

**GOWANUS CANAL SUPERFUND SITE  
RTA1 REMEDIAL CONSTRUCTION  
Water Quality Monitoring Weekly Data Summary**

**PERIOD: November 21 – November 23, 2022**

**Date of Report: November 29, 2022**

## **Report Contents**

- Scope of Monitoring
- Report of Exceedances
- Turbidity Buoy Data
- Summary of Visual Observations

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## **1. SCOPE OF MONITORING**

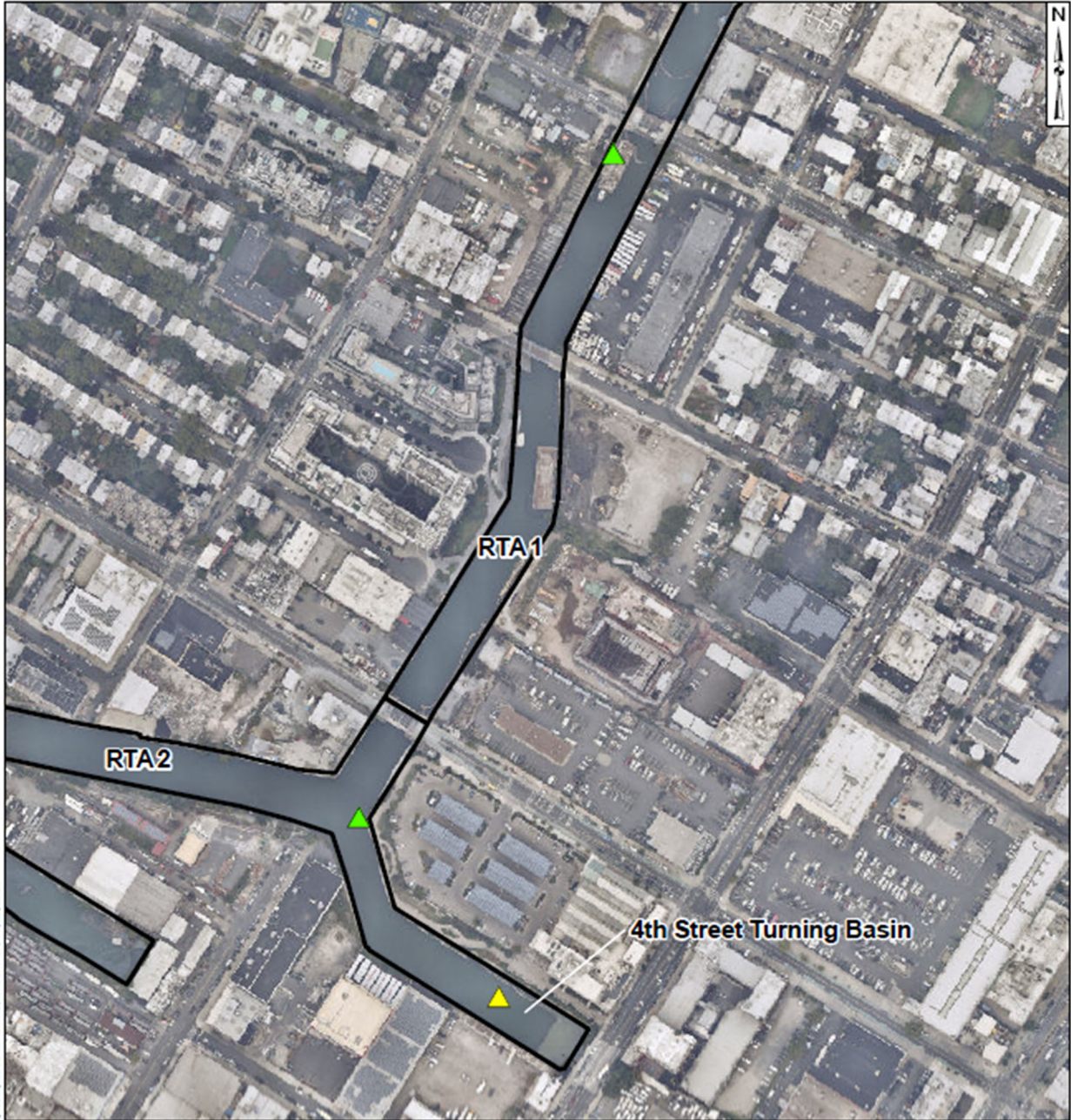
### **1.1 Current Buoy Locations**

The following report summarizes water quality monitoring data collected during the week of November 21, 2022. No construction activities occurred on November 24<sup>th</sup> and November 25<sup>th</sup> due to the union holiday. In accordance with the Water Quality Monitoring Plan for In-waterway Construction Activities (WQMP) two turbidity buoys were deployed to monitor turbidity related to dredging activities. One turbidity buoy was deployed just south of the 3<sup>rd</sup> Street Bridge outside of the air curtain and traditional turbidity curtain and is referred to as the 3<sup>rd</sup> Street Sentinel Buoy. A second turbidity buoy was deployed just south of Union St Bridge to monitor dredging activities north of Union Street Bridge and is referred to as the Union Street Sentinel Buoy. The third turbidity buoy was deployed in the Fourth Street Turning Basin in order to monitor background turbidity unaffected by in-water construction activities and is referred to as the Ambient Buoy.

Each turbidity buoy was equipped with a YSI EXO3 water quality meter with optical turbidity sensor. The buoys were field calibrated and programmed such that readings were collected every 15 minutes. After each measurement, the turbidity data were transmitted to a File Transfer Portal (FTP) site via telemetry. No handheld measurements were collected during this reporting period. Visual observations of turbidity and sheen are summarized in Section 4.

### **1.2 Previous Buoy Locations**

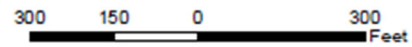
- On January 22, 2021, prior to dredging north of the Union Street Bridge, a fourth turbidity buoy was deployed just south of the Union Street Bridge and was referred to as the Union Street Sentinel Buoy. This fourth turbidity buoy was removed prior to the start of pipe pile installation.
