

**WEEKLY PROGRESS REPORT – TRC SOLUTIONS**

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

**Project number: 283126**

**Period: June 4 to 8, 2018**

**Date of Report: June 19, 2018**

**Rev: 0**

**Prepared For: Gowanus Environmental Remediation Trust**



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

### *Sevenson Environmental Services (SES)*

#### Phase I Dredging:

- Approximately 1,330 cubic yards of sediment dredged (volume provided by Sevenson and accepted as draft by Geosyntec)
- Performed and documented sampling to confirm removal of soft sediment with visual observations corresponding to coordinates

#### Water Treatment and Monitoring

- Discharged 30,523 gallons of treated decant water on 06/05/18.
- No exceedances of continuous monitoring.

#### Turbidity Monitoring

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

#### Debris Screening Activities

- Large debris (i.e., debris greater than 5 feet in any direction) segregated and placed on the asphalt pad at Citizens Site. Photographs of debris provided for AHRS consultation.
- Screening and segregating of dredged sediment following removal of non-large debris performed at Clean Earth Claremont for inspection by AHRS.

#### Sediment Stabilization Activities

- Clean Earth Claremont stabilized 683 tons of dredged sediment by adding 8% Portland cement by weight.
- Stabilized material is segregated on-site pending waste characterization sampling results receipt and disposal facility acceptance.
- Approximately 5,813 tons of stabilized material were disposed off-site as daily cover. An approximate total of 11,458 tons of Phase I stabilized material has been shipped to Waste Management Fairless Hills.

#### Capping Activities

- Complete assembly of mixing plant. Run test batches, confirm correct ratios, and produce low permeability backfill.

### *Quality Assurance and Control – Geosyntec*

- Water treatment system sampling performed on 06/07/18. Laboratory turnaround time is 10 business days.
- Tabulated analytical data from samples collected on 05/10 and 05/17/18 attached.
- No exceedance of the turbidity trigger or action criteria
- Measurements for 6/4/18:
  - Daily average for ambient buoy – -3.3 NTU
  - Daily average for sentinel buoy – 1.9 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 22.9 NTU at 1645.
- Measurements for 6/5/18:
  - Daily average for ambient buoy – -5.7 NTU
  - Daily average for sentinel buoy – 1.7 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 10.8 NTU at 0900, 1000, and 1115.
- Measurements for 6/6/18:
  - Daily average for ambient buoy – -1.1 NTU
  - Daily average for sentinel buoy – 7.6 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 16.3 NTU at 1500.



- Measurements for 6/7/18:
  - Daily average for ambient buoy – -1.1 NTU
  - Daily average for sentinel buoy – 6.7 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 19.3 NTU at 0930.
- Measurements for 6/8/18:
  - Daily average for ambient buoy – -2.1 NTU
  - Daily average for sentinel buoy – 3.5 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 10.8 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 – 13 µg/m<sup>3</sup> recorded on 06/08/18
  - Station 2 – 27 µg/m<sup>3</sup> recorded on 06/04/18
  - Station 3 – <1 µg/m<sup>3</sup> recorded throughout the week
  - Station 4 – 14 µg/m<sup>3</sup> recorded on 06/05/18
  - Station 5 – 38 µg/m<sup>3</sup> recorded on 06/05/18
  - Station 6 – 11 µg/m<sup>3</sup> recorded on 06/08/18
  - Station 7 – <1 µg/m<sup>3</sup> recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
  - Station 1 – 99 ppb recorded on 06/04/18
  - Station 2 – 88 ppb recorded on 06/06/18
  - Station 3 – 54 ppb recorded on 06/04/18
  - Station 4 – <1 ppb recorded throughout the week
  - Station 5 – 115 ppb recorded on 06/04/18
  - Station 6 – 26 ppb recorded on 06/06/18
  - Station 7 – <1 ppb recorded throughout the week
- All real-time readings of formaldehyde, hydrogen sulfide, or ammonia less than instrument reporting limit.
- 23-hour sample collected at ST-6 on 06/04 through 06/05. Laboratory turnaround time is 10 business days.

*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).
- One (1) slight exceedance of the hourly Leq noise limit of 80 dBA at NM-2 during barge movement.
- Greatest hourly Leq noise measurements
  - Northern monitor (NM-1) – 73.3 dBA during 1300-1400 on 06/06/18
  - Southern monitor (NM-2) – 80.2 dBA during 0900-1000 on 06/05/18



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

- Attend site visit with EPA representatives and members of the Community Advisory Group to view oversized debris staged on the asphalt pad on 06/04/18.
- Review photographs of screened debris at Clean Earth Claremont and Citizens Site.
- Mobilize to perform Level 2 monitoring of native alluvium at Citizens Site.

**Two-Week Look Ahead:**

Sevenson:

- Complete Phase I dredging as necessary based on evaluation of sampling conducted on 06/08.
- Commence Phase II dredging.
- Screen native alluvium at Citizens Site prior to shipment to Clean Earth Claremont for stabilization or stabilization at Citizens Site prior to shipment to Waste Management Fairless Hills for beneficial reuse.
- Treatment and discharge of water decanted from dredged sediment.
- Produce low permeability backfill with mixing plant.
- Perform optical monitoring of bulkheads and surrounding structures with autonomous total survey stations. Along with weekly optical surveys conducted by subcontractor.

Geosyntec – Perform construction quality assurance responsibilities, including collection of water samples from dredge water treatment system.

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise monitoring,

AHRS:

- Review photographs and perform inspection of screened debris from Phase I and II dredging at Clean Earth Claremont and Citizens Site.
- Draft and finalize memoranda to facilitate the disposal of non-archaeologically sensitive debris staged at Clean Earth and Citizens Site.
- Perform Level 2 monitoring of native alluvium at Citizens Site.

**Key Milestones**

- No key milestones during period.

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
5. Water Treatment System Monitoring Analytical Laboratory Data
6. Cumulative Dredged Material Chart



<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> 06-04-2018
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**Description**  
Full bucket of material during conventional excavator bucket demonstration.



<b>Photo No.</b> 002	<b>Date</b> 06-04-2018
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**Description**  
Turbidity measurement during conventional excavator bucket demonstration



<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> 003	<b>Date</b> 06-05-2018
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**Description**  
Testing hoppers and stacking conveyor, along with the 4-screw mixer.



<b>Photo No.</b> 004	<b>Date</b> 06-05-2018
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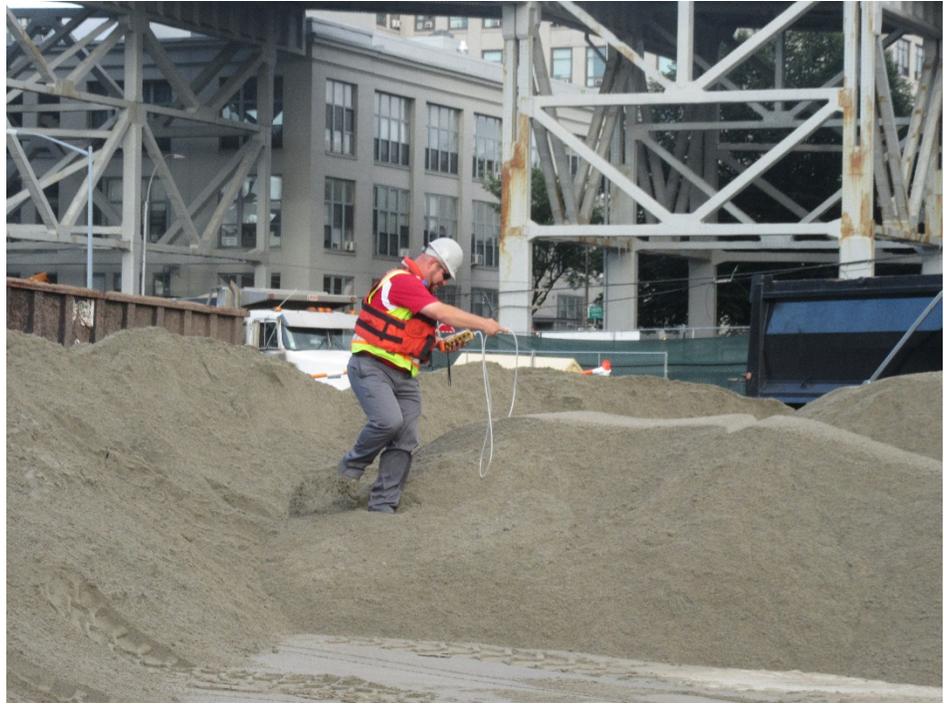
**Description**  
Testing hopper conveyors to ensure the proper ratios of product being mixed.



<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> 005	<b>Date</b> 06-06-2018
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**Description**  
Screening the sand using a PID prior to placement.



<b>Photo No.</b> 006	<b>Date</b> 06-06-2018
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**Description**  
Empty scow ready to be transported back to TB-4.



<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> 06-07-2018
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**Description**  
Loaded scow being prepared to be pumped out prior to transfer to DOS scow.



<b>Photo No.</b> 008	<b>Date</b> 06-07-2018
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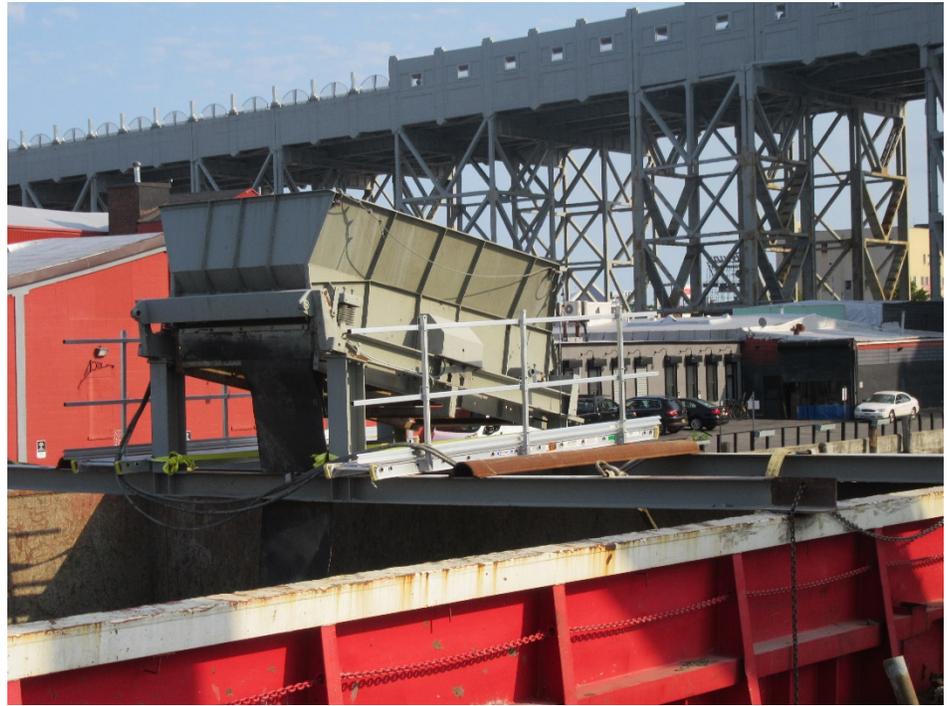
**Description**  
Sand and bentonite mixture being dropped from the stacking conveyor into the screw mixer for final mixing.



