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

PERIOD: February 21 – February 24, 2023

Date of Report: February 28, 2023

Report Contents

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

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Project Number JR0289A

1. SCOPE OF MONITORING

1.1 Current Buoy Locations

The following report summarizes water quality monitoring data collected during the week of February 21, 2023. No construction activities occurred on February 20, 2023 due to the union holiday. In accordance with the Water Quality Monitoring Plan for In-waterway Construction Activities (WQMP) three turbidity buoys were deployed to monitor turbidity related to dredging activities. One turbidity buoy was deployed just south of the 3rd Street Bridge outside of the air curtain and traditional turbidity curtain and is referred to as the 3rd Street Sentinel Buoy. A second turbidity buoy was deployed just south of Carroll St Bridge to monitor dredging activities north of Carroll Street Bridge and is referred to as the Carroll 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.

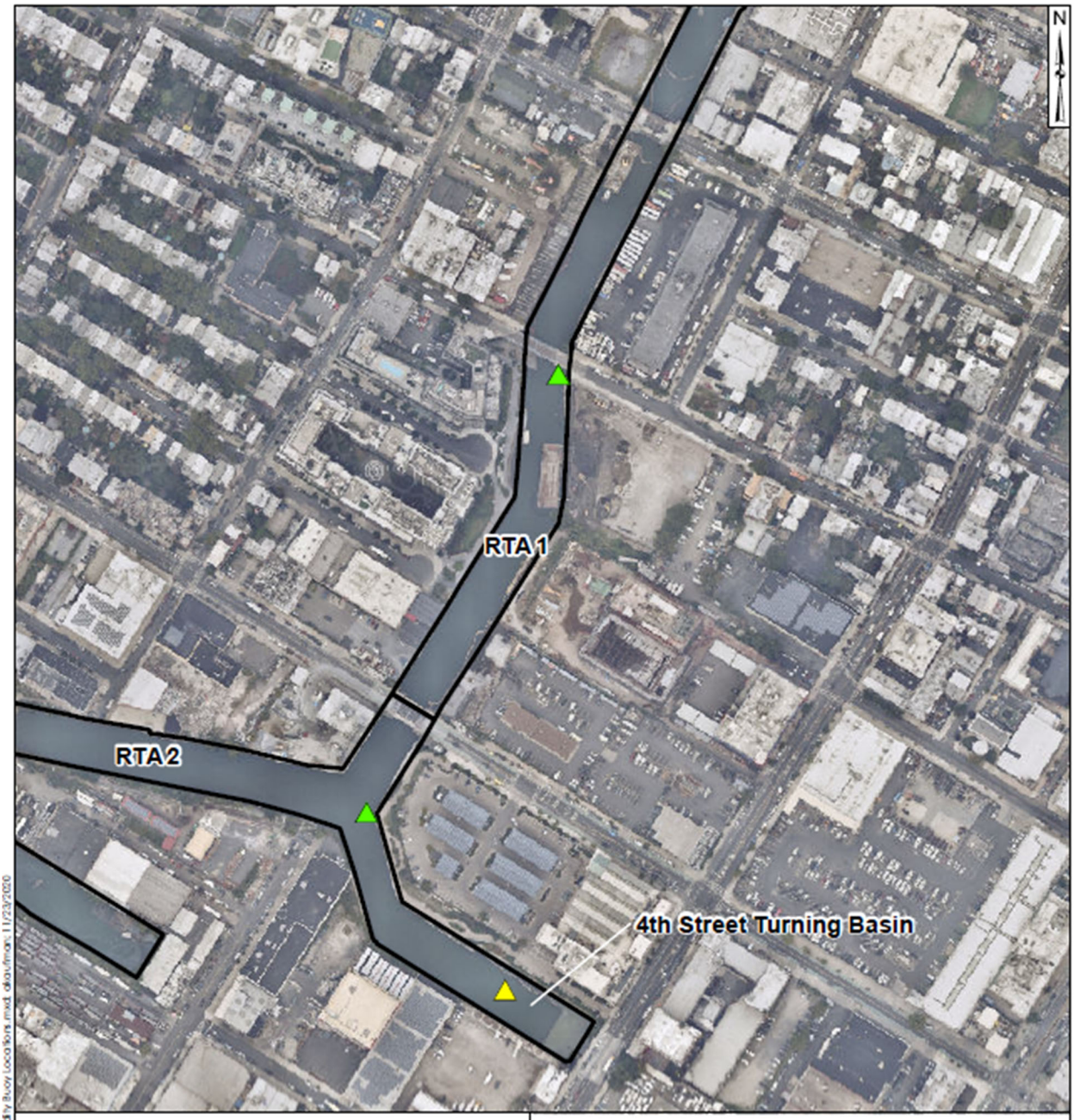
- On October 14, 2021, the Degraw Street Sentinel Buoy was removed from the canal for servicing. On October 20, 2021, the Degraw Street Sentinel Buoy was redeployed to its position south of the Carroll Street Bridge and was renamed to the Carroll Street Sentinel Buoy.

