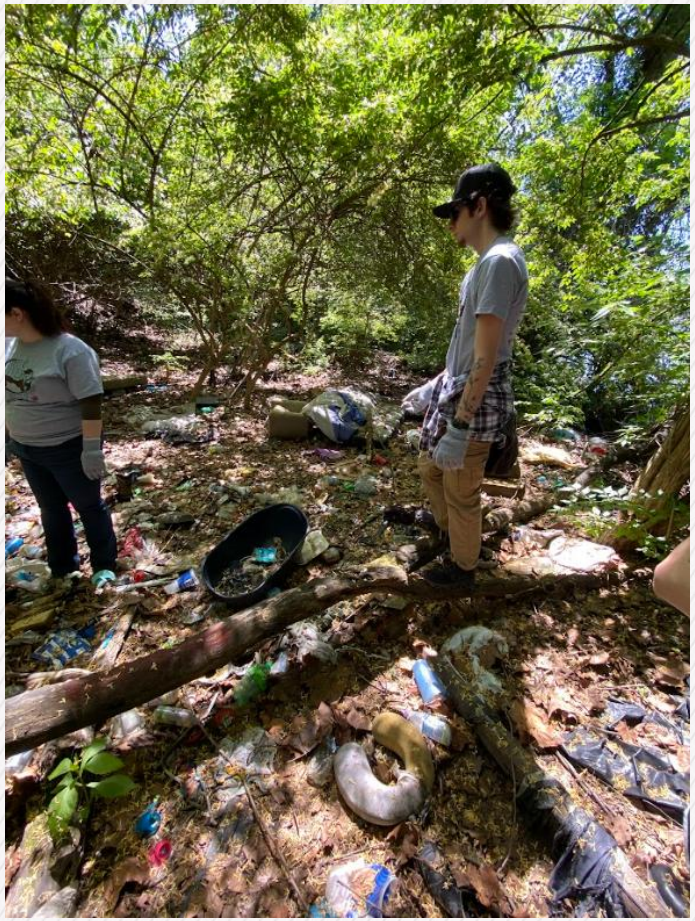
3RQ Updates: Monongahela River Basin

West Virginia Water Research Institute

WestVirginiaUniversity.

Mon River Sweep



- Held second annual Mon River Sweep
- Pulled 6,600 pounds of trash out of the Monongahela River, banks, and rail trail (over 5 times the amount of trash collected the previous year)
- Around 70 volunteers participated
- Volunteers included individuals from WVU, partner organizations, and the Morgantown community

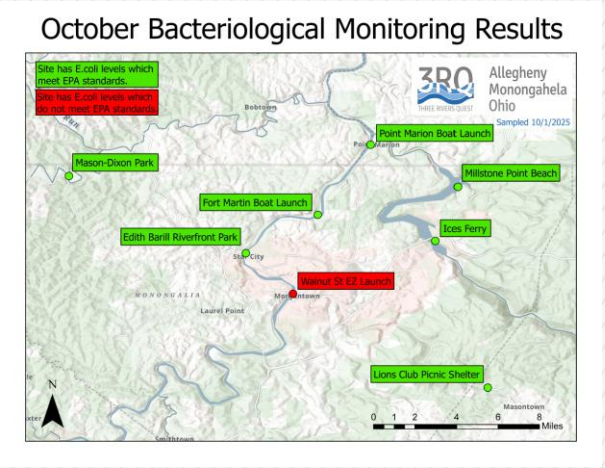
Common Waters

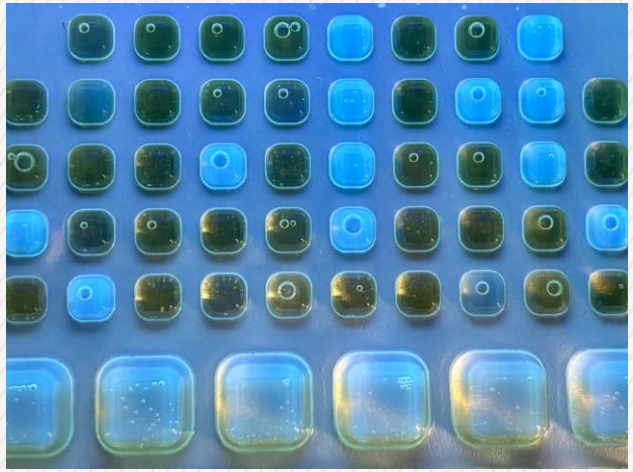
- Created 14 projects between WVU students and six watershed groups, including both research and outreach based projects
- Held two symposiums for students to present their projects
- Led two labs with WVU's Freshwater Ecology lab to give students hands-on experience with water quality field data and sample collection processes

