



# **Back River WWTP: Update on Odor Action Plan**

**April 30, 2026**

**A Collaborative Effort between MDE, Baltimore  
City, & Baltimore County**

# Welcome and Recent Highlights

- Previous Meeting 2/26
- Back River Tours
- Tour with residents



## Back River Community Meeting Agenda

Date: Thursday, April 30, 2026

Time: 5:30 PM – 7:00 PM

Location: Virtual

Participants: Back River community and Representatives from MDE, Baltimore City, and Baltimore County.

### 1. Welcome and Recent Highlights (5 Minutes)

Topic: Opening remarks and appreciation.

- **Baltimore City:** Acknowledging the City for hosting recent site tours and clean-up event.
- **Meeting Goals:** Setting the stage for this 4th community session, with a primary focus on addressing odor concerns.

### 2. Addressing Odor Concerns: Investigation and Next Steps (45 Minutes)

Topic: Results from recent investigations and findings.

- **Presentation (15 min):** A joint report from MDE, Baltimore City, and Baltimore County on recent odor analysis, what we have learned and what we have been doing to improve the situation.
- **Community Discussion (30 min):** Facilitated open floor for residents to ask questions and share feedback on odor issues.

### 3. Managing Solids Processing: Solids Handling Update (15 Minutes)

Topic: Following up on how the plant handles solid materials.

- **Third-Party Review (5 min):** Summary of findings from recent independent expert reports.
- **Community Discussion (10 min):** Facilitated open floor for residents to ask questions and share feedback.

### 4. Water Quality and Operations Update (20 Minutes)

Topic: Status of the plant's discharge permit and local water impact.

- **Presentation (10 min):**
  - **Current Discharge Status:** Recent inspections and performance.
  - **Bypass Discussion:** Explaining recent process bypasses. What are they? What do they mean?
  - **Pier Lights:** Update on the process to revise rules for when pier lights are turned on or off.
- **Q&A (10 min):** Questions regarding water quality and plant operations.

### 5. Summary and Moving Forward (5 Minutes)

Topic: What happens after tonight?

- **Action Item Recap:** A quick summary of the specific commitments made during the meeting.
- **How to Stay Informed:** Where to find presentations from tonight.
- **Reporting Odors:** A reminder of the best way for residents to report "smell events" in real-time so that the City, County and MDE can track them.
- **Next Meeting:** Save the date for the 5th community meeting.
- **Final Thanks:** Closing remarks from MDE, Baltimore City, and Baltimore County.

Meeting format for tonight.



# Tonight's Agenda

1. Addressing Odor Concerns: Investigation and Next Steps
2. Managing Solids Processing: Solids Handling Update
3. Water Quality and Operations Update
4. Summary and Moving Forward



# 1. Odor Investigation Update

- Overview of Smell My City campaign data analysis
- Updates:
  - Onsite Air Monitoring
  - Review of Plant Operational Data
- Next steps



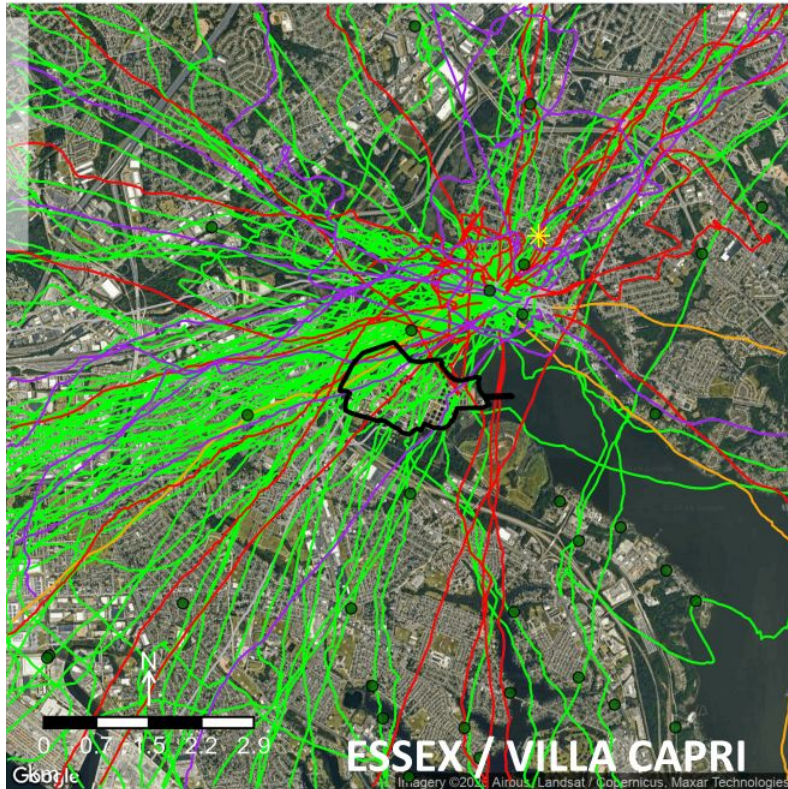
# Data Collection Project Goals

- 1. Identify specific days and locations with strong odors in Essex, Dundalk, North Point, and nearby communities**
- 2. Use wind data and air monitoring data to trace odors back to specific sources**
- 3. Analyze if strong odors correlate with any specific operational activities at Back River WWTP, connected pumping stations, or any other potential sources**
- 4. Understand the impact of atmospheric conditions**



