

**WEEKLY PROGRESS REPORT – TRC SOLUTIONS**

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

**Project number: 283126**

**Period: June 25 to 29, 2018**

**Date of Report: July 10, 2018**

**Rev: 0**

**Prepared For: Gowanus Environmental Remediation Trust**



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

*Sevenson Environmental Services (SES)*

Phase II Dredging:

- Approximately 850 cubic yards of native alluvial sediment dredged:
  - Remove sediment within targeted native alluvial removal area (TNARA) #3 slots 5 and 6 to design grade and backfill with low permeability following acceptance of pole survey
  - Remove sediment within TNARA #3 slot 7

Water Treatment and Monitoring

- No discharge of treated water during the week. Discharge temporarily suspended due to elevated biological oxygen demand concentrations in effluent. Treatment facilities to be cleaned and treated water to be sampled prior to further discharge.

Turbidity Monitoring

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

Debris Screening Activities

- Level 2 debris screening performed by AHRS at Citizens Site.

Sediment Stabilization Activities

- Placed and mixed 24 tons of Portland cement in 2,225 cubic yard hopper Weeks 80 scow.
- Clean Earth Claremont stabilized 495 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 20 tons of stabilized material were disposed off-site as daily cover. An approximate total of 13,173 tons of Phase I stabilized material has been shipped to Waste Management Fairless Hills.

Capping Activities

- Produce low permeability backfill.
- Mobilize equipment and materials for hydraulic capping.

*Quality Assurance and Control – Geosyntec*

- Oversee geotechnical boring at 386 3<sup>rd</sup> Avenue to facilitate permanent shoring design.
- No exceedance of the turbidity trigger or action criteria.
- Measurements for 6/25/18:
  - Daily average for ambient buoy – 2.1 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 – 15.3 NTU at 1130.
- Measurements for 6/26/18:
  - Daily average for ambient buoy – 2.8 NTU
  - Daily average for sentinel buoy – 9.9 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 114.8 NTU at 0730.



- Measurements for 6/27/18:
  - Daily average for ambient buoy – 2.9 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 – 33.7 NTU at 0830.
- Measurements for 6/28/18:
  - Daily average for ambient buoy – 2.5 NTU
  - Daily average for sentinel buoy – 5.7 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 9.7 NTU at 1230.
- Measurements for 6/29/18:
  - Daily average for ambient buoy – 2.3 NTU
  - Daily average for sentinel buoy – 6.6 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 27.1 NTU at 1530.

*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 – 15 µg/m<sup>3</sup> recorded on 06/28 and 06/29/18
  - Station 2 – 15 µg/m<sup>3</sup> recorded on 06/27/18
  - Station 3 – 20 µg/m<sup>3</sup> recorded on 06/28 and 06/29/18
  - Station 4 – 21 µg/m<sup>3</sup> recorded on 06/26/18
  - Station 5 – 34 µg/m<sup>3</sup> recorded on 06/26/18
  - Station 6 – <1 µg/m<sup>3</sup> recorded throughout the week
  - 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 06/26/18
  - Station 2 – 27 ppb recorded on 06/25/18
  - Station 3 – 57 ppb recorded on 06/27/18
  - Station 4 – <1 ppb recorded throughout the week
  - Station 5 – 90 ppb recorded on 06/25/18
  - Station 6 – <1 ppb recorded throughout the week
  - Station 7 – 11 ppb recorded on 06/26/18
- All real-time readings of formaldehyde, hydrogen sulfide, or ammonia less than instrument reporting limit.
- 23-hour samples collected at ST-4 on 06/25 through 06/26 and ST-5 on 06/27 through 06/28. 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).



- No exceedance of the hourly Leq noise limit of 80 dBA.
- Greatest hourly Leq noise measurements
  - Northern monitor (NM-1) – 66.7 dBA during 0800-0900 on 06/26 and 1200-1300 on 06/27/18
  - Southern monitor (NM-2) – 79.8 dBA during 1000-1100 on 06/25/18

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

- Perform Level 2 monitoring of native alluvium at Citizens Site. Metal and wood segregated with screen. No potentially significant archaeological debris identified.
- Conduct site inspection of segregated materials at Clean Earth Claremont. Metal objects relating to the industries flanking TB4, stamped brick, wooden barrel heads, and two rubber tires on metal spoked rims were identified as requiring additional cleaning, recording, and measuring, along with possible coordination with SHPO and EPA.
- Review photographs of screened debris from Clean Earth Claremont.

**Two-Week Look Ahead:**

Sevenson:

- Complete Phase I dredging as necessary based on evaluation of sampling conducted on 06/08.
- Continue and complete Phase II dredging and placement of backfilling.
- 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.
- Mobilize and assemble equipment and materials in preparation of capping activities.

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.
- Perform Level 2 monitoring of native alluvium at Citizens Site.

**Key Milestones**

- No 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 (no activities during week)
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> 06-25-2018
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**Description**  
Empty scow being delivered to TB-4, crossing the air curtain.



<b>Photo No.</b> 002	<b>Date</b> 06-25-2018
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**Description**  
Loaded excavator bucket with material from the TNARA excavation 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> 003	<b>Date</b> 06-26-2018
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**Description**  
Cribbing supports installed to date.



<b>Photo No.</b> 004	<b>Date</b> 06-26-2018
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**Description**  
Unloading drill rig on site for geotechnical investigation at 386 3<sup>rd</sup> Avenue.



<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> 06-27-2018
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**Description**  
Filling the scow with excavated material from slot #6.



<b>Photo No.</b> 006	<b>Date</b> 06-27-2018
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**Description**  
Pole surveying the excavated area prior to backfilling.



<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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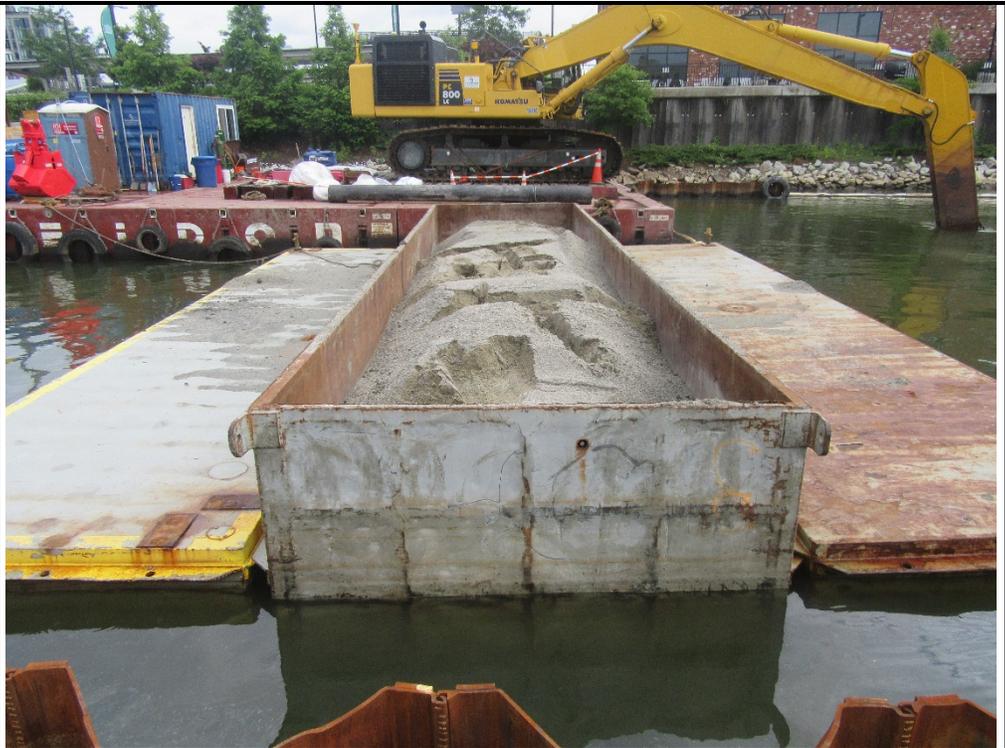
<b>Photo No.</b> 007	<b>Date</b> 06-28-2018
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**Description**  
Stacking sand onto the stockpile with the rubber tired loader.



<b>Photo No.</b> 008	<b>Date</b> 06-28-2018
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**Description**  
Load of low permeability backfill delivered to TB-4 for backfill slots #5 and #6.



<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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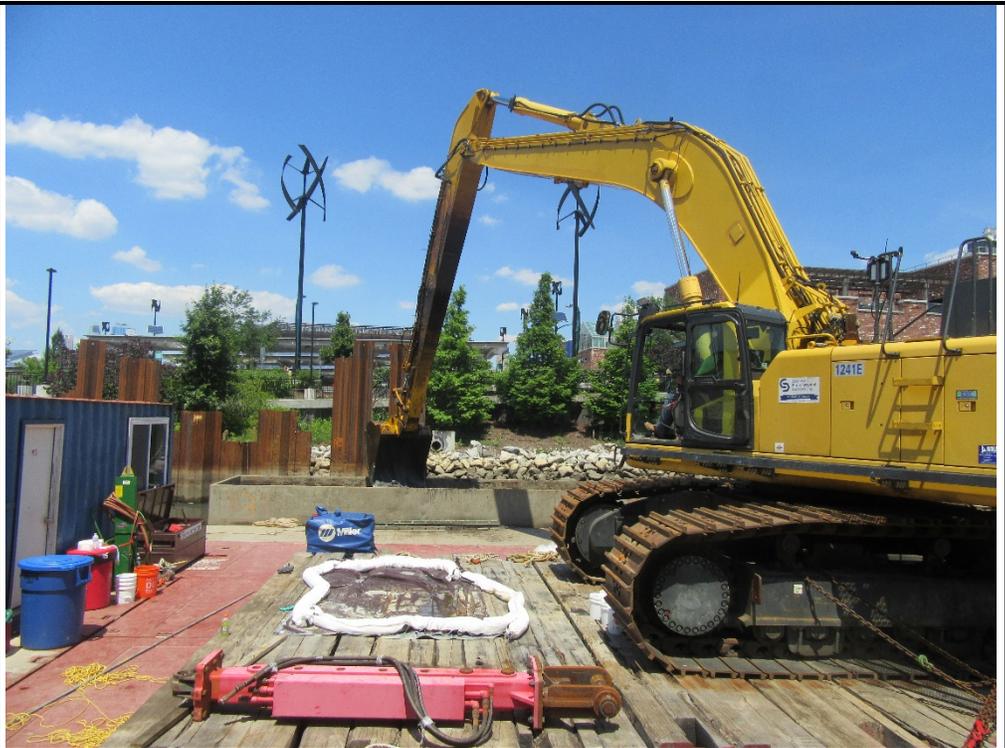
<b>Photo No.</b> 009	<b>Date</b> 06-29-2018
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**Description**  
 Surveying slots #5 and 6 to ensure low permeability backfill has been placed to design elevations.



