

**WEEKLY PROGRESS REPORT – TRC SOLUTIONS**

**Gowanus Canal Turning Basin 4 Dredging and Capping Pilot Study  
Brooklyn, New York**

**Project number: 283126**

**Period: November 5 to 9, 2018**

**Date of Report: November 15, 2018**

**Rev: 0**

**Prepared For: Gowanus Environmental Remediation Trust**



**On-Site Activities Conducted During Week:**

*Sevenson Environmental Services (SES)*

Turbidity Monitoring

- Turbid water not observed migrating from the 4<sup>th</sup> Street Turning Basin.

Capping Activities

- Commence and complete placement of habitat layer (i.e., gravel).
- Commence cutting of installed sheet piles to final elevations. Cut and remove 1.5 pairs of installed sheet pile adjacent to Dykes Lumber.

Citizens Site Activities

- Continue decontaminating and demobilizing equipment.

*Quality Assurance and Control – Geosyntec*

- No exceedance of the turbidity trigger or action criteria
- Measurements for 11/5/18:
  - Daily average for ambient buoy – 8.5 NTU
  - Daily average for sentinel buoy – 5.9 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 1.9 NTU at 0915.
- Measurements for 11/6/18:
  - Daily average for ambient buoy – 13.0 NTU
  - Daily average for sentinel buoy – 24.1 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 527.1 NTU at 1315.
- Measurements for 11/7/18:
  - Daily average for ambient buoy – 6.8 NTU
  - Daily average for sentinel buoy – 6.1 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 2.1 NTU at 1245.
- Measurements for 11/8/18:
  - Daily average for ambient buoy – 9.5 NTU
  - Daily average for sentinel buoy – 7.4 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 4.0 NTU at 1245.
- Measurements for 11/9/18:
  - Daily average for ambient buoy – 9.0 NTU
  - Daily average for sentinel buoy – 6.4 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 1.0 NTU at 1545.



*Community Air Monitoring Program – TRC CAMP*

- Operated and maintained two (2) air monitoring stations at the upland staging area and five (5) monitoring station at the 4<sup>th</sup> Street Turning Basin Area.
- No exceedances of particulate matter of 10 microns in diameter or smaller (PM<sub>10</sub>) or total volatile organic compounds (TVOC) of the action level of 150 micrograms per cubic meter or 1,000 parts per billion, respectively.
- Maximum weekly measurements of PM<sub>10</sub> in µg/m<sup>3</sup>
  - Station 1 – 11 µg/m<sup>3</sup> recorded on 11/07/18
  - Station 2 – 25 µg/m<sup>3</sup> recorded on 11/07/18
  - Station 3 – 58 µg/m<sup>3</sup> recorded on 11/05/18
  - Station 4 – 19 µg/m<sup>3</sup> recorded on 11/07/18
  - Station 5 – 13 µg/m<sup>3</sup> recorded on 11/05, 11/06, and 11/07/18
  - Station 6 – 23 µg/m<sup>3</sup> recorded on 11/07/18
  - Station 7 – <1 µg/m<sup>3</sup> recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
  - Station 1 – 107 ppb recorded on 11/08/18
  - Station 2 – <1 ppb recorded throughout the week
  - Station 3 – 58 ppb recorded on 11/05/18
  - Station 4 – 146 ppb recorded on 11/09/18
  - Station 5 – 145 ppb recorded on 11/05/18
  - Station 6 – 53 ppb recorded on 11/07/18
  - Station 7 – 118 ppb recorded on 11/05/18
- 23-hour samples collected at ST-1 collected on 11/08 through 11/09 and ST-2 collected on 11/05 through 11/06. Laboratory turnaround time is 10 business days.
- All real-time readings of formaldehyde, hydrogen sulfide, or ammonia less than instrument reporting limit.
- Tabulated laboratory analytical results for 24-hour sample collected at ST-4 on 10/01 through 10/02, ST-5 on 10/03 through 10/04, ST-5 on 10/10 through 10/11, and ST-6 on 10/09 through 10/10 presented in weekly CAMP report.

*Noise and Vibration Monitoring – Wilson Ihrig*

- Operated and maintained two (2) noise monitors: NM-1 (north side of canal on Whole Foods promenade) and NM-2 (south side of canal on southeast corner of 386 3rd Avenue).
- No exceedances of the hourly Leq noise limit of 80 dBA.
- Greatest hourly Leq noise measurements
  - Northern monitor (NM-1) – 71.6 dBA during 1100-1200 on 10/31/18
  - Southern monitor (NM-2) – 77.2 dBA during 1100-1200 on 10/30/18

*Cultural Natural Resource Monitoring – Archeology and Historic Resource Services (AHRS)*

- No activities during week.



### **Two-Week Look Ahead:**

Sevenson:

- Transport for off-site disposal gravel and liner from dredge water treatment system pad.
- Perform optical monitoring of bulkheads and surrounding structures with autonomous total survey stations. Along with weekly optical surveys conducted by subcontractor.
- Continue cutting of installed sheet piles to final elevations.
- Continue to demobilize equipment and materials from Citizens Site.
- Restore Citizens Site in accordance with specifications.

Geosyntec – Perform construction quality assurance responsibilities.

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise monitoring,

AHRS – Finalize final report for EPA review.

### **Key Milestones**

- Complete placement of habitat layer (i.e., gravel) on 11/08/18.

Attachments:

1. Geosyntec In-Canal Water Quality Monitoring Weekly Data Summary
2. TRC Weekly CAMP Report
3. Wilson Ihrig Weekly Noise and Vibration Monitoring Report
4. AHRS Weekly Report (no activities during week)
5. Water Treatment System Monitoring Analytical Laboratory Data (no activities during week)
6. Cumulative Dredged Material Chart (no activities during week)



<b>Client Name:</b> Gowanus ERT	<b>Site Location:</b> TB-4 Pilot Study	<b>Project No.:</b> 283126.0000.0001
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<b>Photo No.</b> 001	<b>Date</b> 11-05-2018
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**Description**  
Delivery of additional gravel for habitat layer.



<b>Photo No.</b> 002	<b>Date</b> 11-05-2018
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**Description**  
Vactor truck at dredge water treatment system pad.



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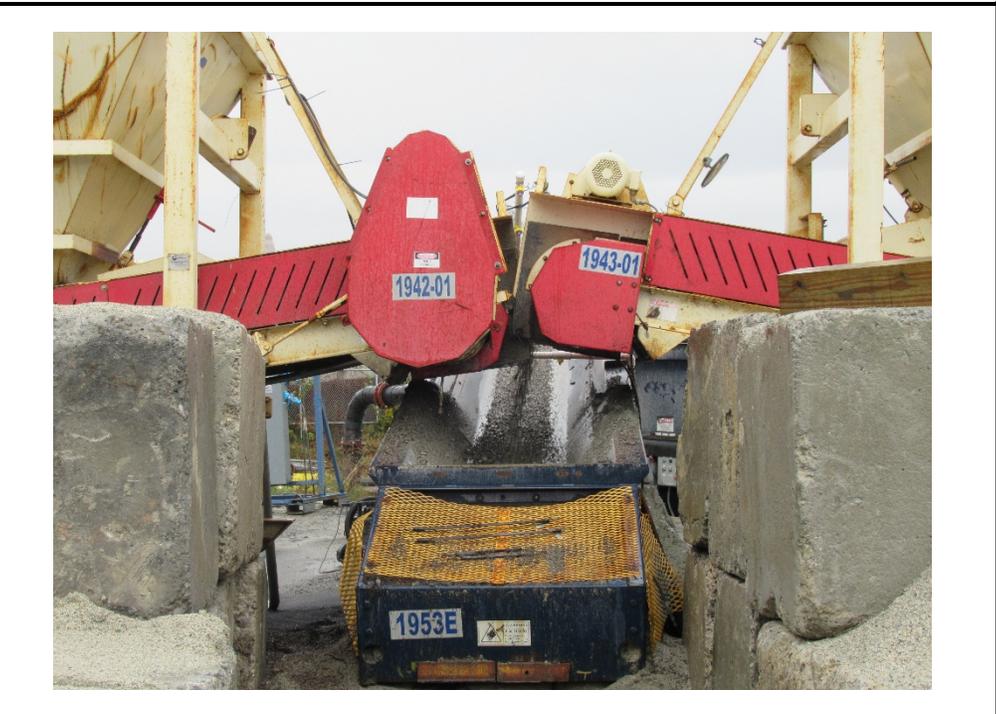
<b>Photo No.</b> 003	<b>Date</b> 11-06-2018
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**Description**  
Gravel exiting conveyor to mix tank.



<b>Photo No.</b> 004	<b>Date</b> 11-06-2018
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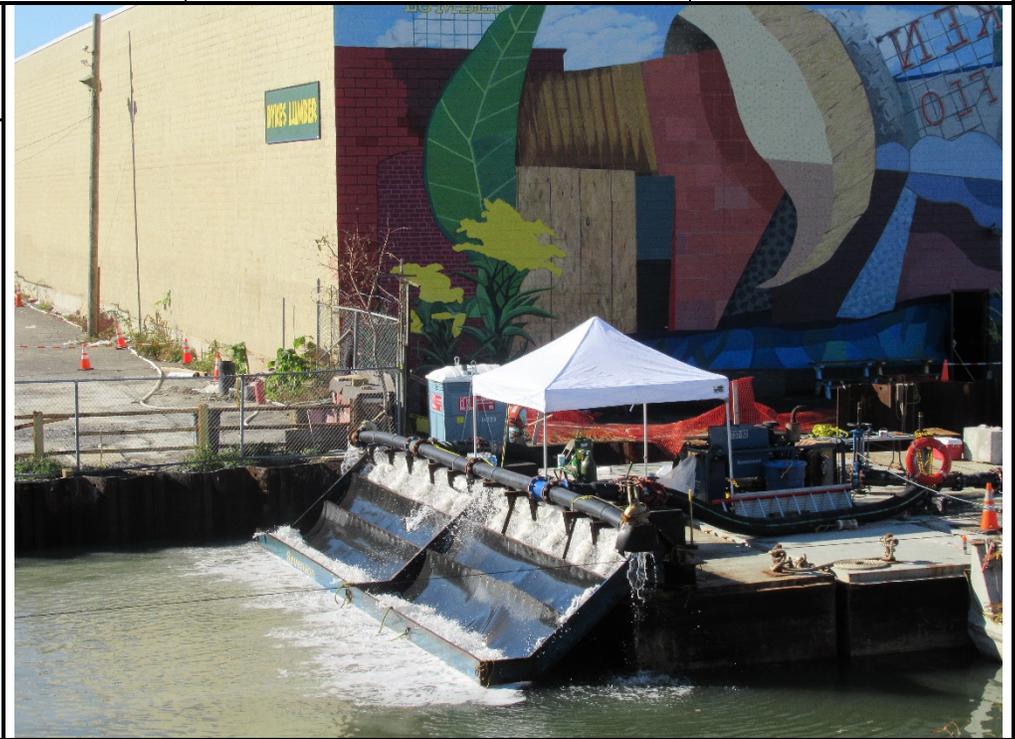
**Description**  
Hopper exit (gravel only staged in hopper on right).



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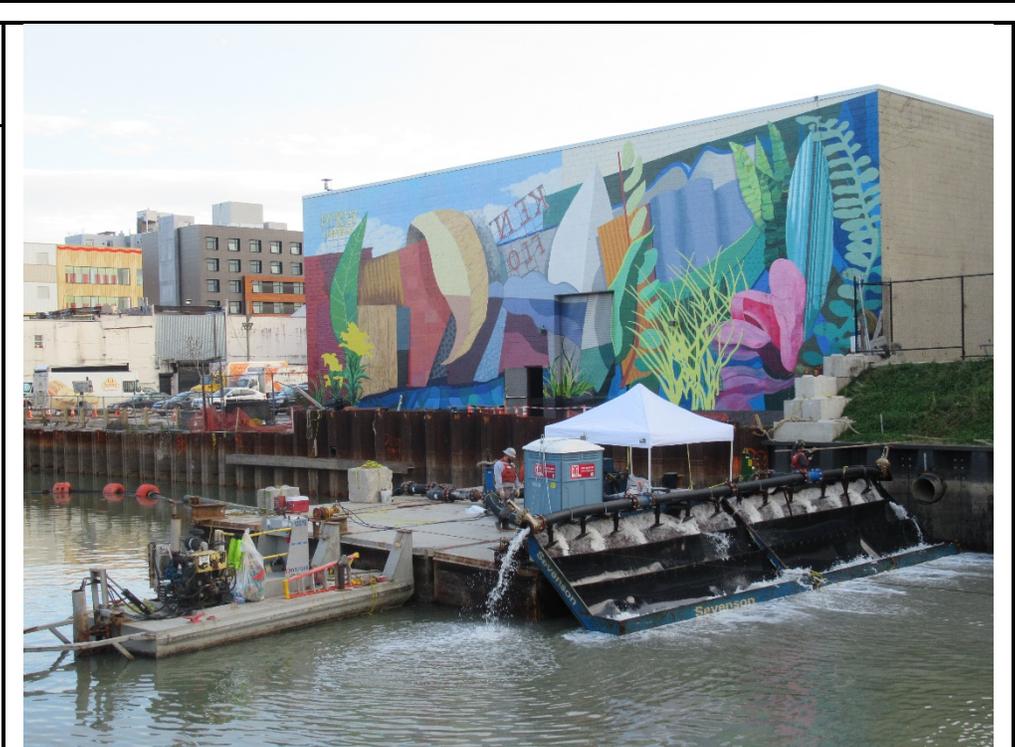
<b>Photo No.</b> 005	<b>Date</b> 11-07-2018
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**Description**  
Placement of habitat layer in southeast area.



<b>Photo No.</b> 006	<b>Date</b> 11-07-2018
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**Description**  
Placement of habitat layer in southwest area.



