WEEKLY PROGRESS REPORT – TRC SOLUTIONS

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

Project number: 283126

Period: March 26 to 30, 2018

Date of Report: April 5, 2018

Rev: 0

Prepared For: Gowanus Environmental Remediation Trust

On-Site Activities Conducted During Week:

Sevenson Environmental Services (SES)

Sheet Pile Installation

- Reconfigure crane in preparation of installation of bulkhead support sheet piling with Giken silent press
- Receive Giken press pile in TB4 and assemble auger attachment for Giken silent press
- Remove existing and install two (2) new pairs of sheet piling at approximate Station 5+76

Water Treatment and Monitoring

- Discharged 10,976 and 46,013 gallons of treated accumulated stormwater on 03/27/18 and 03/30/17, respectively.
- No exceedances of continuous monitoring.

Turbidity Monitoring

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

Vibration Monitoring (subcontractor – Vibra-Tech)

- Operated and maintained five (5) stationary vibration monitors. Two (2) stationary monitors located on the south side of the canal, one (1) stationary monitor located on the north side of the canal, two (2) stationary monitors located on the 3rd Avenue Bridge abutments. Additionally, employed two (2), at a minimum, portable vibration monitors to measure vibration levels within 15 feet of the sheet pile installation work.
- Performed daily crack gauge inspections at 386 3rd Avenue during sheet pile installation.
- No exceedances of the peak particle velocity level specified in the Contract Documents (0.40 inches per second) or acceleration level specified in the Contract Documents (0.1 g).

Quality Assurance and Control – Geosyntec

- No exceedance of the turbidity trigger or action criteria during work.
- Water treatment system sampling performed on 03/27/18. Laboratory turnaround time is 10 business days.
- Measurements for 3/26/18:
  - Daily average for ambient buoy – 8.1 NTU
  - Daily average for sentinel buoy – 7.1 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 18.6 NTU at 0715.
- Measurements for 3/27/18:
  - Daily average for ambient buoy – 8.7 NTU
  - Daily average for sentinel buoy – 7.0 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 1.7 NTU at 1145.
- Measurements for 3/28/18:
  - Daily average for ambient buoy – 8.5 NTU
  - Daily average for sentinel buoy – 8.2 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 17.0 NTU at 1130.

- Measurements for 3/29/18:
    - Daily average for ambient buoy – 9.4 NTU
    - Daily average for sentinel buoy – 7.8 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 2.1 NTU at 1015.
- Measurements for 3/30/18:
    - Daily average for ambient buoy – 11.3 NTU
    - Daily average for sentinel buoy – 9.5 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 1.8 NTU at 0945.

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 – 47 $\mu g/m^3$ recorded on 03/29/18
    - Station 2 – 43 $\mu g/m^3$ recorded on 03/29/18
    - Station 3 – 49 $\mu g/m^3$ recorded on 03/30/18
    - Station 4 – 52 $\mu g/m^3$ recorded on 03/29/18
    - Station 5 – 93 $\mu g/m^3$ recorded on 03/29/18
    - Station 6 – 42 $\mu g/m^3$ recorded on 03/30/18
    - Station 7 – <1 $\mu g/m^3$ recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
    - Station 1 – 59 ppb recorded on 03/28/18
    - Station 2 – 25 ppb recorded on 03/26 and 03/30/18
    - Station 3 – 48 ppb recorded on 03/28/18
    - Station 4 – 70 ppb recorded on 03/27/18
    - Station 5 – 123 ppb recorded on 03/29/18
    - Station 6 – 33 ppb recorded on 03/30/18
    - Station 7 – 120 ppb recorded on 03/27/18
- All real-time readings of hydrogen sulfide, ammonia, or formaldehyde less than instrument reporting limit.
- 23-hour sample collected at ST-3 on 03/29 through 03/30. Laboratory turnaround time is 10 business days.
- Tabulated laboratory analytical results for 23-hour sample collected at ST-2 on 03/15 through 03/16 and ST-3 (collocated) on 03/14 through 03/15 presented in weekly CAMP report.

Noise and Vibration Monitoring – Wilson Ihrig

- Operated and maintained three (3) noise monitors: NM-1 (north side of canal on Whole Foods promenade), NM-2 (south side of canal on southeast corner of 386 3rd Avenue), and NM-3 (southeast corner of Whole Foods at 3rd Avenue Bridge).
- No exceedances of the hourly Leq noise limit of 80 dBA
- Greatest hourly Leq noise measurements
    - Northern monitor (NM-1) – 75.2 dBA during 1100-1200 on 03/26/18
    - Southern monitor (NM-2) – 79.4 dBA during 1000-1100 on 03/26/18
    - 3rd Avenue Bridge monitor (NM-3) – 75.2 dBA during 1000-1100 on 03/26/18
- No exceedances of the commercial and industrial structures vibration criterion of 2.0 inches per second peak particle velocity.
- Greatest peak particle velocity measurements
    - Northern monitor (VM-1) – 0.0242 in/sec event between 1400 and 1500 on 03/26/18
    - Southern monitor (VM-2) – 0.0431 in/sec event between 1300 and 1400 on 03/27/18

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

- Complete final inspection of screened debris from Access Dredging in preparation for off-site disposal. Formal report forthcoming.

Two-Week Look Ahead:

Sevenson:

- Utilize GIKEN Silent Press to remove and install sheet piling adjacent to Dykes Lumber, Whole Foods, and within transect.
- Perform vibration, benchmark, and optical monitoring of bulkheads and surrounding structures.

Geosyntec – Perform construction quality assurance responsibilities.

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise and vibration monitoring,

AHRS –

- Submit report of inspection of screened debris from Access Dredging in preparation for off-site disposal.
- Review photographs of screened Phase I dredging debris from Clean Earth of Claremont.

Key Milestones

- Giken silent press on-site on 03/27/18.

Attachments:

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

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

Photo No.	Date
001	03-26-2018

Description
Lifting cut sheet pile from the section located at Whole Foods.

Photo No.	Date
002	03-26-2018

Description
Torch cutting the sheet piles located at the Dykes Lumber building.

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

Photo No.	Date
003	03-27-2018

Description
Giken being placed onto the sheet piles.

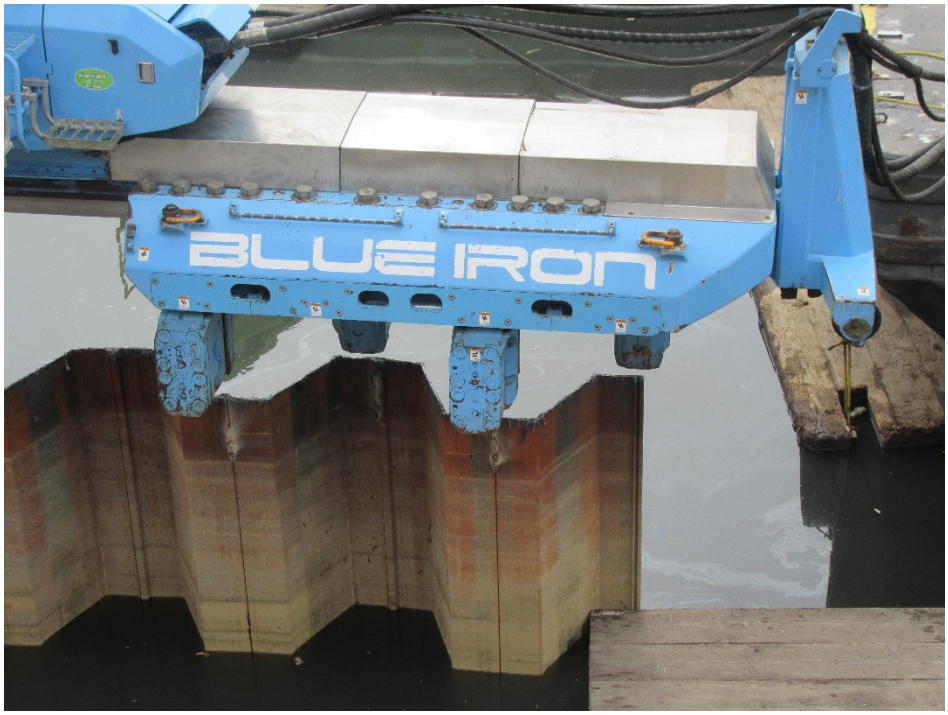


Photo No.	Date
004	03-27-2018

Description
Giken pulling the first pair of sheet piles to be removed.

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

Photo No.	Date
005	03-28-2018

Description
Sennebogen material handler staged for delivery to the site.

Photo No.	Date
006	03-28-2018

Description
Starting a new sheet pile in the gap left by the earlier removal of one pair.

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

Photo No.	Date
007	03-29-2018

Description
Hose attachment for the auger system attached to the Giken pile press.

Photo No.	Date
008	03-29-2018

Description
Assembling the auger sections. Bolting the first joint together.

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

Photo No.	Date
009	03-30-2018

Description
Lowering the Giken press over the high pile, into position onto the reactive piles.

Photo No.	Date
010	03-30-2018

Description
Raising the auger to place it into the Giken press.

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 March 26th, 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 March 26th, 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 collected every 15 minutes from both the ambient and sentinel buoys during each day between 7 AM and 5 PM during the week of March 26th. 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

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 March 26th to March 30th, 2018. Background data prior to the start of dredging is provided in Appendix A. No exceedances to the rolling average threshold criteria were observed during the reporting period.

2.1 Monday, March 26th, 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)
3/26/2018 7:00	7.1	6.3	N	3/26/2018 12:15	7.7	7.0	N
3/26/2018 7:15	6.8	25.4	Y	3/26/2018 12:30	7.5	6.1	N
3/26/2018 7:30	6.8	5.8	N	3/26/2018 12:45	8.3	6.3	N
3/26/2018 7:45	6.6	6.0	N	3/26/2018 13:00	8.6	6.1	N
3/26/2018 8:00	6.6	6.1	N	3/26/2018 13:15	8.1	6.3	N
3/26/2018 8:15	7.3	5.6	N	3/26/2018 13:30	8.2	6.0	N
3/26/2018 8:30	7.7	5.8	N	3/26/2018 13:45	8.1	6.0	N
3/26/2018 8:45	7.9	5.1	N	3/26/2018 14:00	8.3	6.2	N
3/26/2018 9:00	7.2	6.4	N	3/26/2018 14:15	8.1	5.7	N
3/26/2018 9:15	8.5	5.0	N	3/26/2018 14:30	7.3	6.4	N
3/26/2018 9:30	8.8	6.7	N	3/26/2018 14:45	8.0	6.6	N
3/26/2018 9:45	9.2	6.3	N	3/26/2018 15:00	8.4	6.6	N
3/26/2018 10:00	10.5	7.1	N	3/26/2018 15:15	9.1	6.7	N
3/26/2018 10:15	9.7	7.5	N	3/26/2018 15:30	9.0	5.8	N
3/26/2018 10:30	9.2	8.9	N	3/26/2018 15:45	8.9	6.9	N
3/26/2018 10:45	8.3	8.2	N	3/26/2018 16:00	8.1	8.6	Y
3/26/2018 11:00	8.1	8.1	N	3/26/2018 16:15	8.2	8.2	N
3/26/2018 11:15	9.3	7.7	N	3/26/2018 16:30	7.5	7.1	N
3/26/2018 11:30	8.3	7.3	N	3/26/2018 16:45	7.0	7.1	Y
3/26/2018 11:45	7.6	6.9	N	3/26/2018 17:00	7.9	7.4	N
3/26/2018 12:00	7.8	5.9	N				

Average	8.1	7.1	N
Maximum	10.5	25.4	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

2.2 Tuesday, March 27th, 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)
3/27/2018 7:00	10.1	8.3	N	3/27/2018 12:15	9.6	7.7	N
3/27/2018 7:15	8.7	7.9	N	3/27/2018 12:30	7.9	8.1	Y
3/27/2018 7:30	8.9	7.3	N	3/27/2018 12:45	7.7	8.7	Y
3/27/2018 7:45	11.1	7.3	N	3/27/2018 13:00	7.5	8.1	Y
3/27/2018 8:00	9.2	6.9	N	3/27/2018 13:15	7.5	7.4	N
3/27/2018 8:15	8.8	6.4	N	3/27/2018 13:30	8.8	7.2	N
3/27/2018 8:30	8.2	7.0	N	3/27/2018 13:45	7.4	5.4	N
3/27/2018 8:45	8.0	6.6	N	3/27/2018 14:00	6.6	5.4	N
3/27/2018 9:00	8.2	5.7	N	3/27/2018 14:15	8.2	5.1	N
3/27/2018 9:15	8.6	7.7	N	3/27/2018 14:30	7.7	6.0	N
3/27/2018 9:30	9.0	6.0	N	3/27/2018 14:45	7.7	5.6	N
3/27/2018 9:45	8.6	7.7	N	3/27/2018 15:00	10.1	5.5	N
3/27/2018 10:00	8.2	6.6	N	3/27/2018 15:15	6.4	6.1	N
3/27/2018 10:15	9.5	7.6	N	3/27/2018 15:30	7.5	5.6	N
3/27/2018 10:30	9.9	8.1	N	3/27/2018 15:45	7.5	4.9	N
3/27/2018 10:45	10.8	6.7	N	3/27/2018 16:00	8.0	5.7	N
3/27/2018 11:00	10.7	7.5	N	3/27/2018 16:15	7.9	5.9	N
3/27/2018 11:15	13.8	9.0	N	3/27/2018 16:30	7.9	5.5	N
3/27/2018 11:30	8.2	8.5	Y	3/27/2018 16:45	9.5	5.7	N
3/27/2018 11:45	9.0	10.7	Y	3/27/2018 17:00	10.1	8.5	N
3/27/2018 12:00	9.0	8.7	N				

Average	8.7	7.0	N
Maximum	13.8	10.7	N

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, March 28th, 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)
3/28/2018 7:00	10.7	8.7	N	3/28/2018 12:15	9.1	20.4	Y
3/28/2018 7:15	10.2	7.9	N	3/28/2018 12:30	8.3	14.2	Y
3/28/2018 7:30	11.1	8.5	N	3/28/2018 12:45	8.1	9.0	Y
3/28/2018 7:45	9.8	7.4	N	3/28/2018 13:00	7.7	9.4	Y
3/28/2018 8:00	10.9	9.6	N	3/28/2018 13:15	8.2	14.9	Y
3/28/2018 8:15	9.4	7.6	N	3/28/2018 13:30	7.1	8.8	Y
3/28/2018 8:30	8.9	9.9	Y	3/28/2018 13:45	7.1	6.0	N
3/28/2018 8:45	8.7	7.4	N	3/28/2018 14:00	6.7	8.4	Y
3/28/2018 9:00	7.4	6.0	N	3/28/2018 14:15	12.3	6.7	N
3/28/2018 9:15	7.3	5.8	N	3/28/2018 14:30	6.3	5.4	N
3/28/2018 9:30	7.4	6.6	N	3/28/2018 14:45	7.3	5.2	N
3/28/2018 9:45	8.0	5.6	N	3/28/2018 15:00	8.6	5.2	N
3/28/2018 10:00	7.5	5.5	N	3/28/2018 15:15	8.8	6.9	N
3/28/2018 10:15	8.1	5.4	N	3/28/2018 15:30	7.6	7.2	N
3/28/2018 10:30	8.2	5.9	N	3/28/2018 15:45	8.2	6.6	N
3/28/2018 10:45	8.0	5.7	N	3/28/2018 16:00	8.0	6.4	N
3/28/2018 11:00	9.0	5.2	N	3/28/2018 16:15	7.7	5.4	N
3/28/2018 11:15	8.8	6.5	N	3/28/2018 16:30	8.7	6.1	N
3/28/2018 11:30	8.5	25.5	Y	3/28/2018 16:45	7.8	6.1	N
3/28/2018 11:45	9.0	7.9	N	3/28/2018 17:00	8.0	6.1	N
3/28/2018 12:00	8.1	12.6	Y				

