GOWANUS CANAL SUPERFUND SITE
RTA2 REMEDIAL CONSTRUCTION
Water Quality Monitoring Weekly Data Summary

PERIOD: February 24, 2025 – February 28, 2025

Date of Report: March 4, 2025

Report Contents

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1. SCOPE OF MONITORING

1.1 Buoy Locations

In accordance with the Water Quality Monitoring Plan for In-waterway Construction Activities (WQMP) issued March 27, 2024, buoys equipped with multi-parameter water quality sondes, were deployed to monitor turbidity related to RTA2 construction activities. Buoys were deployed in the Fourth Street Turning Basin (TB4) to monitor background turbidity unaffected by in-water construction activities and at the North Carroll Street Bridge, which is referred to as the ambient buoy. A sentinel buoy was deployed north of 3rd Street Bridge (3SB), along the west bulkhead. These buoys (Figure 1) are in use to monitor the RTA2 pre-construction activities.

All readings from buoys were transmitted via telemetry at 15-minute intervals. The instrument used to collect turbidity from the buoys is an In-Situ VuLink (telemetry) and AquaTroll500 (sonde), equipped with optical sensors capable of reading turbidity levels with an accuracy of +/- 0.5 NTU.

1.2 Summary of Monitoring Adjustments during Construction

- August 9, 2024, after the conclusion of RTA1 WQMP, two additional buoys were added to the RTA2 WQMP, for a total of three sentinel buoys. The ambient buoy was moved to approximately ten meters north of Carroll Street Bridge, on the west side of the canal (ambient). A sentinel buoy was placed approximately twenty meters north of 3rd Street Bridge on the west side (3SB). A sentinel buoy was placed in Fourth Street Turning Basin (TB4). The 9th Street Bridge sentinel buoy (9SB) was not moved.

- To reduce instrument downtime, the 9th Street Bridge sentinel buoy (9SB) was relocated to the northeast side of the 9th Street Bridge on August 19, 2024. After two days of data collection, elevated turbidity readings were observed both during and outside of work hours. Consequently, on August 21, 2024, the buoy was moved again, this time to the northeast corner of the Hamilton Street Bridge.

- Turbidity readings at the Hamilton Street Bridge location exceeded 100 NTU both during and outside working hours. However, these readings were not representative of the actual turbidity within the RTA2 work area. Due to commercial traffic, a safe location for the sonde and buoy could not be found south of the 9th Street Bridge. Consequently, the sonde and buoy were relocated to the west side, 5 meters north of the 9th Street Bridge on Tuesday, August 27, 2024, at 08:15.

- Turbidity readings at 9SB were noted to be erratic and exceed 100 NTU both during and outside working hours. The buoy was moved approximately 20 meters north of 9th Street Bridge on Monday, September 9, 2024.

- On September 16, 2024, the 9SB was deselected from construction monitoring, as there are no construction activities in the main canal or in the vicinity of 9th Street Bridge. The buoy will remain in the water to collect background data as it is believed this area has naturally high NTU readings. A spot check zero calibration was performed on the buoy on Wednesday, September 18, 2024 to confirm the sensors were reading properly during this background monitoring period.
- On November 7, 2024, the ambient sonde and buoy was moved to the center of Carroll Street Bridge in an effort to reduce instrument downtime due to poor cell signal. This area was found to have a 100% cellular signal.
- On November 18, 2024, the sentinel buoy in TB4 was deselected from construction monitoring due to instrument errors. The buoy will remain out of service until maintenance and field observations can be made.
- On November 25, 2024, the 9SB sonde and buoy were placed back into the water quality monitoring program.
- On December 18, 2024, the 9SB sonde and buoy were relocated south of 9th Street Bridge along the eastern bulkhead, to avoid construction vessel traffic and shallow waters which had been resulting in false elevated readings, particularly during low tide events.
- On February 12, 2025, after observing a pause in data transmission, the ambient sonde and buoy were moved in an attempt to get a better signal in the area. It was moved to approximately 150 feet north of Carroll Street Bridge, to the center of the canal. On February 14, 2025, with data transmission issues not resolving, the ambient sonde and buoy were moved to approximately 200 feet south of Union Street Bridge, in the center of the canal where stronger signal strength has been observed. A test upload was performed; however data did not upload. Further troubleshooting will be required.
- On February 18, 2025, the ambient sonde buoy was removed from service due to consistent instrumentation and telemetry issues. The buoy will remain out of service until repairs are made.
- On February 25, 2025, the Ambient sonde and buoy was reinstated and positioned 200 feet south of the Union Street Bridge. Elevated readings were recorded, prompting a calibration check to verify the turbidity sensor's functionality. The sensor was confirmed to be operating normally.
- On February 25, 2025, the 9SB sonde was taken out of service due to instrumentation and telemetry failure. No data was recorded from 13:45 onward. The sonde will remain out of service until repairs are completed.

Legend

- Ambient Buoy
- Sentinel Buoy
- RTA1
- RTA2
- RTA3

500 250 0 500 Feet

RTA2 Buoy Locations

Gowanus Canal, Brooklyn, NY

B&B Engineers & Geologists of new york, p.c.

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Brooklyn, NY | February 25, 2025

Figure 1

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1.3 Current Reporting Period Scope of Monitoring

During the week of February 24, 2025, a maximum of two buoys equipped with multi-parameter water quality sondes were deployed as described in Section 1.2.

All readings from buoys were transmitted via telemetry at 15-minute intervals. The instrument used to collect turbidity and DO from the buoys is an In-Situ VuLink (telemetry) and AquaTroll500 (sonde), equipped with optical sensors capable of reading turbidity levels with an accuracy of +/-0.5 NTU and DO levels with an accuracy of +/-0.1 mg/L.

Visual observations of turbidity and sheen are summarized in Section 4.