<b>Client Name:</b> Gowanus ERT	<b>Site Location:</b> TB-4 Pilot Study	<b>Project No.:</b> 283126.0000.0001
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<b>Photo No.</b> 007	<b>Date</b> 11-08-2018
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**Description**  
Demobilization of winch and 125kV generator.



<b>Photo No.</b> 008	<b>Date</b> 11-08-2018
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**Description**  
Staged PC-220 to assist in cutting of sheet piles to final elevations.



<b>Client Name:</b> Gowanus ERT	<b>Site Location:</b> TB-4 Pilot Study	<b>Project No.:</b> 283126.0000.0001
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<b>Photo No.</b> 009	<b>Date</b> 11-09-2018
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**Description**  
Barge staged for cutting and removing installed sheet piles.



<b>Photo No.</b> 010	<b>Date</b> 11-09-2018
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**Description**  
Drain from asphalt pad with plug removed. Geosyntec accepted cleaning of asphalt pad.



**GEOSYNTEC IN-CANAL WATER QUALITY MONITORING WEEKLY DATA SUMMARY**



# **GOWANUS CANAL SUPERFUND SITE DREDGING AND CAPPING PILOT STUDY Water Quality Monitoring Weekly Data Summary**

Week of November 5<sup>th</sup>, 2018

## **Report Contents**

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

*Prepared by*

**Geosyntec**  **Beech and Bonaparte**   
consultants engineering p.c.

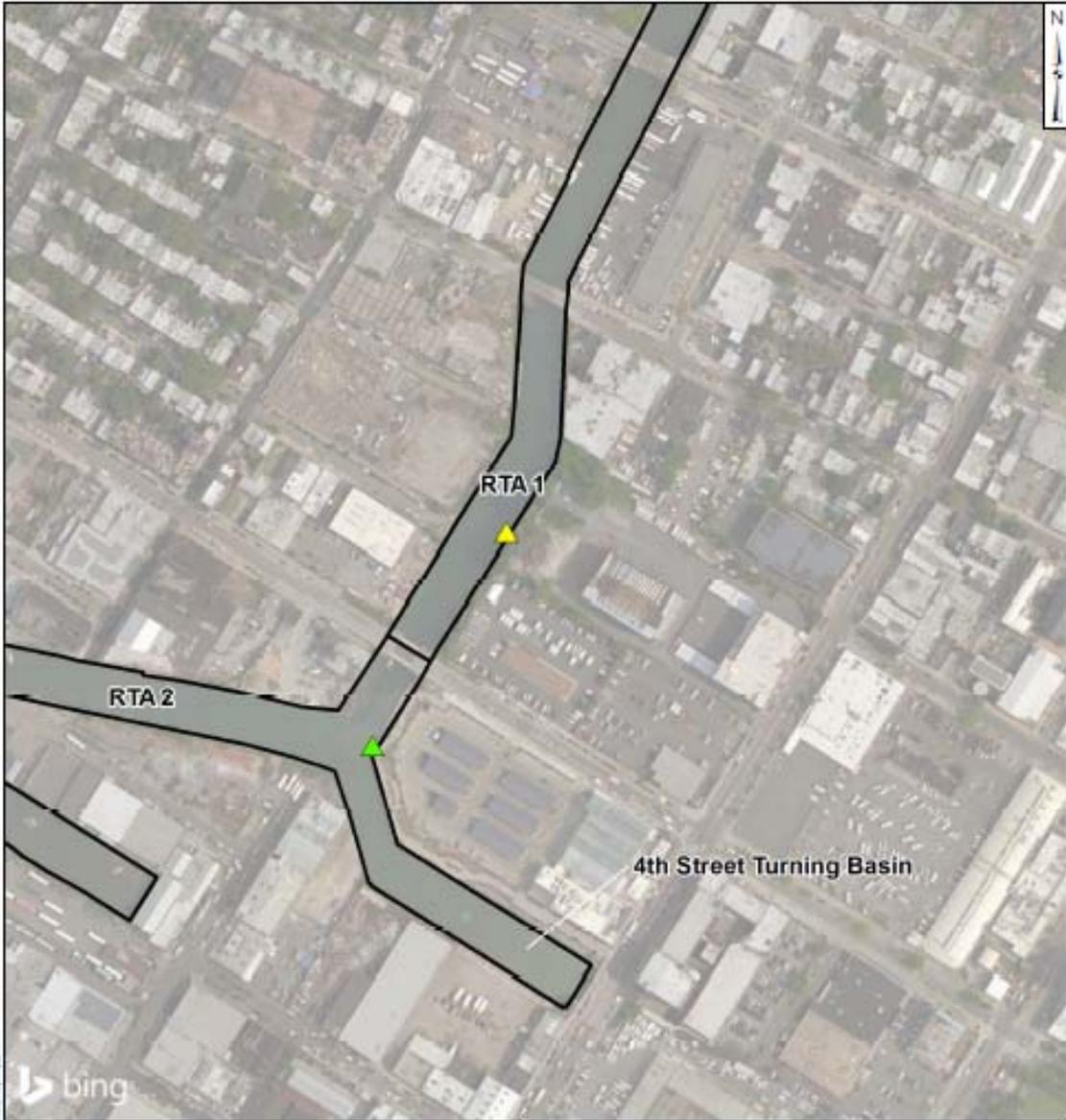
engineers | scientists | innovators

*an affiliate of Geosyntec Consultants*

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Ewing, NJ 08628  
Project Number HPH106A (52)

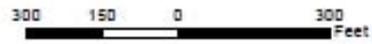
## **1. SCOPE OF MONITORING**

The following report summarizes water quality monitoring data collected during the week of November 5<sup>th</sup>, 2018. Two turbidity buoys were deployed to monitor turbidity during the pilot study. One turbidity buoy was deployed just outside of the 4<sup>th</sup> Street Turning Basin and is referred to as the sentinel buoy. A second turbidity buoy was deployed further upstream in RTA1 in order to monitor background turbidity unaffected by on-water construction activities. This turbidity buoy is referred to as the ambient buoy. A map indicating the approximate locations of the turbidity buoys is provided in Figure 1. Each turbidity buoy was equipped with a YSI 600 OMS water quality meter with optical turbidity sensor. The buoys were programmed such that readings were collected every 15 minutes. After each measurement, the turbidity data were transmitted to a FTP site via telemetry. This report provides the turbidity data collected every 15 minutes from both the ambient and sentinel buoys during each day between 7 AM and 5 PM during the week of November 5<sup>th</sup>. Average and maximum turbidity are also presented. No handheld measurements were collected during this reporting period. Visual observations of turbidity and sheen are summarized in Section 4. The data provided in this summary report have not yet been validated and should be considered preliminary.



**Legend**

-  Ambient Buoy
-  Sentinel Buoy
-  RTA Boundary



**Turbidity Buoy Locations**

Gowanus Canal, Brooklyn, NY

Gowanus Canal Remedial Design Group  
 Geosyntec consultants  
 Beech and Bonaparte engineering p.c.  
an affiliate of Geosyntec Corporation

Figure

1

Ewing, NJ

October 2017

## 2. TURBIDITY BUOY DATA

The following section provides turbidity data for the sentinel and ambient turbidity buoys from 7 AM to 5 PM from November 5<sup>th</sup> to November 9<sup>th</sup>, 2018. Background data prior to the start of dredging is provided in Appendix A. No exceedances to the numerical rolling average threshold criteria were observed during the reporting period. A one-time spike in turbidity of 545.2 NTU was observed at the sentinel buoy at 13:15 on November 6<sup>th</sup> during a rain storm.

### 2.1 Monday, November 5<sup>th</sup>, 2018

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)
11/5/2018 7:00	9.5	4.0	N	11/5/2018 12:15	13.6	7.6	N
11/5/2018 7:15	13.7	4.3	N	11/5/2018 12:30	10.6	7.7	N
11/5/2018 7:30	9.2	5.1	N	11/5/2018 12:45	7.1	7.0	N
11/5/2018 7:45	7.7	6.8	N	11/5/2018 13:00	6.4	5.2	N
11/5/2018 8:00	6.7	6.5	N	11/5/2018 13:15	7.7	6.3	N
11/5/2018 8:15	6.4	6.2	N	11/5/2018 13:30	7.2	5.9	N
11/5/2018 8:30	7.3	5.4	N	11/5/2018 13:45	11.1	6.0	N
11/5/2018 8:45	5.9	6.5	Y	11/5/2018 14:00	5.2	5.0	N
11/5/2018 9:00	8.9	5.9	N	11/5/2018 14:15	8.4	5.1	N
11/5/2018 9:15	4.8	6.7	Y	11/5/2018 14:30	12.6	5.4	N
11/5/2018 9:30	8.4	5.0	N	11/5/2018 14:45	6.1	5.0	N
11/5/2018 9:45	7.5	4.9	N	11/5/2018 15:00	7.2	4.5	N
11/5/2018 10:00	12.6	6.0	N	11/5/2018 15:15	4.9	3.7	N
11/5/2018 10:15	12.0	7.3	N	11/5/2018 15:30	10.9	4.4	N
11/5/2018 10:30	9.3	8.4	N	11/5/2018 15:45	8.7	4.1	N
11/5/2018 10:45	8.5	7.6	N	11/5/2018 16:00	7.9	5.0	N
11/5/2018 11:00	7.3	8.3	Y	11/5/2018 16:15	7.1	5.8	N
11/5/2018 11:15	9.2	8.7	N	11/5/2018 16:30	5.6	4.2	N
11/5/2018 11:30	9.3	7.1	N	11/5/2018 16:45	4.4	4.8	Y
11/5/2018 11:45	11.0	7.8	N	11/5/2018 17:00	4.3	3.7	N
11/5/2018 12:00	15.1	8.0	N				

Average	8.5	5.9	N
Maximum	15.1	8.7	N

#### Notes:

No exceedance to rolling average threshold criteria during reporting period

Values highlighted in green are greater than 20 NTU above the ambient buoy reading

Values highlighted in blue are greater than 40 NTU above the ambient buoy reading

## 2.2 Tuesday, November 6<sup>th</sup>, 2018

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)
11/6/2018 7:00	5.8	2.8	N	11/6/2018 12:15	26.4	22.1	N
11/6/2018 7:15	3.4	2.8	N	11/6/2018 12:30	22.6	18.2	N
11/6/2018 7:30	3.9	3.8	N	11/6/2018 12:45	14.2	16.2	Y
11/6/2018 7:45	9.4	4.2	N	11/6/2018 13:00	19.4	17.0	N
11/6/2018 8:00	10.0	3.4	N	11/6/2018 13:15	18.1	545.2	Y
11/6/2018 8:15	9.0	5.9	N	11/6/2018 13:30	19.0	19.1	Y
11/6/2018 8:30	9.8	5.2	N	11/6/2018 13:45	14.0	16.6	Y
11/6/2018 8:45	9.0	6.9	N	11/6/2018 14:00	10.3	12.3	Y
11/6/2018 9:00	8.2	7.7	N	11/6/2018 14:15	10.3	11.9	Y
11/6/2018 9:15	8.7	8.5	N	11/6/2018 14:30	8.9	11.1	Y
11/6/2018 9:30	17.7	6.1	N	11/6/2018 14:45	8.1	10.3	Y
11/6/2018 9:45	8.8	6.8	N	11/6/2018 15:00	8.1	10.6	Y
11/6/2018 10:00	9.0	8.4	N	11/6/2018 15:15	8.5	11.3	Y
11/6/2018 10:15	6.8	6.3	N	11/6/2018 15:30	7.4	8.5	Y
11/6/2018 10:30	6.7	6.0	N	11/6/2018 15:45	7.5	7.9	Y
11/6/2018 10:45	6.8	5.8	N	11/6/2018 16:00	6.8	10.4	Y
11/6/2018 11:00	6.3	24.5	Y	11/6/2018 16:15	6.7	9.0	Y
11/6/2018 11:15	15.4	19.0	Y	11/6/2018 16:30	7.3	8.6	Y
11/6/2018 11:30	57.6	11.2	N	11/6/2018 16:45	7.4	9.0	Y
11/6/2018 11:45	43.0	33.3	N	11/6/2018 17:00	8.0	8.9	Y
11/6/2018 12:00	37.5	24.2	N				

Average	13.0	24.1	Y
Maximum	57.6	545.2	Y

**Notes:**

No exceedance to rolling average threshold criteria during reporting period

Values highlighted in green are greater than 20 NTU above the ambient buoy reading

Values highlighted in blue are greater than 40 NTU above the ambient buoy reading







### 3. HANDHELD MEASUREMENTS

No handheld measurements were collected during this reporting period.

