SEWER ODOR CONTROL UPDATE 2026

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Rick Bowman, Odor Control Manager, DWQ
Environmental Quality & Public Works Committee
March 3, 2026

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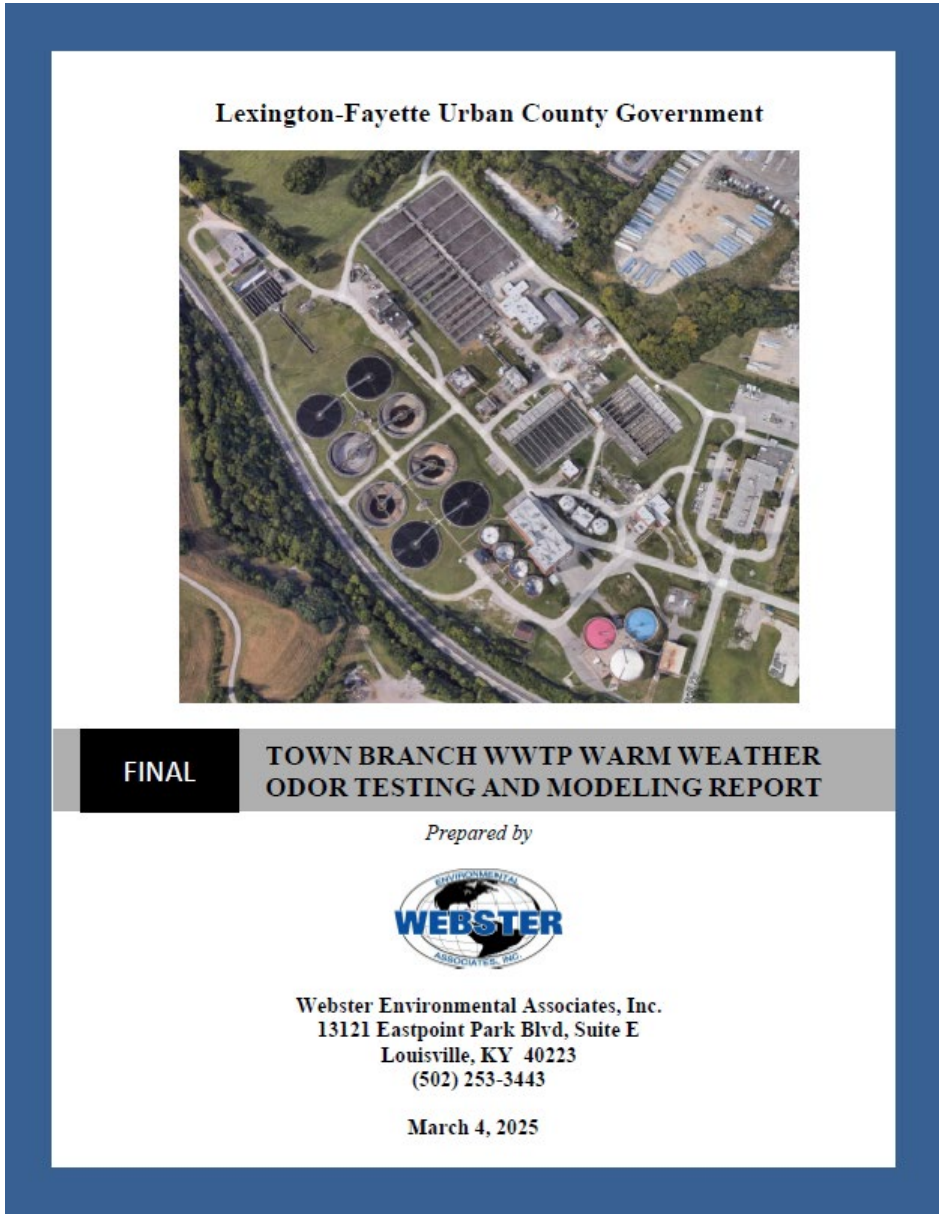
PRIMARY FOCUS AREAS FOR 2025

1. Design and construction of infrastructure that limits the release of odors.

2. Pilot testing of chemical applications that limit the formation of odor causing compounds.

2024 testing led to the development of program guidance documents for each treatment plant.