<b>Photo No.</b> 010	<b>Date</b> 06-29-2018
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**Description**  
 Loading scow with excavated sediment from slot #7.



**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 25<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.

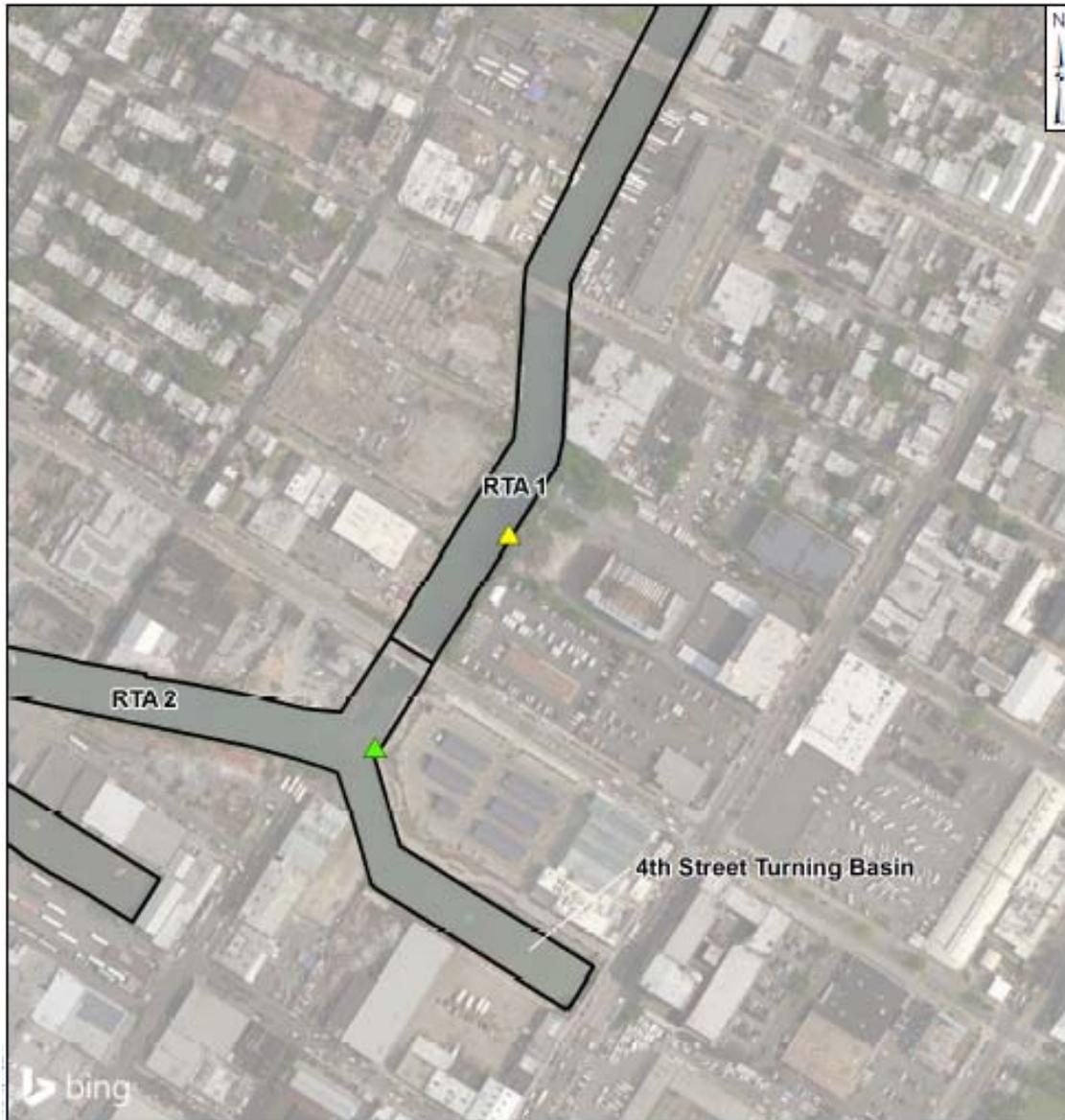
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Project Number HPH106A (52)

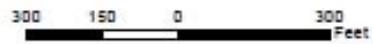
## **1. SCOPE OF MONITORING**

The following report summarizes water quality monitoring data collected during the week of June 25<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 25<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 25<sup>th</sup> to June 29<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. Spikes in turbidity of 116.4 NTU at 07:30 on June 26<sup>th</sup>, 33.4 NTU at 08:30 on June 27<sup>th</sup>, and of 30.9 NTU at 15:30 on June 29<sup>th</sup> were observed at the sentinel buoy. Buoys were serviced previously to address to the negative values the buoys recorded, but there continue to be negative values. 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 25<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)
6/25/2018 7:00	0.6	1.4	Y	6/25/2018 12:15	1.1	7.1	Y
6/25/2018 7:15	0.6	1.5	Y	6/25/2018 12:30	1.9	6.3	Y
6/25/2018 7:30	0.8	1.6	Y	6/25/2018 12:45	2.3	5.9	Y
6/25/2018 7:45	0.3	2.1	Y	6/25/2018 13:00	2.4	5.6	Y
6/25/2018 8:00	1.5	5.5	Y	6/25/2018 13:15	3.1	8.6	Y
6/25/2018 8:15	3.1	5.6	Y	6/25/2018 13:30	2.3	7.9	Y
6/25/2018 8:30	3.4	6.2	Y	6/25/2018 13:45	2.7	6.8	Y
6/25/2018 8:45	2.6	4.6	Y	6/25/2018 14:00	3.0	12.6	Y
6/25/2018 9:00	3.5	6.0	Y	6/25/2018 14:15	2.7	11.8	Y
6/25/2018 9:15	5.9	5.3	N	6/25/2018 14:30	4.1	7.2	Y
6/25/2018 9:30	5.4	6.6	Y	6/25/2018 14:45	1.0	4.7	Y
6/25/2018 9:45	3.9	7.2	Y	6/25/2018 15:00	1.9	3.6	Y
6/25/2018 10:00	4.5	6.5	Y	6/25/2018 15:15	1.7	3.5	Y
6/25/2018 10:15	2.8	7.0	Y	6/25/2018 15:30	0.8	3.1	Y
6/25/2018 10:30	2.5	8.2	Y	6/25/2018 15:45	0.8	2.5	Y
6/25/2018 10:45	1.6	7.5	Y	6/25/2018 16:00	1.2	2.7	Y
6/25/2018 11:00	1.8	7.9	Y	6/25/2018 16:15	0.1	3.5	Y
6/25/2018 11:15	1.1	6.8	Y	6/25/2018 16:30	0.3	2.5	Y
6/25/2018 11:30	1.5	16.8	Y	6/25/2018 16:45	0.6	2.9	Y
6/25/2018 11:45	2.2	8.2	Y	6/25/2018 17:00	0.7	1.9	Y
6/25/2018 12:00	1.2	9.9	Y				

Average	2.1	5.9	Y
Maximum	5.9	16.8	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

## 2.2 Tuesday, June 26<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)
6/26/2018 7:00	1.1	1.2	Y	6/26/2018 12:15	2.0	9.7	Y
6/26/2018 7:15	0.3	1.1	Y	6/26/2018 12:30	1.9	12.7	Y
6/26/2018 7:30	1.6	116.4	Y	6/26/2018 12:45	1.7	12.6	Y
6/26/2018 7:45	0.4	1.7	Y	6/26/2018 13:00	2.0	15.2	Y
6/26/2018 8:00	0.2	1.7	Y	6/26/2018 13:15	1.7	9.3	Y
6/26/2018 8:15	4.1	5.8	Y	6/26/2018 13:30	2.6	10.7	Y
6/26/2018 8:30	0.9	3.5	Y	6/26/2018 13:45	2.9	7.7	Y
6/26/2018 8:45	2.1	3.4	Y	6/26/2018 14:00	2.5	8.9	Y
6/26/2018 9:00	1.2	3.8	Y	6/26/2018 14:15	4.0	8.2	Y
6/26/2018 9:15	1.8	3.3	Y	6/26/2018 14:30	3.9	10.7	Y
6/26/2018 9:30	3.6	4.7	Y	6/26/2018 14:45	3.3	9.4	Y
6/26/2018 9:45	5.8	4.2	N	6/26/2018 15:00	3.4	8.9	Y
6/26/2018 10:00	5.1	4.9	N	6/26/2018 15:15	3.2	8.2	Y
6/26/2018 10:15	8.8	6.3	N	6/26/2018 15:30	2.6	8.7	Y
6/26/2018 10:30	4.7	6.0	Y	6/26/2018 15:45	3.2	7.1	Y
6/26/2018 10:45	4.4	7.1	Y	6/26/2018 16:00	2.1	7.7	Y
6/26/2018 11:00	4.6	8.9	Y	6/26/2018 16:15	2.5	8.0	Y
6/26/2018 11:15	3.1	14.2	Y	6/26/2018 16:30	2.5	5.5	Y
6/26/2018 11:30	2.6	7.5	Y	6/26/2018 16:45	1.5	7.5	Y
6/26/2018 11:45	3.8	9.5	Y	6/26/2018 17:00	2.3	3.3	Y
6/26/2018 12:00	2.5	9.6	Y				