View all 2025 Common Waters projects here:
https://commonwaters.wvu.edu/projects/2025

Swim Guide Monitoring

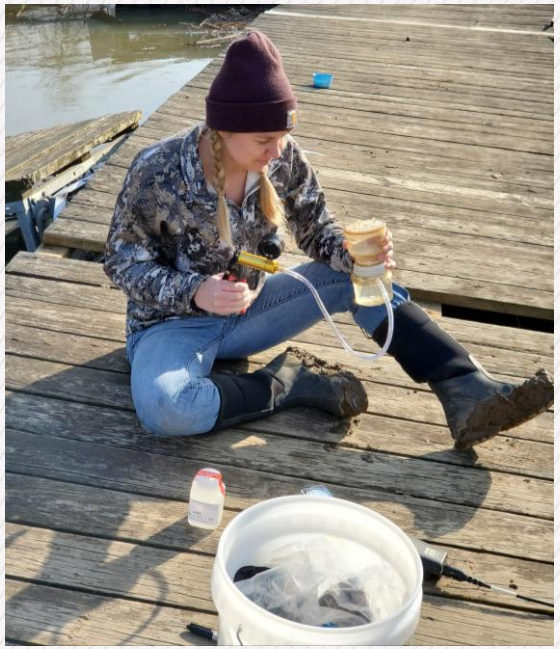
- Monitoring 8 sites popular for water recreation in and around greater Morgantown area from May-October
- Purchased IDEXX equipment to assess total coliform and E.coli levels
- Determined if sites “pass” or “fail” following EPA guidelines for E.coli
- Posted results within 48 days of sampling on WVWRI/3RQ social media, 3RQ website, and SwimGuide





Routine Monitoring

- Monitoring 18 sites from Pittsburgh to Fairmont once a month to assess water quality parameters
- Monitoring 8 sites for coliforms during warmer months
- Utilized data in several projects to assess trends



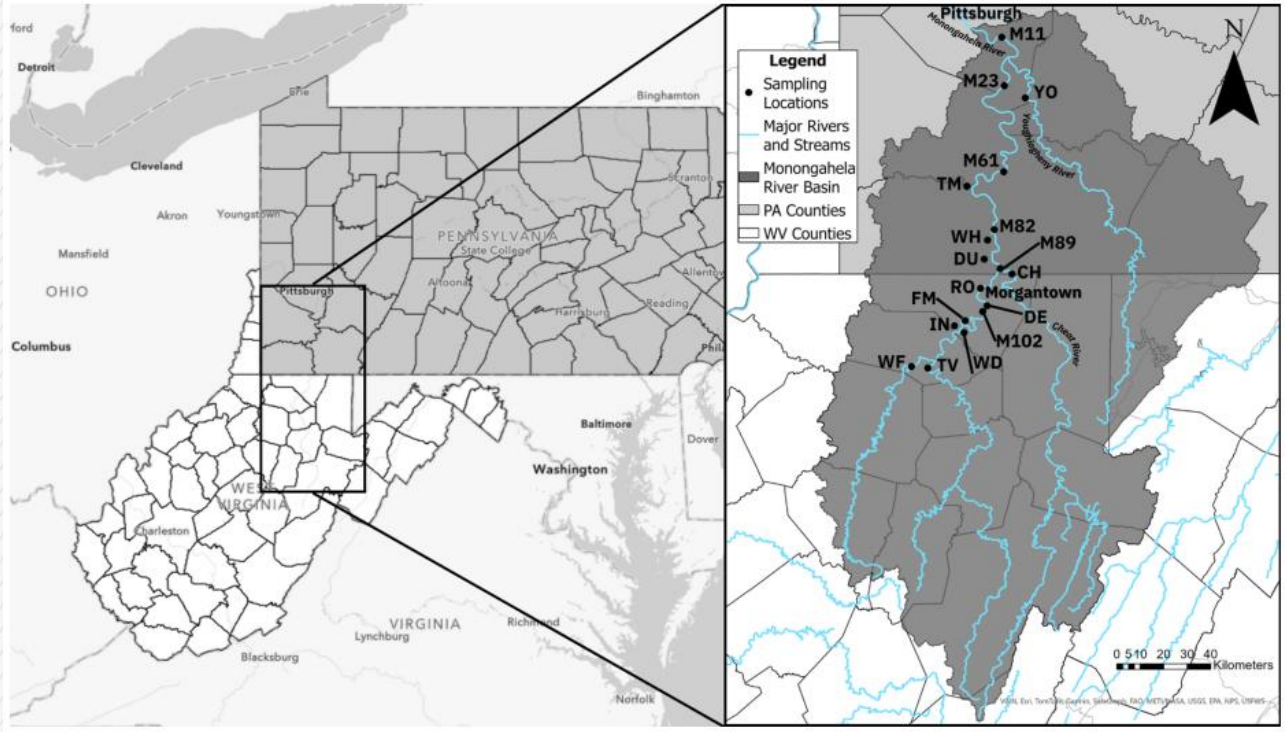
New Applications of Routine Monitoring Data