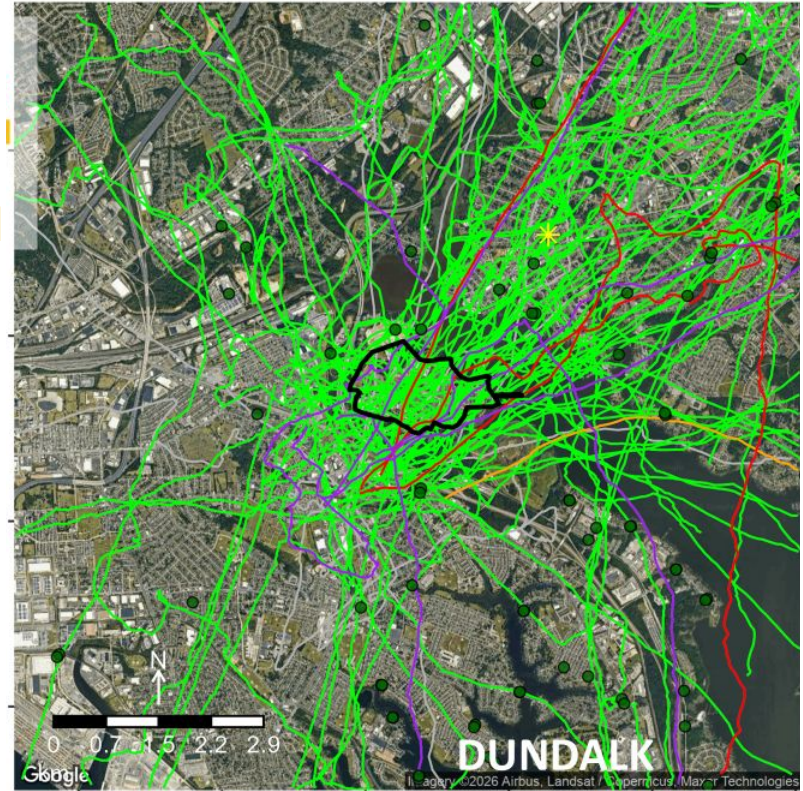
# Smell My City Data - Mapping “Smell Paths”

SmellMyCity Reports (4+) with Smell Path  
Villa Capri & Essex



Sewer  
Burning  
Chemical  
Egg  
Water

SmellMyCity Reports (4+) with Smell Path  
North Pt Blvd & Dundalk



# What we've learned from Smell Paths

- Sewer odors have paths crossing or within bounds of Back River WWTP, predominately the Western half
- Different wind patterns for reported sewer odors in Essex & Villa Capri vs. Dundalk & North Point



## Zooming in: Onsite Sensors

Installed 3/18/26  
 $\text{H}_2\text{S}$ ,  $\text{CH}_4$ , wind

Installed 3/31/26  
 $\text{H}_2\text{S}$ ,  $\text{CH}_4$

We measure hydrogen sulfide ( $\text{H}_2\text{S}$ ) as an indicator for odors

# Zooming In

With two sensors on the Back River WWTP grounds, we're finding primary odor paths towards the sensors (arrows)