Average	2.8	9.9	Y
Maximum	8.8	116.4	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 27<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)
6/27/2018 7:00	-0.4	2.4	Y	6/27/2018 12:15	1.3	8.4	Y
6/27/2018 7:15	0.5	1.7	Y	6/27/2018 12:30	1.9	7.4	Y
6/27/2018 7:30	-0.2	2.0	Y	6/27/2018 12:45	1.6	4.9	Y
6/27/2018 7:45	0.6	2.3	Y	6/27/2018 13:00	1.6	5.9	Y
6/27/2018 8:00	0.5	1.6	Y	6/27/2018 13:15	2.1	8.4	Y
6/27/2018 8:15	0.8	1.4	Y	6/27/2018 13:30	2.7	7.2	Y
6/27/2018 8:30	-0.3	33.4	Y	6/27/2018 13:45	1.8	10.4	Y
6/27/2018 8:45	0.9	5.0	Y	6/27/2018 14:00	1.7	11.3	Y
6/27/2018 9:00	0.9	3.7	Y	6/27/2018 14:15	3.2	8.5	Y
6/27/2018 9:15	0.3	4.3	Y	6/27/2018 14:30	3.9	7.7	Y
6/27/2018 9:30	3.0	5.1	Y	6/27/2018 14:45	5.0	8.7	Y
6/27/2018 9:45	3.0	5.5	Y	6/27/2018 15:00	5.8	12.4	Y
6/27/2018 10:00	4.2	3.7	N	6/27/2018 15:15	5.1	8.2	Y
6/27/2018 10:15	5.1	6.8	Y	6/27/2018 15:30	3.7	8.7	Y
6/27/2018 10:30	13.0	7.1	N	6/27/2018 15:45	3.2	7.8	Y
6/27/2018 10:45	7.4	7.0	N	6/27/2018 16:00	4.2	7.9	Y
6/27/2018 11:00	6.2	7.8	Y	6/27/2018 16:15	3.1	9.3	Y
6/27/2018 11:15	3.7	8.1	Y	6/27/2018 16:30	2.7	8.2	Y
6/27/2018 11:30	3.8	8.9	Y	6/27/2018 16:45	3.7	8.4	Y
6/27/2018 11:45	4.0	9.0	Y	6/27/2018 17:00	2.7	8.1	Y
6/27/2018 12:00	2.1	8.4	Y				

Average	2.9	7.4	Y
Maximum	13.0	33.4	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 29<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)
6/29/2018 7:00	0.5	1.2	Y	6/29/2018 12:15	5.0	6.2	Y
6/29/2018 7:15	0.3	1.9	Y	6/29/2018 12:30	4.1	7.1	Y
6/29/2018 7:30	0.8	0.8	N	6/29/2018 12:45	16.3	11.5	N
6/29/2018 7:45	0.2	1.7	Y	6/29/2018 13:00	2.6	10.6	Y
6/29/2018 8:00	1.5	5.0	Y	6/29/2018 13:15	2.3	11.0	Y
6/29/2018 8:15	0.1	3.7	Y	6/29/2018 13:30	1.8	11.7	Y
6/29/2018 8:30	0.5	4.3	Y	6/29/2018 13:45	2.2	7.8	Y
6/29/2018 8:45	0.3	3.4	Y	6/29/2018 14:00	0.8	9.8	Y
6/29/2018 9:00	0.2	1.5	Y	6/29/2018 14:15	1.6	10.4	Y
6/29/2018 9:15	0.4	3.3	Y	6/29/2018 14:30	1.7	8.9	Y
6/29/2018 9:30	0.4	3.1	Y	6/29/2018 14:45	1.0	6.4	Y
6/29/2018 9:45	2.6	2.4	N	6/29/2018 15:00	1.6	6.2	Y
6/29/2018 10:00	0.7	2.9	Y	6/29/2018 15:15	2.1	14.3	Y
6/29/2018 10:15	0.3	4.3	Y	6/29/2018 15:30	3.8	30.9	Y
6/29/2018 10:30	1.3	3.3	Y	6/29/2018 15:45	3.8	16.6	Y
6/29/2018 10:45	1.5	3.7	Y	6/29/2018 16:00	3.7	7.0	Y
6/29/2018 11:00	2.1	5.2	Y	6/29/2018 16:15	3.5	3.9	Y
6/29/2018 11:15	2.9	7.0	Y	6/29/2018 16:30	2.3	4.6	Y
6/29/2018 11:30	2.7	6.0	Y	6/29/2018 16:45	3.4	4.4	Y
6/29/2018 11:45	2.9	5.6	Y	6/29/2018 17:00	1.8	3.6	Y
6/29/2018 12:00	5.4	7.4	Y				

Average	2.3	6.6	Y
Maximum	16.3	30.9	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

No handheld measurements were collected for this reporting period.

### 4. SUMMARY OF VISUAL OBSERVATIONS

During the start of Phase II dredging with the excavator bucket an increased occurrence of sheen was observed. This sheen was localized in the area of dredging 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.

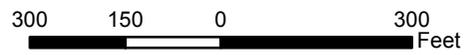
# FIGURES



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

**Figure**

**1**

Ewing, NJ

October 2017

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

June 25<sup>th</sup>, through June 29<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 38 Monitoring Period June 25<sup>th</sup> through June 29<sup>th</sup>, 2018**

The following report summarizes site air monitoring activities for the Week 38 monitoring period from June 25<sup>th</sup> through June 29<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 38 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 38 monitoring period twice daily\*. The results of these measurements are shown in Table 1.

During the Week 38 monitoring period of June 25<sup>th</sup> through June 29<sup>th</sup>, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 4 and 5. The ST-4 sample was collected on June 25<sup>th</sup>, through June 26<sup>th</sup>, 2018 and the ST-5 sample was collected on June 27<sup>th</sup>, through June 28<sup>th</sup>, 2018. Both samples were collected

---

\* Unless otherwise noted in Table 1

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 25<sup>th</sup> through June 29<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
- Transfer dredged material to larger scow for shipment to Clean Earth Claremont
- Produce low permeability backfill by mixing sand and bentonite

Site activities which were conducted at the 4<sup>th</sup> St Turning Basin Area of the Canal on June 25<sup>th</sup> through June 29<sup>th</sup>, 2018 include the following:

- Approximately 774 cubic yards of native alluvial sediment dredged
- Remove material in targeted native alluvial removal area #4 slots 2, 3, and 4
- Place low permeability backfill following hydrographic and pole surveys in area #4 slots 2, 3, and 4

**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)  
06/25/2018 06:30 AM - 06/25/2018 23:45 PM

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

TVOC			PM <sub>10</sub>		
Max.	98	ppb	Max.	5	ug/m <sup>3</sup>
Avg.	38	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.	27	ppb	Max.	5	ug/m <sup>3</sup>
Avg.	4	ppb	Avg.	1	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.	17	ug/m <sup>3</sup>
Avg.	7	ppb	Avg.	8	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.	9	ug/m <sup>3</sup>
Avg.	<1	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.	90	ppb	Max.	4	ug/m <sup>3</sup>
Avg.	34	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.	<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)  
06/26/2018 00:00 AM - 06/26/2018 23:45 PM

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

TVOC			PM <sub>10</sub>		
Max.	99	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 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	20	ppb	Max.	14	ug/m <sup>3</sup>
Avg.	3	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.	2	ppb	Max.	14	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	11	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.	21	ug/m <sup>3</sup>
Avg.	<1	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.	59	ppb	Max.	34	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.	11	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>)

**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)  
6/27/2018 00:00 AM - 06/27/2018 23:45 PM

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

TVOC			PM <sub>10</sub>		
Max.	34	ppb	Max.	11	ug/m <sup>3</sup>
Avg.	26	ppb	Avg.	5	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.	15	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.	57	ppb	Max.	14	ug/m <sup>3</sup>
Avg.	17	ppb	Avg.	6	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.	8	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.	80	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	20	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.	<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)  
06/28/2018 00:00 AM - 06/28/2018 23:45 PM

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

TVOC			PM <sub>10</sub>		
Max.	92	ppb	Max.	15	ug/m <sup>3</sup>
Avg.	35	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.	23	ppb	Max.	14	ug/m <sup>3</sup>
Avg.	2	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.	<1	ppb	Max.	20	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	11	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.	12	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	4	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.	<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)  
06/29/2018 00:00 AM - 06/29/2018 16:00 PM

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

TVOC			PM <sub>10</sub>		
Max.	92	ppb	Max.	15	ug/m <sup>3</sup>
Avg.	26	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.	23	ppb	Max.	14	ug/m <sup>3</sup>
Avg.	3	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.	<1	ppb	Max.	20	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	13	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.	12	ug/m <sup>3</sup>
Avg.	<1	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.	<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.	<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