- 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 3rd Street Bridge in preparation for the resumption of ISS operations. On December 8, 2021, a sentinel buoy was re-deployed just south of the Carroll Street Bridge.

- Since December 8, 2021, the sentinel buoy deployed at the northern-most portion of the canal has alternated positioning between the Union Street Bridge and Carroll Street Bridge locations based on the in-canal construction activities being conducted at any given time.

- On January 9, 2023, the Carroll Street Sentinel Buoy was moved to the Third Street Bridge location and renamed the Third Street Sentinel Buoy. Additionally, the former Third Street Sentinel Buoy was removed from the canal for servicing.

- On February 6, 2023, the newly serviced Third Street Sentinel Buoy was reinstalled at Third Street Bridge, and the former Carroll Street Sentinel Buoy was reinstalled at Carroll Street Bridge.



Legend

- Ambient Buoy
- Sentinel Buoy
- RTA Boundary

300 150 0 300 Feet

Turbidity Buoy Locations

Gowanus Canal, Brooklyn, NY

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Brooklyn, NY | February 2023

Figure 1

\\fileserver\Gowanus\PRJOB_GIS\mxd\Canal_Wide\Turbidity Buoy Locations.mxd drouvinen 11/23/2020

2. REPORT OF EXCEEDANCES

No exceedances to the quantitative trigger or action criteria were observed during the reporting period. Data from the Carroll Street Sentinel Buoy was not reported between February 21 to 24, 2023, due to a faulty sensor causing erroneous readings.

- **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.

No exceedances to the quantitative trigger or action criteria were observed during the reporting period. Data from the Carroll Street Sentinel Buoy was not reported between February 21 to 24, 2023, due to a faulty sensor causing erroneous readings.

3. TURBIDITY BUOY DATA

The following section provides turbidity data for the sentinel and ambient turbidity buoys from 7 AM to 6 PM from February 21 – February 24, 2023.

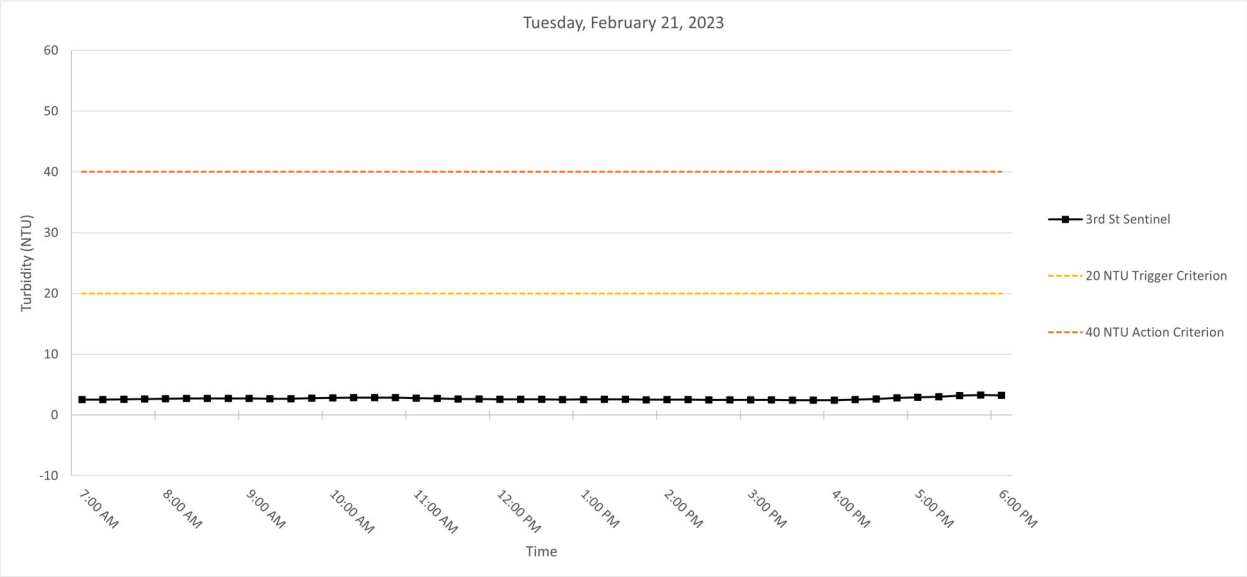
No exceedances to the quantitative trigger or action criteria were observed during the reporting period.

Data from the Ambient Buoy was not reported from February 21 to 24, 2023, due to a faulty communications system preventing transmission of readings. Investigation into the cause of this fault commenced on February 22, 2023 and remains ongoing.

