



224th Technical Committee Meeting

Commissioner Bruno Pigott, Chairman
Presiding
October 6-7, 2020



The meeting will begin shortly at 1:00 P.M. Below are a few tips to effectively navigate the meeting:

- *Confirm that your first and last name is entered correctly in the GoToMeeting software.*
- *Mute your microphone at all times unless speaking.*
- *Disable your camera unless you are a Technical Committee member.*
- *The presenter will prompt participants for verbal questions, or use the Chat feature.*
- *Detailed GoToMeeting instructions and important information can be found in the previously emailed document, "ORSANCO Virtual Technical Committee and Commission Meeting Instructions."*
- *If you need assistance during the meeting, please call our office at 513-231-7719 ext. 100.*

Chairman's Welcome & Roll Call

Commissioner Bruno Pigott
Chairman, Technical Committee

TEC Members Roll Call

- IL – Scott Twait *
- IN – Eileen Hack *
- KY – Katie McKone *
- NY – Jeff Konsella *
- OH – Audrey Rush *
- PA – Kevin Halloran *
- VA – Melanie Davenport*
- WV – Scott Mandirola *
- USACE – Erich Emery*
- USCG – Eric Roy/Josh Miller *
- USEPA – David Pfeifer *
- USGS – Jeff Frey *
- CIAC – Dean Cordle
- PIAC – Cheri Budzynski
- PIACO – Betsy Mallison
- POTW – Alex Novak
- WOAC – Angie Rosser
- WUAC – Bruce Whitteberry
- Chairman – Commissioner Pigott *
- Executive Director – Richard Harrison *

* Voting member

TECHNICAL COMMITTEE MEETING AGENDA

CHAIRMAN'S WELCOME AND ROLL CALL

ACTION ITEMS AND REPORTS

1. Action on Minutes of 223rd Technical Committee Meeting*
2. Chief Engineer's Report
3. Status of ORSANCO's Monitoring Programs (Current and Future) Resulting from COVID-19 Shutdown
4. Biological Programs Update
5. Source Water Protection Programs Update
6. Harmful Algae Blooms
 - a. Review of draft ORSANCO HABs Monitoring, Response and Communications Plan*
 - b. HABs Shiny App Modelling Performance
 - c. Development of 305(b) Use Assessment Methodology for HABs

Adjourn for the day/Reconvene at 9:00 A.M. Wednesday

7. Technical Committee Member Reports
 8. Review of ORSANCO's Bimonthly/Clean Metals Monitoring Programs
 9. PFAS Project Update
-

OTHER BUSINESS

- Comments by Guests
- Announcement of Upcoming Meetings
- Adjourn

*attachment

Agenda Item 1:

Request for action on minutes of the 223rd Technical Committee Meeting

Chairman Pigott

The minutes were emailed with the agenda package on September 17,
2020

Agenda Item 2: Chief Engineer's Report

Executive Director Harrison



OHIO RIVER BASIN
ALLIANCE

Ohio River Strategic Plan Virtual Workshop
Abundant Clean Water Goal
Overview and Next Steps

2020 ORBCRE/ORBA Summit
9-30-2020

Richard Harrison-ORSANCO Executive Director



Abundant Clean Water Workshop Agenda

- 1) Congressional Geographic Program Funding Priorities
- 2) Abundant Clean Water Goal Objectives Overview
- 3) Need for Close Coordination with other Goal Workgroups
- 4) Abundant Work Group Membership
- 5) Abundant Work Group, Objective Committees & Subcommittees
- 6) Suggested Implementation Next Steps
- 7) Questions



The Ohio River Basin Needs to Be a National Priority!

FY2019 CR USEPA Geographic Programs and Line Item Funding

Great Lakes Restoration Initiative	-	\$ 300,000,000
Chesapeake Bay	-	\$ 73,000,000
Puget Sound	-	\$ 28,000,000
Gulf of Mexico	-	\$ 12,542,000
Long Island Sound	-	\$ 12,000,000
Lake Champlain	-	\$ 8,399,999
Southern New England Estuaries	-	\$ 5,000,000
South Florida	-	\$ 1,704,000
Lake Pontchartrain	-	\$ 948,000



Abundant Clean Water Goal Objectives

- 1) Organizations and States will demonstrate increased number of water bodies meeting Clean Water Act drinkable, swimmable and fishable uses over next 10 years in the Ohio River Basin
- 2) Enhance Ohio River Basin utility Source Water Protection programs
- 3) Prepare Basin Wide Strategy to identify Ohio River Basin priority waters with high incidence of Harmful Algal Blooms and develop strategy for response to HABs that will result in measurable reduction in HAB occurrence over next 10 years
- 4) ORSANCO will convene water quality managers Basin-wide to establish common goals to identify Basin-wide problems affecting water quantity management and recommended strategies to address developed goals
- 5) Inventory drinking and wastewater infrastructure needs for the Ohio River Basin and develop a strategy to maintain these systems Basin wide



Plan Work Group Coordination is Critical

- 1) The Goal is Interdependent to all Ohio River Basin Plan Goals
 - a) Healthy and Productive Ecosystems
 - b) Knowledge and Education to Inform Decisions
 - c) Nation's Most Valuable River Transportation and Commerce Center
 - d) Reliable Flood Control and Risk Reduction
 - e) World-class Nature-based Recreation Opportunities



Abundant Clean Water Workgroup

- 1) Need to Develop Broad Ohio River Basin Workgroup
- 2) ORSANCO Technical Committee Membership will Closely Align with ORSANCO Compact Area Workgroup Membership
- 3) Need Significant Presence from Tennessee and Cumberland River Basin States
- 4) Workgroup will Serve as a Steering Committee for Goal Implementation Strategy
- 5) Work Needed to Formalize Workgroup and Meeting Frequency and Schedule



Committee and Subcommittee Opportunities

- Committees are Needed for each Objective
- Subcommittees are Needed to Facilitate Strategic Action Development in Multiple Areas
- Committees and Subcommittees will be Instrumental to Plan's Success
- Committees and Subcommittees will Need Chairs and Focused Membership



Workgroup Subcommittee Opportunities (Examples)

- Multi-Goal Subcommittee to Support all Ohio River Basin Plan Needs
- Subcommittee to Identify Clean Water Act Monitoring and Implementation Use Impairment Needs
- Subcommittee to Develop Source Water Protection Needs
- Subcommittee Focused on USGS Stream Gauge Network
- Subcommittee to Develop Nutrient Trading Basin Needs
- Subcommittee focused on Water Quantity
- Subcommittee to Develop Utility Infrastructure Needs

