WEEKLY PROGRESS REPORT – TRC SOLUTIONS

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

Project number: 283126

Period: July 16 to 20, 2018

Date of Report: July 25, 2018

Rev: 0

Prepared For: Gowanus Environmental Remediation Trust

On-Site Activities Conducted During Week:

Sevenson Environmental Services (SES)

Phase I Dredging:

- Approximately 119 cubic yards of native alluvial sediment dredged from targeted high spots to facilitate cap installation.

Water Treatment and Monitoring

- Discharged 16,667 gallons of treated decant water on 07/18/18.
- No exceedances of continuous monitoring.

Turbidity Monitoring

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

Debris Screening Activities

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

Sediment Stabilization Activities

- Clean Earth Claremont stabilized 187 tons of dredged sediment by adding 8% Portland cement by weight.
- Stabilized material is segregated on-site pending waste characterization sampling results receipt and disposal facility acceptance.
- Approximately 783 tons of stabilized material were disposed off-site as daily cover. An approximate total of 17,159 tons of Phase I stabilized material has been shipped to Waste Management Fairless Hills.

Capping Activities

- Mobilize equipment and materials for hydraulic capping.
- Removal of 4.5 pairs of installed sheet piling in northwest corner of TB4 to approximate elevation -13.5'.
- Place approximately 370 cubic yards of sand as part of leveling layer.

Quality Assurance and Control – Geosyntec

- DWTS discharge sampling conducted on 7/18/18.
- No exceedance of the turbidity trigger or action criteria
- Measurements for 7/16/18:
  - Daily average for ambient buoy – 4.6 NTU
  - Daily average for sentinel buoy – 1.5 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 2.9 NTU at 1515.
- Measurements for 7/17/18:
  - Daily average for ambient buoy – 6.0 NTU
  - Daily average for sentinel buoy – 4.3 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 17.8 NTU at 1530.
- Measurements for 7/18/18:
  - Daily average for ambient buoy – 4.7 NTU
  - Daily average for sentinel buoy – 3.0 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 5.4 NTU at 1630.

- Measurements for 7/19/18:
    - Daily average for ambient buoy – 4.7 NTU
    - Daily average for sentinel buoy – 8.3 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 18.0 NTU at 0815.
- Measurements for 7/20/18:
    - Daily average for ambient buoy – 4.8 NTU
    - Daily average for sentinel buoy – 8.0 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 11.3 NTU at 1115.

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 – 62 $\mu g/m^3$ recorded on 07/16/18
    - Station 2 – 120 $\mu g/m^3$ recorded on 07/16/18
    - Station 3 – <1 $\mu g/m^3$ recorded throughout the week
    - Station 4 – 26 $\mu g/m^3$ recorded on 07/16/18
    - Station 5 – 23 $\mu g/m^3$ recorded on 07/20/18
    - Station 6 – 19 $\mu g/m^3$ recorded on 07/17/18
    - Station 7 – <1 $\mu g/m^3$ recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
    - Station 1 – 109 ppb recorded on 07/16/18
    - Station 2 – 25 ppb recorded on 07/16 and 7/19/18
    - Station 3 – <1 ppb recorded throughout the week
    - Station 4 – 145 ppb recorded on 07/17/18
    - Station 5 – 140 ppb recorded on 07/18/18
    - Station 6 – 94 ppb recorded on 07/20/18
    - Station 7 – <1 ppb recorded throughout the week
- All real-time readings of formaldehyde, hydrogen sulfide, or ammonia less than instrument reporting limit.
- 23-hour samples collected at ST-3 on 07/17 through 07/18 and ST-2 on 07/19 through 07/20. Laboratory turnaround time is 10 business days.
- Tabulated laboratory analytical results for 23-hour sample collected at ST-5 on 03/08 through 03/09, ST-1 on 05/01 through 05/02, ST-2 on 05/02 through 05/03, ST-2 on 06/19 through 06/20, and ST-5 (collocated) on 06/20 through 06/21 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) – 73.7 dBA during 1100-1200 on 07/17/18
    - Southern monitor (NM-2) – 75.1 dBA during 0900-1000 on 07/10/18

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

- Review photographs and perform inspection of screened debris at Clean Earth Claremont. Six (6) metal objects and 12 stamped bricks segregated to be further cleaned for additional inspection and possible coordination with EPA.
- Participate in site visit with EPA and press on 07/18/18.
- Perform Level 2 monitoring of native alluvium at Citizens Site. Oversize metal debris segregated to be further cleaned for additional inspection and possible coordination with EPA.

Two-Week Look Ahead:

Sevenson:

- Treatment and discharge of water decanted from dredged sediment and accumulated during decontamination operations.
- Produce treatment layers with mixing plant.
- Perform optical monitoring of bulkheads and surrounding structures with autonomous total survey stations. Along with weekly optical surveys conducted by subcontractor.
- Continue and complete placement of leveling layer.
- Commence installation of mechanical capping demonstration area following acceptance of hydrographic survey of leveling layer.
- Mobilize and assemble equipment and materials in preparation of hydraulic capping activities.

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

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise monitoring,

AHRS – Perform final inspection of screened debris at Clean Earth Claremont and Citizens Site to prepare final report.

Key Milestones

- Complete Phase I dredging on 07/19/18.
- Commence mechanical placement of leveling layer on 07/20/18.

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
5. Water Treatment System Monitoring Analytical Laboratory Data (no activities during week)
6. Cumulative Dredged Material Chart

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

Photo No.	Date
001	07-16-2018

Description
Monitoring each of the dumped loads of sand on site with PID.

Photo No.	Date
002	07-16-2018

Description
Checking the air curtain for damages and repairing as needed.

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

Photo No.	Date
003	07-17-2018

Description
Diver donning dive helmet, preparing to make first dive of the day.

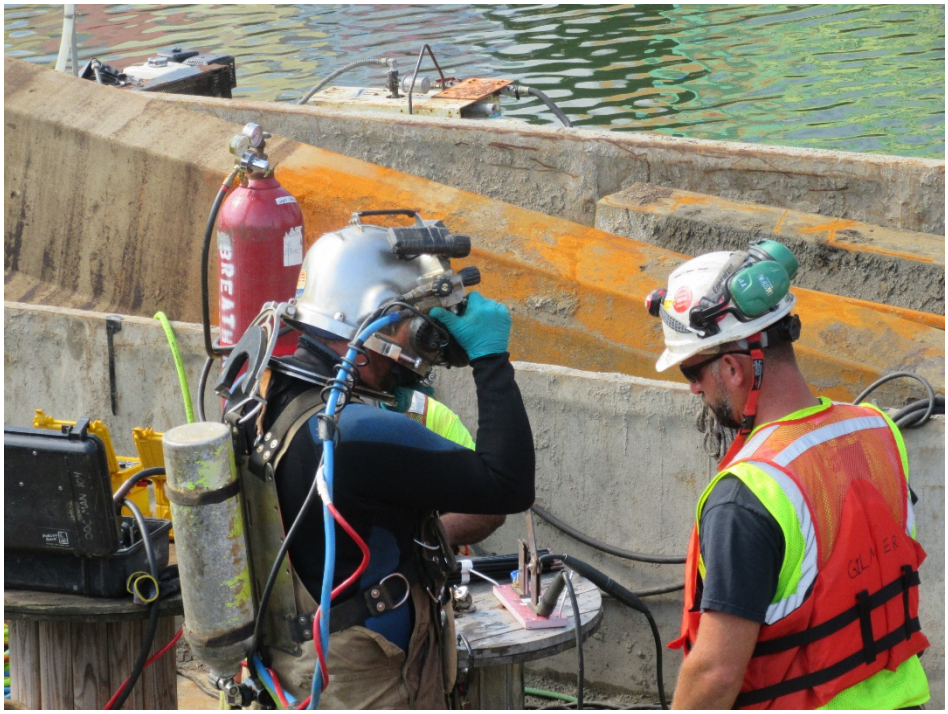

Photo No.	Date
004	07-17-2018

Description
Removed sheet piles being placed onto hopper scow for transport back to the Citizens site.

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

Photo No.	Date
005	07-18-2018

Description
Diver preparing for entry.

Photo No.	Date
006	07-18-2018

Description
Smoke/steam generated from underwater cutting activities.

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

Photo No.	Date
007	07-19-2018

Description
Hydrographic surveyor measuring water height for correction of survey.

Photo No.	Date
008	07-19-2018

Description
Final bucket of dredged material from targeted high spots in eastern portion of TB-4.

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

Photo No.	Date
009	07-20-2018

Description
Welding HDPE piping for hydraulic capping operations.

Photo No.	Date
010	07-20-2018

Description
Scow change-out of sand for leveling layer.

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 July 16th, 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

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Project Number HPH106A (52)

1. SCOPE OF MONITORING

The following report summarizes water quality monitoring data collected during the week of July 16th, 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 July 16th. 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 Bourgarie 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 July 16th to July 20th, 2018. Background data prior to the start of dredging is provided in Appendix A. No exceedances to the numerical rolling average threshold criteria were observed during the reporting period. Buoys were serviced previously to address to the negative values the buoys recorded, but there continue to be negative values. Since the numerical criteria is based on the difference between the ambient and sentinel turbidity buoy measurements, these negative values do not impact monitoring.

2.1 Monday, July 16th, 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)
7/16/2018 7:00	3.4	0.4	N	7/16/2018 12:15	4.2	0.2	N
7/16/2018 7:15	4.8	1.1	N	7/16/2018 12:30	4.6	0.3	N
7/16/2018 7:30	3.2	-0.1	N	7/16/2018 12:45	4.9	0.4	N
7/16/2018 7:45	3.2	2.0	N	7/16/2018 13:00	4.4	1.4	N
7/16/2018 8:00	3.2	0.1	N	7/16/2018 13:15	6.5	3.5	N
7/16/2018 8:15	4.1	1.0	N	7/16/2018 13:30	5.5	0.6	N
7/16/2018 8:30	3.0	0.9	N	7/16/2018 13:45	5.7	1.1	N
7/16/2018 8:45	4.5	0.6	N	7/16/2018 14:00	6.3	0.8	N
7/16/2018 9:00	4.5	0.0	N	7/16/2018 14:15	7.3	1.3	N
7/16/2018 9:15	3.7	1.3	N	7/16/2018 14:30	6.1	2.0	N
7/16/2018 9:30	4.5	1.8	N	7/16/2018 14:45	5.6	2.5	N
7/16/2018 9:45	3.3	0.2	N	7/16/2018 15:00	5.2	2.0	N
7/16/2018 10:00	4.6	0.6	N	7/16/2018 15:15	4.7	7.6	Y
7/16/2018 10:15	4.5	0.4	N	7/16/2018 15:30	6.0	3.9	N
7/16/2018 10:30	4.3	1.8	N	7/16/2018 15:45	4.5	4.3	N
7/16/2018 10:45	3.2	-0.2	N	7/16/2018 16:00	5.2	2.2	N
7/16/2018 11:00	3.6	0.3	N	7/16/2018 16:15	5.3	2.1	N
7/16/2018 11:15	3.3	0.1	N	7/16/2018 16:30	4.4	1.4	N
7/16/2018 11:30	4.8	-0.6	N	7/16/2018 16:45	4.6	1.6	N
7/16/2018 11:45	3.4	0.5	N	7/16/2018 17:00	5.4	8.2	Y
7/16/2018 12:00	4.3	-0.1	N				