<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> 06-08-2018
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**Description**  
Grizzly bars mounted onto the end of Weeks barge.



<b>Photo No.</b> 010	<b>Date</b> 06-08-2018
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**Description**  
Pumping water from full scow to dredge water treatment plant



**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 June 4<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.

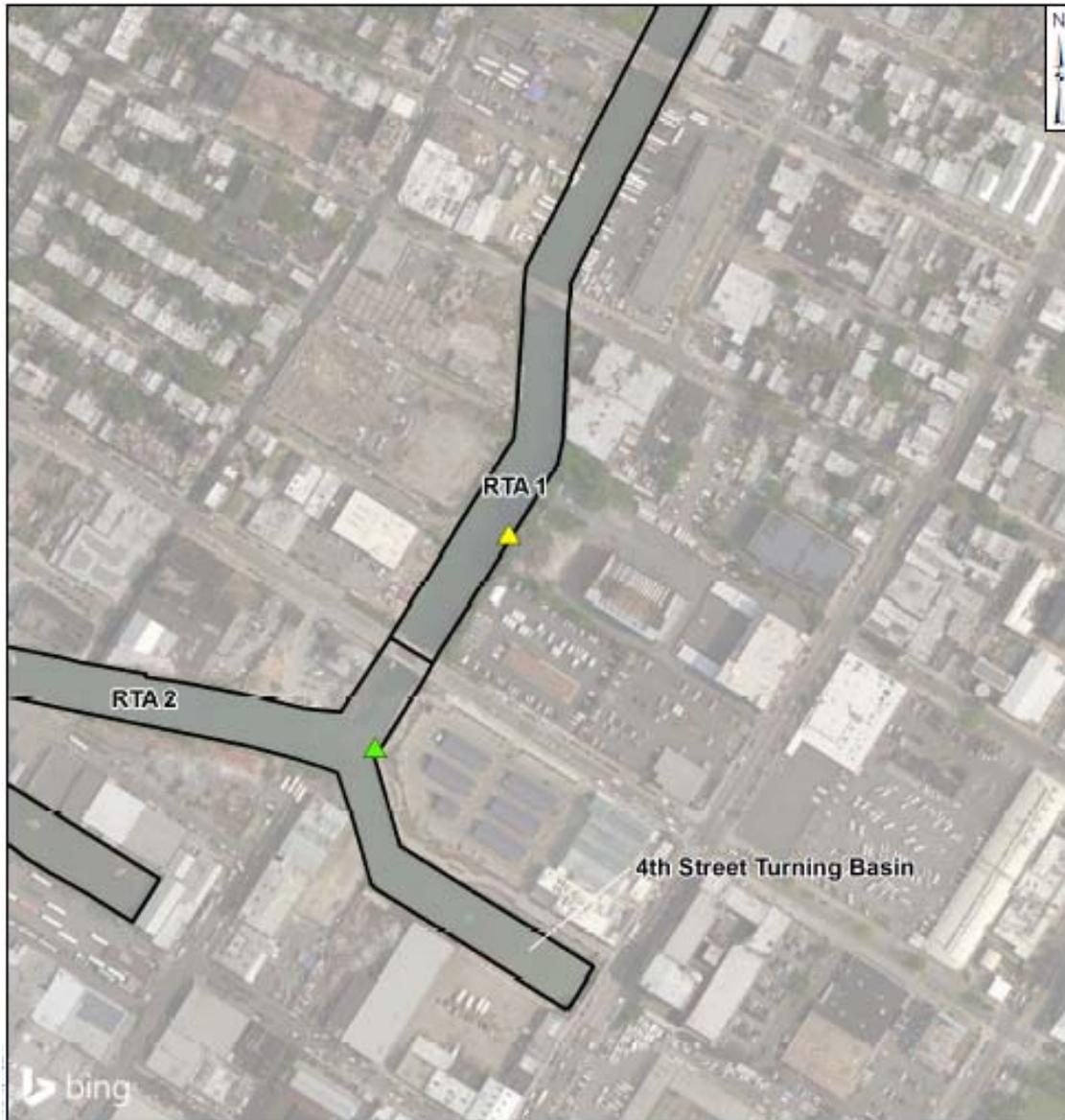
engineers | scientists | innovators

*an affiliate of Geosyntec Consultants*

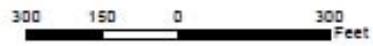
7 Graphics Drive, Suite 106  
Ewing, NJ 08628  
Project Number HPH106A (52)

## **1. SCOPE OF MONITORING**

The following report summarizes water quality monitoring data collected during the week of June 4<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 June 4<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 Consultants

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 June 4<sup>th</sup> to June 8<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 spike in turbidity of 16.3 NTU at 16:45 and 15.0 NTU at 17:00 was observed at the sentinel buoy on June 4<sup>th</sup>. Buoys were serviced due to the negative values the buoys recorded since the last calibration of the turbidity meters. Negative values continue to be recorded and further servicing is required. However, since the numerical criteria is based on the difference between the ambient and sentinel turbidity buoy measurements, these negative values do not impact monitoring.

### 2.1 Monday, June 4<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)
6/4/2018 7:00	-4.2	-1.0	Y	6/4/2018 12:15	-2.6	0.6	Y
6/4/2018 7:15	-5.0	0.4	Y	6/4/2018 12:30	-2.8	2.9	Y
6/4/2018 7:30	-4.6	-0.6	Y	6/4/2018 12:45	-3.4	1.3	Y
6/4/2018 7:45	-4.7	-0.2	Y	6/4/2018 13:00	-3.7	0.7	Y
6/4/2018 8:00	-5.1	3.2	Y	6/4/2018 13:15	-4.5	0.4	Y
6/4/2018 8:15	-4.1	0.8	Y	6/4/2018 13:30	-4.0	-0.6	Y
6/4/2018 8:30	-4.1	0.9	Y	6/4/2018 13:45	-4.8	0.7	Y
6/4/2018 8:45	-0.8	3.8	Y	6/4/2018 14:00	-4.1	1.8	Y
6/4/2018 9:00	-1.6	1.6	Y	6/4/2018 14:15	-4.9	0.3	Y
6/4/2018 9:15	-0.4	2.0	Y	6/4/2018 14:30	-4.7	-0.3	Y
6/4/2018 9:30	-1.7	3.2	Y	6/4/2018 14:45	-6.2	-0.7	Y
6/4/2018 9:45	-0.8	0.8	Y	6/4/2018 15:00	-5.6	1.7	Y
6/4/2018 10:00	-2.7	0.3	Y	6/4/2018 15:15	-5.6	0.4	Y
6/4/2018 10:15	-0.6	0.1	Y	6/4/2018 15:30	-6.1	4.0	Y
6/4/2018 10:30	-0.9	0.3	Y	6/4/2018 15:45	6.8	5.0	N
6/4/2018 10:45	-0.4	0.1	Y	6/4/2018 16:00	-4.7	0.7	Y
6/4/2018 11:00	-0.9	2.4	Y	6/4/2018 16:15	-4.5	3.9	Y
6/4/2018 11:15	-0.8	2.5	Y	6/4/2018 16:30	-5.0	0.4	Y
6/4/2018 11:30	-1.4	1.1	Y	6/4/2018 16:45	-6.6	16.3	Y
6/4/2018 11:45	-2.8	0.9	Y	6/4/2018 17:00	-6.1	15.0	Y
6/4/2018 12:00	-3.0	-0.8	Y				

Average	-3.3	1.9	Y
Maximum	6.8	16.3	Y

**Notes:**

No exceedances 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



### 2.3 Wednesday, June 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)
6/6/2018 7:00	-7.3	-0.6	Y	6/6/2018 12:15	0.6	8.4	Y
6/6/2018 7:15	-8.0	-0.7	Y	6/6/2018 12:30	-0.2	8.4	Y
6/6/2018 7:30	-5.1	1.2	Y	6/6/2018 12:45	-0.2	6.9	Y
6/6/2018 7:45	-4.8	0.5	Y	6/6/2018 13:00	-1.6	11.7	Y
6/6/2018 8:00	-5.7	0.9	Y	6/6/2018 13:15	-2.1	8.6	Y
6/6/2018 8:15	-6.9	2.7	Y	6/6/2018 13:30	-6.4	8.0	Y
6/6/2018 8:30	-5.4	2.9	Y	6/6/2018 13:45	-6.3	4.9	Y
6/6/2018 8:45	2.0	0.9	N	6/6/2018 14:00	-6.1	8.1	Y
6/6/2018 9:00	-0.3	0.9	Y	6/6/2018 14:15	-5.1	7.2	Y
6/6/2018 9:15	4.4	4.4	N	6/6/2018 14:30	-5.6	2.9	Y
6/6/2018 9:30	6.5	15.8	Y	6/6/2018 14:45	-6.2	7.6	Y
6/6/2018 9:45	5.8	11.3	Y	6/6/2018 15:00	-5.6	10.7	Y
6/6/2018 10:00	9.2	11.6	Y	6/6/2018 15:15	-1.3	9.9	Y
6/6/2018 10:15	13.6	13.0	N	6/6/2018 15:30	-2.9	8.5	Y
6/6/2018 10:30	-1.6	8.4	Y	6/6/2018 15:45	-2.9	7.6	Y
6/6/2018 10:45	1.4	11.1	Y	6/6/2018 16:00	-0.9	11.6	Y
6/6/2018 11:00	4.1	8.6	Y	6/6/2018 16:15	1.2	10.7	Y
6/6/2018 11:15	-0.9	14.3	Y	6/6/2018 16:30	-1.5	13.5	Y
6/6/2018 11:30	0.9	8.6	Y	6/6/2018 16:45	-1.0	11.0	Y
6/6/2018 11:45	-0.6	5.4	Y	6/6/2018 17:00	-1.3	12.9	Y
6/6/2018 12:00	7.8	11.7	Y				