Implementation Steps

- Establish Work Group, Objective Committee and Strategic Action Subcommittee Members
- Establish meeting frequency and milestones
- Refine message for implementation for key strategic actions
- Develop high level total and annual funding needs for strategic actions, each objective and the Abundant Clean Water Goal as a whole
- Coordinate closely with Healthy and Productive Ecosystems Work Group to develop a coordinated funding outreach strategy
- Coordinate Closely with other Plan Work Groups and ORBA membership as a whole

Discussion

Agenda Item 3:

Status of ORSANCO's Monitoring Programs Resulting From COVID Shutdown

Heath, Argo, Dinkins

ORSANCO Field Activity Protocols

- Restrictions maintained from Mid-March – Early July
 - Only single person day-trips were allowed
- Additional permitted activities beginning July 14th
 - Multi-person Field Work
 - One person per vehicle
 - Face coverings whilst indoors, or outdoors when 6' distancing can't be maintained
 - Overnight Travel
 - Permitted on case-by-case basis, guidance provided on how to mitigate exposure/transmission
 - Boat-based
 - Conducted with minimal staff required to complete task
 - Activities requiring staff to operate within 6' for ***prolonged*** periods are prohibited
 - Face coverings worn during ***intermittent*** periods when 6' distancing cannot be maintained

Emergency Response

Program Details

- ORSANCO provides a number of services when spills occur including:
 - 24/7 Notifications
 - Field sampling
 - Time-of-travel modeling
 - Analytical support

Impacts to Program

- Spill response deemed an essential function.
- No change to services provided during COVID response.
- No major spills requiring field response occurred June thru September.



Continuous WQ Monitoring Stations



Program Details

- ORSANCO maintains 4 continuous water quality monitoring stations.
 - D.O, pH, conductivity, temperature, chlrophyll, phycocyanin
- Pike Island and Meldahl are deployed from June thru October
- Markland and Newburgh stations are maintained year-round as part of IN HAB grant project.
- Sites serviced twice per month

Impacts to Program

- One site visit was postponed for Markland & Newburgh stations in March.
- Site visits to Markland & Newburgh resumed in April.
- Pike Island & Meldahl deployed in July as normally scheduled.
- All sampling up-to-date.

Bacteria Monitoring

Program Details

- Bacteria samples collected weekly in the six largest CSO communities from April thru October.
- Data used to assess impairment and to inform the public regarding suitability of the river for recreational activities.



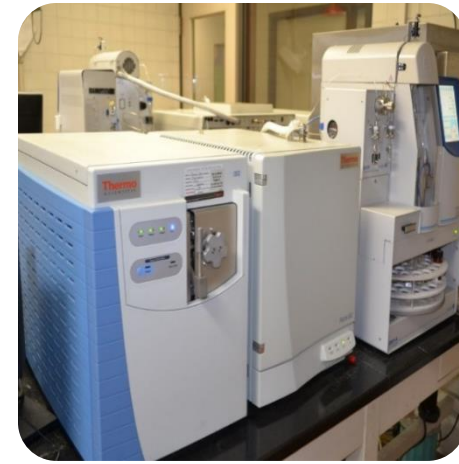
Impacts to Program

	APR	MAY	JUN	JUL	AUG	SEP	OCT
Pittsburgh	20	20	20	20	20	20	20
Wheeling	10	10	10	10	10	10	10
Huntington	10	10	10	10	10	10	10
Cincinnati	15	15	15	15	15	15	15
Louisville	10	10	10	10	10	10	10
Evanville	10	10	10	10	10	10	10

GRAY denotes bacteria samples not collected (105).

Green indicates samples collected as scheduled (315).

Organics Detection System



Program Details

- ORSANCO maintains a network of gas chromatographs at 17 stations as early warning spill detection system.
- Units are owned and maintained by ORSANCO.
- Stations operated by host facilities (water utilities and industries)

Impacts to Program

- Repair visits maintained through out COVID response for sites that could be serviced as a day-trip by single crew member
 - Some sites prohibited visitors
 - Overnight repairs resumed in Sept.
- Preventative maintenance visits suspended for March and April.
- Training visits resumed in September