The recommendations contained in these guidance documents are the driver of decisions and actions currently underway.



Lexington-Fayette Urban County Government

FINAL

TOWN BRANCH WWTP WARM WEATHER ODOR TESTING AND MODELING REPORT

Prepared by

Webster Environmental Associates, Inc.
13121 Eastpoint Park Blvd, Suite E
Louisville, KY 40223
(502) 253-3443

March 4, 2025

Town Branch WWTP

TABLE 6- ODOR CONTROL COST ESTIMATES

	Odor Control System 1	Odor Control System 2	Odor Control System 3	Odor Control System 4
	Airflow: 9,600 cfm	Airflow: 6,000 cfm	Airflow: 39,000 cfm	
	Sources: North and South Primary Clarifiers (Covered Channels)	Sources: Headworks and Grit Effluent Channels	Sources: Dewatering Facility (Centrifuge Room & Truck Bay)	Sources: North and South Primary Clarifiers (Uncovered Surfaces)
	Bioscrubber followed by Carbon	Bioscrubber or Biofilter	Carbon	Chemical Addition
Capital Costs				
Odor Control System Equipment	1,100,000	700,000	1,200,000	Unknown Costs Further Study Needed
Equipment Installation (assume 35%)	385,000	245,000	420,000	
Foul Air Duct and Supports (assumes $75/cfm up to 10,000 cfm and $40/cfm >10,000 cfm)	100,000	450,000	1,560,000	
Structural Pads (lump sum)	15,000	30,000	60,000	
Site/Civil (lump sum)	100,000	100,000	100,000	
Electrical (lump sum)	52,000	50,000	100,000	
Replace Media in Existing Carbon Systems (assume $125/cu ft)	93,000	0	0	
Contractor Mobilization/Demobilization (lump sum)	20,000	20,000	20,000	
Contractor Overhead and Profit (15%)	280,000	144,000	311,000	
Contingency (30%)	644,000	261,000	566,000	
Total Capital Costs	*$2,789,000*	*$2,000,000*	*$4,337,000*	

Note- Estimated capital costs are study level only.