Average	-1.1	7.6	Y
Maximum	13.6	15.8	Y

**Notes:**

No exceedances 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



**2.5 Friday, June 8<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)
6/8/2018 7:00	-4.7	-0.4	Y	6/8/2018 12:15	0.6	5.7	Y
6/8/2018 7:15	-4.8	0.4	Y	6/8/2018 12:30	-0.9	5.6	Y
6/8/2018 7:30	-4.6	0.8	Y	6/8/2018 12:45	-3.6	3.8	Y
6/8/2018 7:45	-5.2	0.6	Y	6/8/2018 13:00	-3.3	1.8	Y
6/8/2018 8:00	-5.1	0.2	Y	6/8/2018 13:15	-0.2	6.3	Y
6/8/2018 8:15	-5.1	-0.9	Y	6/8/2018 13:30	-1.7	3.4	Y
6/8/2018 8:30	-4.7	0.1	Y	6/8/2018 13:45	-1.0	4.6	Y
6/8/2018 8:45	-4.4	-0.2	Y	6/8/2018 14:00	-2.5	2.8	Y
6/8/2018 9:00	-3.1	-0.6	Y	6/8/2018 14:15	-2.2	2.8	Y
6/8/2018 9:15	-3.3	0.3	Y	6/8/2018 14:30	-3.6	4.1	Y
6/8/2018 9:30	0.3	1.2	Y	6/8/2018 14:45	-4.7	4.3	Y
6/8/2018 9:45	0.9	2.0	Y	6/8/2018 15:00	-6.1	3.3	Y
6/8/2018 10:00	6.3	2.6	N	6/8/2018 15:15	-5.2	2.2	Y
6/8/2018 10:15	5.3	8.7	Y	6/8/2018 15:30	-6.2	3.9	Y
6/8/2018 10:30	6.5	10.5	Y	6/8/2018 15:45	-7.7	3.1	Y
6/8/2018 10:45	4.0	8.9	Y	6/8/2018 16:00	-7.6	1.8	Y
6/8/2018 11:00	4.8	10.1	Y	6/8/2018 16:15	-4.7	2.7	Y
6/8/2018 11:15	4.1	10.5	Y	6/8/2018 16:30	-6.0	2.2	Y
6/8/2018 11:30	3.1	9.9	Y	6/8/2018 16:45	-7.3	3.0	Y
6/8/2018 11:45	0.6	4.5	Y	6/8/2018 17:00	-4.4	1.4	Y
6/8/2018 12:00	2.7	6.0	Y				

Average	-2.1	3.5	Y
Maximum	6.5	10.5	Y

**Notes:**

No exceedances 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

Handheld measurements were collected on Monday, 6/4/2018 during the demonstration of the excavator bucket to dredge into the native material. The following table provides a summary of the handheld measurements.

#### Reading Collected During Active Dredging:

*(Measurements collected from 7 ft below water surface)*

<b>Turbidity (NTU)</b>	<b>Distance from Dredging (ft)</b>
17	20
14.9	20
13.1	25
12.5	25
9.5	25
32	20
85.1	20
42	20
53	25
67	25
Maximum:	85.1
Average	34.6

### 4. SUMMARY OF VISUAL OBSERVATIONS

During the demonstration with the excavator bucket an increased occurrence of sheen was observed. This sheen was localized in the area of dredging at the southeast corner of the pilot study area and did not migrate outside of the turning basin.

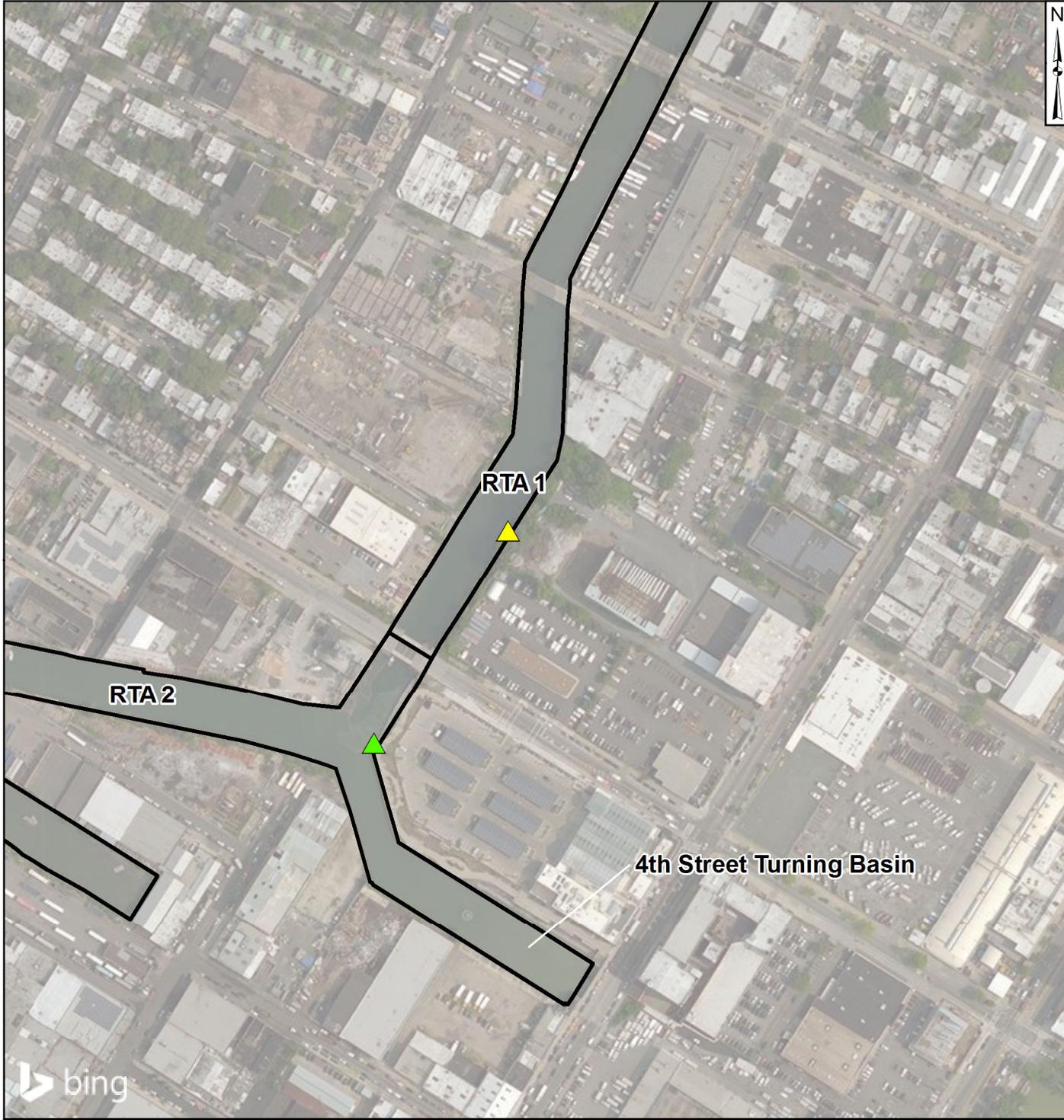
### 5. REPORT OF EXCEEDANCES

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.

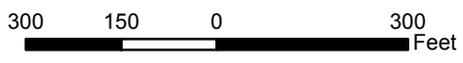
# **FIGURES**



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  
35<sup>th</sup> Weekly Monitoring Period  
Summary Report:**

June 4<sup>th</sup>, through June 8<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 35 Monitoring Period June 4<sup>th</sup> through June 8<sup>th</sup>, 2018**

The following report summarizes site air monitoring activities for the Week 35 monitoring period from June 4<sup>th</sup> through June 8<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 35 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 35 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 35 monitoring period of June 4<sup>th</sup> through June 8<sup>th</sup>, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 6. The ST-6 sample was collected on June 4<sup>th</sup>, through June 5<sup>th</sup>, 2018. The sample was 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.

Site activities which were conducted at the Citizen Property on June 4<sup>th</sup> through June 8<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
- De-watering of dredging sediment
- Decant liquid and decontamination water was treated from asphalt pad then discharged
- Transfer dredged material to larger scow for shipment to Clean Earth Claremont
- Complete assembly of mixing plant and produce low permeability backfill
- Decontaminate sheet piling removed with Giken Silent Press on asphalt pad

Site activities which were conducted at the 4<sup>th</sup> St Turning Basin Area of the Canal on June 4<sup>th</sup> through June 8<sup>th</sup>, 2018 included the following:

- Approximately 1,330 cubic yards of soft sediment dredged
- Performed and documented sampling to confirm removal of soft sediment

**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)  
06/04/2018 06:30 AM - 06/04/2018 23:45 PM

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

TVOC			PM <sub>10</sub>		
Max.	99	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	69	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

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

TVOC			PM <sub>10</sub>		
Max.	4	ppb	Max.	27	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	8	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.	54	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	9	ppb	Avg.	<1	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.	11	ug/m <sup>3</sup>
Avg.	<1	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.	115	ppb	Max.	12	ug/m <sup>3</sup>
Avg.	31	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.	<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

**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)  
06/05/2018 00:00 AM - 06/05/2018 23:45 PM

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

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

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

TVOC			PM <sub>10</sub>		
Max.	7	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	5	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.	27	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 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	14	ug/m <sup>3</sup>
Avg.	<1	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.	33	ppb	Max.	38	ug/m <sup>3</sup>
Avg.	20	ppb	Avg.	7	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.	<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

**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)  
6/06/2018 00:00 AM - 06/06/2018 23:45 PM

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

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

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

TVOC			PM <sub>10</sub>		
Max.	88	ppb	Max.	12	ug/m <sup>3</sup>
Avg.	3	ppb	Avg.	5	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.	27	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	4	ppb	Avg.	<1	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.	2	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.	<1	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	<1	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.	26	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.	<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)  
06/07/2018 00:00 AM - 06/07/2018 23:45 PM

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

TVOC			PM <sub>10</sub>		
Max.	66	ppb	Max.	6	ug/m <sup>3</sup>
Avg.	20	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.	24	ppb	Max.	15	ug/m <sup>3</sup>
Avg.	6	ppb	Avg.	6	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.	27	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	11	ppb	Avg.	<1	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.	2	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.	<1	ppb	Max.	8	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	2	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.	<1	ppb	Max.	10	ug/m <sup>3</sup>
Avg.	<1	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.	<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)  
06/08/2018 00:00 AM - 06/08/2018 14:00 PM

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

TVOC			PM <sub>10</sub>		
Max.	71	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	27	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

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

TVOC			PM <sub>10</sub>		
Max.	24	ppb	Max.	14	ug/m <sup>3</sup>
Avg.	4	ppb	Avg.	10	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.	27	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	8	ppb	Avg.	<1	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.	<1	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.	<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