New 3RQ Publication

- Long-term Water Quality Trends in the Monongahela River Basin was published in the Journal of Contemporary Water Research & Education (April 2025)
- Investigates statistical trends of **AMD signal parameters** over course of program

New 3RQ Publication

- Widespread **decreasing trends** in total dissolved solids, sulfate, chloride, and sodium were **observed in all 6 Monongahela River mainstem sites**
- Identifies 3RQ as a **critical program** for continued water quality improvements in the Monongahela River basin



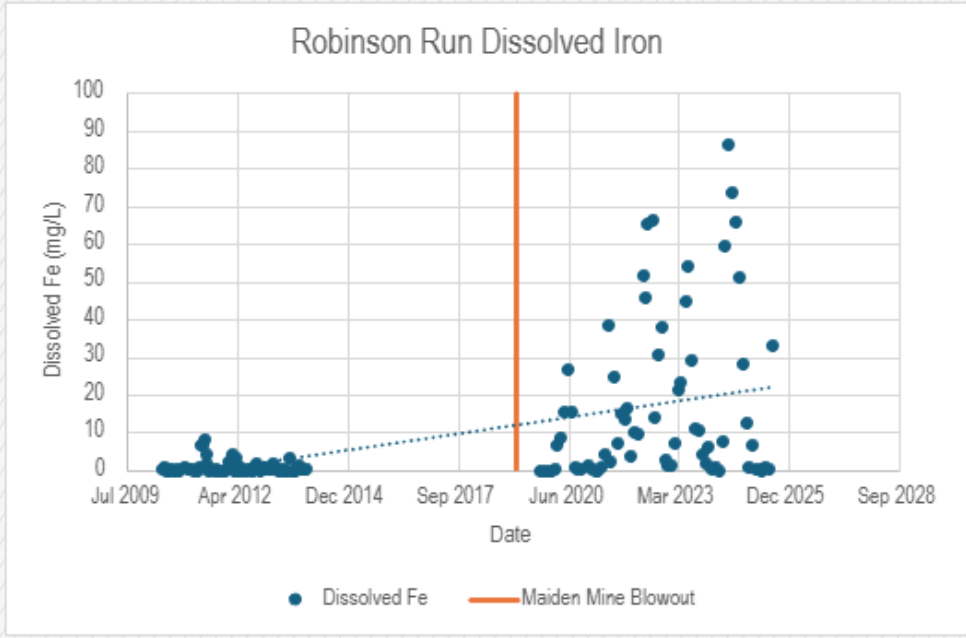
Robinson Run Key Impacts

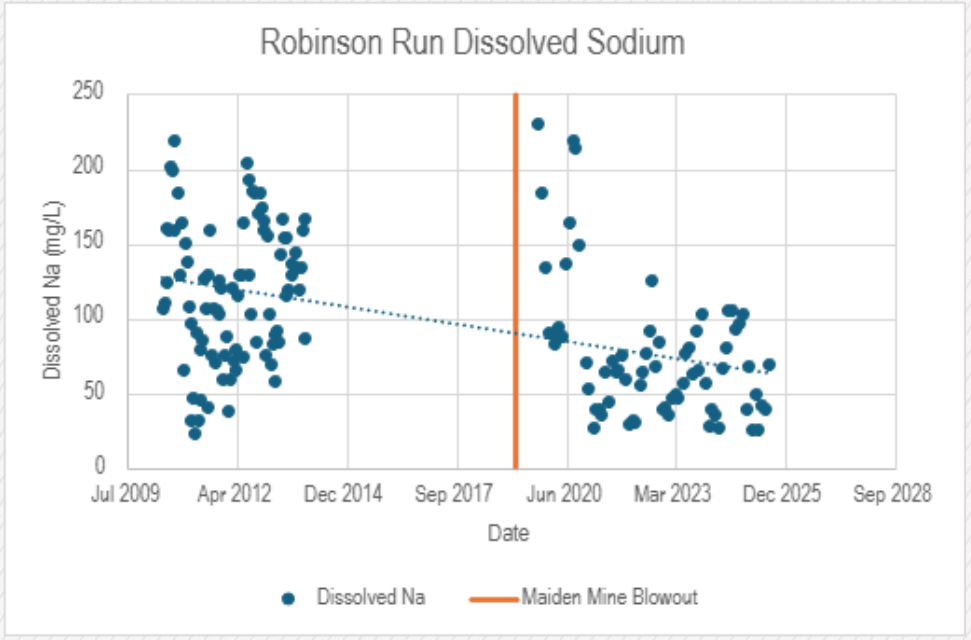
- Investigation on impacts of the **Maiden Mine blowout**
  - Occurred on April 1, 2019
- Additional key dates to be examined:
  - Changes in active mining and treatment
  - Newly inactive sites
  - Injection wells

PERMITS			