- On Wednesday, September 22, 2021, the Carroll Street Sentinel Buoy was relocated to the west side of the canal where Degraw Street intersects the canal to monitor cofferdam removal activities conducted in the vicinity of the Flushing Tunnel. This buoy was renamed the Degraw Street Sentinel Buoy during cofferdam removal activities.
- On October 14, 2021, the Degraw Street Sentinel Buoy was removed from the canal for servicing. On October 20, 2021, the Degraw Street Sentinel Buoy was redeployed to its position south of the Carroll Street Bridge and was renamed to the Carroll Street Sentinel Buoy.
- On November 15, 2021, the Carroll Street Sentinel Buoy was moved to the Union Street Bridge and renamed the Union Street Sentinel Buoy. On December 3, 2021, the Union Street Buoy was removed from the canal for servicing and re-deployed at 3<sup>rd</sup> Street Bridge in preparation for the resumption of ISS operations. On December 8, 2021, a third sentinel buoy was deployed just south of the Carroll Street Bridge.
- On April 21, 2022, the buoy deployed at the Carroll Street Bridge was relocated to the Union Street Bridge. On July 14, 2022, the Union Street Sentinel Buoy was removed from the canal for servicing, re-deployed on July 21, 2022, moved to the Carroll Street Bridge location on September 22, 2022, and then back to the Union Street Bridge location on November 18, 2022.



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**Legend**

- ▲ Ambient Buoy
- ▲ Sentinel Buoy
- RTA Boundary



**Turbidity Buoy Locations**

Gowanus Canal, Brooklyn, NY

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

*an affiliate of Geosyntec Consultants*

Kennesaw, GA

November 2022

Figure

**1**

## 2. REPORT OF EXCEEDANCES

Exceedances of the quantitative trigger criterion occurred at the Union Street Sentinel Buoy on Monday, November 21 from 1:15 PM to 3:45 PM and at the 3<sup>rd</sup> Street Sentinel Buoy on Monday, November 21 at 1:15 PM due to resuspended sediment caused by propwash from passing tugs. No exceedances of the action level criteria were met during the reporting period.

