

WEEKLY PROGRESS REPORT – TRC SOLUTIONS

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

Project number: 283126

Period: May 21 to 25, 2018

Date of Report: June 5, 2018

Rev: 0

Prepared For: Gowanus Environmental Remediation Trust



On-Site Activities Conducted During Week:

Sevenson Environmental Services (SES)

Phase I Dredging:

- Approximately 1,048 cubic yards of sediment dredged (volume provided by Sevenson and accepted as draft by Geosyntec)
- Placed 620 cubic yards of sand backfill in slotted excavation adjacent to Whole Foods
- Changed attachment on excavator from environmental clamshell to conventional bucket
- Dislodged sediment within webbing of installed sheet piling. Sediment to be removed from TB4 during dredging to design grade
- Decanted dredged sediment consolidated into approximate 750 cubic yard scows and transferred to Clean Earth Claremont

Water Treatment and Monitoring

- Discharged 28,509 gallons of treated decant water on 05/24/18.
- No exceedances of continuous monitoring.
- Dredged sediment decanted prior to consolidation for off-site shipment.

Turbidity Monitoring

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

Debris Screening Activities

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

Sediment Stabilization Activities

- Clean Earth Claremont stabilized 1,372 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.
- Two (2) shipments of stabilized material were disposed off-site as daily cover, consisting of approximately 1,540 tons. An approximate total of 3,490 tons of Phase I stabilized material has been shipped to Waste Management Fairless Hills.

Quality Assurance and Control – Geosyntec

- Water treatment system sampling performed on 05/24/18. Laboratory turnaround time is 10 business days.
- No exceedance of the turbidity trigger or action criteria during Phase I dredging.
- Exceedance to the trigger criterion on May 22 due to observation of sheen outside the work zone possibly due to construction activities
- Exceedance to the action criterion on May 23 due to observation of sheen outside of the work zone due to construction activities
- Measurements for 5/21/18:
 - Daily average for ambient buoy – 28.7 NTU
 - Daily average for sentinel buoy – 18.2 NTU
 - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 3.8 NTU at 0830.
- Measurements for 5/22/18:
 - Daily average for ambient buoy – 11.9 NTU
 - Daily average for sentinel buoy – 16.7 NTU
 - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 32.8 NTU at 0800.



- Measurements for 5/23/18:
 - Daily average for ambient buoy – 11.9 NTU
 - Daily average for sentinel buoy – 16.3 NTU
 - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 25.6 NTU at 1115.
- Measurements for 5/24/18:
 - Daily average for ambient buoy – 12.0 NTU
 - Daily average for sentinel buoy – 8.6 NTU
 - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 1.3 NTU at 1130.
- Measurements for 5/25/18:
 - Daily average for ambient buoy – 12.0 NTU
 - Daily average for sentinel buoy – 3.3 NTU
 - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – no instances where sentinel exceeded ambient.

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 (PM₁₀) 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 PM₁₀ in µg/m³
 - Station 1 – 24 µg/m³ recorded on 05/23/18
 - Station 2 – 34 µg/m³ recorded on 05/22/18
 - Station 3 – 26 µg/m³ recorded on 05/25/18
 - Station 4 – 36 µg/m³ recorded on 05/21/18
 - Station 5 – 18 µg/m³ recorded on 05/24/18
 - Station 6 – 38 µg/m³ recorded on 05/21/18
 - Station 7 – <1 µg/m³ recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
 - Station 1 – 65 ppb recorded on 05/25/18
 - Station 2 – 35 ppb recorded on 05/24/18
 - Station 3 – 87 ppb recorded on 05/23/18
 - Station 4 – <1 ppb recorded throughout the week
 - Station 5 – 82 ppb recorded on 05/21/18
 - Station 6 – 23 ppb recorded on 05/21 and 05/23/18
 - Station 7 – 28 ppb recorded on 05/21/18
- All real-time readings of formaldehyde, hydrogen sulfide, or ammonia less than instrument reporting limit except for the following readings.
 - *Formaldehyde:*
 - Station 3 at 1500 on 05/24/18 – 4.51 ppb
 - *Hydrogen Sulfide:*
 - Station 7 at 1030 on 05/21/18 – 0.01 ppb
 - *Ammonia:*
 - Station 7 at 1030 on 05/21/18 – 0.07 ppm



- 23-hour sample collected at ST-1 on 05/21 through 05/22 and ST-7 (collocated) on 05/22 through 05/23. Laboratory turnaround time is 10 business days.