1.4 Meteorological Conditions

The weather conditions onsite were as follows:

Meteorological Parameters	2/24/2025	2/25/2025	2/26/2025	2/27/2025	2/28//2025
Wind Direction (from)	SSE	SW	W	S	WSW
Wind Speed (mph)	7.2	4.8	4.6	6.4	7.8
Temperature (^oF)	41.9	47.0	47.6	48.8	44.9
Humidity (%)	54.5	56.1	60.3	73.3	54.5
Barometric Pressure (inHg)	29.93	29.70	29.80	29.62	29.58
Precipitation (Inch)	0	0	0	0	0

Table 1 - Summary of Weather Conditions for reporting period.

1.5 Tidal Conditions

Tidal data from the Battery (National Oceanic and Atmospheric Administration [NOAA] Station 8518750) was reviewed and is summarized as follows:

Date	Time (LST/LDT)	Predicted (ft)	Preliminary (ft)	High/Low
Monday, February 24, 2025	5:01 AM	1.56	2.12	H
Monday, February 24, 2025	11:41 AM	-2.6	-1.78	L
Monday, February 24, 2025	5:37 PM	0.83	1.75	H
Monday, February 24, 2025	11:42 PM	-2.51	-1.73	L
Tuesday, February 25, 2025	5:54 AM	1.94	2.71	H
Tuesday, February 25, 2025	12:28 PM	-2.96	-1.97	L
Tuesday, February 25, 2025	6:23 PM	1.25	2.31	H
Wednesday, February 26, 2025	12:33 AM	-2.89	-1.94	L
Wednesday, February 26, 2025	6:40 AM	2.28	2.84	H
Wednesday, February 26, 2025	1:14 PM	-3.3	-2.81	L
Wednesday, February 26, 2025	7:05 PM	1.68	2.37	H
Thursday, February 27, 2025	1:23 AM	-3.25	-2.58	L
Thursday, February 27, 2025	7:23 AM	2.52	3.73	H
Thursday, February 27, 2025	1:58 PM	-3.59	-2.71	L
Thursday, February 27, 2025	7:46 PM	2.06	3.11	H
Friday, February 28, 2025	2:13 AM	-3.53	-2.57	L
Friday, February 28, 2025	8:07 AM	2.62	3.23	H
Friday, February 28, 2025	2:41 PM	-3.79	-3.41	L
Friday, February 28, 2025	8:29 PM	2.36	3.24	H

Table 2 - NOAA Preliminary observations and predictions.

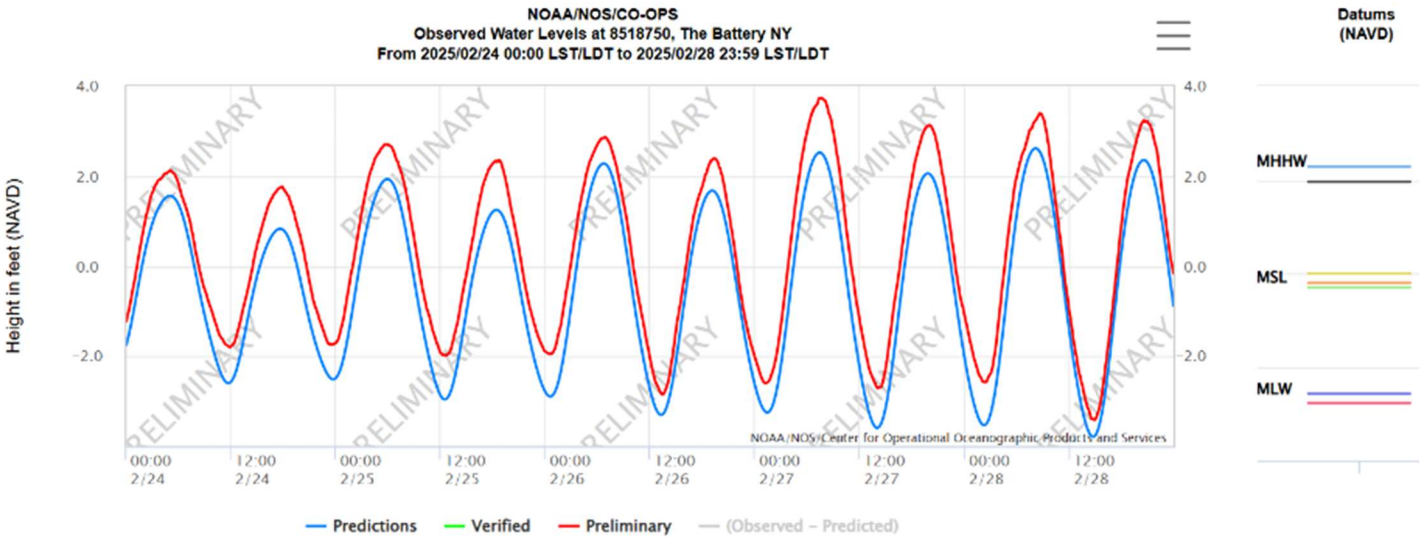

Figure 2 - Tidal Chart for reporting period.

2. REPORT OF EXCEEDANCES

No exceedances to the trigger and action levels occurred during the monitoring period. Elevated readings by the 9SB sonde were recorded between 12:00 to 13:30 on Monday, February 24, 2025. Investigation of these readings found the 9SB buoy and sonde to have drifted into shallow water conditions during low tide resulting in interactions with the mudline behind the southeast 9th Street Bridge abutment. The 3SB sonde did not transmit data on Monday February 24, 2025, and part of Tuesday, February 25, 2025, due to a depleted battery. The batteries were replaced mid-day Tuesday, February 25. The 9SB stopped reporting data at 13:45 on Tuesday, February 25 due to instrumentation failure. The buoy and sonde have been removed from service and has been sent to the manufacturer for repairs.

The Ambient sonde experienced elevated readings. These readings were unrelated to in-water construction activities in RTA2 but may have been caused by other in-water activities unrelated to the project. Therefore, data for the Ambient sonde has been disregarded for this reporting period and the trigger and action criterion were conservatively set to 20 and 40 NTU respectively.