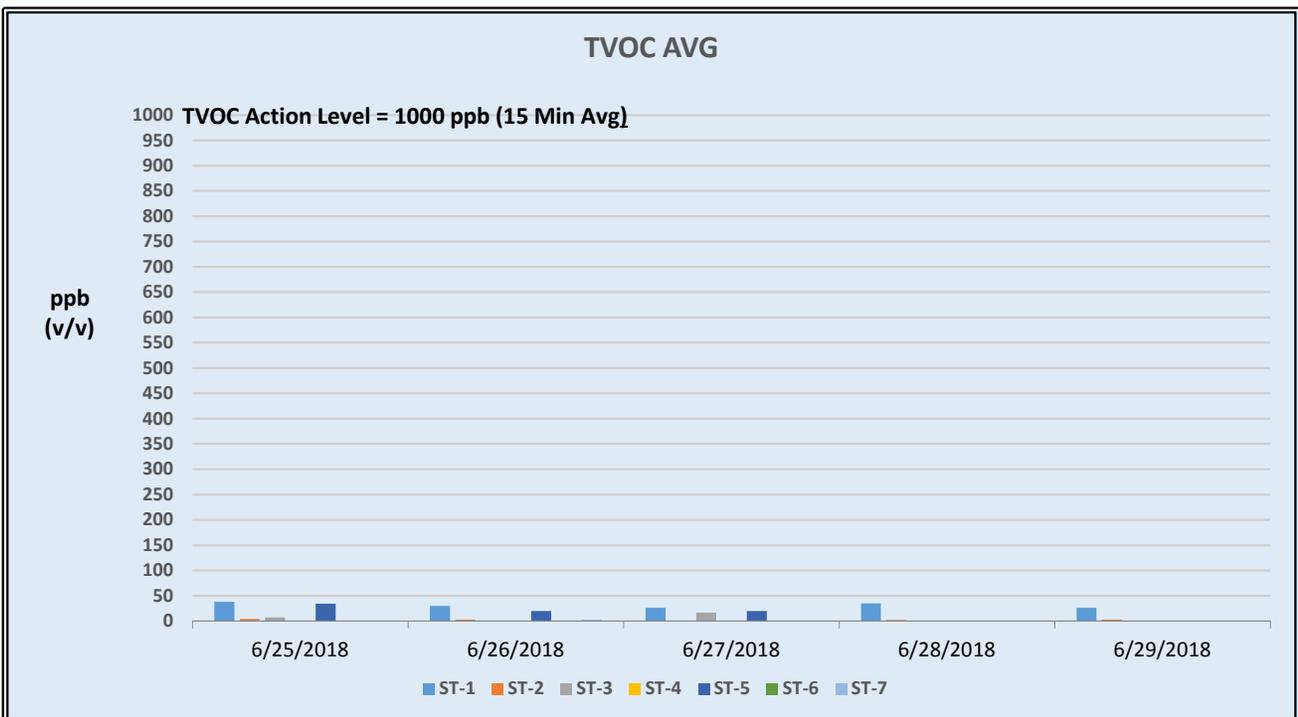
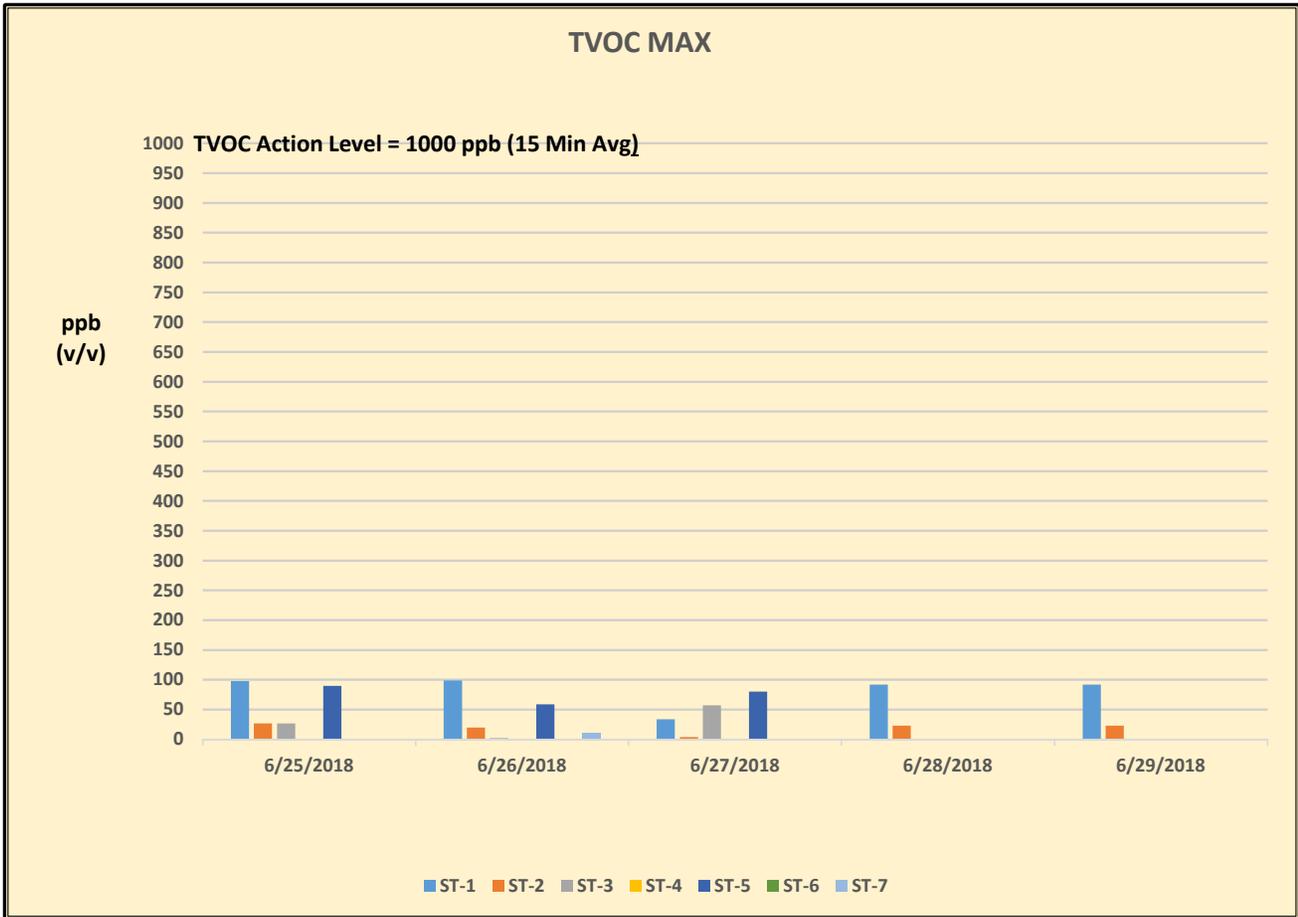
PM<sub>10</sub> – Particulates as PM<sub>10</sub>

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

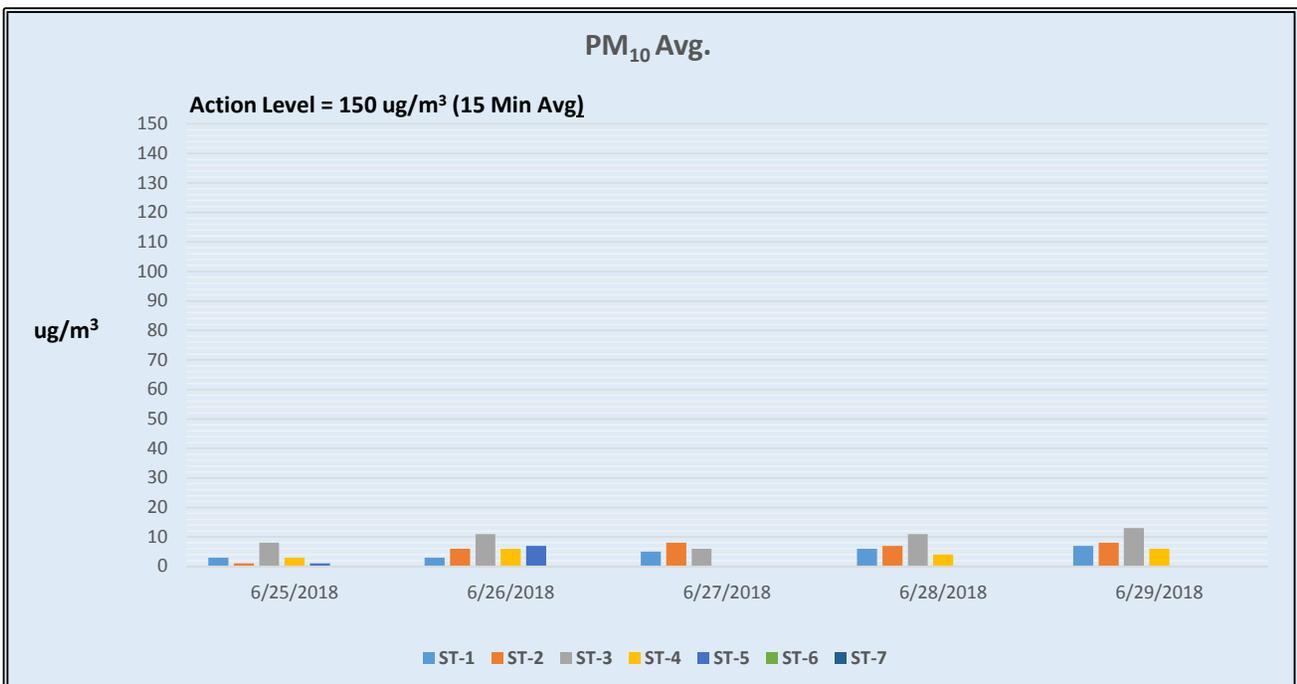
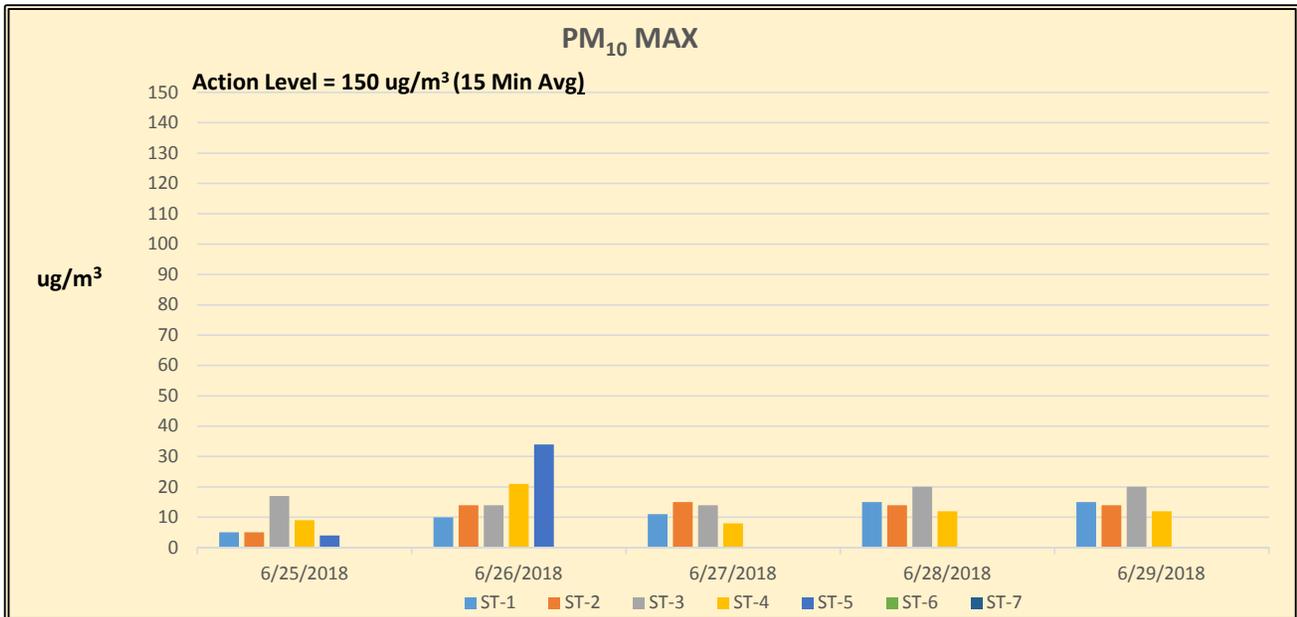
Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