### 4. SUMMARY OF VISUAL OBSERVATIONS

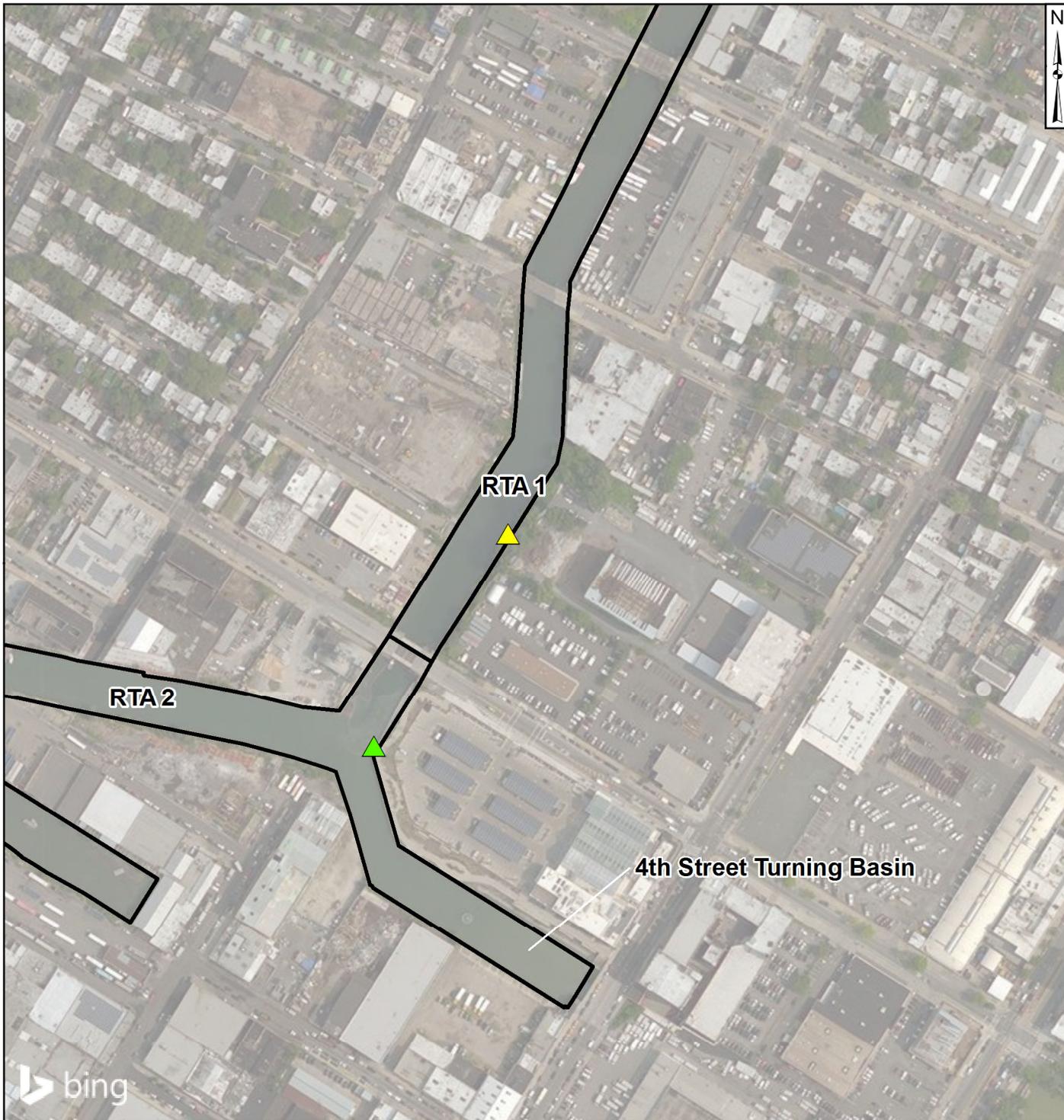
Visual observations were consistent with background conditions.

### 5. REPORT OF EXCEEDANCES

No exceedances of the water quality monitoring threshold criteria were met during the reporting period. Refer to the Water Quality Monitoring Plan for In-waterway Construction Activities (Geosyntec 2017) for further information regarding the Trigger and Action Criteria. Threshold criteria are summarized as follows:

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

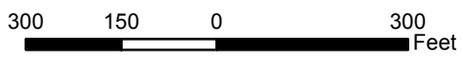
# FIGURES



X:\03\_GIS\mxd\Canal\_Wide\_Turbidity\_Buoy\_Locations.mxd; acarnes; 10/19/2017

**Legend**

-  Ambient Buoy
-  Sentinel Buoy
-  RTA Boundary



**Turbidity Buoy Locations**

Gowanus Canal, Brooklyn, NY

Gowanus Canal Remedial Design Group | Geosyntec consultants | Beech and Bonaparte engineering p.c. an affiliate of Geosyntec Consultants

Ewing, NJ

October 2017

Figure

**1**

**APPENDIX A**  
**PRE-DREDGE TURBIDITY BUOY DATA**

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)
10/3/2017 15:00	7.4	2.7	N	10/4/2017 4:30	4.8	7.1	Y	10/4/2017 18:00	6.9	2.7	N
10/3/2017 15:15	6.6	2.4	N	10/4/2017 4:45	5	6.3	Y	10/4/2017 18:15	7.2	2.7	N
10/3/2017 15:30	6.4	2.7	N	10/4/2017 5:00	4.7	6	Y	10/4/2017 18:30	7.8	3.4	N
10/3/2017 15:45	6.9	2	N	10/4/2017 5:15	5.1	6.4	Y	10/4/2017 18:45	8.2	4.4	N
10/3/2017 16:00	6.3	2.1	N	10/4/2017 5:30	5	7.3	Y	10/4/2017 19:00	7.5	3.1	N
10/3/2017 16:15	6.5	2.4	N	10/4/2017 5:45	5.4	7.8	Y	10/4/2017 19:15	8.7	3.6	N
10/3/2017 16:30	7.1	2.9	N	10/4/2017 6:00	5.5	8.3	Y	10/4/2017 19:30	8.7	4.5	N
10/3/2017 16:45	6.1	2.8	N	10/4/2017 6:15	5.2	9	Y	10/4/2017 19:45	9.4	4.1	N
10/3/2017 17:00	7	2.8	N	10/4/2017 6:30	5.8	7.2	Y	10/4/2017 20:00	8.4	4	N
10/3/2017 17:15	7	4.4	N	10/4/2017 6:45	5.4	8.8	Y	10/4/2017 20:15	8.2	4	N
10/3/2017 17:30	7	4.7	N	10/4/2017 7:00	5.5	8	Y	10/4/2017 20:30	9	3.6	N
10/3/2017 17:45	6.3	4	N	10/4/2017 7:15	5.6	7.5	Y	10/4/2017 20:45	8.4	3.5	N
10/3/2017 18:00	6.5	6.9	Y	10/4/2017 7:30	6.9	7.2	Y	10/4/2017 21:00	9.5	4.7	N
10/3/2017 18:15	7.8	6.7	Y	10/4/2017 7:45	6.8	6.1	N	10/4/2017 21:15	10.2	3.9	N
10/3/2017 18:30	7.9	6.5	N	10/4/2017 8:00	6.7	7.4	Y	10/4/2017 21:30	9.5	3.5	N
10/3/2017 18:45	8.5	5.9	N	10/4/2017 8:15	7.3	6.1	N	10/4/2017 21:45	8.9	3.6	N
10/3/2017 19:00	7.9	6	N	10/4/2017 8:30	7.2	4.6	N	10/4/2017 22:00	8.6	2.9	N
10/3/2017 19:15	7.4	6.3	N	10/4/2017 8:45	6.6	9	Y	10/4/2017 22:15	8.7	3.6	N
10/3/2017 19:30	7.4	4.3	N	10/4/2017 9:00	9.2	14.1	Y	10/4/2017 22:30	8.4	6.3	N
10/3/2017 19:45	8.3	4.6	N	10/4/2017 9:15	7.9	4.8	N	10/4/2017 22:45	7.3	3.3	N
10/3/2017 20:00	8.9	5.2	N	10/4/2017 9:30	9.3	4.6	N	10/4/2017 23:00	7.4	3.8	N
10/3/2017 20:15	8.6	4.5	N	10/4/2017 9:45	7.6	5.1	N	10/4/2017 23:15	7.1	4.5	N
10/3/2017 20:30	8	4.9	N	10/4/2017 10:00	8.1	3.9	N	10/4/2017 23:30	7	3.8	N
10/3/2017 20:45	10.6	4.3	N	10/4/2017 10:15	7.8	3.1	N	10/4/2017 23:45	8.3	5.3	N
10/3/2017 21:00	11.1	4.6	N	10/4/2017 10:30	7.3	4.5	N	10/5/2017 0:00	7.7	6.2	N
10/3/2017 21:15	9.8	4.7	N	10/4/2017 10:45	7.5	3.9	N	10/5/2017 0:15	7.8	5.1	N
10/3/2017 21:30	8.8	4.6	N	10/4/2017 11:00	7.6	9	Y	10/5/2017 0:30	7.2	5.7	N
10/3/2017 21:45	9	4.7	N	10/4/2017 11:15	6.5	16.7	Y	10/5/2017 0:45	7	5.4	N
10/3/2017 22:00	8.3	4.8	N	10/4/2017 11:30	7.4	6	N	10/5/2017 1:00	7.5	4.9	N
10/3/2017 22:15	7.3	6.1	N	10/4/2017 11:45	6.8	5.3	N	10/5/2017 1:15	7	8.2	Y
10/3/2017 22:30	7	4.7	N	10/4/2017 12:00	7.7	5.1	N	10/5/2017 1:30	8.1	4.9	N
10/3/2017 22:45	6.6	5.3	N	10/4/2017 12:15	6.6	6.1	N	10/5/2017 1:45	9.1	6.5	N
10/3/2017 23:00	7.1	6.1	N	10/4/2017 12:30	7.6	4	N	10/5/2017 2:00	9.2	5.2	N
10/3/2017 23:15	6.5	6	N	10/4/2017 12:45	7.7	3.9	N	10/5/2017 2:15	8.5	3.7	N
10/3/2017 23:30	6.6	6.9	Y	10/4/2017 13:00	8.3	4.8	N	10/5/2017 2:30	10.2	5.2	N
10/3/2017 23:45	7.2	5.2	N	10/4/2017 13:15	8.5	3.9	N	10/5/2017 2:45	10.1	4.2	N
10/4/2017 0:00	6.8	6.3	N	10/4/2017 13:30	9.2	5.5	N	10/5/2017 3:00	10.3	4.9	N
10/4/2017 0:15	7.2	5.6	N	10/4/2017 13:45	9.4	4.5	N	10/5/2017 3:15	9	6.3	N
10/4/2017 0:30	7.4	6.4	N	10/4/2017 14:00	11.1	3.1	N	10/5/2017 3:30	9.2	4.5	N
10/4/2017 0:45	7.1	5	N	10/4/2017 14:15	10	2.5	N	10/5/2017 3:45	8.4	4.1	N
10/4/2017 1:00	7.1	4.3	N	10/4/2017 14:30	9.8	2	N	10/5/2017 4:00	7.4	4.4	N
10/4/2017 1:15	8.3	4.6	N	10/4/2017 14:45	9.7	2.1	N	10/5/2017 4:15	7.3	4.4	N
10/4/2017 1:30	9	5.1	N	10/4/2017 15:00	9.3	2.4	N	10/5/2017 4:30	6.4	4.6	N
10/4/2017 1:45	7.9	4.5	N	10/4/2017 15:15	8.5	2.1	N	10/5/2017 4:45	6.2	5.1	N
10/4/2017 2:00	9.1	4	N	10/4/2017 15:30	8.5	1.8	N	10/5/2017 5:00	5.3	5.2	N
10/4/2017 2:15	7	5.3	N	10/4/2017 15:45	7.2	1.8	N	10/5/2017 5:15	5.3	5.3	N
10/4/2017 2:30	7.2	5.5	N	10/4/2017 16:00	7.3	1.6	N	10/5/2017 5:30	4.8	5	Y
10/4/2017 2:45	6.6	4.8	N	10/4/2017 16:15	6.4	1.8	N	10/5/2017 5:45	5.7	5	N
10/4/2017 3:00	6.6	5.7	N	10/4/2017 16:30	7	1.6	N	10/5/2017 6:00	5.6	4.8	N
10/4/2017 3:15	6.2	5.1	N	10/4/2017 16:45	7.5	2.6	N	10/5/2017 6:15	5.4	4.9	N
10/4/2017 3:30	5.9	4.7	N	10/4/2017 17:00	6.4	2.7	N	10/5/2017 6:30	6.1	5.7	N
10/4/2017 3:45	5.5	5.9	N	10/4/2017 17:15	6.5	2	N	10/5/2017 6:45	5.9	6.4	Y
10/4/2017 4:00	4.9	6.4	Y	10/4/2017 17:30	6.7	2.3	N	10/5/2017 7:00	6.1	7.8	Y
10/4/2017 4:15	5.1	7	Y	10/4/2017 17:45	6.6	2.1	N				
Average	7.5	6.0	N								
Maximum	11.1	16.7	Y								

**TRC WEEKLY COMMUNITY AIR MONITORING PROJECT REPORT**





**Gowanus Canal Superfund Site  
TB-4 Dredging and Capping Pilot Study  
Brooklyn, New York  
Weekly Report  
(TRC Project No.274286-0000-00000)**

**Community Air Monitoring Project  
57<sup>th</sup> Weekly Monitoring Period  
Summary Report:**

November 5<sup>th</sup>, through November 9<sup>th</sup>, 2018

**Report Contents**

- Executive Summary
- Daily Data Summary Report – PM<sub>10</sub>/TVOC
  - Daily Meteorological Summary Report
    - Periodic Monitoring Results

# **Gowanus Canal Superfund Site TB-4 Dredging and Capping Pilot Study Brooklyn, New York**

## **Executive Summary – Week 57 Monitoring Period November 5<sup>th</sup> through November 9<sup>th</sup>, 2018**

The following report summarizes site air monitoring activities for the Week 57 monitoring period from November 5<sup>th</sup> through November 9<sup>th</sup>, 2018. The start and stop times associated with each daily monitoring period are listed on the respective daily reports.

TRC continued to operate two (2) air monitoring stations on the Citizen Property or Staging Area, and five (5) air monitoring stations in the 4<sup>th</sup> St Turning Basin Area using the equipment specified previously in the *Gowanus Canal TB-4 Dredging and Pilot Study Executive Summary – Background Monitoring Period Report*. During the Week 57 monitoring period there were no PM<sub>10</sub> or TVOC exceedances of the action level of 150 ug/m<sup>3</sup> or 1,000 ppb respectively as defined in the *Community Air Monitoring Plan for the Gowanus Canal TB-4 Dredging and Pilot Study Project Brooklyn, NY, August 2017*.

Figure 1 depicts Total Volatile Organics (TVOC) daily averages and maximums. Figure 2 depicts particulate monitoring (PM<sub>10</sub>) daily averages and maximums. Figure 3 depicts the station locations along the Gowanus Canal.