Data from the Carroll Street Sentinel Buoy was not reported between February 21 to 24, 2023, due to a faulty sensor causing erroneous readings. Investigation into the cause of the erroneous readings will commence the week of February 27.

3.1 Tuesday, February 21, 2023

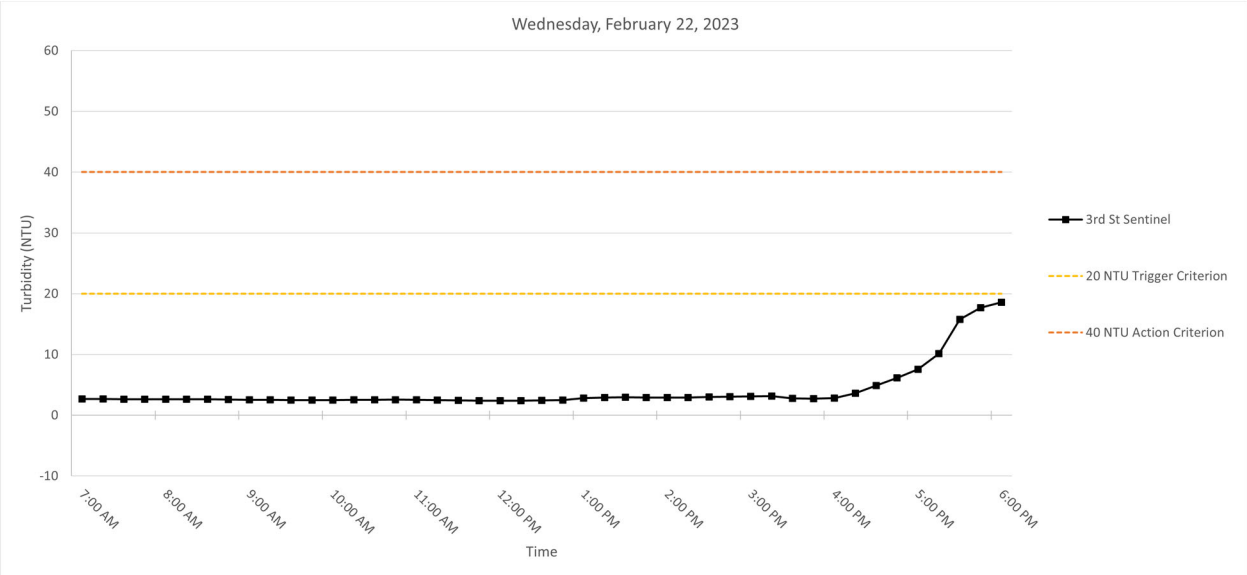
Figure 3. Hourly rolling average turbidity readings on Tuesday, February 21, 2023, from 7 AM to 6 PM.



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

3.2 Wednesday, February 22, 2023

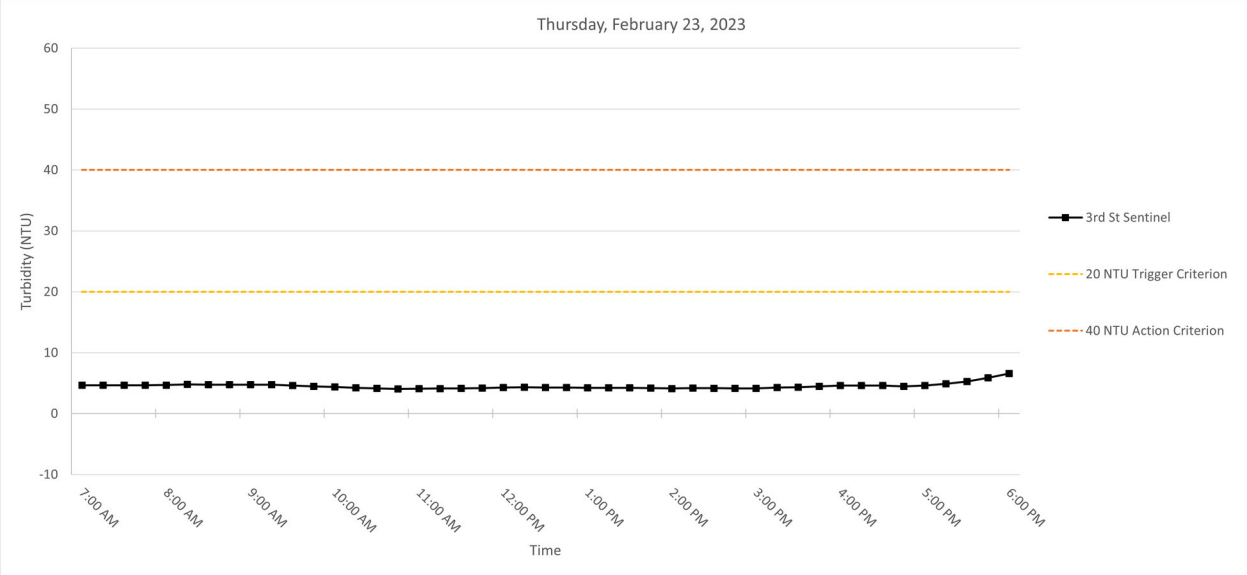
Figure 4. Hourly rolling average turbidity readings on Wednesday, February 22, 2023, from 7 AM to 6 PM.



