WEEKLY PROGRESS REPORT – TRC SOLUTIONS

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

Project number: 283126

Period: August 20 to 24, 2018

Date of Report: August 29, 2018

Rev: 0

Prepared For: Gowanus Environmental Remediation Trust

On-Site Activities Conducted During Week:

Sevenson Environmental Services (SES)

Water Treatment and Monitoring

- Discharged 36,820 gallons of treated decant water on 08/24/18.
- No exceedances of continuous monitoring.

Turbidity Monitoring

- Turbid water not observed migrating from the 4th Street Turning Basin.

Capping Activities

- Complete hydraulic capping demonstration area. Both oleophilic clay/sand and granular activated carbon/sand treatment layers placed and thickness measured by catch pans, core collection, and hydrographic survey.
- Commence installation of sand buttress to provide additional support for sheet piling at the Whole Foods property.

Citizens site Activities

- Continue decontaminating and demobilizing equipment.

Quality Assurance and Control – Geosyntec

- DWTS discharge sampling conducted on 08/24/18.
- During the reporting period of 08/13 to 08/17/18 readings from the sentinel turbidity buoy were falsely high due to biofouling of the meter. A gradual increase in turbidity readings from the sentinel turbidity meter began on the afternoon of August 10. However, the buoy failed to alert water quality monitoring staff of these false readings due to an error in the alarm system programming. The turbidity meter was pulled on the afternoon of Tuesday, August 21 and replaced with a functioning meter. As a result of the malfunctioning meter, data from this reporting period did not meet data quality requirements for accuracy and were rejected.
- Biofouling of the turbidity meter housed in the sentinel turbidity buoy resulted in erroneously high turbidity readings on Monday (08/20/18) and Tuesday (08/21/18). No exceedances of the visual water quality monitoring threshold criteria were observed on Monday and Tuesday. No exceedances of both the numerical and visual water quality monitoring threshold criteria were met during the remainder of the reporting period. As a result of the malfunctioning meter, data from Monday and Tuesday did not meet data quality requirements for accuracy and were rejected.
- Measurements for 8/22/18:
  - Daily average for ambient buoy – 4.3 NTU
  - Daily average for sentinel buoy – 3.6 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 14.8 NTU at 1245.
- Measurements for 8/23/18:
  - Daily average for ambient buoy – 4.7 NTU
  - Daily average for sentinel buoy – 2.2 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 1.3 NTU at 13:45.
- Measurements for 8/24/18:
  - Daily average for ambient buoy – 3.5 NTU
  - Daily average for sentinel buoy – 7.4 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 27.5 NTU at 14:30.

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 4th Street Turning Basin Area.

- No exceedances of particulate matter of 10 microns in diameter or smaller (PM_{10}) 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_{10} in $\mu g/m^3$
    - Station 1 – 29 $\mu g/m^3$ recorded on 08/24/18
    - Station 2 – 14 $\mu g/m^3$ recorded on 08/22/18
    - Station 3 – 44 $\mu g/m^3$ recorded on 08/24/18
    - Station 4 – 20 $\mu g/m^3$ recorded on 08/21/18
    - Station 5 – 24 $\mu g/m^3$ recorded on 08/22/18
    - Station 6 – 25 $\mu g/m^3$ recorded on 08/22/18
    - Station 7 – <1 $\mu g/m^3$ recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
    - Station 1 – 98 ppb recorded on 08/21/18
    - Station 2 – <1 ppb recorded throughout the week
    - Station 3 – 35 ppb recorded on 08/24/18
    - Station 4 – 57 ppb recorded on 08/24/18
    - Station 5 – 136 ppb recorded on 08/24/18
    - Station 6 – 129 ppb recorded on 08/24/18
    - Station 7 – 108 ppb recorded on 08/21/18
- All real-time readings of formaldehyde, hydrogen sulfide, or ammonia less than instrument reporting limit.
- 23-hour samples collected at ST-6 collected on 08/21 through 08/22 and ST-7 collected on 08/23 through 08/24. Laboratory turnaround time is 10 business days.
- Tabulated laboratory analytical results for 23-hour sample collected at ST-7 on 07/31 through 08/01, ST-1 on 08/02 through 08/03, ST-2 on 08/06 through 08/07, and ST-3 on 08/08 through 08/09 presented in weekly CAMP report.

Noise and Vibration Monitoring – Wilson Ihrig

- Operated and maintained two (2) noise monitors: NM-1 (north side of canal on Whole Foods promenade) and NM-2 (south side of canal on southeast corner of 386 3rd Avenue).
- No exceedance of the hourly Leq noise limit of 80 dBA.
- Greatest hourly Leq noise measurements
    - Northern monitor (NM-1) – 73.6 dBA during 1000-1100 on 08/22/18
    - Southern monitor (NM-2) – 73.4 dBA during 1500-1600 on 08/23/18

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

- No activities conducted during week.

Two-Week Look Ahead:

Sevenson:

- Treatment and discharge of water decanted accumulated during decontamination operations.
- Perform optical monitoring of bulkheads and surrounding structures with autonomous total survey stations. Along with weekly optical surveys conducted by subcontractor.
- Commence hydraulic capping of remainder of Turning Basin 4.
- Complete installation of sand buttress to provide additional support for sheet piling at the Whole Foods property.
- Place oleophilic clay/sand mixture and gravel between sheet piling and existing bulkhead adjacent to Whole Foods.
- Cleaning of rip rap adjacent to Whole Foods.

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 – Prepare inventory and final report for EPA review.

Key Milestones

- Completion of hydraulic capping demonstration area on 08/23/18 (pending loss on ignition sampling results).

Attachments:

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

Client Name:	Site Location:	Project No.:
Gowanus ERT	TB-4 Pilot Study	283126.0000.0001

Photo No.	Date
001	8-20-2018

Description
Placing additional sand/OC material into the hydraulic demonstration area.

Photo No.	Date
002	8-20-2018

Description
Removing the survey test pans from the hydraulic demonstration area.

Client Name:	Site Location:	Project No.:
Gowanus ERT	TB-4 Pilot Study	283126.0000.0001

Photo No.	Date
003	8-21-2018

Description
Loaded scow at the excavator barge, grabbing sand for placement in the sand buttress at Whole Foods.

Photo No.	Date
004	8-21-2018

Description
Placing the sand buttress at Whole Foods.

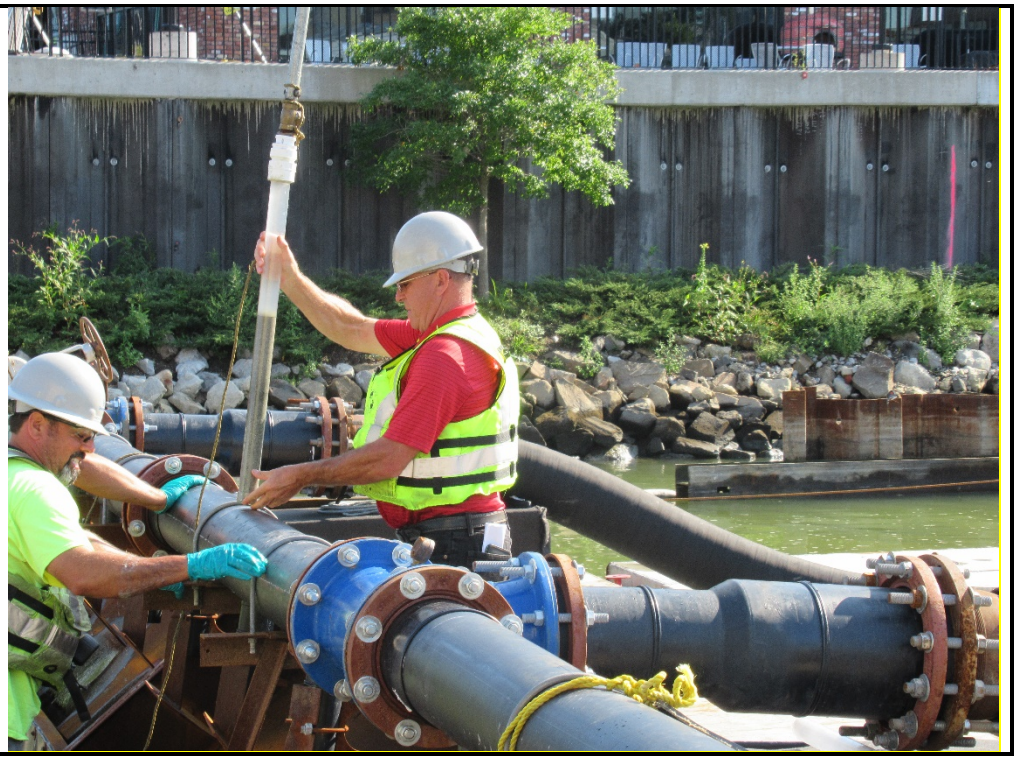
Client Name:	Site Location:	Project No.:
Gowanus ERT	TB-4 Pilot Study	283126.0000.0001

Photo No.	Date
005	8-22-2018

Description
Collecting core samples from the spreader barge outlet.

Photo No.	Date
006	8-22-2018

Description
Examining the core pulled.



Client Name:	Site Location:	Project No.:
Gowanus ERT	TB-4 Pilot Study	283126.0000.0001

Photo No.	Date
007	8-23-2018

Description
Placing the sand and GAC mixture (40%), in the hydraulic capping demonstration area.

Photo No.	Date
008	8-23-2018

Description
Placing catch pans for sand/GAC testing within hydraulic installation demonstration area.

Client Name:	Site Location:	Project No.:
Gowanus ERT	TB-4 Pilot Study	283126.0000.0001

Photo No.	Date
009	8-24-2018

Description
Pulling catch pans from the hydraulic capping test area.

Photo No.	Date
010	8-24-2018

Description
Collecting core samples from the hydraulic capping test area.

GEOSYNTEC IN-CANAL WATER QUALITY MONITORING WEEKLY DATA SUMMARY

Prepared for

Gowanus Canal Remedial Design Group

GOWANUS CANAL SUPERFUND SITE DREDGING AND CAPPING PILOT STUDY

Water Quality Monitoring Weekly Data Summary

Week of August 13th, 2018

Report Contents

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

Prepared by

Geosyntec consultants
engineers | scientists | innovators

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

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

1. SCOPE OF MONITORING

Two turbidity buoys were deployed to monitor turbidity during the pilot study. One turbidity buoy was deployed just outside of the 4th 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. During this reporting period readings from the sentinel turbidity buoy were falsely high due to biofouling of the meter. A gradual increase in turbidity readings from the sentinel turbidity meter began on the afternoon of August 10. However, the buoy failed to alert water quality monitoring staff of these false readings due to an error in the alarm system programming. The turbidity meter was pulled on the afternoon of Tuesday, August 21 and replaced with a functioning meter. As a result of the malfunctioning meter, data from this reporting period did not meet data quality requirements for accuracy and were rejected. During this reporting period clean capping material was being applied in the turning basin. No handheld measurements were collected during this reporting period. Visual observations of turbidity and sheen are summarized in Section 4.