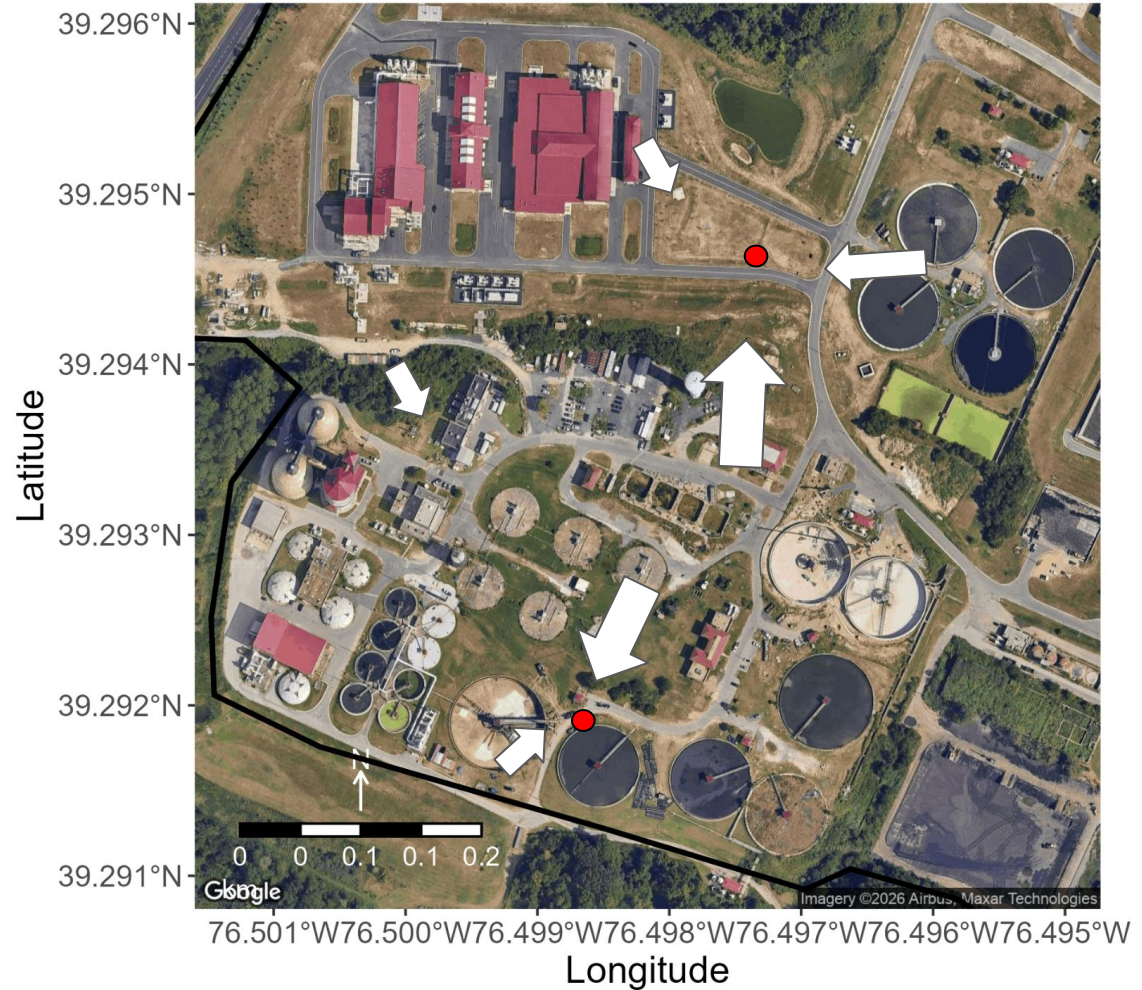
These identify likely odor source areas

Working with the plant to understand operations which may lead to odors in these areas.