Additional monitoring for hydrogen sulfide, ammonia, and formaldehyde took place at all stations throughout the Week 57 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 57 monitoring period of November 5<sup>th</sup> through November 9<sup>th</sup>, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 1 and 2. The ST-1 sample was collected on November 8<sup>th</sup> through November 9<sup>th</sup>, 2018 and the ST-2 sample was collected on November 5<sup>th</sup> through November 6<sup>th</sup>, 2018. Both samples were collected over a 23-hour period and shipped to Con-Test

Analytical Laboratory for analyses. The results of the summa canister sampling are pending lab analyses.

Table 2 presents the analytical results for 23-hour samples collected at Stations 4 and 5 during Week 52. The ST-4 sample was collected on October 1<sup>st</sup> through 2<sup>nd</sup>, 2018 and the ST-5 sample was collected on October 3<sup>rd</sup> through 4<sup>th</sup>, 2018. Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28<sup>th</sup> and 31<sup>st</sup>, 2017.

Table 3 presents the analytical results for 23-hour samples collected at Station 5 and 6 during Week 53. The ST-6 sample was collected on October 9<sup>th</sup> through 10<sup>th</sup>, 2018 and the ST-5 sample was collected on October 10<sup>th</sup> through 11<sup>th</sup>, 2018. Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28<sup>th</sup> and 31<sup>st</sup>, 2017.

Site activities which were conducted at the Citizen Property during November 5<sup>th</sup> through November 9<sup>th</sup>, 2018 included the following:

- Material and equipment deliveries on Citizen Property
- General vehicular traffic site-wide throughout the monitoring period
- Maintenance of the barges and equipment
- Continue decontaminating and demobilizing equipment
- Decon and demobilization of equipment off site

Site activities which were conducted at the 4<sup>th</sup> St Turning Basin Area of the Canal during November 5<sup>th</sup> through November 9<sup>th</sup>, 2018 included the following:

- Commence and complete placement of habitat layer (i.e., gravel)
- Commence cutting of installed sheet piles to final elevations. Cut and remove 1.5 pairs of installed sheet pile adjacent to Dykes Lumber

**Gowanus Canal Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
11/05/2018 06:30 AM - 11/05/2018 23:45 PM

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	60	ppb	Max.	9	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	14	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	58	ppb	Max.	58	ug/m <sup>3</sup>
Avg.	24	ppb	Avg.	16	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	95	ppb	Max.	15	ug/m <sup>3</sup>
Avg.	8	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 5 (Whole Foods Property near 3rd Avenue Bridge)**

TVOC			PM <sub>10</sub>		
Max.	145	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	73	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	38	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	3	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	118	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	8	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

**Gowanus Canal Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
11/06/2018 00:00 AM - 1/06/2018 23:45 PM

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	2	ppb	Max.	10	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	11	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	28	ppb	Max.	36	ug/m <sup>3</sup>
Avg.	15	ppb	Avg.	27	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	9	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 5 (Whole Foods Property near 3rd Avenue Bridge)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	9	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	8	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

**Gowanus Canal Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
11/07/2018 00:00 AM - 11/07/2018 23:45 PM

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	25	ppb	Max.	11	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	25	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	34	ppb	Max.	44	ug/m <sup>3</sup>
Avg.	2	ppb	Avg.	16	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	142	ppb	Max.	19	ug/m <sup>3</sup>
Avg.	3	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 5 (Whole Foods Property near 3rd Avenue Bridge)**

TVOC			PM <sub>10</sub>		
Max.	83	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	9	ppb	Avg.	3	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	53	ppb	Max.	23	ug/m <sup>3</sup>
Avg.	2	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	33	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	3	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

**Gowanus Canal Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
11/08/2018 00:00 AM - 11/08/2018 23:45 PM

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	107	ppb	Max.	8	ug/m <sup>3</sup>
Avg.	5	ppb	Avg.	3	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	9	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	3	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	28	ppb	Max.	25	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	9	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	7	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 5 (Whole Foods Property near 3rd Avenue Bridge)**

TVOC			PM <sub>10</sub>		
Max.	93	ppb	Max.	10	ug/m <sup>3</sup>
Avg.	16	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	39	ppb	Max.	7	ug/m <sup>3</sup>
Avg.	8	ppb	Avg.	3	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	69	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	10	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

**Gowanus Canal Superfund Site  
TB-4 Dredging and Capping Pilot Study  
Brooklyn, New York  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
11/09/2018 00:00 AM - 11/09/2018 16:00 PM**

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	99	ppb	Max.	9	ug/m <sup>3</sup>
Avg.	13	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	8	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	3	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	33	ppb	Max.	32	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	16	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	146	ppb	Max.	10	ug/m <sup>3</sup>
Avg.	30	ppb	Avg.	3	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 5 (Whole Foods Property near 3rd Avenue Bridge)**

TVOC			PM <sub>10</sub>		
Max.	77	ppb	Max.	12	ug/m <sup>3</sup>
Avg.	11	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	37	ppb	Max.	11	ug/m <sup>3</sup>
Avg.	14	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	42	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	2	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

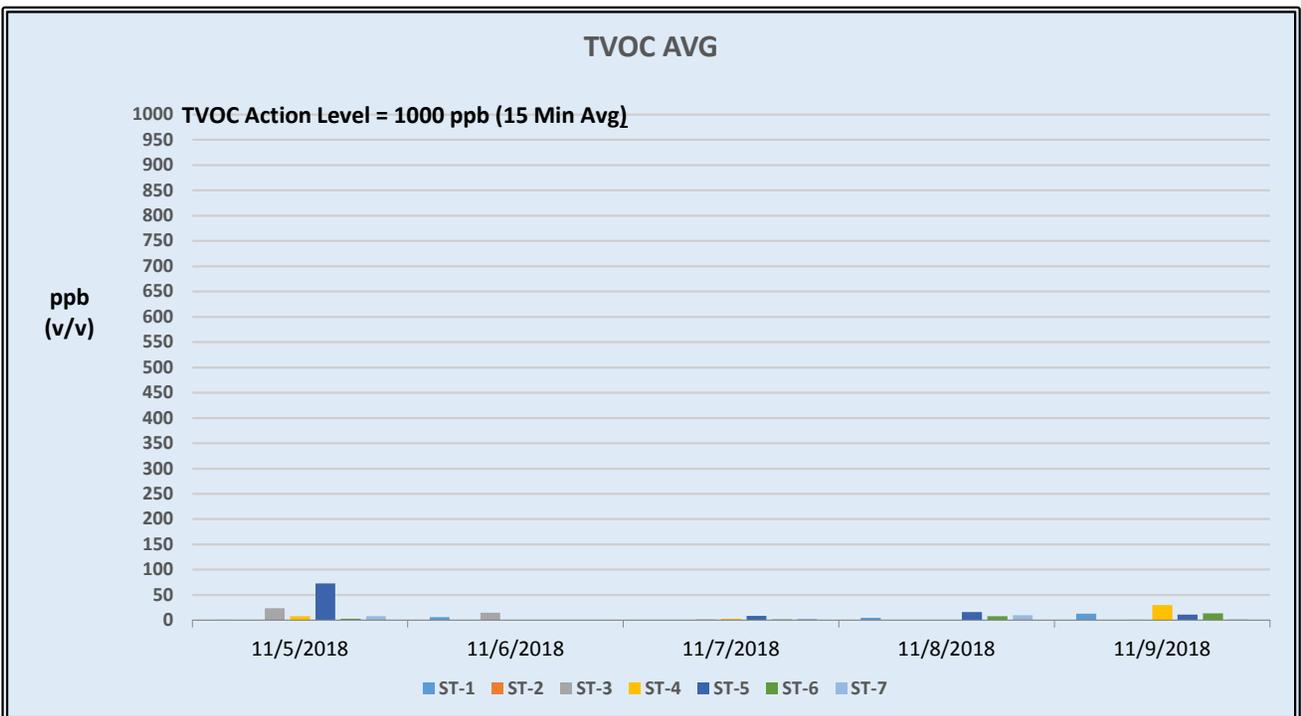
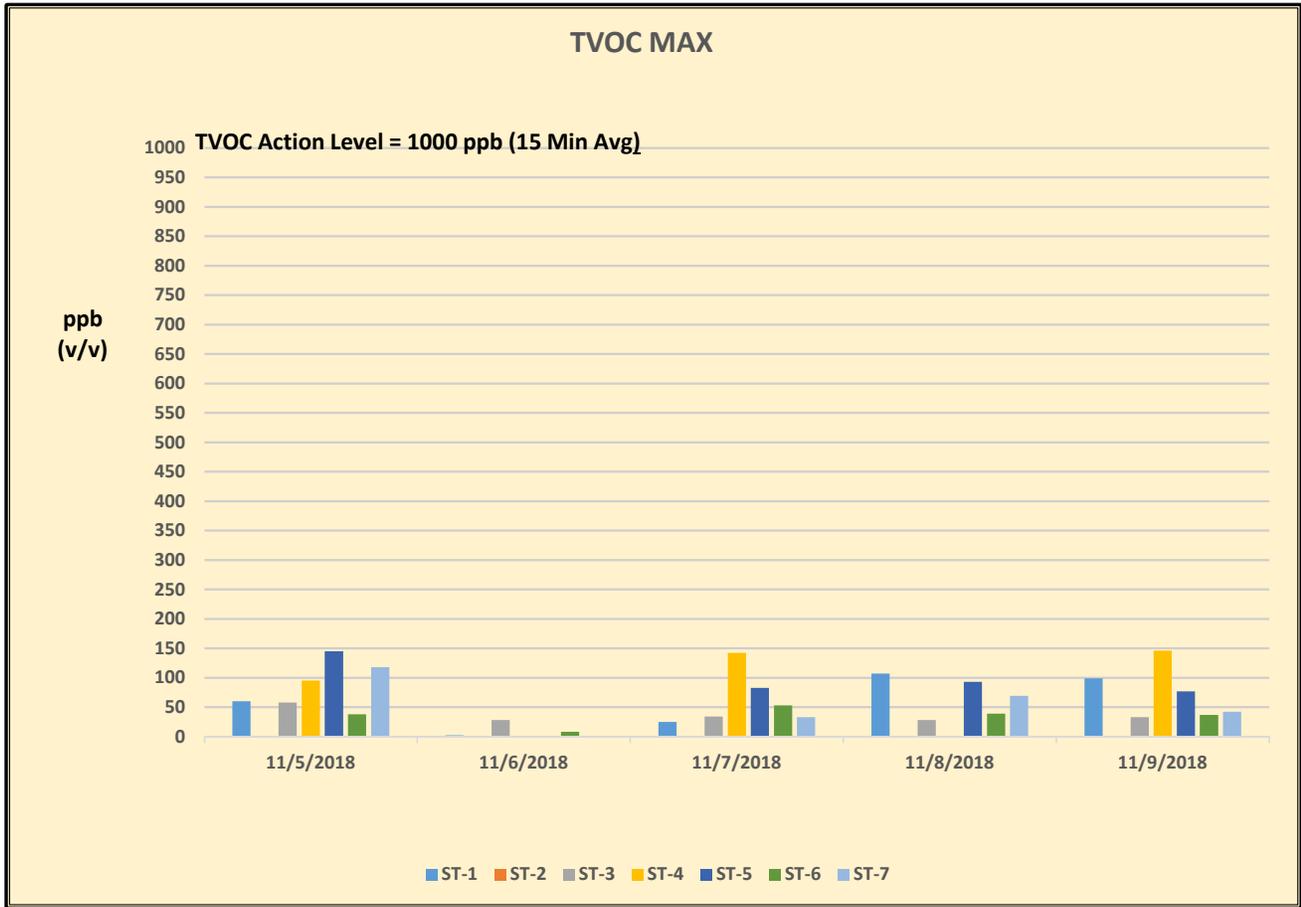
PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