- **Trigger criterion** – Any of the following:
    - The rolling average of the relevant sentinel buoy turbidity measurements over a one-hour period exceeds the rolling average of the ambient buoy turbidity measurements by 20 NTU excluding any eliminated outlier measurements and in-waterway construction activities cannot be immediately excluded as the source following consultation with EPA; or
    - Either an oil sheen or a turbidity plume is visually observed at the relevant sentinel buoy and in-waterway construction activities are readily identified as the source.
- **Action criterion** – Any of the following:
    - The rolling average of the turbidity measurements of the sentinel buoy outside of RTA2 over a one-hour period exceeds the rolling average of the ambient buoy turbidity measurements by 40 NTU excluding any eliminated outlier measurements and in-waterway construction activities cannot be immediately excluded as the source following consultation with EPA; or
    - Either an oil sheen or a turbidity plume is visually observed outside of RTA2, and any deployed engineering controls and in-waterway construction activities are readily identified as the source.

An outlier is defined as a reading that is outside the range of 50 to 200 percent of the average of the three previous readings. In addition, to be considered an outlier, the subsequent reading must return to a range of 75 to 133 percent of the average of the three readings preceding the outlier.

2.1 Response to Criteria Exceedances

The trigger level criterion serves to provide early notification to the contractor of construction activities that may lead to an exceedance of the action level criterion. In the event of an exceedance to the trigger criterion, the contractor will not be stopped, and the contractor will be directed to investigate the source of the exceedance and evaluate Best Management Practices (BMPs). In the event of an exceedance to the action level criterion, in-waterway construction activities may be slowed or temporarily suspended as necessary while the contractor investigates the source of the exceedance and appropriate mitigation, and corrective measures are determined. A more detailed description of responses to exceedances of the trigger and action level criteria is provided in Section 4.2 of the WQMP.

3. TURBIDITY BUOY DATA

Elevated readings by the 9SB buoy were recorded between the times of 12:00 to 13:30 on Monday, February 24th, 2025, due to low tide conditions and mudline interference. Ambient sonde data was disregarded for the monitoring period as discussed in Section 2. As a result, the trigger and action criterion limits for the reporting period were set to 20 and 40 NTU, respectively, to allow for conservative monitoring of the sentinel buoy stations. No exceedances to the trigger and action levels occurred during the monitoring period.

3.1 Monday, February 24, 2025

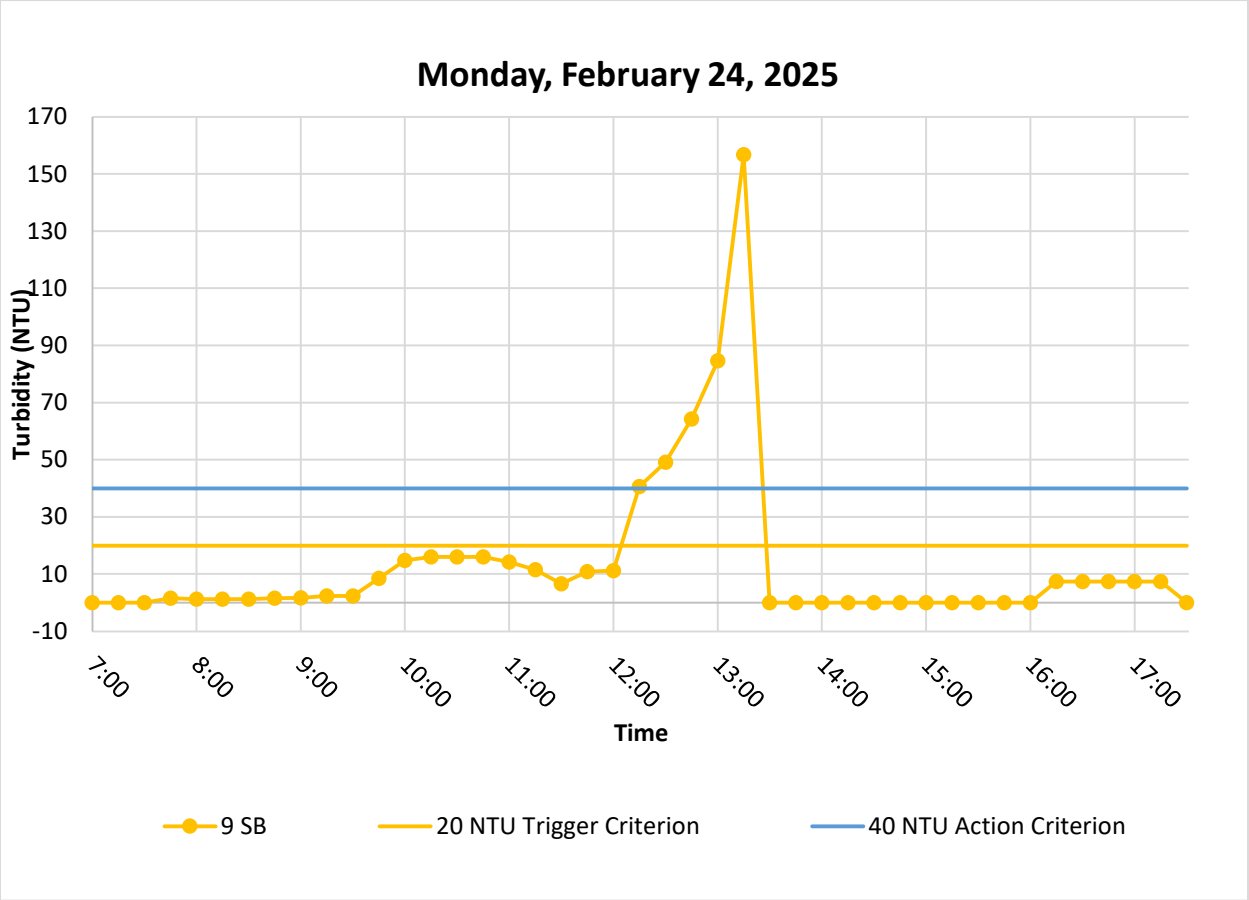

Figure 3. Hourly rolling average turbidity readings from 07:00 to 17:30. Elevated readings by the 9SB buoy are unrelated to in-water construction activities. The 3SB sonde data not reported due to insufficient battery power.

