

# Surface Water Meeting AWOP Update

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# SWM AWOP Update Outline

What is AWOP?

3 Main Status Components (Goals)

What does AWOP do?

How do I get Involved?

What would the water system need?

Maintaining The Program

Still Developing New Manganese Goals

Developing Corrosion Control Goals

Membrane Optimization Goals

AWOP Impacts

# **SWM AWOP Update Outline**

What's happening in AWOP?

Region 4 Multi-State AWOP Team

Why Muscle Shoals?

What resources were assessed?

What did this workshop cover?

How did it go?

What did we learn?

# What is AWOP?

- Area Wide Optimization Program
- Supplies realistic goals for water treatment plants.
- The goals are set below what the regulations require.
- Water systems go above and beyond to ensure the best quality of water supplied to each customer.

# 3 Main Status Components

## Disinfection Byproducts

- Short Term Goal for distribution's each individual site:  
LRAA is  $\leq 70$  ppb for TTHM and  $\leq 50$  ppb for HAA5
- Long Term Goal, the average of max LRAA based on 11 quarters of data:  
< 60 ppb for TTHM and < 40 ppb for HAA5.
- Plant Effluent Goal:  
TTHM RAA 20 ppb or less  
HAA5 RAA 15 ppb or less  
TOC RAA 1.7 mg/L or less

## Microbial (Pathogen Removal) for Traditional WTPs

- Meet sedimentation goals of 1.0 or 2.0 NTU
- < 0.10 NTU, 95% of the time for individual filtered water turbidity
- 0.30 NTU, do not exceed
- < 0.10 NTU, rewash filter and return to service

## Chlorine Residual

- Maintain sufficient chlorine residual; report lowest

# What does AWOP do?

- Our team sets up training sessions and workshops in which operators can receive CEH's.
- Homework is assigned.
- Provides Operators with tools and the knowledge to achieve optimization.
- Operators can apply their knowledge /skills to their own water systems.

# How do I get involved?

The Operator or Management can call me or call your inspector and we can work out a schedule to set it up. My number is 334-271-7779. Or you can email me at [abwhite@adem.alabama.gov](mailto:abwhite@adem.alabama.gov).

# What would the water system need?

- A large enough space to provide room for training sessions.
- Classroom style preferably but can make other conference room styles work.
- Support from Management.
- Operators with a willingness to put forth the effort to learn new skills and gain new knowledge.



# Maintaining The Program

AWOP is a voluntary program for ADEM staff.  
AWOP is in addition to required duties.

All appropriate water systems are tracked in the status components.

Water system involvement in AWOP activities is voluntary.

More technical staff are becoming involved.