Average	4.6	1.5	N
Maximum	7.3	8.2	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, July 17th, 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)
7/17/2018 7:00	4.7	2.9	N	7/17/2018 12:15	3.7	0.3	N
7/17/2018 7:15	4.9	-0.2	N	7/17/2018 12:30	4.9	2.7	N
7/17/2018 7:30	3.4	3.2	N	7/17/2018 12:45	3.8	1.4	N
7/17/2018 7:45	3.8	4.5	Y	7/17/2018 13:00	5.3	1.0	N
7/17/2018 8:00	3.6	1.5	N	7/17/2018 13:15	12.4	2.3	N
7/17/2018 8:15	2.8	6.3	Y	7/17/2018 13:30	4.8	3.1	N
7/17/2018 8:30	3.7	0.3	N	7/17/2018 13:45	4.4	2.7	N
7/17/2018 8:45	4.3	2.8	N	7/17/2018 14:00	4.1	4.1	N
7/17/2018 9:00	4.5	0.0	N	7/17/2018 14:15	5.2	2.4	N
7/17/2018 9:15	5.5	2.6	N	7/17/2018 14:30	5.8	3.8	N
7/17/2018 9:30	5.6	0.8	N	7/17/2018 14:45	5.9	4.1	N
7/17/2018 9:45	5.6	1.3	N	7/17/2018 15:00	4.6	3.4	N
7/17/2018 10:00	7.8	2.0	N	7/17/2018 15:15	4.8	5.2	Y
7/17/2018 10:15	4.6	1.7	N	7/17/2018 15:30	5.9	23.7	Y
7/17/2018 10:30	8.7	3.2	N	7/17/2018 15:45	11.1	7.9	N
7/17/2018 10:45	4.0	2.3	N	7/17/2018 16:00	15.3	7.9	N
7/17/2018 11:00	4.7	1.8	N	7/17/2018 16:15	11.0	18.9	Y
7/17/2018 11:15	4.4	1.6	N	7/17/2018 16:30	14.7	8.8	N
7/17/2018 11:30	4.4	2.3	N	7/17/2018 16:45	10.4	16.6	Y
7/17/2018 11:45	4.2	1.5	N	7/17/2018 17:00	11.1	12.7	Y
7/17/2018 12:00	3.6	2.8	N				

Average	6.0	4.3	N
Maximum	15.3	23.7	Y

Notes:

No exceedances to rolling average threshold criteria during reporting period

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

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

2.3 Wednesday, July 18th, 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)
7/18/2018 7:00	2.8	3.4	Y	7/18/2018 12:15	3.1	4.1	Y
7/18/2018 7:15	3.7	1.1	N	7/18/2018 12:30	3.6	6.1	Y
7/18/2018 7:30	3.7	1.4	N	7/18/2018 12:45	3.6	3.4	N
7/18/2018 7:45	3.3	0.9	N	7/18/2018 13:00	4.0	2.3	N
7/18/2018 8:00	4.0	2.5	N	7/18/2018 13:15	3.9	3.5	N
7/18/2018 8:15	4.1	1.8	N	7/18/2018 13:30	3.9	2.9	N
7/18/2018 8:30	4.1	1.5	N	7/18/2018 13:45	4.0	3.8	N
7/18/2018 8:45	4.8	1.9	N	7/18/2018 14:00	3.4	2.4	N
7/18/2018 9:00	4.7	0.7	N	7/18/2018 14:15	4.3	2.2	N
7/18/2018 9:15	5.4	2.4	N	7/18/2018 14:30	5.2	1.7	N
7/18/2018 9:30	6.0	2.3	N	7/18/2018 14:45	4.4	1.9	N
7/18/2018 9:45	5.9	1.7	N	7/18/2018 15:00	5.4	1.6	N
7/18/2018 10:00	7.2	2.3	N	7/18/2018 15:15	5.6	2.6	N
7/18/2018 10:15	5.3	1.5	N	7/18/2018 15:30	7.3	6.2	N
7/18/2018 10:30	5.1	3.1	N	7/18/2018 15:45	7.1	4.0	N
7/18/2018 10:45	5.2	4.5	N	7/18/2018 16:00	7.3	4.6	N
7/18/2018 11:00	4.2	3.9	N	7/18/2018 16:15	5.3	2.7	N
7/18/2018 11:15	5.6	4.0	N	7/18/2018 16:30	4.1	9.5	Y
7/18/2018 11:30	3.7	3.1	N	7/18/2018 16:45	7.8	4.0	N
7/18/2018 11:45	3.9	3.4	N	7/18/2018 17:00	3.9	3.6	N
7/18/2018 12:00	4.1	4.1	N				

Average	4.7	3.0	N
Maximum	7.8	9.5	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, July 19th, 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)
7/19/2018 7:00	2.8	3.2	Y	7/19/2018 12:15	4.4	5.5	Y
7/19/2018 7:15	2.5	5.1	Y	7/19/2018 12:30	5.6	6.6	Y
7/19/2018 7:30	3.5	5.8	Y	7/19/2018 12:45	4.2	5.2	Y
7/19/2018 7:45	3.0	5.9	Y	7/19/2018 13:00	4.7	7.3	Y
7/19/2018 8:00	3.2	10.1	Y	7/19/2018 13:15	4.0	6.7	Y
7/19/2018 8:15	3.3	21.3	Y	7/19/2018 13:30	4.2	5.6	Y
7/19/2018 8:30	5.1	6.2	Y	7/19/2018 13:45	4.1	9.3	Y
7/19/2018 8:45	5.7	7.6	Y	7/19/2018 14:00	3.8	6.8	Y
7/19/2018 9:00	5.1	12.3	Y	7/19/2018 14:15	3.4	6.6	Y
7/19/2018 9:15	5.1	8.0	Y	7/19/2018 14:30	3.3	8.4	Y
7/19/2018 9:30	5.3	8.1	Y	7/19/2018 14:45	4.1	12.9	Y
7/19/2018 9:45	6.6	4.1	N	7/19/2018 15:00	5.1	12.1	Y
7/19/2018 10:00	6.1	3.8	N	7/19/2018 15:15	4.2	14.0	Y
7/19/2018 10:15	6.0	7.1	Y	7/19/2018 15:30	4.0	9.4	Y
7/19/2018 10:30	5.7	8.9	Y	7/19/2018 15:45	4.1	14.2	Y
7/19/2018 10:45	5.9	4.9	N	7/19/2018 16:00	5.7	7.9	Y
7/19/2018 11:00	5.7	4.9	N	7/19/2018 16:15	5.1	12.8	Y
7/19/2018 11:15	5.5	5.3	N	7/19/2018 16:30	4.9	8.3	Y
7/19/2018 11:30	5.5	5.9	Y	7/19/2018 16:45	6.3	8.9	Y
7/19/2018 11:45	5.5	13.0	Y	7/19/2018 17:00	4.7	11.6	Y
7/19/2018 12:00	4.9	7.8	Y				

Average	4.7	8.3	Y
Maximum	6.6	21.3	Y

Notes:

No exceedances to rolling average threshold criteria during reporting period

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

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

2.5 Friday, July 20th, 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)
7/20/2018 7:00	3.4	8.7	Y	7/20/2018 12:15	5.5	3.0	N
7/20/2018 7:15	2.8	11.0	Y	7/20/2018 12:30	5.6	3.1	N
7/20/2018 7:30	3.5	9.1	Y	7/20/2018 12:45	4.6	3.0	N
7/20/2018 7:45	2.8	8.8	Y	7/20/2018 13:00	4.5	2.1	N
7/20/2018 8:00	4.2	10.3	Y	7/20/2018 13:15	5.6	0.9	N
7/20/2018 8:15	3.4	10.4	Y	7/20/2018 13:30	4.5	2.4	N
7/20/2018 8:30	4.3	13.7	Y	7/20/2018 13:45	3.9	1.7	N
7/20/2018 8:45	5.8	12.9	Y	7/20/2018 14:00	4.2	1.2	N
7/20/2018 9:00	5.8	14.7	Y	7/20/2018 14:15	3.8	0.1	N
7/20/2018 9:15	5.5	14.6	Y	7/20/2018 14:30	4.0	0.3	N
7/20/2018 9:30	6.7	13.8	Y	7/20/2018 14:45	4.3	0.2	N
7/20/2018 9:45	5.8	15.8	Y	7/20/2018 15:00	3.5	-0.1	N
7/20/2018 10:00	6.8	16.2	Y	7/20/2018 15:15	3.7	2.5	N
7/20/2018 10:15	6.5	14.9	Y	7/20/2018 15:30	4.2	6.4	Y
7/20/2018 10:30	6.4	11.2	Y	7/20/2018 15:45	3.9	1.2	N
7/20/2018 10:45	6.7	17.3	Y	7/20/2018 16:00	3.8	2.1	N
7/20/2018 11:00	5.6	9.9	Y	7/20/2018 16:15	4.1	13.0	Y
7/20/2018 11:15	6.2	17.5	Y	7/20/2018 16:30	4.2	4.6	Y
7/20/2018 11:30	5.4	14.7	Y	7/20/2018 16:45	4.0	11.9	Y
7/20/2018 11:45	5.8	3.1	N	7/20/2018 17:00	6.3	12.6	Y
7/20/2018 12:00	5.6	5.6	N				

Average	4.8	8.0	Y
Maximum	6.8	17.5	Y

Notes:

No exceedances to rolling average threshold criteria during reporting period

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

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

3. HANDHELD MEASURMENTS

No handheld measurements were collected for this reporting period.

4. SUMMARY OF VISUAL OBSERVATIONS

During the start of Phase II dredging with the excavator bucket an increased occurrence of sheen was observed. This sheen was localized in the area of dredging and did not migrate outside of the turning basin.

5. REPORT OF EXCEEDANCES

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

- **Trigger criterion** – Any of the following:
  - The rolling average of the sentinel buoy turbidity measurements over a one-hour period exceeds the rolling average of the ambient buoy turbidity measurements by 20 NTU excluding any eliminated outlier measurements; or
  - Either an oil sheen or a turbidity plume is visually observed outside of engineering controls and in-waterway construction activities cannot be immediately excluded as the source.
- **Action criterion** – Any of the following:
  - The rolling average of the sentinel buoy turbidity measurements over a one-hour period exceeds the rolling average of the ambient buoy turbidity measurements by 40 NTU excluding any eliminated outlier measurements; or
  - Either an oil sheen or a turbidity plume is visually observed outside of engineering controls and in-waterway construction activities are readily identified as the source.

FIGURES

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
41st Weekly Monitoring Period
Summary Report:

July 16th, through July 20th, 2018

Report Contents

- Executive Summary
- Daily Data Summary Report – PM_{10}/TVOC
- Daily Meteorological Summary Report
- Periodic Monitoring Results

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

Executive Summary – Week 41 Monitoring Period
July 16th through July 20th, 2018

The following report summarizes site air monitoring activities for the Week 41 monitoring period from July 16th through July 20th, 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 41 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 41 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 41 monitoring period of July 16th through July 20th, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 3 and 5. The ST-3 sample was collected on July 17th, through July 18th, 2018 and the ST-2 sample was collected on July 19th, through July 20th, 2018. Both samples were collected over a 23-hour period and shipped to Con-Test Analytical Laboratory for analyses. The results of the summa canister sampling are pending lab analyses.

Table 2 presents the analytical results for 23-hour sample collected at Station 5 during Week 22. The ST-5 sample was collected on March 8th through 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.

Table 3 presents the analytical results for 23-hour samples collected at Station 1 and 3 during Week 30. The ST-1 sample was collected on May 1st through 2nd, 2018. The ST-3 sample was collected on May 2nd through 3rd, 2018. Results for the both samples included concentrations for a number of aromatic hydrocarbons that were slightly elevated above background levels. These included a number of compounds commonly associated with Manufactured Gas Plant (MGP) residuals (naphthalene, toluene, benzene, trimethyl benzenes, ethyl toluene and xylene isomers (o,m,p).