3.2 Tuesday, February 25, 2025

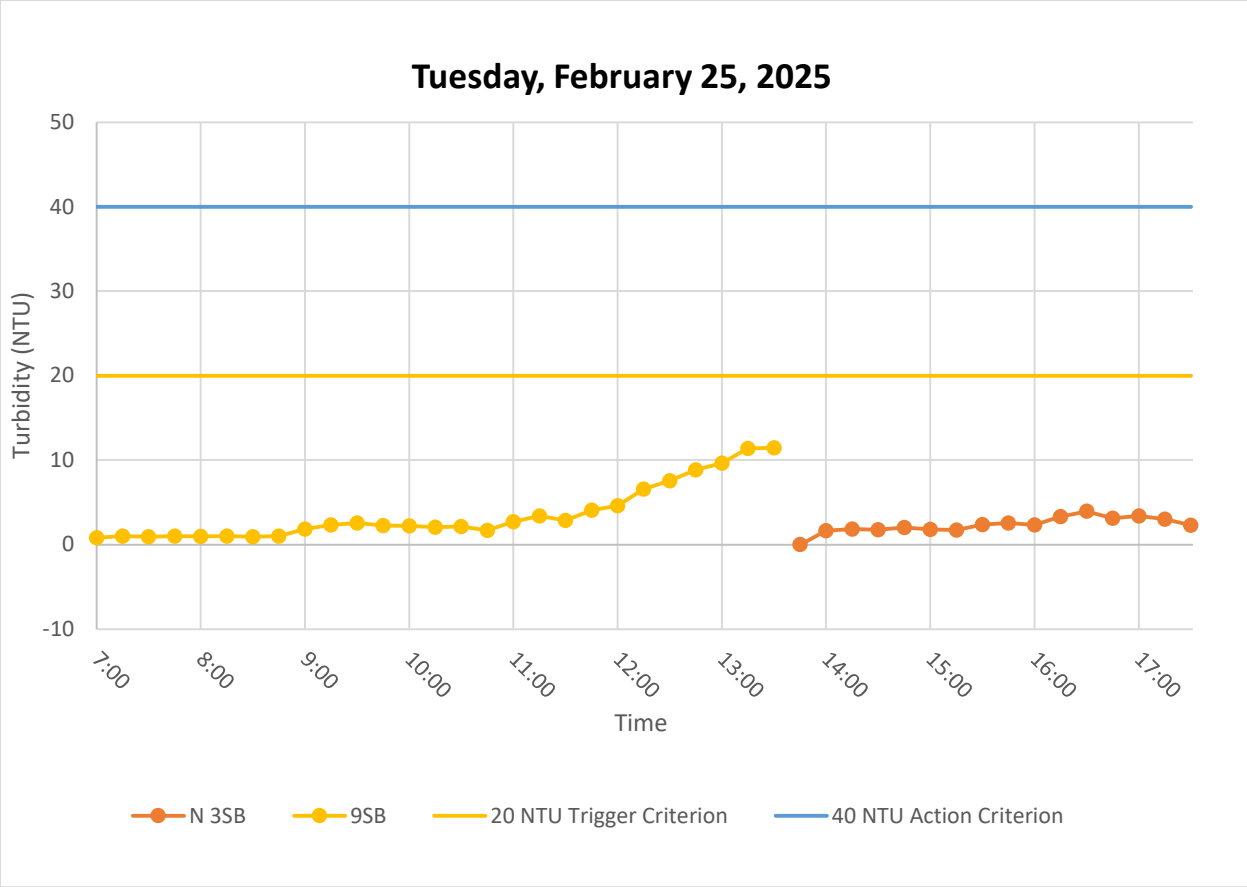

Figure 4. Hourly rolling average turbidity readings from 07:00 to 17:30. The 9SB was removed from service at 13:45 for manufacture repairs. The 3SB was serviced at 13:45 and resumed data reporting.