Noise and Vibration Monitoring – Wilson Ihrig

- Operated and maintained two (2) noise monitors: NM-1 (north side of canal on Whole Foods promenade) and NM-2 (south side of canal on southeast corner of 386 3rd Avenue).
- One (1) exceedances of the hourly Leq noise limit of 80 dBA at southern monitor during increased boat movement at beginning of day due to tide cycle.
- Greatest hourly Leq noise measurements
 - Northern monitor (NM-1) – 75.1 dBA during 1400-1500 on 05/22/18
 - Southern monitor (NM-2) – 80.6 dBA during 0700-0800 on 05/22/18

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

- Draft and finalize memoranda to facilitate the disposal of non-archaeologically sensitive debris staged at Clean Earth.
- Reviewed photographs of screened debris from Phase I dredging at Clean Earth Claremont and Citizens Site. Conduct site inspection of segregated materials at Clean Earth Claremont. Wood debris, iron industrial debris, and red brick with maker’s stamp identified as requiring additional cleaning, recording, and measuring, along with possible coordination with SHPO and EPA.

Two-Week Look Ahead:

Sevenson:

- Continue and complete Phase I dredging.
- Commence Phase II dredging.
- Shipment of dredged sediment to Clean Earth Claremont for screening and stabilization prior to shipment to Waste Management Fairless Hills for beneficial reuse.
- Treatment and discharge of water decanted from dredged sediment.
- Perform optical monitoring of bulkheads and surrounding structures with autonomous total survey stations. Along with weekly optical surveys conducted by subcontractor.

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

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise monitoring,

AHRS:

- Finalize report of inspection of screened debris from Access Dredging in preparation for off-site disposal.
- Review photographs and perform inspection of screened debris from Phase I dredging at Clean Earth Claremont and Citizens Site.
- Draft and finalize report to facilitate the disposal of non-archaeologically sensitive debris staged at Clean Earth and Citizens Site.

Key Milestones

- No milestones during period.

Attachments:

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



Client Name: Gowanus ERT	Site Location: TB-4 Pilot Study	Project No.: 283126.0000.0001
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Photo No. 001	Date 05-21-2018
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Description
Loading material into scow #2.



Photo No. 002	Date 05-21-2018
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Description
Excavating material from the southeast corner of TB-4.



Client Name: Gowanus ERT	Site Location: TB-4 Pilot Study	Project No.: 283126.0000.0001
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Photo No. 003	Date 05-22-2018
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Description
Measuring empty draft on the sand scow after placing sand into Slot #1.



Photo No. 004	Date 05-22-2018
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Description
Loaded sand scow being transferred to TB-4.



Client Name: Gowanus ERT	Site Location: TB-4 Pilot Study	Project No.: 283126.0000.0001
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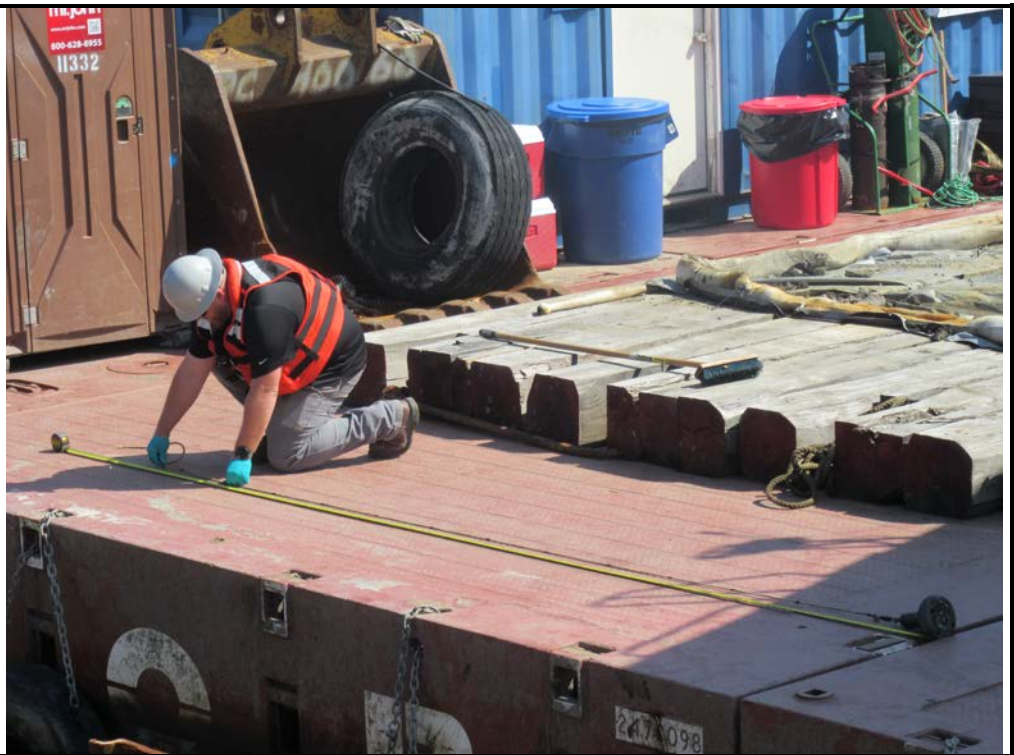
Photo No. 005	Date 05-23-2018
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Description
Loading scow with dredged material.