Bimonthly and Clean Metals

Background

Used for 305(b) assessments

Mix of day-trip and overnight travel

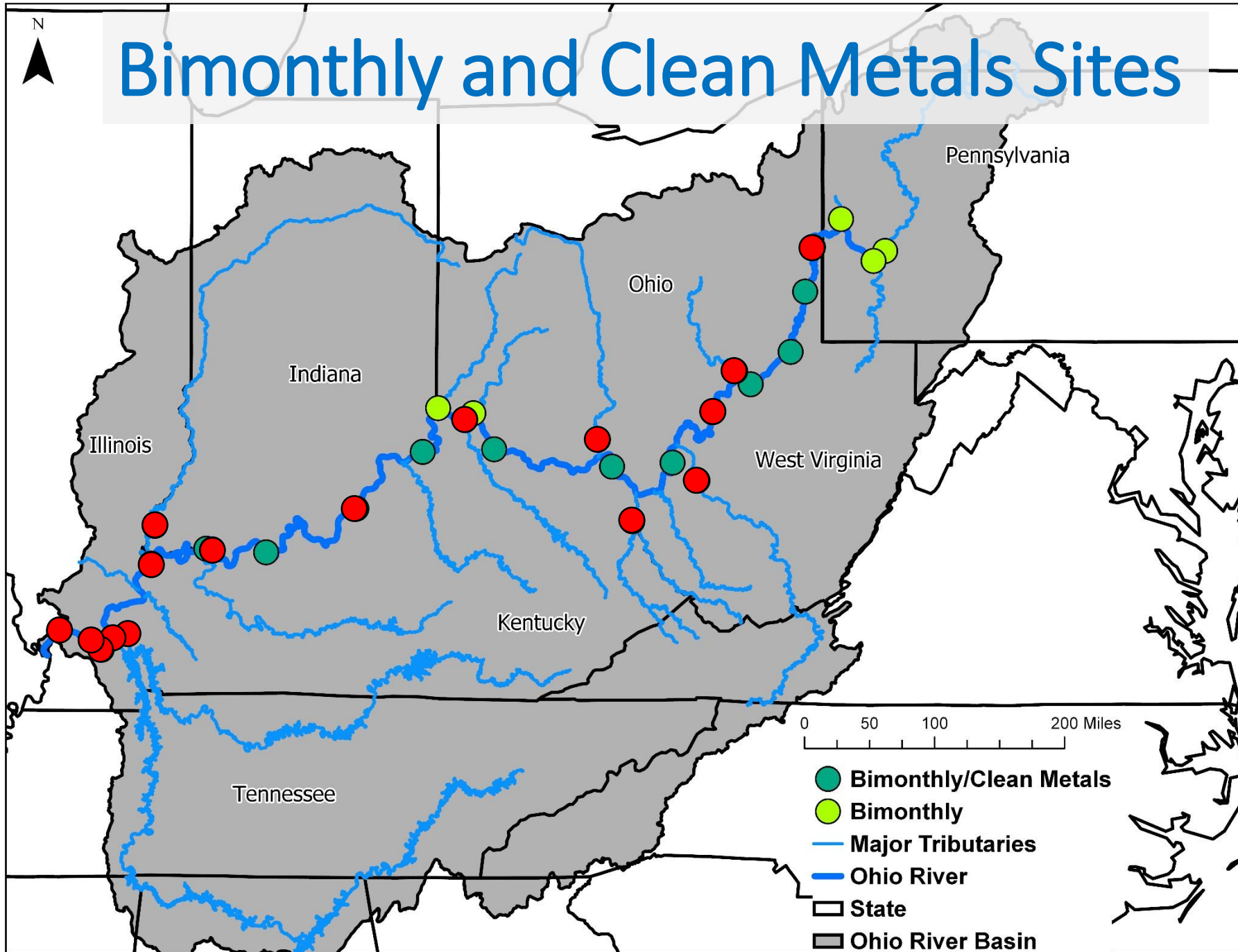
Can require 2 person boat crews

30 sites sampled in January, March, May, July, Sep., & Nov.

- **January and March – all sites sampled**
 - except where access or water levels precluded sampling (4 sites in March)
- **May – No overnight travel, single person sampling**
 - 11 day-trip stations on main stem
 - 3 stations in Pittsburgh area via contract sampler
 - 3 tributaries near Cincinnati (G. Miami, L. Miami, Licking rivers)
- **July onward – Continue with schedule established in May**
 - Add additional tributaries as resources allow
 - Return to full suite of stations as access and overnight travel allow



Bimonthly and Clean Metals Sites



Sites Sampled

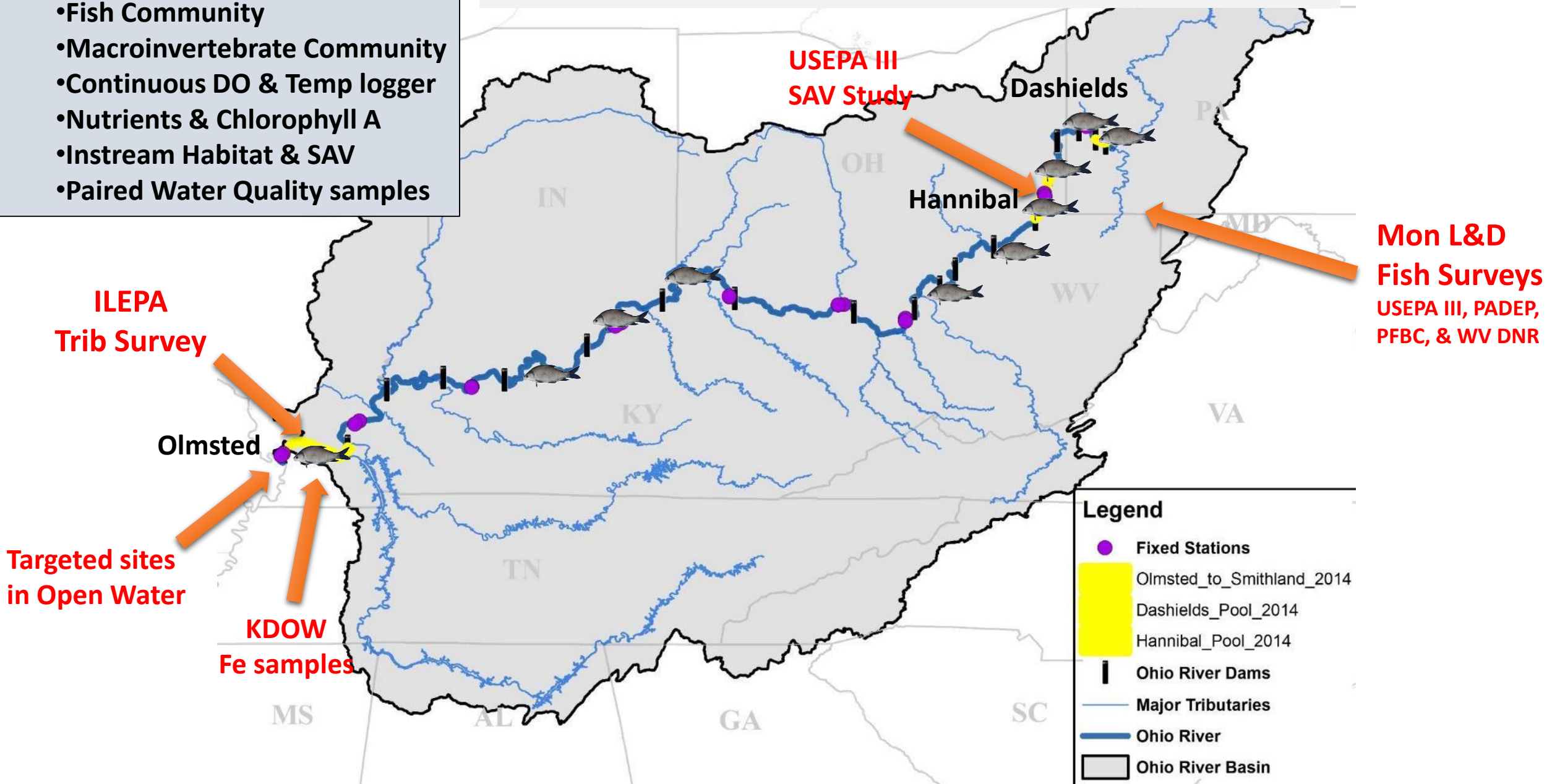
May – 14/30

July – 18/30

Sept. – 28/30

Biological Sampling Activities

- Dashields, Hannibal, Olmsted Pools
- 15 random 500m sites per pool
 - Fish Community
 - Macroinvertebrate Community
 - Continuous DO & Temp logger
 - Nutrients & Chlorophyll A
 - Instream Habitat & SAV
 - Paired Water Quality samples



Biological Activity Requirements

Activity	Index Period	Crew Size	Overnight Travel
Electrofishing	July - Oct	3 person minimum	Required
Macros	Aug - Oct	2-4 person	Required
Paired Collections	July - Oct	2-4 person	Required
Fish Tissue	April - Nov	2 person	Optional



BWQSC agreed to postpone probabilistic surveys to 2021

Agenda Item 4: Biological Programs Update

Ryan Argo

Informational Item

Prioritizing Fish Tissue Collections

- Used for consumption advisories and 305(b) assessments
- 2022 Biennial 305(b) report
 - Covers years 2016 – 2020
 - Minimum Requirement - 2 species from Trophic Levels 3 & 4
 - 2018/19 NRSA and fewer pool surveys = fewer samples
 - Exacerbated pre-existing gaps
- Requested assistance of local state & federal partners in far reaches of Ohio R.
- Refocused available resources to FT day trips (overnight travel as necessary)