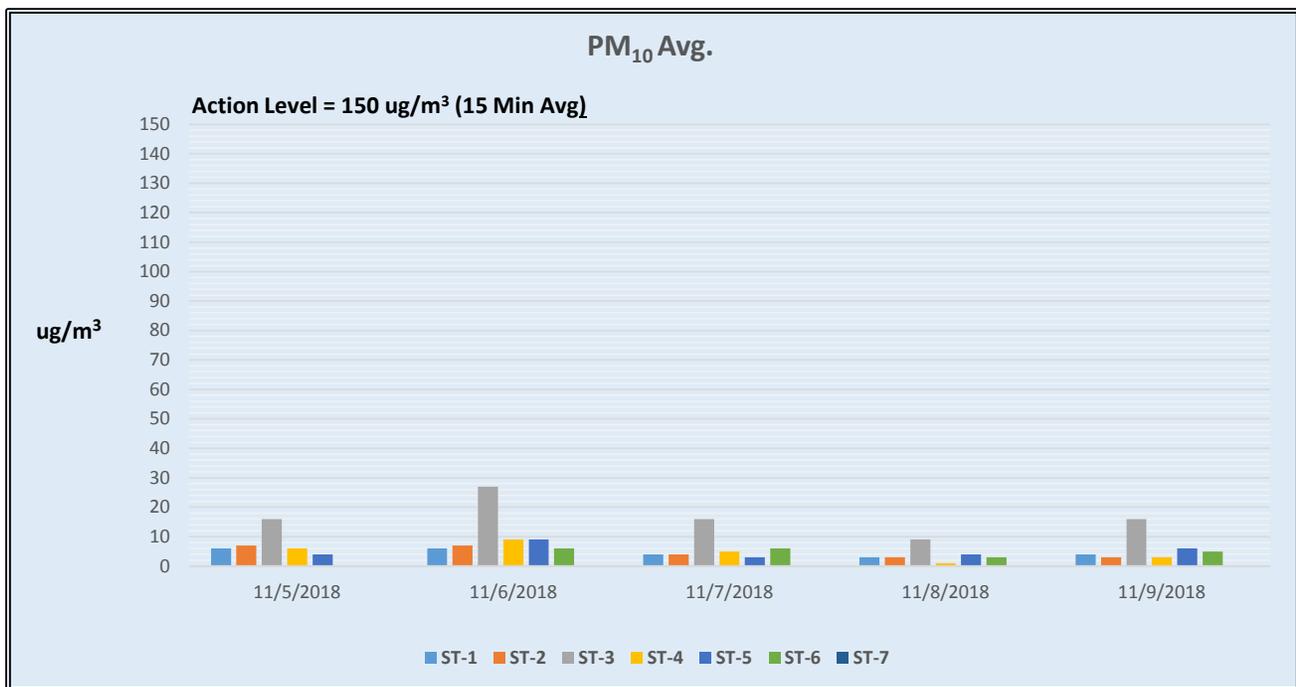
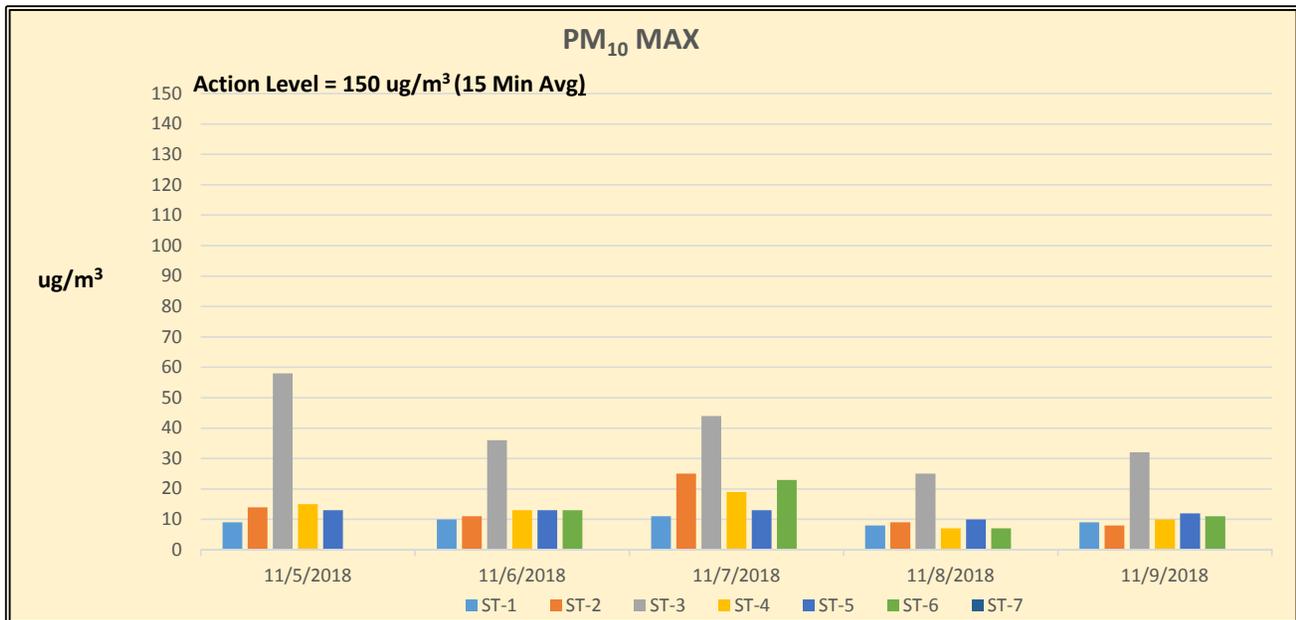
Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

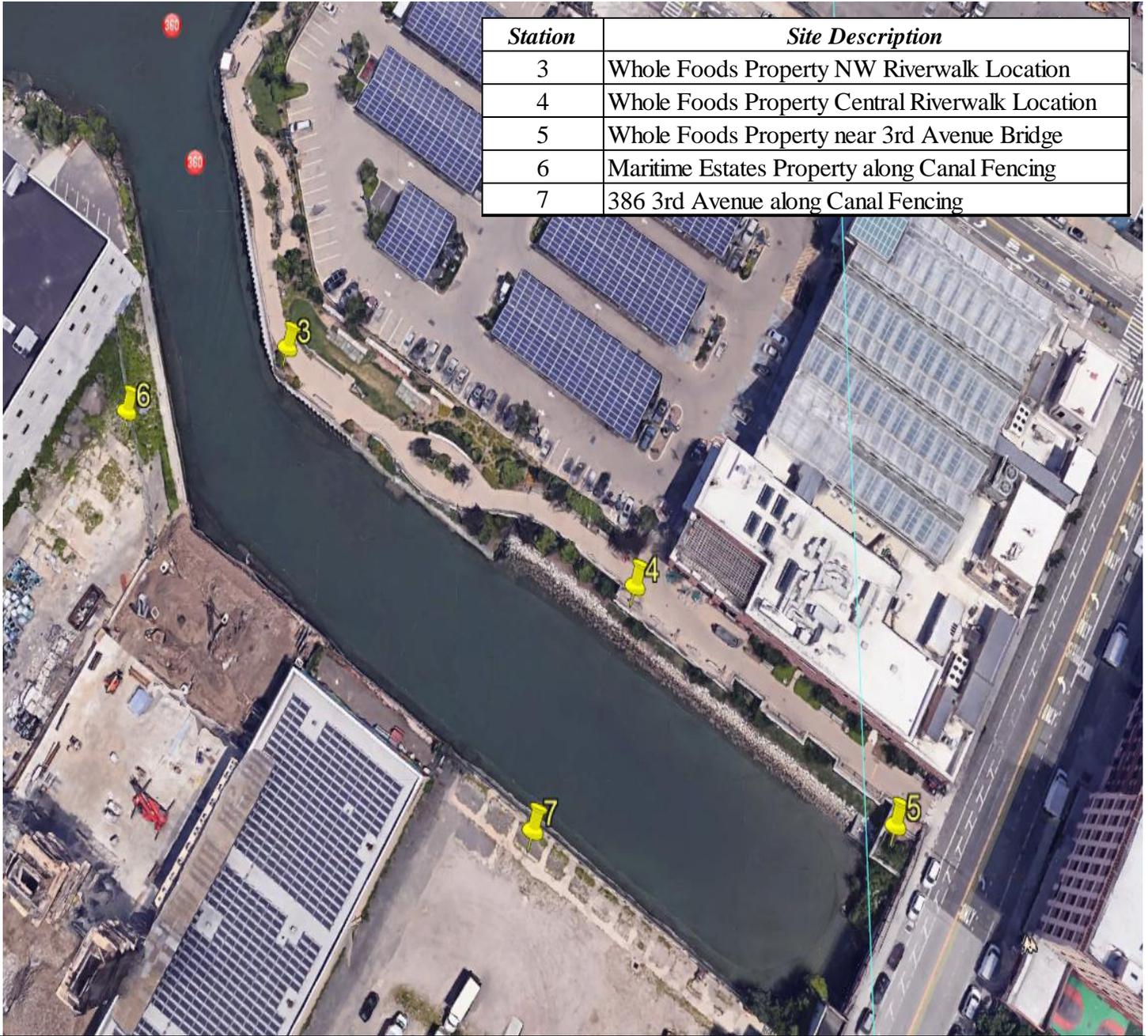
Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

**Figure 1**  
**Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program**  
**TVOC Monitoring Data - Week 57**



**Figure 2**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**TRC CAMP PM<sub>10</sub> Monitoring Data - Week 57**





**FIGURE 3**  
**Gowanus Canal Superfund Site-TB4**  
**Dredging and Capping Pilot Program**

**Table 1**

**Week 57**

**Summary of Additional Periodic (Daily) Monitoring Data**

November 5 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)*	Ammonia (NH <sub>3</sub> ) (ppm)**
ST-1	9:07	<50	<3	<1.0
	14:03	<50	<3	<1.0
ST-2	9:12	<50	<3	<1.0
	14:12	<50	<3	<1.0
ST-3	9:32	<50	<3	<1.0
	13:10	<50	<3	<1.0
ST-4	9:37	<50	<3	<1.0
	13:18	<50	<3	<1.0
ST-5	9:44	<50	<3	<1.0
	13:24	<50	<3	<1.0
ST-6	9:59	<50	<3	<1.0
	13:48	<50	<3	<1.0
ST-7	9:54	<50	<3	<1.0
	13:38	<50	<3	<1.0

November 6 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)*	Ammonia (NH <sub>3</sub> ) (ppm)**
ST-1	9:11	<50	<3	<1.0
	12:20	<50	<3	<1.0
ST-2	9:13	<50	<3	<1.0
	12:26	<50	<3	<1.0
ST-3	9:22	<50	<3	<1.0
	12:47	<50	<3	<1.0
ST-4	9:27	<50	<3	<1.0
	12:54	<50	<3	<1.0
ST-5	9:32	<50	<3	<1.0
	13:06	<50	<3	<1.0
ST-6	9:51	<50	<3	<1.0
	13:24	<50	<3	<1.0
ST-7	9:44	<50	<3	<1.0
	13:16	<50	<3	<1.0

**Table 1****Week 57****Summary of Additional Periodic (Daily) Monitoring Data**

November 7 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)*	Ammonia (NH <sub>3</sub> ) (ppm)**
ST-1	9:32	<50	<3	<1.0
	14:48	<50	<3	<1.0
ST-2	9:41	<50	<3	<1.0
	14:49	<50	<3	<1.0
ST-3	8:25	<50	<3	<1.0
	14:22	<50	<3	<1.0
ST-4	8:34	<50	<3	<1.0
	14:26	<50	<3	<1.0
ST-5	8:42	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-6	9:11	<50	<3	<1.0
	14:16	<50	<3	<1.0
ST-7	9:00	<50	<3	<1.0
	14:08	<50	<3	<1.0
November 8 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)*	Ammonia (NH <sub>3</sub> ) (ppm)**
ST-1	10:34	<50	<3	<1.0
	13:54	<50	<3	<1.0
ST-2	10:42	<50	<3	<1.0
	13:57	<50	<3	<1.0
ST-3	9:17	<50	<3	<1.0
	14:21	<50	<3	<1.0
ST-4	9:34	<50	<3	<1.0
	14:24	<50	<3	<1.0
ST-5	9:53	<50	<3	<1.0
	14:29	<50	<3	<1.0
ST-6	9:01	<50	<3	<1.0
	14:46	<50	<3	<1.0
ST-7	10:03	<50	<3	<1.0
	14:37	<50	<3	<1.0

Table 1

Week 57

Summary of Additional Periodic (Daily) Monitoring Data

November 9 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)*	Ammonia (NH <sub>3</sub> ) (ppm)**
ST-1	9:02	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-2	9:13	<50	<3	<1.0
	14:51	<50	<3	<1.0
ST-3	7:36	<50	<3	<1.0
	15:11	<50	<3	<1.0
ST-4	7:49	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	8:39	<50	<3	<1.0
	15:26	<50	<3	<1.0
ST-6	8:27	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-7	8:20	<50	<3	<1.0
	15:32	<50	<3	<1.0

\*(ppb) Indicates results reported in parts per billion

\*\* (ppm) Indicates results reported in parts per million

**Table 2:**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**Week 52 VOCs Results: October 1st through 2nd and October 3rd through 4th**

Sample ID	ST-4-VOC-100118		ST-5-VOC-100318	
Laboratory ID	18J0626-01		18J0626-02	
Date Sampled	10/1/18 10:00 - 10/2/18 09:00		10/3/18 13:00 - 10/4/18 12:00	
Location	Station 4		Station 5	
VOCs - TO-15	ppbV	ug/m3	ppbV	ug/m3
Acetone	<b>8.6</b>	<b>21</b>	<b>5.2</b>	<b>12</b>
Benzene	<b>0.18</b>	<b>0.57</b>	<b>0.17</b>	<b>0.53</b>
Benzyl chloride	<0.035	<0.18	<0.035	<0.18
Bromodichloromethane	<0.035	<0.24	<0.035	<0.24
Bromoform	<0.035	<0.36	<0.035	<0.36
Bromomethane	<0.035	<0.14	<0.035	<0.14
1,3-Butadiene	<0.035	<0.078	<0.035	<0.078
2-Butanone (MEK)	<b>1.4</b>	<b>4.2</b>	<1.4	<4.1
Carbon Disulfide	<0.35	<1.1	<0.35	<1.1
Carbon Tetrachloride	<b>0.07</b>	<b>0.44</b>	<b>0.072</b>	<b>0.45</b>
Chlorobenzene	<0.035	<0.16	<0.035	<0.16
Chloroethane	<0.035	<0.093	<0.035	<0.093
Chloroform	<0.035	<0.17	<0.035	<0.17
Chloromethane	<b>0.46</b>	<b>0.96</b>	<b>0.41</b>	<b>0.84</b>
Cyclohexane	<0.035	<0.12	<0.035	<0.12
Dibromochloromethane	<0.035	<0.30	<0.035	<0.30
1,2-Dibromoethane (EDB)	<0.035	<0.27	<0.035	<0.27
1,2-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
1,3-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
1,4-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
Dichlorodifluoromethane (Freon 12)	<b>0.28</b>	<b>1.4</b>	<b>0.24</b>	<b>1.2</b>
1,1-Dichloroethane	<0.035	<0.14	<0.035	<0.14
1,2-Dichloroethane	<0.035	<0.14	<0.035	<0.14
1,1-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
cis-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
trans-1,2-Dichloroethylene	<0.035	<0.14	0.036	<0.14
1,2-Dichloropropane	<0.035	<0.16	<0.035	<0.16
cis-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16
trans-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.035	<0.25	<0.035	<0.25
1,4-Dioxane	<0.35	<1.3	<0.35	<1.3
Ethanol	<b>4.9</b>	<b>9.2</b>	<b>3.1</b>	<b>5.9</b>
Ethyl Acetate	<0.070	<0.25	<0.070	<0.13
Ethylbenzene	<b>0.075</b>	<b>0.33</b>	<b>0.072</b>	<b>0.31</b>
4-Ethyltoluene	<0.035	<0.17	<0.035	<0.17
Heptane	<b>0.1</b>	<b>0.43</b>	<b>0.11</b>	<b>0.44</b>
Hexachlorobutadiene	<0.035	<0.37	<0.035	<0.37
Hexane	<1.4	<4.9	<1.4	<4.9
2-Hexanone (MBK)	<0.035	<0.14	<0.035	<0.14
Isopropanol	<1.4	<3.4	<1.4	<3.4
Methyl tert-Butyl Ether (MTBE)	<0.035	<0.13	<0.035	<0.13
Methylene Chloride	<0.35	<1.2	<b>0.35</b>	<b>1.2</b>
4-Methyl-2-pentanone (MIBK)	<0.035	<0.14	<0.035	<0.14
Naphthalene	<b>0.11</b>	<b>0.55</b>	<b>0.082</b>	<b>0.43</b>
Propene	<1.4	<2.4	<1.4	<2.4
Styrene	<0.035	<0.15	<0.035	<0.15
1,1,2,2-Tetrachloroethane	<0.035	<0.24	<0.035	<0.24
Tetrachloroethylene	<b>0.33</b>	<b>2.2</b>	<b>0.35</b>	<b>2.4</b>
Tetrahydrofuran	<0.070	<0.10	<0.070	<0.10
Toluene	<b>0.51</b>	<b>1.9</b>	<b>0.49</b>	<b>1.8</b>
1,2,4-Trichlorobenzene	<0.035	<0.26	<0.035	<0.26
1,1,1-Trichloroethane	<0.035	<0.19	<0.035	<0.19
1,1,2-Trichloroethane	<0.035	<0.19	<0.035	<0.19
Trichloroethylene	<0.035	<0.19	<0.035	<0.19
Trichlorofluoromethane (Freon 11)	<b>0.24</b>	<b>1.3</b>	<b>0.22</b>	<b>1.2</b>
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1	<0.14	<1.1
1,2,4-Trimethylbenzene	<b>0.11</b>	<b>0.52</b>	<b>0.095</b>	<b>0.47</b>
1,3,5-Trimethylbenzene	<0.035	<0.17	<0.035	<0.17
Vinyl Acetate	<b>0.9</b>	<b>3.2</b>	<0.70	<2.5
Vinyl Chloride	<0.035	<0.090	<0.035	<0.090
m&p-Xylene	<b>0.25</b>	<b>1.1</b>	<b>0.25</b>	<b>1.1</b>
o-Xylene	<b>0.09</b>	<b>0.39</b>	<b>0.092</b>	<b>0.4</b>