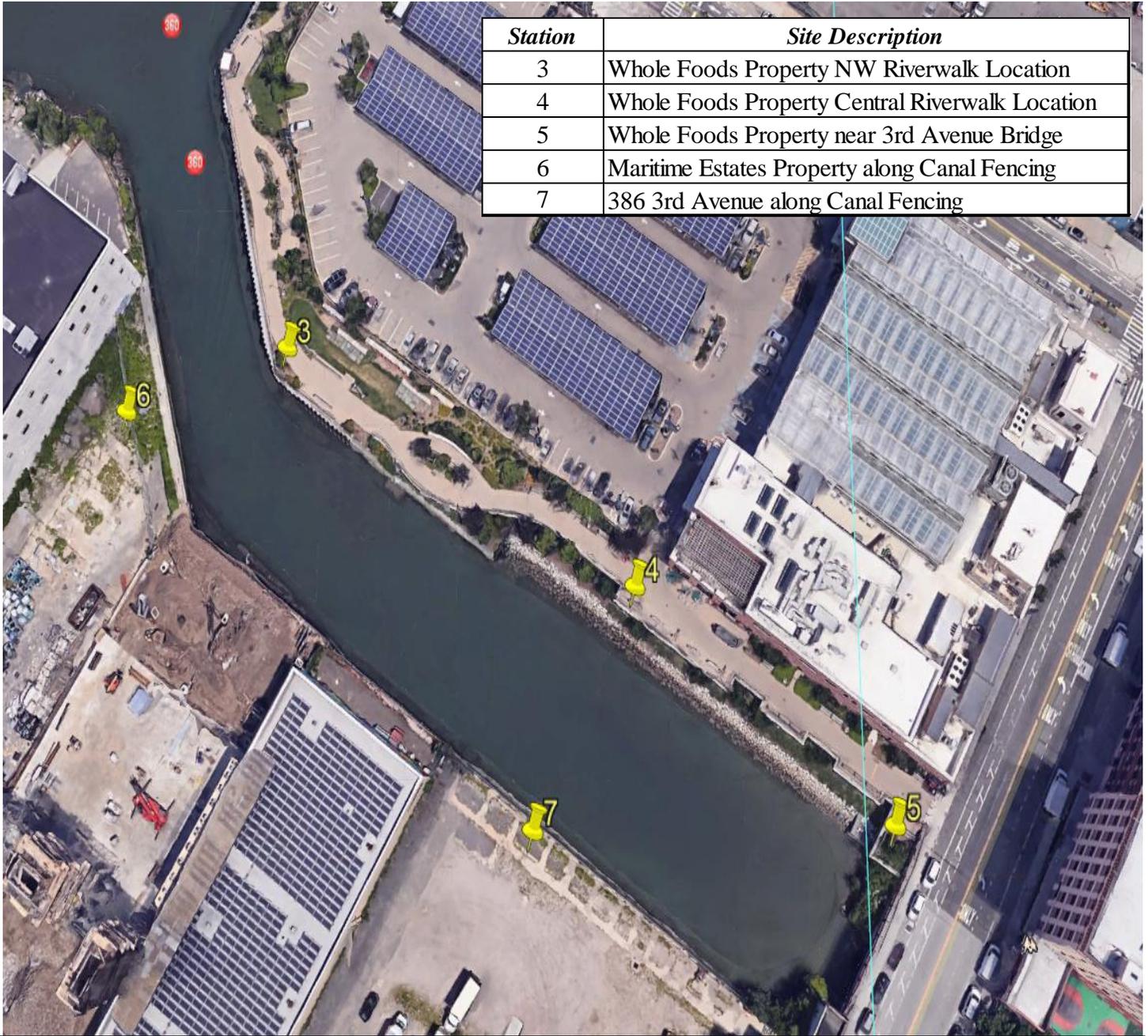
Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

**Figure 1**  
**Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program**  
**TVOC Monitoring Data - Week 38**



**Figure 2**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**TRC CAMP PM<sub>10</sub> Monitoring Data - Week 38**





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

**Table 1**

**Week 38**

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

June 25 <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	7:35	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-2	7:40	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-3	8:00	<50	<3	<1.0
	14:20	<50	<3	<1.0
ST-4	8:05	<50	<3	<1.0
	14:25	<50	<3	<1.0
ST-5	8:10	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-6	8:15	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-7	8:40	<50	<3	<1.0
	15:10	<50	<3	<1.0
June 26 <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	9:00	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-2	9:05	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-3	9:15	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-4	9:20	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-5	9:25	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-6	9:40	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-7	10:00	<50	<3	<1.0
	16:00	<50	<3	<1.0

**Table 1**

**Week 38**

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

June 27 <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	8:00	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-4	8:05	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-5	8:10	<50	<3	<1.0
	14:10	<50	<3	<1.0
ST-6	8:25	<50	<3	<1.0
	14:15	<50	<3	<1.0
ST-7	8:40	<50	<3	<1.0
	14:30	<50	<3	<1.0
June 28 <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	10:00	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-2	10:05	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-3	10:30	<50	<3	<1.0
	15:45	<50	<3	<1.0
ST-4	10:35	<50	<3	<1.0
	15:50	<50	<3	<1.0
ST-5	10:40	<50	<3	<1.0
	15:55	<50	<3	<1.0
ST-6	10:50	<50	<3	<1.0
	16:15	<50	<3	<1.0
ST-7	11:00	<50	<3	<1.0
	16:40	<50	<3	<1.0

**Table 1**

**Week 38**

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

June 29 <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	14:30	<50	<3	<1.0
ST-2	14:35	<50	<3	<1.0
ST-3	15:00	<50	<3	<1.0
ST-4	15:05	<50	<3	<1.0
ST-5	15:15	<50	<3	<1.0
ST-6	15:30	<50	<3	<1.0
ST-7	15:45	<50	<3	<1.0

**Note: No measurements were taken on the morning of June 29<sup>th</sup>, 2018**

**\*(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 25<sup>th</sup> through June 29<sup>th</sup>, 2018**

June 25 <sup>th</sup> , 2018 *		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>W</b>	<b>3.48</b>	<b>77.9</b>

June 26 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>ENE</b>	<b>5.37</b>	<b>70.5</b>

June 27 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>SE</b>	<b>3.58</b>	<b>69.9</b>

June 28 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>SE</b>	<b>2.54</b>	<b>75.9</b>

June 29 <sup>th</sup> , 2018 ***		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>WSW</b>	<b>1.46</b>	<b>81.2</b>

\* 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**

July 2, 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, 25 June – 29 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.