- **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 RTA1 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 RTA1 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.

Exceedances of the quantitative trigger criterion occurred at the Union Street Sentinel Buoy on Monday, November 21 from 1:15 PM to 3:45 PM and at the 3<sup>rd</sup> Street Sentinel Buoy on Monday, November 21 at 1:15 PM due to resuspended sediment caused by propwash from passing tugs. No exceedances of the action level criteria were met during the reporting period.

### 3. TURBIDITY BUOY DATA

The following section provides turbidity data for the sentinel and ambient turbidity buoys from 7 AM to 6 PM from November 21 – November 23, 2022. Exceedances of the trigger criterion occurred at the Union Street Sentinel Buoy on Monday, November 21 from 1:15 PM to 3:45 PM and at the 3rd Street Sentinel Buoy on Monday, November 21 at 1:15 PM due to resuspended sediment caused by propwash from passing tugs. No exceedances of the action level criteria were met during the reporting period.

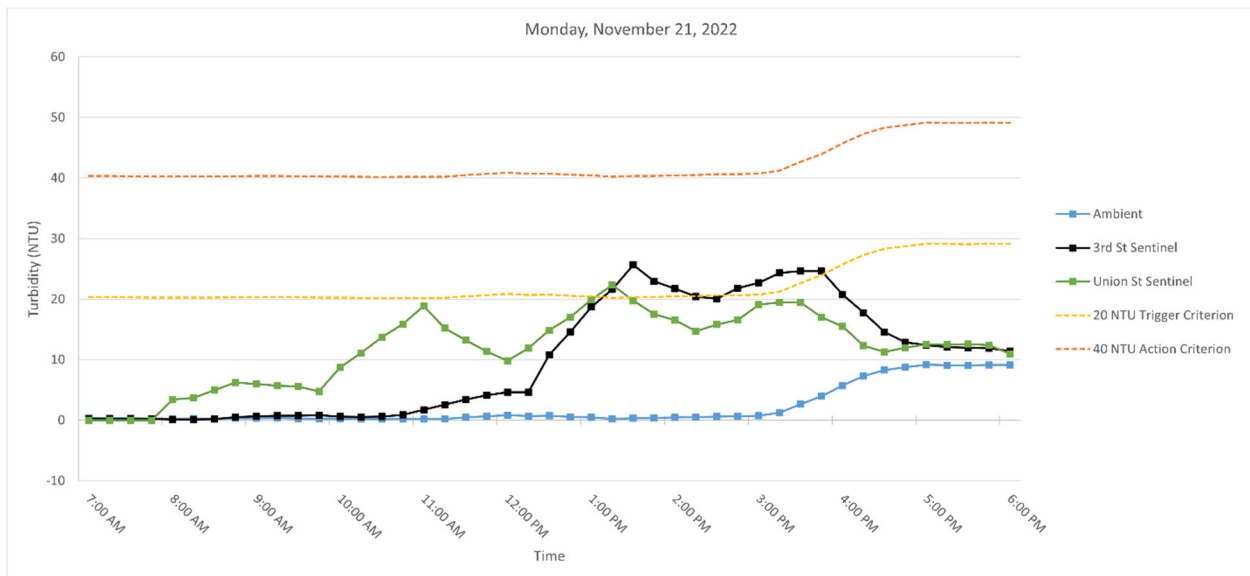
Table 1 below provides a summary of the turbidity data for the reporting period.

Date	Average Rolling Average Difference (NTU)		Maximum Rolling Average Difference (NTU)	
	3rd St - Ambient	Union St - Ambient	3rd St - Ambient	Union St - Ambient
Monday, November 21, 2022	7.82	10.65	25.30	22.11
Tuesday, November 22, 2022	2.75	10.87	7.38	19.21
Wednesday, November 23, 2022	0.68	2.83	2.40	6.43
Thursday, November 24, 2022	N/A	N/A	N/A	N/A
Friday, November 25, 2022	N/A	N/A	N/A	N/A

**Table 1.** Daily average and maximum differences between the rolling average turbidity readings from RTA1 sentinel buoys and the ambient buoy between 7 AM and 6 PM.

