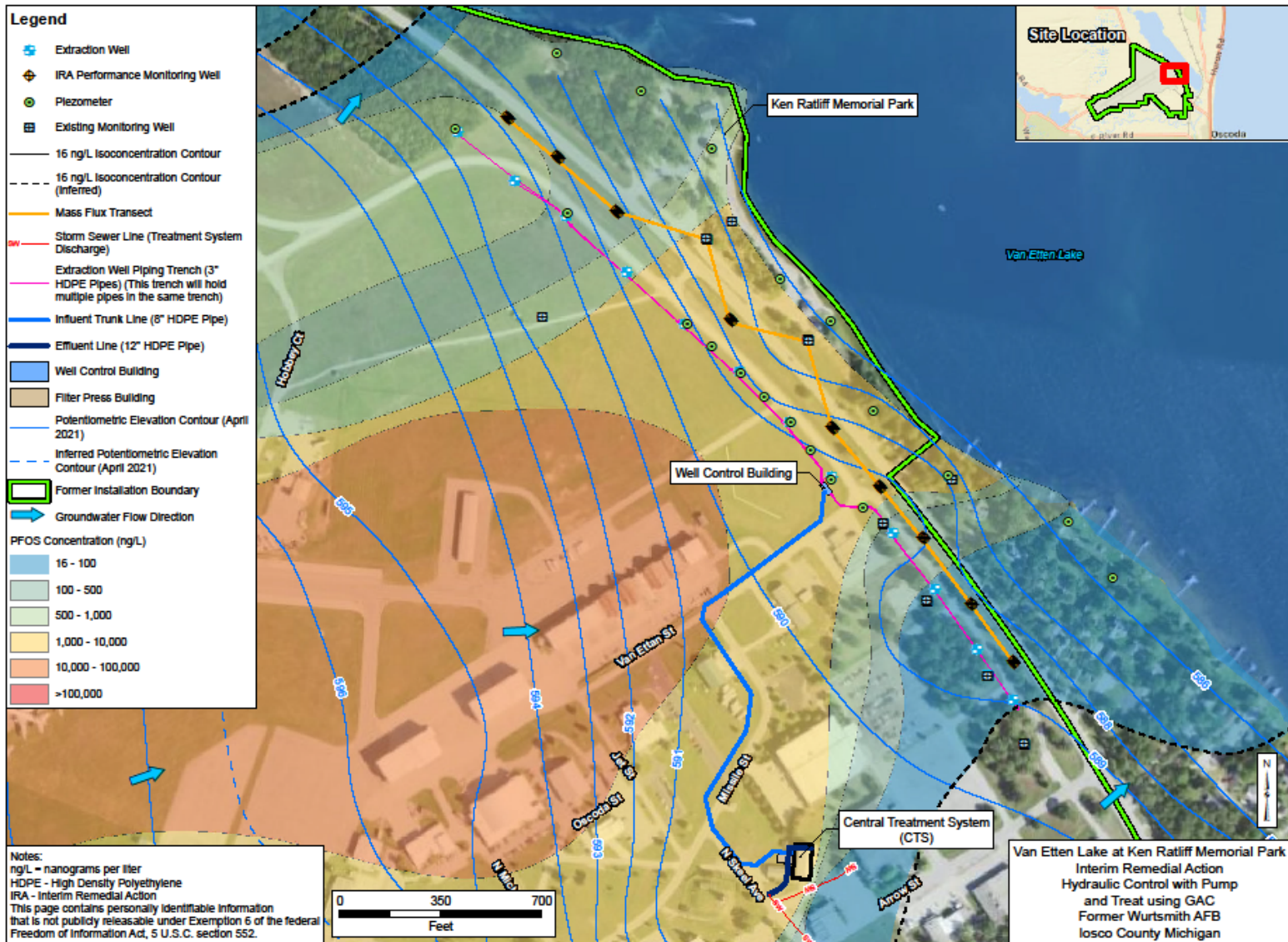
FT002 at Clark's Marsh IRA – Startup, Status, and O&M