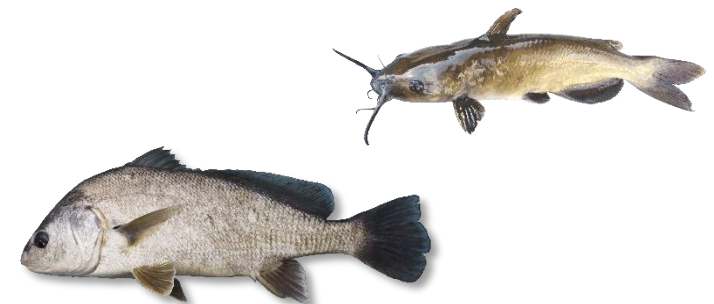


$$C_{\text{avg}} = \frac{8.0 * C_3 + 5.7 * C_4}{(8.0 + 5.7)}$$

Where:

C_3 = average mercury concentration for trophic level 3

C_4 = average mercury concentration for trophic level 4



Filling a Need

Beginning 2020

3 hour
travel radius

Pool	TL3	TL4
Emsworth	2	1
Dashields*	0	0
Montgomery	0	4
New Cumberland	3	3
Pike Island	0	1
Hannibal	0	2
Willow Island	2	6
Belleville*	0	0
Racine	0	0
R.C. Byrd	1	2
Greenup	2	5
Meldahl	0	6
Markland	0	8
McAlpine	0	4
Cannelton	0	0
Newburgh	1	6
J.T. Myers	2	4
Smithland	5	6
Olmsted*	0	0
Open Water	2	2

Filling a Need



ORSANCO
Overnights

Pool	TL3	TL4
Emsworth	2	1
Dashields*	0	0
Montgomery	0	4
New Cumberland	3	3
Pike Island	0	3
Hannibal	0	5
Willow Island	2	6
Belleville*	0	0
Racine	5	4
R.C. Byrd	4	2
Greenup	2	6
Meldahl	6	7
Markland	5	8
McAlpine	3	7
Cannelton	4	3
Newburgh	1	6
J.T. Myers	2	4
Smithland	7	8
Olmsted*	0	0
Open Water	2	2



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

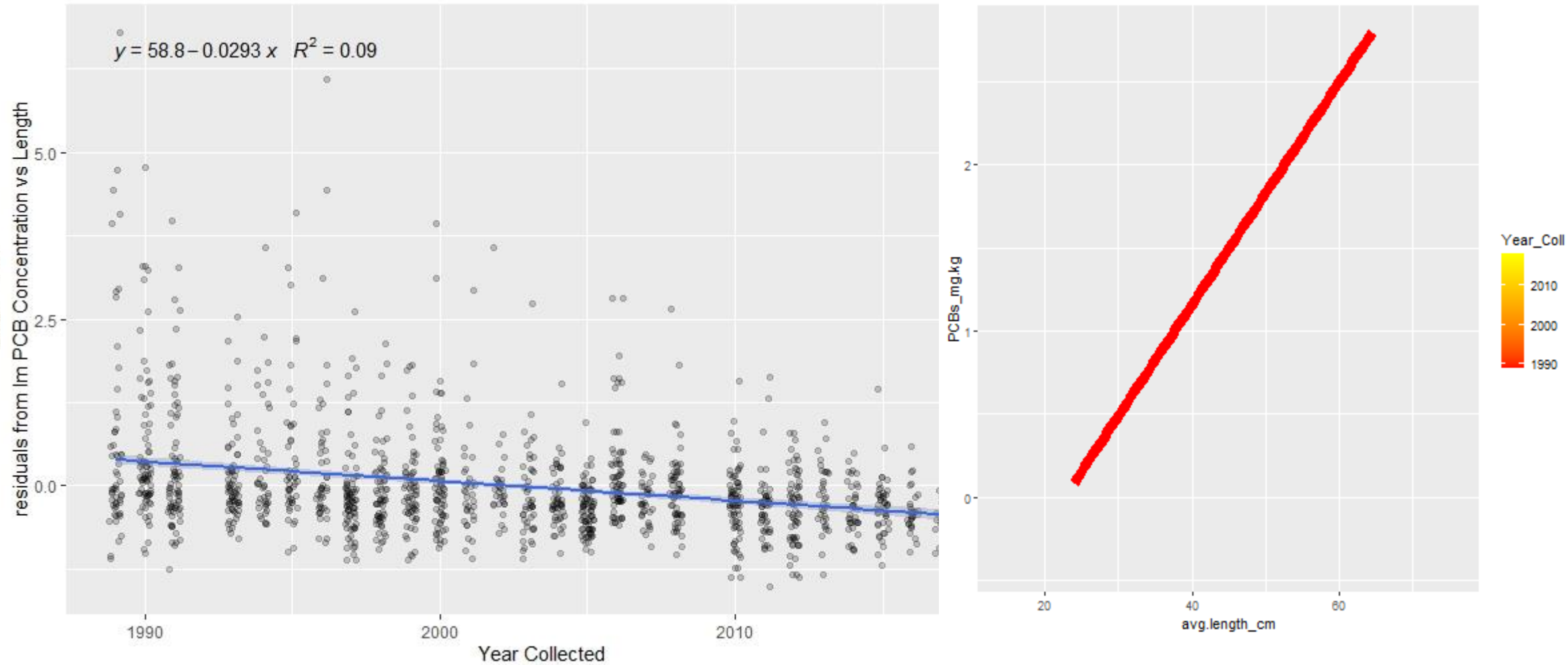


Time Reallocation

- Decreased demand allowed for needed vessel updates
 - Navionics/electrical systems
 - New trailers
- Remote Activities
 - Report development
 - Trainings
 - Taxonomy
 - Data management
 - Statistical/Graphical
 - Investigatory analyses
 - Macroinvertebrate Trends
 - 2019 Smithland macro data under review
 - Fish Tissue Contaminant Trends
 - PCBs