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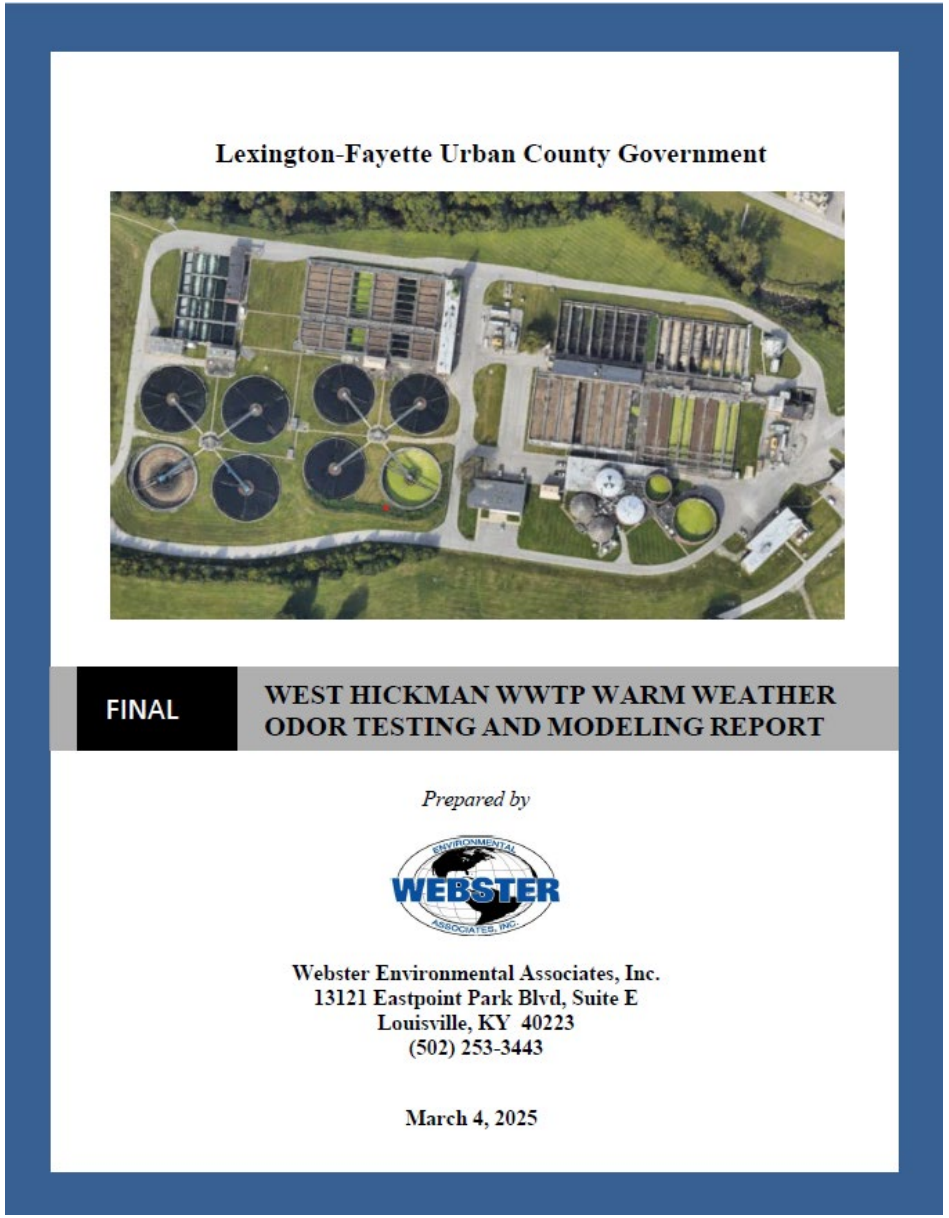
- **Two stage unit – bio-scrubber followed by activated carbon.**
- **Two different units – one for north bank, one for south bank.**
- **Capital investment - $1.6 M**

Similar approach applied at West Hickman with site specific recommendations.



Lexington-Fayette Urban County Government

FINAL

WEST HICKMAN WWTP WARM WEATHER ODOR TESTING AND MODELING REPORT

Prepared by

Webster Environmental Associates, Inc.
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March 4, 2025