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

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	11	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	9	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

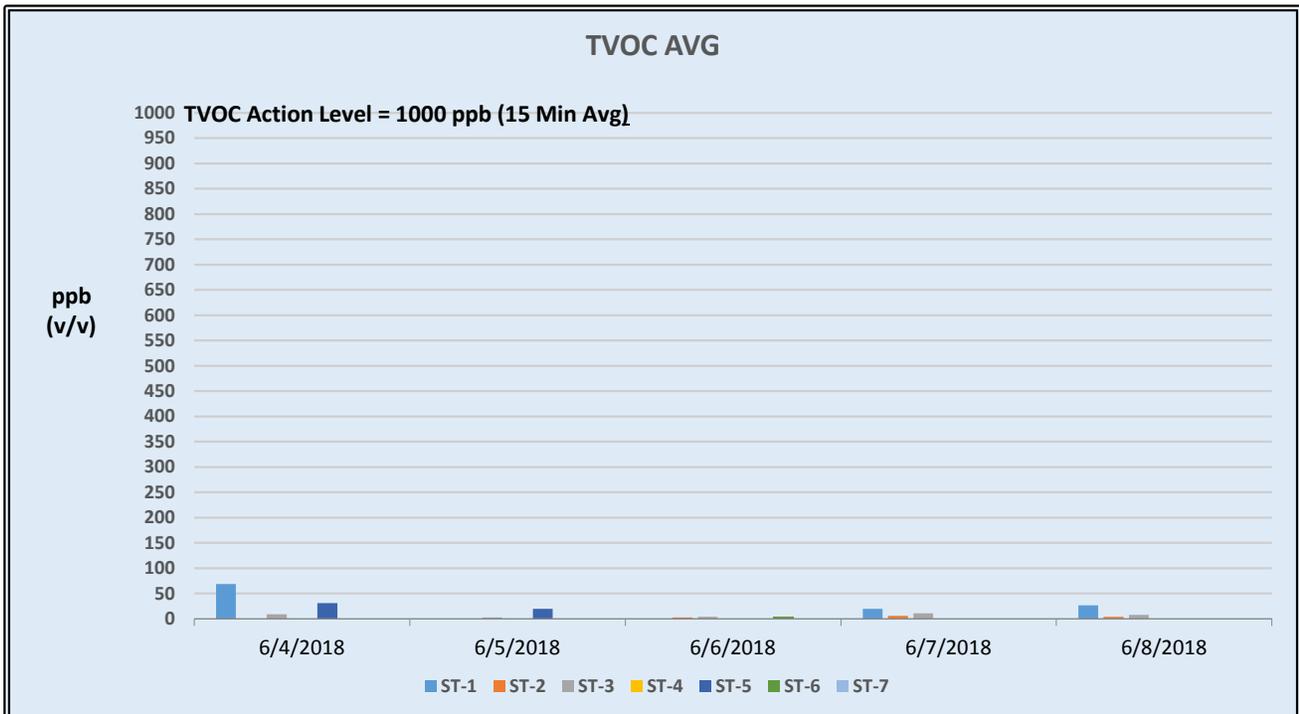
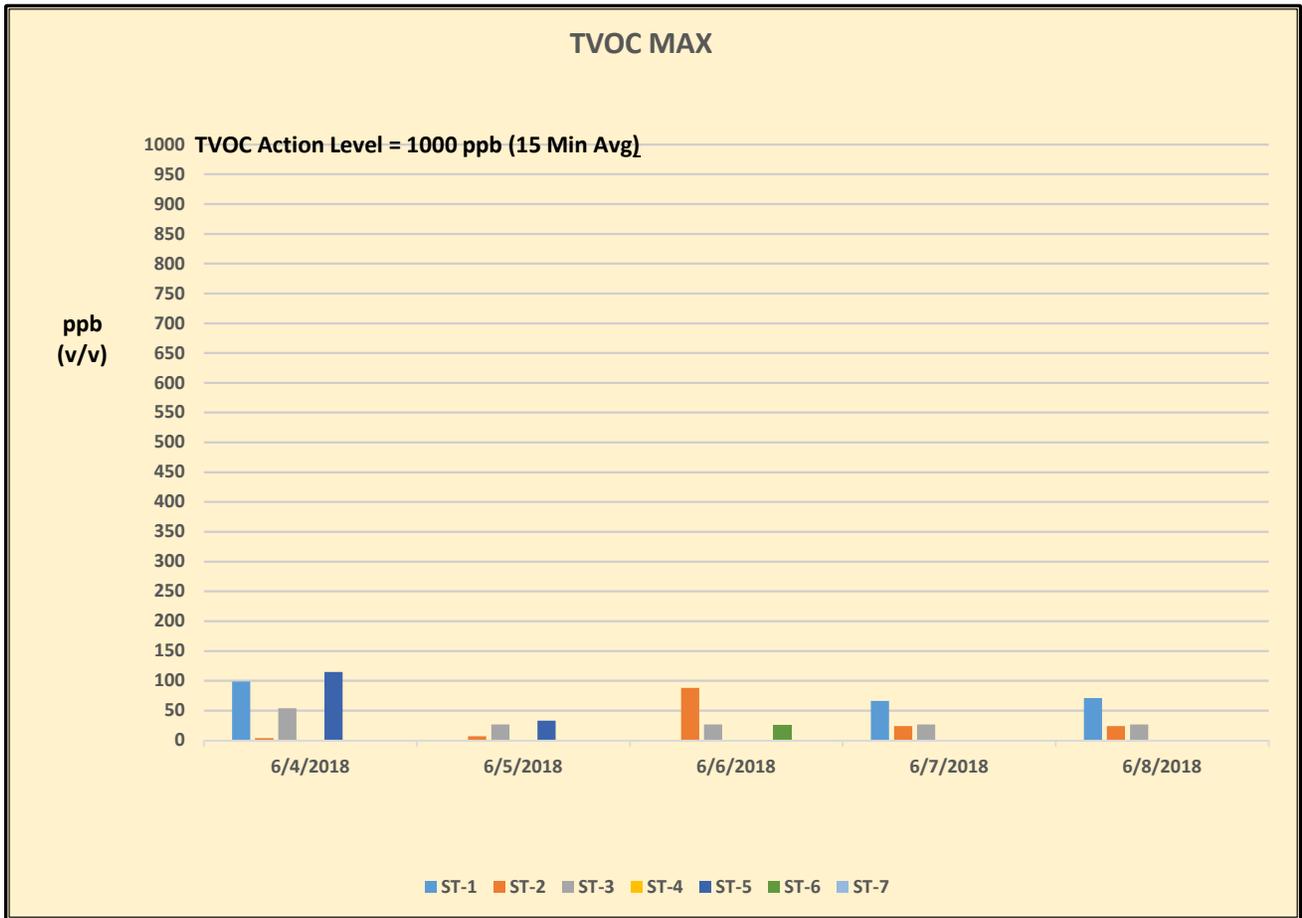
PM<sub>10</sub> – Particulates as PM<sub>10</sub>

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

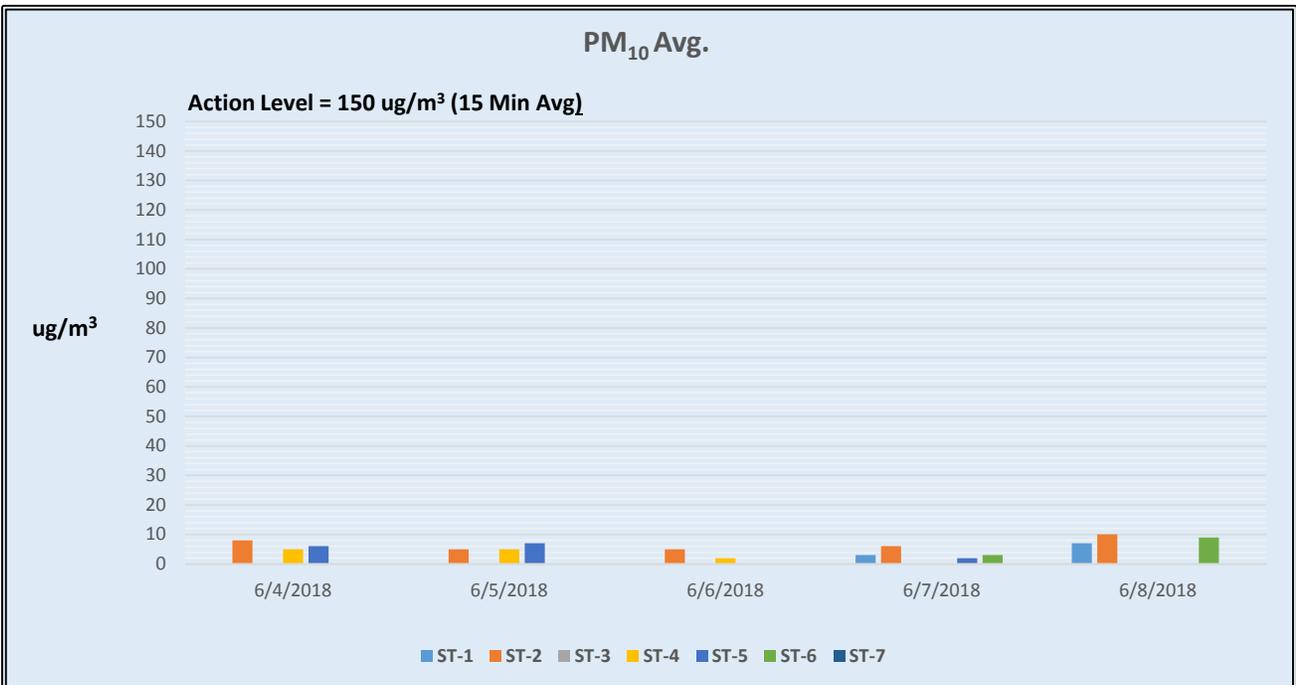
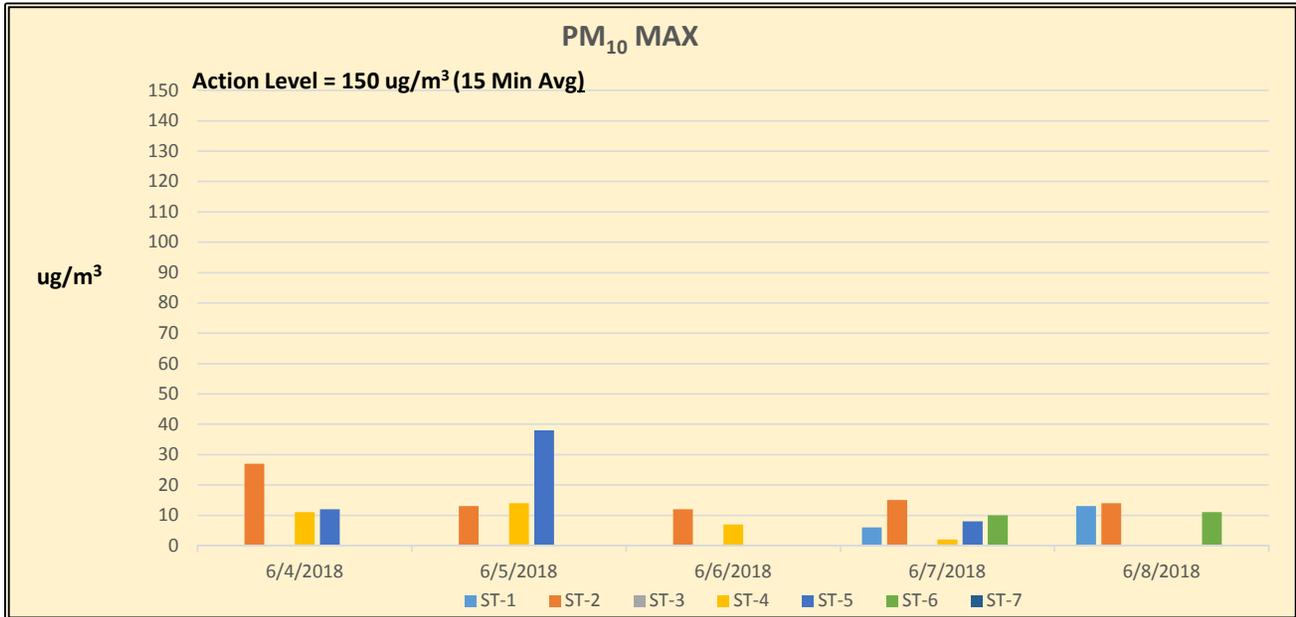
Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