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

3.3 Thursday, February 23, 2023

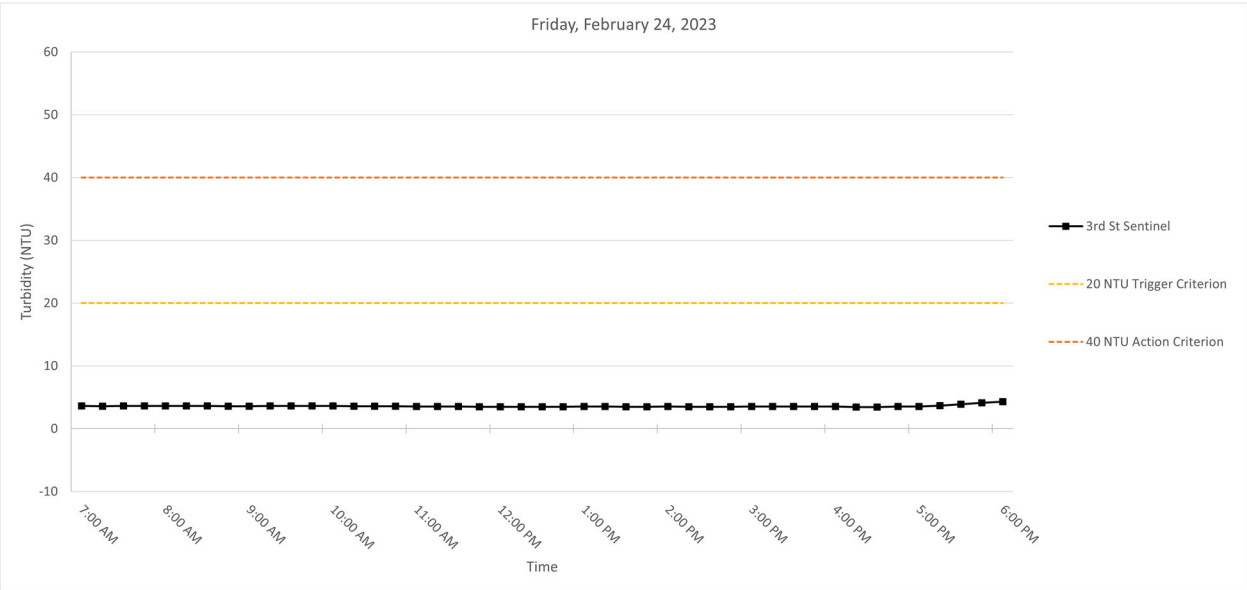
Figure 5. Hourly rolling average turbidity readings on Thursday, February 23, 2023, from 7 AM to 6 PM.



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

3.4 Friday, February 24, 2023

Figure 6. Hourly rolling average turbidity readings on Friday, February 24, 2023, from 7 AM to 6 PM.



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

SUMMARY OF VISUAL OBSERVATIONS

No sheens attributable to in-canal work operations were observed above background conditions. Sheen and turbid discharges were observed from storm water outfalls, including from the high-level storm sewer pipe adjacent to OH-005 on multiple instances from February 21 through February 24, 2023. Examples of these discharges are shown in the figures below.

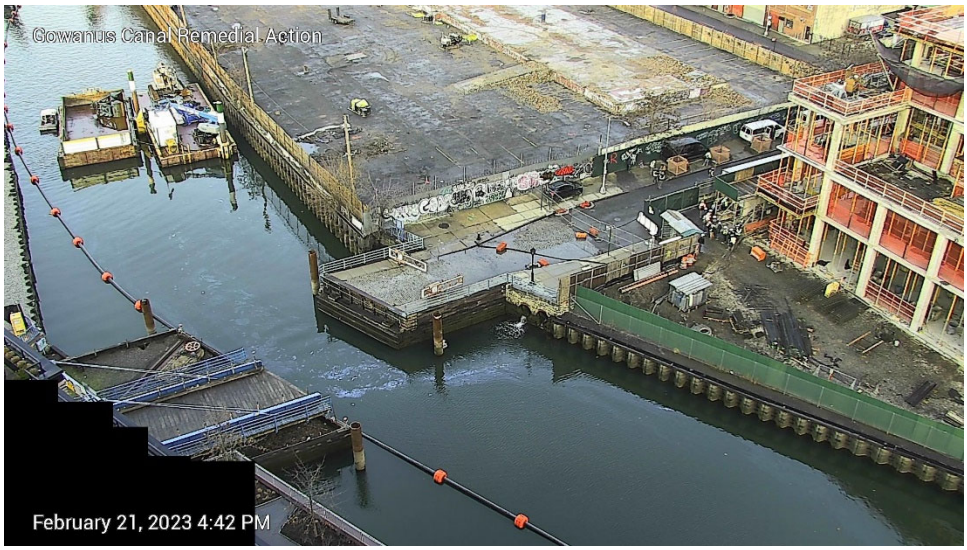


Figure 7. Sheen discharge from high level storm sewer pipe on February 21, 2023 at 4:45 PM.