Photo No. 006	Date 05-23-2018
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Description
Measuring the length of the lead line prior to checking the area of slotted excavations to ensure proper backfill elevation.



Client Name: Gowanus ERT	Site Location: TB-4 Pilot Study	Project No.: 283126.0000.0001
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Photo No. 007	Date 05-24-2018
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Description
Scow with water waiting for pumping to the water treatment plant.



Photo No. 008	Date 05-24-2018
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Description
Changing from environmental clamshell bucket to conventional excavator bucket.



Client Name: Gowanus ERT	Site Location: TB-4 Pilot Study	Project No.: 283126.0000.0001
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Photo No. 009	Date 05-25-2018
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Description
Progress of assembly of mixing plant.



Photo No. 010	Date 05-25-2018
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Description
Attempting to calibrate GPS for conventional excavator bucket.



GEOSYNTEC IN-CANAL WATER QUALITY MONITORING WEEKLY DATA SUMMARY



GOWANUS CANAL SUPERFUND SITE DREDGING AND CAPPING PILOT STUDY Water Quality Monitoring Weekly Data Summary

Week of May 21st, 2018

Report Contents

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

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1. SCOPE OF MONITORING

The following report summarizes water quality monitoring data collected during the week of May 21st, 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 May 21st. 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.



2. TURBIDITY BUOY DATA

The following section provides turbidity data for the sentinel and ambient turbidity buoys from 7 AM to 5 PM from May 21st to May 25th, 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. On May 22nd the sentinel buoy detected two spikes in turbidity of 44.7 NTU at 08:00 and of 37.1 NTU at 10:00. On May 23rd the sentinel buoy detected two spikes in turbidity of 36.0 NTU at 10:45 and 37.5 NTU at 11:15. On May 24th the sentinel buoy did not record turbidity between 11:45 and 12:30 and the ambient buoy did not record turbidity between 10:30 and 11:30 during routine buoy servicing.

2.1 Monday, May 21st, 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)
5/21/2018 7:00	19.2	7.6	N	5/21/2018 12:15	26.8	24.4	N
5/21/2018 7:15	21.9	6.3	N	5/21/2018 12:30	31.2	20.7	N
5/21/2018 7:30	20.4	23.3	Y	5/21/2018 12:45	27.6	19.6	N
5/21/2018 7:45	20.2	13.4	N	5/21/2018 13:00	25.2	14.9	N
5/21/2018 8:00	21.3	17.5	N	5/21/2018 13:15	28.2	14.8	N
5/21/2018 8:15	25.2	13.1	N	5/21/2018 13:30	28.1	22.4	N
5/21/2018 8:30	23.0	26.8	Y	5/21/2018 13:45	27.5	18.7	N
5/21/2018 8:45	25.0	18.6	N	5/21/2018 14:00	30.3	13.6	N
5/21/2018 9:00	24.5	16.1	N	5/21/2018 14:15	32.3	26.8	N
5/21/2018 9:15	29.0	26.3	N	5/21/2018 14:30	33.8	24.3	N
5/21/2018 9:30	27.6	14.3	N	5/21/2018 14:45	38.0	19.7	N
5/21/2018 9:45	25.9	17.3	N	5/21/2018 15:00	43.3	20.2	N
5/21/2018 10:00	27.6	16.0	N	5/21/2018 15:15	38.3	21.2	N
5/21/2018 10:15	28.1	15.0	N	5/21/2018 15:30	39.3	23.5	N
5/21/2018 10:30	27.9	13.1	N	5/21/2018 15:45	36.8	26.9	N
5/21/2018 10:45	29.2	12.9	N	5/21/2018 16:00	32.5	19.3	N
5/21/2018 11:00	29.9	15.8	N	5/21/2018 16:15	31.0	14.6	N
5/21/2018 11:15	27.6	22.4	N	5/21/2018 16:30	34.7	24.6	N
5/21/2018 11:30	26.7	16.7	N	5/21/2018 16:45	28.1	16.9	N
5/21/2018 11:45	28.2	13.6	N	5/21/2018 17:00	29.0	21.8	N
5/21/2018 12:00	26.4	13.1	N				
Average							
Maximum							
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, May 22nd, 2018