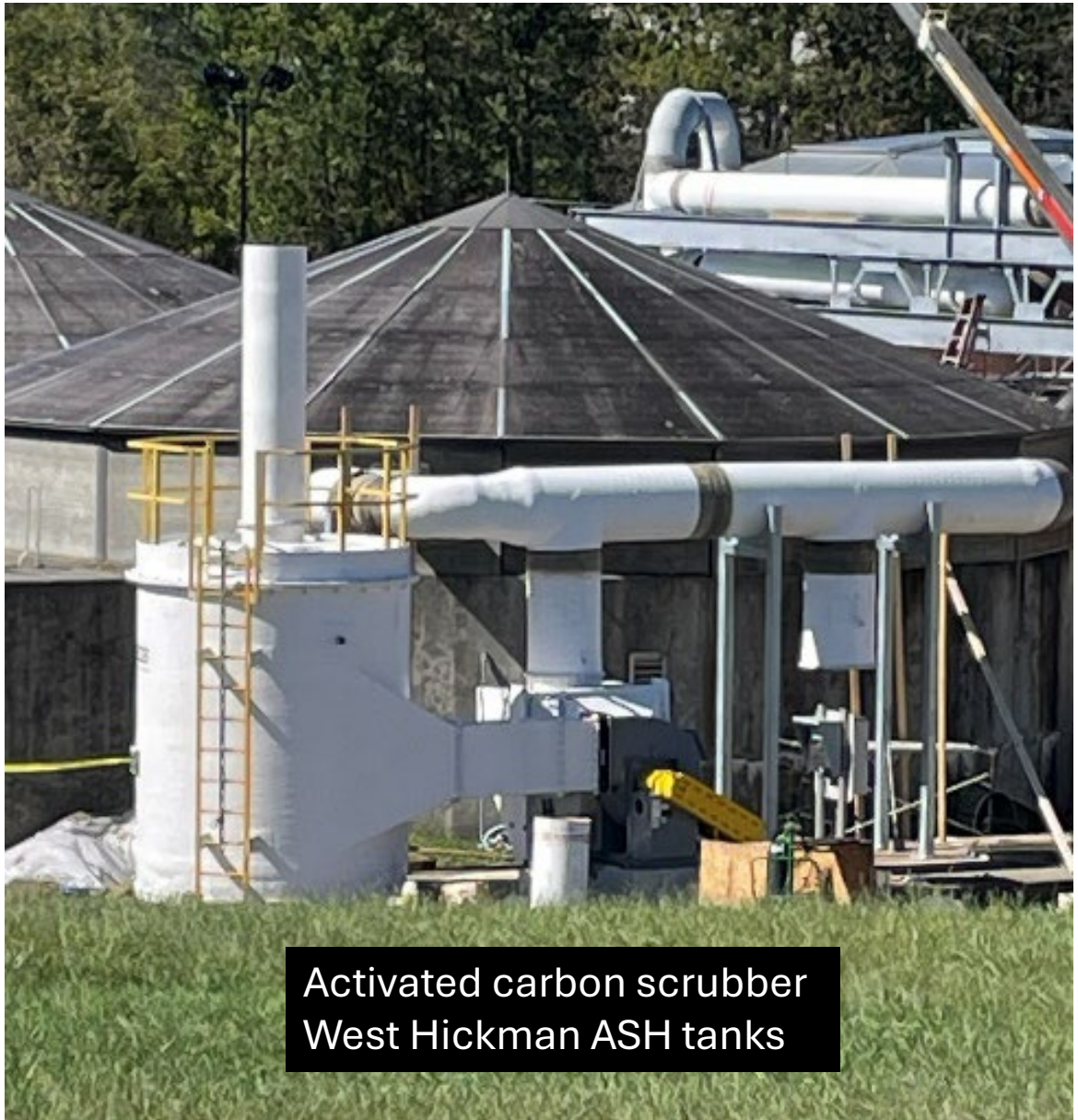
West Hickman WWTP

TABLE 6- ODOR CONTROL COST ESTIMATES

	Odor Control System 1	Odor Control System 2A	Odor Control System 2B	Odor Control System 3	Odor Control System 4
	Airflow: 4,500 cfm + 8,500 cfm	Airflow: 73,500 cfm	Airflow: 3,000 cfm	Airflow: 28,000 cfm	Airflow: 10,000 cfm
	Sources: ASH Tanks and Sludge Tanks	Sources: Headworks	Sources: Grit Effluent Tanks and Channels	Sources: Dewatering Facility (Centrifuge Room & Truck Bay)	Sources: BPR Tanks
	Chemical Scrubber and Carbon	Replace Media in Carbon	Carbon	Carbon	Carbon
Capital Costs					
Odor Control System Equipment			225,000	1,000,000	400,000
Equipment Installation (assume 35%)			79,000	350,000	140,000
Covers (assume $100/ft2)	Projects have already been awarded, capital costs are actual bid results	Used average of bids received during 2023 carbon replacement advertisement	0	0	2,200,000
Foul Air Duct and Supports (assume $75/cfm up to 10,000 cfm and $40/cfm >10,000 cfm)			225,000	1,120,000	750,000
Structural Pads (lump sum)			40,000	60,000	60,000
Site/Civil (lump sum)	Scrubber Rehab= $152,000		60,000	100,000	100,000
Electrical (lump sum)	New Carbon System= $1,042,000		60,000	100,000	100,000
Contractor Mobilization/Demobilization (lump sum)			20,000	20,000	20,000
Contractor Overhead and Profit (15%)			64,000	248,000	339,000
Contingency (30%)			116,000	450,000	616,000
Total Capital Costs	***$1,194,000***	***$350,000***	***$889,000***	***$3,448,000***	***$4,725,000***