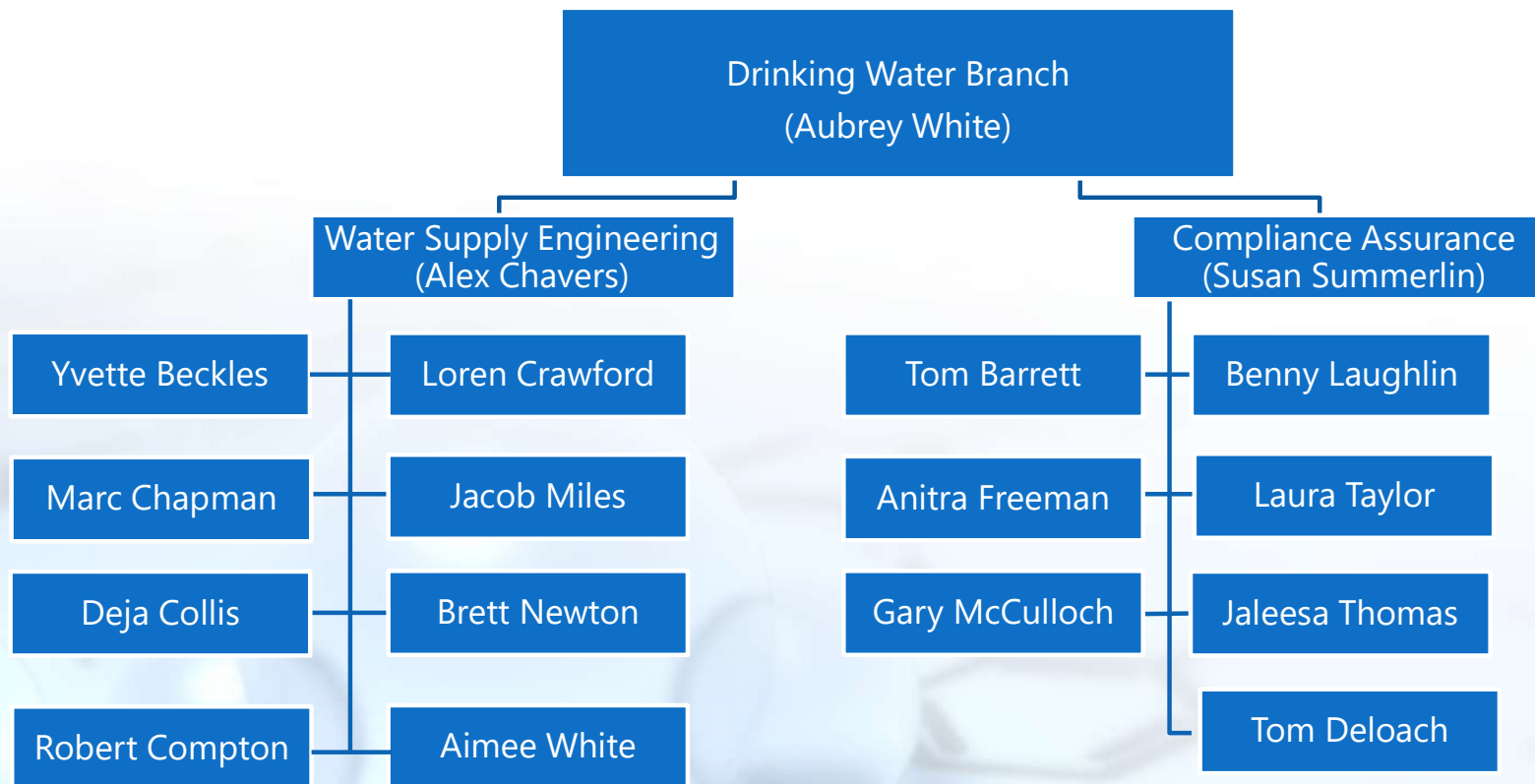
# Maintaining The Program

## 2023 Team Structure

### Core Team

- Aimee White
- Brett Newton
- Deja Collis
- Jacob Miles
- Laura Taylor
- Robert Compton

# Drinking Water Organization



# New Manganese Optimization Goals

- We are working with the EPA in developing new Manganese goals.
- The goal could be 0.02 ppm or 0.03 ppm in finished water.
- Currently there are 3 different tests approved to measure manganese with each having differing minimum levels of detection/accuracy.
- Minimizes manganese loading in the distribution system.

# New Corrosion Control Optimization Goals

- We are working with the EPA to develop corrosion control goals.
- Maintain minimum levels of corrosion inhibitor in the distribution system.
- 1.0 ppm, suggestion for the current minimum level of corrosion inhibitor in the distribution system at maximum physical locations.

# Membrane Optimization Goals

- Meet sedimentation goals of 1.0 or 2.0 NTU
- 0.050 NTU 95% of time from individual membranes (IFE)
- Not to exceed 0.15 NTU.
- 95% of PDTs below limit.
- Hybrid WTPs will have to meet goals appropriate to treatment units.
- Goals Were implemented in 2020

# Status Components Distribution (DBPs)

Optimization Goals Achieved	4th QTR 2018	1st QTR 2019	2nd QTR 2019	3rd QTR 2019	4th QTR 2019	1st QTR 2020	2nd QTR 2020	3rd QTR 2020	4th QTR 2020	1st QTR 2021	2nd QTR 2021	3rd QTR 2021	4th QTR 2021	1st QTR 2022	2nd QTR 2022	3rd QTR 2022	4th QTR 2022
<b>Systems Optimized</b>	177	184	186	185	177	189	187	183	179	179	170	175	168	169	170	161	159
Met TTHM LRAA Goal	216	225	226	226	225	221	221	222	221	221	213	222	224	225	222	218	224
Met TTHM Long Term Goal	203	205	204	207	203	210	209	206	204	204	200	209	204	207	206	204	205
Met TTHM Short- and Long-Term Goals	200	204	203	203	201	206	207	206	203	204	199	209	204	207	199	198	203
Met HAA5 LRAA Goal	224	233	229	226	226	226	226	219	214	221	209	217	213	213	218	218	220
Met HAA5 Long Term Goal	199	201	203	208	211	212	210	202	197	197	191	195	191	189	194	187	189
Met HAA5 Short- and Long-Term Goals	191	199	201	204	206	209	206	200	196	195	186	193	187	186	186	185	185
Met Both Short-Term Goals	207	221	220	219	217	214	217	212	209	217	203	210	208	208	206	206	214
Met Both Long-Term Goals	185	189	189	192	192	196	194	187	185	181	176	181	174	175	171	171	170
Not Meeting Any Goals	5	2	2	2	2	1	3	1	3	2	3	4	2	1	0	0	2