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)
5/22/2018 7:00	12.0	9.0	N	5/22/2018 12:15	11.9	12.1	Y
5/22/2018 7:15	12.0	16.9	Y	5/22/2018 12:30	12.0	12.5	Y
5/22/2018 7:30	12.0	12.5	Y	5/22/2018 12:45	12.0	13.2	Y
5/22/2018 7:45	11.9	17.9	Y	5/22/2018 13:00	12.0	7.5	N
5/22/2018 8:00	11.9	44.7	Y	5/22/2018 13:15	11.9	12.6	Y
5/22/2018 8:15	11.9	18.5	Y	5/22/2018 13:30	11.9	14.5	Y
5/22/2018 8:30	11.9	13.4	Y	5/22/2018 13:45	12.0	13.8	Y
5/22/2018 8:45	12.0	14.4	Y	5/22/2018 14:00	12.0	13.0	Y
5/22/2018 9:00	11.9	20.8	Y	5/22/2018 14:15	12.0	13.4	Y
5/22/2018 9:15	12.0	14.3	Y	5/22/2018 14:30	11.9	8.3	N
5/22/2018 9:30	12.0	17.2	Y	5/22/2018 14:45	11.9	14.4	Y
5/22/2018 9:45	12.0	16.7	Y	5/22/2018 15:00	12.0	15.4	Y
5/22/2018 10:00	11.9	37.1	Y	5/22/2018 15:15	12.0	14.4	Y
5/22/2018 10:15	11.9	13.2	Y	5/22/2018 15:30	11.9	16.8	Y
5/22/2018 10:30	11.9	13.5	Y	5/22/2018 15:45	12.0	14.0	Y
5/22/2018 10:45	11.9	13.1	Y	5/22/2018 16:00	12.0	21.2	Y
5/22/2018 11:00	11.9	16.0	Y	5/22/2018 16:15	12.0	21.9	Y
5/22/2018 11:15	11.9	23.4	Y	5/22/2018 16:30	11.9	19.1	Y
5/22/2018 11:30	12.0	20.0	Y	5/22/2018 16:45	12.0	19.2	Y
5/22/2018 11:45	11.9	14.3	Y	5/22/2018 17:00	11.9	24.7	Y
5/22/2018 12:00	11.9	14.6	Y				
Average	11.9	16.7	Y				
Maximum	12.0	44.7	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							

2.4 Thursday, May 24th, 2018

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)
5/24/2018 7:00	11.9	12.8	Y	5/24/2018 12:15	11.9	--	Y
5/24/2018 7:15	11.9	10.0	N	5/24/2018 12:30	11.9	11.5	N
5/24/2018 7:30	11.9	9.3	N	5/24/2018 12:45	12.0	6.7	N
5/24/2018 7:45	11.9	8.6	N	5/24/2018 13:00	11.9	6.5	N
5/24/2018 8:00	11.9	7.9	N	5/24/2018 13:15	12.0	7.2	N
5/24/2018 8:15	11.9	8.1	N	5/24/2018 13:30	11.9	6.1	N
5/24/2018 8:30	12.0	8.0	N	5/24/2018 13:45	12.0	5.4	N
5/24/2018 8:45	12.0	8.8	N	5/24/2018 14:00	12.0	6.2	N
5/24/2018 9:00	12.0	10.1	N	5/24/2018 14:15	12.0	4.5	N
5/24/2018 9:15	12.0	11.0	N	5/24/2018 14:30	12.0	6.2	N
5/24/2018 9:30	12.0	10.2	N	5/24/2018 14:45	12.0	4.2	N
5/24/2018 9:45	11.9	10.1	N	5/24/2018 15:00	11.9	5.6	N
5/24/2018 10:00	11.9	11.6	N	5/24/2018 15:15	12.0	5.8	N
5/24/2018 10:15	12.0	10.9	N	5/24/2018 15:30	12.0	6.9	N
5/24/2018 10:30	--	12.9	N	5/24/2018 15:45	12.0	7.1	N
5/24/2018 10:45	--	14.1	N	5/24/2018 16:00	12.0	6.8	N
5/24/2018 11:00	--	13.8	N	5/24/2018 16:15	12.0	4.9	N
5/24/2018 11:15	--	14.2	N	5/24/2018 16:30	12.0	5.7	N
5/24/2018 11:30	11.9	13.2	Y	5/24/2018 16:45	11.9	5.5	N
5/24/2018 11:45	12.0	--	Y	5/24/2018 17:00	11.9	8.7	N
5/24/2018 12:00	11.9	--	Y				
<hr/>							
Average	12.0	8.6	N				
Maximum	12.0	14.2	Y				
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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, May 25th, 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)
5/25/2018 7:00	11.9	5.3	N	5/25/2018 12:15	12.0	4.4	N
5/25/2018 7:15	12.0	2.8	N	5/25/2018 12:30	12.0	4.0	N
5/25/2018 7:30	12.0	4.3	N	5/25/2018 12:45	12.0	5.0	N
5/25/2018 7:45	12.0	3.1	N	5/25/2018 13:00	12.0	2.8	N
5/25/2018 8:00	12.0	3.6	N	5/25/2018 13:15	12.0	3.4	N
5/25/2018 8:15	11.9	3.0	N	5/25/2018 13:30	12.0	2.1	N
5/25/2018 8:30	12.0	3.7	N	5/25/2018 13:45	12.0	2.3	N
5/25/2018 8:45	11.9	2.7	N	5/25/2018 14:00	12.0	3.2	N
5/25/2018 9:00	12.0	1.8	N	5/25/2018 14:15	12.0	2.6	N
5/25/2018 9:15	12.0	1.9	N	5/25/2018 14:30	12.0	2.5	N
5/25/2018 9:30	11.9	1.7	N	5/25/2018 14:45	12.0	2.2	N
5/25/2018 9:45	12.0	3.0	N	5/25/2018 15:00	12.0	1.6	N
5/25/2018 10:00	11.9	2.7	N	5/25/2018 15:15	12.0	3.5	N
5/25/2018 10:15	12.0	3.2	N	5/25/2018 15:30	12.0	1.3	N
5/25/2018 10:30	11.9	5.5	N	5/25/2018 15:45	12.0	2.0	N
5/25/2018 10:45	12.0	5.3	N	5/25/2018 16:00	11.9	1.4	N
5/25/2018 11:00	12.0	4.9	N	5/25/2018 16:15	11.9	1.1	N
5/25/2018 11:15	11.9	5.5	N	5/25/2018 16:30	12.0	3.1	N
5/25/2018 11:30	11.9	5.2	N	5/25/2018 16:45	11.9	2.7	N
5/25/2018 11:45	11.9	5.9	N	5/25/2018 17:00	12.0	3.7	N
5/25/2018 12:00	12.0	5.1	N				
<hr/>							
Average	12.0	3.3	N				
Maximum	12.0	5.9	N				
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Notes:							
No exceedances to rolling average threshold criteria during reporting period							
Values highlighted in green are greater than 20 NTU above the ambient buoy reading							
Values highlighted in blue are greater than 40 NTU above the ambient buoy reading							