Legend

- Ambient Buoy
- Sentinel Buoy
- RTA Boundary

300 150 0 300 Feet

Turbidity Buoy Locations

Gowanus Canal, Brooklyn, NY

Gowanus Canal Remedial Design Group

Geosyntec consultants

Beech and Bourgarie engineering p.c.

Figure 1

Ewing, NJ | October 2017

2. TURBIDITY BUOY DATA

During this monitoring period the water quality meter deployed at the sentinel buoy malfunctioned due to biofouling of the optical sensor. This malfunction resulted in turbidity readings unrepresentative of waterway conditions. As a result, the data from this reporting period did not meet data quality requirements for accuracy and were rejected.

3. HANDHELD MEASURMENTS

No handheld measurements were collected for this reporting period.

4. SUMMARY OF VISUAL OBSERVATIONS

Visual observations were consistent with background conditions and did not corroborate the erroneously high readings collected from the malfunctioning sentinel buoy turbidity meter.

5. REPORT OF EXCEEDANCES

Biofouling of the turbidity meter housed in the sentinel turbidity buoy resulted in erroneously high turbidity readings during the reporting period. However, the buoy failed to alert water quality monitoring staff of these false readings due to an error in the alarm system programming. The alarm system on the turbidity buoys have been reprogrammed to ensure that water quality monitoring staff are alerted of readings that could result in an exceedance to the numerical trigger and action criteria. Clean capping material was being applied during the affected period.

APPENDIX A
PRE-DREDGE TURBIDITY BUOY DATA

PRELIMINARY DATA
NOT YET SUBJECT TO QC REVIEW

Geosyntec consultants

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

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

Prepared for

Gowanus Canal Remedial Design Group

GOWANUS CANAL SUPERFUND SITE DREDGING AND CAPPING PILOT STUDY

Water Quality Monitoring Weekly Data Summary

Week of August 20th, 2018

Report Contents

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

Prepared by

Geosyntec consultants
engineers | scientists | innovators

Beech and Bonaparte engineering p.c.
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 August 20th, 2018. Two turbidity buoys were deployed to monitor turbidity during the pilot study. One turbidity buoy was deployed just outside of the 4th 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 from both the ambient and sentinel buoys during the week of August 6th. Average and maximum turbidity are also presented. On Monday and Tuesday of this reporting period readings from the sentinel turbidity buoy were falsely high due to biofouling of the meter. The buoy failed to alert water quality monitoring staff of these false readings due to an error in the alarm system programming. On the afternoon of Tuesday, August 21, a handheld measurement was collected adjacent to the sentinel buoy and confirmed that the turbidity buoy was collecting false readings. The turbidity meter was pulled from the sentinel buoy and replaced with a functioning meter. As a result of the malfunctioning meter, data from Monday and Tuesday did not meet data quality requirements for accuracy and were rejected. During this time period clean capping material was applied in the turning basin. On August 23rd, the turbidity buoys and meters were temporarily removed for cleaning and calibrating. 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

300 150 0 300 Feet

Turbidity Buoy Locations

Gowanus Canal, Brooklyn, NY

Gowanus Canal Remedial Design Group | Geosyntec consultants | Beech and Bonaparte engineering p.c.

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 August 22nd to August 24th, 2018. On August 20th and August 21st the water quality meter deployed at the sentinel buoy malfunctioned due to biofouling of the optical sensor. This malfunction resulted in turbidity readings unrepresentative of waterway conditions. As a result, the data from this time period did not meet data quality requirements for accuracy and were rejected. Background data prior to the start of dredging is provided in Appendix A.

2.1 Monday, August 20th, 2018

Data from Monday, August 6th, 2018 did not meet data quality requirements for accuracy and were rejected.

2.2 Tuesday, August 21st, 2018

Data from Tuesday, August 7th, 2018 did not meet data quality requirements for accuracy and were rejected.

2.3 Wednesday, August 22nd, 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)
8/22/2018 7:00	2.0	-0.5	N	8/22/2018 12:15	5.2	10.6	Y
8/22/2018 7:15	3.1	-1.3	N	8/22/2018 12:30	5.4	4.6	N
8/22/2018 7:30	4.0	-0.6	N	8/22/2018 12:45	6.5	21.3	Y
8/22/2018 7:45	4.5	-0.8	N	8/22/2018 13:00	5.5	16.3	Y
8/22/2018 8:00	3.5	-0.5	N	8/22/2018 13:15	8.3	8.3	N
8/22/2018 8:15	3.5	0.8	N	8/22/2018 13:30	3.4	5.5	Y
8/22/2018 8:30	3.2	0.4	N	8/22/2018 13:45	5.1	7.9	Y
8/22/2018 8:45	4.4	-0.9	N	8/22/2018 14:00	2.7	6.0	Y
8/22/2018 9:00	7.9	-0.8	N	8/22/2018 14:15	4.0	3.7	N
8/22/2018 9:15	5.7	2.1	N	8/22/2018 14:30	3.8	6.3	Y
8/22/2018 9:30	6.0	1.7	N	8/22/2018 14:45	3.8	3.3	N
8/22/2018 9:45	5.5	-0.4	N	8/22/2018 15:00	1.8	4.7	Y
8/22/2018 10:00	4.8	0.3	N	8/22/2018 15:15	3.2	2.4	N
8/22/2018 10:15	3.9	1.2	N	8/22/2018 15:30	2.5	2.0	N
8/22/2018 10:30	5.1	3.3	N	8/22/2018 15:45	0.9	2.9	Y
8/22/2018 10:45	3.7	0.9	N	8/22/2018 16:00	2.5	0.6	N
8/22/2018 11:00	5.9	1.3	N	8/22/2018 16:15	1.0	6.0	Y
8/22/2018 11:15	6.0	2.6	N	8/22/2018 16:30	1.4	-0.8	N
8/22/2018 11:30	9.1	4.7	N	8/22/2018 16:45	2.0	3.6	Y
8/22/2018 11:45	6.9	5.4	N	8/22/2018 17:00	2.8	3.0	Y
8/22/2018 12:00	4.4	11.3	Y				
Average	4.3	3.6	N				
Maximum	9.1	21.3	Y				

Notes:

No exceedance to rolling average threshold criteria during reporting period

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

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

2.4 Thursday, August 23rd, 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)
8/23/2018 7:00	1.9	-1.6	N	8/23/2018 12:15	4.8	-0.1	N
8/23/2018 7:15	1.6	-1.1	N	8/23/2018 12:30	5.2	1.1	N
8/23/2018 7:30	2.5	0.1	N	8/23/2018 12:45	4.2	1.4	N
8/23/2018 7:45	1.2	-0.9	N	8/23/2018 13:00	10.3	0.7	N
8/23/2018 8:00	0.6	-0.8	N	8/23/2018 13:15	5.0	2.5	N
8/23/2018 8:15	1.8	0.7	N	8/23/2018 13:30	8.1	3.9	N
8/23/2018 8:30	2.6	-0.7	N	8/23/2018 13:45	4.8	6.1	Y
8/23/2018 8:45	3.1	0.4	N	8/23/2018 14:00	5.3	6.3	Y
8/23/2018 9:00	2.9	1.2	N	8/23/2018 14:15	3.0	2.9	N
8/23/2018 9:15	2.5	0.8	N	8/23/2018 14:30	2.3	2.1	N
8/23/2018 9:30	8.0	-0.4	N	8/23/2018 14:45	3.6	1.4	N
8/23/2018 9:45	2.8	1.0	N	8/23/2018 15:00	4.1	--	--
8/23/2018 10:00	4.0	1.1	N	8/23/2018 15:15	33.2	5.9	N
8/23/2018 10:15	3.0	0.4	N	8/23/2018 15:30	--	6.0	--
8/23/2018 10:30	4.1	-0.5	N	8/23/2018 15:45	--	6.2	--
8/23/2018 10:45	3.4	0.6	N	8/23/2018 16:00	--	13.0	--
8/23/2018 11:00	4.9	0.9	N	8/23/2018 16:15	--	6.7	N
8/23/2018 11:15	3.6	0.4	N	8/23/2018 16:30	--	5.6	N
8/23/2018 11:30	3.5	0.2	N	8/23/2018 16:45	--	6.7	N
8/23/2018 11:45	3.7	0.2	N	8/23/2018 17:00	--	6.9	N
8/23/2018 12:00	4.3	1.1	N				
Average	4.7	2.2	N				
Maximum	33.2	13.0	N				

Notes:

No exceedance to rolling average threshold criteria during reporting period

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

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

2.5 Friday, August 24th, 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)
8/24/2018 7:00	--	0.5	N	8/17/2018 12:15	3.1	3.1	N
8/24/2018 7:15	--	0.5	N	8/17/2018 12:30	4.0	4.2	Y
8/24/2018 7:30	--	3.6	N	8/17/2018 12:45	2.5	4.4	Y
8/24/2018 7:45	--	6.9	N	8/17/2018 13:00	3.2	5.1	Y
8/24/2018 8:00	--	3.6	N	8/17/2018 13:15	3.1	4.4	Y
8/24/2018 8:15	--	3.9	N	8/17/2018 13:30	4.7	6.9	Y
8/24/2018 8:30	--	4.1	N	8/17/2018 13:45	7.2	12.7	Y
8/24/2018 8:45	--	3.3	N	8/17/2018 14:00	3.8	16.6	Y
8/24/2018 9:00	--	4.8	N	8/17/2018 14:15	3.9	11.7	Y
8/24/2018 9:15	3.2	4.6	Y	8/17/2018 14:30	4.2	31.7	Y
8/24/2018 9:30	3.0	4.0	Y	8/17/2018 14:45	3.8	16.9	Y
8/24/2018 9:45	2.6	7.9	Y	8/17/2018 15:00	3.7	30.0	Y
8/24/2018 10:00	2.9	5.4	Y	8/17/2018 15:15	3.8	15.8	Y
8/24/2018 10:15	2.9	4.9	Y	8/17/2018 15:30	3.1	13.0	Y
8/24/2018 10:30	2.9	4.6	Y	8/17/2018 15:45	2.7	6.6	Y
8/24/2018 10:45	3.2	5.6	Y	8/17/2018 16:00	2.7	5.6	Y
8/24/2018 11:00	3.1	5.7	Y	8/17/2018 16:15	5.1	6.2	Y
8/24/2018 11:15	2.7	7.6	Y	8/17/2018 16:30	6.9	3.3	N
8/24/2018 11:30	3.8	5.1	Y	8/17/2018 16:45	2.7	4.0	Y
8/24/2018 11:45	2.0	3.6	Y	8/17/2018 17:00	2.5	4.8	Y
8/24/2018 12:00	2.8	5.5	Y				

Average	3.5	7.4	Y
Maximum	7.2	31.7	Y

Notes:

No exceedance to rolling average threshold criteria during reporting period

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

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

3. HANDHELD MEASURMENTS

A handheld measurement was collected at 16:45 on August 21st adjacent to the malfunctioning sentinel turbidity buoy. The handheld measurement reading was 7.8 NTU.

4. SUMMARY OF VISUAL OBSERVATIONS

Visual observations were consistent with background conditions.