Average	8.5	8.2	N
Maximum	12.3	25.5	Y

Notes:

No exceedances to rolling average threshold criteria during reporting period

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

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

2.4 Thursday, March 29th, 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)
3/29/2018 7:00	13.5	8.0	N	3/29/2018 12:15	8.5	6.2	N
3/29/2018 7:15	11.8	6.4	N	3/29/2018 12:30	7.8	6.9	N
3/29/2018 7:30	14.3	9.7	N	3/29/2018 12:45	8.1	7.0	N
3/29/2018 7:45	14.6	10.7	N	3/29/2018 13:00	8.1	6.2	N
3/29/2018 8:00	17.0	7.6	N	3/29/2018 13:15	9.2	6.9	N
3/29/2018 8:15	14.3	12.7	N	3/29/2018 13:30	9.9	7.7	N
3/29/2018 8:30	12.8	12.9	Y	3/29/2018 13:45	8.3	6.2	N
3/29/2018 8:45	12.0	12.6	Y	3/29/2018 14:00	8.7	7.3	N
3/29/2018 9:00	10.9	10.6	N	3/29/2018 14:15	8.1	5.9	N
3/29/2018 9:15	9.6	8.6	N	3/29/2018 14:30	8.6	6.5	N
3/29/2018 9:30	9.4	10.1	Y	3/29/2018 14:45	7.3	6.9	N
3/29/2018 9:45	8.6	9.3	Y	3/29/2018 15:00	8.2	6.0	N
3/29/2018 10:00	8.7	9.5	Y	3/29/2018 15:15	6.9	5.4	N
3/29/2018 10:15	8.4	10.5	Y	3/29/2018 15:30	7.6	6.6	N
3/29/2018 10:30	7.7	7.6	N	3/29/2018 15:45	8.0	6.8	N
3/29/2018 10:45	7.5	7.6	Y	3/29/2018 16:00	9.0	6.8	N
3/29/2018 11:00	7.1	7.2	Y	3/29/2018 16:15	9.4	5.5	N
3/29/2018 11:15	6.8	6.2	N	3/29/2018 16:30	9.8	6.5	N
3/29/2018 11:30	7.3	6.1	N	3/29/2018 16:45	9.0	7.0	N
3/29/2018 11:45	7.2	6.1	N	3/29/2018 17:00	9.5	9.7	Y
3/29/2018 12:00	7.3	6.6	N				

Average	9.4	7.8	N
Maximum	17.0	12.9	N

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, March 30th, 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)
3/30/2018 7:00	12.0	8.5	N	3/30/2018 12:15	8.3	8.9	Y
3/30/2018 7:15	10.9	7.8	N	3/30/2018 12:30	9.1	8.2	N
3/30/2018 7:30	12.2	8.6	N	3/30/2018 12:45	9.4	7.3	N
3/30/2018 7:45	14.3	11.0	N	3/30/2018 13:00	8.9	7.9	N
3/30/2018 8:00	15.5	11.2	N	3/30/2018 13:15	9.2	9.3	Y
3/30/2018 8:15	17.0	12.2	N	3/30/2018 13:30	8.4	8.4	N
3/30/2018 8:30	18.7	13.7	N	3/30/2018 13:45	8.7	8.8	Y
3/30/2018 8:45	18.4	18.4	N	3/30/2018 14:00	9.5	7.7	N
3/30/2018 9:00	14.9	14.1	N	3/30/2018 14:15	9.4	7.2	N
3/30/2018 9:15	13.8	11.7	N	3/30/2018 14:30	9.5	8.6	N
3/30/2018 9:30	12.6	11.8	N	3/30/2018 14:45	9.0	7.3	N
3/30/2018 9:45	11.9	13.7	Y	3/30/2018 15:00	9.1	8.9	N
3/30/2018 10:00	12.0	11.6	N	3/30/2018 15:15	11.1	8.2	N
3/30/2018 10:15	11.8	9.4	N	3/30/2018 15:30	9.8	8.3	N
3/30/2018 10:30	9.7	9.9	Y	3/30/2018 15:45	14.8	8.2	N
3/30/2018 10:45	9.1	10.4	Y	3/30/2018 16:00	12.4	10.5	N
3/30/2018 11:00	8.3	7.9	N	3/30/2018 16:15	12.1	9.2	N
3/30/2018 11:15	9.0	7.7	N	3/30/2018 16:30	13.2	9.9	N
3/30/2018 11:30	8.6	7.4	N	3/30/2018 16:45	12.2	8.9	N
3/30/2018 11:45	8.1	6.8	N	3/30/2018 17:00	12.1	9.3	N
3/30/2018 12:00	8.2	6.7	N				

Average	11.3	9.5	N
Maximum	18.7	18.4	N

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 MEASURMENTS

No handheld measurements were collected for this reporting period.

4. SUMMARY OF VISUAL OBSERVATIONS

Visual observations are consistent with background conditions 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

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
25th Weekly Monitoring Period
Summary Report:

March 26th through March 30th, 2018

Report Contents

- Executive Summary
- Daily Data Summary Report – PM_{10}/TVOC
- Daily Meteorological Summary Report
- Periodic Monitoring Results
- Volatile Organic Compounds (USEPA Method TO-15

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

WI #15-081

MEMORANDUM

April 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 and Vibration Monitoring Report, 26 March – 30 March, 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. NM-3 is installed at a light pole on the north side of TB4 near 3rd Avenue, approximately 50 feet from the north edge of the canal. Photos 1, 2, and 3 show the recent field conditions at the monitors.

Vibration Monitoring Locations

Figure 1 shows the vibration monitoring locations. Vibration monitor VM-1 is installed at the parking lot curb on the north side of TB4, approximately 45 feet from the north edge of the canal. Vibration monitor VM-2 is installed near the corner of an existing building on the south side of TB4, approximately 24 feet from the south edge of the canal. Photos 4 and 5 show the recent field conditions at the monitors.

Noise Monitoring Results

Figures 2 through 16 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.

Vibration Monitoring Results

Figures 17 through 26 present the maximum peak particle velocity (PPV) vibration events compared with the thresholds discussed in the vibration monitoring plan[3]. Commercial and Industrial structures are assigned a PPV vibration criterion of 2.0 inches/second.

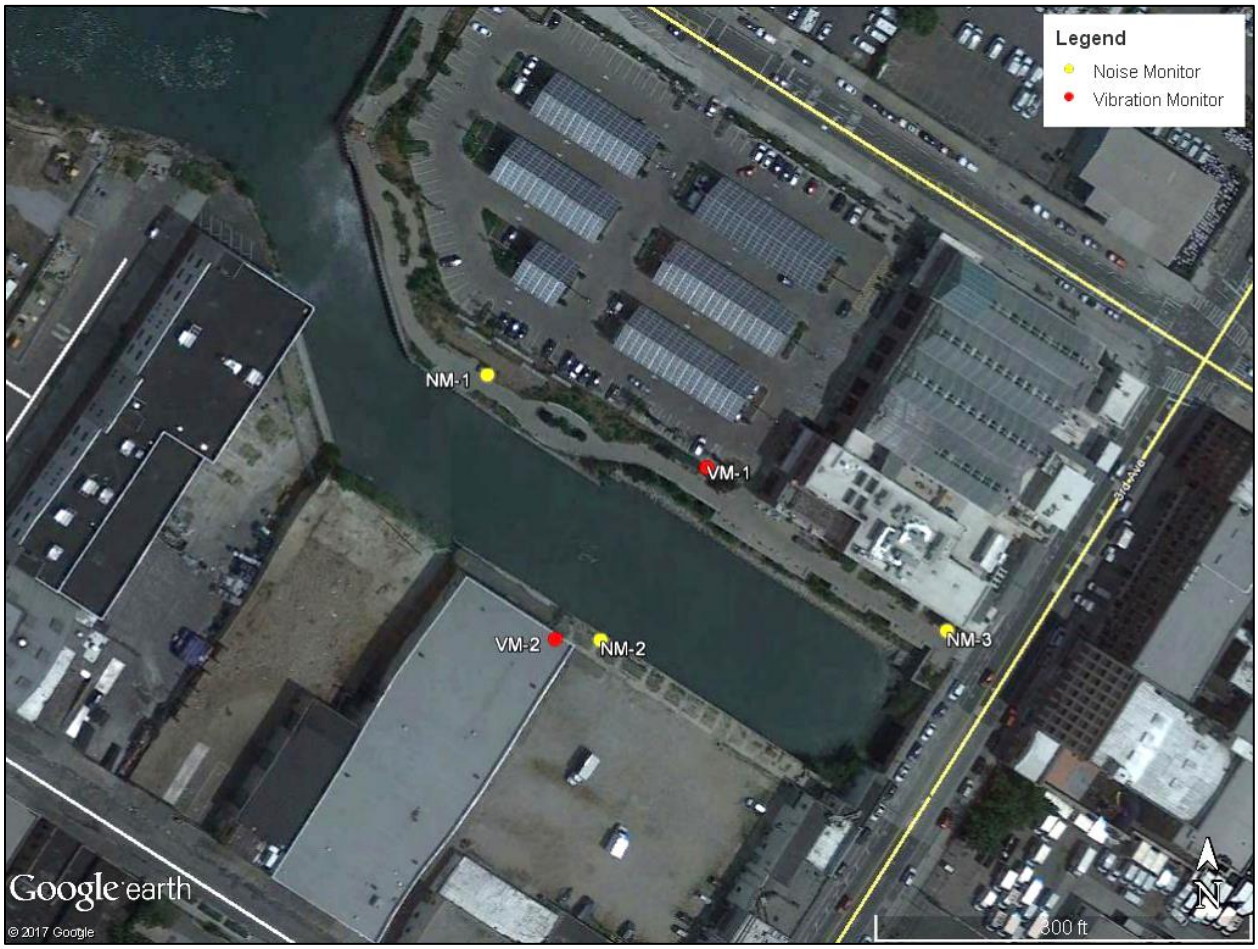


Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study

[3] 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

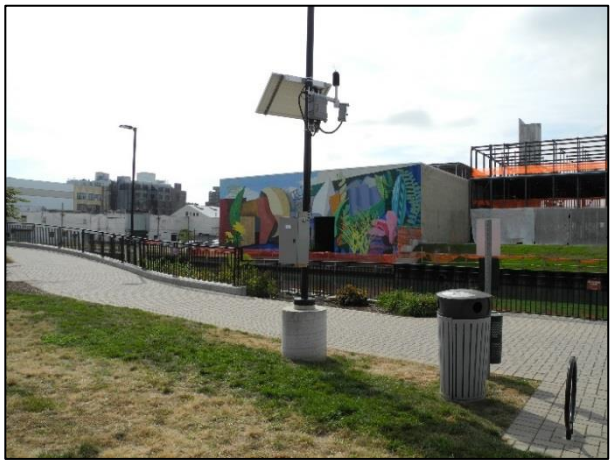


Photo 1: Noise Monitoring Location NM-1 (26 September 2017)

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

Photo 3: Noise Monitoring Location NM-3 (29 October 2017)

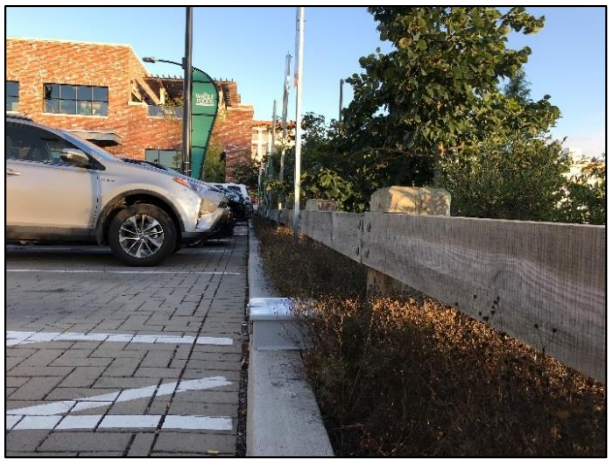


Photo 4: Vibration Monitoring Location VM-1 (12 October 2017)

Photo 5: Vibration Monitoring Location VM-2 (12 October 2017)