Note- Estimated capital costs are study level only and do not include engineering fees.

Rehabilitated Wet Scrubber
West Hickman ASH tanks



Activated carbon scrubber
West Hickman ASH tanks

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Other “wins”


Veterans Park junction chambers


Carbon inserts for manholes

- Unit price contract for carbon replacements.
- Service contract for wet scrubbers.
- South Elkhorn activated carbon project.

FOCUS AREA FOR 2025

Chemical Addition in the Collection System.

CHEMICAL ADDITION QUESTIONS

- Using consistent pilot test criteria, are there options that can exceed the performance of the current chemical?

- If better performance can be achieved, at what cost?

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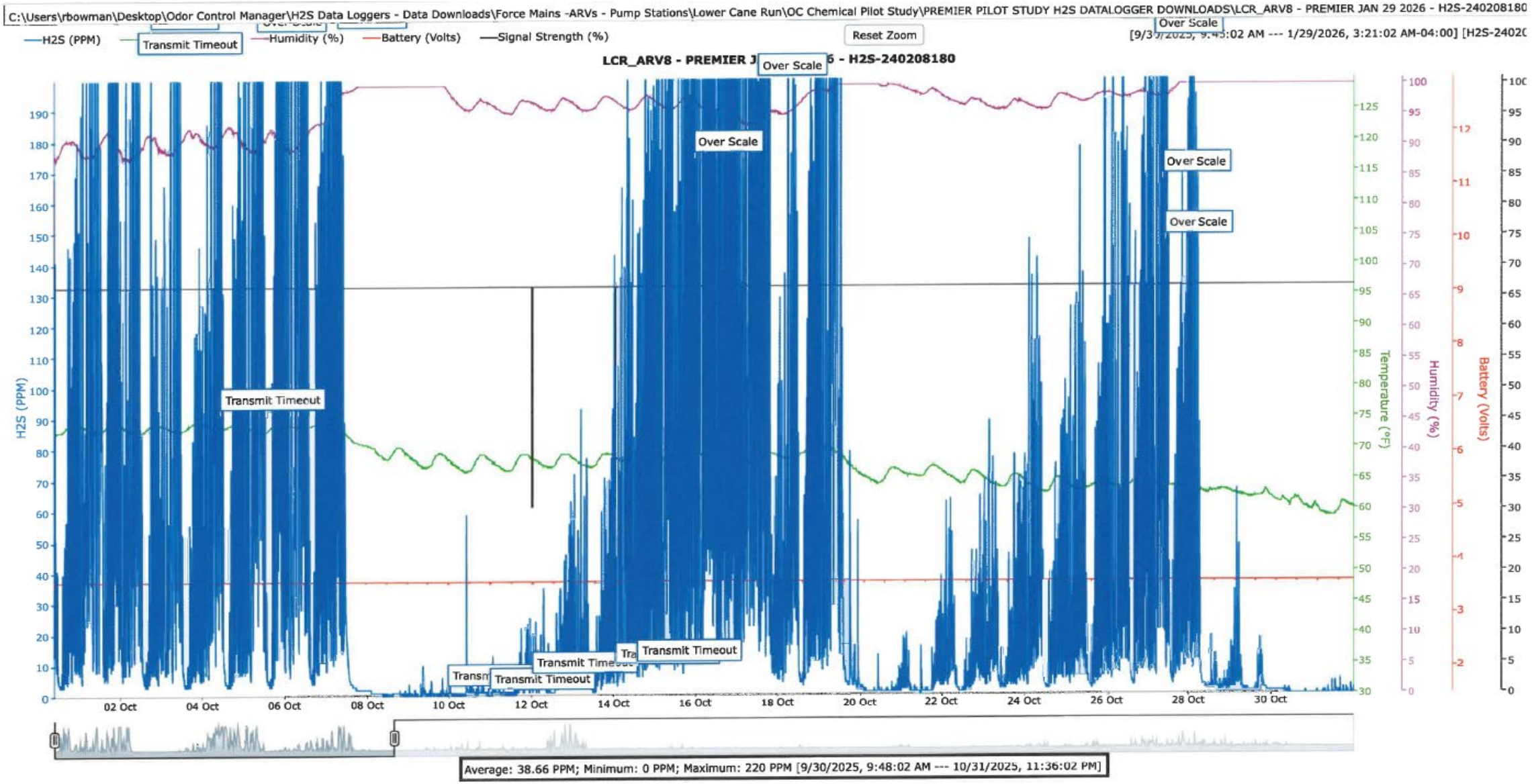