#### 3.1 Monday, November 21, 2022

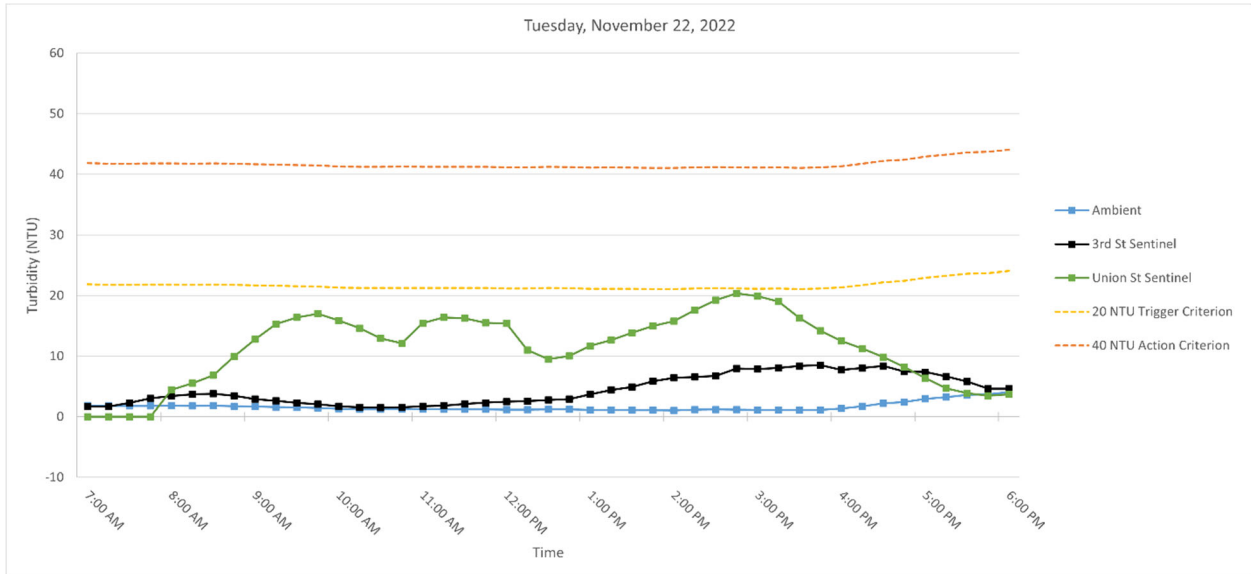
**Figure 3.** Hourly rolling average turbidity readings on Monday, November 21, 2022, from 7 AM to 6 PM.



**Note:** Exceedances of the trigger criterion occurred at the Union Street Sentinel Buoy from 1:15 PM to 3:45 PM and at the 3rd Street Sentinel Buoy at 1:15 PM due to resuspended sediment caused by propwash from passing tugs.