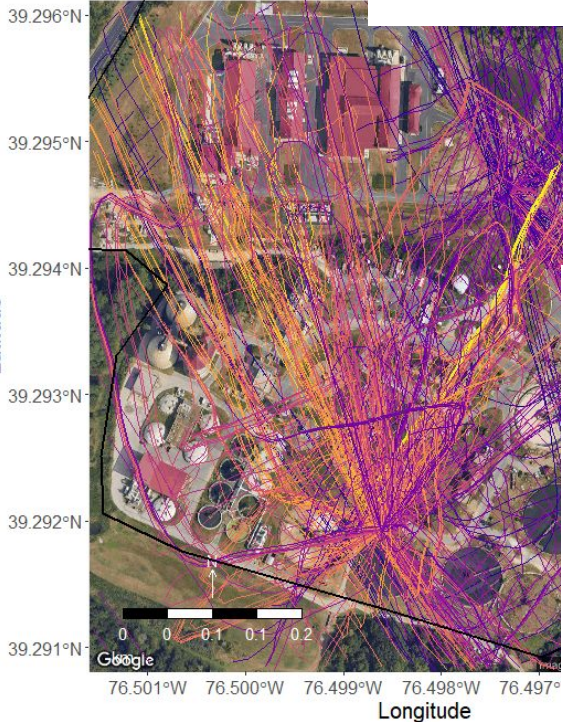
## BR WWTP SmellPaths

Max Daily H<sub>2</sub>S Instances >100 ppb since March 28, 2026



## BR WWTP SmellPaths

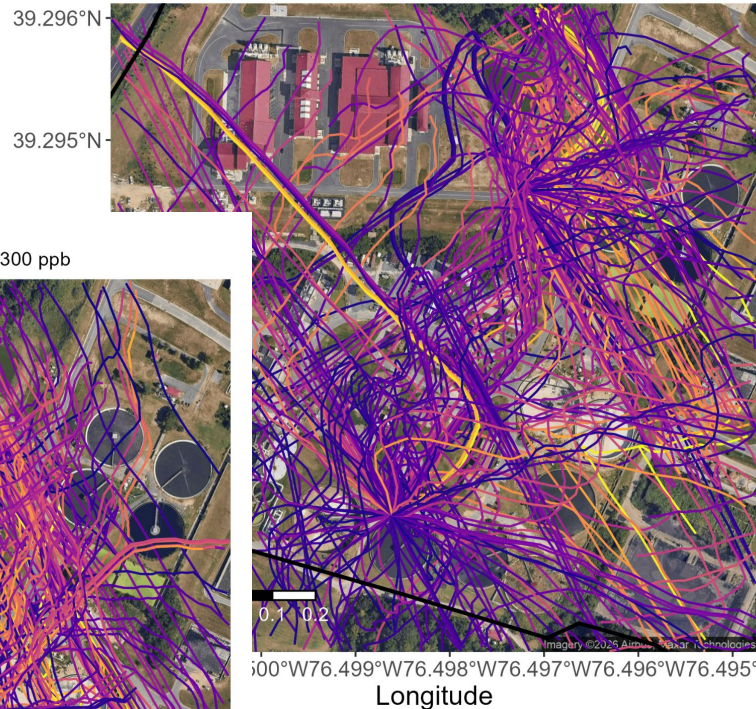
April 3-4, 2026 [8p.m. - 8a.m.]; Instance



# What the Analysis Actually Looks like:

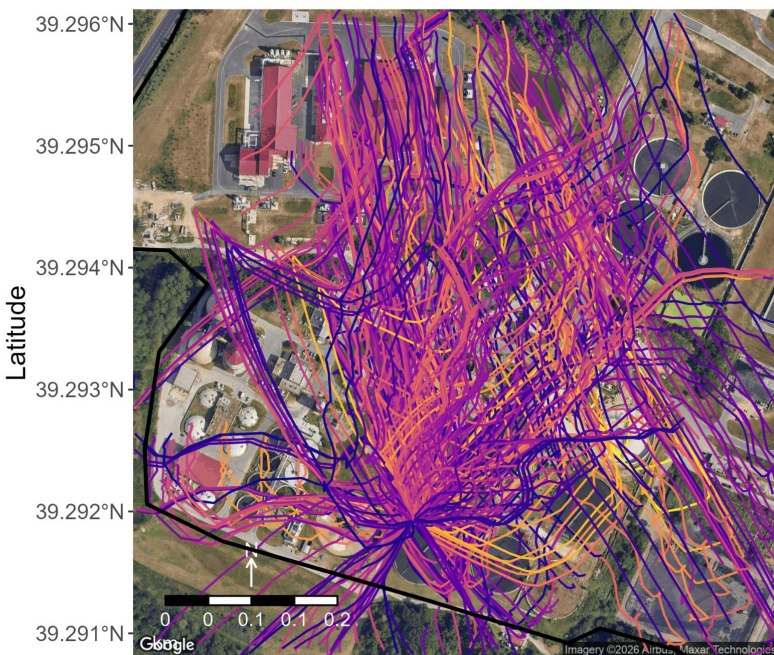
IS

April 15, 2026 [8p.m. - 8a.m.]; Instances of >300 ppb



## BR WWTP SmellPaths

April 15-16, 2026 [8p.m. - 8a.m.]; Instances of >300 ppb



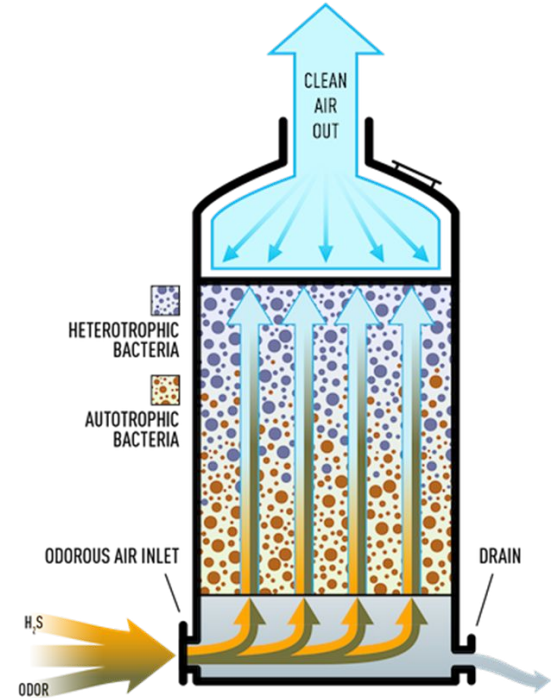
# H<sub>2</sub>S Odor Path & Sensor Data - Initial Findings