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H2S (PPM)
Transmit Timeout
Humidity (%)
Battery (Volts)
Signal Strength (%)
Reset Zoom
Over Scale
[9/30/2025, 9:48:02 AM --- 1/29/2026, 3:21:02 AM-04:00] [H2S-2402
LCR_ARV8 - PREMIER J
6 - H2S-240208180
Over Scale
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Transmit Timeout
Transmit Timeout
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Transmit Timeout
H2S (PPM)
Temperature (°F)
Humidity (%)
Battery (Volts)
02 Oct
04 Oct
06 Oct
08 Oct
10 Oct
12 Oct
14 Oct
16 Oct
18 Oct
20 Oct
22 Oct
24 Oct
26 Oct
28 Oct
30 Oct
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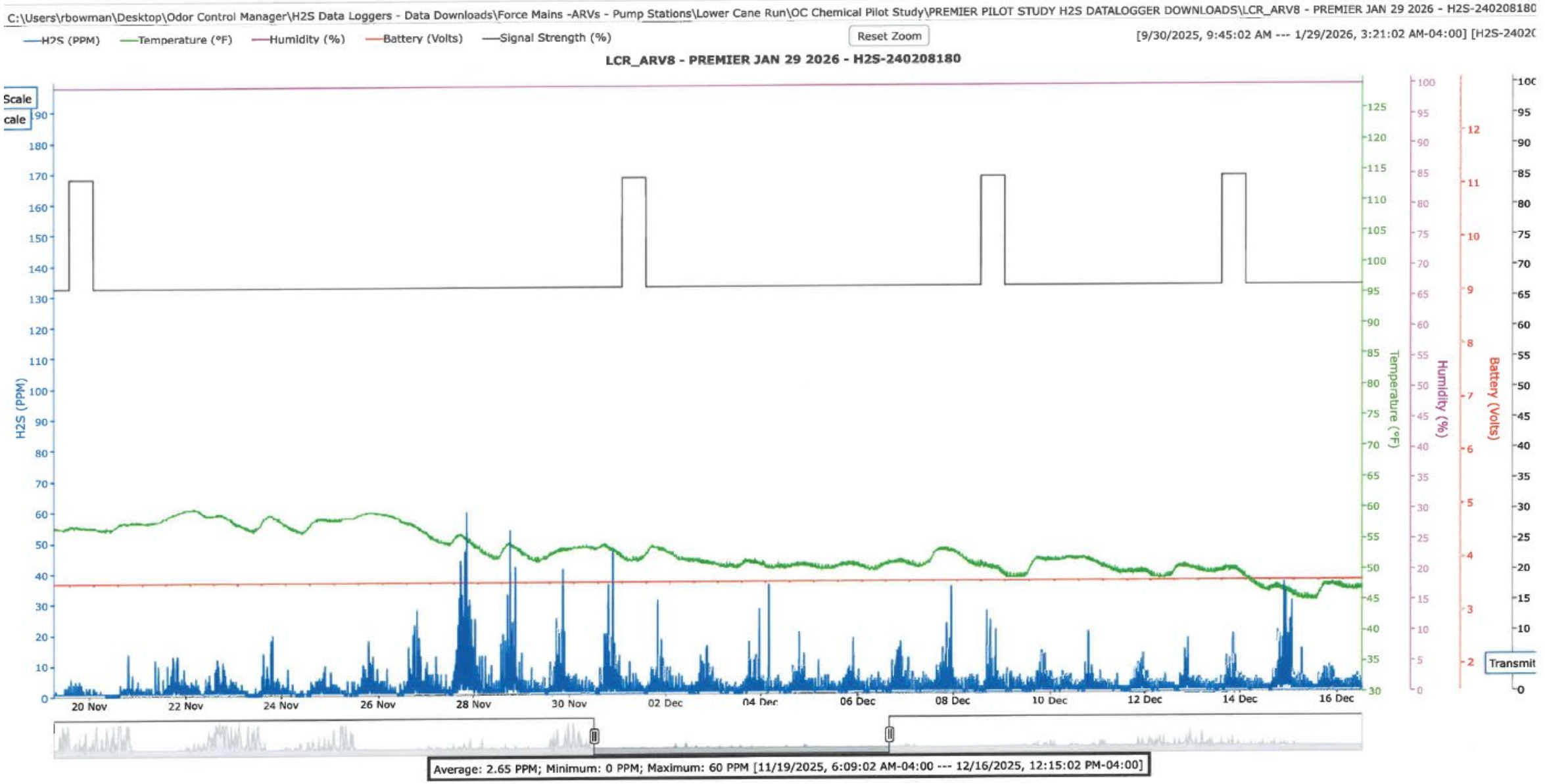
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H2S (PPM)
Temperature (°F)
Humidity (%)
Battery (Volts)
Signal Strength (%)