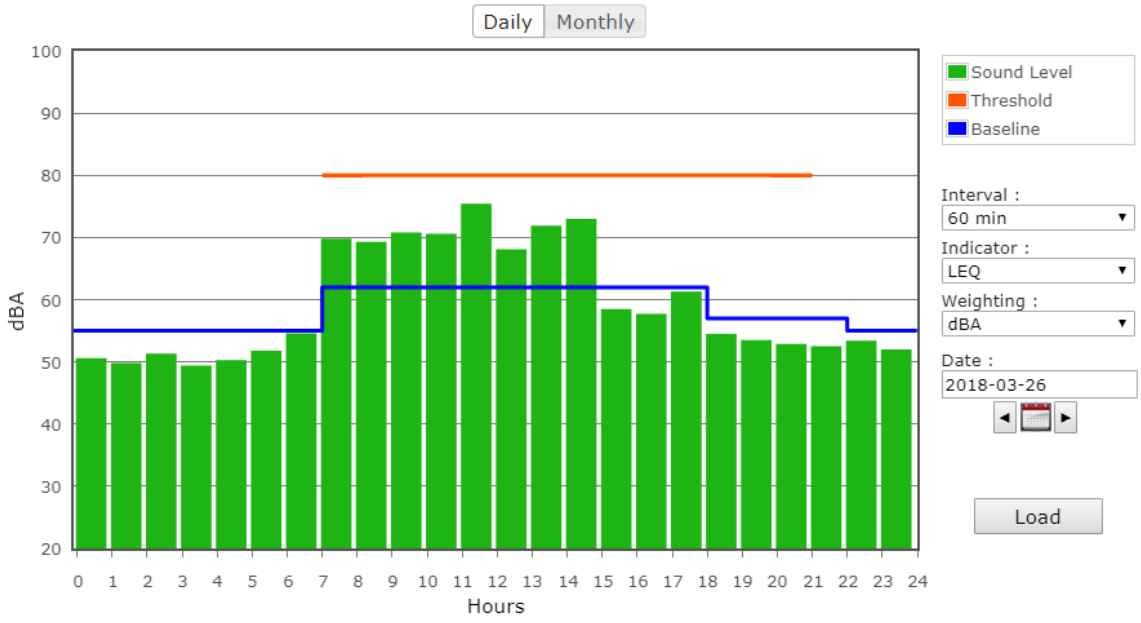


Figure 2: North Monitor NM-1 on Monday

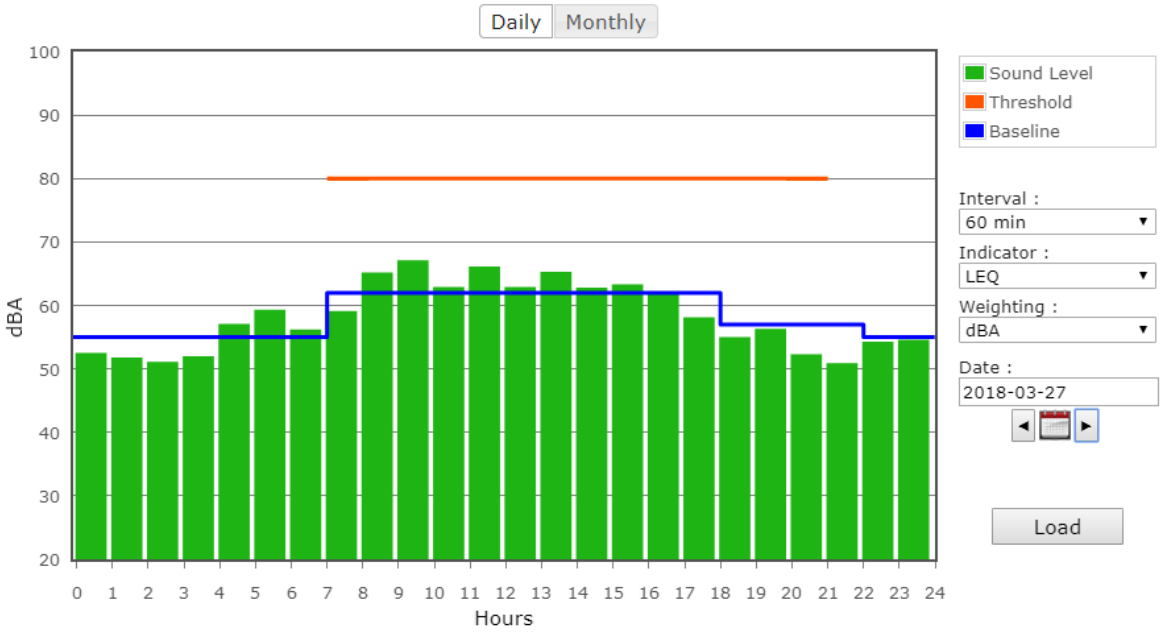


Figure 3: North Monitor NM-1 on Tuesday

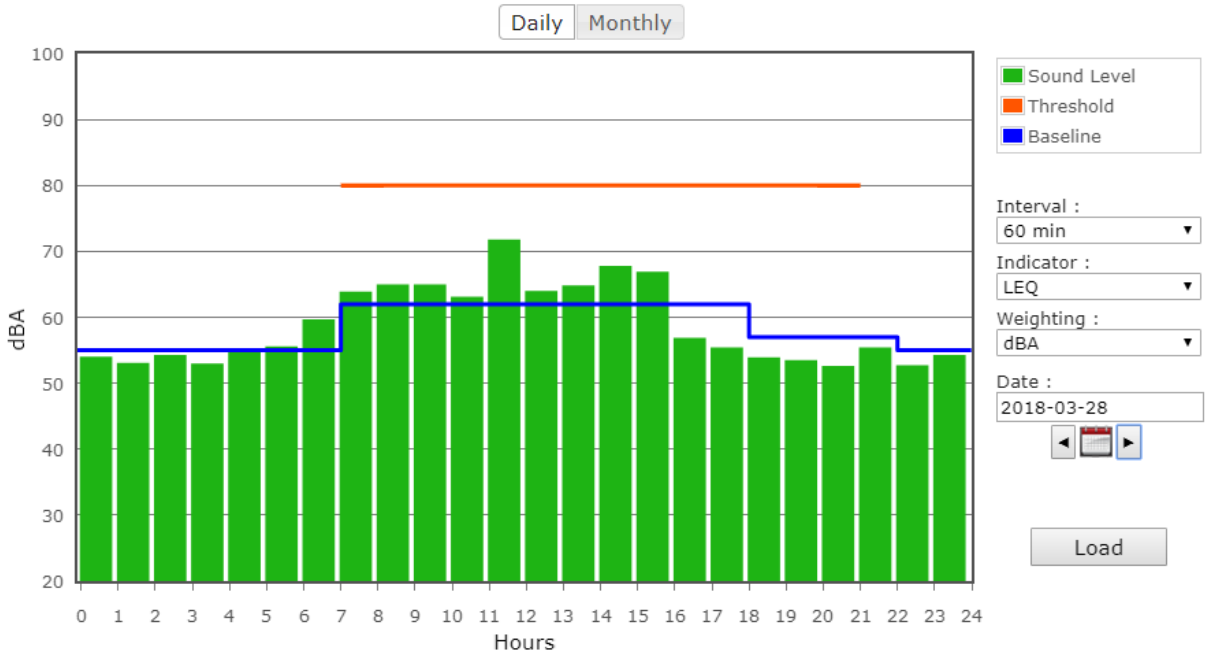


Figure 4: North Monitor NM-1 on Wednesday

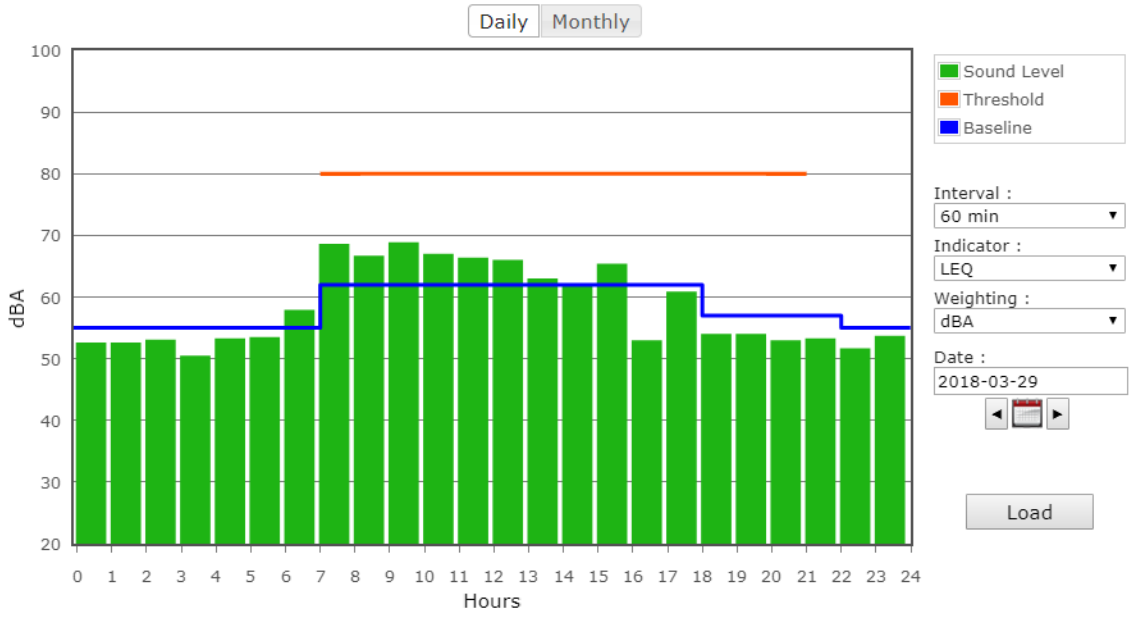


Figure 5: North Monitor NM-1 on Thursday

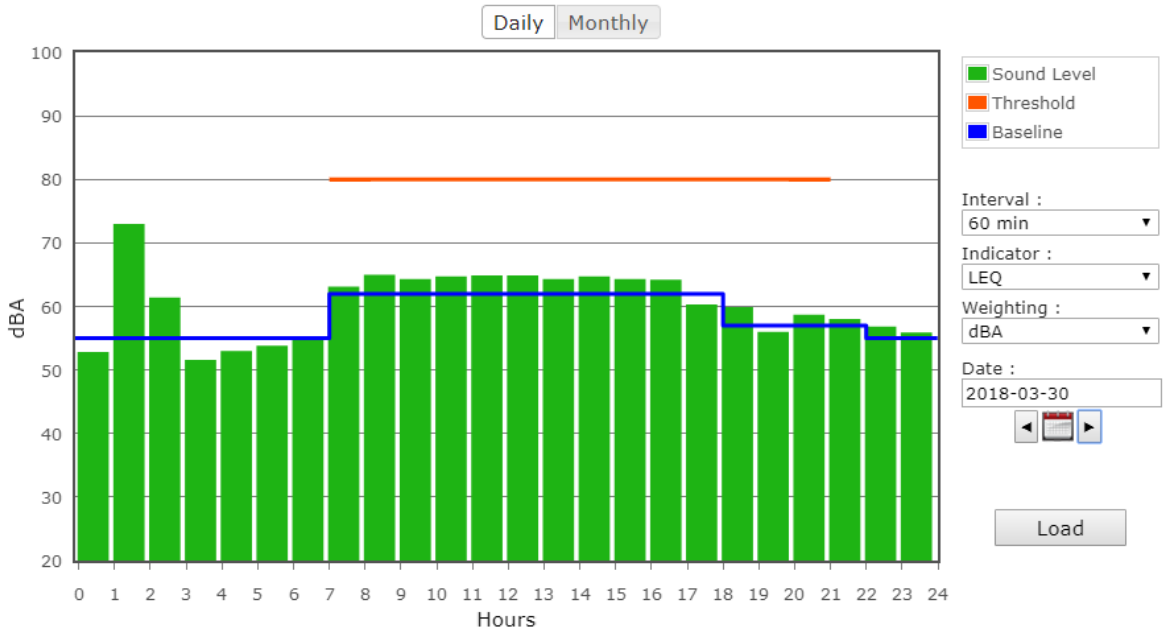


Figure 6: North Monitor NM-1 on Friday

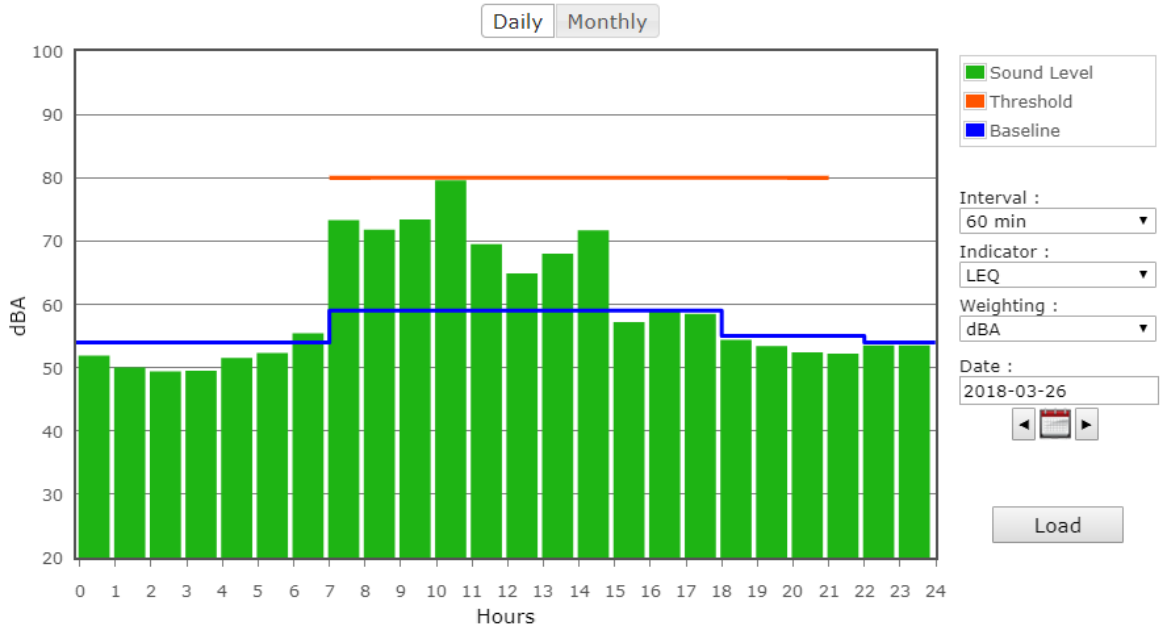


Figure 7: South Monitor NM-2 on Monday

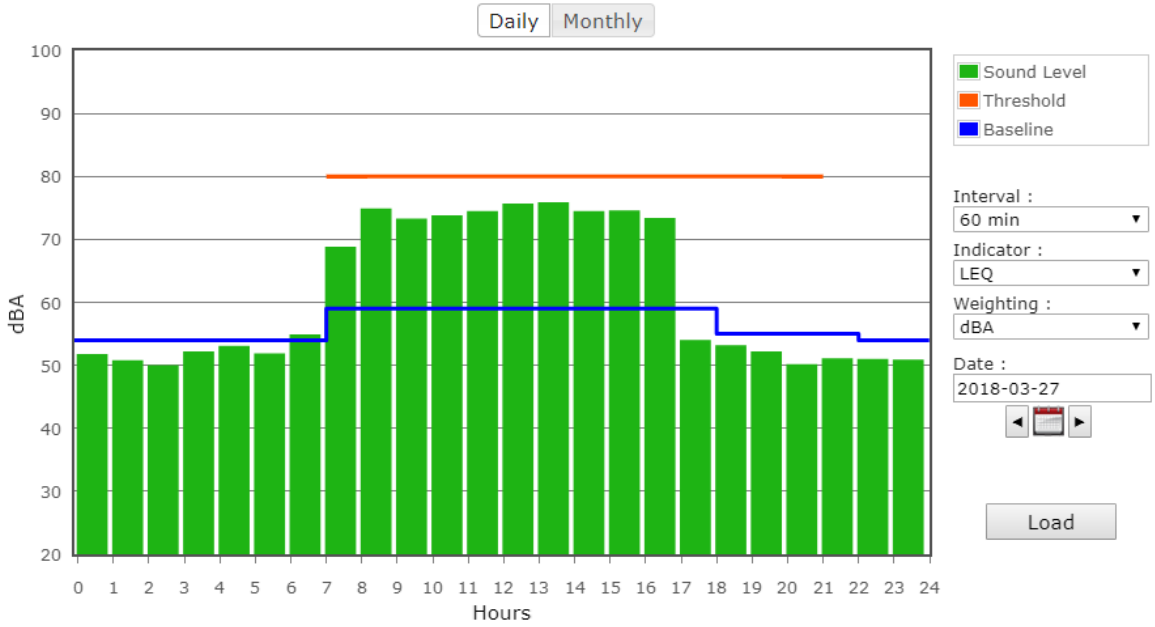


Figure 8: South Monitor NM-2 on Tuesday

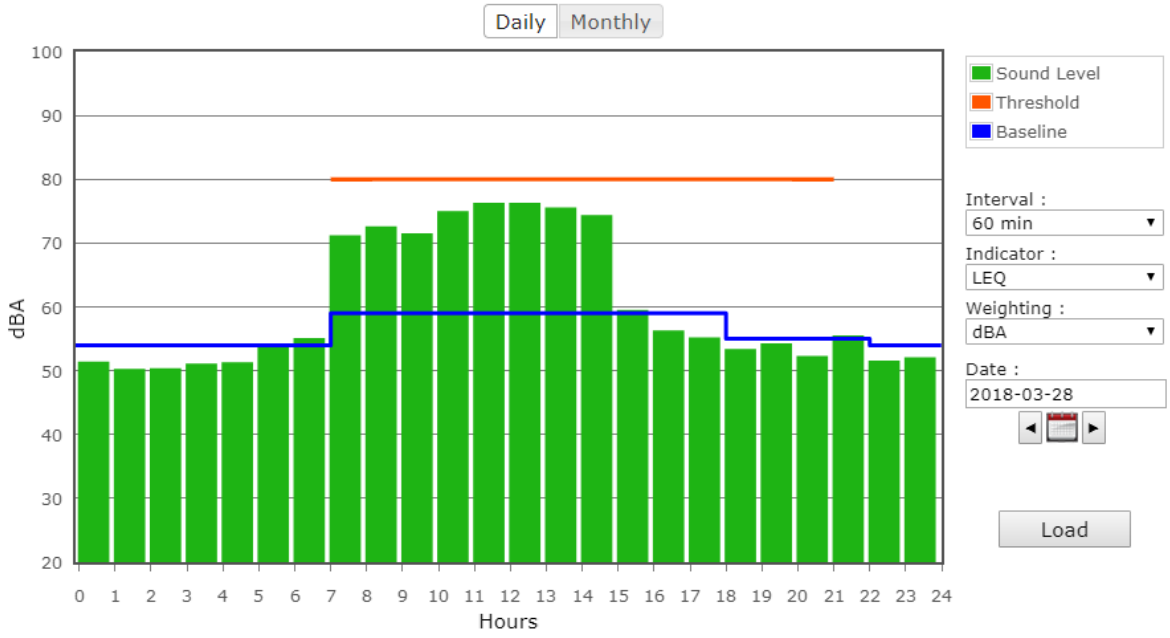


Figure 9: South Monitor NM-2 on Wednesday

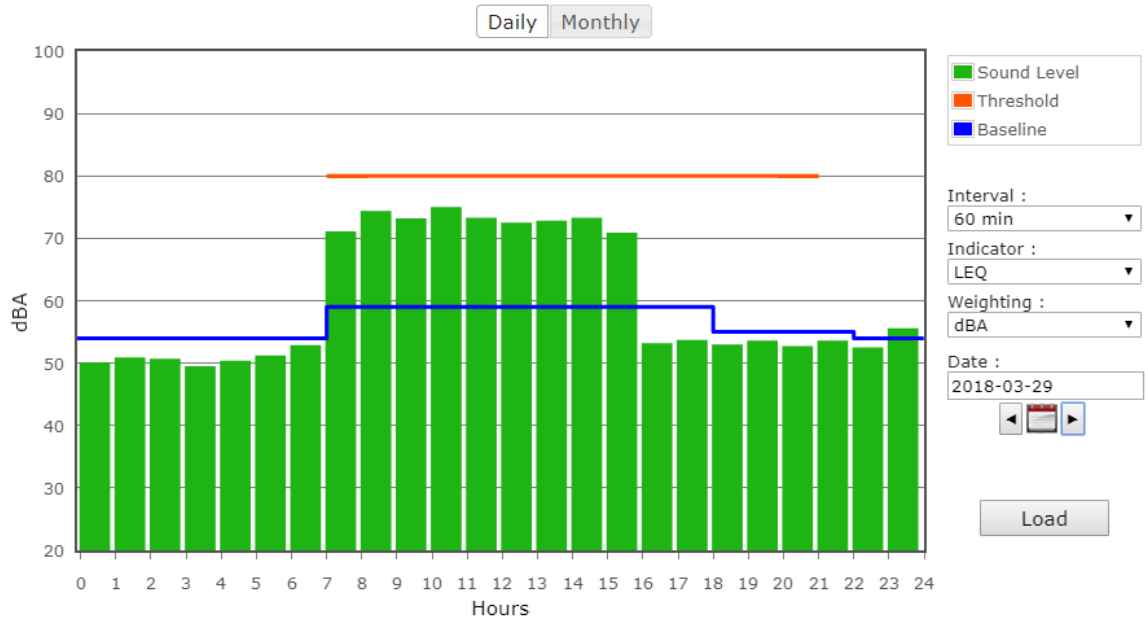


Figure 10: South Monitor NM-2 on Thursday

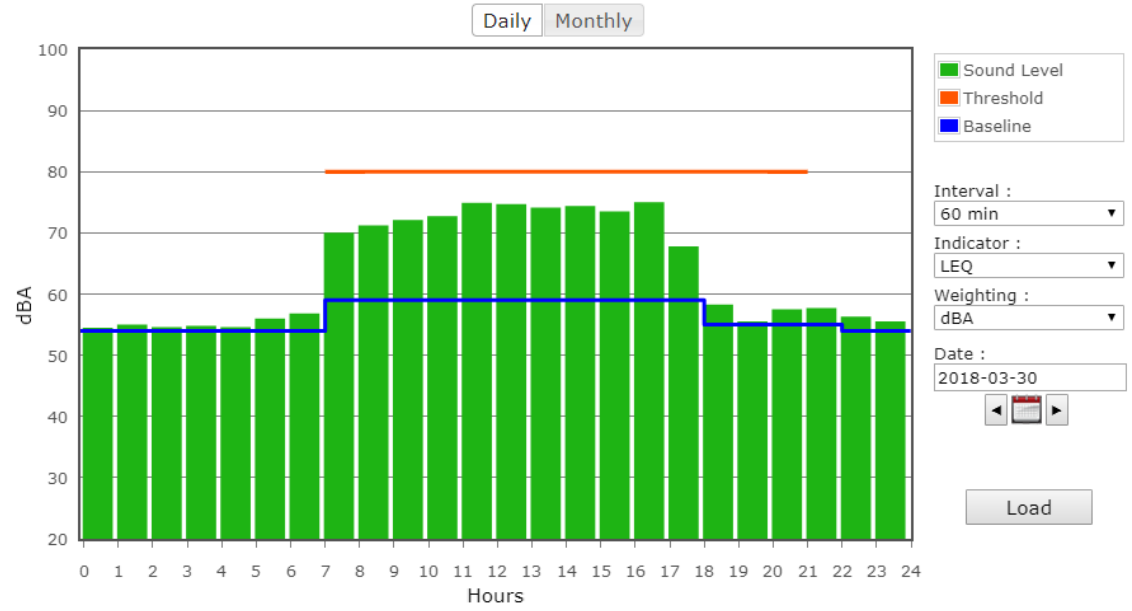


Figure 11: South Monitor NM-2 on Friday

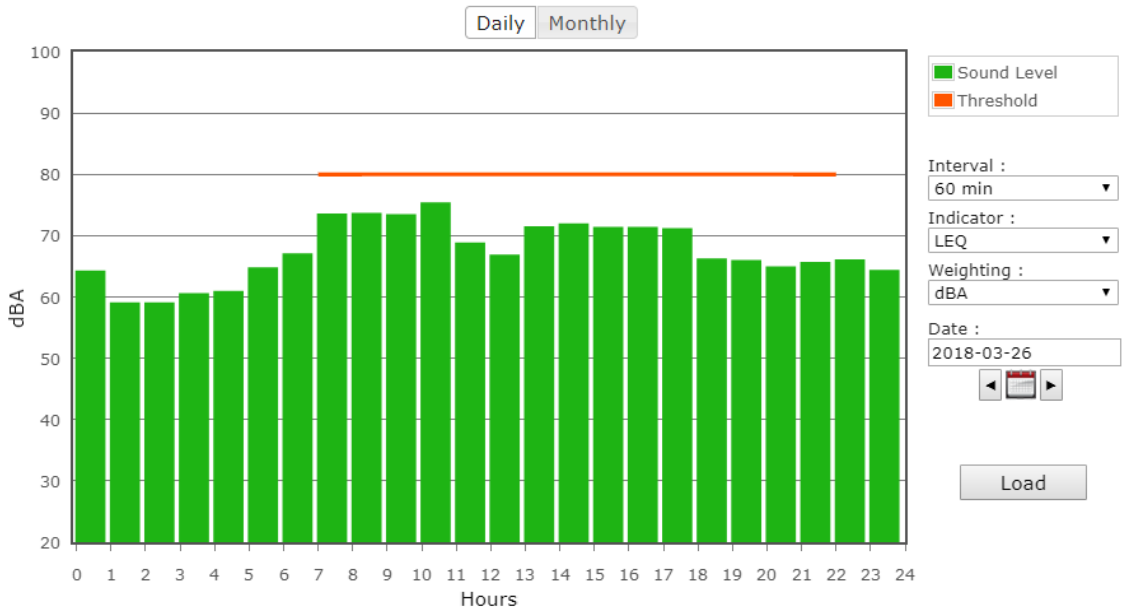


Figure 12: Northeast Monitor NM-3 on Monday