3.3 Wednesday, February 26, 2025

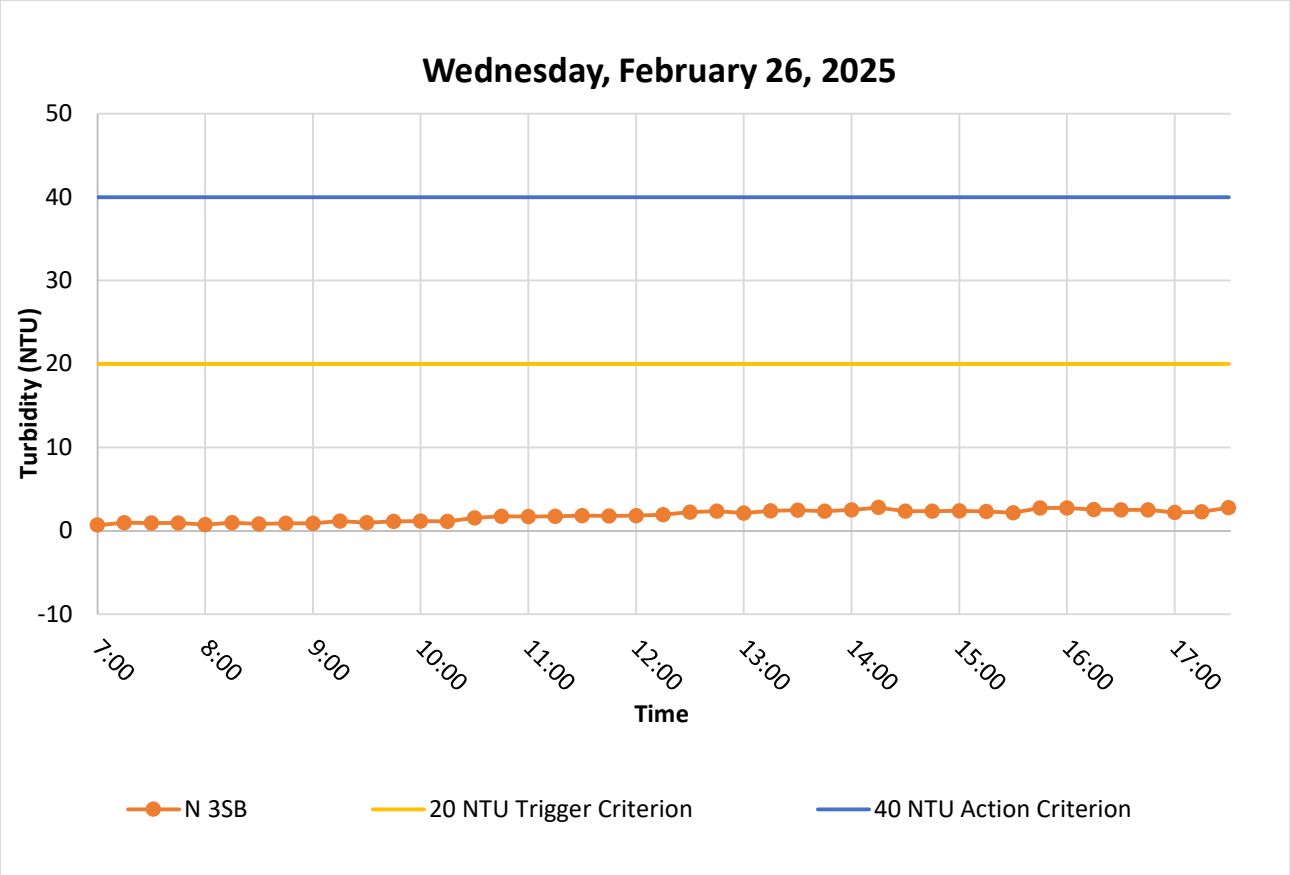

Figure 5 . Hourly rolling average turbidity readings from 07:00 to 17:30.