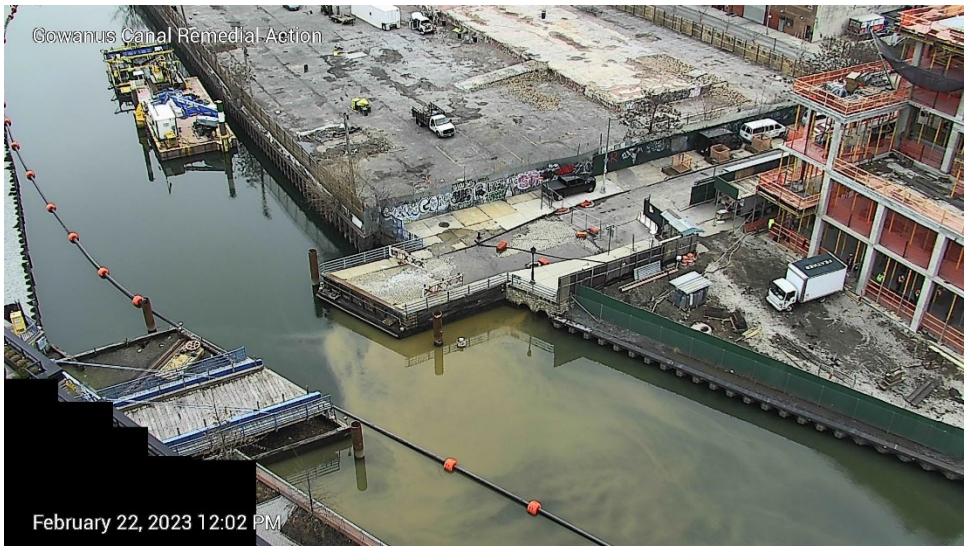


Figure 8. Turbid discharge from high level storm sewer pipe on February 22, 2023 at 12:00 PM.

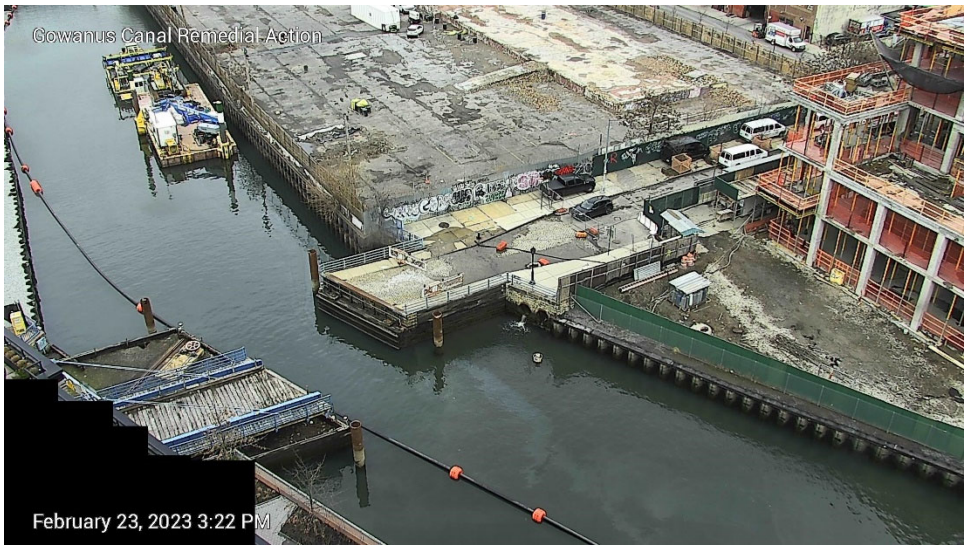


Figure 9. Sheen discharge from high level storm sewer pipe on February 23, 2023 at 3:15 PM.