Preliminary FT Contaminants Trends - PCBs



Upcoming Activities

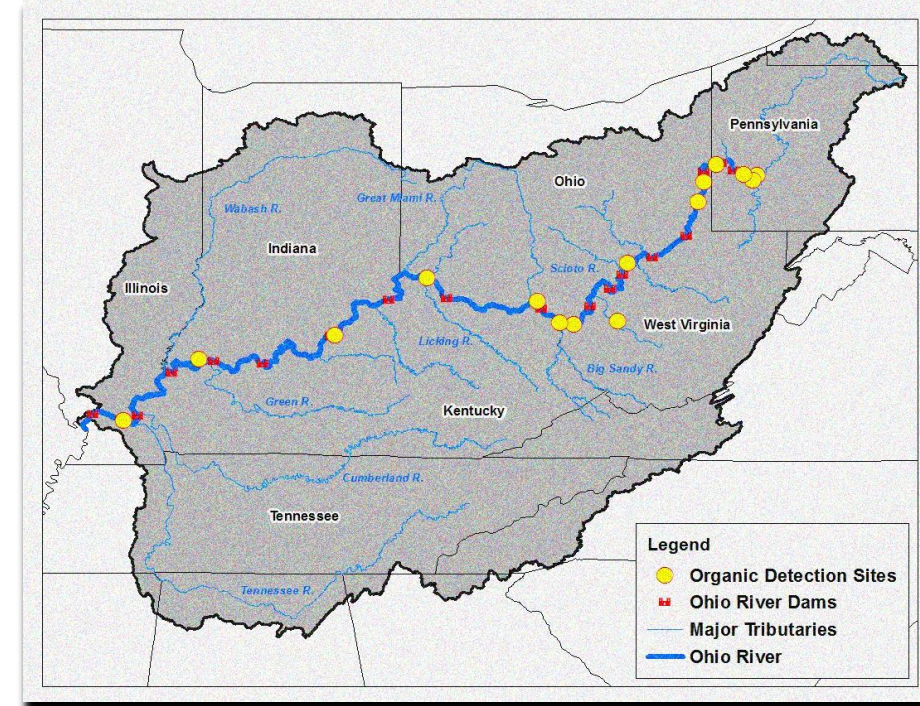
- Continue trends analyses
 - Incorporate 2019 - 2020 fish tissue data
- Reconvene Fish Consumption Advisory Workgroup
 - Spring of 2021 pending data availability
- Reconvene BWQSC in winter
 - Finalize Guidelines for the *Evaluation of Biological Pool Surveys*
 - Decision making process by which the committee follows to formally approve results and associated assessments
 - Strategize pool schedule to maximize benefit to the states
 - 6 of the 18 pools still remain unassessed for this cycle
 - Determine how to collectively fill any additional data needs

Agenda Item 5:
Source Water Protection Programs
Update

Sam Dinkins
Informational Item

Organics Detection System Update

- 17 ODS stations, 14 are operational.
 - Inoperable
 - St. Albans (Kanawha) - COVID
 - Chemours (Parkersburg, WV) – COVID
 - Midland – Instrument malfunction
 - Operable with Limited Data
 - Hays Mine (Monongahela) – COVID
 - West View (Pittsburgh, PA) - COVID



ODS Instrument/Software Upgrades

- Continuing GCMS software upgrades to Chromeleon 7.3
 - Improve usability
 - Weirton upgrade completed
 - Louisville and Evansville software installed
 - Huntington and Wheeling upgrades planned for second half FY21
 - Also will upgrade computers along with Chrom 7.3 from this point forward
 - Windows 10 upgrades to all ODS PCs- still ongoing

ODS Replacement Strategy

- ODS Equipment Replacement Account
 - \$178K allocated for equipment purchases in FY21
- FY21 Plan
 - Purchase two Inficon CMS 5000 units
 - Will greatly reduce downtime while units are repaired
 - First unit set for delivery late Sept or early Oct
 - Purchase of second unit later in FY21
 - Single unit cost ~\$50K



Source Water Protection Meetings

- Region 5 – Annual Meeting
 - ORSANCO was scheduled to host
 - Moved to virtual format
- Water Utility Meetings
 - Early stages of developing SW PA collaborative
 - SW PA Contaminant Source Inventory (WaterSuite)
- Ohio River Source Water Alliance (ORSWA)
 - Industry Outreach
- Ohio Basin Regional Water Resources Committee
 - Update PA State Water Plan
 - Setting state/watershed priorities

Emergency Response

- ER Area Focus Groups
 - Spring 2020 meetings cancelled
 - Winter meetings will be held virtually
- US EPA DNA Tracer Study
 - Postponed due to COVID
- Louisville Sub-Area Team
 - Developing sub-area plan like Cincy
 - Summer field recon efforts postponed
- EPA/USCG Regional Response Teams
 - Semi-annual meetings moved to virtual format
- Clean Waterways Conference
 - 2020 Conference cancelled due to COVID (Indianapolis)



Emergency Response (cont.)

- Have maintained full readiness during pandemic
- Emergency Response Directory
 - Staff currently updating directory
 - Every utility and response agency will be asked to update emergency contact information.
- Industrial Intake Directory
- Spill Response Activity
 - No major spills/releases since last meeting
 - Standardized spill email communications
- NRC – Temporary loss of communications
 - NRC experienced an emergency evacuation
 - ORSANCO simultaneously had power loss at office which included email servers
 - NRC no longer provides fax spill reports
 - ORSANCO maintained contact with emergency response agencies through phone communications



Agenda Item 6A: Harmful Algae Blooms

A. Review of draft ORSANCO HABs Monitoring, Response and Communication Plan

Greg Youngstrom

Action Item: Would the Technical Committee like to endorse the plan or is further review and comment needed?

HAB Monitoring Response and Communication Plan

- **First full update since 2016**
 - **Changes to State and Federal drinking water standards and recreational advisory levels for algal toxins**
 - **Responded to a second large HAB event**
- **Reviewed by HAB Workgroup January, 2020**
 - **Discussion over definition of an HAB**
 - **“...an algae bloom which consists primarily of Cyanobacteria which can produce toxins is defined as a HAB.”**

Overview

- **Goals**
 - Support the States and health departments to manage the Ohio River's use as a source of recreation
 - Support water utilities to use the Ohio River as a source of safe drinking water
- **Algae/Toxin Standards**
 - Drinking water
 - Recreation
- **Advisories**
- **Monitoring**
- **Response**
- **Communication**

HAB Monitoring Response and Communication Plan

- **Asking for comments and/or approval of the document**

Agenda Item 6B: Harmful Algae Blooms

B. HABs Shiny App Predictive Model

Greg Youngstrom
Informational Item

Background

- **Started as an effort to understand the causes of the 2015 HAB**
- **UC Capstone project 2017/2018**
 - Analysis of time series data to identify alert levels
 - Free (Richard provided snacks to students)
- **USEPA funding through RARE Grant**
 - Received \$24,000 for each of two years beginning 2018
 - Statistical analysis and app development
- **WV 604b funding**
 - \$30,000
 - Data collection to feed into the statistical analysis

RARE Grant Project Team

- **Chris Nietch, USEPA**
- **Jim Lazorchak, USEPA**
- **Scott Keely, USEPA**
- **Leslie Gaines-Germain, Neptune, Inc.**
- **Greg Youngstrom, ORSANCO**
- **Taylor Sasak, ORSANCO**
- **Emilee Urichich, ORSANCO**
- **Heather Mayfield, FORE**