- High H<sub>2</sub>S concentrations coming from multiple 'pulsing' sources
- H<sub>2</sub>S at sensors spiking during acute events
- H<sub>2</sub>S concentrations consistently 8pm - 8am
  - Could be driven by both meteorology or plant operations/flow rate
- The highest H<sub>2</sub>S concentrations are spatially coming from the west side of the plant
- High concentrations indicate that the source is likely close to the sensor
- Most likely H<sub>2</sub>S odor sources based on smell paths
  - **Headworks**
  - **Sludge processing (PSTs → TSHTs → HRDs)**



# Headworks Odor Scrubbers Data Review

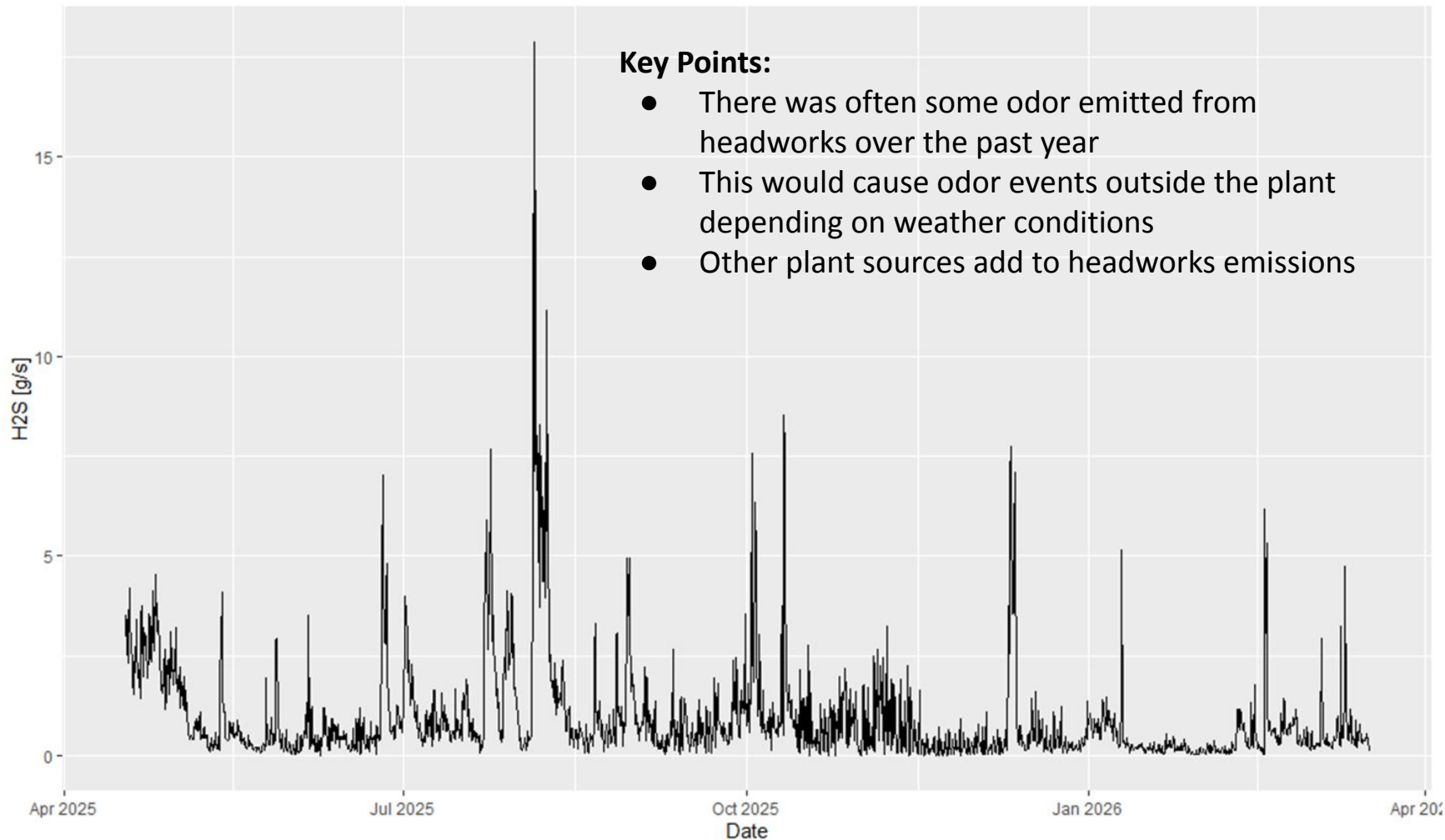
- Reviewed data 4/17/25 - 3/17/26 for 10 odor scrubbers
- Some scrubbers are operating better than others
- Identified days where there is room for improvement in operations