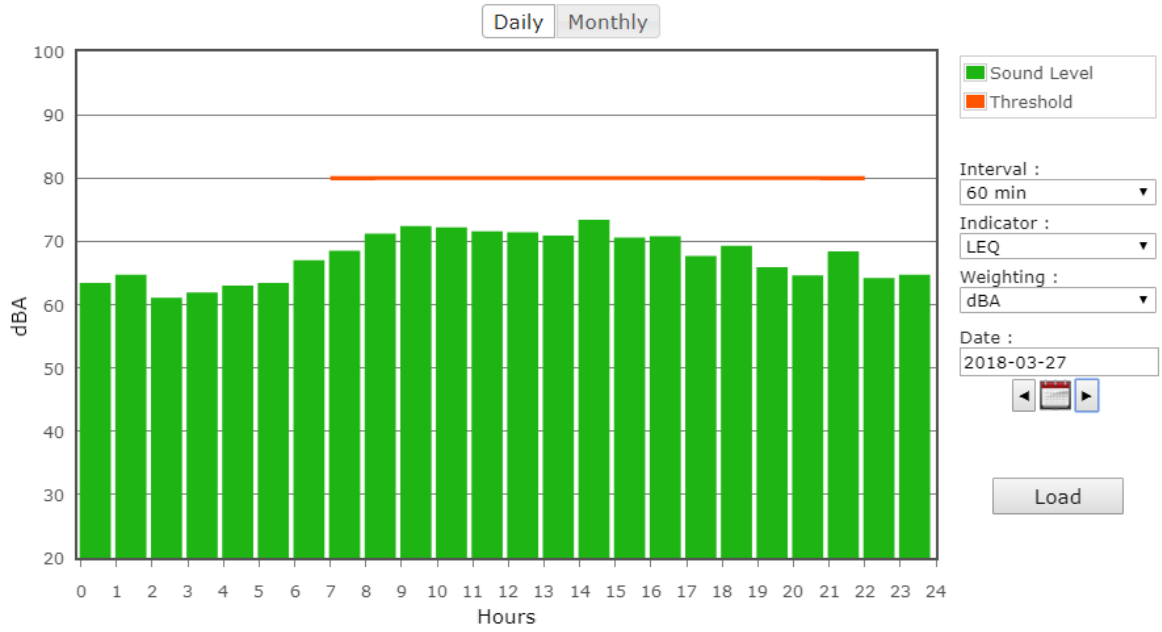


Figure 13: Northeast Monitor NM-3 on Tuesday

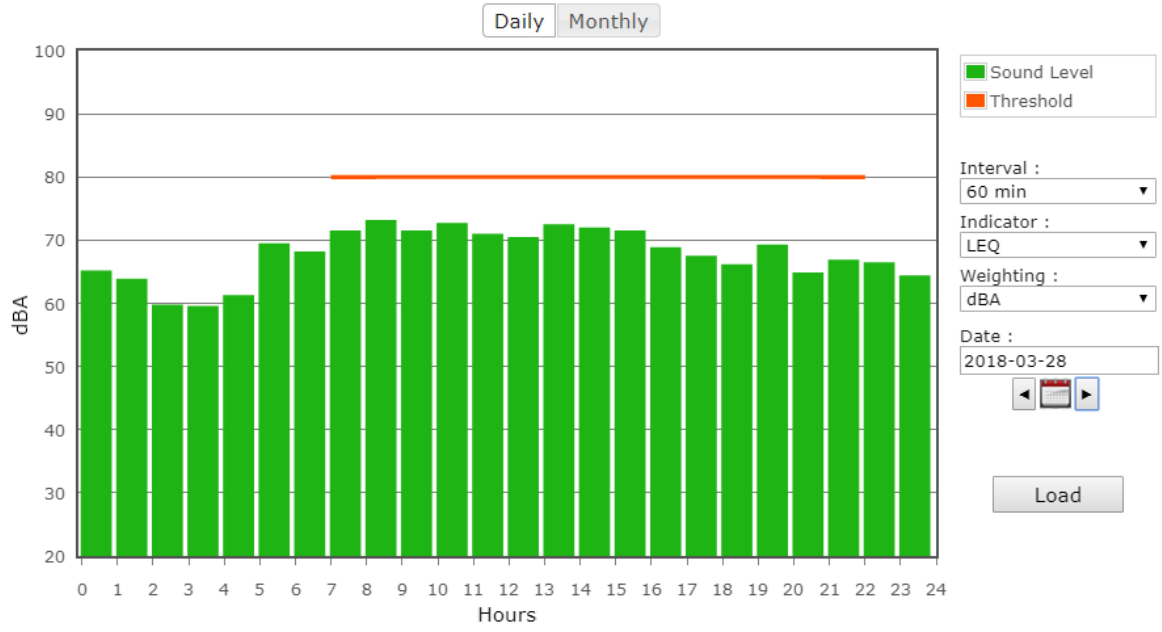


Figure 14: Northeast Monitor NM-3 on Wednesday*

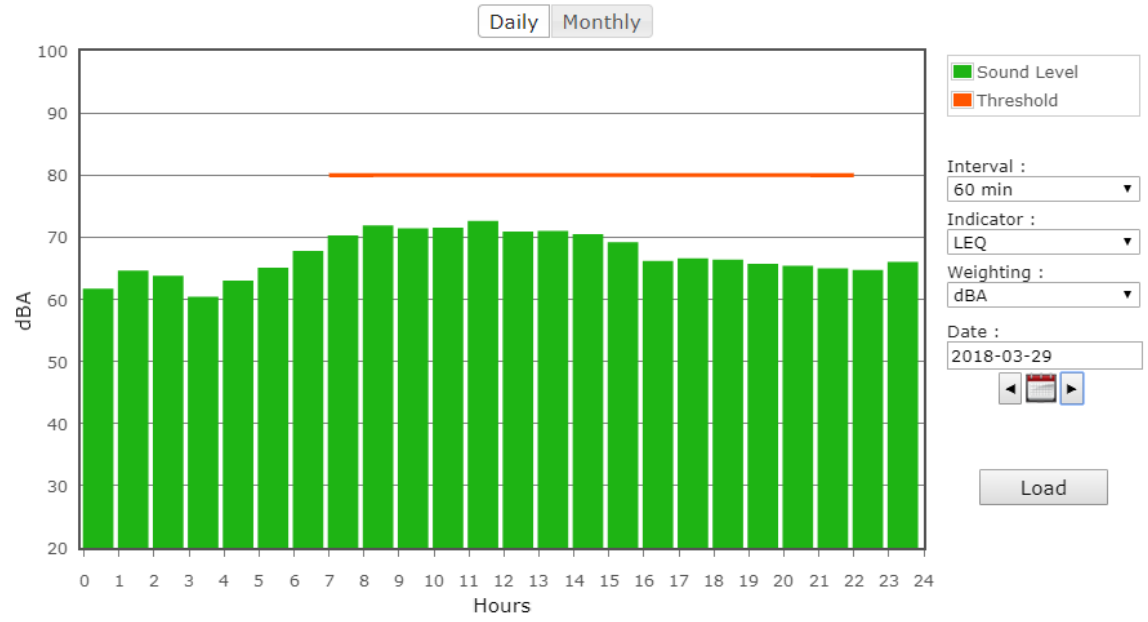


Figure 15: Northeast Monitor NM-3 on Thursday

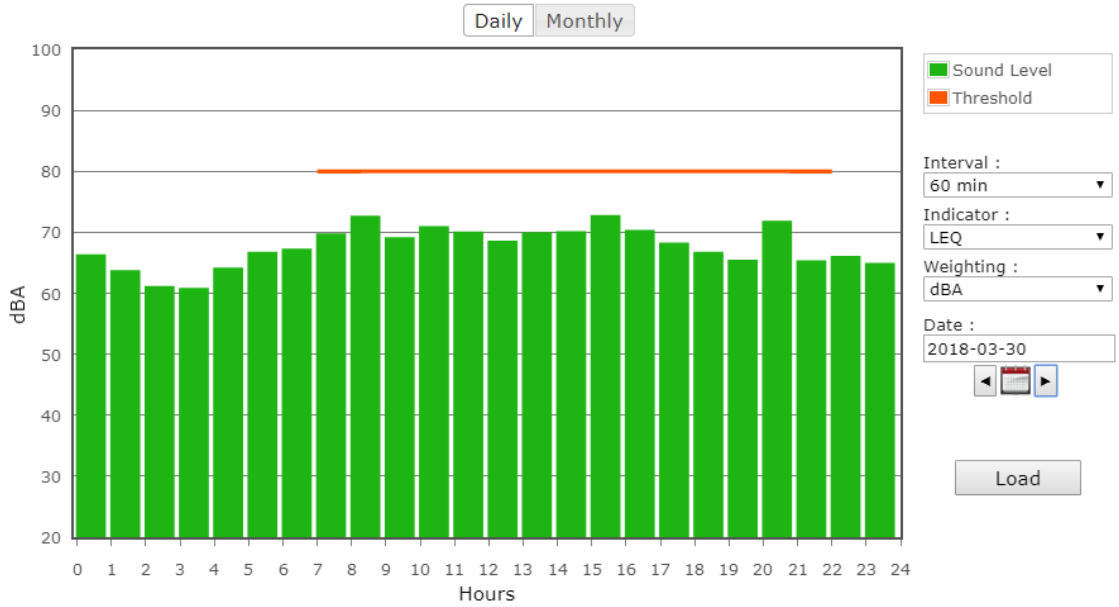


Figure 16: Northeast Monitor NM-3 on Friday

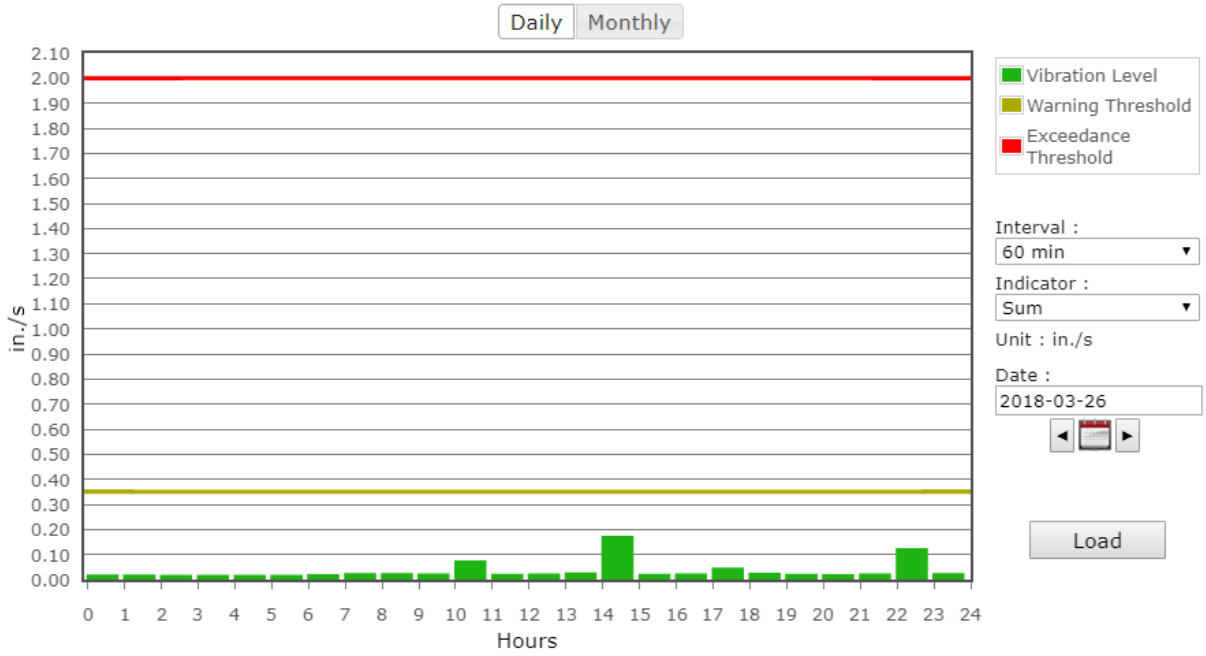


Figure 17: North Vibration Monitor VM-1 on Monday

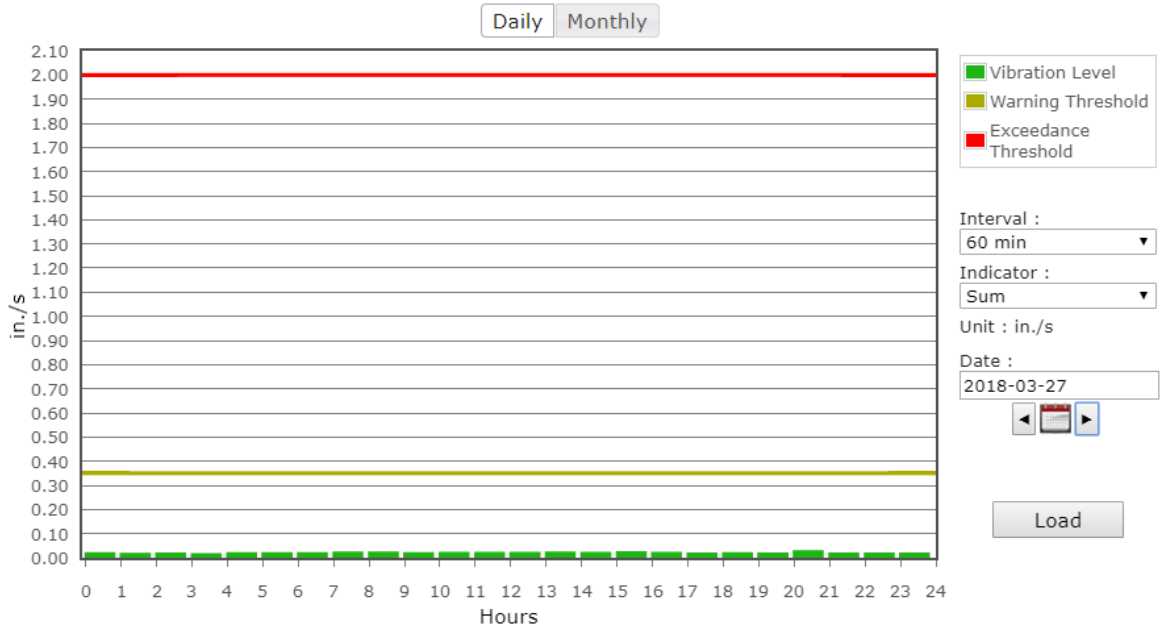


Figure 18: North Vibration Monitor VM-1 on Tuesday

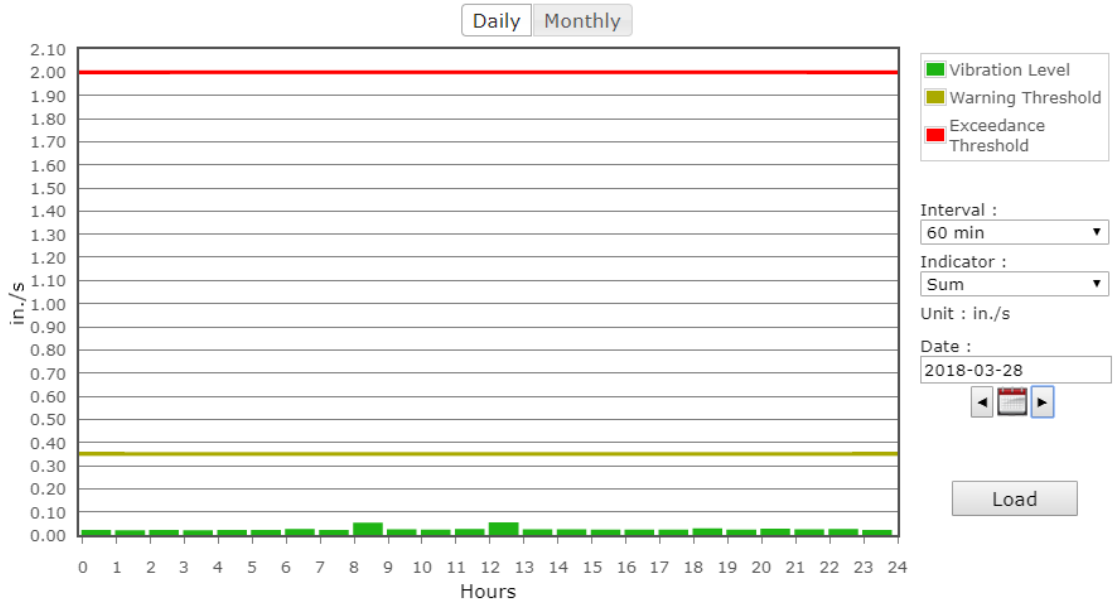


Figure 19: North Vibration Monitor VM-1 on Wednesday

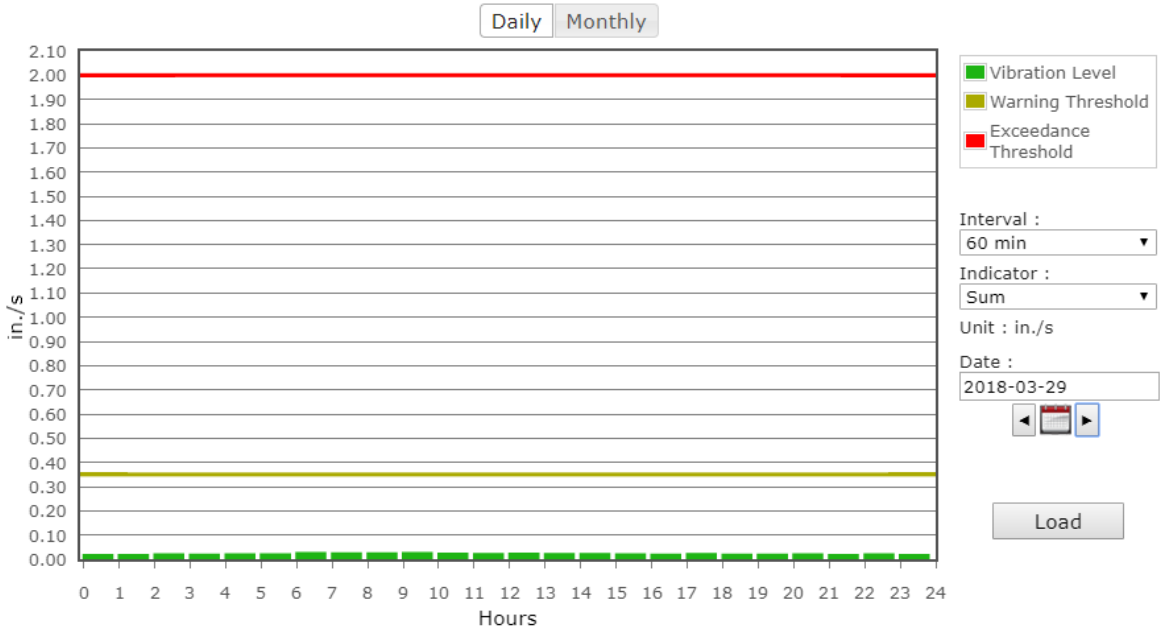


Figure 20: North Vibration Monitor VM-1 on Thursday

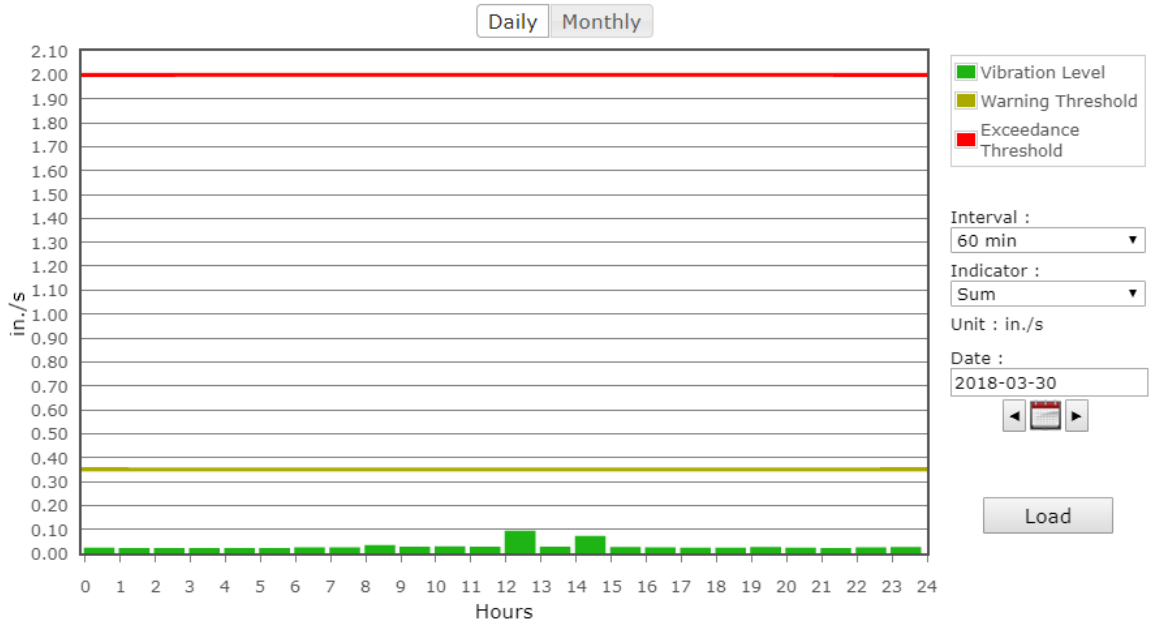


Figure 21: North Vibration Monitor VM-1 on Friday

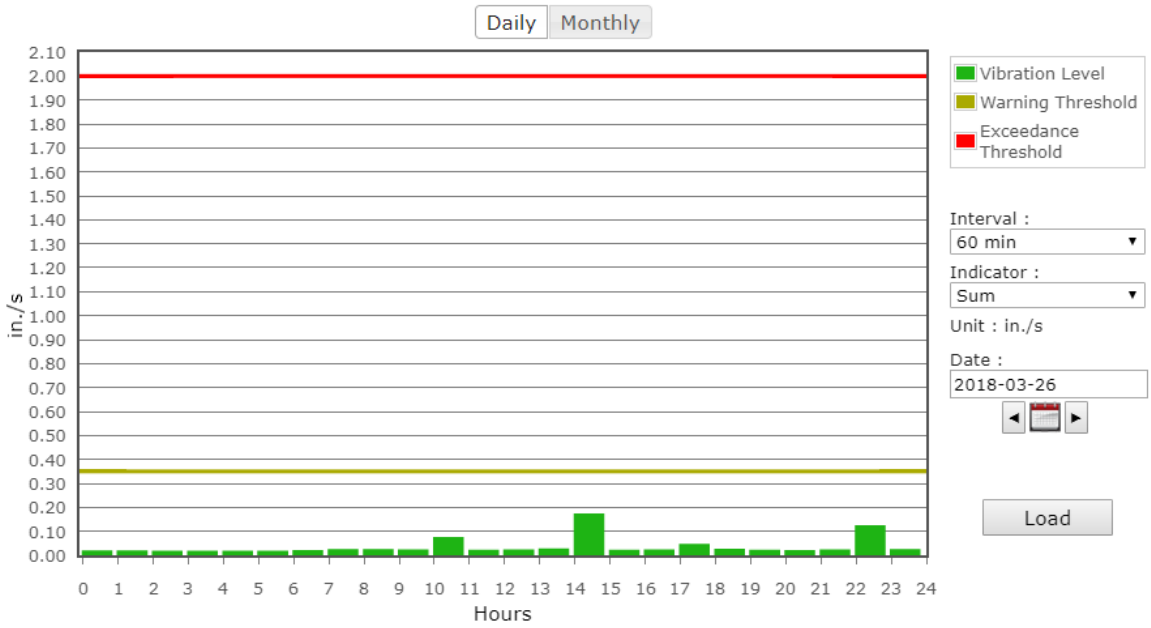


Figure 22: South Vibration Monitor VM-2 on Monday