### 3.2 Tuesday, November 22, 2022

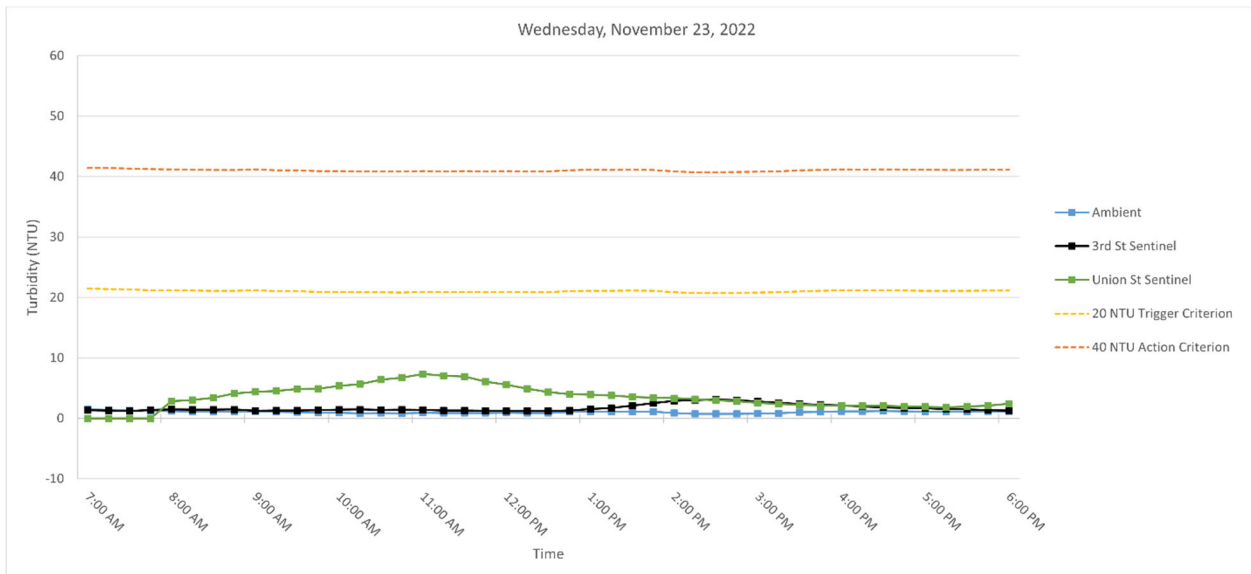
**Figure 3.** Hourly rolling average turbidity readings on Tuesday, November 22, 2022, from 7 AM to 6 PM.



**Note:** No outlier turbidity readings above 20 NTU were detected.

### 3.3 Wednesday, November 23, 2022

**Figure 4.** Hourly rolling average turbidity readings on Wednesday, November 23, 2022, from 7 AM to 6 PM.



**Note:** No outlier turbidity readings above 20 NTU were detected.

## **SUMMARY OF VISUAL OBSERVATIONS**

Sheen was observed above background conditions during work operations. These sheens were contained within RTA1 by the air curtain deployed south of the 3<sup>rd</sup> Street Bridge. Absorbent booms were deployed at Union Street Bridge to contain sheens between the Union Street Bridge and the head of the canal.