Notes:

Values in **bold** indicate detected concentrations

J-: The results reported for 1,3-butadiene, bromomethane, dichlorodifluoromethane (Freon 12), and 1,2-dichloro-1,1,2,2-tetrafluoroethane (Freon 114) are estimated values and may be biased low.

J+: The results reported for heptane are estimated values and may be biased high.

Results for the following compounds may be influenced by laboratory derived contamination:

acetone, ethanol, methylene chloride and isopropanol

**Table 3:**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**Week 53 VOCs Results: October 9th through 10th and October 10th through 11th**

Sample ID	ST-6-VOC-100918		ST-7-VOC-101018	
Laboratory ID	18J0624-01		18J0624-02	
Date Sampled	10/9/18 12:00 - 10/10/18 11:00		10/10/18 08:30 - 10/11/18 07:30	
Location	Station 6		Station 5	
VOCs - TO-15	ppbV	ug/m3	ppbV	ug/m3
Acetone	<b>6.5</b>	<b>15</b>	<b>4.9</b>	<b>12</b>
Benzene	<b>0.22</b>	<b>0.7</b>	<b>0.2</b>	<b>0.63</b>
Benzyl chloride	<0.035	<0.18	<0.035	<0.18
Bromodichloromethane	<0.035	<0.24	<0.035	<0.24
Bromoform	<0.035	<0.36	<0.035	<0.36
Bromomethane	<0.035	<0.14	<0.035	<0.14
1,3-Butadiene	<0.035	<0.078	<0.035	<0.078
2-Butanone (MEK)	<1.4	<4.1	<1.4	<4.1
Carbon Disulfide	<0.35	<1.1	<0.35	<1.1
Carbon Tetrachloride	<b>0.074</b>	<b>0.46</b>	<b>0.072</b>	<b>0.45</b>
Chlorobenzene	<0.035	<0.16	<0.035	<0.16
Chloroethane	<0.035	<0.093	<0.035	<0.093
Chloroform	<0.035	<0.17	<0.035	<0.17
Chloromethane	<b>0.46</b>	<b>0.96</b>	<b>0.42</b>	<b>0.86</b>
Cyclohexane	<0.035	<0.12	<0.035	<0.12
Dibromochloromethane	<0.035	<0.30	<0.035	<0.30
1,2-Dibromoethane (EDB)	<0.035	<0.27	<0.035	<0.27
1,2-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
1,3-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
1,4-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
Dichlorodifluoromethane (Freon 12)	<b>0.28</b>	<b>1.4</b>	<b>0.26</b>	<b>1.3</b>
1,1-Dichloroethane	<0.035	<0.14	<0.035	<0.14
1,2-Dichloroethane	<0.035	<0.14	<0.035	<0.14
1,1-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
cis-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
trans-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
1,2-Dichloropropane	<0.035	<0.16	<0.035	<0.16
cis-1,3-Dichloropropane	<0.035	<0.16	<0.035	<0.16
trans-1,3-Dichloropropane	<0.035	<0.16	<0.035	<0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.035	<0.25	<0.035	<0.25
1,4-Dioxane	<0.35	<1.3	<0.35	<1.3
Ethanol	<b>6.6</b>	<b>12</b>	<b>4.9</b>	<b>9.1</b>
Ethyl Acetate	<0.070	<0.13	<b>0.15</b>	<b>0.55</b>
Ethylbenzene	<b>0.087</b>	<b>0.38</b>	<b>0.081</b>	<b>0.35</b>
4-Ethyltoluene	<0.035	<0.17	<0.035	<0.17
Heptane	<b>0.12</b>	<b>0.51</b>	<b>0.11</b>	<b>0.45</b>
Hexachlorobutadiene	<0.035	<0.37	<0.035	<0.37
Hexane	<1.4	<4.9	<1.4	<4.9
2-Hexanone (MBK)	<0.035	<0.14	<0.035	<0.14
Isopropanol	<1.4	<3.4	<1.4	<3.4
Methyl tert-Butyl Ether (MTBE)	<0.035	<0.13	<0.035	<0.13
Methylene Chloride	<0.35	<1.2	<0.35	<1.2
4-Methyl-2-pentanone (MIBK)	<0.035	<0.14	<0.035	<0.14
Naphthalene	<b>0.16</b>	<b>0.85</b>	<b>0.12</b>	<b>0.6</b>
Propene	<1.4	<2.4	<1.4	<2.4
Styrene	<0.035	<0.15	<0.035	<0.15
1,1,2,2-Tetrachloroethane	<0.035	<0.24	<0.035	<0.24
Tetrachloroethylene	<b>0.3</b>	<b>2</b>	<b>0.28</b>	<b>1.9</b>
Tetrahydrofuran	<0.070	<0.10	<0.070	<0.10
Toluene	<b>0.72</b>	<b>2.7</b>	<b>0.56</b>	<b>2.1</b>
1,2,4-Trichlorobenzene	<0.035	<0.26	<0.035	<0.26
1,1,1-Trichloroethane	<0.035	<0.19	<0.035	<0.19
1,1,2-Trichloroethane	<0.035	<0.19	<0.035	<0.19
Trichloroethylene	<0.035	<0.19	<0.035	<0.19
Trichlorofluoromethane (Freon 11)	<b>0.29</b>	<b>1.7</b>	<b>0.24</b>	<b>1.3</b>
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1	<0.14	<1.1
1,2,4-Trimethylbenzene	<b>0.12</b>	<b>0.61</b>	<b>0.11</b>	<b>0.54</b>
1,3,5-Trimethylbenzene	<0.035	<0.17	<0.035	<0.17
Vinyl Acetate	<0.70	<2.5	<0.70	<2.5
Vinyl Chloride	<0.035	<0.090	<0.035	<0.090
m&p-Xylene	<b>0.3</b>	<b>1.3</b>	<b>0.28</b>	<b>1.2</b>
o-Xylene	<b>0.12</b>	<b>0.5</b>	<b>0.1</b>	<b>0.44</b>

Notes:

Values in **bold** indicate detected concentrations

J-: The results reported for 1,3-butadiene, bromomethane, dichlorodifluoromethane (Freon 12), and 1,2-dichloro-1,1,2,2-tetrafluoroethane (Freon 114) are estimated values and may be biased low.

J+: The results reported for heptane are estimated values and may be biased high.

Results for the following compounds may be influenced by laboratory derived contamination:

acetone, ethanol, methylene chloride and isopropanol



**Gowanus Canal Superfund Site  
TB-4 Dredging and Capping Pilot Study  
Brooklyn, New York  
Meteorological Summary  
November 5<sup>th</sup> through November 9<sup>th</sup>, 2018**

November 5 <sup>th</sup> , 2018 *		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
NE	8.02	64.5

November 6 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
ENE	3.19	64.5

November 7 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SW	1.17	64.0

November 8 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
WSW	2.93	64.0

November 9 <sup>th</sup> , 2018 ***		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
NE	6.64	63.0

\* Monday's meteorological data represents an average for the time period of 06:30 to 23:45.

\*\* Tuesday's, Wednesday's, and Thursday's meteorological data represents averages for the time period of 00:00 to 23:45.

\*\*\* Friday's meteorological data represents an average for the time period of 00:00 to 19:00.

**Table 1****Week 57****Summary of Additional Periodic (Daily) Monitoring Data**

November 7 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)*	Ammonia (NH <sub>3</sub> ) (ppm)**
ST-1	9:32	<50	<3	<1.0
	14:48	<50	<3	<1.0
ST-2	9:41	<50	<3	<1.0
	14:49	<50	<3	<1.0
ST-3	8:25	<50	<3	<1.0
	14:22	<50	<3	<1.0
ST-4	8:34	<50	<3	<1.0
	14:26	<50	<3	<1.0
ST-5	8:42	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-6	9:11	<50	<3	<1.0
	14:16	<50	<3	<1.0
ST-7	9:00	<50	<3	<1.0
	14:08	<50	<3	<1.0
November 8 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)*	Ammonia (NH <sub>3</sub> ) (ppm)**
ST-1	10:34	<50	<3	<1.0
	13:54	<50	<3	<1.0
ST-2	10:42	<50	<3	<1.0
	13:57	<50	<3	<1.0
ST-3	9:17	<50	<3	<1.0
	14:21	<50	<3	<1.0
ST-4	9:34	<50	<3	<1.0
	14:24	<50	<3	<1.0
ST-5	9:53	<50	<3	<1.0
	14:29	<50	<3	<1.0
ST-6	9:01	<50	<3	<1.0
	14:46	<50	<3	<1.0
ST-7	10:03	<50	<3	<1.0
	14:37	<50	<3	<1.0

Table 1

Week 57

Summary of Additional Periodic (Daily) Monitoring Data

November 9 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)*	Ammonia (NH <sub>3</sub> ) (ppm)**
ST-1	9:02	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-2	9:13	<50	<3	<1.0
	14:51	<50	<3	<1.0
ST-3	7:36	<50	<3	<1.0
	15:11	<50	<3	<1.0
ST-4	7:49	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	8:39	<50	<3	<1.0
	15:26	<50	<3	<1.0
ST-6	8:27	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-7	8:20	<50	<3	<1.0
	15:32	<50	<3	<1.0

\*(ppb) Indicates results reported in parts per billion

\*\* (ppm) Indicates results reported in parts per million

**WILSON IHRIG WEEKLY NOISE AND VIBRATION MONITORING REPORT**





WI #15-081

**MEMORANDUM**

November 12, 2018

To: William Lee/ de maximis, inc.  
Kirsten Meyers / TRC

From: Silas Bensing, Ani Toncheva / Wilson Ihrig

Subject: Gowanus Canal 4th Street Turning Basin Dredging and Capping Pilot Study, Weekly Noise Monitoring Report, 5 - 9 November, 2018

**Noise Monitoring Locations**

Figure 1 shows the noise monitoring locations. NM-1 is installed at a light pole on the north side of TB4 and is approximately 25 feet from the north edge of the canal. NM-2 is installed at the existing guard rail on the south side of TB4, approximately 4 feet from the south edge of the canal. Photos 1 and 2 show the recent field conditions at the monitors.