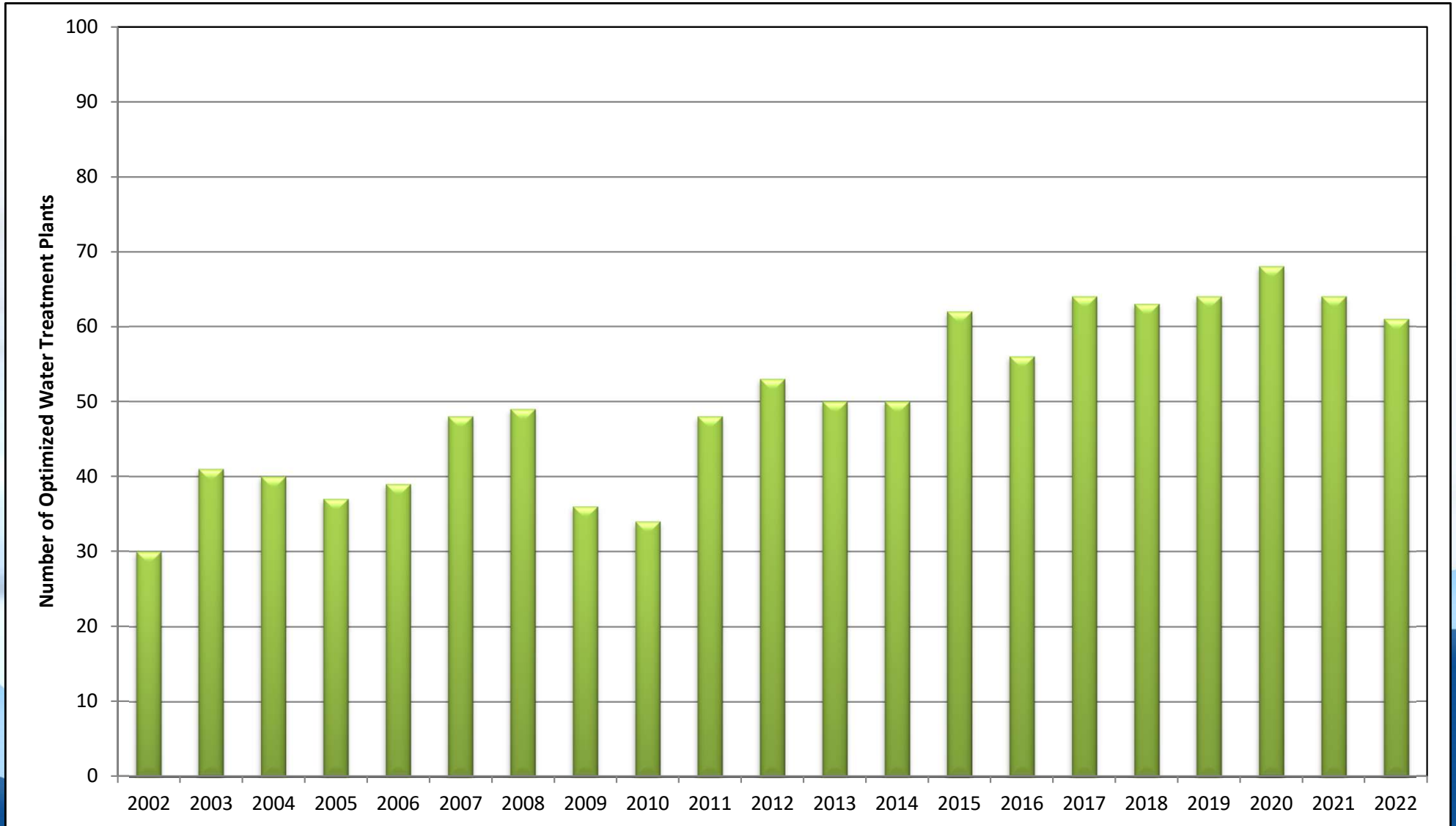
# Status Components Microbial (Conventional)