Permittee	**Facility Name**	**Description**	**Permit ID & Link**
Coreseco, LLC	Coreseco, LLC	Prep Prant & Related Fac.	WV1002619
Permit Type	**Start Date**	**End Date**	
Deep Mine	11/25/1986	10/13/2009	
Haulroad	1/9/2006	-	
Preparation/Cleaning Plant	1/9/2006	-	
Underground Disposal Area	2/12/2008	-	
Refuse Area	1/9/2006	-	
Office or Shop Area	1/9/2006	-	
Surface Mine	11/25/1986	10/13/2009	
Permittee	**Facility Name**	**Description**	**Permit ID & Link**
Dana Mining Company, LLC	Prime No. 1 Mine	Deep Mine	WV1011715
Permit Type	**Start Date**	**End Date**	
Bath House/Sewage	11/14/2012	-	
Deep Mine	12/3/1996	-	
Office or Shop Area	12/3/1996	-	
Underground Disposal Area	10/31/2005	-	

Robinson Run Key Impacts

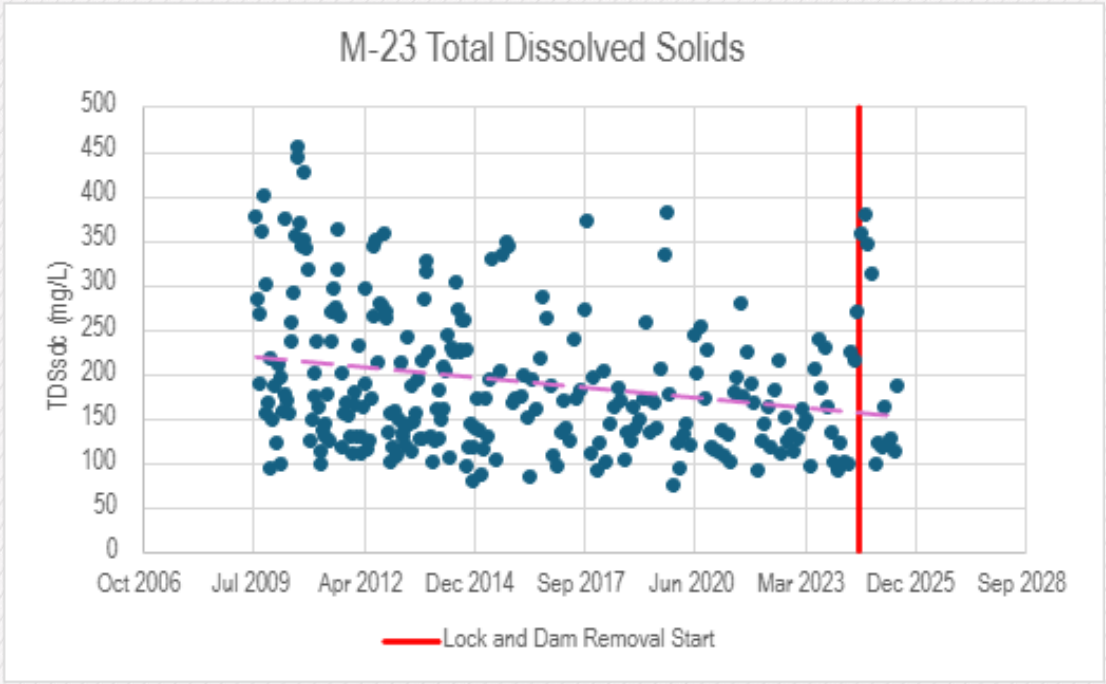
- Increases in:
  - **Metals:** dissolved Al, dissolved Fe, dissolved Mn
  - **Salt components:** Cl, Br
- Decreases in:
  - **Salt components:** dissolved Na, Ca, SO4
  - pH