**APPENDIX A**  
**Turbidity Data Tables**



## Monday, November 21, 2022

Time	Turbidity (NTU)			Rolling Average Turbidity (NTU)			Difference (NTU)	
	Ambient	3rd Street	Union Street	Ambient	3rd Street	Union Street	3rd St - Ambient	Union St - Ambient
7:00:00	0.34	0.19	2.37	0.35	0.25	1.48	-0.10	1.13
7:15:00	0.45	--	1.27	0.35	0.25	1.63	-0.11	1.28
7:30:00	0.01	0.1	2.42	0.30	0.24	1.90	-0.06	1.59
7:45:00	0.29	0.11	6.11	0.28	0.21	2.80	-0.08	2.51
8:00:00	0.13	0.11	4.9	0.24	0.13	3.41	-0.12	3.17
8:15:00	0.56	0.23	3.85	0.29	0.14	3.71	-0.15	3.42
8:30:00	--	0.34	7.41	0.25	0.18	4.94	-0.07	4.69
8:45:00	0.25	1.67	8.75	0.31	0.49	6.20	0.18	5.90
9:00:00	0.38	0.9	5	0.33	0.65	5.98	0.32	5.65
9:15:00	0.28	0.51	3.52	0.37	0.73	5.71	0.36	5.34
9:30:00	0.26	0.4	3.23	0.29	0.76	5.58	0.47	5.29
9:45:00	0.21	0.75	3.4	0.28	0.85	4.78	0.57	4.50
10:00:00	0.18	0.54	28.34	0.26	0.62	8.70	0.36	8.44
10:15:00	0.1	0.58	16.86	0.21	0.56	11.07	0.35	10.86
10:30:00	0.17	0.78	16.8	0.18	0.61	13.73	0.43	13.54
10:45:00	0.37	1.8	14.02	0.21	0.89	15.88	0.68	15.68
11:00:00	--	4.85	18.27	0.21	1.71	18.86	1.51	18.65
11:15:00	0.22	4.72	10.05	0.22	2.55	15.20	2.33	14.99
11:30:00	1.11	4.84	7.07	0.47	3.40	13.24	2.93	12.77
11:45:00	0.92	4.28	7.41	0.66	4.10	11.36	3.44	10.71
12:00:00	1.17	4.41	6.31	0.86	4.62	9.82	3.77	8.97
12:15:00	0.12	4.86	28.7	0.71	4.62	11.91	3.91	11.20
12:30:00	0.36	35.55	24.81	0.74	10.79	14.86	10.05	14.12
12:45:00	0.2	23.95	18.02	0.55	14.61	17.05	14.06	16.50
13:00:00	--	24.79	21.75	0.46	18.71	19.92	18.25	19.46
13:15:00	0.18	19.03	18.33	0.22	21.64	22.32	21.42	22.11
13:30:00	0.6	24.86	15.73	0.34	25.64	19.73	25.30	19.39
13:45:00	0.49	22.05	13.66	0.37	22.94	17.50	22.57	17.13
14:00:00	0.58	17.95	13.15	0.46	21.74	16.52	21.27	16.06
14:15:00	0.63	18.24	12.6	0.50	20.43	14.69	19.93	14.20
14:30:00	0.81	17.27	23.87	0.62	20.07	15.80	19.45	15.18
14:45:00	0.74	33.6	19.52	0.65	21.82	16.56	21.17	15.91
15:00:00	0.86	26.52	26.24	0.72	22.72	19.08	21.99	18.35
15:15:00	3.26	26.01	15.11	1.26	24.33	19.47	23.07	18.21
15:30:00	7.67	19.74	12.42	2.67	24.63	19.43	21.96	16.76
15:45:00	7.3	17.3	11.65	3.97	24.63	16.99	20.67	13.02
16:00:00	9.56	14.17	12.09	5.73	20.75	15.50	15.02	9.77
16:15:00	8.69	11.59	10.32	7.30	17.76	12.32	10.47	5.02
16:30:00	8.29	9.95	9.95	8.30	14.55	11.29	6.25	2.98
16:45:00	9.81	11.29	15.89	8.73	12.86	11.98	4.13	3.25
17:00:00	9.51	15.09	14.52	9.17	12.42	12.55	3.25	3.38
17:15:00	9.19	12.4	11.81	9.10	12.06	12.50	2.97	3.40
17:30:00	8.63	11.21	10.77	9.09	11.99	12.59	2.90	3.50
17:45:00	8.57	9.37	9.02	9.14	11.87	12.40	2.73	3.26
18:00:00	9.73	8.97	8.7	9.13	11.41	10.96	2.28	1.84