- The system total flow is approximately 386 gpm (previous flow was approximately 215 gpm)
- Optimized treatment system sampling ongoing
 - Weekly 22 August – 16 September 2022
 - Biweekly 19 September – 14 November 2022
 - Monthly begins in December 2022
- Results confirm the system is effectively treating PFAS to below SRD discharge levels
- Biocide system approved by WRD 16 September 2022

Van Etten Lake at Ken Ratliff Memorial Park

IRA – Remedial Action Objective

- Remedial action objective is to hydraulically control the migration of PFOS and PFOA contaminated groundwater into Van Etten Lake at Ken Ratliff Memorial Park by extracting contaminated groundwater and treating it at the CTS



Van Etten Lake at Ken Ratliff Memorial Park

IRA - Remedial Design

- Installation of **12** groundwater extraction wells to provide hydraulic control - expected increased flow rate to be approx. 500 gpm (current flow rate is approx. 225 gpm)
- Installation of **27** new performance monitoring wells and **36** piezometers
- Construction of a well control building for routine sampling and operation of the extraction well field
- Installation of three additional **20,000lb** GAC vessels in the existing CTS building
- Installation of equalization, effluent, and settling tanks
- Expansion of the CTS building to house filter press equipment for processing settled solids and sludge (to be used for solids and sludge from FT002 as well)

Van Etten Lake at Ken Ratliff Memorial Park

IRA – Startup, Status, and O&M

- Construction began in February 2022, anticipated system start date October 2022
- Baseline groundwater sampling and water level measurements completed in August 2022 on existing and new performance monitoring wells and piezometers
- 27 new performance monitoring wells and 36 new piezometers, along with 16 existing monitoring wells were sampled for PFAS

Transitioning to BECOS

- **Planned IRAs turnover to BECOS – Upon completion of the 90-day start-up period (Aerostar)**
- **O&M will be conducted in accordance with the Work Plan and O&M Manual**
- **Personnel update – CTI hired Terry Travis as Site Superintendent for the Oscoda Office on 25 August 2022**
- **Following 90-day start-up period, operational data will be compiled, and sampling requirements and frequency will be reevaluated**
- **Additional performance well/purge well monitoring will be presented in a UFP-QAPP Addendum**

O&M of the New Systems

- **FT002 PTS O&M (FT002 at Clark's Marsh IRA)**
 - Semi-annual GAC changeouts of three new 4,000-pound SAC vessels
 - Four additional GAC changeouts of one of the 20,000-pound vessels annually
 - Delivery and consumption of 15 330-gal totes of biocide chemicals annually
 - Routine O&M including back flushing of GAC vessels
 - System sampling along with quarterly monitoring well samples to establish PFAS trends for first year
 - Non-routine O&M as needed to replace/repair/clean pumps and motors, & transducers



O&M of the New Systems

- **CTS O&M (Van Etten Lake at Ken Ratliff Memorial Park IRA)**
 - Four additional GAC changeouts of one of the 20,000-pound vessels annually (spent GAC reactivated)
 - Routine O&M including back flushing of GAC vessels
 - System sampling along with quarterly monitoring well samples to establish PFAS trends for first year
 - Non-routine O&M as needed to replace/repair/clean pumps and motors, replacement of flow meters & transducers. Semi-annual line jetting events to maximize flow rates
 - Transportation and disposal of up to 10, 1cy supersacks of PFAS solid waste from the filter press
 - Optimization of the Benzene Plant conveyance lines to reduce pressure loss and increase flow rates



Updated SRD

- A request for the addition of the sodium hypochlorite to the FT002 treatment system was submitted in August 2022. Approval was granted on 16 September 2022
- The Air Force plans to submit a request to WRD for changes to the SRD sampling requirements
 - To accommodate the new treatment trains at CTS and FT002 systems
 - To more accurately reflect Mission Pump and Treat System ion exchange resin performance

Discussion

- Questions?