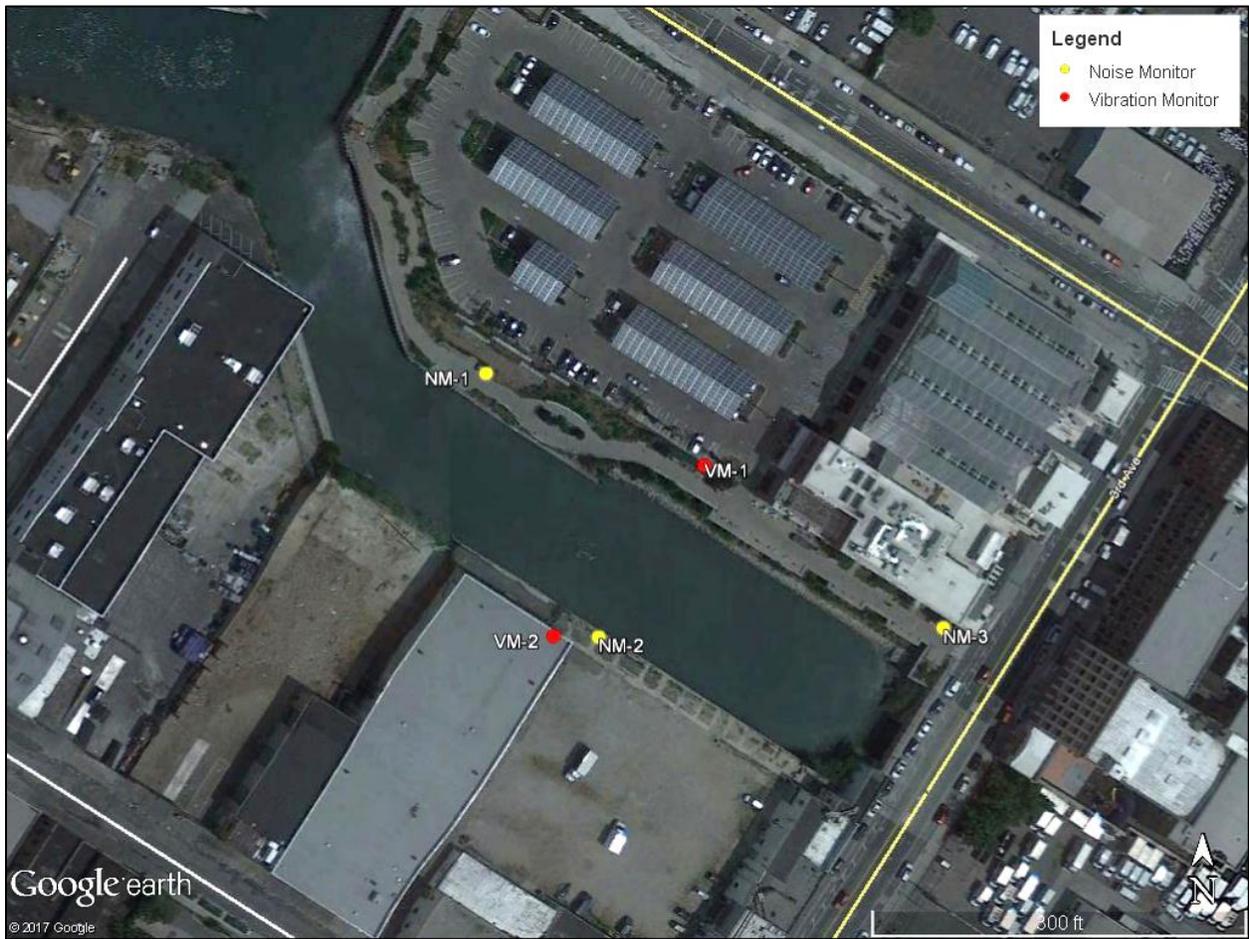
**Noise Monitoring Results**

Figures 2 through 11 present the hourly Leq noise levels compared with the noise thresholds discussed in the noise monitoring plan<sup>1</sup>. Commercial and Industrial land uses are assigned an hourly Leq noise limit of 80 dBA for Daytime and Evening time periods. The average baseline noise measured in the project area in 2015 are also shown for reference<sup>2</sup>.

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<sup>1</sup> Wilson Ihrig. *Gowanus Canal 4<sup>th</sup> Street Turning Basin Dredging and Capping Pilot Study Noise and Vibration Monitoring Plan*. California: prepared for Gowanus Canal Remedial Design Group, DRAFT May 2017

<sup>2</sup> Wilson Ihrig. *Gowanus Canal Remedial Design Project RTA-1 Noise and Vibration Baseline Report*. California: prepared for Geosyntec Consultants Inc., October 2015.



**Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study**



**Photo 1: Noise Monitoring Location NM-1  
(26 September 2017)**



**Photo 2: Noise Monitoring Location NM-2  
(25 September 2017)**

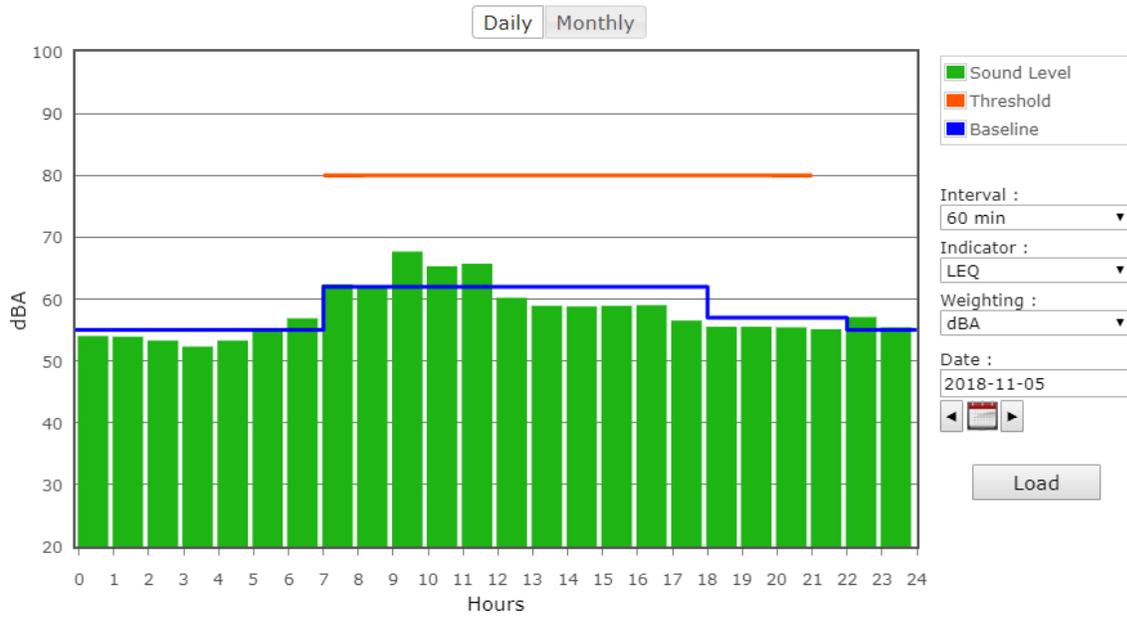


Figure 2: North Monitor NM-1 on Monday

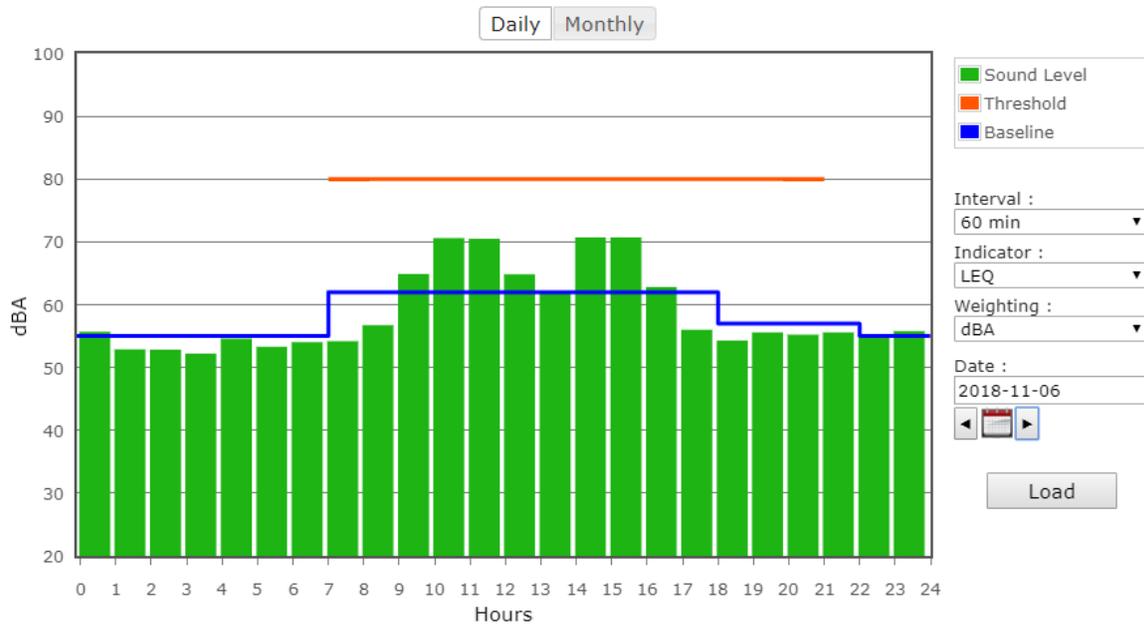
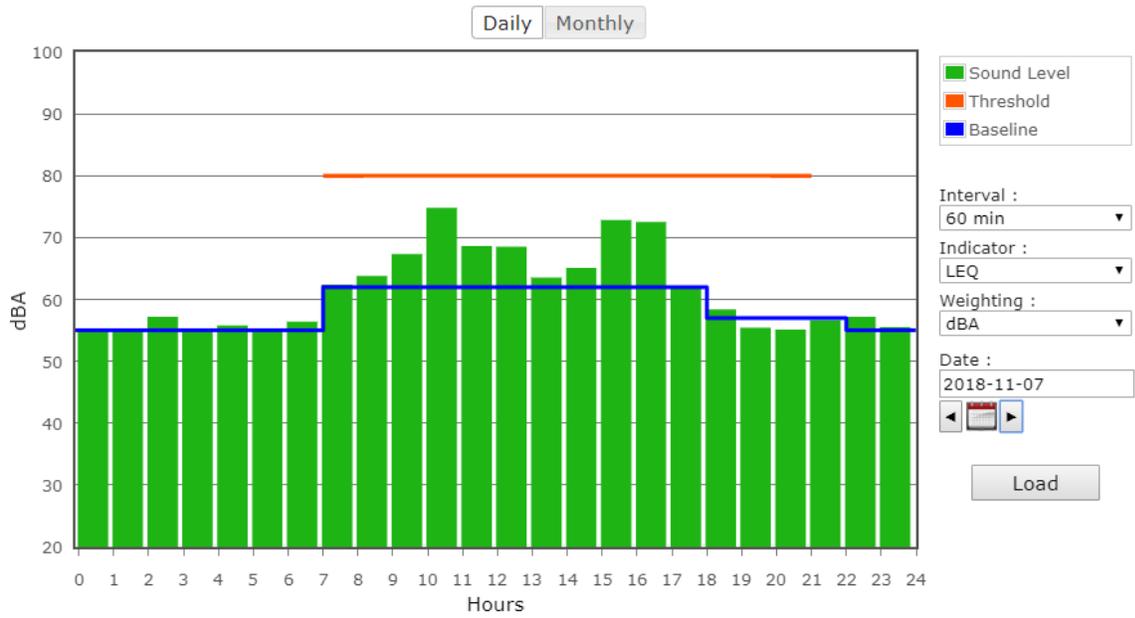
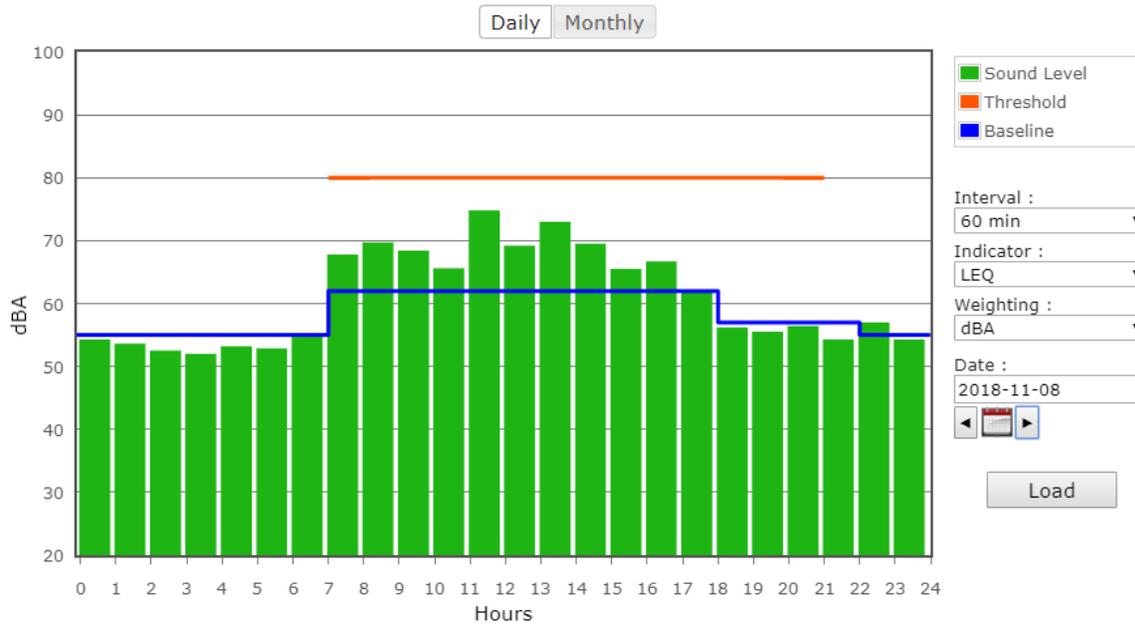