## Tuesday, November 22, 2022

Time	Turbidity (NTU)			Rolling Average Turbidity (NTU)			Difference (NTU)	
	Ambient	3rd Street	Union Street	Ambient	3rd Street	Union Street	3rd St - Ambient	Union St - Ambient
7:00:00	1.77	1.73	3.35	1.84	1.66	2.48	-0.18	0.63
7:15:00	1.59	2.17	4.49	1.75	1.66	2.86	-0.09	1.11
7:30:00	2.15	4.8	3.53	1.75	2.29	3.11	0.54	1.36
7:45:00	1.8	5.15	3.8	1.79	3.02	3.53	1.24	1.74
8:00:00	1.76	3.25	7.06	1.81	3.42	4.45	1.61	2.63
8:15:00	1.53	3.07	8.74	1.77	3.69	5.52	1.92	3.76
8:30:00	1.8	2.58	10.96	1.81	3.77	6.82	1.96	5.01
8:45:00	1.81	3.16	19.27	1.74	3.44	9.97	1.70	8.23
9:00:00	1.5	2.42	17.72	1.68	2.90	12.75	1.22	11.07
9:15:00	1.35	1.78	19.76	1.60	2.60	15.29	1.00	13.69
9:30:00	1.23	1.52	14.24	1.54	2.29	16.39	0.75	14.85
9:45:00	1.41	1.48	13.96	1.46	2.07	16.99	0.61	15.53
10:00:00	1.01	1.48	13.71	1.30	1.74	15.88	0.44	14.58
10:15:00	1.11	1.4	11.34	1.22	1.53	14.60	0.31	13.38
10:30:00	1.35	1.62	11.24	1.22	1.50	12.90	0.28	11.68
10:45:00	1.44	1.74	10.41	1.26	1.54	12.13	0.28	10.87
11:00:00	1.33	2.39	30.49	1.25	1.73	15.44	0.48	14.19
11:15:00	0.9	1.9	18.51	1.23	1.81	16.40	0.58	15.17
11:30:00	1.11	2.82	10.47	1.23	2.09	16.22	0.87	15.00
11:45:00	1.34	2.69	7.51	1.22	2.31	15.48	1.08	14.25
12:00:00	1.06	2.57	9.93	1.15	2.47	15.38	1.33	14.23
12:15:00	1.34	2.9	8.46	1.15	2.58	10.98	1.43	9.83
12:30:00	1.26	2.86	11.02	1.22	2.77	9.48	1.55	8.26
12:45:00	0.96	3.47	13.18	1.19	2.90	10.02	1.71	8.83
13:00:00	0.9	6.69	15.77	1.10	3.70	11.67	2.59	10.57
13:15:00	1.14	6.09	14.83	1.12	4.40	12.65	3.28	11.53
13:30:00	1.18	5.44	14.48	1.09	4.91	13.86	3.82	12.77
13:45:00	1.09	7.54	16.64	1.05	5.85	14.98	4.79	13.93
14:00:00	0.9	6.33	17.22	1.04	6.42	15.79	5.38	14.75
14:15:00	1.51	7.26	24.7	1.16	6.53	17.57	5.37	16.41
14:30:00	1.24	7.11	23.04	1.18	6.74	19.22	5.55	18.03
14:45:00	0.99	11.4	20.16	1.15	7.93	20.35	6.78	19.21
15:00:00	0.9	7.17	14.3	1.11	7.85	19.88	6.75	18.78
15:15:00	1.02	7.18	12.78	1.13	8.02	19.00	6.89	17.86
15:30:00	1.2	9.07	11.24	1.07	8.39	16.30	7.32	15.23
15:45:00	1.54	7.74	12.34	1.13	8.51	14.16	7.38	13.03
16:00:00	2.1	7.35	11.73	1.35	7.70	12.48	6.35	11.13
16:15:00	2.8	8.76	7.95	1.73	8.02	11.21	6.29	9.48
16:30:00	3.38	8.88	5.91	2.20	8.36	9.83	6.16	7.63
16:45:00	2.23	4.38	3.09	2.41	7.42	8.20	5.01	5.79
17:00:00	4.15	7.45	3.05	2.93	7.36	6.35	4.43	3.41
17:15:00	3.64	3.7	3.4	3.24	6.63	4.68	3.39	1.44
17:30:00	4.6	4.66	3.85	3.60	5.81	3.86	2.21	0.26
17:45:00	3.89	2.99	3.97	3.70	4.64	3.47	0.93	-0.23
18:00:00	4.02	4.37	4.08	4.06	4.63	3.67	0.57	-0.39