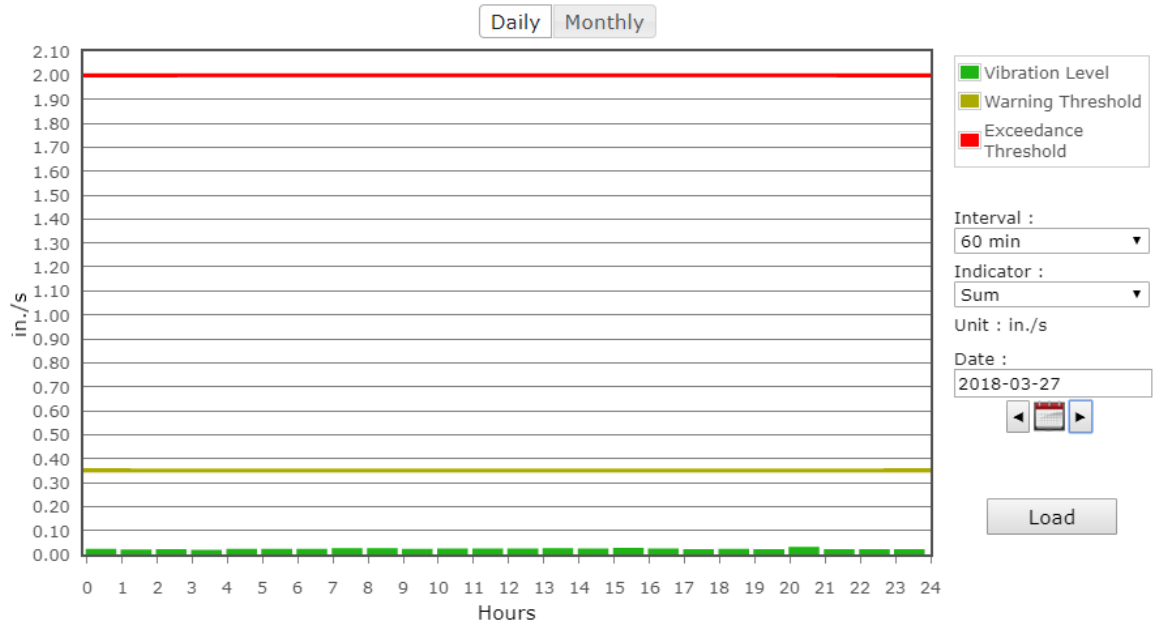


Figure 23: South Vibration Monitor VM-2 on Tuesday

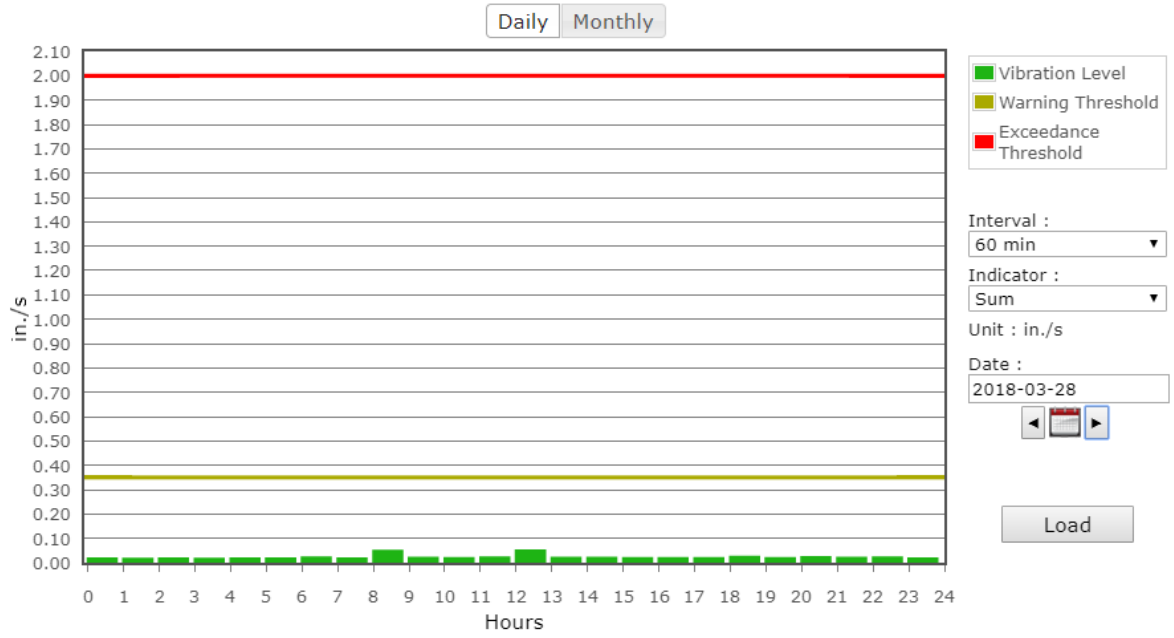


Figure 24: South Vibration Monitor VM-2 on Wednesday

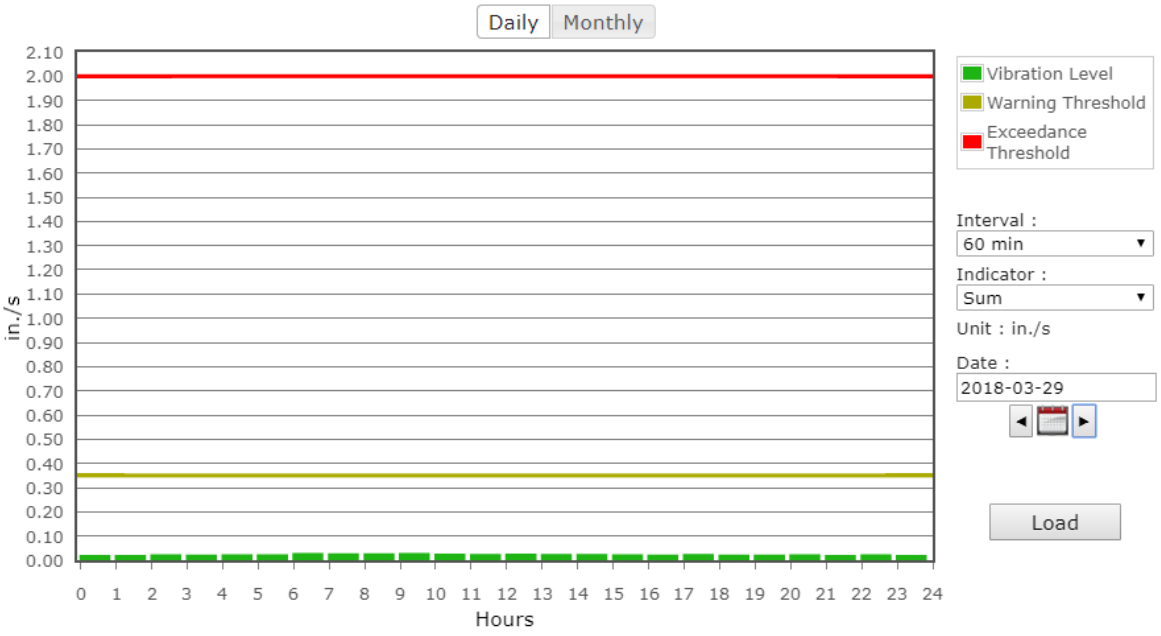


Figure 25: South Vibration Monitor VM-2 on Thursday

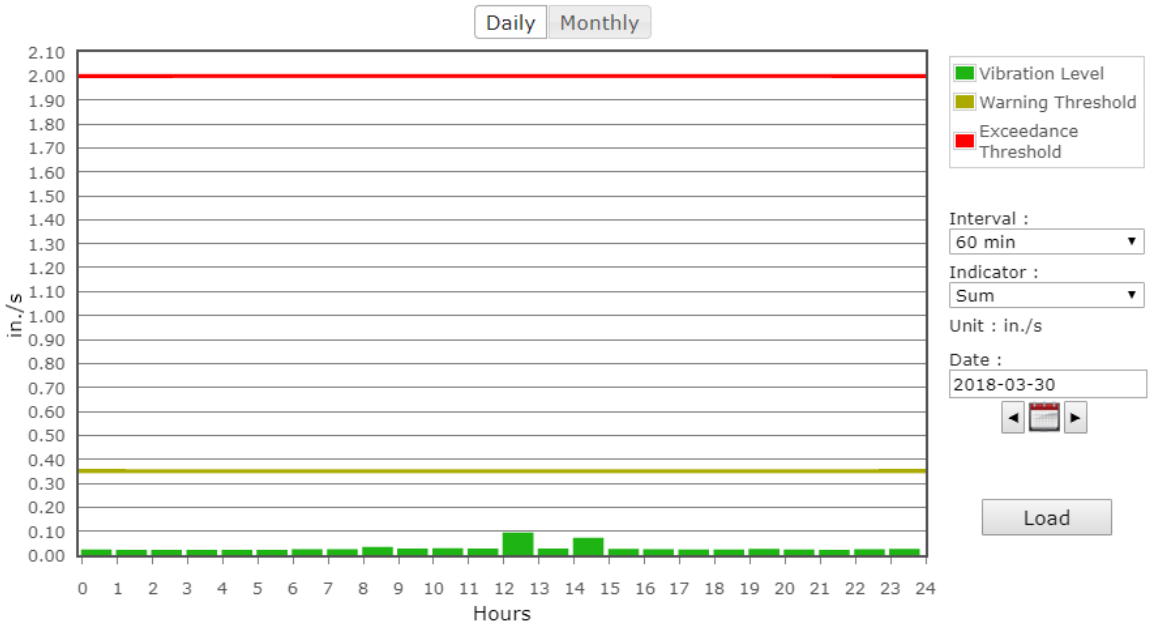


Figure 26: South Vibration Monitor VM-2 on Friday

20180402 Wilson Ihrig Weekly Noise and Vibration Report 26 Mar - 30 Mar 2018

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

Executive Summary – Week 25 Monitoring Period
March 26th through March 30th, 2018

The following report summarizes site air monitoring activities for the Week 25 monitoring period from March 26th through March 30th, 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 25 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 2018.*

Figure 1 depicts Total Volatile Organics (TVOC) daily averages and maximums. Figure 2 depicts particulate monitoring (PM_{10}) daily averages and maximums. Figure 2 depicts the station locations along the Gowanus Canal.

Additional monitoring for hydrogen sulfide, ammonia, and formaldehyde took place at all stations throughout the Week 25 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 25 monitoring period of March 26th through March 30th, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Station 3. The ST-3 sample was collected on March 29th, through March 30th, 2018. The sample was collected over a 23-hour period. The Sample was 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 Station 2 and 3 during Week 22. ST-2 was collected on March 15th, through March 16th, 2018. Co-located samples (ST-3A and ST-3B) were collected at Station 3 on March 14th, through March 15th, 2018. Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted on August 28th through 31st, 2018.