Figure 3: North Monitor NM-1 on Tuesday



**Figure 4: North Monitor NM-1 on Wednesday**



**Figure 5: North Monitor NM-1 on Thursday**

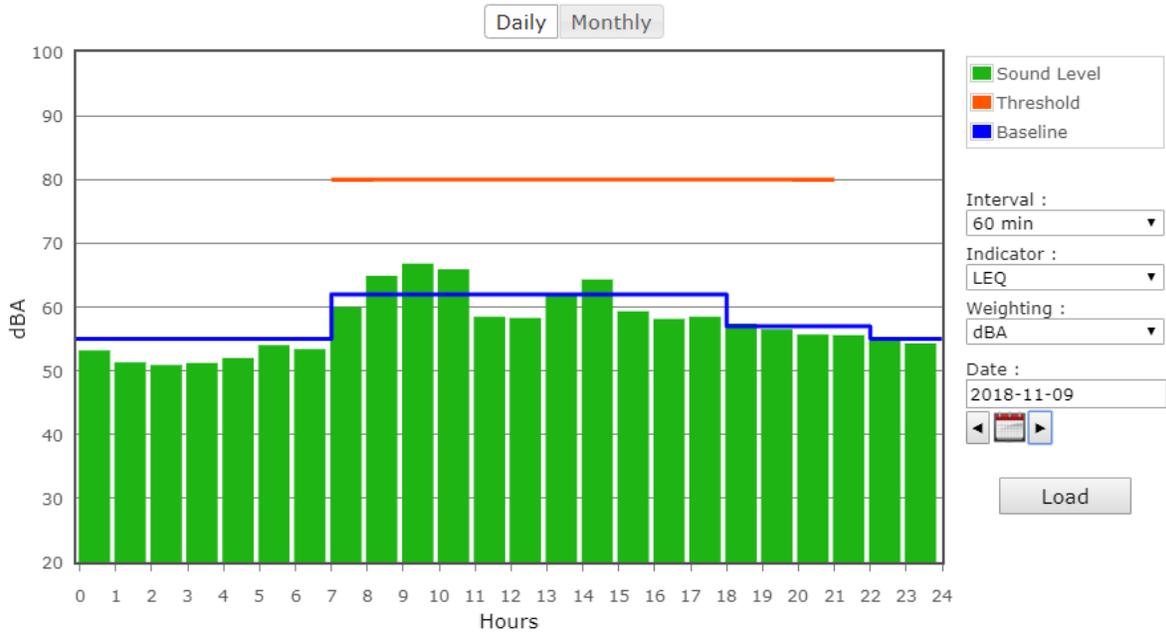


Figure 6: North Monitor NM-1 on Friday

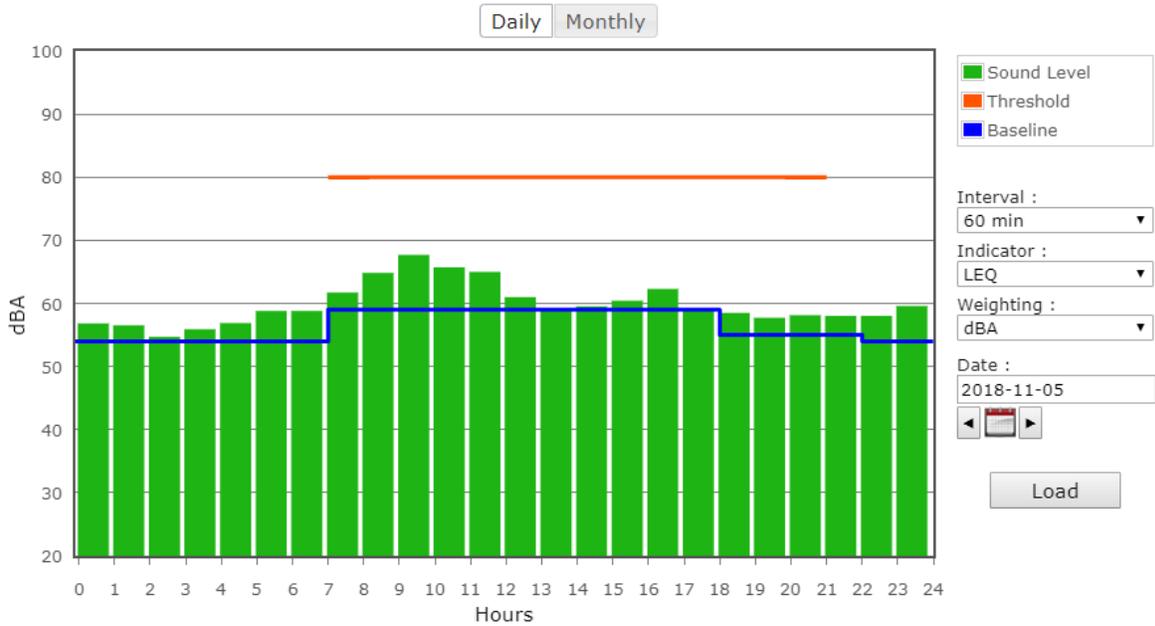
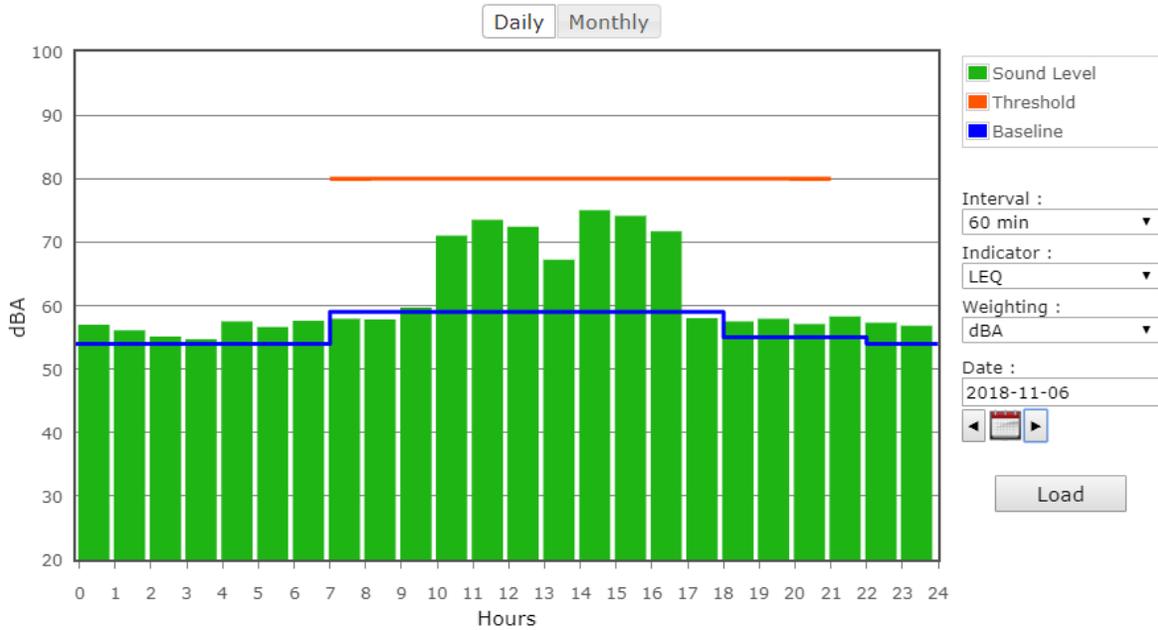
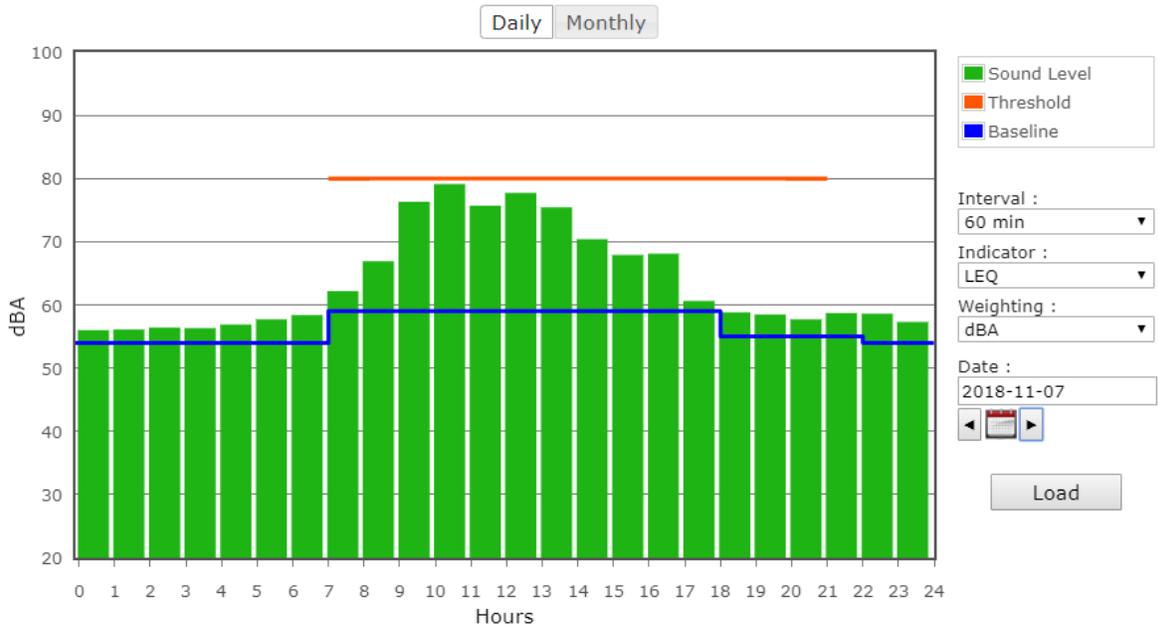


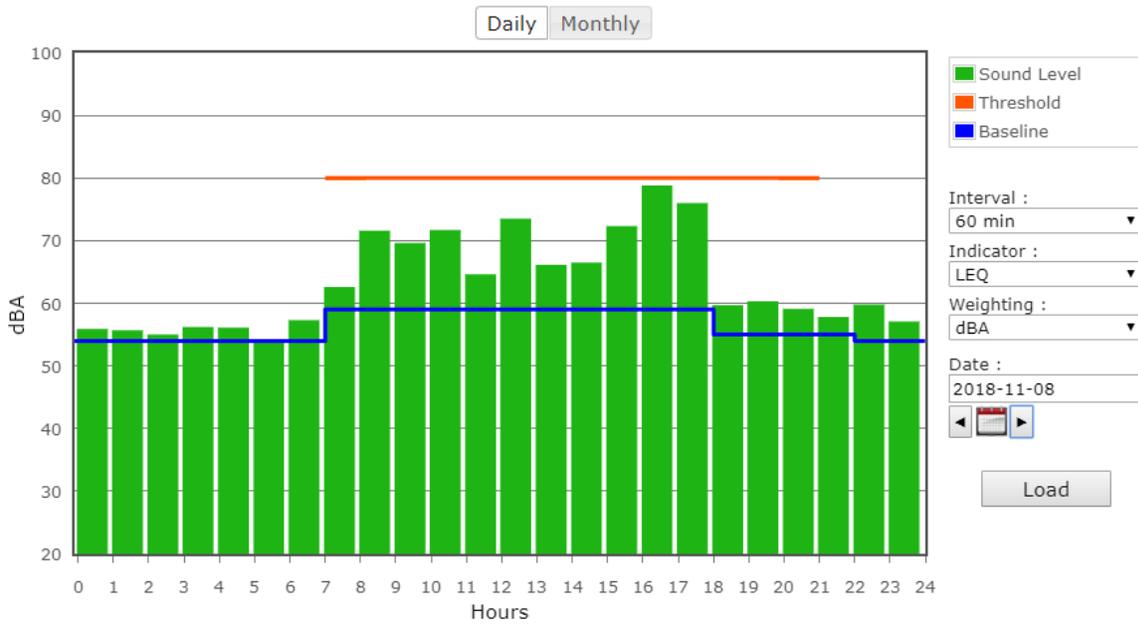
Figure 7: South Monitor NM-2 on Monday



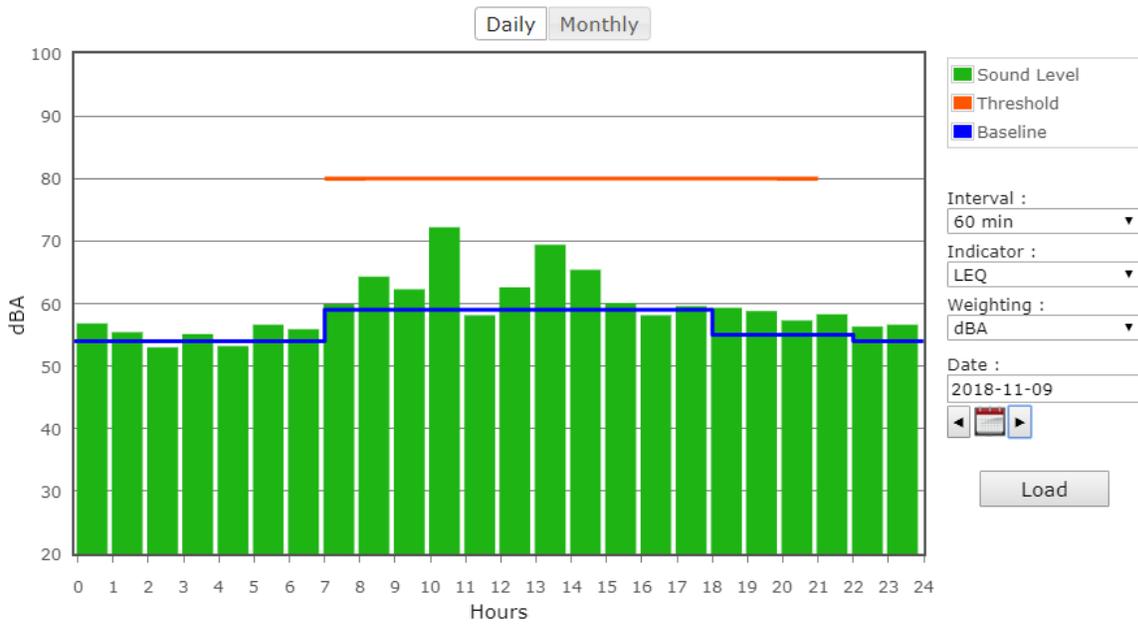
**Figure 8: South Monitor NM-2 on Tuesday**



**Figure 9: South Monitor NM-2 on Wednesday**



**Figure 10: South Monitor NM-2 on Thursday**



**Figure 11: South Monitor NM-2 on Friday**

**AHRS WEEKLY REPORT**  
**(NO ACTIVITIES DURING WEEK)**



**WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA  
(NO ACTIVITIES DURING WEEK)**



**CUMULATIVE DREDGED MATERIAL CHART  
(NO ACTIVITIES DURING WEEK)**