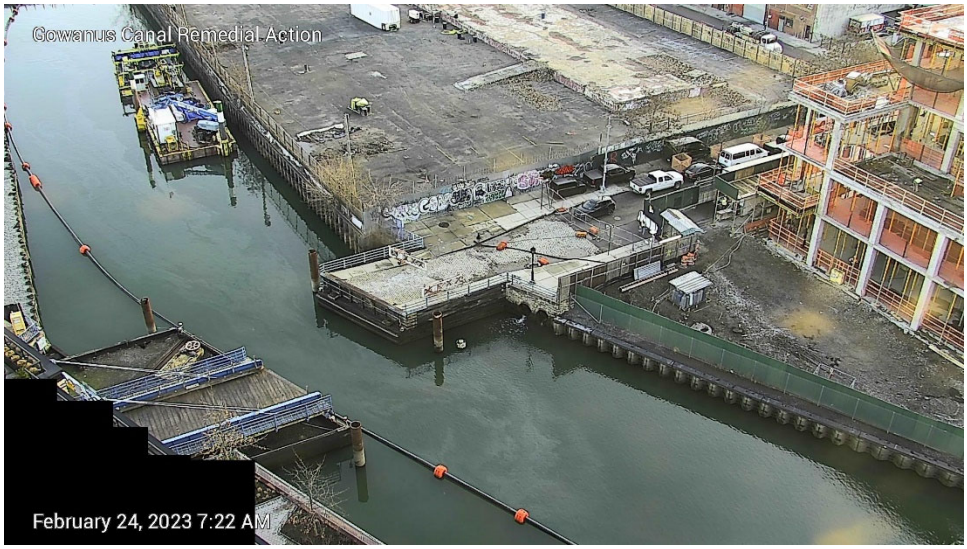


Figure 10. Sheen discharge from high level storm sewer pipe on February 23, 2023 at 7:15 AM.

APPENDIX A
Turbidity Data Tables

Tuesday, February 21, 2023

Time	Turbidity (NTU)			Rolling Average Turbidity (NTU)			Difference (NTU)	
	Ambient	3rd Street	Carroll Street	Ambient	3rd Street	Carroll Street	3rd St - Ambient	Carroll St - Ambient
7:00:00	--	2.45	--	--	2.52	--	--	--
7:15:00	--	2.64	--	--	2.53	--	--	--
7:30:00	--	2.68	--	--	2.58	--	--	--
7:45:00	--	2.76	--	--	2.61	--	--	--
8:00:00	--	2.8	--	--	2.67	--	--	--
8:15:00	--	2.73	--	--	2.72	--	--	--
8:30:00	--	2.63	--	--	2.72	--	--	--
8:45:00	--	2.66	--	--	2.72	--	--	--
9:00:00	--	2.71	--	--	2.71	--	--	--
9:15:00	--	2.74	--	--	2.69	--	--	--
9:30:00	--	2.64	--	--	2.68	--	--	--
9:45:00	--	3.12	--	--	2.77	--	--	--
10:00:00	--	2.83	--	--	2.81	--	--	--
10:15:00	--	3	--	--	2.87	--	--	--
10:30:00	--	2.66	--	--	2.85	--	--	--
10:45:00	--	2.66	--	--	2.85	--	--	--
11:00:00	--	2.59	--	--	2.75	--	--	--
11:15:00	--	2.63	--	--	2.71	--	--	--
11:30:00	--	2.61	--	--	2.63	--	--	--
11:45:00	--	2.6	--	--	2.62	--	--	--
12:00:00	--	2.55	--	--	2.60	--	--	--
12:15:00	--	2.46	--	--	2.57	--	--	--
12:30:00	--	2.61	--	--	2.57	--	--	--
12:45:00	--	2.49	--	--	2.54	--	--	--
13:00:00	--	2.68	--	--	2.56	--	--	--
13:15:00	--	2.58	--	--	2.56	--	--	--
13:30:00	--	2.49	--	--	2.57	--	--	--
13:45:00	--	2.31	--	--	2.51	--	--	--
14:00:00	--	2.56	--	--	2.52	--	--	--
14:15:00	--	2.7	--	--	2.53	--	--	--
14:30:00	--	2.46	--	--	2.50	--	--	--
14:45:00	--	2.42	--	--	2.49	--	--	--
15:00:00	--	2.4	--	--	2.51	--	--	--
15:15:00	--	2.45	--	--	2.49	--	--	--
15:30:00	--	2.42	--	--	2.43	--	--	--
15:45:00	--	2.51	--	--	2.44	--	--	--
16:00:00	--	2.43	--	--	2.44	--	--	--
16:15:00	--	2.96	--	--	2.55	--	--	--
16:30:00	--	2.92	--	--	2.65	--	--	--
16:45:00	--	3.32	--	--	2.83	--	--	--
17:00:00	--	2.98	--	--	2.92	--	--	--
17:15:00	--	2.85	--	--	3.01	--	--	--
17:30:00	--	3.87	--	--	3.19	--	--	--
17:45:00	--	3.31	--	--	3.27	--	--	--
18:00:00	--	3.28	--	--	3.26	--	--	--