Table 4 presents the analytical results for 23-hour samples collected at Station 2 and 3 during Week 37. ST-2 was collected on June 19th, through 20th, 2018. Co-located samples (ST-3A and ST-3B) were collected at Station 3 on June 20th, through 21st, 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 July 16th through July 20th, 2018 included the following:

- Material and equipment deliveries on Citizen Property
- General vehicular traffic site-wide throughout the monitoring period
- Maintenance of the barges and equipment
- De-watering and screening of dredging sediment
- Transfer dredged material to larger scow for shipment to Clean Earth Claremont

Site activities which were conducted at the 4th St Turning Basin Area of the Canal during July 16th through July 20th, 2018 included the following:

- Approximately 119 cubic yards of native alluvial sediment dredged
- Removal of 4.5 pairs of installed sheet piling in northeast corner of the 4th St Turning Basin Area to approximate elevation -13.5'
- Place approximately 370 cubic yards of sand as part of cap leveling layer

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)
07/16/2018 06:30 AM - 07/16/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	109	ppb	Max.	62	ug/m^3
Avg.	63	ppb	Avg.	18	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	25	ppb	Max.	120	ug/m^3
Avg.	8	ppb	Avg.	22	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.	72	ppb	Max.	26	ug/m^3
Avg.	21	ppb	Avg.	15	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.	<1	ug/m^3
Avg.	<1	ppb	Avg.	<1	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.	<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)
07/17/2018 00:00 AM - 07/17/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	103	ppb	Max.	42	ug/m^3
Avg.	44	ppb	Avg.	16	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	33	ug/m^3
Avg.	<1	ppb	Avg.	17	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.	145	ppb	Max.	21	ug/m^3
Avg.	39	ppb	Avg.	13	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.	<1	ug/m^3
Avg.	<1	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	32	ppb	Max.	19	ug/m^3
Avg.	3	ppb	Avg.	4	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)
07/18/2018 00:00 AM - 07/18/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	15	ppb	Max.	7	ug/m^3
Avg.	3	ppb	Avg.	4	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.	<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.	88	ppb	Max.	<1	ug/m^3
Avg.	26	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.	140	ppb	Max.	5	ug/m^3
Avg.	19	ppb	Avg.	1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	23	ppb	Max.	11	ug/m^3
Avg.	15	ppb	Avg.	6	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)
07/19/2018 00:00 AM - 07/19/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

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

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	25	ppb	Max.	22	ug/m^3
Avg.	1	ppb	Avg.	4	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.	39	ppb	Max.	17	ug/m^3
Avg.	28	ppb	Avg.	4	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	23	ppb	Max.	9	ug/m^3
Avg.	16	ppb	Avg.	3	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)
07/20/2018 00:00 AM - 07/20/2018 17:00 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	7	ppb	Max.	24	ug/m^3
Avg.	4	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	14	ppb	Max.	26	ug/m^3
Avg.	<1	ppb	Avg.	9	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.	47	ppb	Max.	23	ug/m^3
Avg.	28	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	94	ppb	Max.	7	ug/m^3
Avg.	13	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

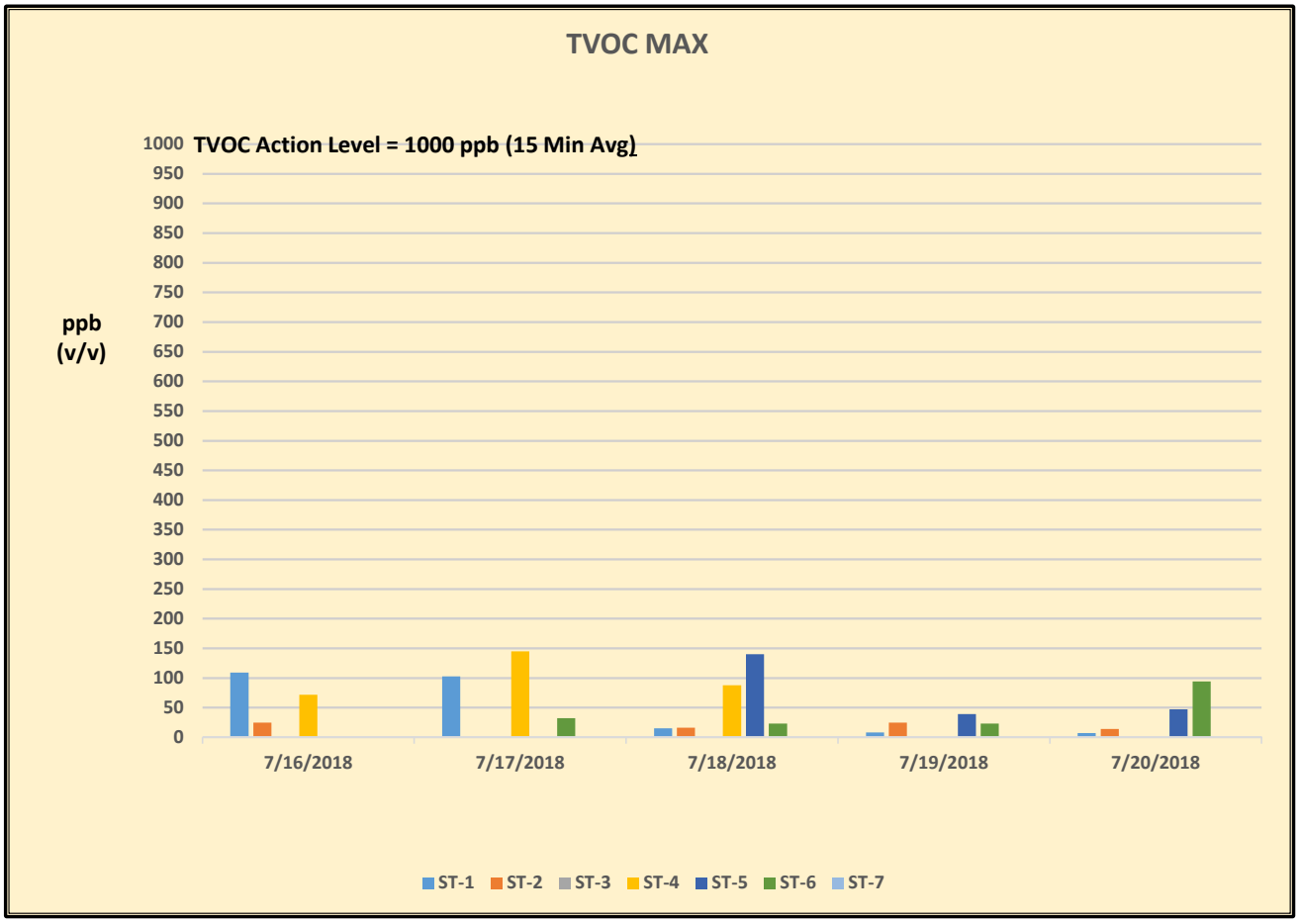
TVOC – Total Volatile Organic Compounds PM_{10} – Particulates as PM_{10}

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 41



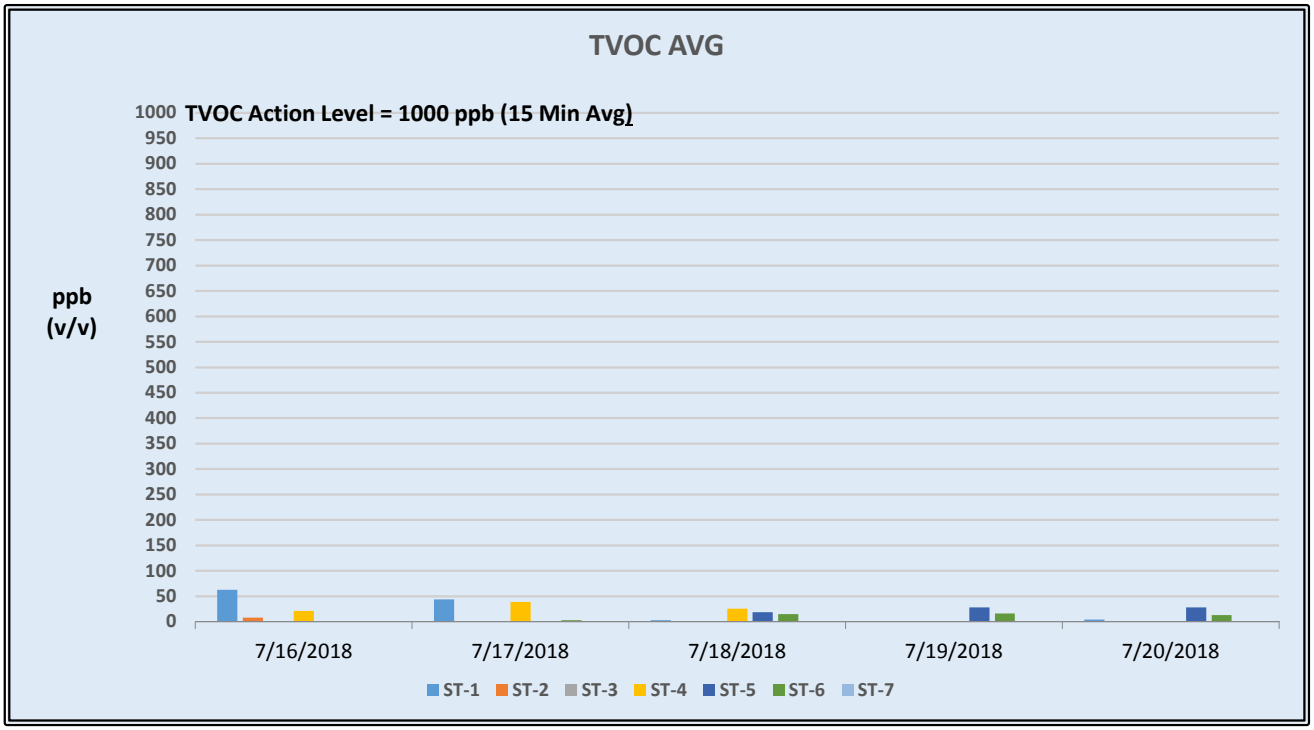
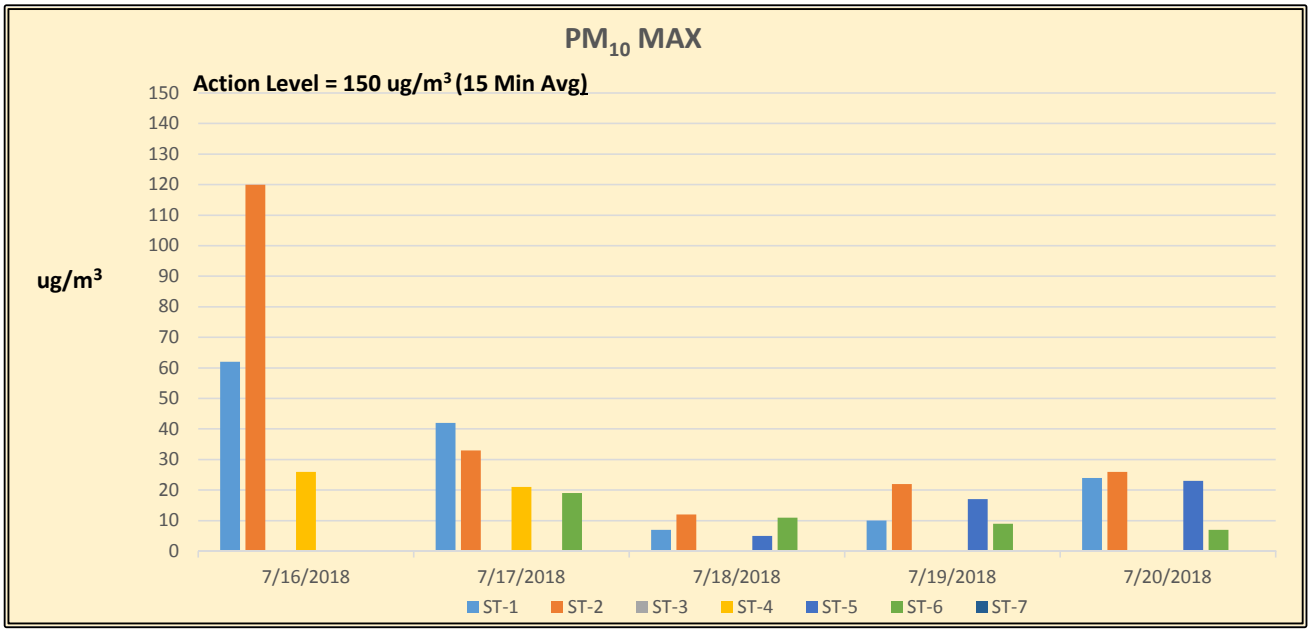
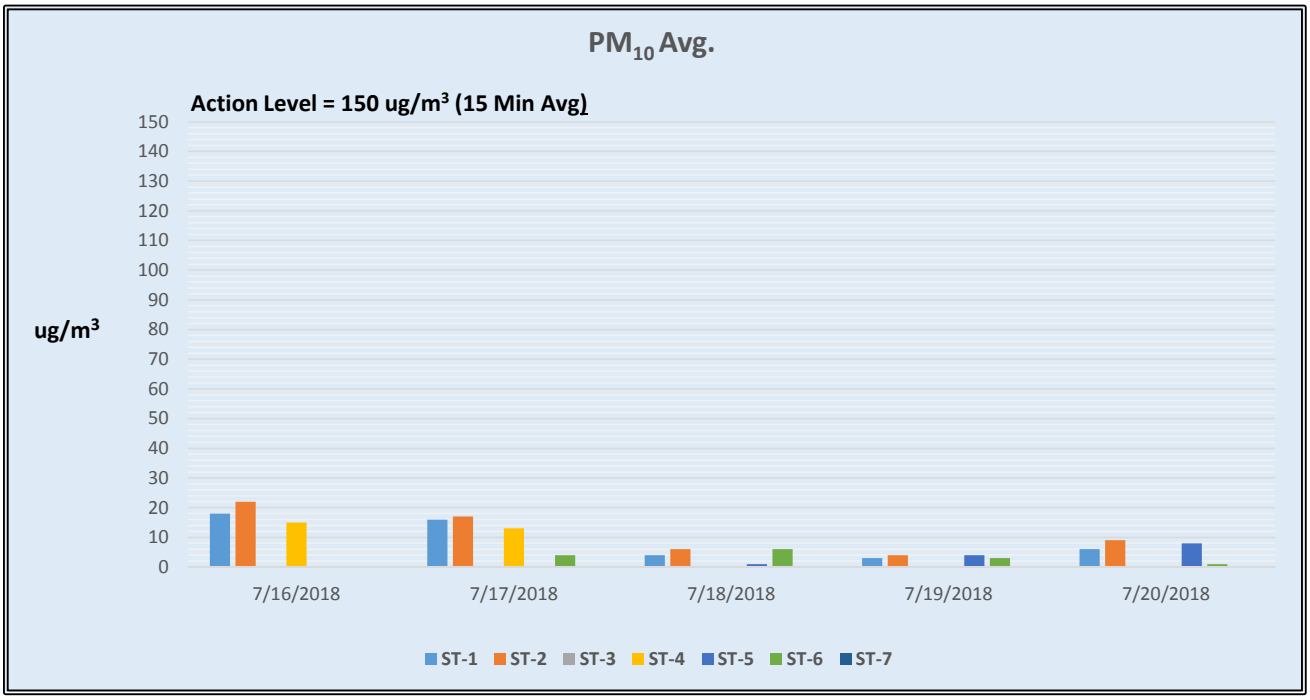
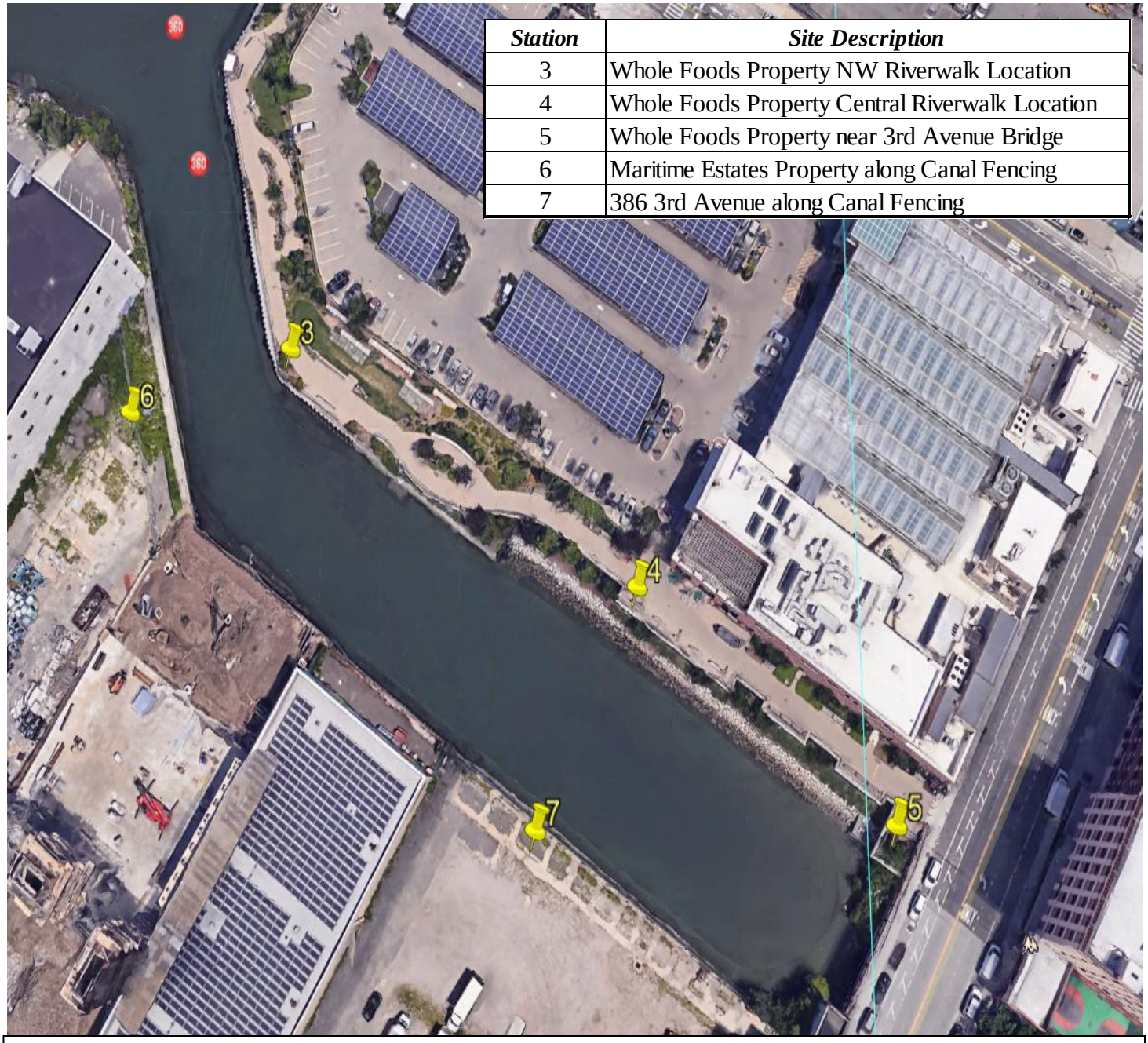