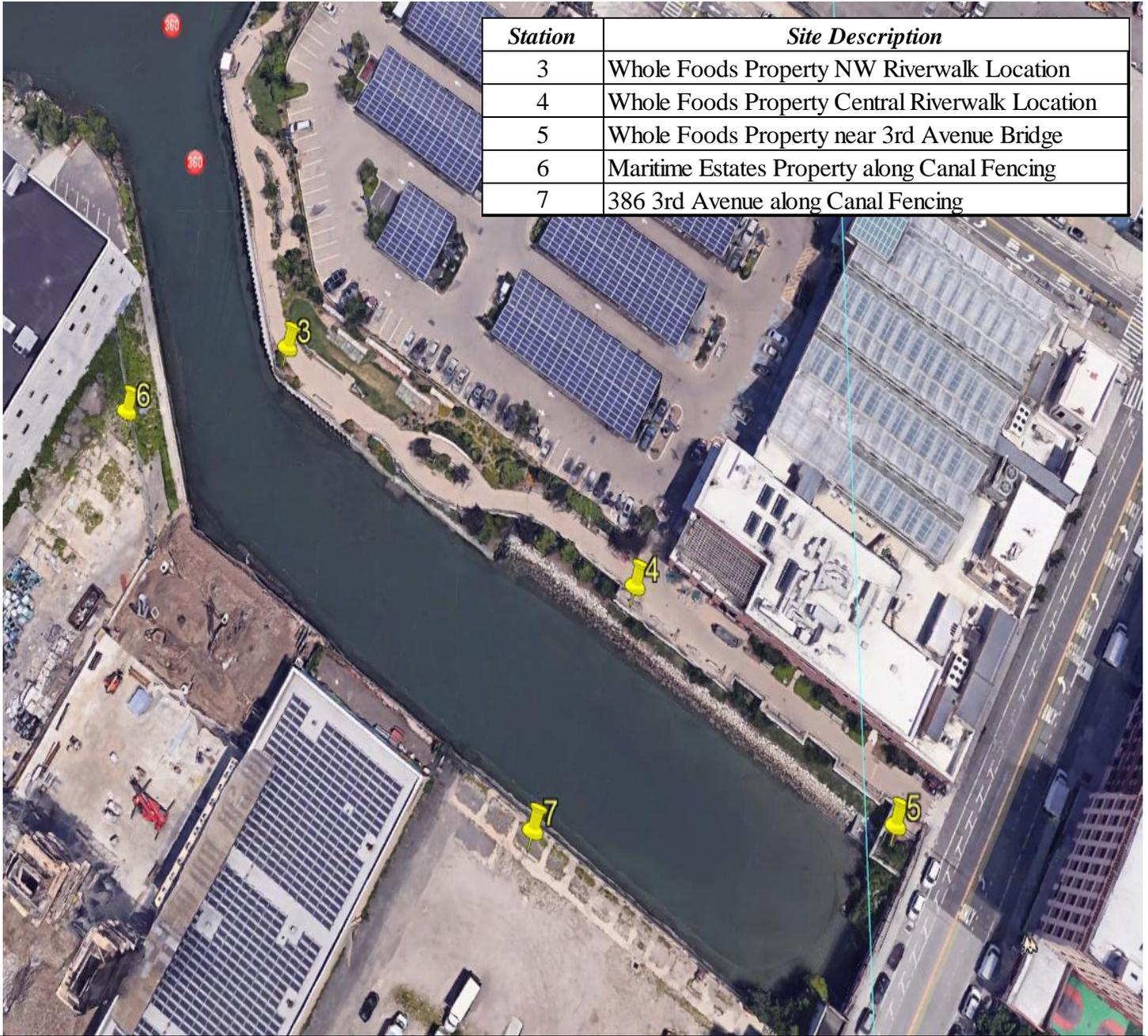
Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

**Figure 1**  
**Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program**  
**TVOC Monitoring Data - Week 35**



**Figure 2**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**TRC CAMP PM<sub>10</sub> Monitoring Data - Week 35**





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

**Table 1**

**Week 35**

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

June 4 <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	8:00	<50	<3	<1.0
	14:10	<50	<3	<1.0
ST-2	8:10	<50	<3	<1.0
	14:15	<50	<3	<1.0
ST-3	8:30	<50	<3	<1.0
	14:40	<50	<3	<1.0
ST-4	8:40	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-5	8:50	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-6	9:15	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-7	9:30	<50	<3	<1.0
	15:20	<50	<3	<1.0

June 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	7:30	<50	<3	<1.0
	13:30	<50	<3	<1.0
ST-2	7:35	<50	<3	<1.0
	13:35	<50	<3	<1.0
ST-3	7:45	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-4	7:50	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-5	7:55	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-6	8:10	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-7	8:25	<50	<3	<1.0
	15:25	<50	<3	<1.0

**Table 1**

**Week 35**

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

June 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	8:10	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-2	8:15	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-3	8:25	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-4	8:30	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	8:35	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-6	8:50	<50	<3	<1.0
	15:45	<50	<3	<1.0
ST-7	9:00	<50	<3	<1.0
	16:00	<50	<3	<1.0

June 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	7:30	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-2	7:35	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-3	7:50	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-4	7:55	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	8:00	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-6	8:15	<50	<3	<1.0
	15:35	<50	<3	<1.0
ST-7	8:30	<50	<3	<1.0
	15:45	<50	<3	<1.0

Table 1

Week 35

Summary of Additional Periodic (Daily) Monitoring Data

June 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	6:30	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-2	6:35	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-3	6:50	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-4	6:55	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	7:00	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-6	7:15	<50	<3	<1.0
	15:50	<50	<3	<1.0
ST-7	7:30	<50	<3	<1.0
	16:00	<50	<3	<1.0

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

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



**Gowanus Canal Superfund Site  
TB-4 Dredging and Capping Pilot Study  
Brooklyn, New York  
Meteorological Summary  
June 4<sup>th</sup> through June 8<sup>th</sup>, 2018**

June 4 <sup>th</sup> , 2018 *		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SE	3.27	71.1

June 5 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
W	2.13	72.1

June 6 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
ESE	3.60	63.9

June 7 <sup>th</sup> 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
ESE	4.05	63.2

June 8 <sup>th</sup> 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
S	1.31	65.5

\* 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 16:00.

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





WI #15-081

**MEMORANDUM**

June 11, 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, 4 June – 8 June, 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.

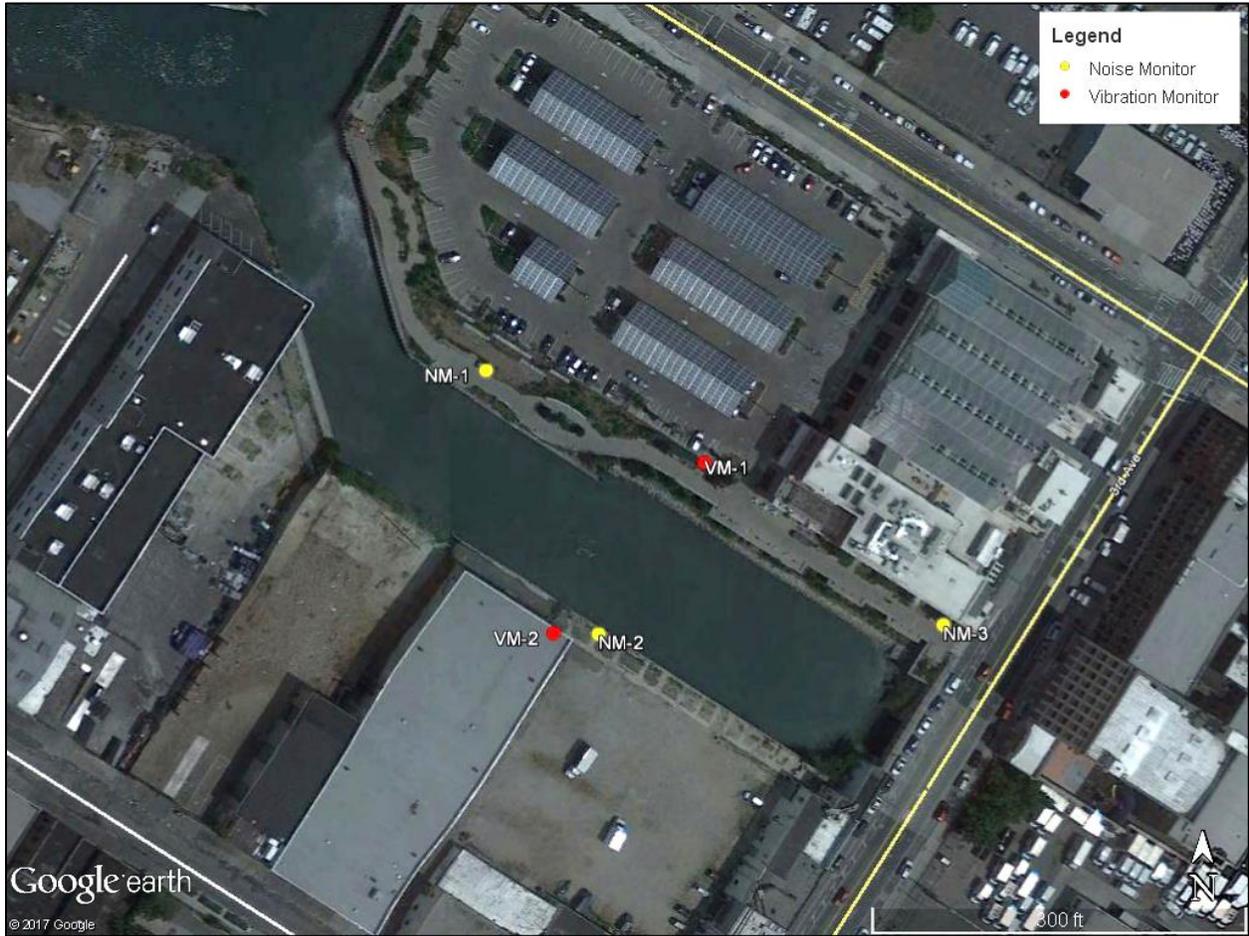
**Noise Monitoring Results**

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.