Goal	Number of WTPs	Percent
Optimized	61	63.5%
Settled Water	72	75.0%
Filtered Water	79	82.3%
Neither Goal	8	8.3%



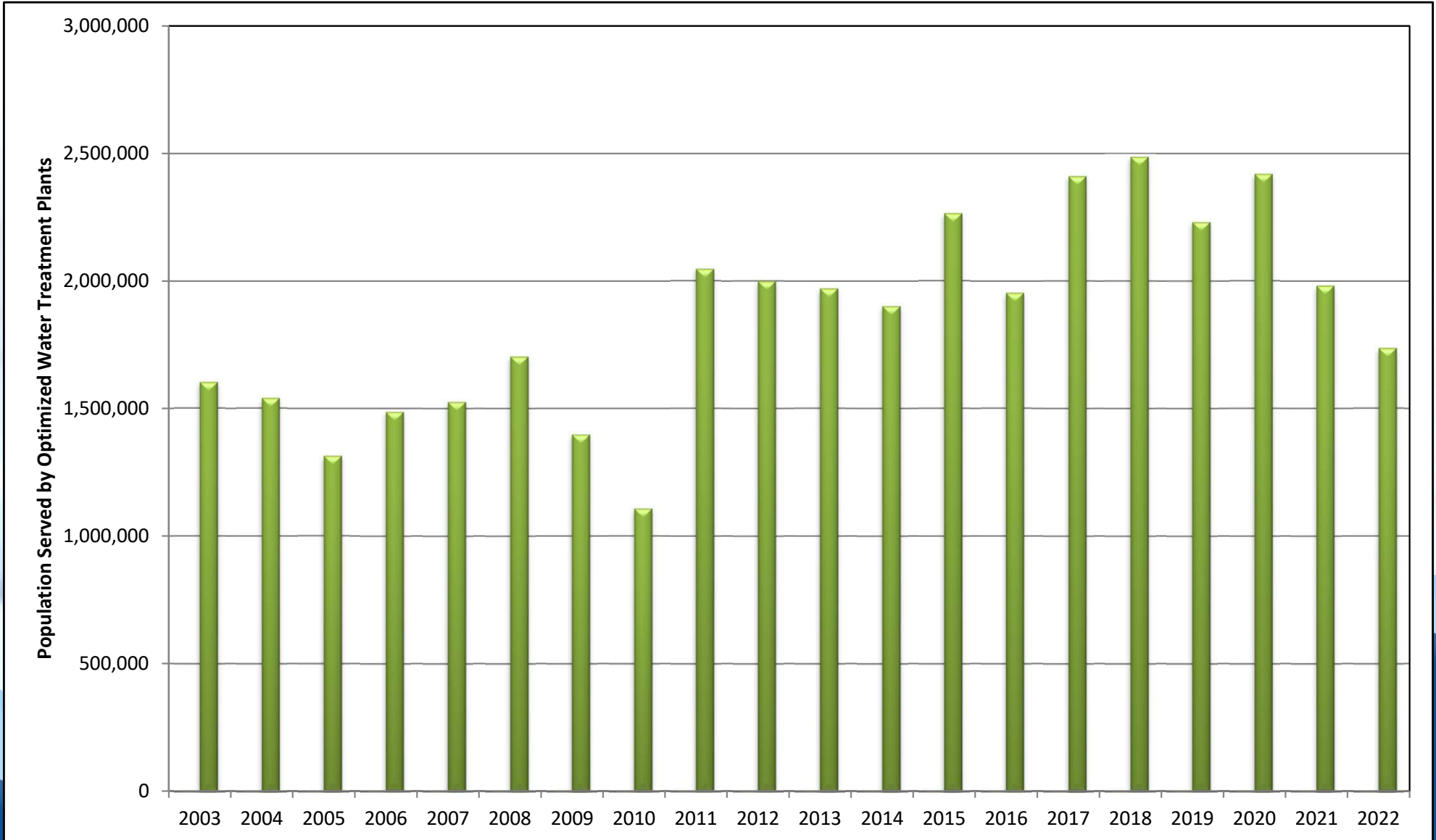
# AWOP Impacts

## Optimized Water Treatment Plants



# AWOP Impacts

## Population Receiving Optimized Water



# What's been happening in AWOP?

- This year it was ADEM's turn to host the Region 4 Multi-State AWOP Team Meeting and Training Workshop in April.
- The National AWOP Meeting and Training Workshop also took place this year in August.
- Next, the Region 4 and More Multi-State AWOP Team is meeting in Florida in November 2023.