## Headworks H2S Emission Rate

### Key Points:

- There was often some odor emitted from headworks over the past year
- This would cause odor events outside the plant depending on weather conditions
- Other plant sources add to headworks emissions



# Next Steps

1. **Headworks** - Plant staff is working with scrubber company and headworks operator to improve operations
2. **Sludge Processing** - Continue technical collaboration to identify specific H<sub>2</sub>S and odor sources from the plant
  - a. Review each piece of equipment onsite (PSTs, TSHTs, HRDs, etc.)
  - b. Identify changes in operations that could contribute to odors
  - c. Identify what odor controls currently exist or could exist



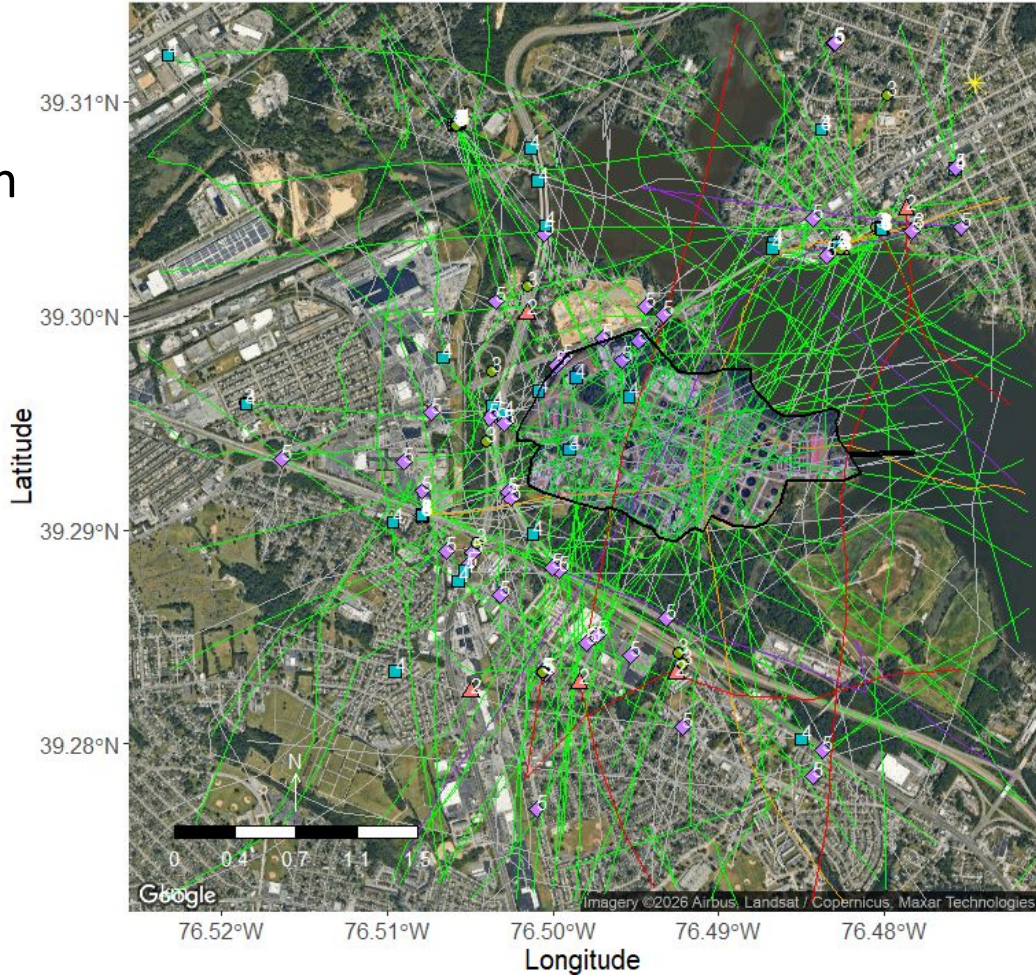
# SmellMyCity Reports with Smell Path BR WWTP Winds

March 18 - April 29, 2026

## Smell Paths

Smell MyCity Paths March  
18 - April 29, 2026

- Green lines indicate 'sewage' smells
- Green lines overwhelmingly identify the plant



# Baltimore County Updates

## County Updates

- Baltimore County has continued passive monitoring at several stations.
- Includes several visits per day, along with the use of a PID (“sniffer”) at several locations
  - Still no significant findings as of April 2026
- Coordination with MDE and Baltimore City to provide access to Pump Stations rapidly
  - No calls received for access as of April 2026
- Force Main inspections have not indicated issues either as of April 2026