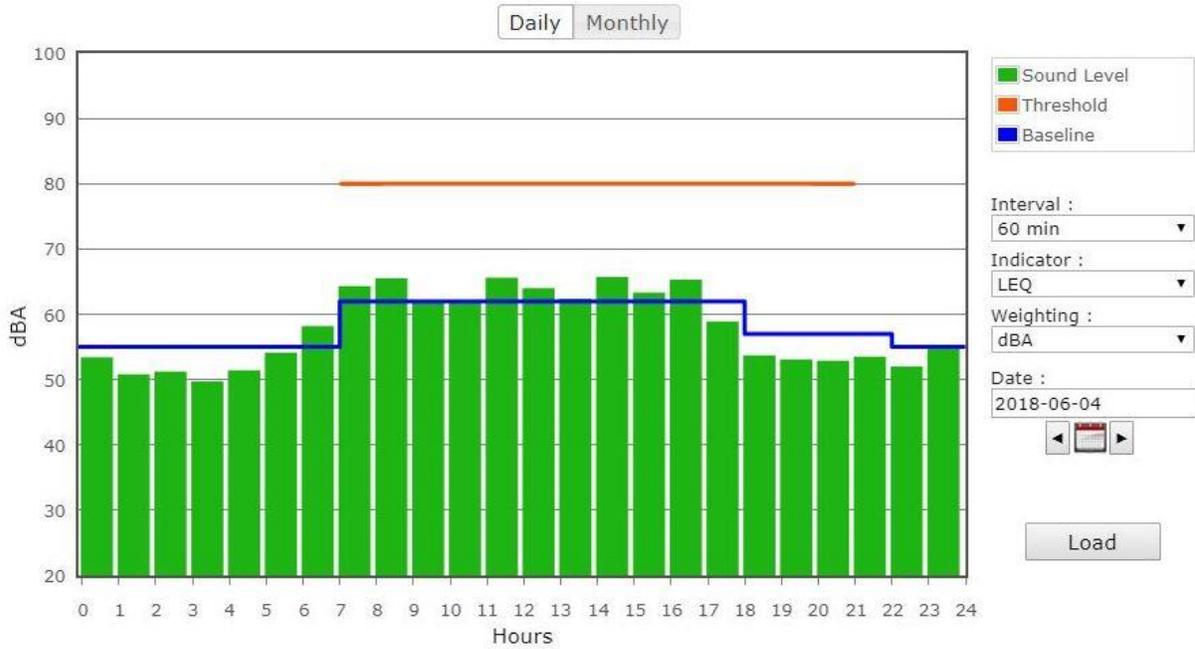
**Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study**



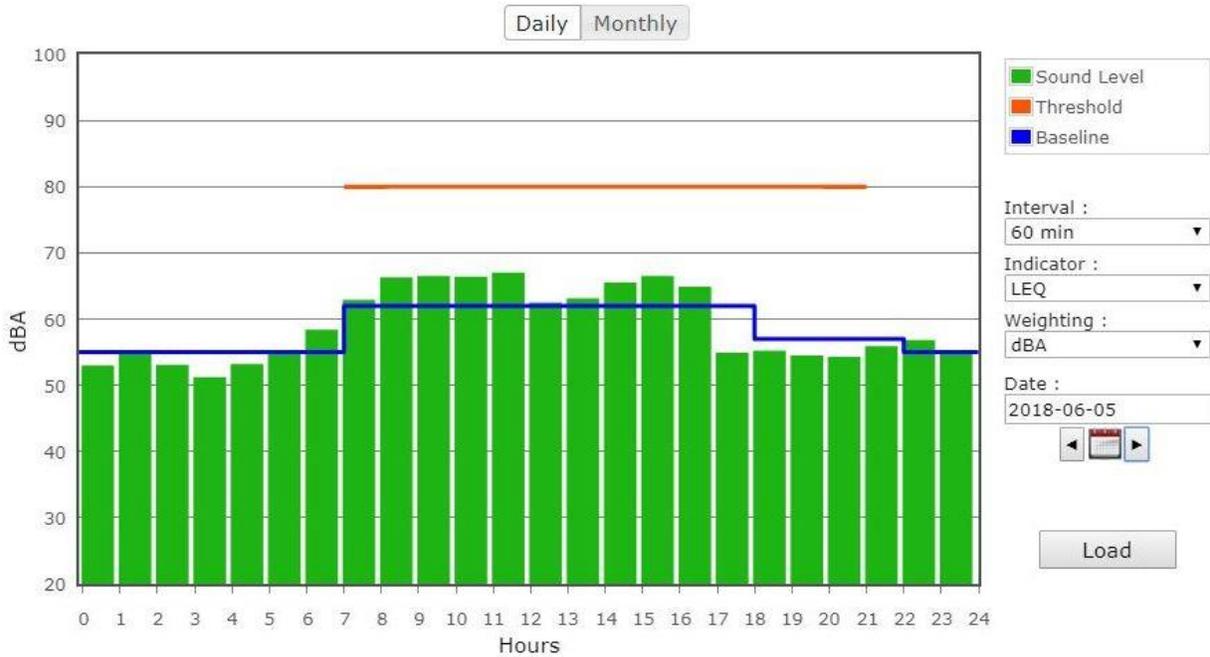
**Photo 1: Noise Monitoring Location NM-1  
(26 September 2017)**



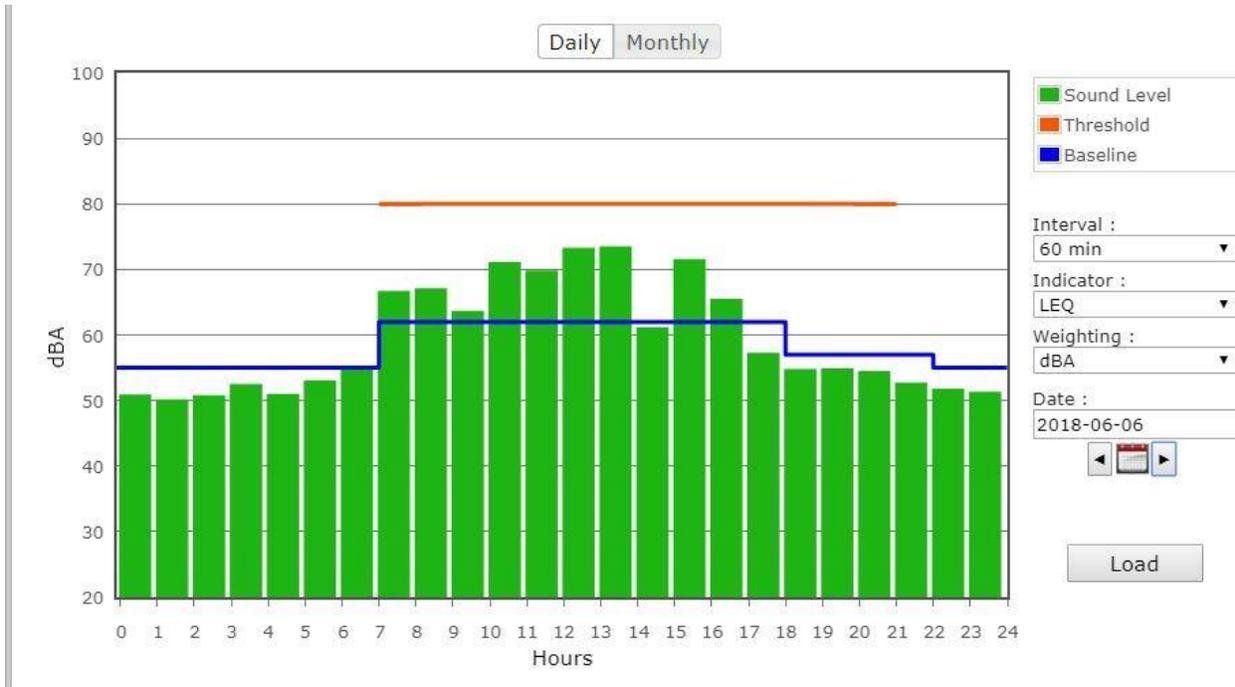
**Photo 2: Noise Monitoring Location NM-2  
(25 September 2017)**