Data Sources

Organization	Data type	Locations
USACE	Water Level	20 Dams and mid pool
USGS	Water Quality	Ironton, Cannelton, Olmstead
ORSANCO	Water Quality	Markland, Newburgh Dams
Water utilities	Water Quality	Used for model development

Next Steps

- **Additional Funding**
 - **USEPA starting October 1, 2020**
 - **USGS/ORSANCO Summer 2021**
- **Additional Tasks**
 - **Incorporate Pike Island/Meldahl HAB stations**
 - **Expanded capabilities**
 - **Future HAB's integrated into models**

HAB App Live Demo

Access

- **Currently limited**
 - State and Federal agencies
 - Water Utilities
- **Goal is to be public**
 - Exploring options to make data available
 - Aquarius software
- Email gregy@orsanco.org to be added to approved users list

Agenda Item 6C: Harmful Algae Blooms

C. Development of 305(b) Use Assessment Methodology
for HABs

Jason Heath
Informational Item

Need for HABs Assessment Methodology

- The first significant Ohio River HABs event occurred in 2015.
- Prior to that time the Ohio River was not experiencing HABs.
- Subsequent to the 2015 event, the 305b Workgroup decided not to list the Ohio River based on that one-off event in the 2016 305b.
- There were no new Ohio River HABs occurrences for the 2018 305b.
- The 2nd Ohio River HABs event occurred in 2019.
- The 2020 305b did not list HABs as an Ohio River impairment, however there was recognition that a protocol is necessary for future 305b assessments.
- That's where we are now, and we will begin engaging the 305b Workgroup to develop a protocol prior to the 2022 305b Report.

Agenda Item 7: TEC Members Reports

- IL – Scott Twait
- IN – Eileen Hack
- KY – Katie McKone
- NY – Jeff Konsella
- OH – Audrey Rush
- PA – Kevin Halloran
- VA – Melanie Davenport
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Agenda Item 8:

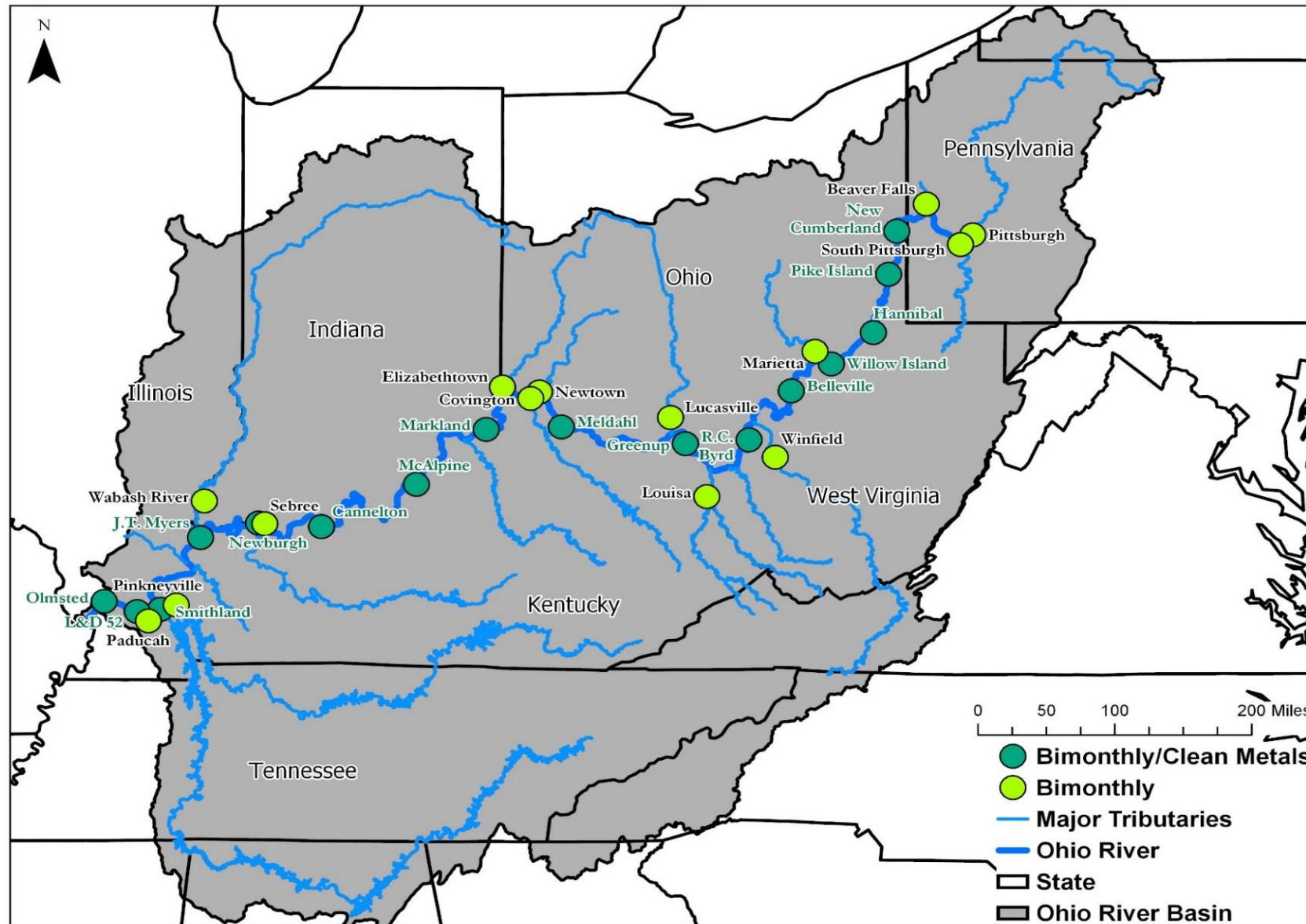
Review of ORSANCO's Bimonthly and Clean Metals Monitoring Programs

Jason Heath
Status Report

Background

- Initiated a review of ORSANCO's Bimonthly & Clean Metals monitoring programs following the June TEC meeting.
- Bimonthly monitoring began in 1975 (monthly at the time), and moved to bimonthly in the early 90's (budget constraints). Includes conventional water quality parameters and some total metals..
- Clean Metals began in 1998 which includes total and dissolved metals.
- Prior to the Clean Metals program and dissolved metals criteria, there would often be total metals criteria violations.
- We do not have criteria violations for dissolved metals.
- ORSANCO uses the data from these monitoring programs primarily for 305b use assessments and trends.