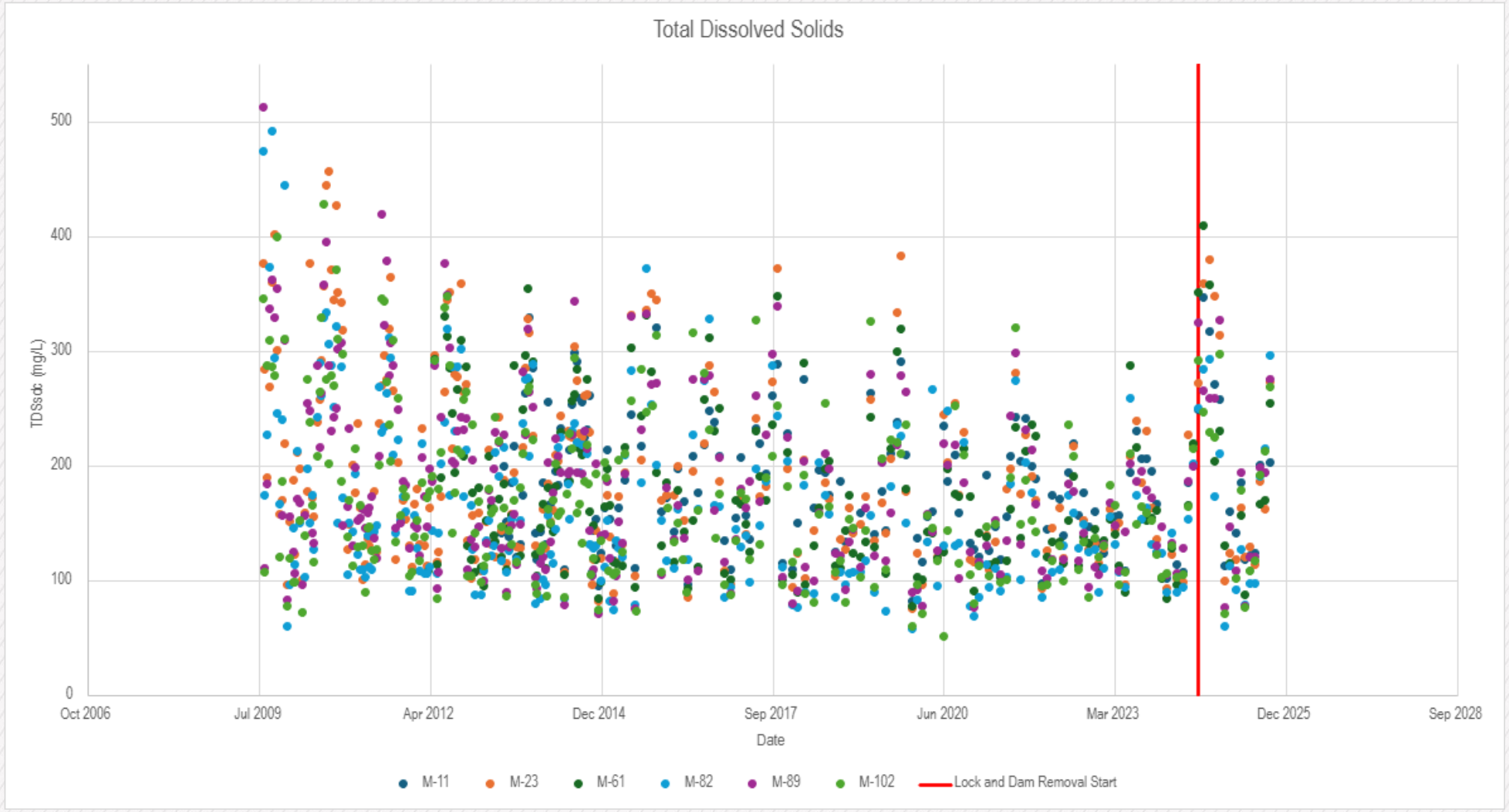


Lock and Dam Removal in Elizabeth, PA

- Aimed to examine the effects of the **lock and dam removal** on Monongahela River water quality
  - Removal began in **April 2024** and is ongoing
- Trends directly related to removal have not yet been observed