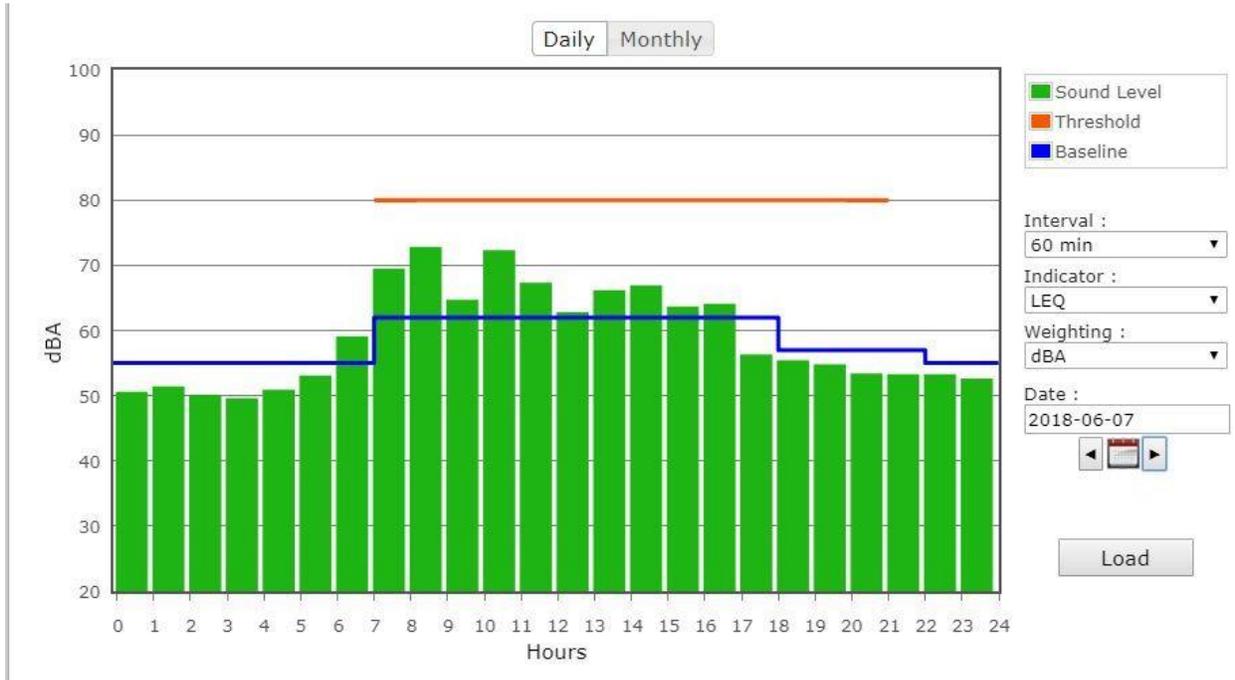
**Figure 2: North Monitor NM-1 on Monday**



**Figure 3: North Monitor NM-1 on Tuesday**



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



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

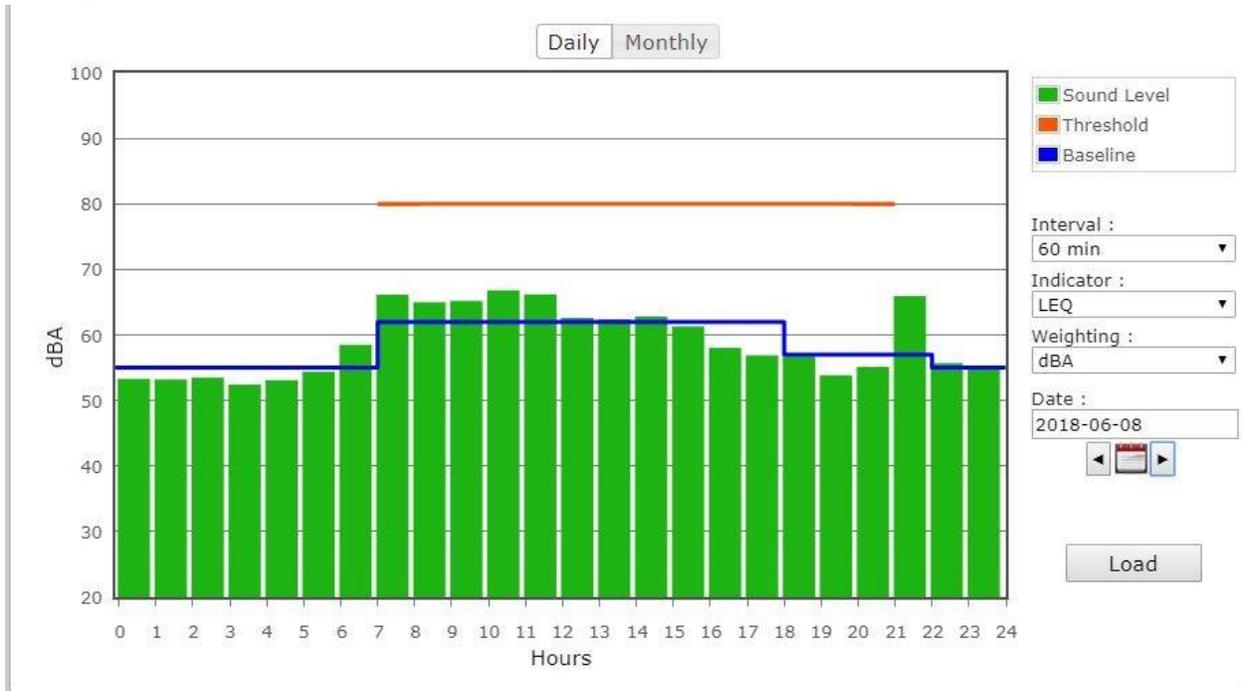


Figure 6: North Monitor NM-1 on Friday

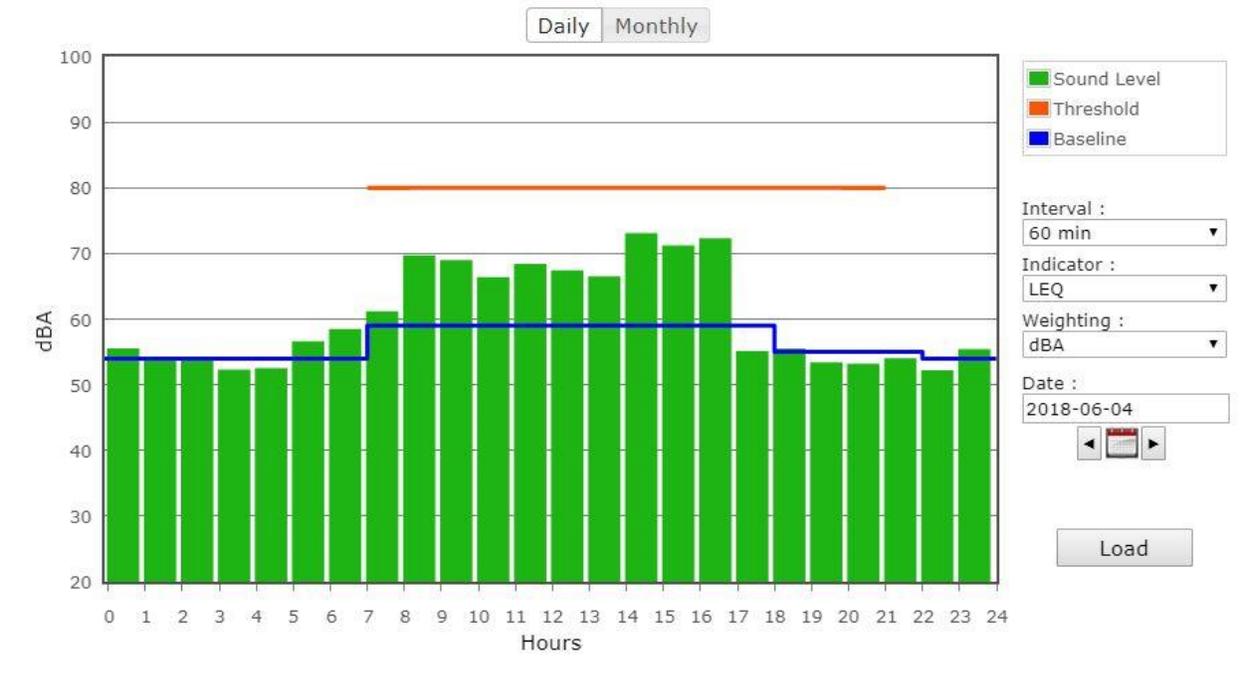
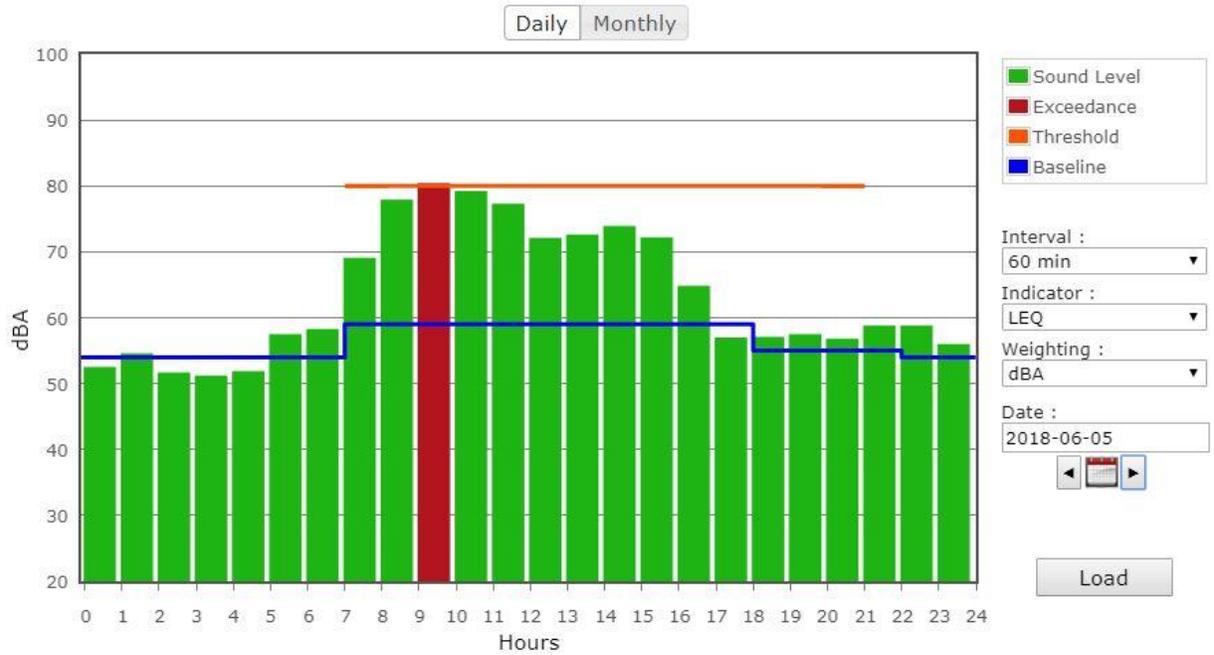
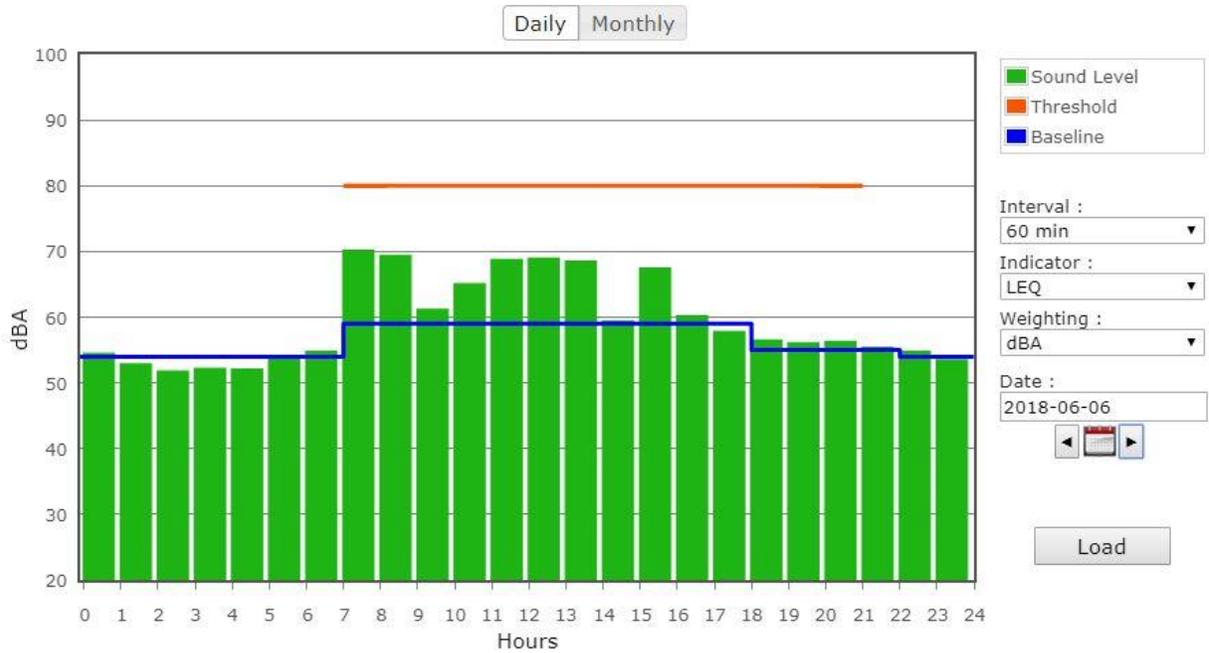