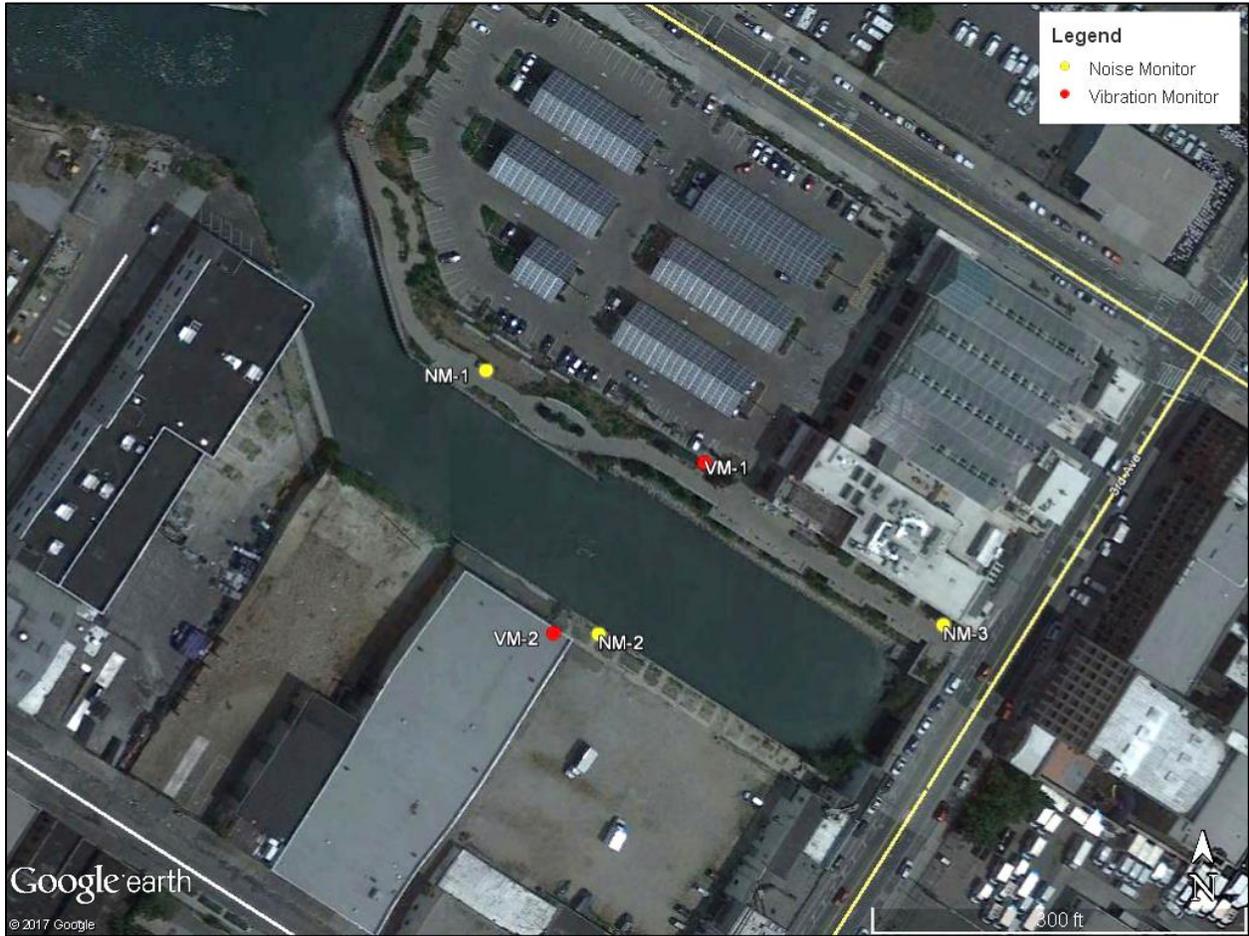
**Noise Monitoring Results**

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.



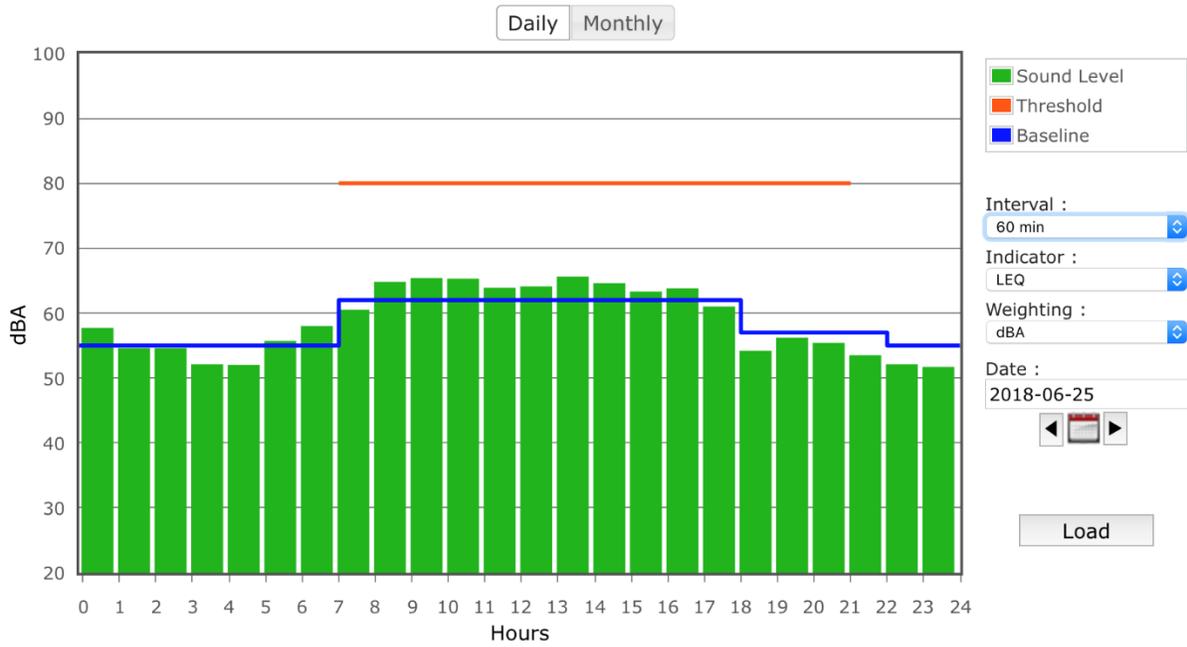
**Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study**



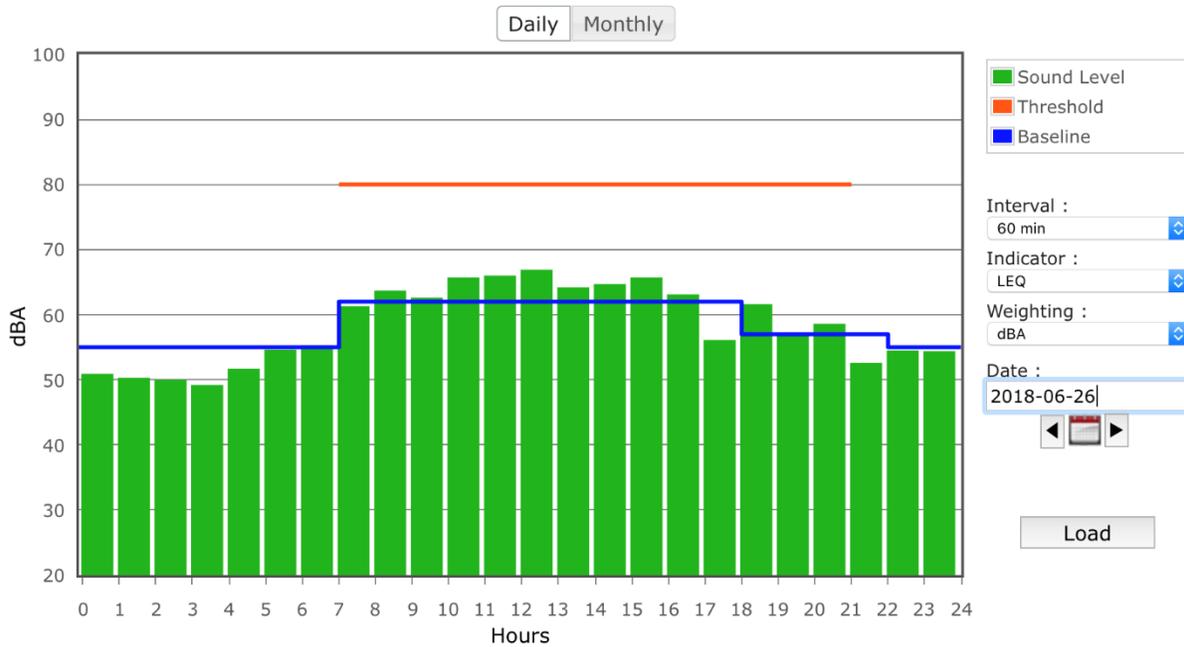
**Photo 1: Noise Monitoring Location NM-1  
(26 September 2017)**



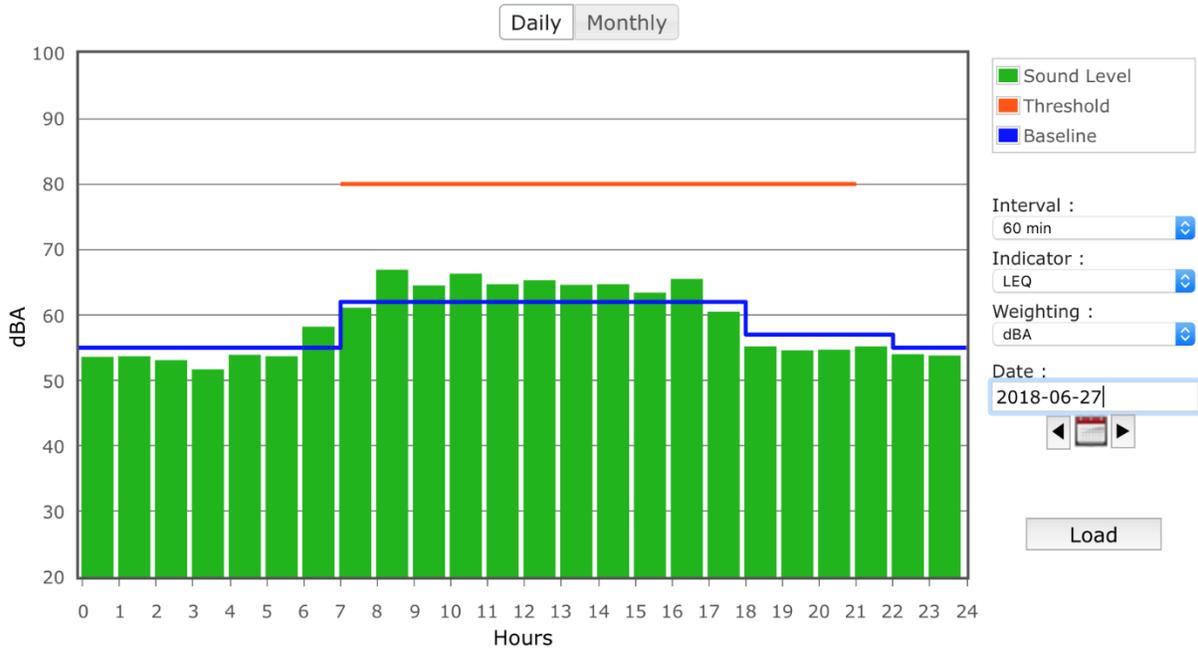
**Photo 2: Noise Monitoring Location NM-2  
(25 September 2017)**