Site activities which were conducted at the Citizen Property on March 26th through March 30th, 2018 included the following:

- Material and equipment deliveries on Citizen Property
- General vehicular traffic site-wide throughout the monitoring period
- Receive and assemble new material handler and dissemble and demobilize old
- Maintenance of the barges and equipment
- Decanted dredging sediment barges to dredge water treatment system
- Treated and discharged accumulated stormwater from dredge water treatment system

Site activities which were conducted at the 4th St Turning Basin Area of the Canal on March 26th through March 30th, 2018 included the following:

- Reconfigure crane in preparation of installation of bulkhead support sheet piling with Giken press pile
- Receive Giken press pile in 4th St Turning Basin Area
- Assemble and utilize auger attachment for Giken press pile
- Remove and replace two (2) pairs of sheet piling at Station 5+76 (approximate)

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)
03/26/2018 06:30 AM - 03/26/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	9	ppb	Max.	10	ug/m^3
Avg.	1	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	25	ppb	Max.	12	ug/m^3
Avg.	7	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	27	ppb	Max.	22	ug/m^3
Avg.	13	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	53	ppb	Max.	12	ug/m^3
Avg.	3	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.	20	ppb	Max.	15	ug/m^3
Avg.	9	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	23	ppb	Max.	13	ug/m^3
Avg.	9	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

TVOC			PM_{10}		
Max.	55	ppb	Max.	<1	ug/m^3
Avg.	3	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)
03/27/2018 00:00 AM - 03/27/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

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 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	16	ppb	Max.	12	ug/m^3
Avg.	2	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	27	ppb	Max.	15	ug/m^3
Avg.	6	ppb	Avg.	4	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	70	ppb	Max.	15	ug/m^3
Avg.	4	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	19	ppb	Max.	31	ug/m^3
Avg.	4	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	23	ppb	Max.	18	ug/m^3
Avg.	4	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

TVOC			PM_{10}		
Max.	120	ppb	Max.	<1	ug/m^3
Avg.	29	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)
03/28/2018 00:00 AM - 03/28/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	59	ppb	Max.	34	ug/m^3
Avg.	6	ppb	Avg.	18	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	2	ppb	Max.	39	ug/m^3
Avg.	<1	ppb	Avg.	20	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	48	ppb	Max.	32	ug/m^3
Avg.	12	ppb	Avg.	17	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	68	ppb	Max.	28	ug/m^3
Avg.	18	ppb	Avg.	14	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.	32	ug/m^3
Avg.	22	ppb	Avg.	20	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	23	ppb	Max.	21	ug/m^3
Avg.	11	ppb	Avg.	5	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)
03/29/2018 00:00 AM - 03/29/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	33	ppb	Max.	47	ug/m^3
Avg.	21	ppb	Avg.	27	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	14	ppb	Max.	43	ug/m^3
Avg.	1	ppb	Avg.	29	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	34	ug/m^3
Avg.	<1	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	29	ppb	Max.	52	ug/m^3
Avg.	24	ppb	Avg.	20	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	123	ppb	Max.	93	ug/m^3
Avg.	34	ppb	Avg.	22	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property 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

Station 7 (386 3rd Avenue along Canal Fencing)

TVOC			PM_{10}		
Max.	5	ppb	Max.	<1	ug/m^3
Avg.	3	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)
03/30/2018 00:00 AM - 03/30/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	33	ppb	Max.	37	ug/m^3
Avg.	21	ppb	Avg.	19	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	25	ppb	Max.	39	ug/m^3
Avg.	6	ppb	Avg.	20	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	33	ppb	Max.	49	ug/m^3
Avg.	9	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	5	ppb	Max.	46	ug/m^3
Avg.	1	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	18	ppb	Max.	46	ug/m^3
Avg.	8	ppb	Avg.	5	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	33	ppb	Max.	42	ug/m^3
Avg.	4	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

TVOC			PM_{10}		
Max.	57	ppb	Max.	<1	ug/m^3
Avg.	5	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

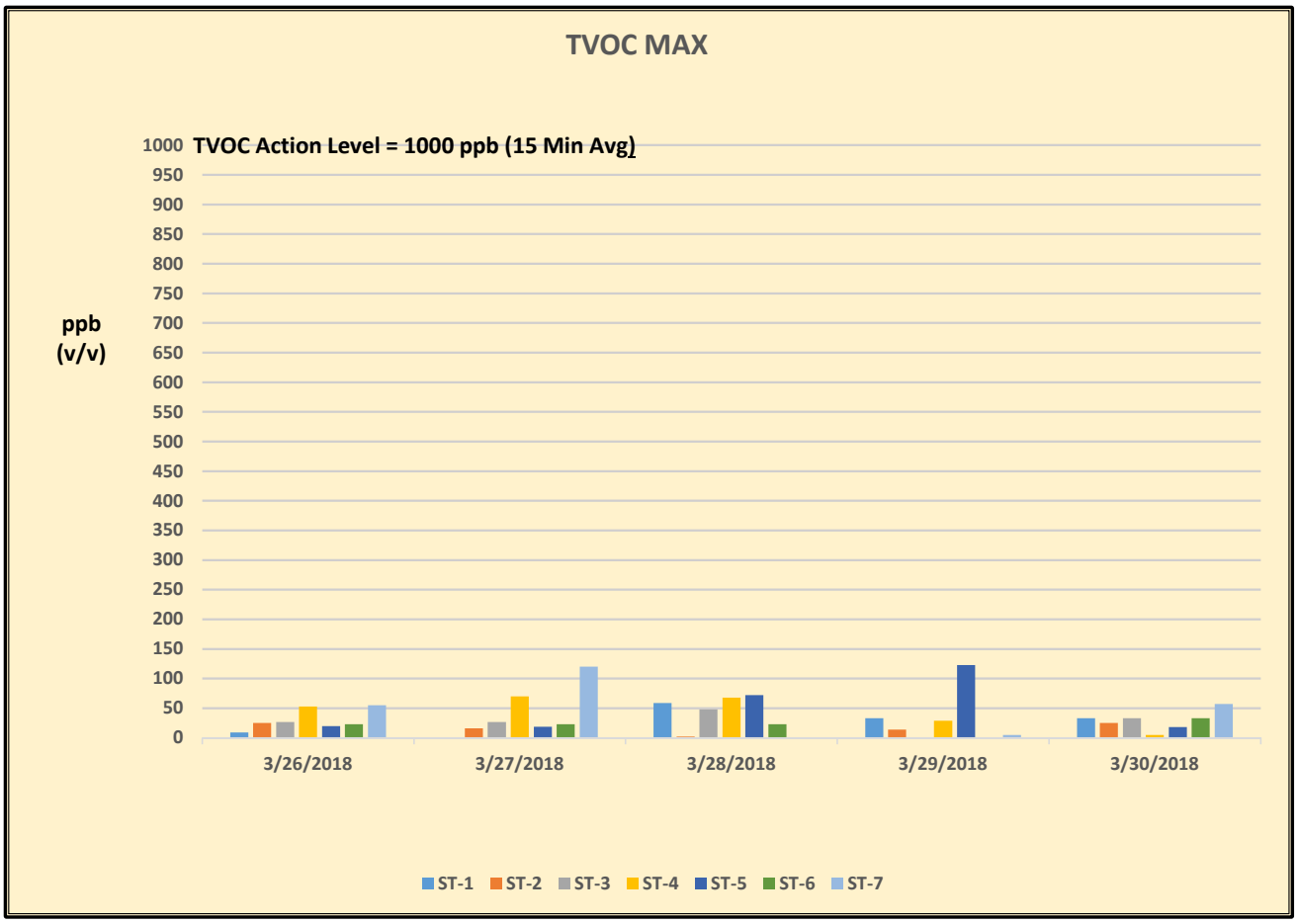
TVOC – Total Volatile Organic Compounds PM_{10} – Particulates as PM_{10}

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 25



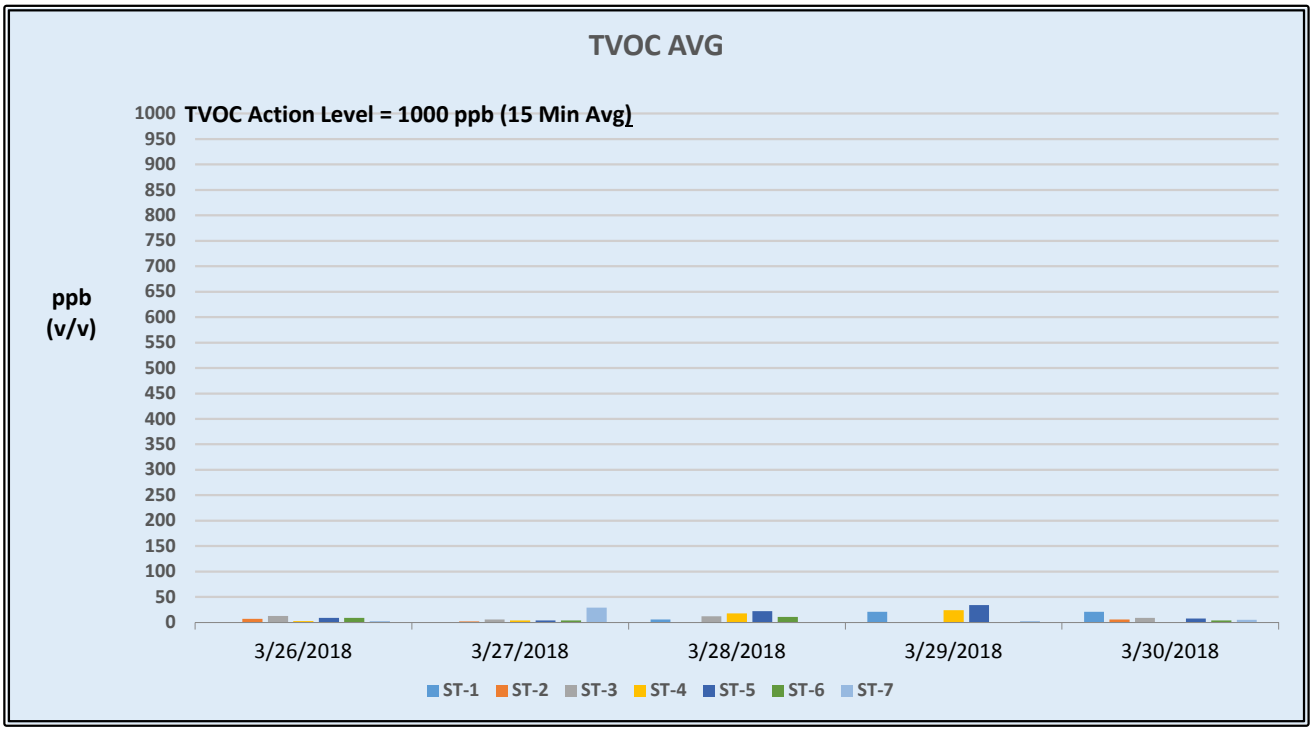
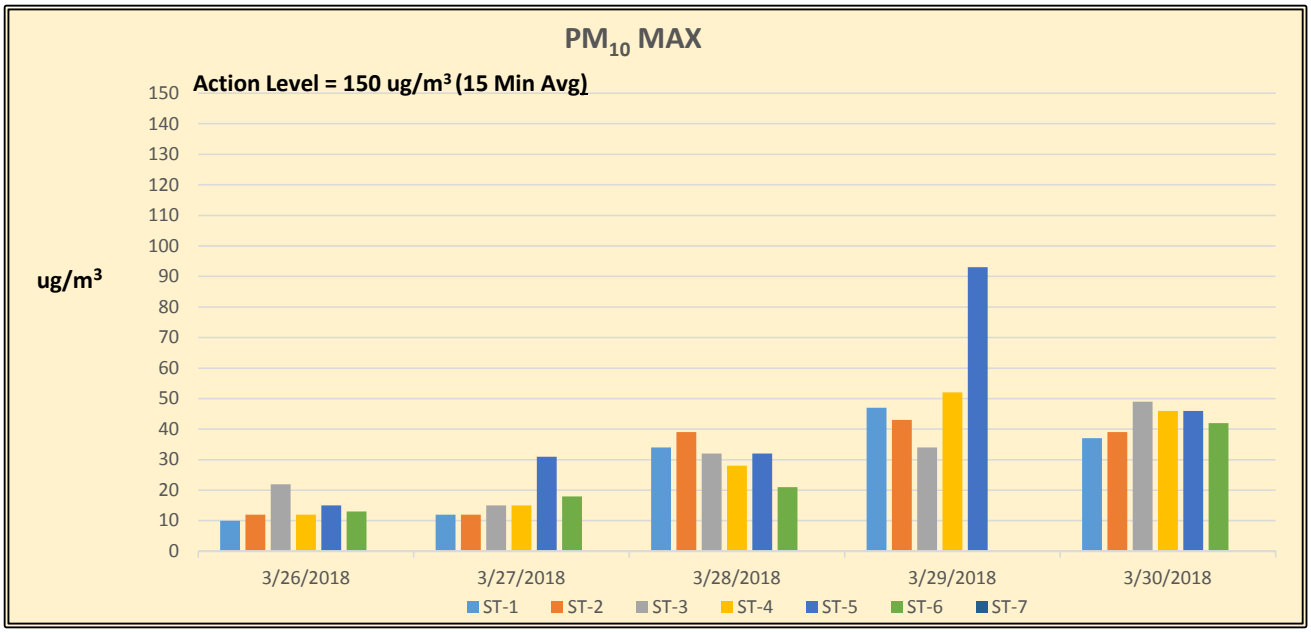
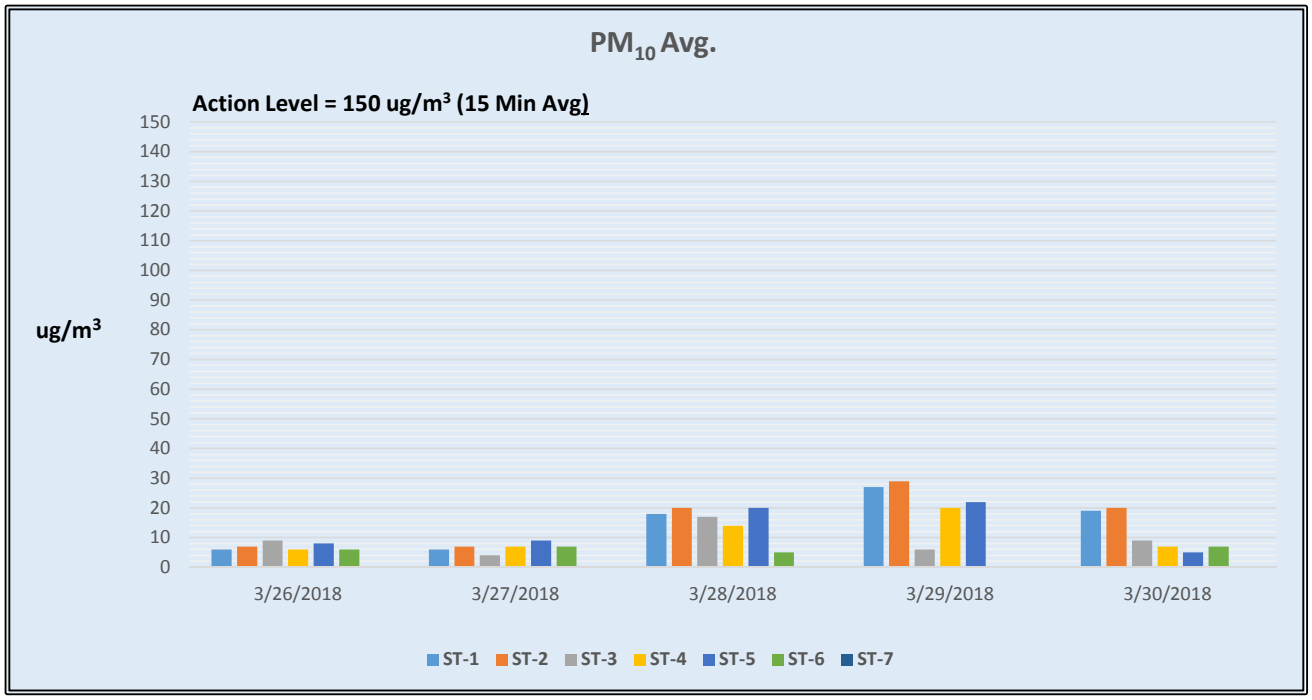
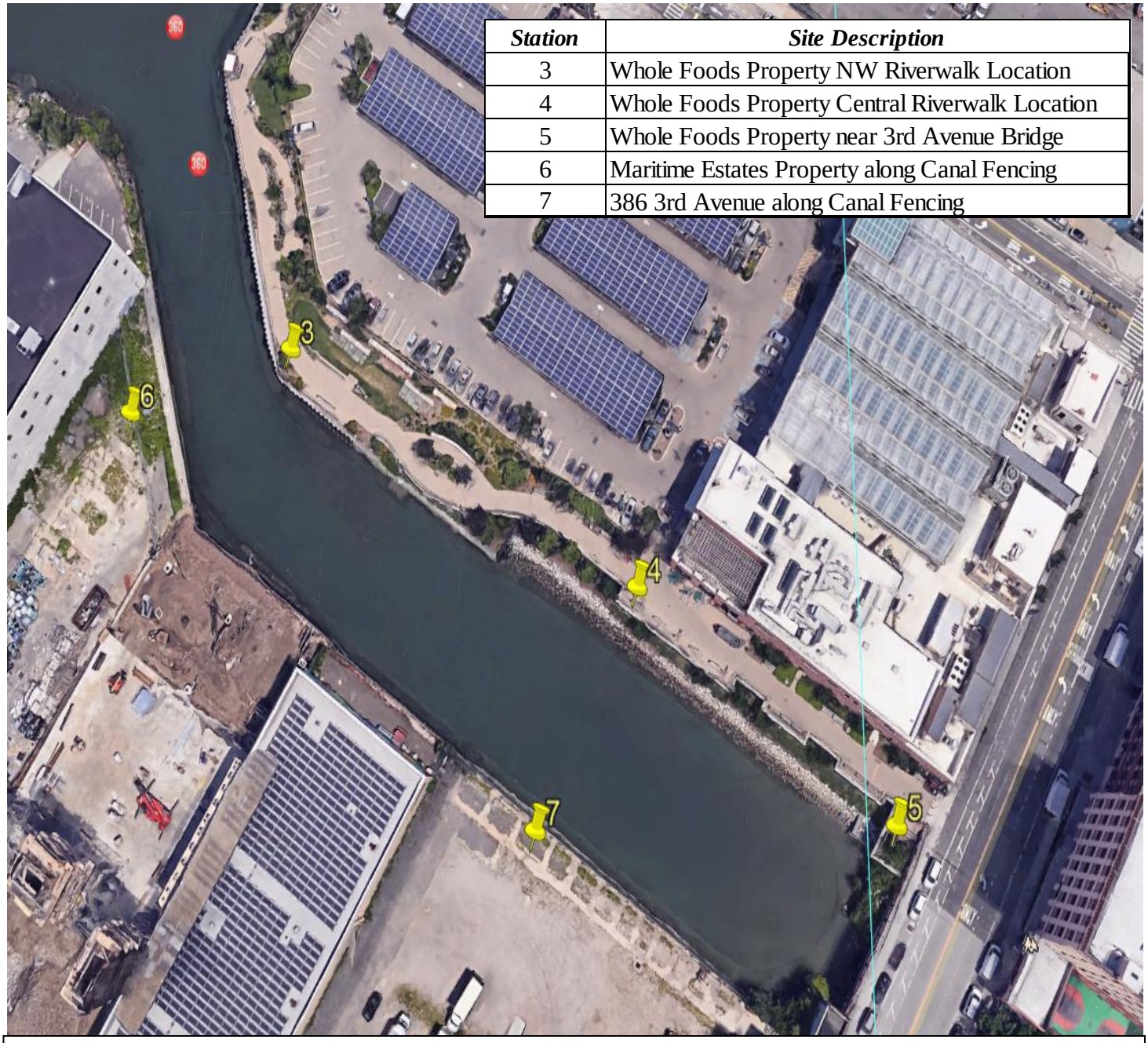