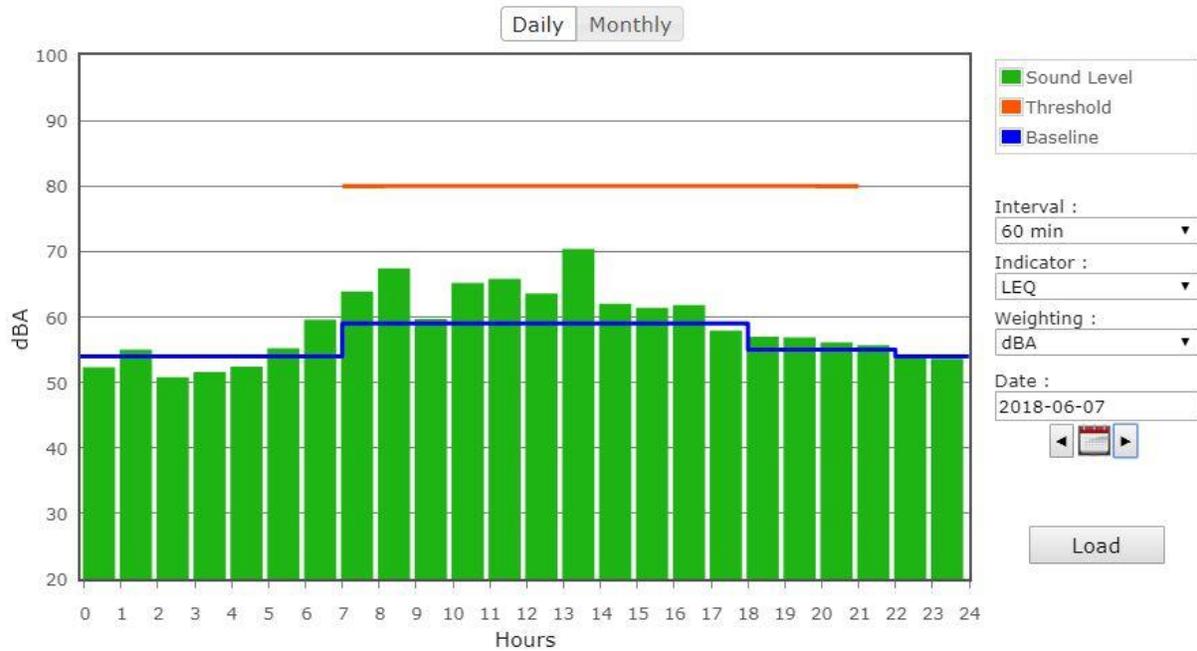
Figure 7: South Monitor NM-2 on Monday



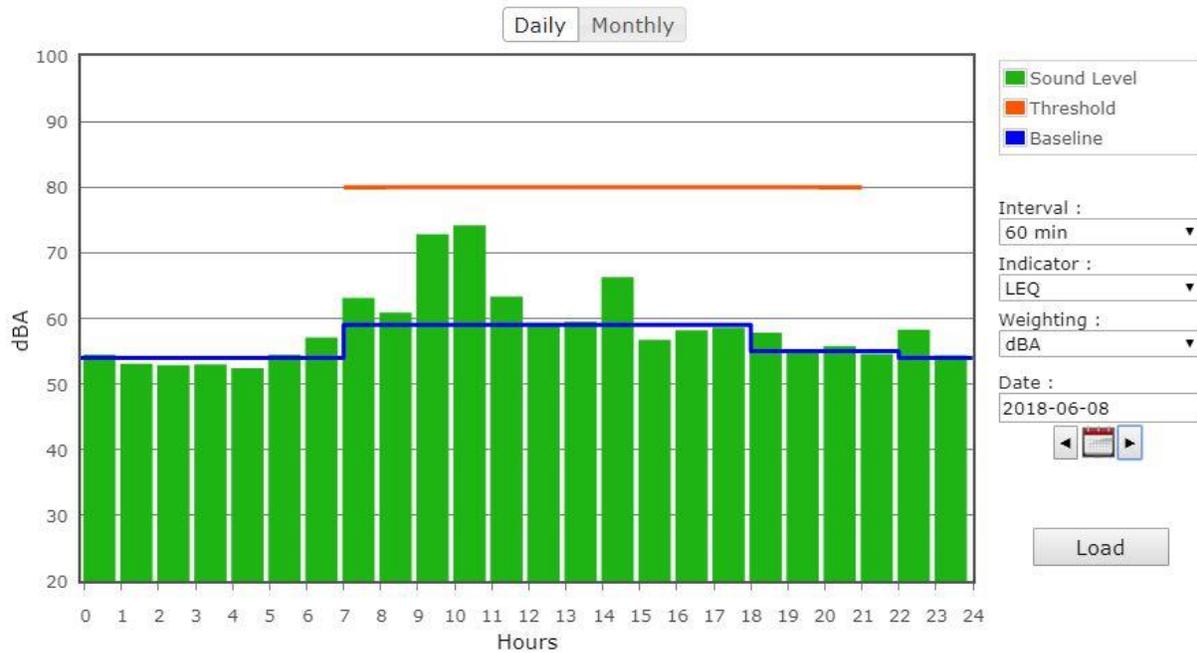
**Figure 8: South Monitor NM-2 on Tuesday**



**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**





ARCHAEOLOGY & HISTORIC RESOURCE SERVICES

## Cultural Resource Consultants

### ARCHAEOLOGY MONITORING REPORT

PROJECT	DATES	PROJECT LOCATION	AHRS PERSONNEL IN FIELD
Turning Basin 4 Pilot Capping and Dredging	6/4 to 6/8/18	TB4/Citizens Site & Clean Earth – Claremont	Jonathan Bream & Rosita Tirado

#### Week Overview

AHRS is conducting Level 1 archaeological monitoring in coordination with soft sediment dredging and Level 2 monitoring in coordination with native alluvium dredging in TB4.

For Level 1 monitoring, AHRS archaeologist K. French reviewed photographs of artifacts of large debris staged at Citizens Site and photographs of screened debris from Clean Earth. Clean Earth did not request an in-person site visit this week.

For Level 2 monitoring, AHRS archaeologists J. Bream or Rosita Tirado were on site to monitor screening of dredged material at the Citizens site, but no material was dredged/screened due to equipment delays.

#### Monday, June 4

J. Bream attended the EPA community event Monday, June 4 at 2:30 PM at Citizens Site. No photos posted from Clean Earth or Citizens Site.

#### Tuesday, June 5

No photos posted from Clean Earth or Citizens Site.

#### Wednesday, June 6

Jonathan Bream arrived at Citizens Site Wednesday morning for Level 2 monitoring and was informed the start of screening was postponed to Friday. He left site before the 7 am meeting. No photos posted from Clean Earth or Citizens Site.

#### Thursday, June 7

No photos posted from Clean Earth or Citizens Site.

#### Friday, June 8

Rosita Tirado was on site for the start of Level 2 dredging. Due to delays setting up the screen, no Level 2 material was dredged or screened that day. No photos posted from Citizens.

#### NEXT WEEK

Level 2 monitoring of native alluvium is scheduled to begin Monday, 6/11. Screening will take place at the Citizens site. Jonathan is tentatively scheduled back at Clean Earth June 15 for additional Level 1 monitoring. Will continue to review Level 1 photographs as posted by Clean Earth. Citizens Site will have archaeologist on site to review debris.

**WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA  
(LABORATORY RESULTS FROM 05/10 AND 05/17/18 SAMPLING EVENTS)**



**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - WEEKLY**

Analyte	Analytical Results			
	5/10/18 Result	Qualifier	Discharge Limit	Units
pH	7.51	--	Monitor	s.u.
Biological Oxygen Demand	11		20	mg/l
Dissolved oxygen	5.23	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	3.2		20	mg/l
Copper	ND	U	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	0.06	J	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

NA = not applicable

s.u. = standard units

J-qualifier means the result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U-qualifier indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - WEEKLY**

Analyte	Analytical Results			
	5/17/18 Result	Qualifier	Discharge Limit	Units
pH	7.52	--	Monitor	s.u.
Biological Oxygen Demand	5.9		20	mg/l
Dissolved oxygen	6.15	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	2.3		20	mg/l
Copper	ND	U	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

NA = not applicable

s.u. = standard units

U-qualifier indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

**CUMULATIVE DREDGED MATERIAL CHART**



Gowanus Canal TB4 Pilot Study  
Cumulative Material Dredged  
Weekly Report Update