3. HANDHELD MEASUREMENTS

No handheld measurements were collected for this reporting period.

4. SUMMARY OF VISUAL OBSERVATIONS

On Tuesday, May 22, sheen was observed outside of the work zone and resulted in an exceedance of the trigger criterion. This sheen was observed between the 4th Street Turning Basin and the 3rd Street Bridge. On Wednesday, May 23, sheen was again observed outside of the work zone and resulted in an exceedance of the action criterion.

5. REPORT OF EXCEEDANCES

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.

On Tuesday, May 22 sheen was observed outside of the work zone at 14:00 between the 3rd Street Bridge and the 4th Street Turning Basin. Onsite personnel were unable to determine the source of the sheen and were unable to exclude construction activities as the possible source. As a result, an exceedance to the trigger criterion was met. A discharge was occurring just south of the 3rd Street Bridge. Sheen was observed in close proximity to this discharge point. However, sheen was also observed further south just outside the work zone. At the time of the observation, the tide was rising. Although some rainfall occurred later on in the day, at the time of the observation, there was no rainfall.

On Wednesday, May 23, sheen was observed outside of the work zone at 07:20 and resulted in an exceedance to the action criterion. Sheen and debris accumulated just inside the turbidity curtain

on Wednesday morning due to ebb tide currents. As the turbidity curtain was opened in the morning to start work, near the end of ebb tide, the sheen migrated with the tide into the main channel. As a result of this exceedance, the following corrective actions have been implemented:




- The Contractor will do a sweep of the turning basin side of the oil boom/turbidity curtain prior to opening the curtain to remove any floating debris or sheen that has accumulated overnight.
- The Contractor will activate the air curtain prior to opening the turbidity curtain.
- The Contractor will more thoroughly wash scow decks before transporting them outside the turning basin.
- The Contractor will have the tug operator slow down as he crosses the air curtain with the scows.
- The Contractor will make sure that the oil boom used when the air curtain is not operating completely spans the width of the turning basin.

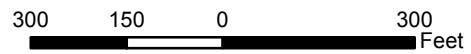
FIGURES



X:\03_GIS\mxd\Canal_Wide_Turbidity_Buoy_Locations.mxd; acarnes; 10/19/2017

Legend

-  Ambient Buoy
-  Sentinel Buoy
-  RTA Boundary



Turbidity Buoy Locations

Gowanus Canal, Brooklyn, NY

Gowanus Canal Remedial Design Group Geosyntec consultants Beech and Bonaparte engineering p.c. an affiliate of Geosyntec Consultants