### Wednesday, November 23, 2022

Time	Turbidity (NTU)			Rolling Average Turbidity (NTU)			Difference (NTU)	
	Ambient	3rd Street	Union Street	Ambient	3rd Street	Union Street	3rd St - Ambient	Union St - Ambient
7:00:00	1.42	1.2	2.63	1.46	1.36	2.22	-0.10	0.76
7:15:00	1.22	1.26	2.71	1.39	1.28	2.27	-0.11	0.88
7:30:00	1.14	1.13	1.79	1.31	1.21	2.28	-0.10	0.97
7:45:00	0.82	2.27	2.98	1.21	1.39	2.45	0.18	1.24
8:00:00	1.38	1.47	3.96	1.20	1.47	2.81	0.27	1.62
8:15:00	1.02	1.03	3.7	1.12	1.43	3.03	0.32	1.91
8:30:00	1.13	1.22	4.44	1.10	1.42	3.37	0.33	2.28
8:45:00	1.14	1.28	5.37	1.10	1.45	4.09	0.36	2.99
9:00:00	1.14	1.3	4.45	1.16	1.26	4.38	0.10	3.22
9:15:00	0.83	1.53	4.69	1.05	1.27	4.53	0.22	3.48
9:30:00	0.9	1.21	5.33	1.03	1.31	4.86	0.28	3.83
9:45:00	0.51	1.47	4.6	0.90	1.36	4.89	0.45	3.98
10:00:00	1.19	1.64	7.78	0.91	1.43	5.37	0.52	4.46
10:15:00	0.77	1.42	5.82	0.84	1.45	5.64	0.61	4.80
10:30:00	0.97	1.2	8.52	0.87	1.39	6.41	0.52	5.54
10:45:00	0.69	1.4	6.79	0.83	1.43	6.70	0.60	5.88
11:00:00	0.87	1.27	7.74	0.90	1.39	7.33	0.49	6.43
11:15:00	0.96	1.23	6.45	0.85	1.30	7.06	0.45	6.21
11:30:00	0.94	1.25	5.08	0.89	1.27	6.92	0.38	6.03
11:45:00	0.85	1.06	4.35	0.86	1.24	6.08	0.38	5.22
12:00:00	0.9	1.22	4.05	0.90	1.21	5.53	0.30	4.63
12:15:00	0.58	1.2	4.45	0.85	1.19	4.88	0.35	4.03
12:30:00	1.07	1.16	3.75	0.87	1.18	4.34	0.31	3.47
12:45:00	1.82	1.78	3.36	1.04	1.28	3.99	0.24	2.95
13:00:00	1.19	2.15	3.84	1.11	1.50	3.89	0.39	2.78
13:15:00	0.83	2.27	3.41	1.10	1.71	3.76	0.61	2.66
13:30:00	0.68	3.13	3.25	1.12	2.10	3.52	0.98	2.40
13:45:00	0.98	3.15	3.01	1.10	2.50	3.37	1.40	2.27
14:00:00	0.63	3.6	3.12	0.86	2.86	3.33	2.00	2.46
14:15:00	0.42	2.97	3.12	0.71	3.02	3.18	2.32	2.47
14:30:00	0.85	2.7	2.37	0.71	3.11	2.97	2.40	2.26
14:45:00	0.82	2.37	2.44	0.74	2.96	2.81	2.22	2.07
15:00:00	1.24	2.39	1.78	0.79	2.81	2.57	2.01	1.77
15:15:00	0.86	2.35	2.18	0.84	2.56	2.38	1.72	1.54
15:30:00	1.3	2	2.35	1.01	2.36	2.22	1.35	1.21
15:45:00	1.15	1.94	1.96	1.07	2.21	2.14	1.14	1.07
16:00:00	1.28	1.95	2.05	1.17	2.13	2.06	0.96	0.90
16:15:00	1.16	1.49	1.64	1.15	1.95	2.04	0.80	0.89
16:30:00	1.05	1.7	2.38	1.19	1.82	2.08	0.63	0.89
16:45:00	1.1	1.58	1.73	1.15	1.73	1.95	0.58	0.80
17:00:00	0.96	1.71	1.61	1.11	1.69	1.88	0.58	0.77
17:15:00	1.19	1.22	1.56	1.09	1.54	1.78	0.45	0.69
17:30:00	1.16	1.1	2.45	1.09	1.46	1.95	0.37	0.85
17:45:00	1.25	1.09	3.18	1.13	1.34	2.11	0.21	0.97
18:00:00	1.2	1.37	3.37	1.15	1.30	2.43	0.15	1.28