5. REPORT OF EXCEEDANCES

Biofouling of the turbidity meter housed in the sentinel turbidity buoy resulted in erroneously high turbidity readings on Monday and Tuesday of the reporting period. Clean capping material was applied during the affected period. No exceedances of the visual water quality monitoring threshold criteria were observed on Monday and Tuesday. No exceedances of the both the numerical and visual water quality monitoring threshold criteria were met during the remainder of 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

Legend

- Ambient Buoy
- Sentinel Buoy
- RTA Boundary

300 150 0 300 Feet

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

X:\03_GIS\mxd\Canal_Wide\Turbidity Buoy Locations.mxd; acarnes; 10/19/2017

APPENDIX A
PRE-DREDGE TURBIDITY BUOY DATA

PRELIMINARY DATA
NOT YET SUBJECT TO QC REVIEW

Geosyntec consultants

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

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
46th Weekly Monitoring Period
Summary Report:

August 20th, through August 24th, 2018

Report Contents

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

Executive Summary – Week 46 Monitoring Period
August 20th through August 24th, 2018

The following report summarizes site air monitoring activities for the Week 46 monitoring period from August 20th through August 24th, 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 4th 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 46 monitoring period there were no PM_{10} or TVOC exceedances of the action level of 150 ug/m^3 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_{10}) 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 46 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 46 monitoring period of August 20th through August 24th, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 6 and 7. The ST-6 sample was collected on August 21st, through August 22nd, 2018 and the ST-7 sample was collected on August 23rd, through August 24th. Both samples were collected over a 23-hour period and shipped to Con-Test Analytical Laboratory for analyses. The results of the summa canister sampling are pending lab analyses.

Table 2 presents the analytical results for 23-hour samples collected at Stations 1 and 7 during Week 43. The ST-1 sample was collected on August 2nd through 3rd, 2018 and the ST-7 sample was collected on July 31st through August 1st , 2018. Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28th and 31st, 2017.

Table 3 presents the analytical results for 23-hour samples collected at Stations 2 and 3 during Week 44. The ST-2 sample was collected on August 6th through 7th, 2018 and the ST-3 sample was collected on August 8th through August 9th , 2018. Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28th and 31st, 2017.

Site activities which were conducted at the Citizen Property during August 20th through August 24th, 2018 included the following:

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

Site activities which were conducted at the 4th St Turning Basin Area of the Canal during August 20th through August 24th, 2018 included the following:

- Completed hydraulic capping in demonstration area. Both Oleophilic clay/sand and granular activated carbon/sand treatment layers placed and thickness measured by catch pans, core collection, and hydrographic survey
- Commence installation of sand buttress to provide additional support for sheet piling at the Whole Foods property

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)
08/20/2018 06:30 AM - 08/20/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	18	ppb	Max.	7	ug/m^3
Avg.	8	ppb	Avg.	5	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	12	ug/m^3
Avg.	<1	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	<1	ug/m^3
Avg.	<1	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	7	ug/m^3
Avg.	<1	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	135	ppb	Max.	11	ug/m^3
Avg.	48	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	85	ppb	Max.	11	ug/m^3
Avg.	8	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

TVOC			PM_{10}		
Max.	99	ppb	Max.	<1	ug/m^3
Avg.	25	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds PM_{10} – Particulates as PM_{10}

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM_{10})

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM_{10})

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m3 - PM_{10})

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)
08/21/2018 00:00 AM - 08/21/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	98	ppb	Max.	9	ug/m^3
Avg.	18	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	9	ug/m^3
Avg.	<1	ppb	Avg.	5	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	16	ppb	Max.	24	ug/m^3
Avg.	9	ppb	Avg.	5	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	57	ppb	Max.	20	ug/m^3
Avg.	1	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	136	ppb	Max.	12	ug/m^3
Avg.	27	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	77	ppb	Max.	15	ug/m^3
Avg.	23	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

TVOC			PM_{10}		
Max.	108	ppb	Max.	<1	ug/m^3
Avg.	58	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds PM_{10} – Particulates as PM_{10}

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM_{10})

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM_{10})

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m3 - PM_{10})

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)
08/22/2018 00:00 AM - 08/22/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	32	ppb	Max.	23	ug/m^3
Avg.	6	ppb	Avg.	14	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	14	ug/m^3
Avg.	<1	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	<1	ug/m^3
Avg.	<1	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	<1	ug/m^3
Avg.	<1	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	82	ppb	Max.	24	ug/m^3
Avg.	20	ppb	Avg.	11	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	106	ppb	Max.	25	ug/m^3
Avg.	22	ppb	Avg.	16	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	<1	ug/m^3
Avg.	<1	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds PM_{10} – Particulates as PM_{10}

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM_{10})

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM_{10})

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m3 - PM_{10})

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

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	36	ppb	Max.	16	ug/m^3
Avg.	2	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	13	ug/m^3
Avg.	<1	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	31	ppb	Max.	42	ug/m^3
Avg.	5	ppb	Avg.	21	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	<1	ug/m^3
Avg.	<1	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	<1	ppb	Max.	12	ug/m^3
Avg.	<1	ppb	Avg.	2	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	64	ppb	Max.	14	ug/m^3
Avg.	14	ppb	Avg.	4	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

TVOC			PM_{10}		
Max.	63	ppb	Max.	<1	ug/m^3
Avg.	15	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds PM_{10} – Particulates as PM_{10}

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM_{10})

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM_{10})

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m3 - PM_{10})

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)
08/24/2018 00:00 AM - 08/24/2018 16:00 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	84	ppb	Max.	29	ug/m^3
Avg.	13	ppb	Avg.	11	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	11	ug/m^3
Avg.	<1	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	35	ppb	Max.	44	ug/m^3
Avg.	7	ppb	Avg.	10	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	<1	ug/m^3
Avg.	<1	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	72	ppb	Max.	22	ug/m^3
Avg.	24	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	129	ppb	Max.	12	ug/m^3
Avg.	10	ppb	Avg.	1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	<1	ug/m^3
Avg.	<1	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

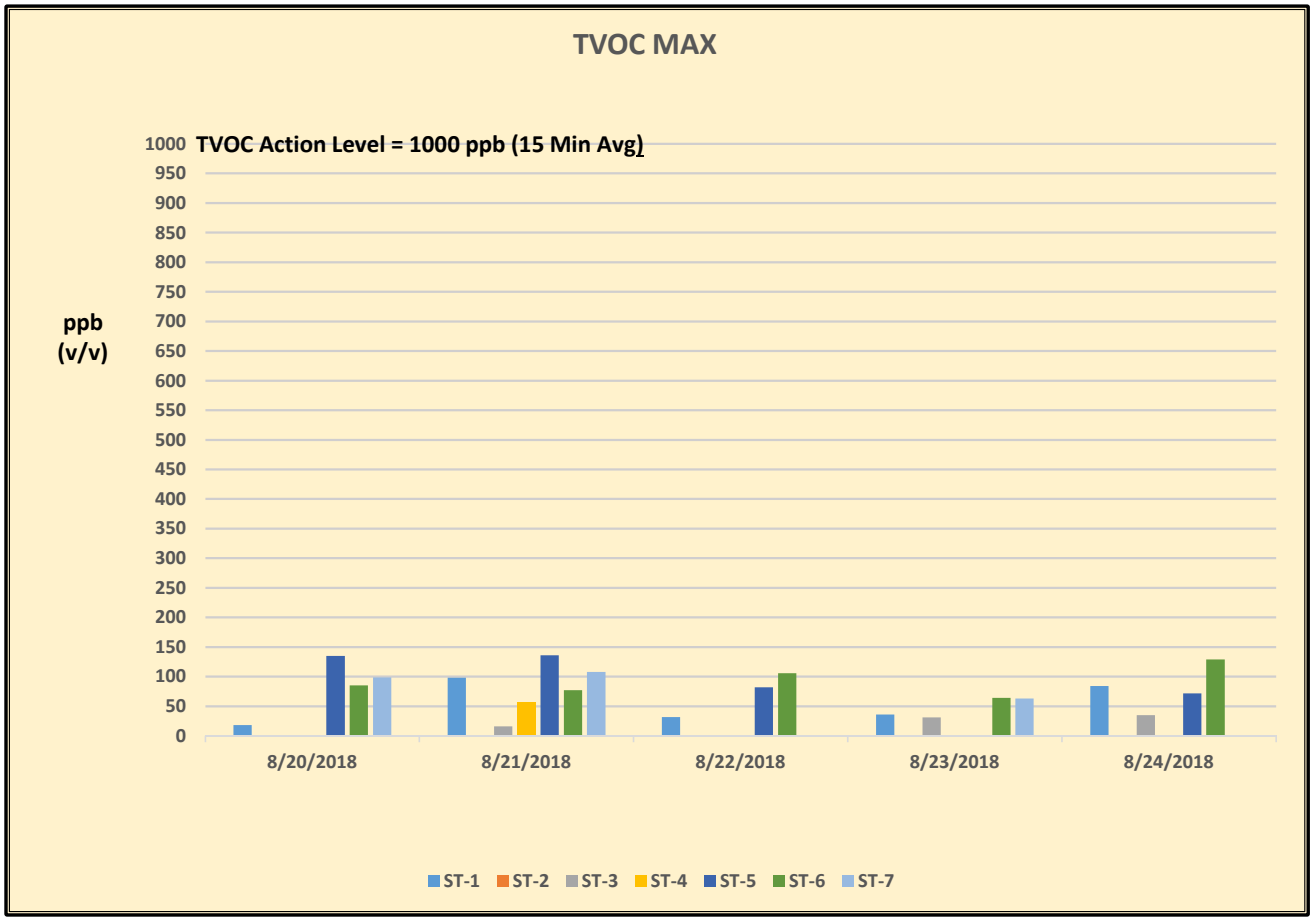
TVOC – Total Volatile Organic Compounds PM_{10} – Particulates as PM_{10}

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM_{10})

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM_{10})

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m3 - PM_{10})

Figure 1
Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program
TVOC Monitoring Data - Week 46