Lock and Dam Removal in Elizabeth, PA

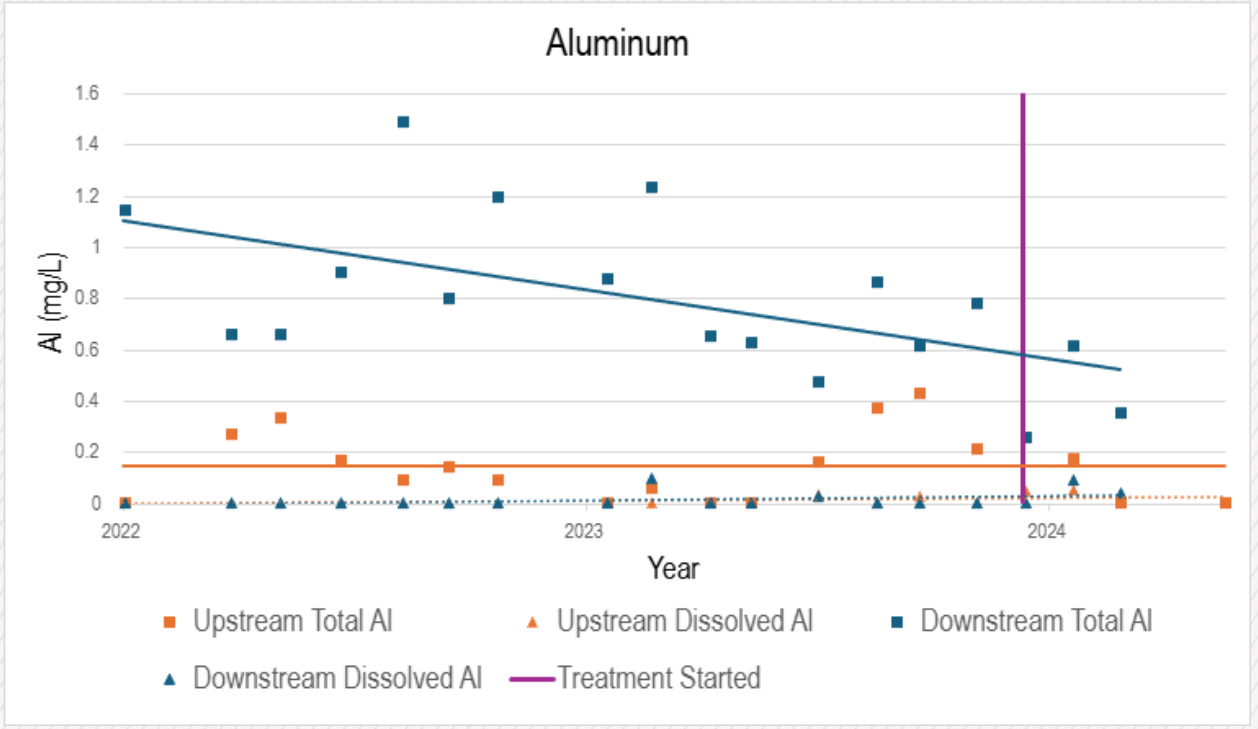


Richard AMD Treatment's Effect on Deckers Creek

- Examines the impact of Richard Mine discharge treatment
- Compares Friends of Deckers Creek (FODC) monitoring data **collected upstream and downstream of treatment** to 3RQ data