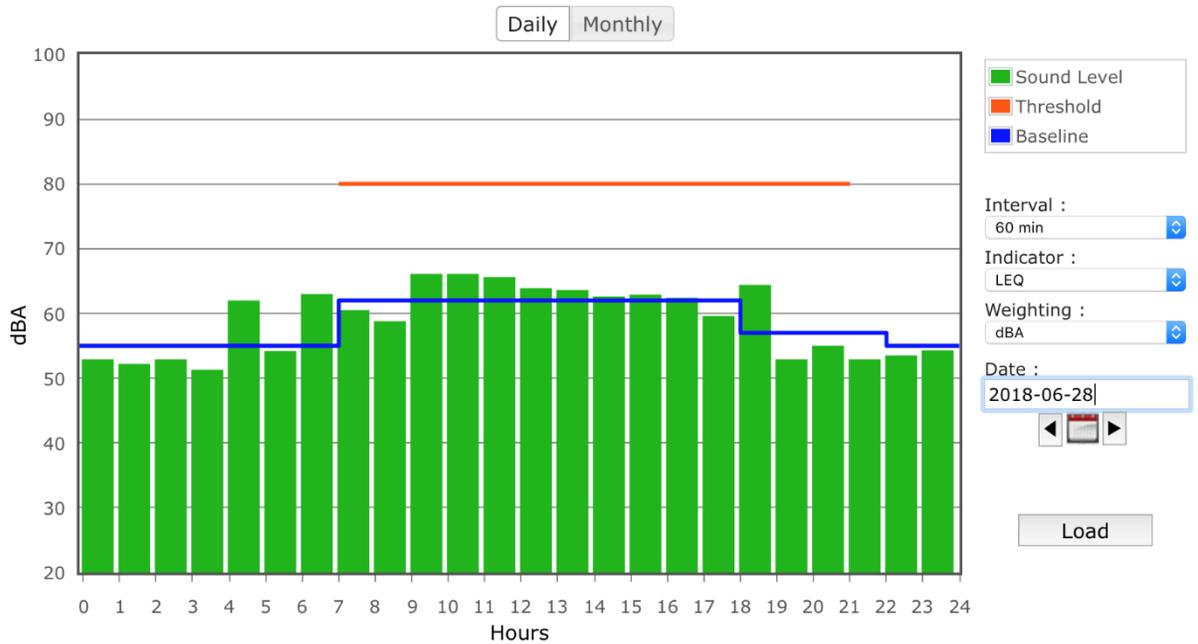
**Figure 2: North Monitor NM-1 on Monday**



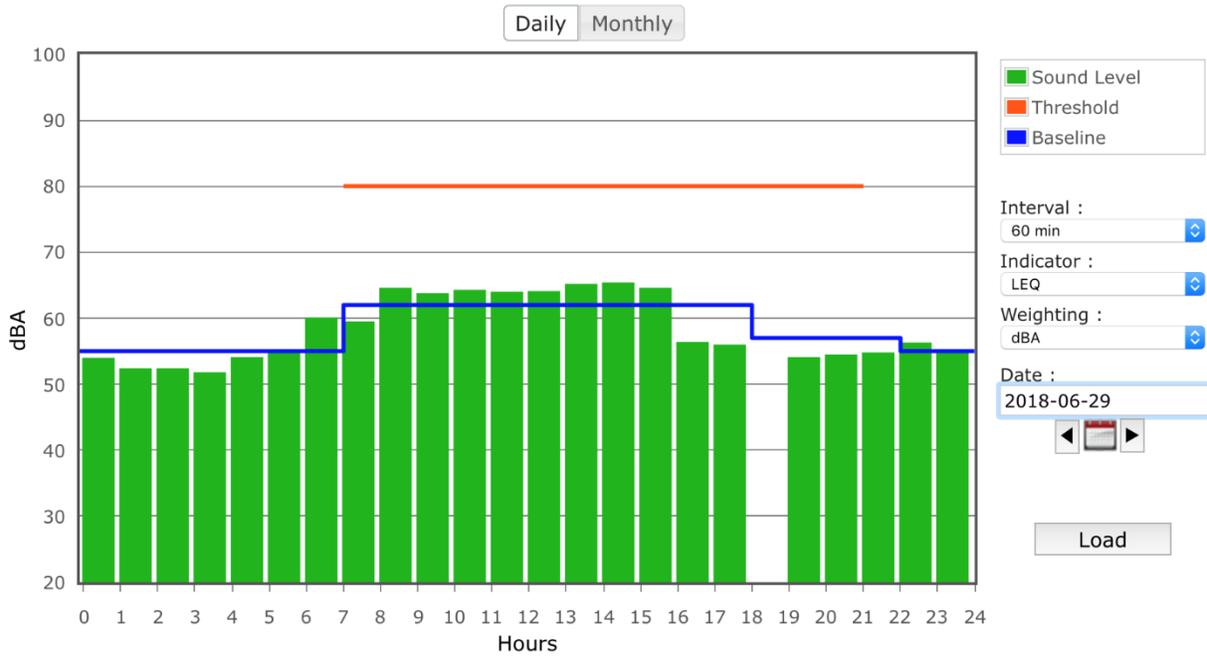
**Figure 3: North Monitor NM-1 on Tuesday**