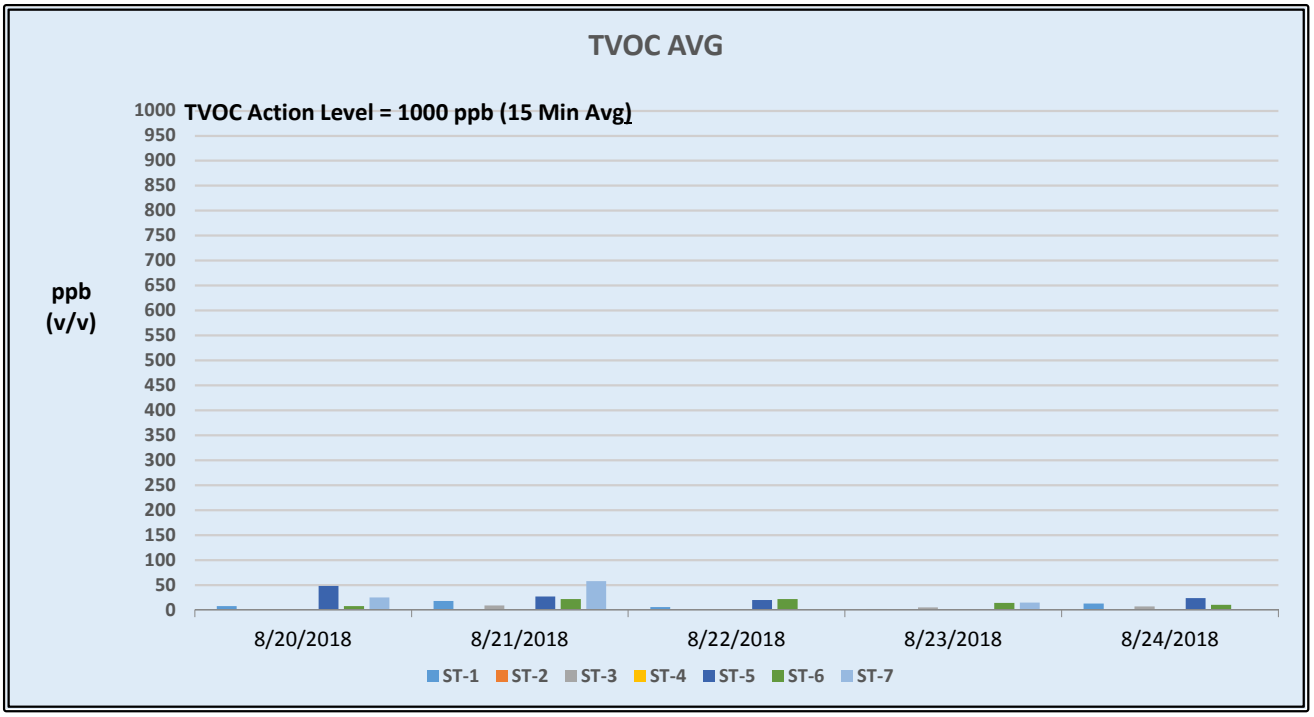
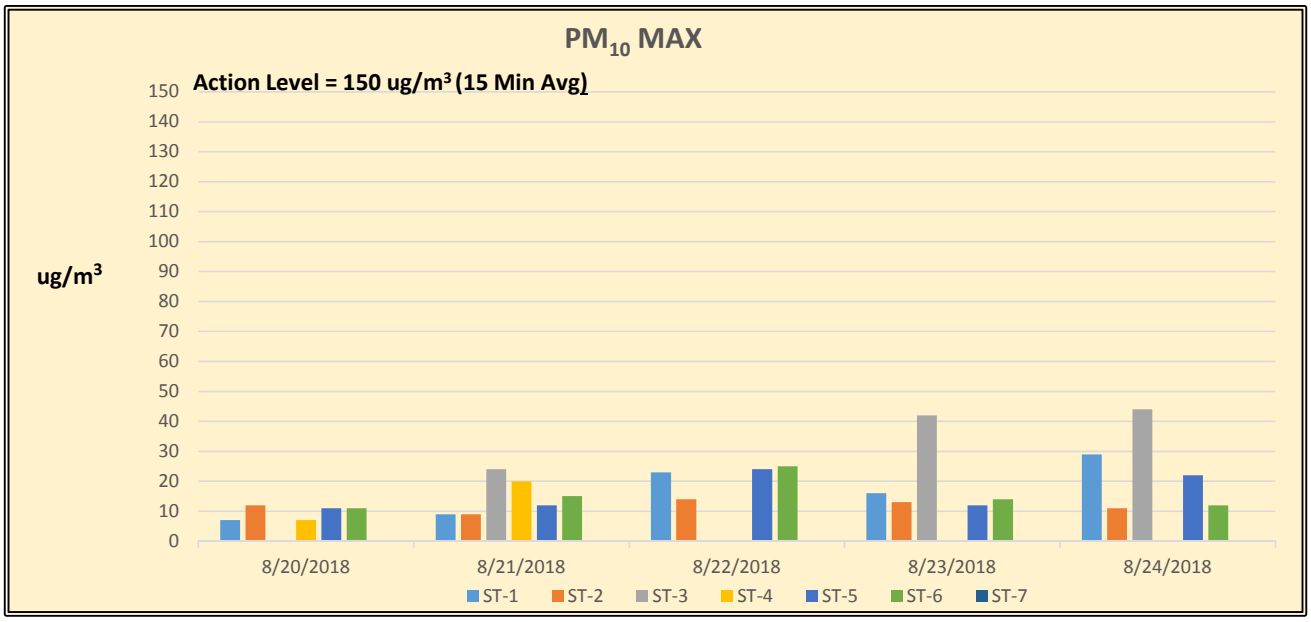
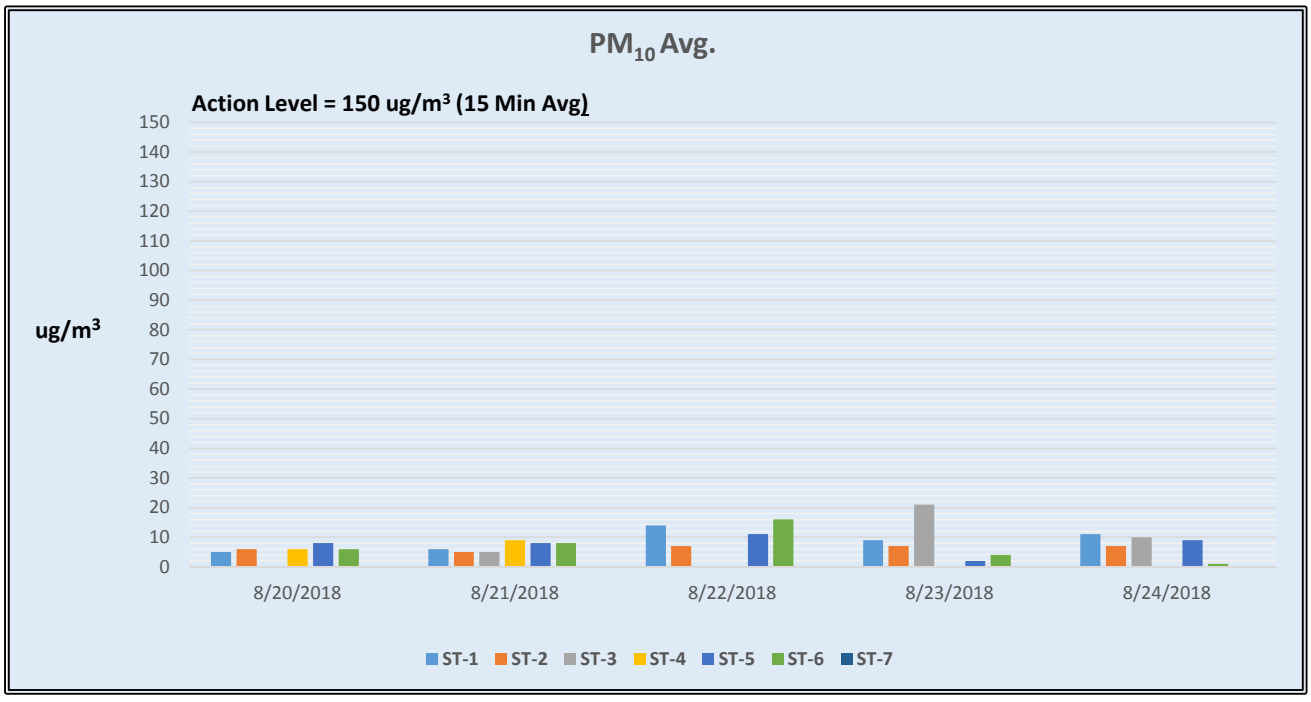
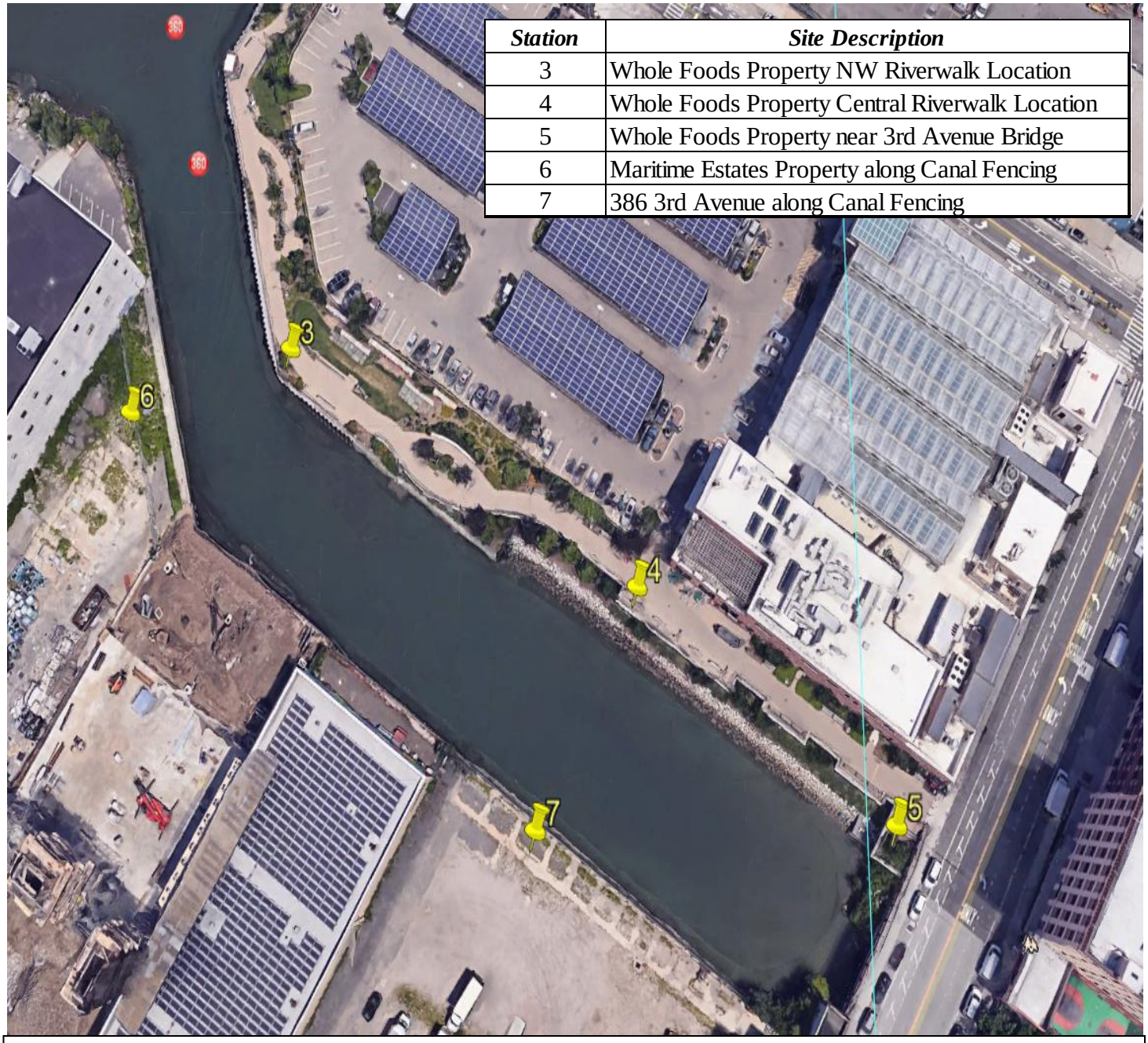