Figure 2
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
TRC CAMP PM_{10} Monitoring Data - Week 41







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 2:
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
Week 22 VOCs Results: March 8th through March 9th

Sample ID	ST-5-VOC-030818	
Laboratory ID	18C0493-01	
Date Sampled	3/8/18 13:15 - 3/9/18 12:15	
Location	Station 5	
	ppbV	ug/m^3
VOCs - TO-15		
Acetone	**11**	**26**
Benzene	**0.21**	**0.66**
Benzyl chloride	<0.035	<0.18
Bromodichloromethane	<0.035	<0.24
Bromoform	<0.035	<0.36
Bromomethane	<0.035	<0.14
1,3-Butadiene	**0.062**	**0.14**
2-Butanone (MEK)	<1.4	<4.1
Carbon Disulfide	<0.35	<1.1
Carbon Tetrachloride	**0.072**	**0.45**
Chlorobenzene	<0.035	<0.16
Chloroethane	<0.035	<0.093
Chloroform	<0.035	<0.17
Chloromethane	**0.68**	**1.4**
Cyclohexane	**0.12**	**0.43**
Dibromochloromethane	<0.035	<0.30
1,2-Dibromoethane (EDB)	<0.035	<0.27
1,2-Dichlorobenzene	<0.035	<0.21
1,3-Dichlorobenzene	<0.035	<0.21
1,4-Dichlorobenzene	<0.035	<0.21
Dichlorodifluoromethane (Freon 12)	**0.54**	**2.7**
1,1-Dichloroethane	<0.035	<0.14
1,2-Dichloroethane	<0.035	<0.14
1,1-Dichloroethylene	<0.035	<0.14
cis-1,2-Dichloroethylene	<0.035	<0.14
trans-1,2-Dichloroethylene	<0.035	<0.14
1,2-Dichloropropane	<0.035	<0.16
cis-1,3-Dichloropropene	<0.035	<0.16
trans-1,3-Dichloropropene	<0.035	<0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.035	<0.25
1,4-Dioxane	<0.35	<1.3
Ethanol	**8.3**	**16**
Ethyl Acetate	**0.39**	**1.4**
Ethylbenzene	**0.055**	**0.24**
4-Ethyltoluene	<0.035	<0.17
Heptane	**0.12**	**0.51**
Hexachlorobutadiene	<0.035	<0.37
Hexane	<1.4	<4.9
2-Hexanone (MBK)	**0.094**	**0.39**
Isopropanol	**2.1**	**5.1**
Methyl tert-Butyl Ether (MTBE)	<0.035	<0.13
Methylene Chloride	**0.62**	**2.2**
4-Methyl-2-pentanone (MIBK)	**0.048**	**0.2**
Naphthalene	<0.035	<0.18
Propene	<1.4	<2.4
Styrene	**0.039**	**0.16**
1,1,2,2-Tetrachloroethane	<0.035	<0.24
Tetrachloroethylene	**0.055**	**0.37**
Tetrahydrofuran	<0.035	<0.10
Toluene	**0.85**	**3.2**
1,2,4-Trichlorobenzene	<0.035	<0.26
1,1,1-Trichloroethane	<0.035	<0.19
1,1,2-Trichloroethane	<0.035	<0.19
Trichloroethylene	<0.035	<0.19
Trichlorofluoromethane (Freon 11)	**0.28**	**1.6**
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1
1,2,4-Trimethylbenzene	**0.055**	**0.27**
1,3,5-Trimethylbenzene	<0.035	<0.17
Vinyl Acetate	<0.70	<2.5
Vinyl Chloride	<0.035	<0.090
m&p-Xylene	**0.16**	**0.7**
o-Xylene	**0.067**	**0.29**

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

Table 3:
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
Week 30 VOCs Results: May 1st through 2nd and May 2nd through 3rd

Sample ID	ST-1-VOC-050118		ST-3-VOC-050318	
Laboratory ID	18E0300-01		18E0300-02	
Date Sampled	5/1/18 09:15 - 5/2/18 08:15		5/2/18 09:00 - 5/3/18 08:00	
Location	Station 1		Station 3	
VOCs - TO-15	ppbV	ug/m3	ppbV	ug/m3
Acetone	**6.4**	**15**	**7.6**	**18**
Benzene	**0.44**	**1.4**	**0.26**	**0.83**
Benzyl chloride	<0.040	<0.21	<0.035	<0.18
Bromodichloromethane	<0.040	<0.27	<0.035	<0.24
Bromoform	<0.040	<0.41	<0.035	<0.36
Bromomethane	<0.040	<0.16	<0.035	<0.14
1,3-Butadiene	<0.040	<0.088	<0.035	<0.078
2-Butanone (MEK)	<1.6	<4.7	<1.4	<4.1
Carbon Disulfide	<0.40	<1.2	<0.35	<1.1
Carbon Tetrachloride	**0.082**	**0.52**	**0.079**	**0.49**
Chlorobenzene	<0.040	<0.18	<0.035	<0.16
Chloroethane	<0.040	<0.11	<0.035	<0.0093
Chloroform	**0.14**	**0.7**	**0.042**	**0.21**
Chloromethane	**0.55**	**1.1**	**0.56**	**1.2**
Cyclohexane	**0.17**	**0.59**	**0.14**	**0.5**
Dibromochloromethane	<0.040	<0.34	<0.035	<0.30
1,2-Dibromoethane (EDB)	<0.040	<0.31	<0.035	<0.27
1,2-Dichlorobenzene	<0.040	<0.24	<0.035	<0.21
1,3-Dichlorobenzene	<0.040	<0.24	<0.035	<0.21
1,4-Dichlorobenzene	<0.040	<0.24	<0.035	<0.21
Dichlorodifluoromethane (Freon 12)	**0.54**	**2.7**	**0.37**	**1.8**
1,1-Dichloroethane	<0.040	<0.16	<0.035	<0.14
1,2-Dichloroethane	<0.040	<0.16	<0.035	<0.14
1,1-Dichloroethylene	<0.040	<0.16	<0.035	<0.14
cis-1,2-Dichloroethylene	<0.040	<0.16	<0.035	<0.14
trans-1,2-Dichloroethylene	<0.040	<0.16	<0.035	<0.14
1,2-Dichloropropane	<0.040	<0.18	<0.035	<0.16
cis-1,3-Dichloropropene	<0.040	<0.18	<0.035	<0.16
trans-1,3-Dichloropropene	<0.040	<0.18	<0.035	<0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.040	<0.28	<0.035	<0.25
1,4-Dioxane	<0.40	<1.4	<0.35	<1.3
Ethanol	**10**	**19**	**11**	**20**
Ethyl Acetate	**0.41**	**1.5**	**0.48**	**1.7**
Ethylbenzene	**0.2**	**0.86**	**0.14**	**0.63**
4-Ethyltoluene	**0.076**	**0.37**	**0.06**	**0.3**
Heptane	**0.24**	**0.98**	**0.25**	**1**
Hexachlorobutadiene	<0.040	<0.43	<0.035	<0.37
Hexane	<1.6	<5.6	<1.4	<4.9
2-Hexanone (MBK)	<0.040	<0.16	<0.035	<0.14
Isopropanol	**1.7**	**4.2**	**1.6**	**3.8**
Methyl tert-Butyl Ether (MTBE)	<0.040	<0.14	<0.035	<0.13
Methylene Chloride	**0.42**	**1.5**	**0.36**	**1.3**
4-Methyl-2-pentanone (MIBK)	**0.073**	**0.3**	**0.1**	**0.42**
Naphthalene	**0.14**	**0.75**	**0.29**	**1.5**
Propene	<1.6	<2.8	<1.4	<2.4
Styrene	<0.040	<0.17	**0.036**	**0.16**
1,1,2,2-Tetrachloroethane	<0.040	<0.27	<0.035	<0.24
Tetrachloroethylene	**0.19**	**1.3**	**0.066**	**0.45**
Tetrahydrofuran	**0.069**	**0.2**	<0.035	<0.10
Toluene	**1.1**	**4.2**	**1.6**	**6.1**
1,2,4-Trichlorobenzene	<0.040	<0.30	<0.035	<0.26
1,1,1-Trichloroethane	<0.040	<0.22	<0.035	<0.19
1,1,2-Trichloroethane	<0.040	<0.22	<0.035	<0.19
Trichloroethylene	<0.040	<0.21	<0.035	<0.19
Trichlorofluoromethane (Freon 11)	**0.33**	**1.9**	**0.3**	**1.7**
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.16	<1.2	<0.14	<1.1
1,2,4-Trimethylbenzene	**0.22**	**1.1**	**0.17**	**0.83**
1,3,5-Trimethylbenzene	**0.074**	**0.36**	**0.058**	**0.28**
Vinyl Acetate	<0.80	<2.8	<0.70	<2.5
Vinyl Chloride	<0.040	<0.10	<0.035	<0.090
m&p-Xylene	**0.45**	**2**	**0.43**	**1.9**
o-Xylene	**0.18**	**0.77**	**0.16**	**0.7**