Figure

1

Ewing, NJ

October 2017

APPENDIX A
PRE-DREDGE TURBIDITY BUOY DATA

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)
10/3/2017 15:00	7.4	2.7	N	10/4/2017 4:30	4.8	7.1	Y	10/4/2017 18:00	6.9	2.7	N
10/3/2017 15:15	6.6	2.4	N	10/4/2017 4:45	5	6.3	Y	10/4/2017 18:15	7.2	2.7	N
10/3/2017 15:30	6.4	2.7	N	10/4/2017 5:00	4.7	6	Y	10/4/2017 18:30	7.8	3.4	N
10/3/2017 15:45	6.9	2	N	10/4/2017 5:15	5.1	6.4	Y	10/4/2017 18:45	8.2	4.4	N
10/3/2017 16:00	6.3	2.1	N	10/4/2017 5:30	5	7.3	Y	10/4/2017 19:00	7.5	3.1	N
10/3/2017 16:15	6.5	2.4	N	10/4/2017 5:45	5.4	7.8	Y	10/4/2017 19:15	8.7	3.6	N
10/3/2017 16:30	7.1	2.9	N	10/4/2017 6:00	5.5	8.3	Y	10/4/2017 19:30	8.7	4.5	N
10/3/2017 16:45	6.1	2.8	N	10/4/2017 6:15	5.2	9	Y	10/4/2017 19:45	9.4	4.1	N
10/3/2017 17:00	7	2.8	N	10/4/2017 6:30	5.8	7.2	Y	10/4/2017 20:00	8.4	4	N
10/3/2017 17:15	7	4.4	N	10/4/2017 6:45	5.4	8.8	Y	10/4/2017 20:15	8.2	4	N
10/3/2017 17:30	7	4.7	N	10/4/2017 7:00	5.5	8	Y	10/4/2017 20:30	9	3.6	N
10/3/2017 17:45	6.3	4	N	10/4/2017 7:15	5.6	7.5	Y	10/4/2017 20:45	8.4	3.5	N
10/3/2017 18:00	6.5	6.9	Y	10/4/2017 7:30	6.9	7.2	Y	10/4/2017 21:00	9.5	4.7	N
10/3/2017 18:15	7.8	6.7	Y	10/4/2017 7:45	6.8	6.1	N	10/4/2017 21:15	10.2	3.9	N
10/3/2017 18:30	7.9	6.5	N	10/4/2017 8:00	6.7	7.4	Y	10/4/2017 21:30	9.5	3.5	N
10/3/2017 18:45	8.5	5.9	N	10/4/2017 8:15	7.3	6.1	N	10/4/2017 21:45	8.9	3.6	N
10/3/2017 19:00	7.9	6	N	10/4/2017 8:30	7.2	4.6	N	10/4/2017 22:00	8.6	2.9	N
10/3/2017 19:15	7.4	6.3	N	10/4/2017 8:45	6.6	9	Y	10/4/2017 22:15	8.7	3.6	N
10/3/2017 19:30	7.4	4.3	N	10/4/2017 9:00	9.2	14.1	Y	10/4/2017 22:30	8.4	6.3	N
10/3/2017 19:45	8.3	4.6	N	10/4/2017 9:15	7.9	4.8	N	10/4/2017 22:45	7.3	3.3	N
10/3/2017 20:00	8.9	5.2	N	10/4/2017 9:30	9.3	4.6	N	10/4/2017 23:00	7.4	3.8	N
10/3/2017 20:15	8.6	4.5	N	10/4/2017 9:45	7.6	5.1	N	10/4/2017 23:15	7.1	4.5	N
10/3/2017 20:30	8	4.9	N	10/4/2017 10:00	8.1	3.9	N	10/4/2017 23:30	7	3.8	N
10/3/2017 20:45	10.6	4.3	N	10/4/2017 10:15	7.8	3.1	N	10/4/2017 23:45	8.3	5.3	N
10/3/2017 21:00	11.1	4.6	N	10/4/2017 10:30	7.3	4.5	N	10/5/2017 0:00	7.7	6.2	N
10/3/2017 21:15	9.8	4.7	N	10/4/2017 10:45	7.5	3.9	N	10/5/2017 0:15	7.8	5.1	N