Figure 2
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
TRC CAMP PM_{10} Monitoring Data - Week 46







Station	*Site Description*
3	Whole Foods Property NW Riverwalk Location
4	Whole Foods Property Central Riverwalk Location
5	Whole Foods Property near 3rd Avenue Bridge
6	Maritime Estates Property along Canal Fencing
7	386 3rd Avenue along Canal Fencing

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

Table 1

Week 46
Summary of Additional Periodic (Daily) Monitoring Data

August 22nd, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	11:41	<50	<3	<1.0
	14:07	<50	<3	<1.0
ST-2	11:54	<50	<3	<1.0
	14:12	<50	<3	<1.0
ST-3	8:30	<50	<3	<1.0
	13:17	<50	<3	<1.0
ST-4	8:43	<50	<3	<1.0
	13:22	<50	<3	<1.0
ST-5	8:53	<50	<3	<1.0
	13:26	<50	<3	<1.0
ST-6	9:22	<50	<3	<1.0
	13:44	<50	<3	<1.0
ST-7	9:10	<50	<3	<1.0
	13:39	<50	<3	<1.0

August 23rd, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	9:41	<50	<3	<1.0
	14:27	<50	<3	<1.0
ST-2	9:56	<50	<3	<1.0
	14:34	<50	<3	<1.0
ST-3	8:19	<50	<3	<1.0
	14:52	<50	<3	<1.0
ST-4	8:27	<50	<3	<1.0
	14:56	<50	<3	<1.0
ST-5	8:32	<50	<3	<1.0
	15:04	<50	<3	<1.0
ST-6	9:19	<50	<3	<1.0
	15:17	<50	<3	<1.0
ST-7	9:02	<50	<3	<1.0
	15:13	<50	<3	<1.0

Table 1

Week 46
Summary of Additional Periodic (Daily) Monitoring Data

August 24th, 2018				
Station Id	**Time**	**Formaldehyde (CHO) (ppb)***	**Hydrogen Sulfide (H_2S) (ppb)***	**Ammonia (NH_3) (ppm)****
ST-1	10:06	<50	<3	<1.0
	13:17	<50	<3	<1.0
ST-2	10:20	<50	<3	<1.0
	13:22	<50	<3	<1.0
ST-3	8:31	<50	<3	<1.0
	13:44	<50	<3	<1.0
ST-4	9:19	<50	<3	<1.0
	13:49	<50	<3	<1.0
ST-5	9:07	<50	<3	<1.0
	13:56	<50	<3	<1.0
ST-6	9:53	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-7	9:27	<50	<3	<1.0
	14:13	<50	<3	<1.0

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

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

Table 2:
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
Week 43 VOCs Results: July 31st through August 1st and August 2nd through August 3rd

Sample ID	ST-7-VOC-073118		ST-1-VOC-080218	
Laboratory ID	18H0290-01		18H0290-02	
Date Sampled	7/31/18 14:00 - 8/1/18 13:00		8/2/18 09:00 - 8/3/18 08:00	
Location	Station 7		Station 1	
VOCs - TO-15	ppbV	ug/m3	ppbV	ug/m3
Acetone	**7.2**	**17**	**7.6**	**18**
Benzene	**0.13**	**0.43**	**0.11**	**0.36**
Benzyl chloride	<0.035	<0.18	<0.035	<0.18
Bromodichloromethane	<0.035	<0.24	<0.035	<0.24
Bromoform	<0.035	<0.36	<0.035	<0.36
Bromomethane	<0.035	<0.14	<0.035	<0.14
1,3-Butadiene	<0.035	<0.078	<0.035	<0.078
2-Butanone (MEK)	<1.4	<4.1	<1.4	<4.1
Carbon Disulfide	<0.35	<1.1	<0.35	<1.1
Carbon Tetrachloride	**0.079**	**0.49**	**0.074**	**0.47**
Chlorobenzene	<0.035	<0.16	<0.035	<0.16
Chloroethane	<0.070	<0.093	<0.070	<0.19
Chloroform	<0.035	<0.17	<0.035	<0.17
Chloromethane	**0.48**	**0.99**	**0.44**	**0.92**
Cyclohexane	<0.035	<0.12	<0.035	<0.12
Dibromochloromethane	<0.035	<0.30	<0.035	<0.30
1,2-Dibromoethane (EDB)	<0.035	<0.27	<0.035	<0.27
1,2-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
1,3-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
1,4-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
Dichlorodifluoromethane (Freon 12)	**0.14**	**0.68** J-	**0.12**	**0.61** J-
1,1-Dichloroethane	<0.035	<0.14	<0.035	<0.14
1,2-Dichloroethane	<0.035	<0.14	<0.035	<0.14
1,1-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
cis-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
trans-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
1,2-Dichloropropane	<0.035	<0.16	<0.035	<0.16
cis-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16
trans-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.035	<0.25	<0.035	<0.25
1,4-Dioxane	<0.35	<1.3	<0.35	<1.3
Ethanol	**6.3**	**12**	**4.8**	**9**
Ethyl Acetate	<0.070	<0.25	<0.070	<0.25
Ethylbenzene	**0.082**	**0.36**	**0.079**	**0.34**
4-Ethyltoluene	<0.035	<0.17	<0.035	<0.17
Heptane	**0.12**	**0.49**	**0.091**	**0.37**
Hexachlorobutadiene	<0.035	<0.37	<0.035	<0.37
Hexane	<1.4	<4.9	<1.4	<4.9
2-Hexanone (MBK)	<0.035	<0.14	<0.035	<0.14
Isopropanol	**3.5**	**8.5**	<1.4	<3.4
Methyl tert-Butyl Ether (MTBE)	<0.035	<0.13	<0.035	<0.13
Methylene Chloride	<0.35	<1.2	<0.35	<1.2
4-Methyl-2-pentanone (MIBK)	<0.035	<0.14	<0.035	<0.14
Naphthalene	**0.064**	**0.33**	**0.073**	**0.38**
Propene	<1.4	<2.4	<1.4	<2.4
Styrene	<0.035	<0.15	<0.035	<0.15
1,1,2,2-Tetrachloroethane	<0.035	<0.24	<0.035	<0.24
Tetrachloroethylene	**0.41**	**2.8**	**0.68**	**4.6**
Tetrahydrofuran	<0.035	<0.10	<0.035	<0.10
Toluene	**0.57**	**2.2**	**0.65**	**2.4**
1,2,4-Trichlorobenzene	<0.035	<0.26	<0.035	<0.26
1,1,1-Trichloroethane	<0.035	<0.19	<0.035	<0.19
1,1,2-Trichloroethane	<0.035	<0.19	<0.035	<0.19
Trichloroethylene	**0.087**	**0.47**	<0.035	<0.19
Trichlorofluoromethane (Freon 11)	**0.21**	**1.2**	**0.2**	**1.1**
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1	<0.14	<1.1
1,2,4-Trimethylbenzene	**0.091**	**0.45**	**0.098**	**0.48**
1,3,5-Trimethylbenzene	<0.035	<0.17	<0.035	<0.17
Vinyl Acetate	<0.70	<2.5	**0.97**	**3.4**
Vinyl Chloride	<0.035	<0.090	<0.035	<0.090
m&p-Xylene	**0.24**	**1**	**0.26**	**1.1**
o-Xylene	**0.083**	**0.36**	**0.094**	**0.41**

Notes:

Values in **bold** indicate detected concentrations

J-: The reported results for dichlorodifluoromethane (freon12) are estimated and may be biased low.

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

acetone, ethanol, methylene chloride and isopropanol

Table 3:
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
Week 44 VOCs Results: August 6th through August 7th and August 8th through August 9th

Sample ID	ST-2-VOC-080618			ST-3-VOC-080818		
Laboratory ID	18H0940-01			18H0940-02		
Date Sampled	8/6/18 11:30 - 8/7/18 10:30			8/8/18 10:00 - 8/9/18 09:00		
Location	Station 2			Station 3		
VOCs - TO-15	ppbV	ug/m3		ppbV	ug/m3	
Acetone	**8.5**	**20**		**8.7**	**21**	
Benzene	**0.24**	**0.76**		**0.2**	**0.63**	
Benzyl chloride	<0.035	<0.18		<0.035	<0.18	
Bromodichloromethane	<0.035	<0.24		<0.035	<0.24	
Bromoform	<0.035	<0.36		<0.035	<0.36	
Bromomethane	<0.035	<0.14		<0.035	<0.14	
1,3-Butadiene	**0.08**	**0.18**		**0.053**	**0.12**	
2-Butanone (MEK)	<1.4	<4.1		<1.4	<4.1	
Carbon Disulfide	<0.35	<1.1		<0.35	<1.1	
Carbon Tetrachloride	**0.072**	**0.45**		**0.067**	**0.42**	
Chlorobenzene	<0.035	<0.16		<0.035	<0.16	
Chloroethane	<0.035	<0.093		<0.035	<0.19	
Chloroform	**0.055**	**0.27**		**0.046**	**0.23**	
Chloromethane	**0.55**	**1.1**		**0.52**	**1.1**	
Cyclohexane	<0.035	<0.12		<0.035	<0.12	
Dibromochloromethane	<0.035	<0.30		<0.035	<0.30	
1,2-Dibromoethane (EDB)	<0.035	<0.27		<0.035	<0.27	
1,2-Dichlorobenzene	<0.035	<0.21		<0.035	<0.21	
1,3-Dichlorobenzene	<0.035	<0.21		<0.035	<0.21	
1,4-Dichlorobenzene	<0.035	<0.21		<0.035	<0.21	
Dichlorodifluoromethane (Freon 12)	**0.41**	**2**		**0.4**	**2**	
1,1-Dichloroethane	<0.035	<0.14		<0.035	<0.14	
1,2-Dichloroethane	<0.035	<0.14		<0.035	<0.14	
1,1-Dichloroethylene	<0.035	<0.14		<0.035	<0.14	
cis-1,2-Dichloroethylene	<0.035	<0.14		<0.035	<0.14	
trans-1,2-Dichloroethylene	<0.035	<0.14		<0.035	<0.14	
1,2-Dichloropropane	<0.035	<0.16		<0.035	<0.16	
cis-1,3-Dichloropropene	<0.035	<0.16		<0.035	<0.16	
trans-1,3-Dichloropropene	<0.035	<0.16		<0.035	<0.16	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.035	<0.25		<0.035	<0.25	
1,4-Dioxane	<0.35	<1.3		<0.35	<1.3	
Ethanol	**7.7**	**14**		**9.5**	**18**	
Ethyl Acetate	**0.27**	**0.97**		**0.27**	**0.99**	
Ethylbenzene	**0.084**	**0.36**		**0.077**	**0.34**	
4-Ethyltoluene	<0.035	<0.17		<0.035	<0.17	
Heptane	**0.12**	**0.51**		**0.13**	**0.54**	
Hexachlorobutadiene	<0.035	<0.37		<0.035	<0.37	
Hexane	<1.4	<4.9		<1.4	<4.9	
2-Hexanone (MBK)	**0.08**	**0.33**		**0.1**	**0.42**	
Isopropanol	<1.4	<3.4	J-	<1.4	<3.4	J-
Methyl tert-Butyl Ether (MTBE)	<0.035	<0.13		<0.035	<0.13	
Methylene Chloride	<0.35	<1.2		<0.35	<1.2	
4-Methyl-2-pentanone (MIBK)	**0.079**	**0.32**		**0.081**	**0.33**	
Naphthalene	**0.072**	**0.38**		**0.047**	**0.25**	
Propene	<1.4	<2.4		<1.4	<2.4	
Styrene	<0.035	<0.15		<0.035	<0.15	
1,1,2,2-Tetrachloroethane	<0.035	<0.24		<0.035	<0.24	
Tetrachloroethylene	<0.035	<0.24		<0.035	<0.24	
Tetrahydrofuran	<0.035	<0.10	J-	<0.035	<0.10	J-
Toluene	**0.44**	**1.7**		**0.45**	**1.7**	
1,2,4-Trichlorobenzene	<0.035	<0.26		<0.035	<0.26	
1,1,1-Trichloroethane	<0.035	<0.19		<0.035	<0.19	
1,1,2-Trichloroethane	<0.035	<0.19		<0.035	<0.19	
Trichloroethylene	<0.035	<0.19		<0.035	<0.19	
Trichlorofluoromethane (Freon 11)	**0.22**	**1.3**		**0.22**	**1.3**	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1		<0.14	<1.1	
1,2,4-Trimethylbenzene	**0.088**	**0.43**		**0.09**	**0.44**	
1,3,5-Trimethylbenzene	<0.035	<0.17		<0.035	<0.17	
Vinyl Acetate	<0.70	<2.5		<0.70	<2.5	
Vinyl Chloride	<0.035	<0.090		<0.035	<0.090	
m&p-Xylene	**0.22**	**0.97**		**0.23**	**0.99**	
o-Xylene	**0.086**	**0.37**		**0.086**	**0.37**	