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

Table 4:
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
Week 37 VOCs Results: June 19th through 20th and June 20th through 21st (Co-located)

Sample ID	ST-2-VOC-061918		ST-3A-VOC-062018		ST-3B-VOC-062018		
Laboratory ID	18F1192-01		18F1193-01		18F1193-02		Relative Percent
Date Sampled	6/19/18 14:30 to 6/20/18 13:30		6/20/18 16:00 to 6/21/18 15:00		6/20/18 16:00 to 6/21/18 15:00		Difference
Location	Station 2		Station 3		Station 3 Duplicate		Station 3 Pair
VOCs - TO-15	ppbV	ug/m^3	ppbV	ug/m3	ppbV	ug/m3	
Acetone	**6.3**	**1.6**	**4.8**	**11**	**4.3**	**10**	**9.5%**
Benzene	**0.089**	**0.04**	**0.075**	**0.24**	**0.077**	**0.25**	**4.1%**
Benzyl chloride	<0.040	< 0.21	<0.035	<0.18	<0.035	<0.18	NC
Bromodichloromethane	<0.040	<0.27	<0.035	<0.24	<0.035	<0.24	NC
Bromoform	<0.040	<0.41	<0.035	<0.36	<0.035	<0.36	NC
Bromomethane	<0.080	<0.16	<0.070	<0.27	<0.070	<0.27	NC
1,3-Butadiene	<0.040	<0.88	<0.035	<0.078	<0.035	<0.078	NC
2-Butanone (MEK)	<1.6	<4.7	<1.4	<41	<1.4	<41	NC
Carbon Disulfide	<0.40	<1.2	<0.35	<1.1	<0.35	<1.1	NC
Carbon Tetrachloride	**0.051**	**0.4**	**0.055**	**0.35**	**0.051**	**0.32**	**9.0%**
Chlorobenzene	<0.040	<0.18	<0.035	<0.16	<0.035	<0.16	NC
Chloroethane	<0.040	<0.11	<0.035	<0.093	<0.035	<0.093	NC
Chloroform	<0.040	< 0.040	<0.035	<0.17	<0.035	<0.17	NC
Chloromethane	**0.44**	**0.9**	**0.45**	**0.92**	**0.45**	**0.92**	**0.0%**
Cyclohexane	<0.080	<0.14	<0.070	<0.24	<0.070	<0.24	NC
Dibromochloromethane	<0.040	<034	<0.035	<0.30	<0.035	<0.30	NC
1,2-Dibromoethane (EDB)	<0.040	<0.31	<0.035	<0.27	<0.035	<0.27	NC
1,2-Dichlorobenzene	<0.040	<0.24	<0.035	<0.21	<0.035	<0.21	NC
1,3-Dichlorobenzene	<0.040	<0.24	<0.035	<0.21	<0.035	<0.21	NC
1,4-Dichlorobenzene	<0.040	< 0.040	<0.035	<0.21	<0.035	<0.21	NC
Dichlorodifluoromethane (Freon 12)	**0.33**	**0.04**	**0.32**	**1.6**	**0.32**	**1.6**	**0.0%**
1,1-Dichloroethane	<0.040	<0.16	<0.035	<0.14	<0.035	<0.14	NC
1,2-Dichloroethane	<0.040	<0.16	<0.035	<0.14	<0.035	<0.14	NC
1,1-Dichloroethylene	<0.040	<0.16	<0.035	<0.15	<0.035	<0.15	NC
cis-1,2-Dichloroethylene	<0.040	<0.16	<0.035	<0.16	<0.035	<0.16	NC
trans-1,2-Dichloroethylene	<0.040	<0.16	<0.035	<0.17	<0.035	<0.17	NC
1,2-Dichloropropane	<0.040	<0.18	<0.035	<0.16	<0.035	<0.16	NC
cis-1,3-Dichloropropene	<0.040	<0.18	<0.035	<0.16	<0.035	<0.16	NC
trans-1,3-Dichloropropene	<0.040	<0.18	<0.035	<0.16	<0.035	<0.16	NC
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.040	<0.040	<0.035	<0.25	<0.035	<0.25	NC
1,4-Dioxane	<0.40	0<0.40	<0.35	<11.3	<0.35	<11.3	NC
Ethanol	**5.8**	**1.6**	**6.5**	**12**	**5.6**	**10**	**18.2%**
Ethyl Acetate	<0.080	<0.29	<0.070	<0.25	**0.14**	**0.51**	NC
Ethylbenzene	**0.072**	**0.31**	**0.039**	**0.17**	**0.042**	**0.18**	**5.7%**
4-Ethyltoluene	<0.040	<0.20	<0.035	<0.17	<0.035	<0.17	NC
Heptane	**0.058**	**0.24**	**0.067**	**0.28**	**0.11**	**0.43**	**42.3%**
Hexachlorobutadiene	<0.040	<0.43	<0.035	<0.37	<0.035	<0.37	NC
Hexane	<1.6	<5.6	<1.4	<4.9	<1.4	<4.9	NC
2-Hexanone (MBK)	<0.040	<0.16	<0.035	<0.14	<0.035	<0.14	NC
Isopropanol	<1.6	<3.9	<1.4	<3.4	<1.4	<3.4	NC
Methyl tert-Butyl Ether (MTBE)	<0.040	<0.14	<0.035	<0.13	<0.035	<0.13	NC
Methylene Chloride	<0.40	<1.4	**0.42**	**1.5**	<0.35	<1.2	NC
4-Methyl-2-pentanone (MIBK)	<0.040	<0.16	<0.035	<1.4	<0.035	<1.4	NC
Naphthalene	**0.62**	**3.2**	**0.086**	**0.45**	**0.06**	**0.31**	**36.8%**
Propene	<1.6	<2.8	<1.4	<2.4	<1.4	<2.4	NC
Styrene	<0.040	<0.17	<0.035	<0.15	<0.035	<0.15	NC
1,1,2,2-Tetrachloroethane	<0.040	<0.27	<0.035	<0.24	<0.035	<0.24	NC
Tetrachloroethylene	**0.15**	**1**	**0.095**	**0.64**	**0.1**	**0.68**	**6.1%**
Tetrahydrofuran	<0.080	<0.24	<0.070	<0.21	<0.070	<0.21	NC
Toluene	**0.49**	**1.9**	**0.4**	**1.5**	**0.39**	**1.5**	**0.0%**
1,2,4-Trichlorobenzene	<0.040	<0.30	<0.035	<0.26	<0.035	<0.26	NC
1,1,1-Trichloroethane	<0.040	<0.22	<0.035	<0.19	<0.035	<0.19	NC
1,1,2-Trichloroethane	<0.040	<0.22	<0.035	<0.19	<0.035	<0.19	NC
Trichloroethylene	<0.040	<0.21	<0.035	<0.19	<0.035	<0.19	NC
Trichlorofluoromethane (Freon 11)	**0.16**	**0.92**	**0.17**	**0.95**	**0.16**	**0.9**	**5.4%**
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.16	<1.2	<0.14	<1.1	<0.14	<1.1	NC
1,2,4-Trimethylbenzene	<0.040	<0.20	**0.06**	**0.29**	**0.071**	**0.35**	**18.8%**
1,3,5-Trimethylbenzene	<0.040	<0.20	<0.035	<0.17	<0.035	<0.17	NC
Vinyl Acetate	<0.80	<2.8	<0.70	<2.5	<0.70	<2.5	NC
Vinyl Chloride	<0.040	<0.10	<0.035	<0.902	<0.035	<0.902	NC
m&p-Xylene	**0.15**	**0.63**	**0.1**	**0.45**	**0.11**	**0.47**	**4.3%**
o-Xylene	**0.063**	**0.27**	**0.041**	**0.18**	**0.046**	**0.2**	**10.5%**

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

Table 1

Week 41
Summary of Additional Periodic (Daily) Monitoring Data

July 16th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	8:30	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-2	8:35	<50	<3	<1.0
	14:35	<50	<3	<1.0
ST-3	8:50	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-4	8:55	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-5	9:10	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-6	9:30	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-7	9:50	<50	<3	<1.0
	16:00	<50	<3	<1.0

July 17th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	9:00	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-2	9:05	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-3	9:25	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-4	9:30	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-5	9:35	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-6	10:00	<50	<3	<1.0
	16:00	<50	<3	<1.0
ST-7	10:15	<50	<3	<1.0
	16:15	<50	<3	<1.0

Table 1

Week 41
Summary of Additional Periodic (Daily) Monitoring Data

July 18th, 2018				
Station Id	**Time**	**Formaldehyde (CHO) (ppb)***	**Hydrogen Sulfide (H_2S) (ppb)***	**Ammonia (NH_3) (ppm)****
ST-1	7:45	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-2	7:55	<50	<3	<1.0
	14:35	<50	<3	<1.0
ST-3	8:05	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-4	8:10	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-5	8:25	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-6	8:40	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-7	9:00	<50	<3	<1.0
	16:00	<50	<3	<1.0

July 19th, 2018				
Station Id	**Time**	**Formaldehyde (CHO) (ppb)***	**Hydrogen Sulfide (H_2S) (ppb)***	**Ammonia (NH_3) (ppm)****
ST-1	8:30	<50	<3	<1.0
	16:00	<50	<3	<1.0
ST-2	8:35	<50	<3	<1.0
	16:05	<50	<3	<1.0
ST-3	9:00	<50	<3	<1.0
	16:30	<50	<3	<1.0
ST-4	9:05	<50	<3	<1.0
	16:35	<50	<3	<1.0
ST-5	9:10	<50	<3	<1.0
	16:40	<50	<3	<1.0
ST-6	9:25	<50	<3	<1.0
	17:00	<50	<3	<1.0
ST-7	9:40	<50	<3	<1.0
	17:15	<50	<3	<1.0

Table 1

Week 41
Summary of Additional Periodic (Daily) Monitoring Data

July 20th, 2018				
Station Id	**Time**	**Formaldehyde (CHO) (ppb)***	**Hydrogen Sulfide (H_2S) (ppb)***	**Ammonia (NH_3) (ppm)****
ST-1	10:00	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-2	10:05	<50	<3	<1.0
	14:55	<50	<3	<1.0
ST-3	10:15	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-4	10:20	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	10:25	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-6	10:40	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-7	11:00	<50	<3	<1.0
	16:00	<50	<3	<1.0

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

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

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

Meteorological Summary
July 16th through July 20th, 2018

July 16th, 2018 *		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SE	**3.11**	**85.7**

July 17th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SSE	**2.19**	**79.6**

July 18th , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SW	**3.50**	**78.2**

July 19th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
E	**2.74**	**76.1**

July 20th, 2018 ***		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SE	**2.74**	**76.1**

* 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

July 23, 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, 16 June – 20 June, 2018

Noise Monitoring Locations

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

Noise Monitoring Results

Figures 2 through 11 present the hourly Leq noise levels compared with the noise thresholds discussed in the noise monitoring plan[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.