Wednesday, February 22, 2023

Time	Turbidity (NTU)			Rolling Average Turbidity (NTU)			Difference (NTU)	
	Ambient	3rd Street	Carroll Street	Ambient	3rd Street	Carroll Street	3rd St - Ambient	Carroll St - Ambient
7:00:00	--	2.63	--	--	2.66	--	--	--
7:15:00	--	2.7	--	--	2.67	--	--	--
7:30:00	--	2.62	--	--	2.63	--	--	--
7:45:00	--	2.66	--	--	2.62	--	--	--
8:00:00	--	2.6	--	--	2.64	--	--	--
8:15:00	--	2.66	--	--	2.65	--	--	--
8:30:00	--	2.53	--	--	2.61	--	--	--
8:45:00	--	2.5	--	--	2.59	--	--	--
9:00:00	--	2.44	--	--	2.55	--	--	--
9:15:00	--	2.52	--	--	2.53	--	--	--
9:30:00	--	2.44	--	--	2.49	--	--	--
9:45:00	--	2.58	--	--	2.50	--	--	--
10:00:00	--	2.47	--	--	2.49	--	--	--
10:15:00	--	2.69	--	--	2.54	--	--	--
10:30:00	--	2.56	--	--	2.55	--	--	--
10:45:00	--	2.49	--	--	2.56	--	--	--
11:00:00	--	2.39	--	--	2.52	--	--	--
11:15:00	--	2.39	--	--	2.50	--	--	--
11:30:00	--	2.39	--	--	2.44	--	--	--
11:45:00	--	2.4	--	--	2.41	--	--	--
12:00:00	--	2.36	--	--	2.39	--	--	--
12:15:00	--	2.45	--	--	2.40	--	--	--
12:30:00	--	2.65	--	--	2.45	--	--	--
12:45:00	--	2.55	--	--	2.48	--	--	--
13:00:00	--	4.15	--	--	2.83	--	--	--
13:15:00	--	2.64	--	--	2.89	--	--	--
13:30:00	--	2.71	--	--	2.94	--	--	--
13:45:00	--	2.53	--	--	2.92	--	--	--
14:00:00	--	2.54	--	--	2.91	--	--	--
14:15:00	--	4.2	--	--	2.92	--	--	--
14:30:00	--	3.09	--	--	3.01	--	--	--
14:45:00	--	2.83	--	--	3.04	--	--	--
15:00:00	--	2.74	--	--	3.08	--	--	--
15:15:00	--	2.76	--	--	3.12	--	--	--
15:30:00	--	2.43	--	--	2.77	--	--	--
15:45:00	--	2.92	--	--	2.74	--	--	--
16:00:00	--	3.17	--	--	2.80	--	--	--
16:15:00	--	6.84	--	--	3.62	--	--	--
16:30:00	--	9.14	--	--	4.90	--	--	--
16:45:00	--	8.59	--	--	6.13	--	--	--
17:00:00	--	10.14	--	--	7.58	--	--	--
17:15:00	--	16.06	--	--	10.15	--	--	--
17:30:00	--	34.9	--	--	15.77	--	--	--
17:45:00	--	18.78	--	--	17.69	--	--	--
18:00:00	--	13.11	--	--	18.60	--	--	--