3.4 Thursday, February 27, 2025

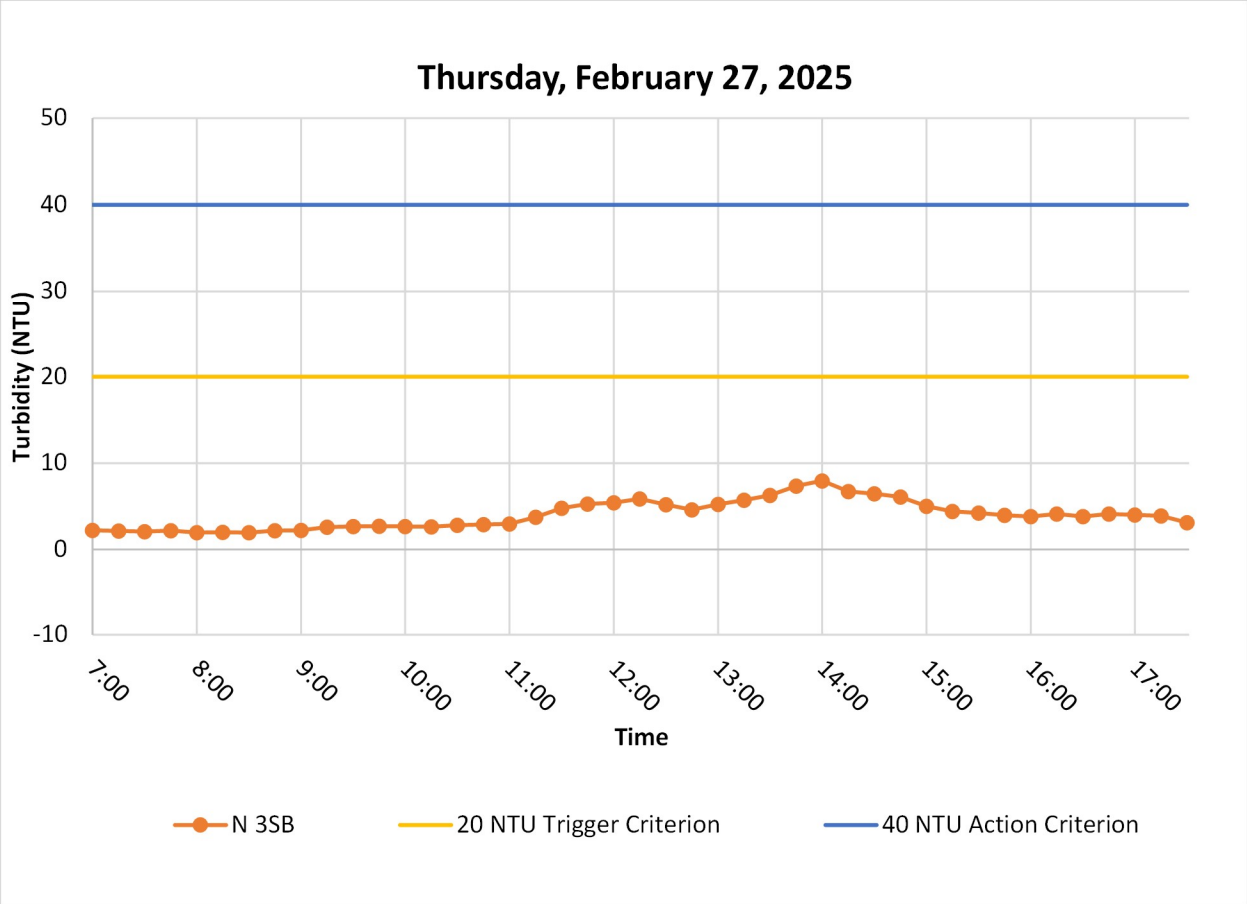

Figure 6. Hourly rolling average turbidity readings from 07:00 to 17:30

3.5 Friday, February 28, 2025

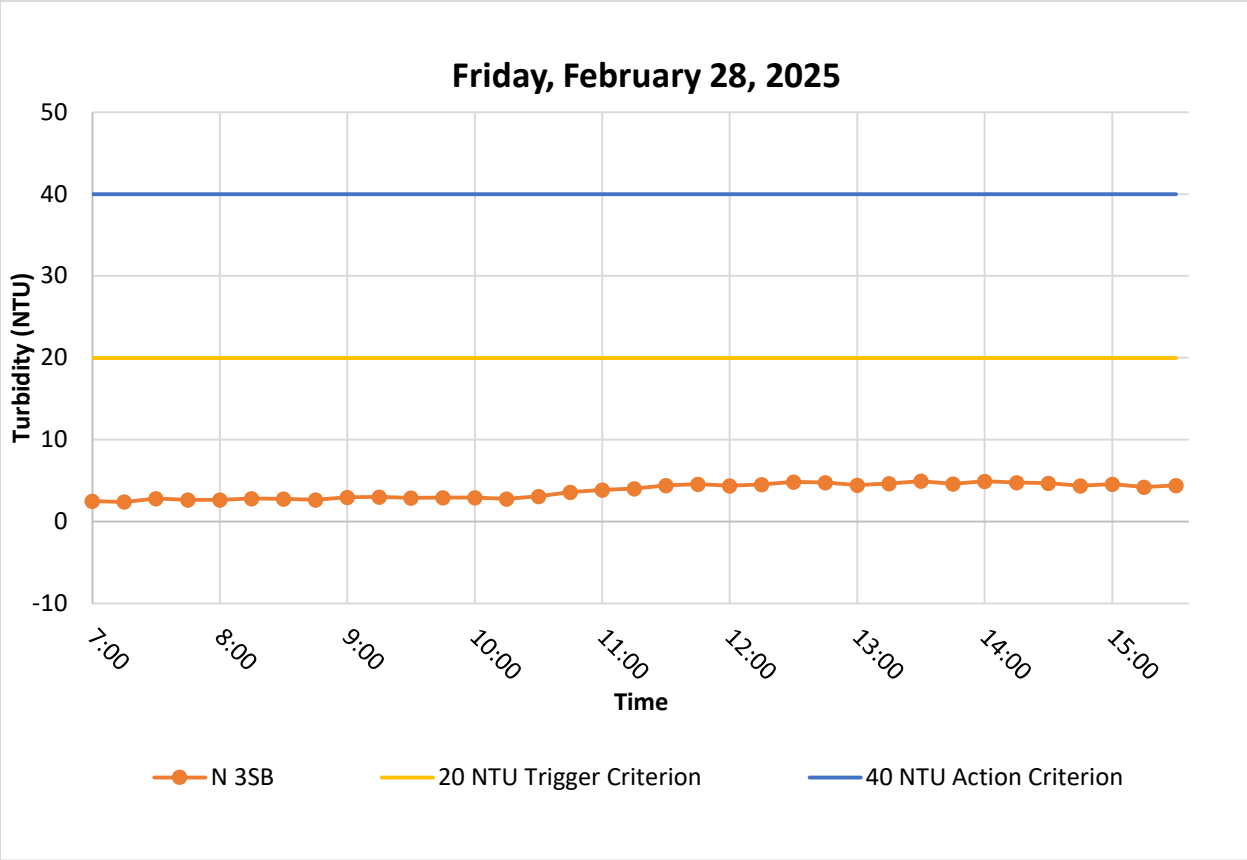

Figure 7. Hourly rolling average turbidity readings from 07:00 to 15:30.

4. SUMMARY OF VISUAL OBSERVATIONS

Throughout the majority of the reporting period, sheens in the RTA2 areas ranged from minimal to moderate. Although outside of the RTA2 work zone, floatables and visible turbidity north of 3rd Street Bridge were noted to be heavy at times. Floatables consisted of styrofoam and plastics. Additionally the Flushing Tunnel resumed flow operations on Friday, February 28, 2025.

Figure 8 – February 25, 2025. General Conditions in Canal north of 9th Street Bridge near TB6 during in-waterway construction activities.

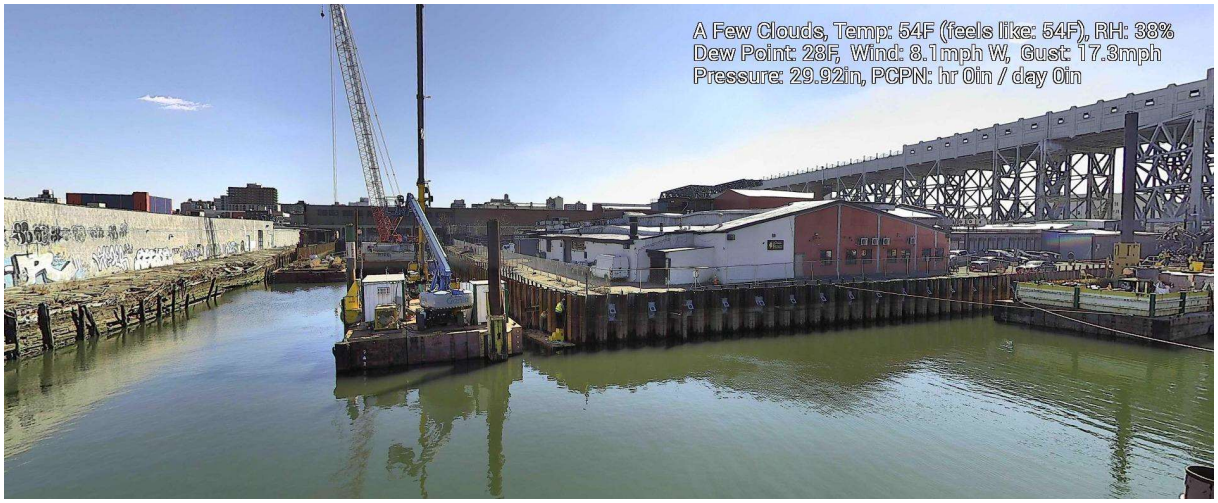

Figure 9 – February 26, 2025. General Conditions in Canal north of 9th Street Bridge near TB6 during in-waterway construction activities.