# *Discussion*



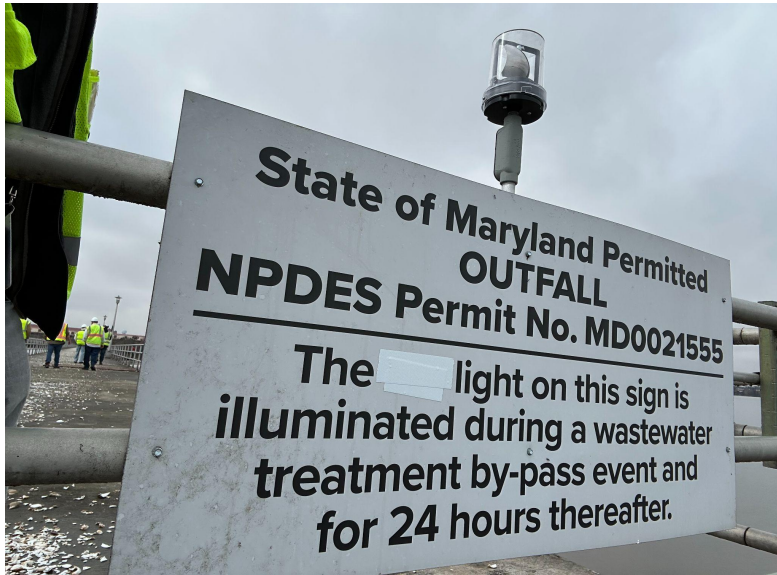
## 2. Solids Handling Update

| Items ID'd in Third Party Report                                                                                                                                                                   | Countermeasure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maintaining clogged tanks associated with solids storage.                                                                                                                                          | <ul style="list-style-type: none"> <li>• Clean out legacy solids</li> <li>• Rehabilitate Activated Plant 3               <ul style="list-style-type: none"> <li>○ Close to 100% design complete</li> <li>○ Next steps are to go out to bid after 100%</li> </ul> </li> <li>• Replace 3 of 6 previous decommissioned tanks. Replacing with 2 new sludge storage tanks and upgrading pumping station.               <ul style="list-style-type: none"> <li>○ 60% design in February 2026</li> <li>○ Next steps are to go out to bid after 100%</li> </ul> </li> </ul> |
| Challenge with sludge storage, DAF performance - renovations to the sludge storage and dissolved air flotation No 3 and 4                                                                          | <ul style="list-style-type: none"> <li>• 2 DAF tanks in service</li> <li>• Rehabilitate 2 redundant DAF tanks               <ul style="list-style-type: none"> <li>○ 60% design in February 2026</li> <li>○ Next steps are to go out to bid after 100%</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                       |
| Disruptions with the Rapid Sludge Loading Station (RSLs) storage silos. <div>  </div> | <ul style="list-style-type: none"> <li>• Install new sludge storage system which adds several weeks of storage capacity per tank, giving the plant the operational buffer needed to maintain stable flows.               <ul style="list-style-type: none"> <li>○ Currently in planning, pre-design</li> <li>○ Next steps are developing the engineering design documents</li> </ul> </li> </ul>                                                                                                                                                                    |