Thursday, February 23, 2023

Time	Turbidity (NTU)			Rolling Average Turbidity (NTU)			Difference (NTU)	
	Ambient	3rd Street	Carroll Street	Ambient	3rd Street	Carroll Street	3rd St - Ambient	Carroll St - Ambient
7:00:00	--	4.46	--	--	4.66	--	--	--
7:15:00	--	4.8	--	--	4.67	--	--	--
7:30:00	--	4.65	--	--	4.65	--	--	--
7:45:00	--	4.8	--	--	4.68	--	--	--
8:00:00	--	4.69	--	--	4.68	--	--	--
8:15:00	--	5.01	--	--	4.79	--	--	--
8:30:00	--	4.62	--	--	4.75	--	--	--
8:45:00	--	4.69	--	--	4.76	--	--	--
9:00:00	--	4.78	--	--	4.76	--	--	--
9:15:00	--	4.62	--	--	4.74	--	--	--
9:30:00	--	4.26	--	--	4.59	--	--	--
9:45:00	--	4.09	--	--	4.49	--	--	--
10:00:00	--	4.17	--	--	4.38	--	--	--
10:15:00	--	4.13	--	--	4.25	--	--	--
10:30:00	--	4	--	--	4.13	--	--	--
10:45:00	--	3.91	--	--	4.06	--	--	--
11:00:00	--	4.16	--	--	4.07	--	--	--
11:15:00	--	4.39	--	--	4.12	--	--	--
11:30:00	--	4.21	--	--	4.13	--	--	--
11:45:00	--	4.25	--	--	4.18	--	--	--
12:00:00	--	4.34	--	--	4.27	--	--	--
12:15:00	--	4.43	--	--	4.32	--	--	--
12:30:00	--	4.12	--	--	4.27	--	--	--
12:45:00	--	4.23	--	--	4.27	--	--	--
13:00:00	--	4.11	--	--	4.25	--	--	--
13:15:00	--	4.29	--	--	4.24	--	--	--
13:30:00	--	4.35	--	--	4.22	--	--	--
13:45:00	--	3.92	--	--	4.18	--	--	--
14:00:00	--	3.92	--	--	4.12	--	--	--
14:15:00	--	4.42	--	--	4.18	--	--	--
14:30:00	--	4.21	--	--	4.16	--	--	--
14:45:00	--	4.14	--	--	4.12	--	--	--
15:00:00	--	4.04	--	--	4.15	--	--	--
15:15:00	--	4.6	--	--	4.28	--	--	--
15:30:00	--	4.7	--	--	4.34	--	--	--
15:45:00	--	4.81	--	--	4.46	--	--	--
16:00:00	--	4.79	--	--	4.59	--	--	--
16:15:00	--	4.09	--	--	4.60	--	--	--
16:30:00	--	4.65	--	--	4.61	--	--	--
16:45:00	--	4.05	--	--	4.48	--	--	--
17:00:00	--	5.56	--	--	4.63	--	--	--
17:15:00	--	6.14	--	--	4.90	--	--	--
17:30:00	--	5.98	--	--	5.28	--	--	--
17:45:00	--	7.68	--	--	5.88	--	--	--
18:00:00	--	7.51	--	--	6.57	--	--	--

Friday, February 24, 2023

Time	Turbidity (NTU)			Rolling Average Turbidity (NTU)			Difference (NTU)	
	Ambient	3rd Street	Carroll Street	Ambient	3rd Street	Carroll Street	3rd St - Ambient	Carroll St - Ambient
7:00:00	--	3.55	--	--	3.61	--	--	--
7:15:00	--	3.56	--	--	3.60	--	--	--
7:30:00	--	3.73	--	--	3.64	--	--	--
7:45:00	--	3.75	--	--	3.64	--	--	--
8:00:00	--	3.52	--	--	3.62	--	--	--
8:15:00	--	3.53	--	--	3.62	--	--	--
8:30:00	--	3.64	--	--	3.63	--	--	--
8:45:00	--	3.48	--	--	3.58	--	--	--
9:00:00	--	3.79	--	--	3.59	--	--	--
9:15:00	--	3.67	--	--	3.62	--	--	--
9:30:00	--	3.57	--	--	3.63	--	--	--
9:45:00	--	3.68	--	--	3.64	--	--	--
10:00:00	--	3.45	--	--	3.63	--	--	--
10:15:00	--	3.61	--	--	3.60	--	--	--
10:30:00	--	3.56	--	--	3.57	--	--	--
10:45:00	--	3.58	--	--	3.58	--	--	--
11:00:00	--	3.52	--	--	3.54	--	--	--
11:15:00	--	3.48	--	--	3.55	--	--	--
11:30:00	--	3.49	--	--	3.53	--	--	--
11:45:00	--	3.41	--	--	3.50	--	--	--
12:00:00	--	3.53	--	--	3.49	--	--	--
12:15:00	--	3.58	--	--	3.50	--	--	--
12:30:00	--	3.53	--	--	3.51	--	--	--
12:45:00	--	3.44	--	--	3.50	--	--	--
13:00:00	--	3.53	--	--	3.52	--	--	--
13:15:00	--	3.5	--	--	3.52	--	--	--
13:30:00	--	3.5	--	--	3.50	--	--	--
13:45:00	--	3.55	--	--	3.50	--	--	--
14:00:00	--	3.53	--	--	3.52	--	--	--
14:15:00	--	3.45	--	--	3.51	--	--	--
14:30:00	--	3.4	--	--	3.49	--	--	--
14:45:00	--	3.46	--	--	3.48	--	--	--
15:00:00	--	3.86	--	--	3.54	--	--	--
15:15:00	--	3.52	--	--	3.54	--	--	--
15:30:00	--	3.38	--	--	3.52	--	--	--
15:45:00	--	3.42	--	--	3.53	--	--	--
16:00:00	--	3.4	--	--	3.52	--	--	--
16:15:00	--	3.46	--	--	3.44	--	--	--
16:30:00	--	3.53	--	--	3.44	--	--	--
16:45:00	--	3.81	--	--	3.52	--	--	--
17:00:00	--	3.57	--	--	3.55	--	--	--
17:15:00	--	4.06	--	--	3.69	--	--	--
17:30:00	--	4.6	--	--	3.91	--	--	--
17:45:00	--	4.51	--	--	4.11	--	--	--
18:00:00	--	4.71	--	--	4.29	--	--	--