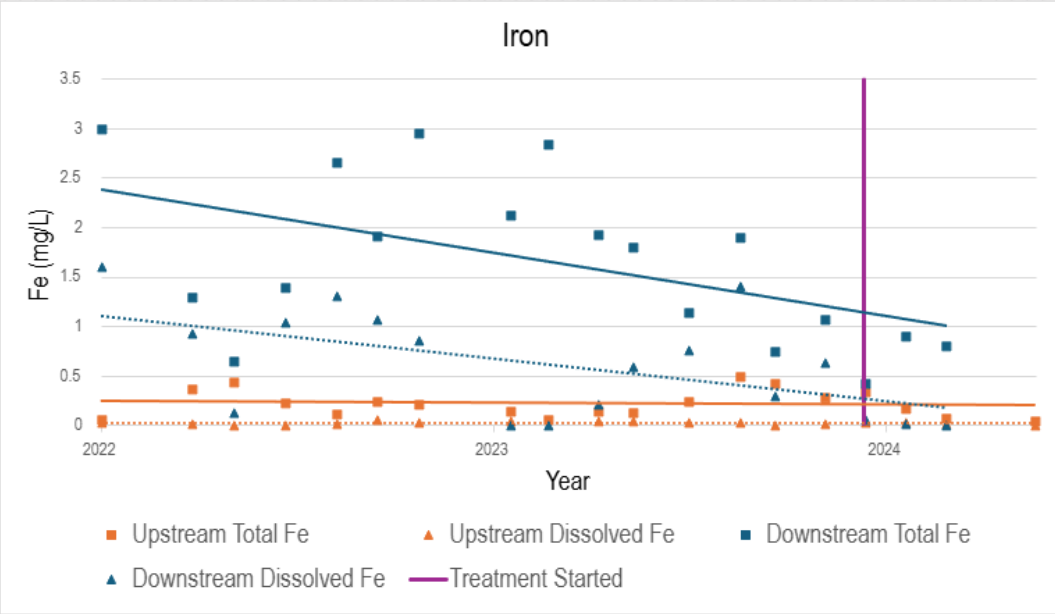
Richard AMD Treatment's Effect on Deckers Creek

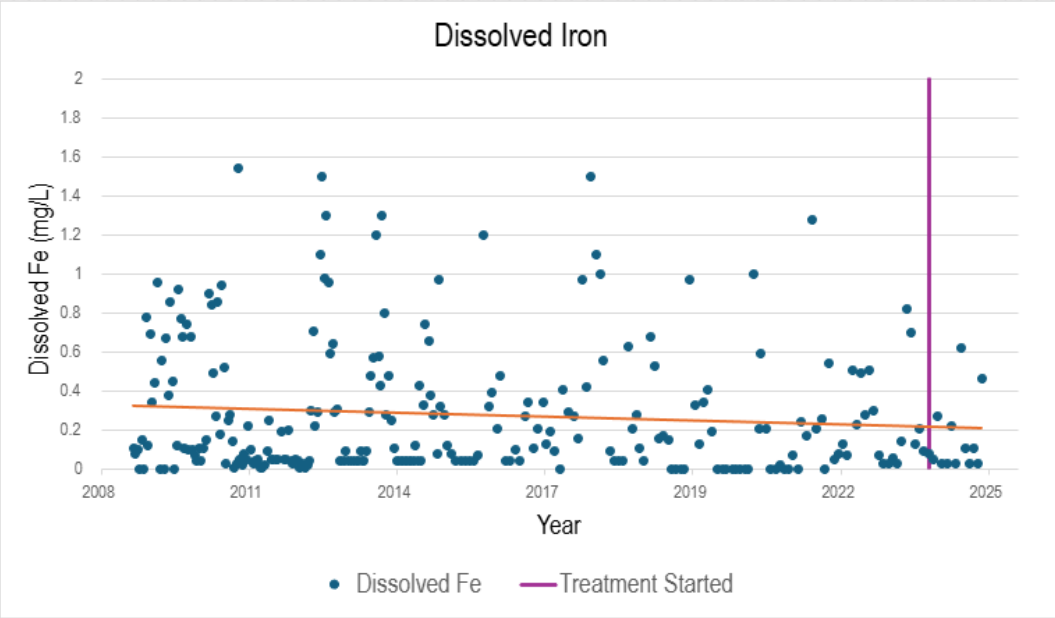
- General **AMD signal parameter improvements** observed in FODC datapoints
  - Excluding TDS (increasing)
  - Al and Fe decreasing dramatically
- Supports AMD treatment throughout the watershed and at the Richard Mine is improving water quality



Richard AMD Treatment's Effect on Deckers Creek

- 3RQ data shows a significant upward trend in Al but **no significant trend for Fe**
  - 3RQ only reports dissolved metals (not total)
  - Earlier statistical analysis of 3RQ data was over a broader time period
- Future work should involve **statistical analysis** of FODC data





Thanks for listening!

Questions?

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