# *Discussion*



# 3. Water Quality and Operations Update



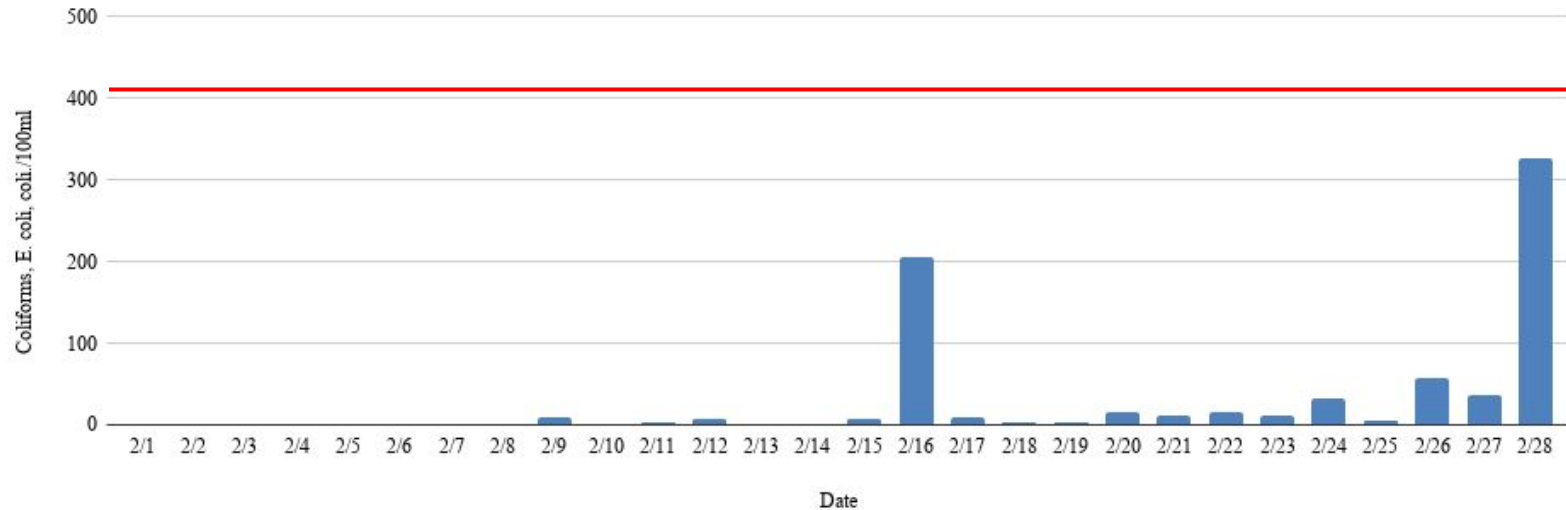
## Bypasses

- Bypasses occurred on April 1 and April 3
- Did not bypass disinfection
- Baltimore City, Blue Water Baltimore, and MDE are discussing changes to when the light comes on
- Limit the light to bypasses that have acute impacts, such as disinfection failures

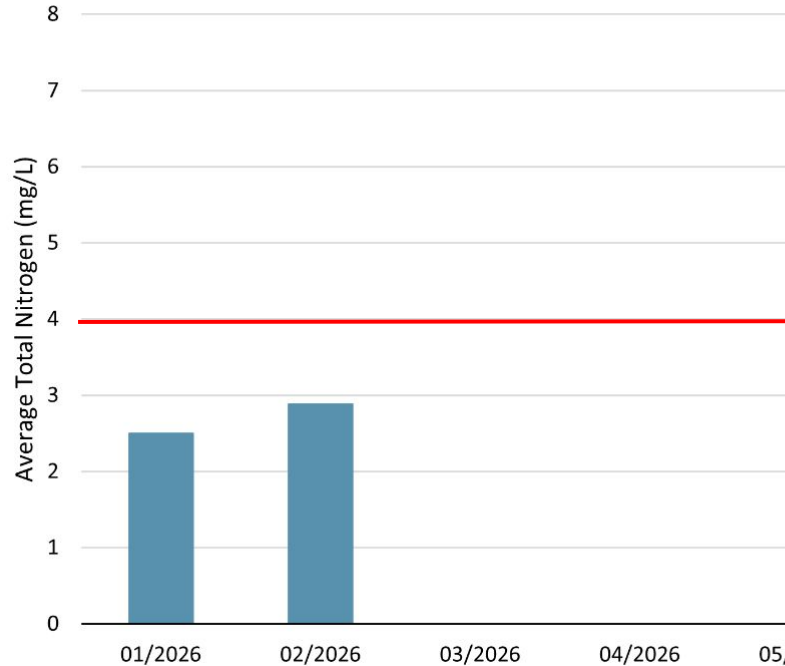


# 3. Water Quality and Operations Update

Back River February E. coli



# 3. Water Quality and Operations Update



*UMCES*

*University of Maryland Center for Environmental Science*

*Chesapeake Biological Laboratory*

***Assessing Patapsco and Back River Water Quality Responses  
to Recent Wastewater Treatment Failures***

***Final Report***

Prepared for: Maryland Department of the Environment

**July 2025**



# 3. Water Quality and Operations Update

## INSPECTIONS

- Recent inspection by MDE was February 20, 2026
- That inspection found the facility was in compliance
- Next inspection will be by May 15



# Back River WWTP - Action and Results



- Discharge levels compared to 2021:
  - ~60% reduction in nitrogen loads
  - ~80% reduction in phosphorus loads
  - Confirmed by University of Maryland
  - Compliance with discharge limits
- Corrective Actions on schedule
  - Included significant capital improvements of major process trains
    - Primary settling tanks
    - Egg shaped digester
    - Sand Filters
- Environmental Projects
  - \$1.7 million penalty reinvested into 21 community projects
- Additional State and Federal Investment
  - Loans and grants totaling \$32.6 million for infrastructure upgrades and repairs



# *Discussion*



# 4. Summary and Moving Forward

- <https://mde.maryland.gov/backriver/Pages/index.aspx>

Back River Home

Operations

Air monitoring

Sludge

Work group

Documents

## Back River Wastewater Plant



//mde.maryland.gov/BackRiver/Pages/index.aspx