Notes:

Values in **bold** indicate detected concentrations

J-: The reported results for isopropanol and tetrahydrofuran are estimated and may be biased low.

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

acetone, ethanol, methylene chloride and isopropanol

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

Meteorological Summary
August 20th through August 24th, 2018

August 20th, 2018 *		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
S	**4.97**	**70.8**

August 21st, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
E	**6.30**	**71.4**

August 22nd, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
S	**2.40**	**78.0**

August 23rd, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
W	**2.48**	**73.7**

August 24th, 2018 ***		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SSW	**1.45**	**75.2**

* 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 17:00.

WILSON IHRIG WEEKLY NOISE AND VIBRATION MONITORING REPORT

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

WI #15-081

MEMORANDUM

August 27, 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, 20 August – 24 August, 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[1]. 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[2].

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

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

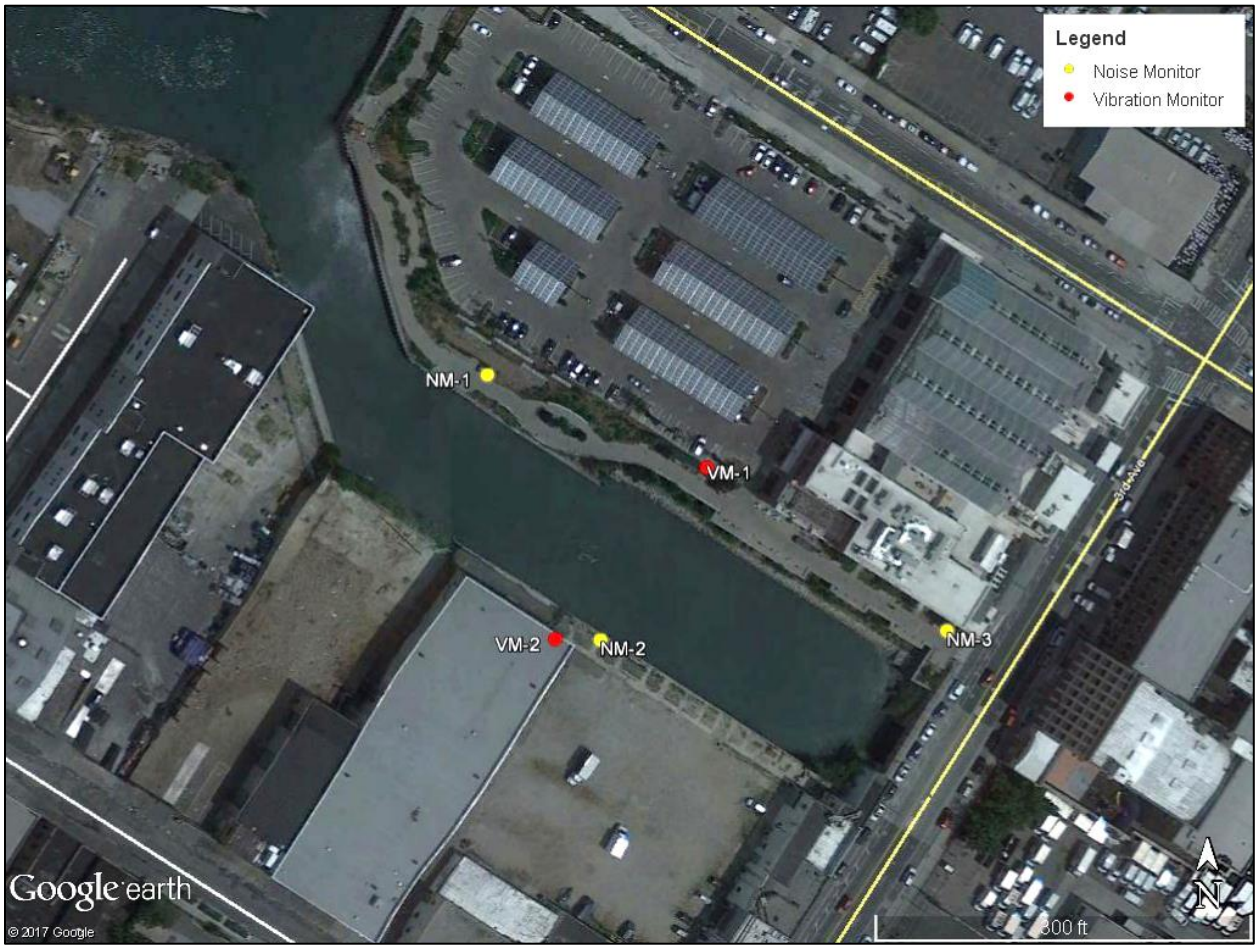


Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study

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

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

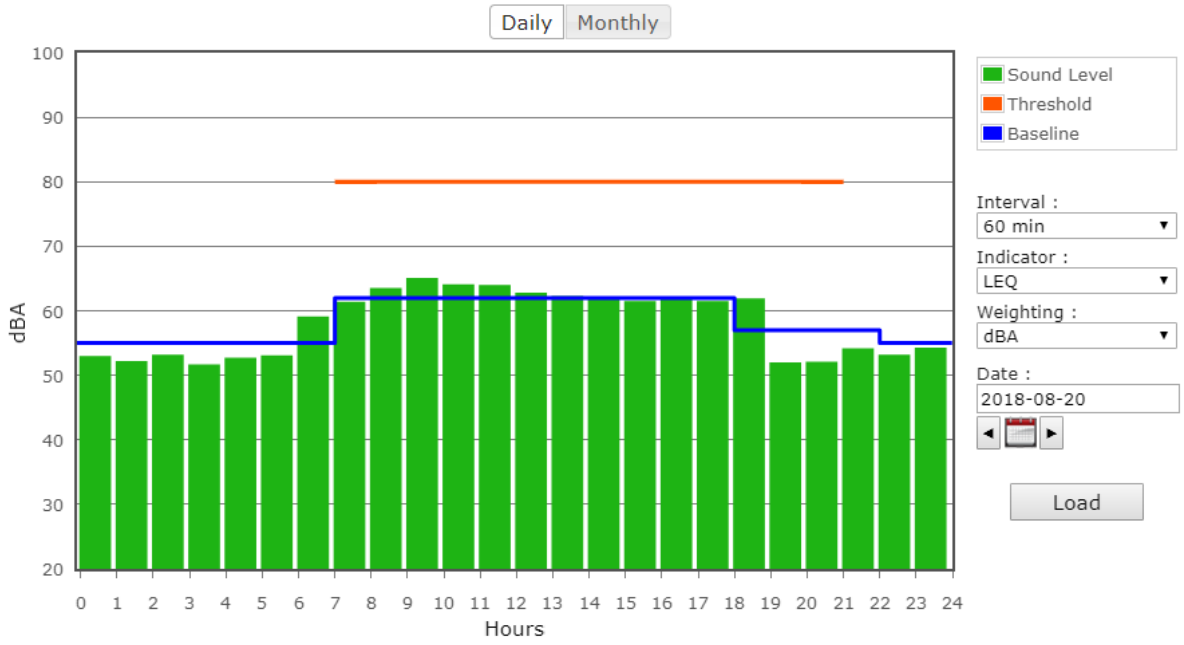


Figure 2: North Monitor NM-1 on Monday

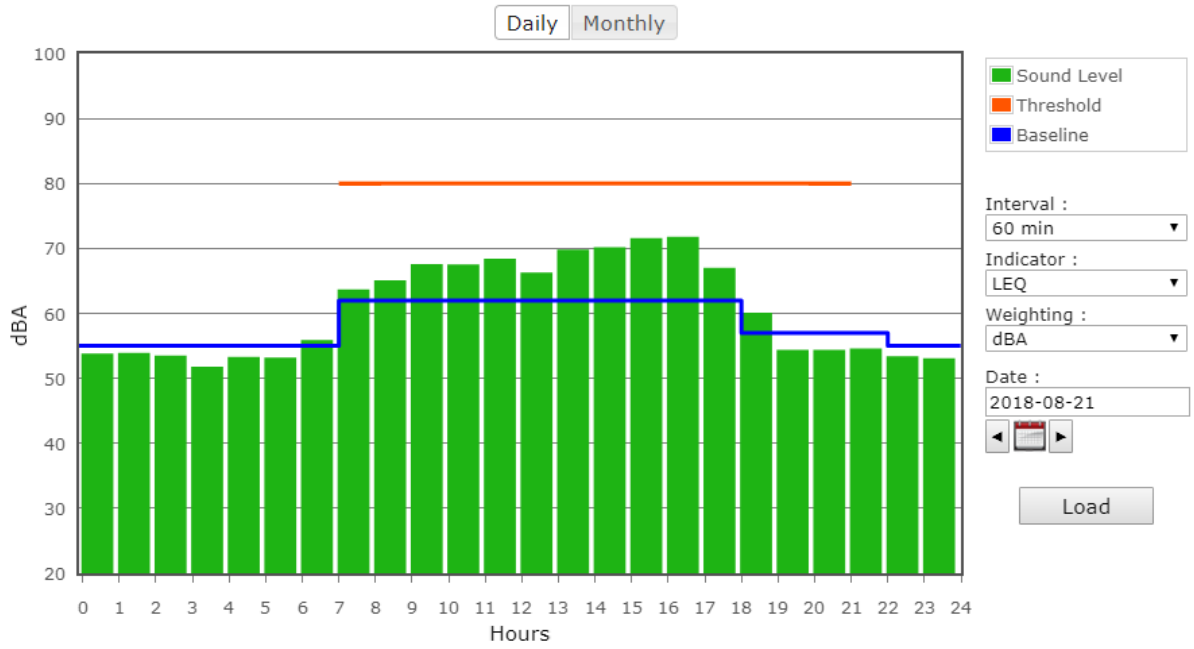


Figure 3: North Monitor NM-1 on Tuesday