Figure 10 – February 28, 2025. General Conditions in Canal south of 3rd Street Bridge near TB4 during in-waterway construction activities.

APPENDIX A
Turbidity Data Tables

Table 3

Monday, Feb 24, 2025

Date	Time	Turbidity (NTU)	Rolling Average Turbidity (NTU)
		9SB	9SB
2/24/2025	7:00:00	--	--
2/24/2025	7:15:00	--	--
2/24/2025	7:30:00	--	--
2/24/2025	7:45:00	1.57	1.57
2/24/2025	8:00:00	0.89	1.23
2/24/2025	8:15:00	--	1.23
2/24/2025	8:30:00	--	1.23
2/24/2025	8:45:00	2.30	1.59
2/24/2025	9:00:00	--	1.60
2/24/2025	9:15:00	--	2.30
2/24/2025	9:30:00	--	2.30
2/24/2025	9:45:00	14.64	8.47
2/24/2025	10:00:00	14.81	14.73
2/24/2025	10:15:00	18.44	15.96
2/24/2025	10:30:00	--	15.96
2/24/2025	10:45:00	--	15.96
2/24/2025	11:00:00	9.32	14.19
2/24/2025	11:15:00	6.76	11.50
2/24/2025	11:30:00	3.63	6.57
2/24/2025	11:45:00	23.55	10.81
2/24/2025	12:00:00	12.48	11.15
2/24/2025	12:15:00	156.72	40.63
2/24/2025	12:30:00	--	49.10
2/24/2025	12:45:00	--	64.25
2/24/2025	13:00:00	--	84.60
2/24/2025	13:15:00	--	156.72
2/24/2025	13:30:00	--	--
2/24/2025	13:45:00	--	--
2/24/2025	14:00:00	--	--
2/24/2025	14:15:00	--	--
2/24/2025	14:30:00	--	--
2/24/2025	14:45:00	--	--
2/24/2025	15:00:00	--	--
2/24/2025	15:15:00	--	--
2/24/2025	15:30:00	--	--
2/24/2025	15:45:00	--	--
2/24/2025	16:00:00	--	--
2/24/2025	16:15:00	7.35	7.35
2/24/2025	16:30:00	--	7.35
2/24/2025	16:45:00	--	7.35
2/24/2025	17:00:00	--	7.35
2/24/2025	17:15:00	--	7.35
2/24/2025	17:30:00	--	--

Table 4

Tuesday, Feb 25, 2025

Date	Time	Turbidity (NTU)		Rolling Average Turbidity (NTU)	
		N3SB	9SB	N3SB	9SB
2/25/25	7:00:00	--	0.81	--	0.81
2/25/25	7:15:00	--	1.17	--	0.99
2/25/25	7:30:00	--	0.73	--	0.90
2/25/25	7:45:00	--	1.19	--	0.97
2/25/25	8:00:00	--	0.80	--	0.94
2/25/25	8:15:00	--	--	--	0.97
2/25/25	8:30:00	--	--	--	0.91
2/25/25	8:45:00	--	--	--	1.00
2/25/25	9:00:00	--	2.82	--	1.81
2/25/25	9:15:00	--	1.82	--	2.32
2/25/25	9:30:00	--	3.04	--	2.56
2/25/25	9:45:00	--	1.29	--	2.24
2/25/25	10:00:00	--	2.03	--	2.20
2/25/25	10:15:00	--	--	--	2.05
2/25/25	10:30:00	--	--	--	2.12
2/25/25	10:45:00	--	--	--	1.66
2/25/25	11:00:00	--	3.37	--	2.70
2/25/25	11:15:00	--	--	--	3.37
2/25/25	11:30:00	--	2.36	--	2.86
2/25/25	11:45:00	--	6.41	--	4.05
2/25/25	12:00:00	--	6.16	--	4.57
2/25/25	12:15:00	--	11.31	--	6.56
2/25/25	12:30:00	--	11.46	--	7.54
2/25/25	12:45:00	--	--	--	8.84
2/25/25	13:00:00	--	--	--	9.64
2/25/25	13:15:00	--	--	--	11.39
2/25/25	13:30:00	--	--	--	11.46
2/25/25	13:45:00	--	--	--	--
2/25/25	14:00:00	1.63	--	1.63	--
2/25/25	14:15:00	1.98	--	1.81	--
2/25/25	14:30:00	1.67	--	1.76	--
2/25/25	14:45:00	2.85	--	2.03	--
2/25/25	15:00:00	0.85	--	1.79	--
2/25/25	15:15:00	1.21	--	1.71	--
2/25/25	15:30:00	5.23	--	2.36	--
2/25/25	15:45:00	--	--	2.53	--
2/25/25	16:00:00	2.02	--	2.33	--
2/25/25	16:15:00	4.72	--	3.29	--
2/25/25	16:30:00	3.78	--	3.94	--
2/25/25	16:45:00	1.92	--	3.11	--
2/25/25	17:00:00	4.50	--	3.39	--
2/25/25	17:15:00	0.08	--	3.00	--
2/25/25	17:30:00	1.11	--	2.28	--