Figure 2
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
TRC CAMP PM_{10} Monitoring Data - Week 25







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 25
Summary of Additional Periodic (Daily) Monitoring Data

March 26th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	8:00	<50	<3	<1.0
	14:10	<50	<3	<1.0
ST-2	8:10	<50	<3	<1.0
	14:15	<50	<3	<1.0
ST-3	8:30	<50	<3	<1.0
	14:40	<50	<3	<1.0
ST-4	8:40	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-5	8:50	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-6	9:15	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-7	9:30	<50	<3	<1.0
	15:20	<50	<3	<1.0

March 27th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	7:30	<50	<3	<1.0
	13:30	<50	<3	<1.0
ST-2	7:35	<50	<3	<1.0
	13:35	<50	<3	<1.0
ST-3	7:45	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-4	7:50	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-5	7:55	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-6	8:10	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-7	8:25	<50	<3	<1.0
	15:25	<50	<3	<1.0

Table 1

Week 25
Summary of Additional Periodic (Daily) Monitoring Data

March 28th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	8:10	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-2	8:15	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-3	8:25	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-4	8:30	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	8:35	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-6	8:50	<50	<3	<1.0
	15:45	<50	<3	<1.0
ST-7	9:00	<50	<3	<1.0
	16:00	<50	<3	<1.0

March 29th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	7:30	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-2	7:35	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-3	7:50	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-4	7:55	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	8:00	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-6	8:15	<50	<3	<1.0
	15:35	<50	<3	<1.0
ST-7	8:30	<50	<3	<1.0
	15:45	<50	<3	<1.0

Table 1

Week 25
Summary of Additional Periodic (Daily) Monitoring Data

March 30th, 2018				
Station Id	**Time**	**Formaldehyde (CHO) (ppb)***	**Hydrogen Sulfide (H_2S) (ppb)***	**Ammonia (NH_3) (ppm)****
ST-1	6:30	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-2	6:35	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-3	6:50	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-4	6:55	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	7:00	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-6	7:15	<50	<3	<1.0
	15:50	<50	<3	<1.0
ST-7	7:30	<50	<3	<1.0
	16:00	<50	<3	<1.0

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

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

Table 2:
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
Week 23 VOCs Results: March 14th through 15th (Co-located) and March 15th through 16th

Sample ID	ST-2-VOC-031518		ST-3A-VOC-031418		ST-3B-VOC-031418		
Laboratory ID	18C0874-01		18C0866-01		18C0866-02		Relative Precent
Date Sampled	3/15/18 08:00 - 3/16/18 07:00		3/14/18 13:00 - 3/15/18 12:00		3/14/18 13:00 - 3/15/18 12:00		Difference
Location	Station 2		Station 3		Station 3 Duplicate		Station 3 Pair
	ppbV	ug/m^3	ppbV	ug/m3	ppbV	ug/m3	
VOCs - TO-15							
Acetone	**2.9**	**6.8**	**2.7**	**6.5**	**2.8**	**6.6**	**1.5%**
Benzene	**0.17**	**0.56**	**0.14**	**0.46**	**0.14**	**0.43**	**6.7%**
Benzyl chloride	<0.035	<0.18	<0.035	<0.18	<0.035	<0.18	NC
Bromodichloromethane	<0.035	<0.24	<0.035	<0.24	<0.035	<0.24	NC
Bromoform	<0.035	<0.36	<0.035	<0.36	<0.035	<0.36	NC
Bromomethane	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
1,3-Butadiene	<0.035	<0.078	<0.035	<0.078	<0.035	<0.078	NC
2-Butanone (MEK)	<1.4	<4.1	<1.4	<4.1	<1.4	<4.1	NC
Carbon Disulfide	<0.35	<1.1	<0.35	<1.1	<0.35	<1.1	NC
Carbon Tetrachloride	**0.06**	**0.38**	**0.059**	**0.37**	**0.061**	**0.38**	**2.7%**
Chlorobenzene	<0.035	<0.16	<0.035	<0.16	<0.035	<0.16	NC
Chloroethane	<0.035	<0.093	<0.035	<0.093	<0.035	<0.093	NC
Chloroform	<0.035	<0.17	<0.035	<0.17	<0.035	<0.17	NC
Chloromethane	**0.52**	**1.1**	**0.49**	**1**	**0.5**	**1**	**0.0%**
Cyclohexane	<0.035	<0.12	<0.035	<0.12	<0.035	<0.12	NC
Dibromochloromethane	<0.035	<0.30	<0.035	<0.30	<0.035	<0.30	NC
1,2-Dibromoethane (EDB)	<0.035	<0.27	<0.035	<0.27	<0.035	<0.27	NC
1,2-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21	<0.035	<0.21	NC
1,3-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21	<0.035	<0.21	NC
1,4-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21	<0.035	<0.21	NC
Dichlorodifluoromethane (Freon 12)	**0.42**	**2.1**	**0.39**	**1.9**	**0.4**	**2**	**5.1%**
1,1-Dichloroethane	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
1,2-Dichloroethane	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
1,1-Dichloroethylene	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
cis-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
trans-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
1,2-Dichloropropane	<0.035	<0.16	<0.035	<0.16	<0.035	<0.16	NC
cis-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16	<0.035	<0.16	NC
trans-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16	<0.035	<0.16	NC
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.035	<0.25	<0.035	<0.25	<0.035	<0.25	NC
1,4-Dioxane	<0.35	<1.3	<0.35	<1.3	<0.35	<1.3	NC
Ethanol	**3.8**	**7.2**	**4.2**	**7.9**	**2.5**	**4.8**	**48.8%**
Ethyl Acetate	**0.064**	**0.23**	**0.16**	**0.59**	**0.12**	**0.45**	**26.9%**
Ethylbenzene	<0.035	<0.15	<0.035	<0.15	<0.035	<0.15	NC
4-Ethyltoluene	<0.035	<0.17	<0.035	<0.17	<0.035	<0.17	NC
Heptane	**0.04**	**0.16**	**0.1**	**0.41**	**0.038**	**0.16**	**87.7%**
Hexachlorobutadiene	<0.035	<0.37	<0.035	<0.37	<0.035	<0.37	NC
Hexane	<1.4	<4.9	<1.4	<4.9	<1.4	<4.9	NC
2-Hexanone (MBK)	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
Isopropanol	<1.4	<3.4	**2.6**	**6.4**	<1.4	<3.4	NC
Methyl tert-Butyl Ether (MTBE)	<0.035	<0.13	<0.035	<0.13	<0.035	<0.13	NC
Methylene Chloride	<0.35	<1.2	<0.35	<1.2	<0.35	<1.2	NC
4-Methyl-2-pentanone (MIBK)	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
Naphthalene	<0.035	<0.18	**0.057**	**0.3**	**0.039**	**0.24**	**22.2%**
Propene	<1.4	<2.4	<1.4	<2.4	<1.4	<2.4	NC
Styrene	<0.035	<0.15	<0.035	<0.15	<0.035	<0.15	NC
1,1,2,2-Tetrachloroethane	<0.035	<0.24	<0.035	<0.10	<0.035	<0.10	NC
Tetrachloroethylene	**0.041**	**0.28**	<0.035	<0.24	<0.035	<0.24	NC
Tetrahydrofuran	<0.035	<0.10	<0.035	<0.10	<0.035	<0.10	NC
Toluene	**0.2**	**0.76**	**0.46**	**1.7**	**0.45**	**1.7**	**0.0%**
1,2,4-Trichlorobenzene	<0.035	<0.26	<0.035	<0.26	<0.035	<0.26	NC
1,1,1-Trichloroethane	<0.035	<0.19	<0.035	<0.19	<0.035	<0.19	NC
1,1,2-Trichloroethane	<0.035	<0.19	<0.035	<0.19	<0.035	<0.19	NC
Trichloroethylene	<0.035	<0.19	<0.035	<0.19	<0.035	<0.19	NC
Trichlorofluoromethane (Freon 11)	**0.18**	**1**	**0.23**	**1.3**	**0.2**	**1.1**	**16.7%**
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1	<0.14	<1.1	<0.14	<1.1	NC
1,2,4-Trimethylbenzene	<0.035	<0.17	<0.035	<0.17	<0.035	<0.17	NC
1,3,5-Trimethylbenzene	<0.035	<0.17	<0.035	<0.17	<0.035	<0.17	NC
Vinyl Acetate	<0.70	<2.5	<0.70	<2.5	<0.70	<2.5	NC
Vinyl Chloride	<0.035	<0.090	<0.035	<0.090	<0.035	<0.090	NC
m&p-Xylene	<0.070	<0.30	**0.083**	**0.36**	**0.074**	**0.32**	**11.8%**
o-Xylene	<0.035	<0.15	<0.035	<0.15	<0.035	<0.15	NC

Notes:

Values in **bold** indicate detected concentrations

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

acetone, ethanol, methylene chloride and isopropanol

Relative Percent Difference (RPD) calculated using the following equation:

RPD = |X1 -X2|/[(X1+X2)/2]

where: X1 = original sample, X2 = duplicate sample

NC: RPD not calcuable due to a non-detect result in one or both co-located sample

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

Meteorological Summary
March 26th through March 30th, 2018

March 26th, 2018 *		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
E	**6.27**	**40.4**

March 27th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
E	**3.59**	**38.7**

March 28th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SSW	**1.17**	**43.8**

March 29th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
E	**3.51**	**48.1**

March 30th, 2018 ***		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SSE	**2.31**	**52.3**

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

** Tuesday, Wednesday 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

AHRS WEEKLY REPORT

(NO ACTIVITIES DURING CURENT WEEK)

WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA

(NO ACTIVITIES DURING CURRENT WEEK)

CUMULATIVE DREDGED MATERIAL CHART

(NO ACTIVITIES THIS WEEK)