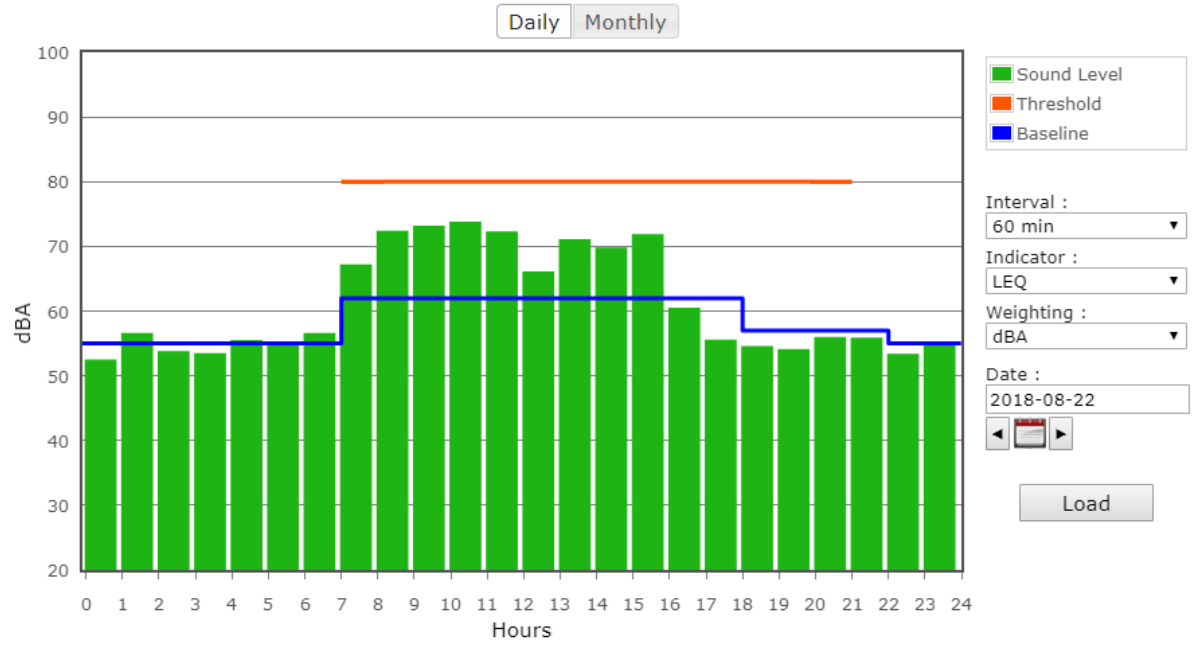


Figure 4: North Monitor NM-1 on Wednesday

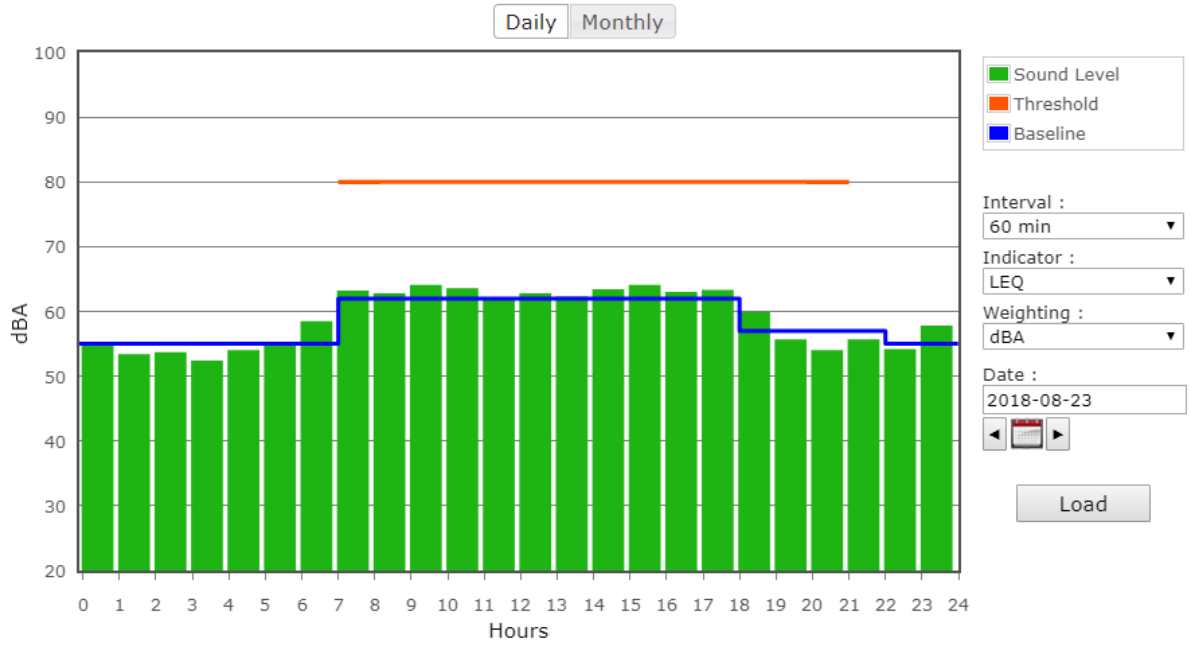


Figure 5: North Monitor NM-1 on Thursday

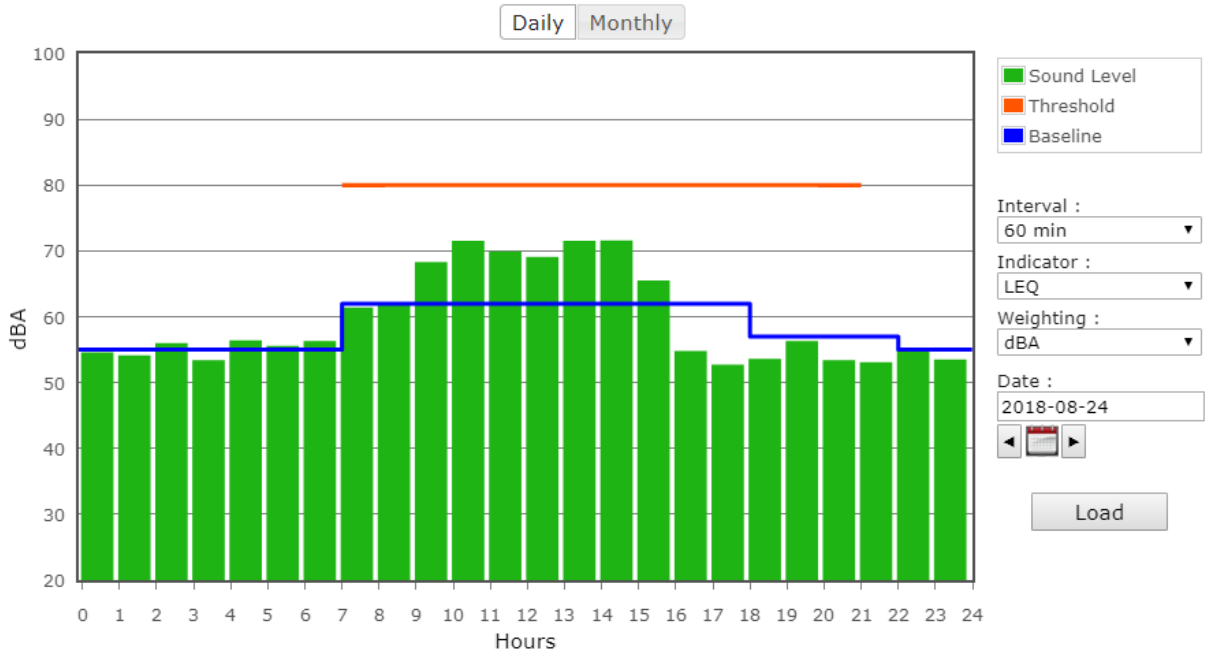


Figure 6: North Monitor NM-1 on Friday

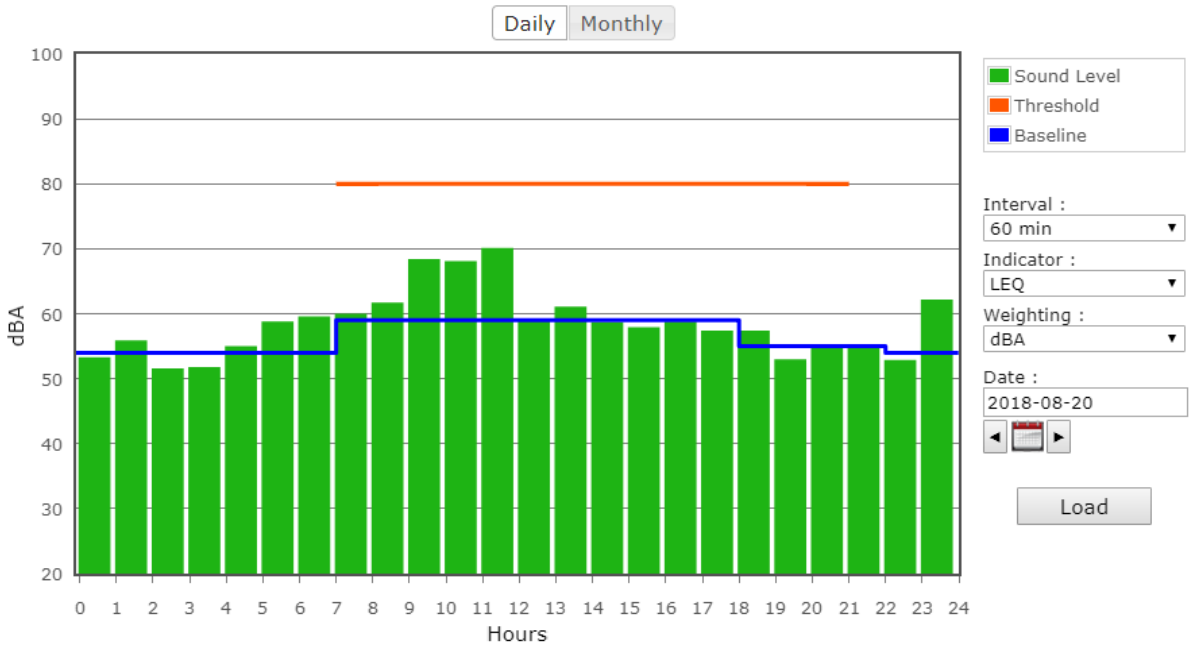


Figure 7: South Monitor NM-2 on Monday

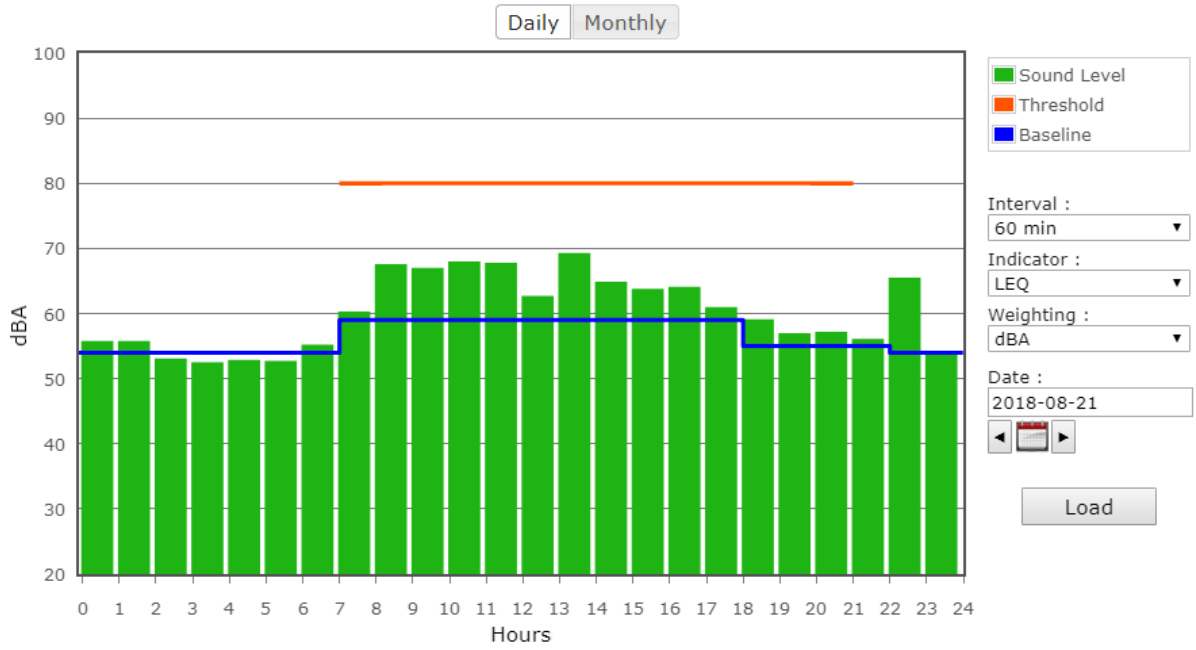


Figure 8: South Monitor NM-2 on Tuesday

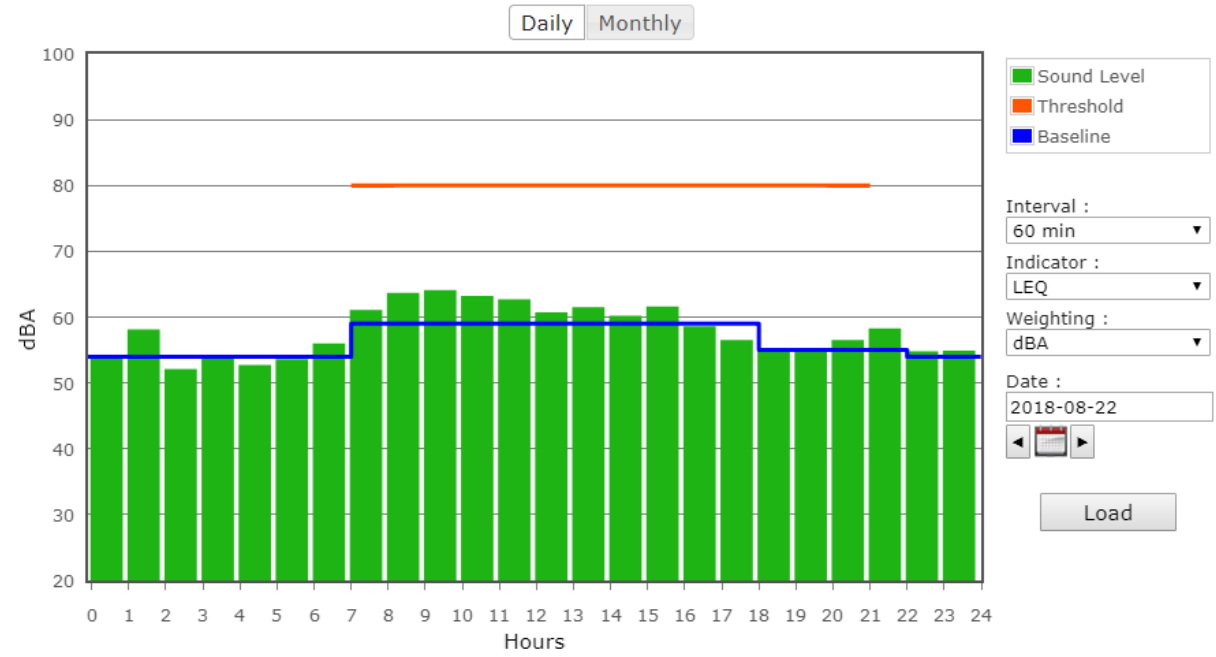


Figure 9: South Monitor NM-2 on Wednesday

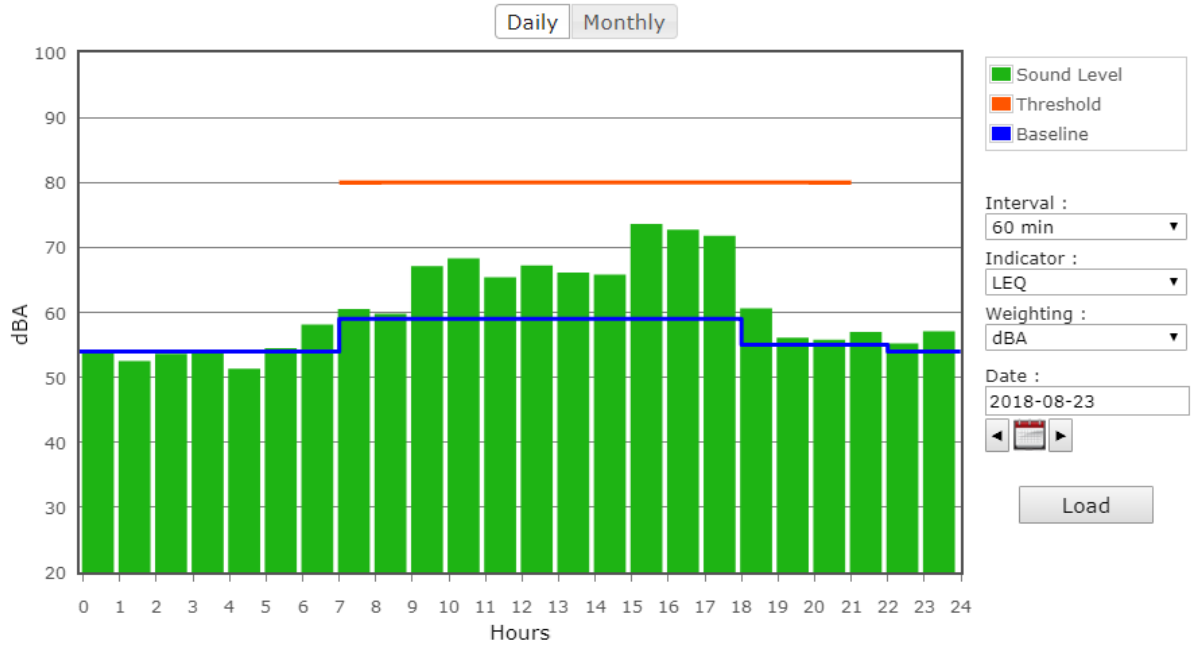


Figure 10: South Monitor NM-2 on Thursday

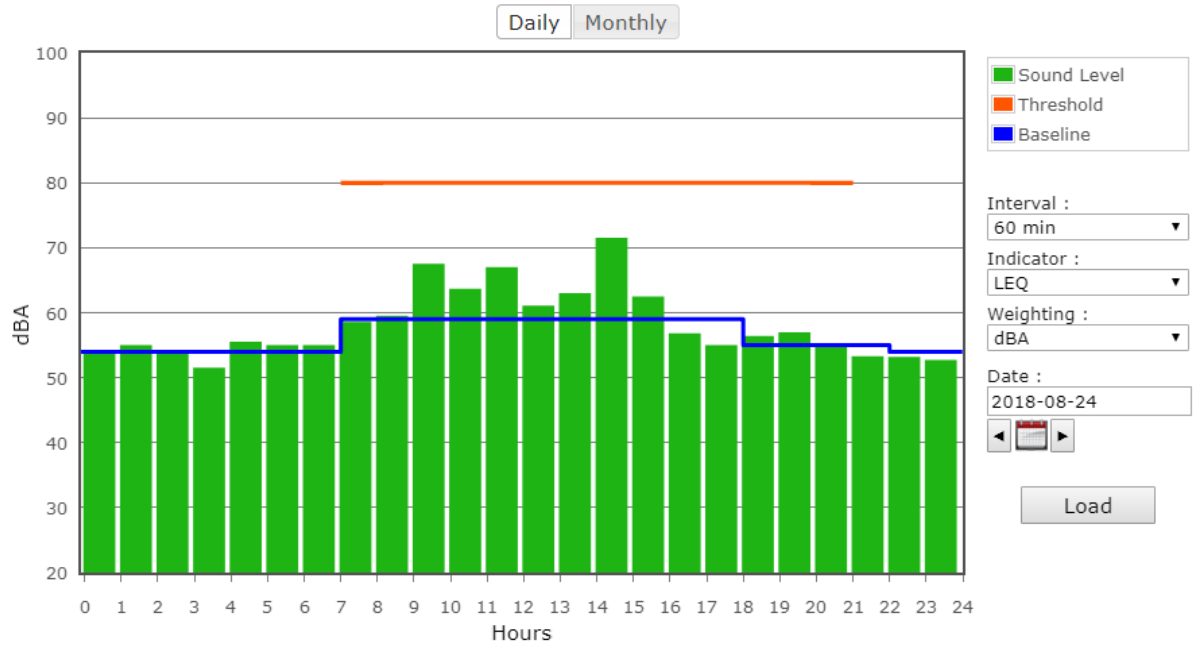


Figure 11: South Monitor NM-2 on Friday

AHRS WEEKLY REPORT

(NO ACTIVITIES DURING WEEK)

WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA

(NO ACTIVITIES DURING WEEK)

CUMULATIVE DREDGED MATERIAL CHART

(NO ACTIVITIES DURING WEEK)