Table 5

Wednesday, Feb 26, 2025

Date	Time	Turbidity (NTU)	Rolling Average Turbidity (NTU)
		N3SB	N3SB
2/26/2025	7:00:00	0.68	0.68
2/26/2025	7:15:00	1.28	0.98
2/26/2025	7:30:00	0.82	0.93
2/26/2025	7:45:00	--	0.93
2/26/2025	8:00:00	0.17	0.74
2/26/2025	8:15:00	1.59	0.96
2/26/2025	8:30:00	0.70	0.82
2/26/2025	8:45:00	1.14	0.90
2/26/2025	9:00:00	--	0.90
2/26/2025	9:15:00	1.15	1.14
2/26/2025	9:30:00	0.87	0.97
2/26/2025	9:45:00	1.37	1.13
2/26/2025	10:00:00	1.26	1.16
2/26/2025	10:15:00	1.04	1.14
2/26/2025	10:30:00	3.27	1.56
2/26/2025	10:45:00	1.78	1.74
2/26/2025	11:00:00	1.23	1.71
2/26/2025	11:15:00	1.33	1.73
2/26/2025	11:30:00	1.42	1.80
2/26/2025	11:45:00	3.20	1.79
2/26/2025	12:00:00	1.95	1.82
2/26/2025	12:15:00	1.65	1.91
2/26/2025	12:30:00	2.88	2.22
2/26/2025	12:45:00	2.07	2.35
2/26/2025	13:00:00	1.96	2.10
2/26/2025	13:15:00	3.33	2.38
2/26/2025	13:30:00	2.09	2.47
2/26/2025	13:45:00	--	2.36
2/26/2025	14:00:00	2.68	2.51
2/26/2025	14:15:00	3.07	2.79
2/26/2025	14:30:00	1.53	2.34
2/26/2025	14:45:00	2.16	2.36
2/26/2025	15:00:00	2.43	2.37
2/26/2025	15:15:00	--	2.30
2/26/2025	15:30:00	2.57	2.17
2/26/2025	15:45:00	3.82	2.75
2/26/2025	16:00:00	2.04	2.72
2/26/2025	16:15:00	1.69	2.53
2/26/2025	16:30:00	2.45	2.51
2/26/2025	16:45:00	--	2.50
2/26/2025	17:00:00	2.63	2.20
2/26/2025	17:15:00	2.25	2.26
2/26/2025	17:30:00	3.72	2.76

Table 6

Thursday, Feb 27, 2025

Date	Time	Turbidity (NTU)	Rolling Average Turbidity (NTU)
		N3SB	N3SB
2/27/2025	7:00:00	2.21	2.21
2/27/2025	7:15:00	2.10	2.15
2/27/2025	7:30:00	1.92	2.08
2/27/2025	7:45:00	2.53	2.19
2/27/2025	8:00:00	1.06	1.96
2/27/2025	8:15:00	2.30	1.98
2/27/2025	8:30:00	1.94	1.95
2/27/2025	8:45:00	3.01	2.17
2/27/2025	9:00:00	2.72	2.21
2/27/2025	9:15:00	2.97	2.59
2/27/2025	9:30:00	2.75	2.68
2/27/2025	9:45:00	2.06	2.70
2/27/2025	10:00:00	2.91	2.68
2/27/2025	10:15:00	2.52	2.64
2/27/2025	10:30:00	3.80	2.81
2/27/2025	10:45:00	3.09	2.88
2/27/2025	11:00:00	2.43	2.95
2/27/2025	11:15:00	6.78	3.72
2/27/2025	11:30:00	7.79	4.78
2/27/2025	11:45:00	6.21	5.26
2/27/2025	12:00:00	3.92	5.42
2/27/2025	12:15:00	4.63	5.86
2/27/2025	12:30:00	3.45	5.20
2/27/2025	12:45:00	4.78	4.60
2/27/2025	13:00:00	9.28	5.21
2/27/2025	13:15:00	6.33	5.70
2/27/2025	13:30:00	7.47	6.26
2/27/2025	13:45:00	8.92	7.36
2/27/2025	14:00:00	7.79	7.96
2/27/2025	14:15:00	3.08	6.72
2/27/2025	14:30:00	5.09	6.47
2/27/2025	14:45:00	5.64	6.10
2/27/2025	15:00:00	3.43	5.00
2/27/2025	15:15:00	4.82	4.41
2/27/2025	15:30:00	2.22	4.24
2/27/2025	15:45:00	3.78	3.98
2/27/2025	16:00:00	4.83	3.82
2/27/2025	16:15:00	4.87	4.10
2/27/2025	16:30:00	3.39	3.82
2/27/2025	16:45:00	3.75	4.12
2/27/2025	17:00:00	3.22	4.01
2/27/2025	17:15:00	4.24	3.89
2/27/2025	17:30:00	0.95	3.11

Table 7

Friday, Feb 28, 2025

Date	Time	Turbidity (NTU)	Rolling Average Turbidity (NTU)
		N3SB	N3SB
2/28/2025	7:00:00	2.49	2.49
2/28/2025	7:15:00	2.29	2.39
2/28/2025	7:30:00	3.56	2.78
2/28/2025	7:45:00	2.23	2.64
2/28/2025	8:00:00	2.56	2.63
2/28/2025	8:15:00	3.26	2.78
2/28/2025	8:30:00	2.14	2.75
2/28/2025	8:45:00	2.94	2.63
2/28/2025	9:00:00	3.86	2.95
2/28/2025	9:15:00	2.69	2.98
2/28/2025	9:30:00	2.84	2.89
2/28/2025	9:45:00	2.20	2.90
2/28/2025	10:00:00	2.94	2.90
2/28/2025	10:15:00	3.11	2.76
2/28/2025	10:30:00	4.34	3.09
2/28/2025	10:45:00	5.22	3.56
2/28/2025	11:00:00	3.63	3.85
2/28/2025	11:15:00	3.80	4.02
2/28/2025	11:30:00	4.93	4.38
2/28/2025	11:45:00	5.29	4.57
2/28/2025	12:00:00	4.25	4.38
2/28/2025	12:15:00	4.40	4.53
2/28/2025	12:30:00	5.24	4.82
2/28/2025	12:45:00	4.68	4.77
2/28/2025	13:00:00	3.65	4.44
2/28/2025	13:15:00	5.24	4.64
2/28/2025	13:30:00	5.93	4.95
2/28/2025	13:45:00	3.53	4.61
2/28/2025	14:00:00	6.28	4.92
2/28/2025	14:15:00	2.72	4.74
2/28/2025	14:30:00	4.95	4.68
2/28/2025	14:45:00	--	4.37
2/28/2025	15:00:00	4.31	4.56
2/28/2025	15:15:00	4.80	4.19
2/28/2025	15:30:00	3.50	4.39