Bimonthly & Clean Metals Sampling Sites



Bimonthly Parameter List

Stations	Nutrients, Major Ions	Symbol	Units	Method Number	Reporting Limit
16 Ohio River stations 14 major tributaries	Bromide	Br-	mg/L	EPA 300.0	0.05
	Chloride	Cl-	mg/L	SM 4500 Cl E	2.0
	Hardness	Hardness	mg/L	SM 2340 B	3.0
	Ammonia Nitrogen	NH3-N	mg/L	EPA 350.1	0.03
	Nitrate-Nitrite Nitrogen	NO2-NO3-N	mg/L	EPA 353.2	0.05
	pH	pH	Std. Units	Physical	N/A
	Sulfate	SO4	mg/L	ASTM D516-90	12.5
	Specific Conductivity	SpCond	us/cm	Physical	N/A
	Total Kjeldahl Nitrogen	TKN	mg/L	EPA 351.2	0.1
	Total Organic Carbon	TOC	mg/L	SM 5310 C	0.5
	Total Phosphorus	TP	mg/L	EPA 365.3	0.01
	Total Suspended Solids	TSS	mg/L	SM 2540 D	1.0
	Total Dissolved Solids	TDS	mg/L	SM 2540 C	5.0
	Total Nitrogen	TN	mg/L	TKN+(N+N) Calculation	0.5
	Phenols	Phenols	ug/L	EPA 420.4	0.01
	Dissolved Oxygen	DO	mg/L	Physical	N/A
	Temperature	Temp	Deg. C	Physical	N/A
Turbidity	Turbidity	NTU	Physical	N/A	
5 Upper Ohio Basin Winter months only (Nov, Jan, Mar)	Cyanide	CN	ug/L	EPA 335.4	5.0

Clean Metals Parameter List

Parameter	Reporting Units	Test Method	MDL	RDL
Silver (Diss. & Total)	Ag (µg/L)	EPA 1638/200.8	0.01	0.1
Aluminum (Diss. & Total)	Al (µg/L)	EPA 1638/200.8	0.3	1
Arsenic (Diss. & Total)	As (µg/L)	EPA 1638/200.8	0.1	1
Barium (Diss. & Total)	Ba (µg/L)	EPA 200.7	3	10
Beryllium (Diss. & Total)	Be (µg/L)	EPA 1638/200.8	0.1	1
Calcium (Diss. & Total)	Ca (mg/L)	EPA 200.7	0.02	0.1
Cadmium (Diss. & Total)	Cd (µg/L)	EPA 1638/200.8	0.1	1
Chromium (Diss. & Total)	Cr (µg/L)	EPA 1638/200.8	0.3	1
Copper (Diss. & Total)	Cu (µg/L)	EPA 1638/200.8	0.09	1
Iron (Diss. & Total)	Fe (µg/L)	EPA 200.7	6	50
Hardness (Diss. & Total)	Hardness (mg/L)	EPA 200.7	0.3	1
Mercury (Diss. & Total)	Hg (ng/L)	EPA 245.7	0.2	1.5
Potassium (Diss. & Total)	K (mg/L)	EPA 200.7	0.2	0.5
Magnesium (Diss. & Total)	Mg (mg/L)	EPA 200.7	0.04	0.1
Manganese (Diss. & Total)	Mn (µg/L)	EPA 1638/200.8	0.1	1
Sodium (Diss. & Total)	Na (mg/L)	EPA 200.7	0.06	0.5
Nickel (Diss. & Total)	Ni (µg/L)	EPA 1638/200.8	0.08	1
Lead (Diss. & Total)	Pb (µg/L)	EPA 1638/200.8	0.1	1
Antimony (Diss. & Total)	Sb (µg/L)	EPA 1638/200.8	0.01	0.1
Selenium (Diss. & Total)	Se (µg/L)	EPA 1638/200.8	0.4	1
Strontium (Diss. & Total)	Sr (µg/L)	EPA 200.7	0.2	1
Thallium (Diss. & Total)	Tl (µg/L)	EPA 1638/200.8	0.01	0.1
Zinc (Diss. & Total)	Zn (µg/L)	EPA 1638/200.8	0.4	1

Approach to the Review

- We have started this review with the mainstem states' only.
- Two conference calls have been held since the last TEC meeting.
- Provided Quality Assurance Plans, sampling SOPs, site descriptions and 10 yrs of monitoring data.
- We asked for recommendations for program modifications/enhancements independent of any cost or other resource considerations.
- Once we receive comments/recommendations from all the mainstem states, they will be summarized and then open for review by the full TEC Committee.
- After receiving all comments from TEC, costs will be assigned to recommendations and we will begin a prioritization process which would include budget considerations.
- This analysis would then go into a monitoring strategy document.
- Comments thus far have included the addition of two monitoring stations and addition of 5 parameters.

Agenda Item 9:
PFAS Project Update

Heath, Dinkins

Study Objective



- Characterize ambient conditions relative to PFASs in the Ohio River at 20 locations
 - Two rounds of sampling (different seasons)
 - Probabilistic-systematic approach used for site selection.
 - Outside of any regulatory mixing zones.
- The survey is not intended to focus on drinking water, but rather develop ambient baseline conditions for the Ohio River.
- Results may inform states, EPA, utilities & other interested parties on Ohio River ambient water quality conditions. The Commission is developing a communication plan.

PFAS Workgroup Met August 19, 2020

- Amy Kramer – NKY Water
- Audrey Rush, Mike Proffitt, Jeff Lewis – OEPA
- Bill Boria - PIACO
- Bruce Whitteberry – Cincinnati Water
- Bruno Pigott – Commissioner/TEC Chairman
- Chris Impellitteri, Marc Mills – USEPA ORD
- Chris Tavenor – WOAC
- Eileen Hack, Ali Meils – IDEM
- Eric Zhu – Louisville Water
- Erich Emery – USACE
- Katie McKone, Melanie Arnold – KYDOW
- Kevin Halloran, Dawn Hissner, Tom Barron – PADEP
- Kim Harris – USEPA Reg 5
- Mike Wilson – Commissioner/Vice Chairman
- Ron Potesta – Commissioner
- Scott Mandirola, John Wirts - WVDEP