10/3/2017 21:30	8.8	4.6	N	10/4/2017 11:00	7.6	9	Y	10/5/2017 0:30	7.2	5.7	N
10/3/2017 21:45	9	4.7	N	10/4/2017 11:15	6.5	16.7	Y	10/5/2017 0:45	7	5.4	N
10/3/2017 22:00	8.3	4.8	N	10/4/2017 11:30	7.4	6	N	10/5/2017 1:00	7.5	4.9	N
10/3/2017 22:15	7.3	6.1	N	10/4/2017 11:45	6.8	5.3	N	10/5/2017 1:15	7	8.2	Y
10/3/2017 22:30	7	4.7	N	10/4/2017 12:00	7.7	5.1	N	10/5/2017 1:30	8.1	4.9	N
10/3/2017 22:45	6.6	5.3	N	10/4/2017 12:15	6.6	6.1	N	10/5/2017 1:45	9.1	6.5	N
10/3/2017 23:00	7.1	6.1	N	10/4/2017 12:30	7.6	4	N	10/5/2017 2:00	9.2	5.2	N
10/3/2017 23:15	6.5	6	N	10/4/2017 12:45	7.7	3.9	N	10/5/2017 2:15	8.5	3.7	N
10/3/2017 23:30	6.6	6.9	Y	10/4/2017 13:00	8.3	4.8	N	10/5/2017 2:30	10.2	5.2	N
10/3/2017 23:45	7.2	5.2	N	10/4/2017 13:15	8.5	3.9	N	10/5/2017 2:45	10.1	4.2	N
10/4/2017 0:00	6.8	6.3	N	10/4/2017 13:30	9.2	5.5	N	10/5/2017 3:00	10.3	4.9	N
10/4/2017 0:15	7.2	5.6	N	10/4/2017 13:45	9.4	4.5	N	10/5/2017 3:15	9	6.3	N
10/4/2017 0:30	7.4	6.4	N	10/4/2017 14:00	11.1	3.1	N	10/5/2017 3:30	9.2	4.5	N
10/4/2017 0:45	7.1	5	N	10/4/2017 14:15	10	2.5	N	10/5/2017 3:45	8.4	4.1	N
10/4/2017 1:00	7.1	4.3	N	10/4/2017 14:30	9.8	2	N	10/5/2017 4:00	7.4	4.4	N
10/4/2017 1:15	8.3	4.6	N	10/4/2017 14:45	9.7	2.1	N	10/5/2017 4:15	7.3	4.4	N
10/4/2017 1:30	9	5.1	N	10/4/2017 15:00	9.3	2.4	N	10/5/2017 4:30	6.4	4.6	N
10/4/2017 1:45	7.9	4.5	N	10/4/2017 15:15	8.5	2.1	N	10/5/2017 4:45	6.2	5.1	N
10/4/2017 2:00	9.1	4	N	10/4/2017 15:30	8.5	1.8	N	10/5/2017 5:00	5.3	5.2	N
10/4/2017 2:15	7	5.3	N	10/4/2017 15:45	7.2	1.8	N	10/5/2017 5:15	5.3	5.3	N
10/4/2017 2:30	7.2	5.5	N	10/4/2017 16:00	7.3	1.6	N	10/5/2017 5:30	4.8	5	Y
10/4/2017 2:45	6.6	4.8	N	10/4/2017 16:15	6.4	1.8	N	10/5/2017 5:45	5.7	5	N
10/4/2017 3:00	6.6	5.7	N	10/4/2017 16:30	7	1.6	N	10/5/2017 6:00	5.6	4.8	N
10/4/2017 3:15	6.2	5.1	N	10/4/2017 16:45	7.5	2.6	N	10/5/2017 6:15	5.4	4.9	N
10/4/2017 3:30	5.9	4.7	N	10/4/2017 17:00	6.4	2.7	N	10/5/2017 6:30	6.1	5.7	N
10/4/2017 3:45	5.5	5.9	N	10/4/2017 17:15	6.5	2	N	10/5/2017 6:45	5.9	6.4	Y
10/4/2017 4:00	4.9	6.4	Y	10/4/2017 17:30	6.7	2.3	N	10/5/2017 7:00	6.1	7.8	Y
10/4/2017 4:15	5.1	7	Y	10/4/2017 17:45	6.6	2.1	N				
Average	7.5	6.0	N								
Maximum	11.1	16.7	Y								