# Region 4 – Multi State AWOP Team Meeting and Workshop in April 2023

- Included Region 4 EPA and several states.
- Our workshop topic was Membranes. We pick topics based on relevance of the hosting state.
- Muscle Shoals was picked because their membranes were not optimized in the past.

# Why Muscle Shoals?

- Their location was ideal for travel from other states.
- The closest airport is a reasonable distance away.
- We also contacted Management including the Chief Operator to ensure their cooperation.
- Also, we ensured they had the resources available to host it.

# What resources were assessed?

- Will enough operators be made available for a large group to be split up into smaller groups?
- Will they be able to provide technical support or know who to contact to obtain any requested data?
- Is there a meeting space available for 20 to 30 people within a reasonable distance from the plant or onsite?

# What did this workshop cover?

- This workshop consisted of seven sections.
- We split up into smaller groups and divided up the sections between them, so we didn't work on the same things.
- We mainly assessed data integrity between recorded and reported data.
- One group also watched/recorded the pressure gauges during an integrity test.

## How did it go?

- There were some data issues discovered.
- Part of the agreement when we do these types of assessments, is that there isn't any resulting enforcement action.
- The system is informed of the issues, and they can make corrections to fix them.



# What did we learn?

- We learn more when problems or discrepancies exist between recorded and reported data.
- If everything was perfect, how would we learn to identify problems?
- The goal was to learn more about how Membranes work and process data from them.

**NOW PRESENTING THE AWOP  
AWARDS FOR THE 2022  
MICROBIAL (TURBIDITY)  
AWARD WINNERS**

# 1 YEAR AWARDS

Birmingham Water Works Board – Western WTP

Coosa Valley WSD

Fort Payne (The WWB of the City of )

Franklin County Water Service Authority

Jackson WWSB (Clarke County)

Mobile Area Water Works and Sewer Board –  
Stickney WTP

# 2 YEAR AWARDS

Bessemer (G.U.S.C.)

Birmingham Water Works Board – Carson  
WTP

Roanoke Water

Warrior River Water

# 3 YEAR AWARDS

Alexander City Water

Athens Utilities

Cherokee Water and Gas Board

Clay County Water Authority

Constellium – Wise Alloys – WTP

Opelika Utilities – Betts WTP

Oxford Water Works and Sewer Board – Quarry  
WTP

# 4 YEAR AWARDS

Alabaster Water

Bridgeport Utilities

Sheffield Utilities

Shelby County Water

Winfield Water Works

# 5 YEAR AWARDS

Albertville Utilities Board – 12 MGD WTP

Albertville Utilities Board – 9 MGD WTP

Anniston – Knowlton WTP

Arab Water Works

Huntsville Utilities – Southeast WTP

North Marshall Utilities

Smiths Water and Sewer Board

# 6 YEAR AWARDS

Arley Water Works

Berry Water Department

Gadsden Water Works

Jasper Water Works

Northeast Alabama WSD –

Monsanto WTP



# 8 YEAR AWARDS

Harvest-Monrovia WSFP – Zion WTP  
Thomasville Water Works WTP

# 9 YEAR AWARDS

Colbert County Rural Water System  
Cullman Utilities Board

# 10 YEAR AWARDS

Guntersville Water Works – Sunset WTP

Northeast Alabama – Highpoint WTP

# 11 YEAR AWARDS

Scottsboro Water Works – Skinny Jones WTP  
Talladega (City of) Water Department

# 12 YEAR AWARDS

Birmingham Water Works Board – Putnam WTP

Hawk Pride Mountain WS WTP

US Army Aviation & Missile Command WTP

# 14 YEAR AWARDS

Russellville WWSB

# 16 YEAR AWARDS

Blount County Water

Calera Water

Tuscumbia Water

# 17 YEAR AWARDS

Florence Water Department – Wilson Lake WTP

Harvest-Monrovia WSFP – Burwell WTP

Red Bay WTP



# 18 YEAR AWARDS

Scottsboro Water Works – North Sauty WTP

# 19 YEAR AWARDS

Centre Water

Florence Water Department – Cypress Creek WTP

# 20 YEAR AWARDS

Anniston WWSB – Krebs WTP

Fayette Water

Montgomery Water Works

Northeast Alabama WSD – Waterloo  
WTP

Section Dutton Water