Outcomes of August 19 Meeting

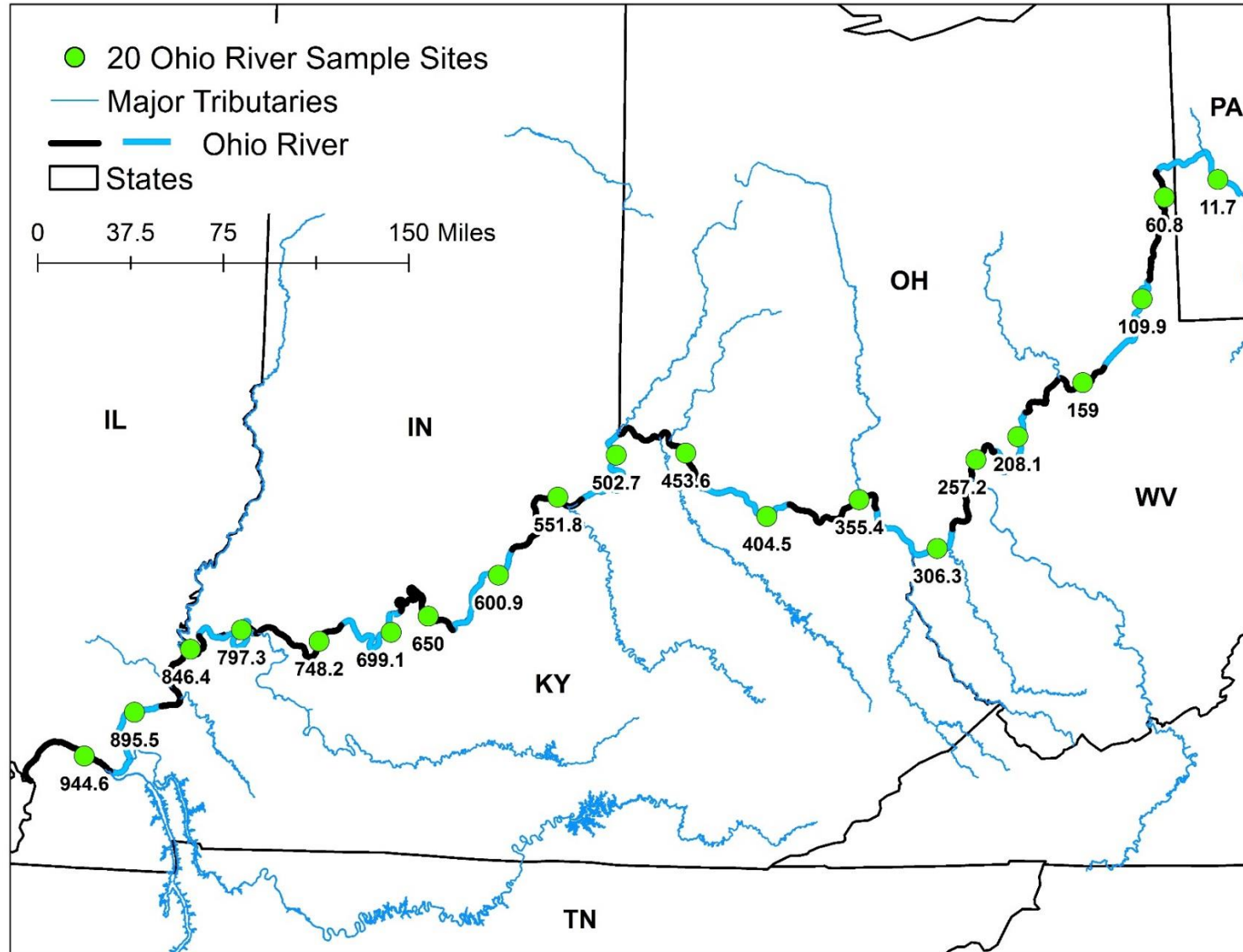
- 20 monitoring sites have been established. We are not planning two additional sites bracketing Parkersburg as the 20 sites will provide bracketing.
- Three Rivers Quest asked us to collect an additional sample each on the Allegheny & Monongahela Rivers, which we plan to do.
- Proceeding with the USGS EDI sample collection cross-section method for large rivers.
- Collection of discrete samples to look at PFAS distribution in the water column. Design needs to be presented to PFAS workgroup.
- Agreed to provide completed QAPP and sampling plan to workgroup with at least 2 weeks for review.
- Workgroup has been notified that sampling is delayed until Spring.

Survey Design

- Survey Timing
 - First round of sampling scheduled for spring 2021
 - Postponement necessary to ensure sampling, analysis & data communication plans fully developed prior to sampling
- PFAS Sample Collection
 - 20 Ohio River ambient sites
 - 2 tributaries (Allegheny & Monongahela)
 - Possible addition of discrete sample collection & analysis
 - Conduct test run with field blanks (Fall 2020)



Systematic-Probabilistic Approach

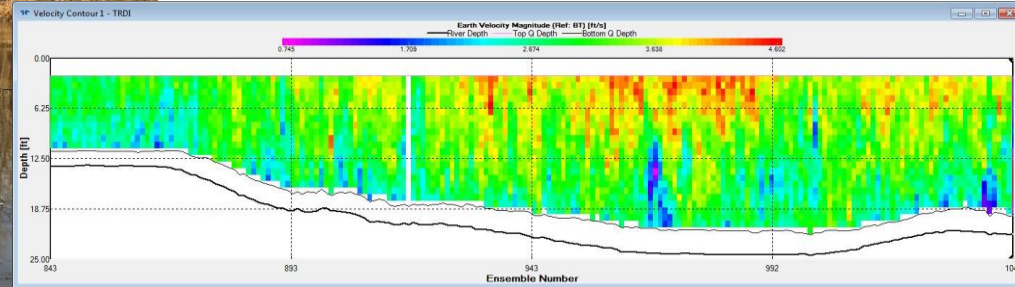


Sample Collection Methodology

- Use USGS EDI (Equal Discharge Increment) method for all Ohio River and tributary samples
- EDI Method
 - Measure stream flow using Acoustic Doppler Current Profiling
 - Select 5 points along cross-section to represent each flow quintile
 - Collect vertically composited sample at each of the 5 flow quintile centroid points
 - Composite the 5 samples in churn splitter
 - Submit single flow-weighted, cross-sectional composite to represent the cross-sectional average concentration at the specified river mile
- Discrete samples to be collected using peristaltic pump at designated depths
 - Analyze discrete samples separately to gain understanding of vertical and lateral distribution of PFAS in the water column
 - Details for discrete sampling still need to be worked out (i.e. # of samples, what depths?)



EDI Sampling Equipment



Sample Analysis

- US EPA has developed two analytical methods suitable for surface water sample analysis
- Analysis to be performed by US EPA contractor Battelle Laboratories
- Rely heavily on EPA expertise for lab method selection
- PFAS Workgroup recommended including Gen-X compounds
 - EPA methods can do this
- Sample collection and analysis will include full suite of quality control samples
 - Field blanks – 1 per site
 - Replicates – 3 per round of sampling
 - Trip blanks



Remaining Tasks

1. Finalize agreement for laboratory services with Battelle
2. Acquire remaining supplies/equipment
 - Some items on back-order
3. Determine sampling sites for Allegheny and Monongahela
 - Discussion with WV Water Research Institute/3 Rivers Quest
4. Determine discrete sample collection plan
5. Finalize QAPP and Sampling SOP
6. Conduct test run Fall 2020
7. Finalize Sampling Plan and Communication Plan
 - Receive approval from PFAS Work Group and Technical Committee (Feb 2021)
8. Conduct sampling (Round 1 – Spring; Round 2 Fall 2021)



Other Business:

- Comments by Guests
- Announcement of Upcoming Meetings
- Adjourn

Chairman Pigott