Reset Zoom
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LCR_ARV8 - PREMIER JAN 29 2026 - H2S-240208180
Scale
cale
H2S (PPM)
Temperature (°F)
Humidity (%)
Battery (Volts)
Transmit
20 Nov
22 Nov
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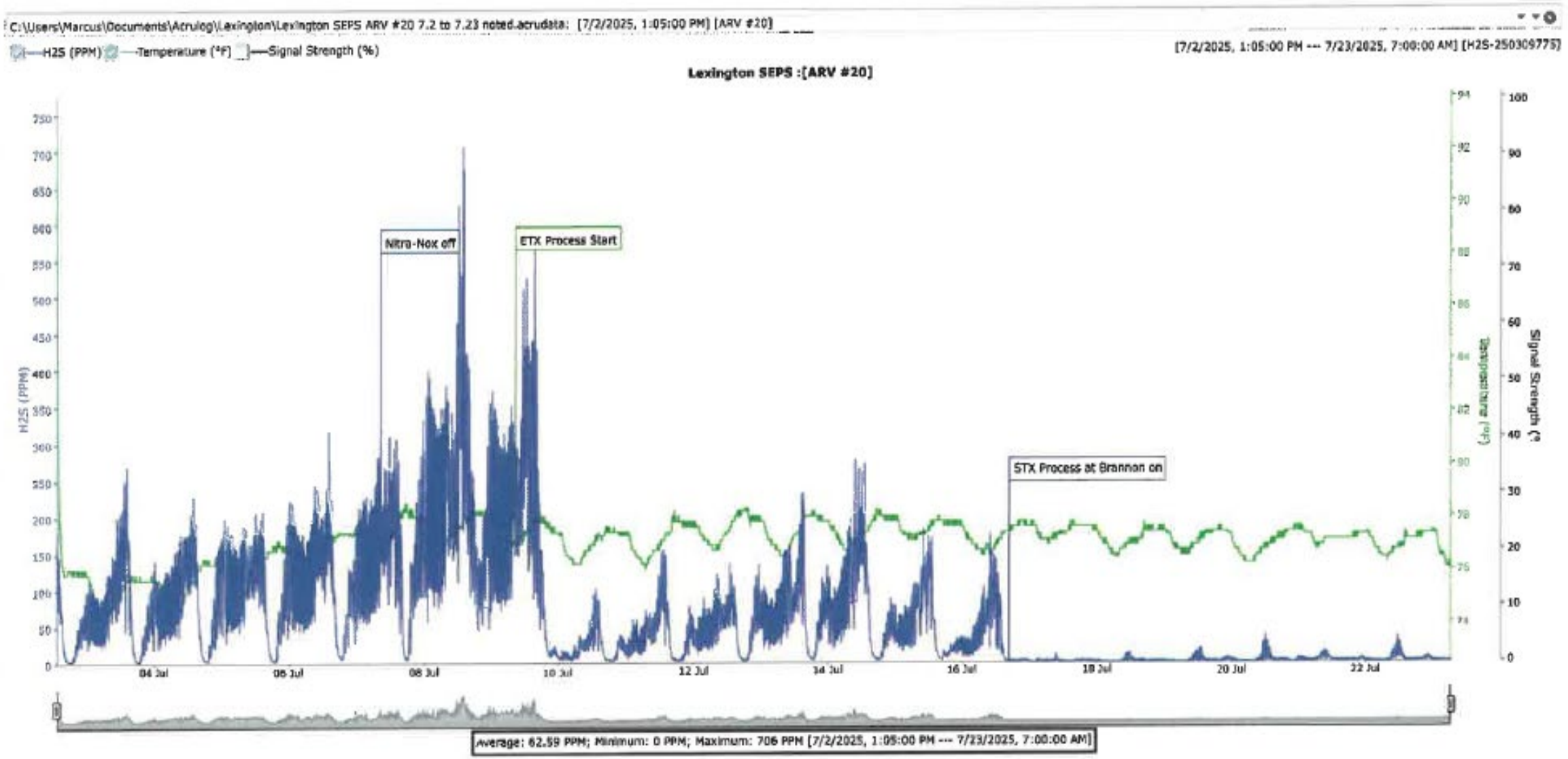
Average: 2.65 PPM; Minimum: 0 PPM; Maximum: 60 PPM [11/19/2025, 6:09:02 AM-04:00 --- 12/16/2025, 12:15:02 PM-04:00]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H2S (PPM)
Temperature (°F)
Signal Strength (%)
[7/2/2025, 1:05:00 PM --- 7/23/2025, 7:00:00 AM] [H2S-250309775]
Lexington SEPS :[ARV #20]
Nitro-Nox off
ETX Process Start
STX Process at Brannon on
H2S (PPM)
Temperature (°F)
Signal Strength (%)
04 Jul
06 Jul
08 Jul
10 Jul
12 Jul
14 Jul
16 Jul
18 Jul
20 Jul
22 Jul
Average: 62.59 PPM; Minimum: 0 PPM; Maximum: 706 PPM [7/2/2025, 1:05:00 PM --- 7/23/2025, 7:00:00 AM]

CONCLUSIONS

- Improved performance is attainable.
- No one size fits all solution.
- Operational costs still not clearly defined but appear manageable with consistent performance monitoring to prevent overfeed.

2025 SUMMARY / 2026 PLAN

- Treatment Units
  - Construction of two treatment units (one at each plant) “complete”.
  - Two treatment plant units 90% ready for construction and one pump station unit ready for bid/award/build.
  - FY27 construction funding is recommended for Town Branch WWTP solids building.
- Chemical Addition
  - Alternative chemical bids are currently being advertised.
  - Season long demonstration to validate performance and cost.

Questions?

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