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

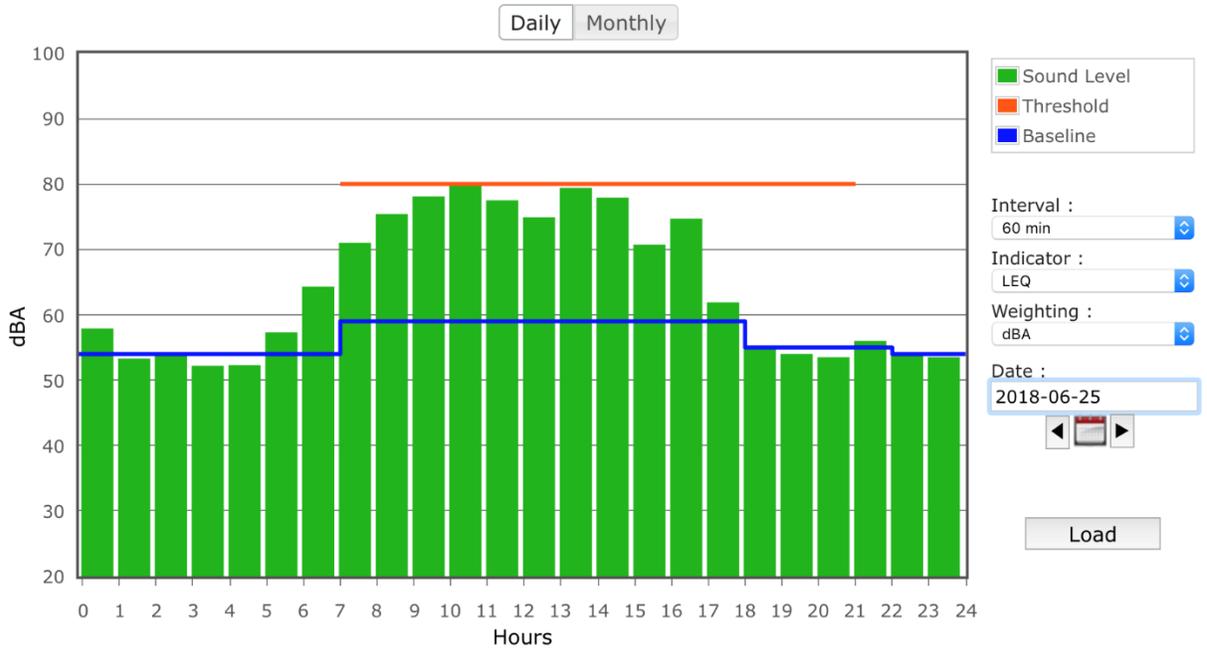


**Figure 5: North Monitor NM-1 on Thursday**

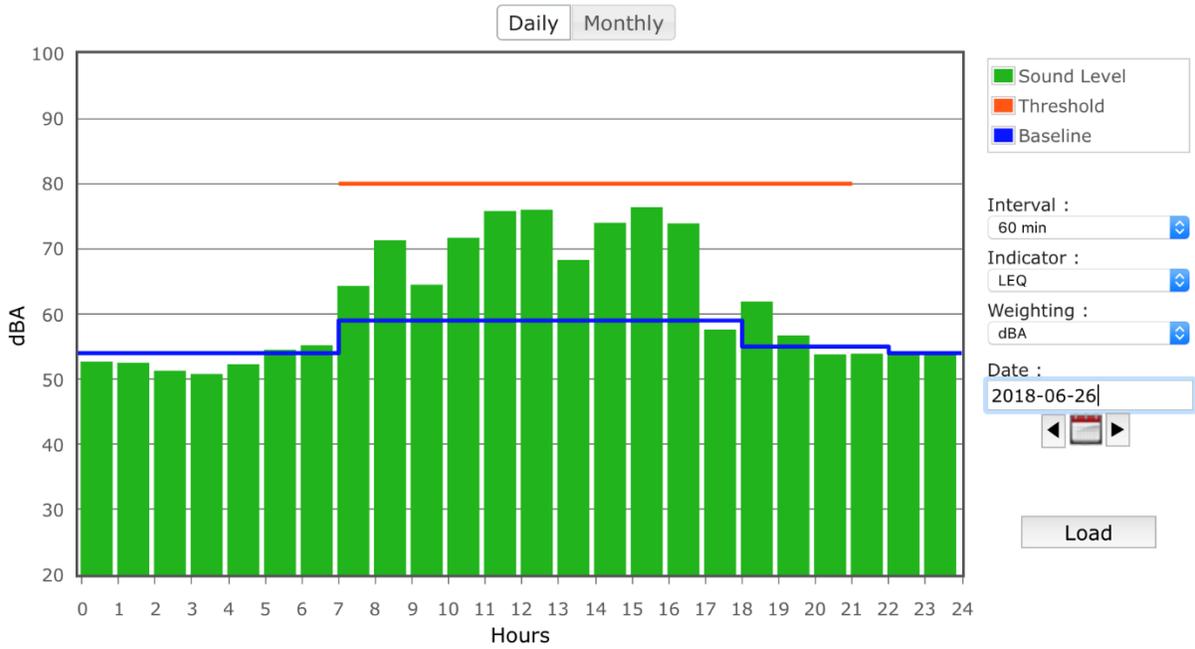


**Figure 6: North Monitor NM-1 on Friday\***

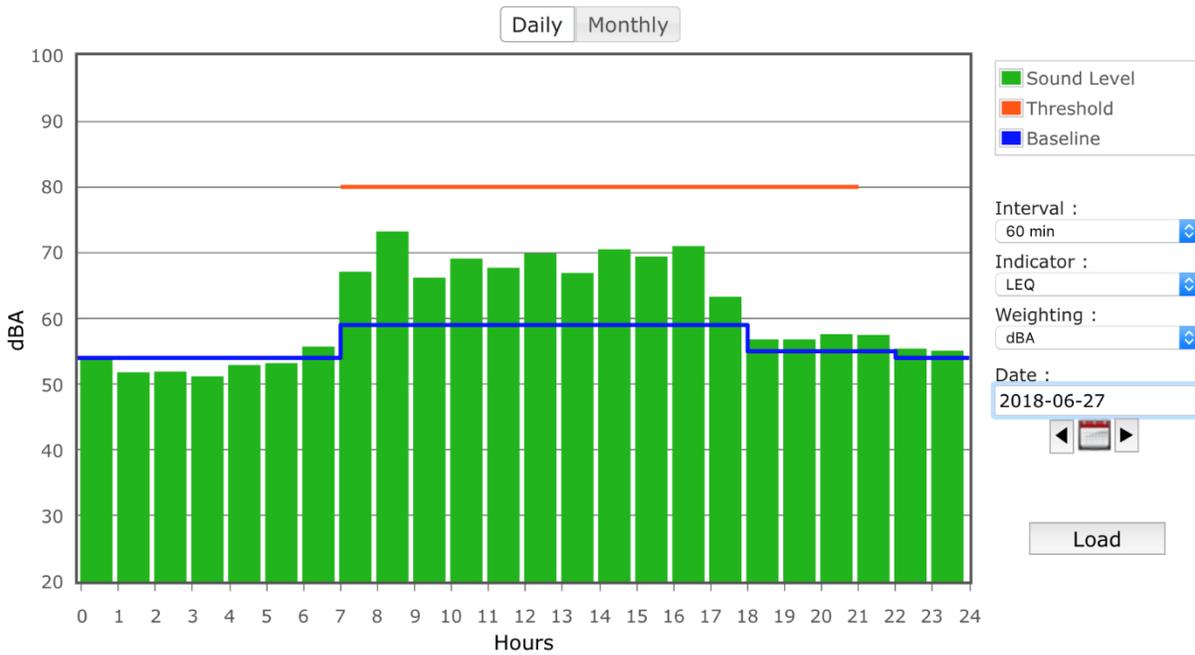
\*The 18:00-19:00 interval is unavailable due to intermittent equipment issues.



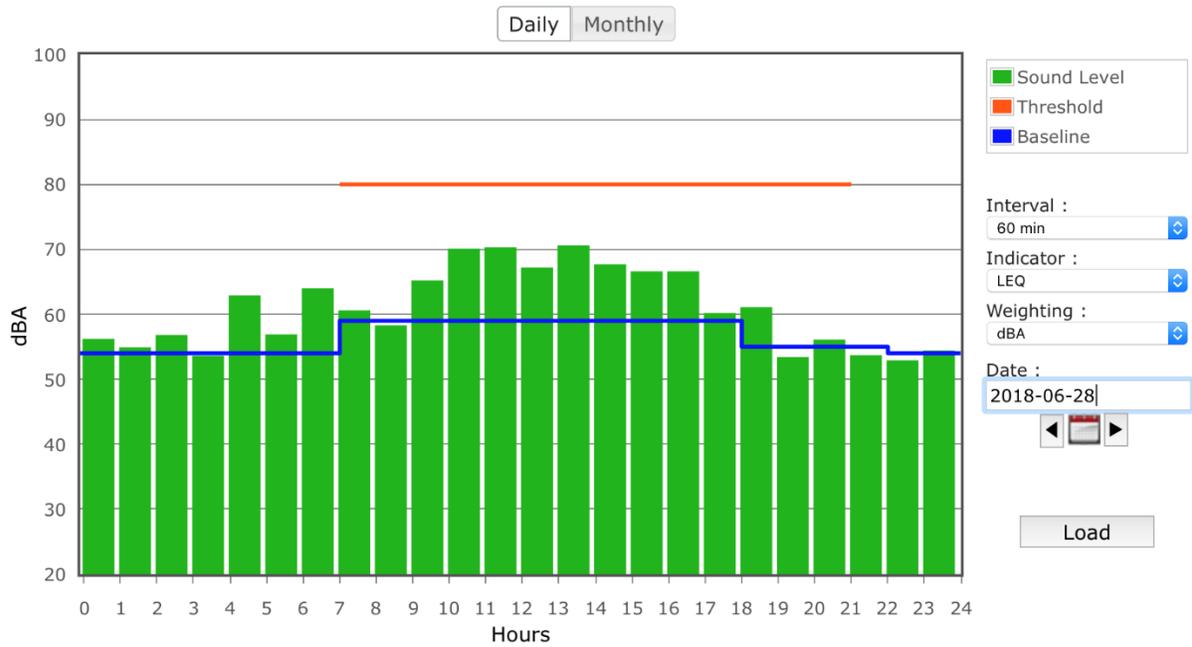
**Figure 7: South Monitor NM-2 on Monday**



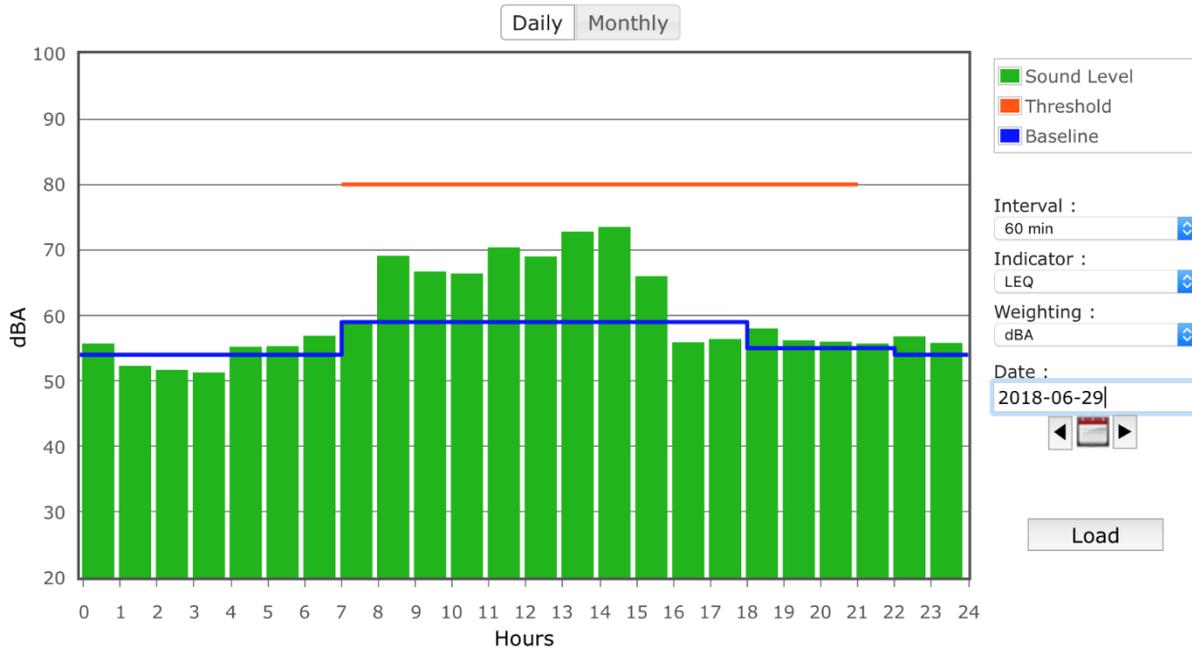
**Figure 8: South Monitor NM-2 on Tuesday**



**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	6/25 to 6/29/18	TB4/Citizens Site TB4/ Clean Earth	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 J. Bream conducted an in-person site visit to Clean Earth this week. For Level 2 monitoring, AHRS archaeologists J. Bream and R. Tirado were on site to monitor screening of dredged material at the Citizens site.

#### Monday, June 25

J. Bream was at Citizens for Level 2 monitoring of screening native alluvial sediments. Metal and some wood were collected in oversize bin. No photos posted from Clean Earth for review.

#### Tuesday, June 26

J. Bream conducted Level 2 monitoring of screening dredged native alluvial sediments at Citizens Site. Metal and some wood were collected in oversize bin. No photos posted from Clean Earth for review.

#### Wednesday, June 27

J. Bream conducted an inspection of Level 1 material screened at Clean Earth. Items collected include metal objects relating to the industries flanking TB4. Numerous brick and wooden barrel heads also were collected. Two rubber tires on metal spoked rims were also collected. These wheels date to circa 1926

R. Tirado conducted Level 2 monitoring of screening dredged native alluvial sediments at Citizens Site. Metal and some wood were collected in oversize bin.

#### Thursday, June 28

R. Tirado conducted Level 2 monitoring of screening dredged native alluvial sediments at Citizens Site. No potentially significant archaeological debris identified. No photos posted from Clean Earth for review.

#### Friday, June 29

J. Bream reviewed photo of debris screened at Clean Earth on June 29. R. Tirado conducted Level 2 monitoring of screening dredged native alluvial sediments at Citizens Site. No potentially significant archaeological debris identified.

#### NEXT WEEK

Level 2 monitoring of native alluvium is anticipated to be completed early in the week. Screening will take place at the Citizens site and an AHRS monitor will be onsite. Jonathan Bream will schedule another inspection at Clean Earth and will schedule the power washing and inspection of oversized material on the pad at Citizens Site.

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



**CUMULATIVE DREDGED MATERIAL CHART**



# Gowanus Canal TB4 Pilot Study Cumulative Material Dredged Weekly Report Update