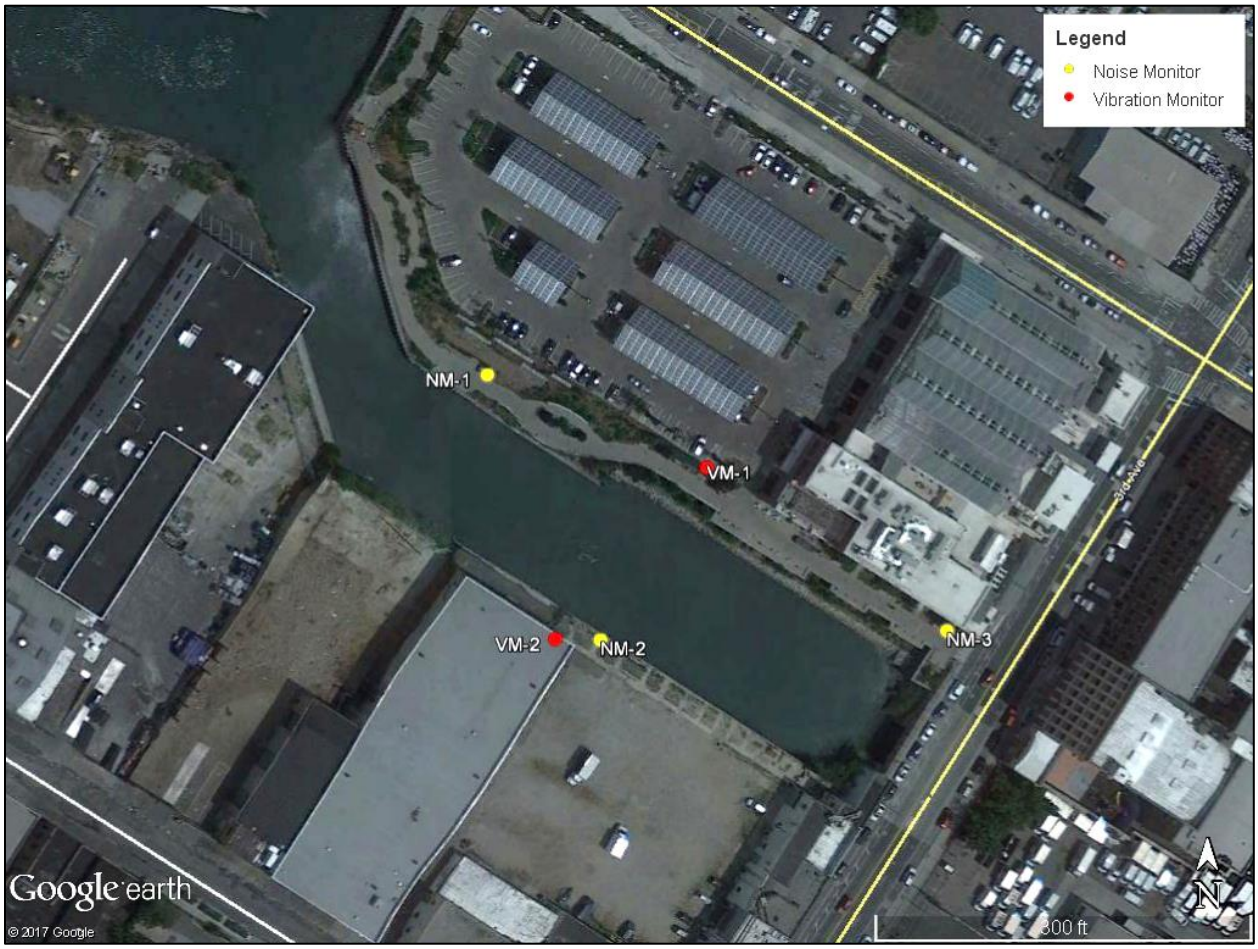


Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study

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

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

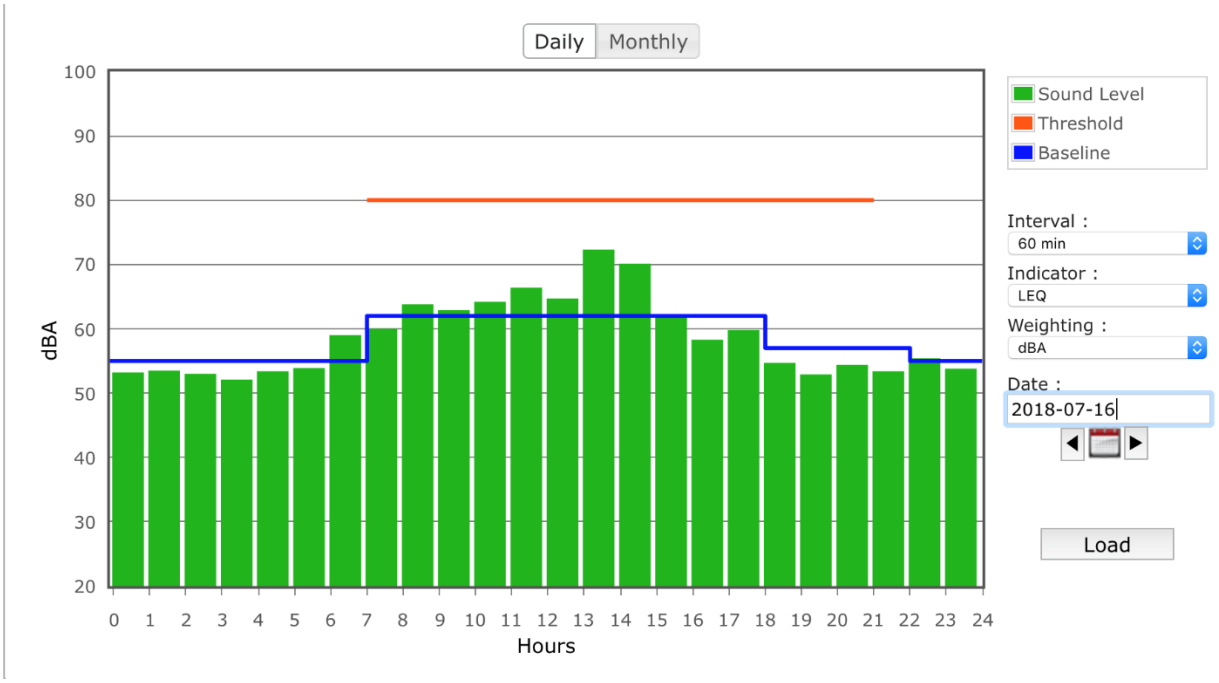


Figure 2: North Monitor NM-1 on Monday

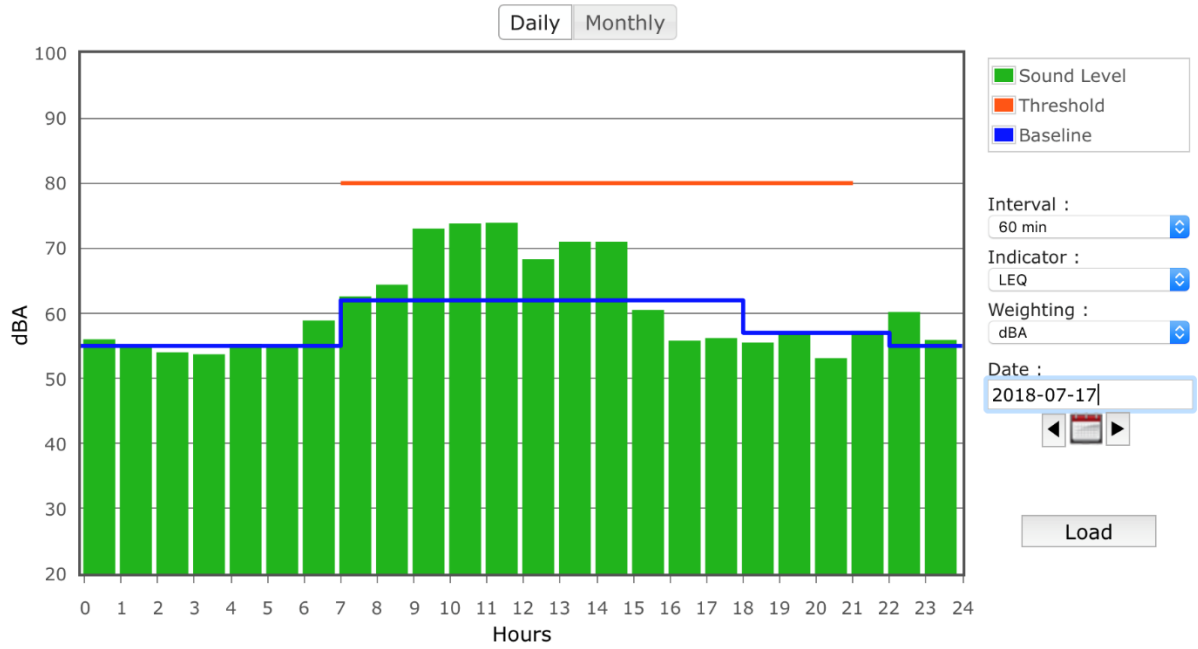


Figure 3: North Monitor NM-1 on Tuesday

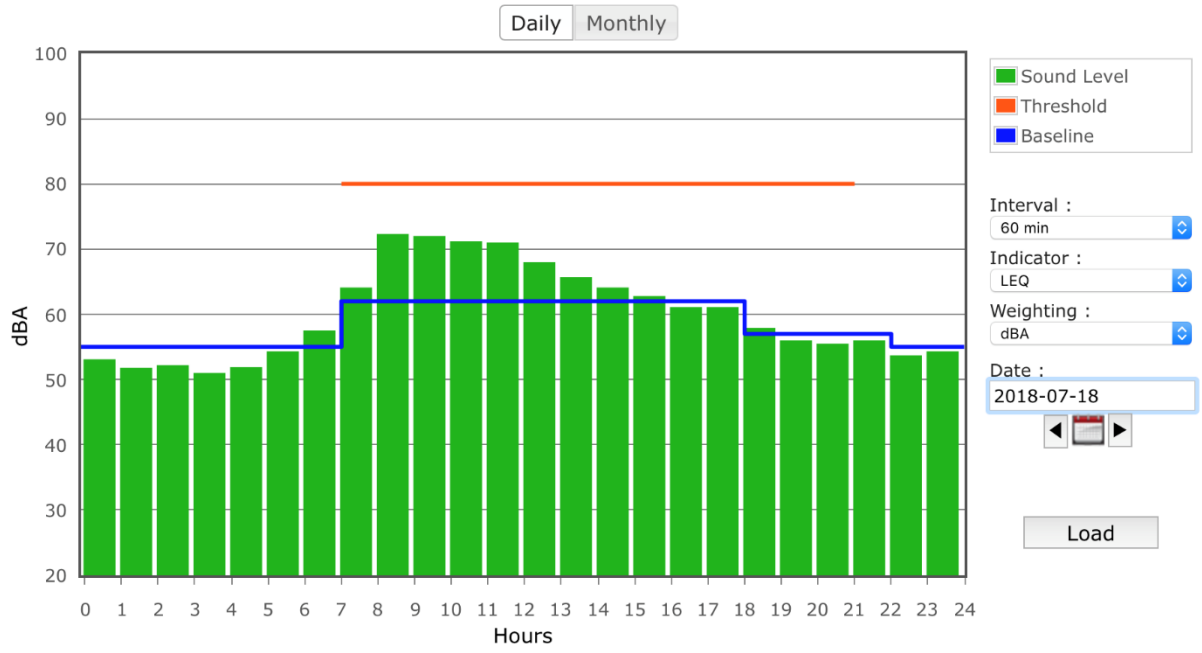


Figure 4: North Monitor NM-1 on Wednesday

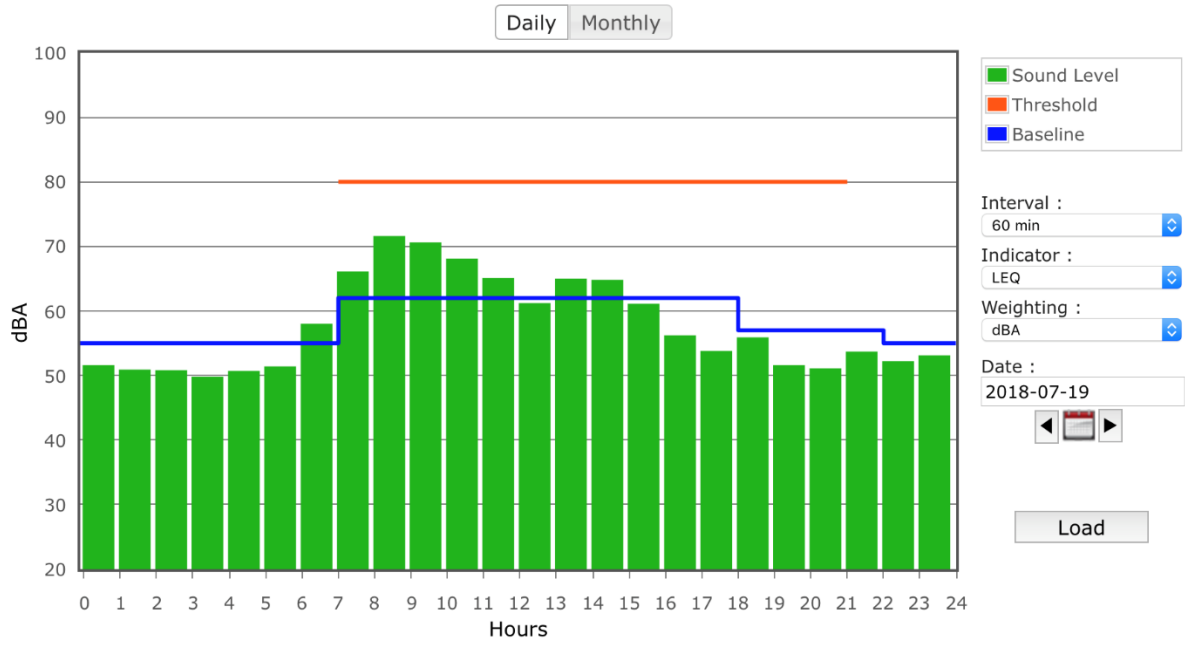


Figure 5: North Monitor NM-1 on Thursday

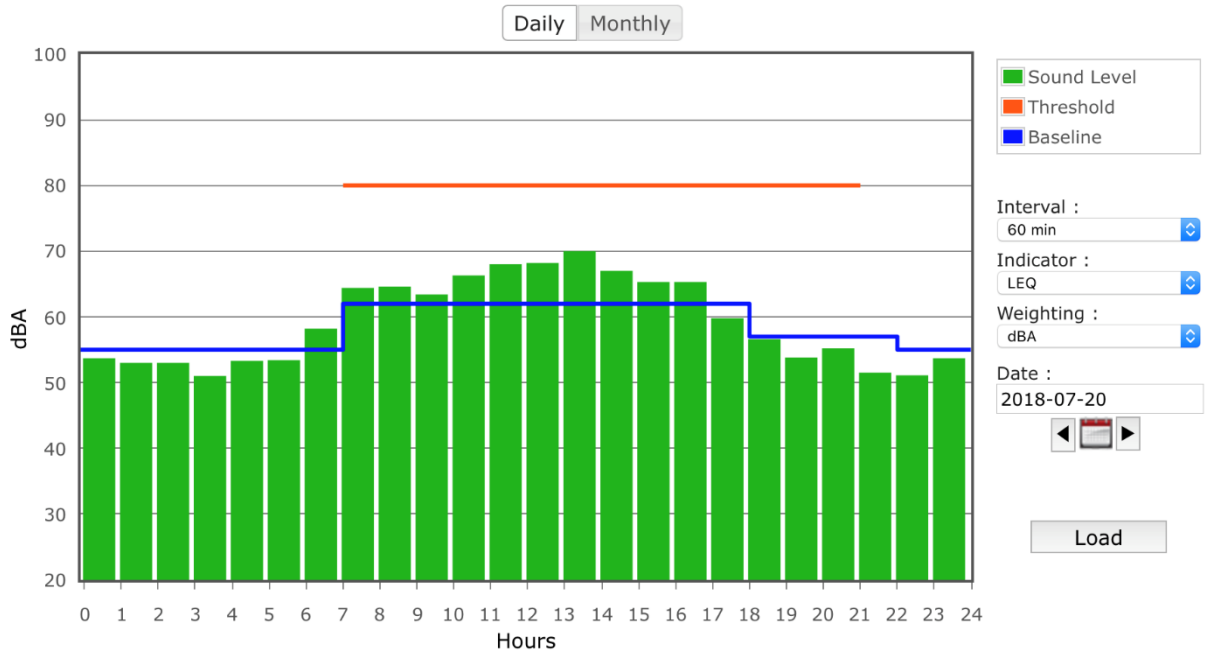


Figure 6: North Monitor NM-1 on Friday

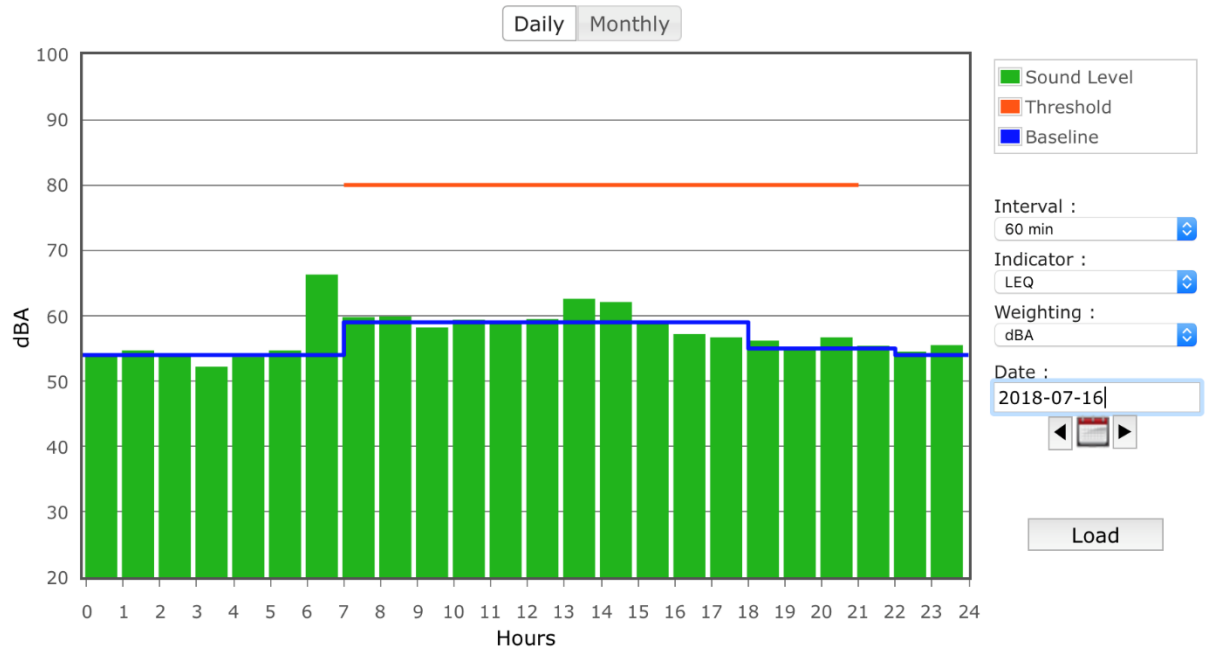


Figure 7: South Monitor NM-2 on Monday

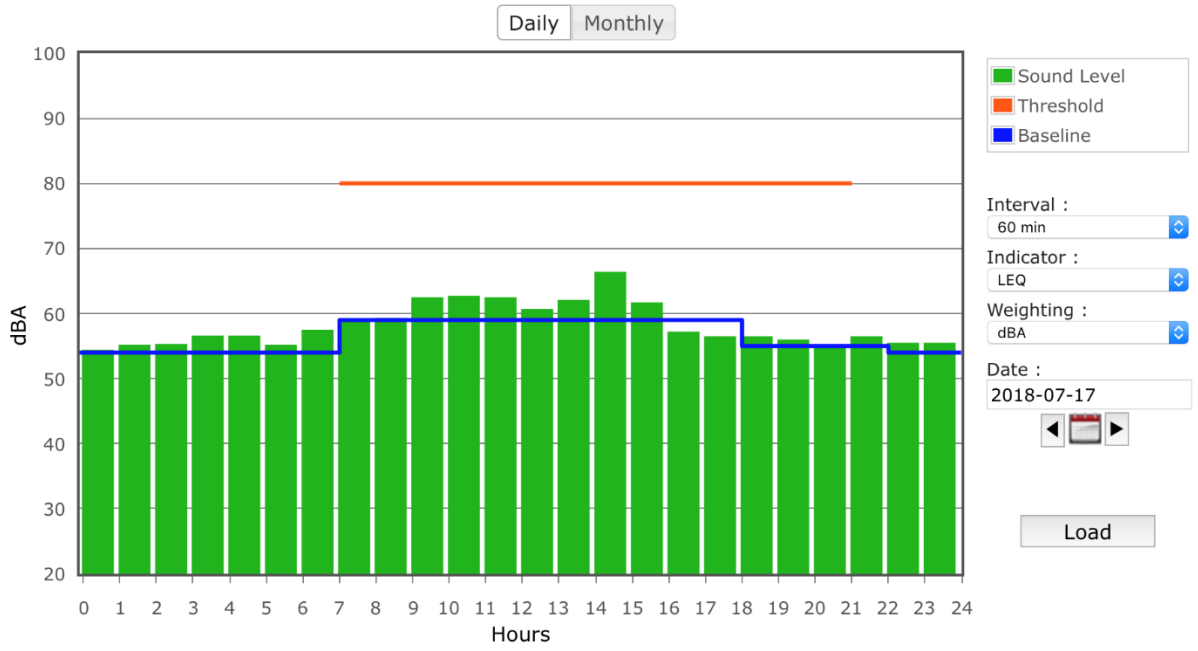


Figure 8: South Monitor NM-2 on Tuesday

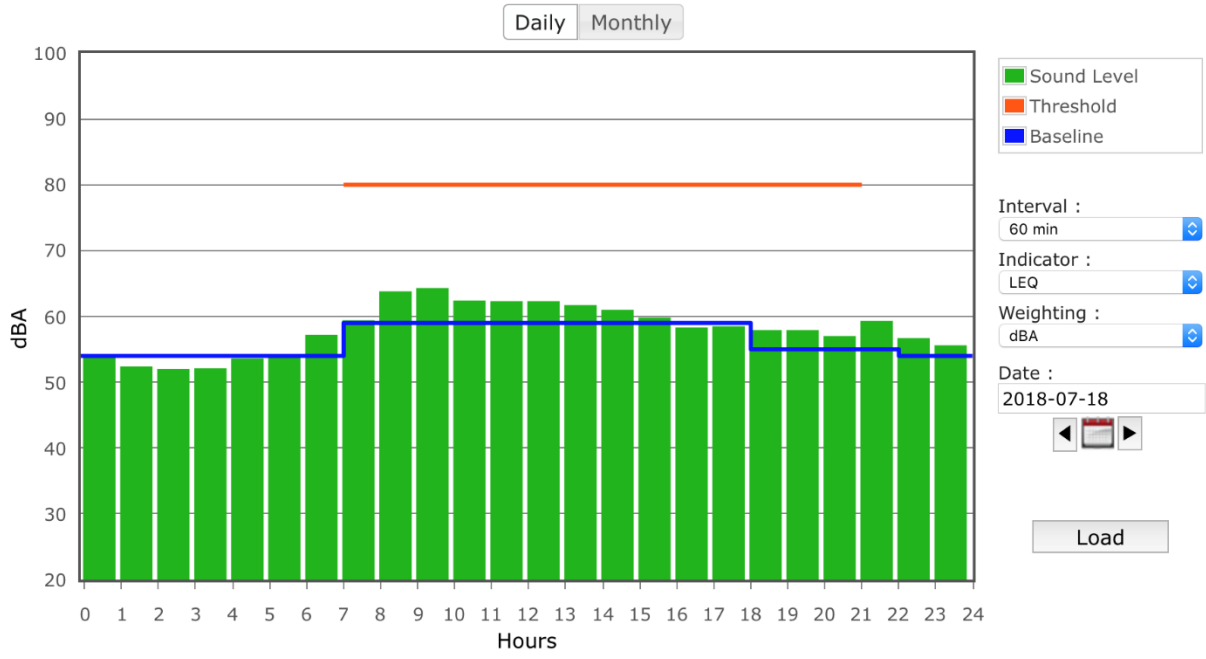


Figure 9: South Monitor NM-2 on Wednesday

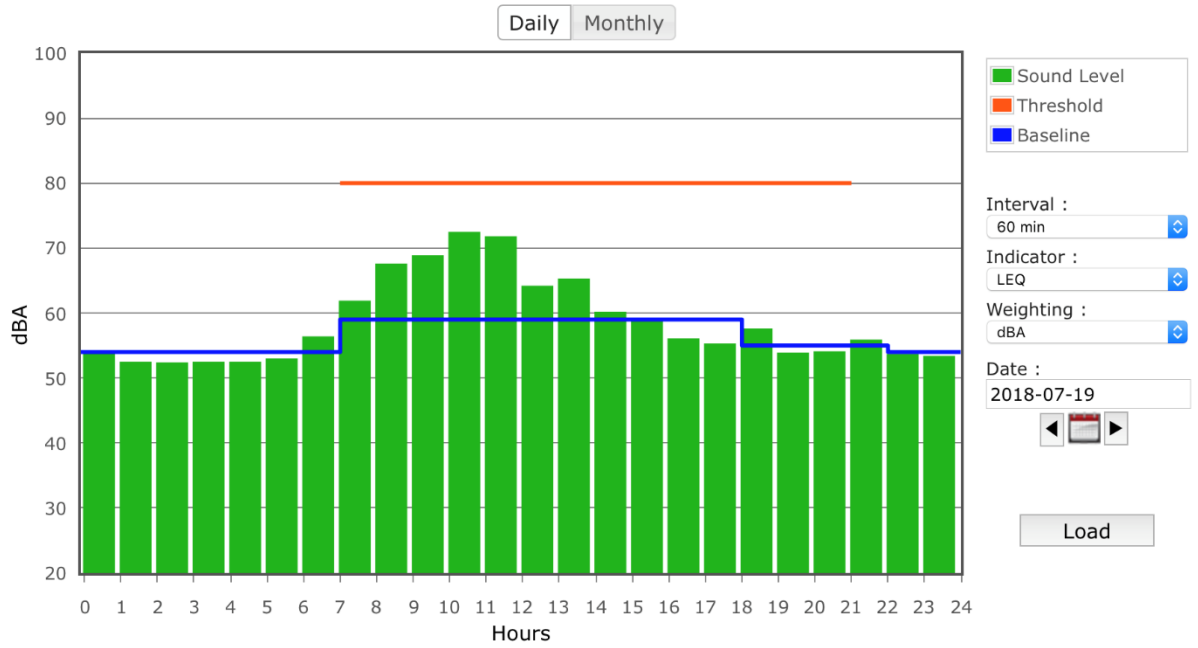


Figure 10: South Monitor NM-2 on Thursday

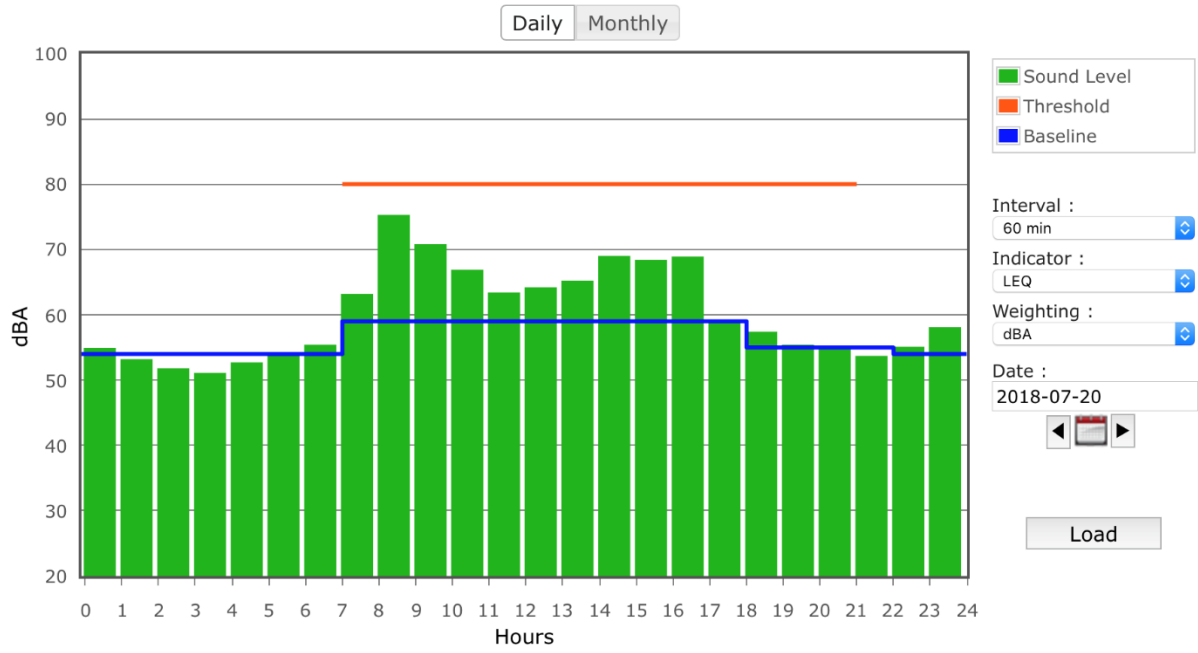


Figure 11: South Monitor NM-2 on Friday

AHRS WEEKLY REPORT

ARCHAEOLOGY MONITORING REPORT

PROJECT	DATES	PROJECT LOCATION	AHRS PERSONNEL IN FIELD
Turning Basin 4 Pilot Capping and Dredging	7/16 to 7/20/18	TB4/Citizens Site	Jonathan Bream

Week Overview
AHRS is conducting Level 2 monitoring in coordination with native alluvium dredging in TB4. Finished dredging and screening of Level 2 material on July 19

For Level 2 monitoring, AHRS archaeologists J. Bream was on site to monitor screening of dredged material at the Citizens site.

Monday, July 16
J. Beam was at Citizens for Level 2 monitoring of screening native alluvial sediments. No dredging was conducted today. J. Bream reviewed photo of debris screened at Clean Earth.

Tuesday, July 17
No dredging was conducted today therefore no monitoring for the screening of dredged native alluvial sediments at Citizens Site was needed. J. Bream inspected material screened at Clean Earth over the past three weeks since last visit to Clean Earth. As seen at Citizens Site, the volume of debris recovered from the screening has diminished. Six metal objects and 12 bricks were collected. All the items collected will be washed and inventoried in the future

Wednesday, July 18
J. Beam was at Citizens for Level 2 monitoring of screening native alluvial sediments. No dredging was conducted today. At 11:30, the *New York Post* interviewed J. Bream about the archaeological material recovered from the dredging.

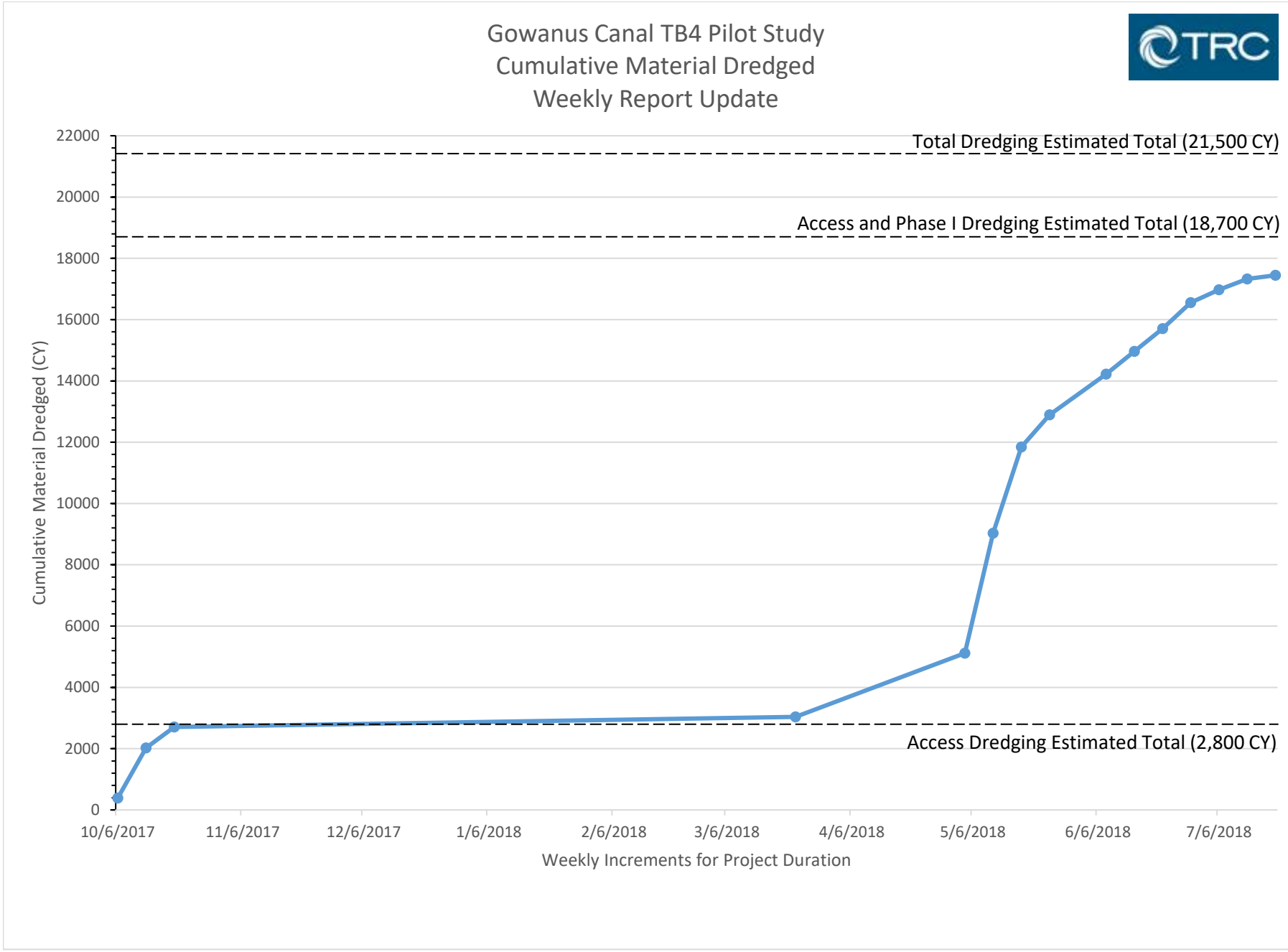
Thursday, July 19
J. Bream was at Citizens for Level 2 monitoring of screening native alluvial sediments. Some of the large metal objects went into the oversized bin and were then transferred to the cement pad. Dredging of Level 2 material is finished at TB 4.

NEXT WEEK
Level 2 monitoring of native alluvium screening is completed at Citizen Site. Next week, the material collected on the pad at Citizen Site should be power washed, after which an inspection of oversized material at Citizens Site will be scheduled. Jonathan Bream will schedule an inspection at Clean Earth to complete the final inspection and to complete a final inventory of collected materials at Clean Earth.

WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA

(NO ACTIVITIES DURING WEEK)

CUMULATIVE DREDGED MATERIAL CHART


Gowanus Canal TB4 Pilot Study
Cumulative Material Dredged
Weekly Report Update
TRC
Total Dredging Estimated Total (21,500 CY)
Access and Phase I Dredging Estimated Total (18,700 CY)
Access Dredging Estimated Total (2,800 CY)
Cumulative Material Dredged (CY)
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
10/6/2017
11/6/2017
12/6/2017
1/6/2018
2/6/2018
3/6/2018
4/6/2018
5/6/2018
6/6/2018
7/6/2018
Weekly Increments for Project Duration