TRC WEEKLY COMMUNITY AIR MONITORING PROJECT REPORT





**Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Weekly Report
(TRC Project No.274286-0000-00000)**

**Community Air Monitoring Project
33rd Weekly Monitoring Period
Summary Report:**

May 21st, through May 25th, 2018

Report Contents

- Executive Summary
- Daily Data Summary Report – PM₁₀/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 33 Monitoring Period May 21st through May 25th, 2018

The following report summarizes site air monitoring activities for the Week 33 monitoring period from May 21st through May 25th, 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 33 monitoring period there were no PM₁₀ or TVOC exceedances of the action level of 150 ug/m³ 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 (PM₁₀) 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 33 monitoring period twice daily during work week actives. The results of these measurements are shown in Table 1.

During the Week 33 monitoring period of May 21st through May 25th, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 1 and 7. The ST-1 sample was collected on May 21st, through May 22nd, 2018. A pair of Co-located samples (ST-7A and ST-7B) was collected at Station 7 on May 22nd, through May 23rd, 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.

Site activities which were conducted at the Citizen Property on May 21st through May 25th, 2018 included the following:

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

Site activities which were conducted at the 4th St Turning Basin Area of the Canal on May 21st through May 25th, 2018 included the following:

- Approximately 1,048 cubic yards of soft sediment dredged
- Placed 620 cubic yards of sand backfill in slotted excavation adjacent to Whole Foods
- Changed attachment on excavator from environmental clamshell to conventional bucket
- Dislodged sediment within webbing of installed sheet piling. Sediment to be removed from TB4 during dredging to design grade

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM₁₀
(TRC Project No.274286-0000-00000)
05/21/2018 06:30 AM - 05/21/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM ₁₀		
Max.	33	ppb	Max.	20	ug/m ³
Avg.	13	ppb	Avg.	4	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM ₁₀		
Max.	31	ppb	Max.	14	ug/m ³
Avg.	10	ppb	Avg.	5	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM ₁₀		
Max.	43	ppb	Max.	4	ug/m ³
Avg.	11	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.	36	ug/m ³
Avg.	<1	ppb	Avg.	5	ug/m ³
Exc.	0	total	Exc.	0	Total

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

TVOC			PM ₁₀		
Max.	82	ppb	Max.	<1	ug/m ³
Avg.	9	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.	38	ug/m ³
Avg.	12	ppb	Avg.	5	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

TVOC			PM ₁₀		
Max.	28	ppb	Max.	<1	ug/m ³
Avg.	15	ppb	Avg.	<1	ug/m ³
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

PM₁₀ – Particulates as PM₁₀

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM₁₀)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM₁₀)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m³ - PM₁₀)

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM₁₀
(TRC Project No.274286-0000-00000)
05/22/2018 00:00 AM - 05/22/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM ₁₀		
Max.	32	ppb	Max.	13	ug/m ³
Avg.	16	ppb	Avg.	7	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM ₁₀		
Max.	25	ppb	Max.	34	ug/m ³
Avg.	4	ppb	Avg.	11	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.	11	ug/m ³
Avg.	<1	ppb	Avg.	5	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.	22	ug/m ³
Avg.	<1	ppb	Avg.	10	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

PM₁₀ – Particulates as PM₁₀

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM₁₀)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM₁₀)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m³ - PM₁₀)

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM₁₀
(TRC Project No.274286-0000-00000)
05/23/2018 00:00 AM - 05/23/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM ₁₀		
Max.	33	ppb	Max.	24	ug/m ³
Avg.	26	ppb	Avg.	8	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM ₁₀		
Max.	30	ppb	Max.	28	ug/m ³
Avg.	19	ppb	Avg.	9	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM ₁₀		
Max.	87	ppb	Max.	20	ug/m ³
Avg.	6	ppb	Avg.	5	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM ₁₀		
Max.	<1	ppb	Max.	7	ug/m ³
Avg.	<1	ppb	Avg.	3	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.	8	ug/m ³
Avg.	<1	ppb	Avg.	3	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM ₁₀		
Max.	23	ppb	Max.	35	ug/m ³
Avg.	5	ppb	Avg.	11	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

PM₁₀ – Particulates as PM₁₀

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM₁₀)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM₁₀)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m³ - PM₁₀)

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM₁₀
(TRC Project No.274286-0000-00000)
05/24/2018 00:00 AM - 05/24/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM ₁₀		
Max.	38	ppb	Max.	16	ug/m ³
Avg.	16	ppb	Avg.	5	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM ₁₀		
Max.	35	ppb	Max.	14	ug/m ³
Avg.	13	ppb	Avg.	7	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM ₁₀		
Max.	<1	ppb	Max.	18	ug/m ³
Avg.	<1	ppb	Avg.	7	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM ₁₀		
Max.	<1	ppb	Max.	10	ug/m ³
Avg.	<1	ppb	Avg.	2	ug/m ³
Exc.	0	total	Exc.	0	Total

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

TVOC			PM ₁₀		
Max.	34	ppb	Max.	18	ug/m ³
Avg.	11	ppb	Avg.	6	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM ₁₀		
Max.	<1	ppb	Max.	13	ug/m ³
Avg.	<1	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

PM₁₀ – Particulates as PM₁₀

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM₁₀)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM₁₀)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m³ - PM₁₀)

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM₁₀
(TRC Project No.274286-0000-00000)
05/25/2018 00:00 AM - 05/25/2018 14:00 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM ₁₀		
Max.	65	ppb	Max.	18	ug/m ³
Avg.	22	ppb	Avg.	9	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM ₁₀		
Max.	30	ppb	Max.	22	ug/m ³
Avg.	11	ppb	Avg.	11	ug/m ³
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM ₁₀		
Max.	<1	ppb	Max.	26	ug/m ³
Avg.	<1	ppb	Avg.	11	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.	33	ppb	Max.	17	ug/m ³
Avg.	15	ppb	Avg.	5	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

PM₁₀ – Particulates as PM₁₀

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM₁₀)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM₁₀)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m³ - PM₁₀)

Figure 1
Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program
TVOC Monitoring Data - Week 33

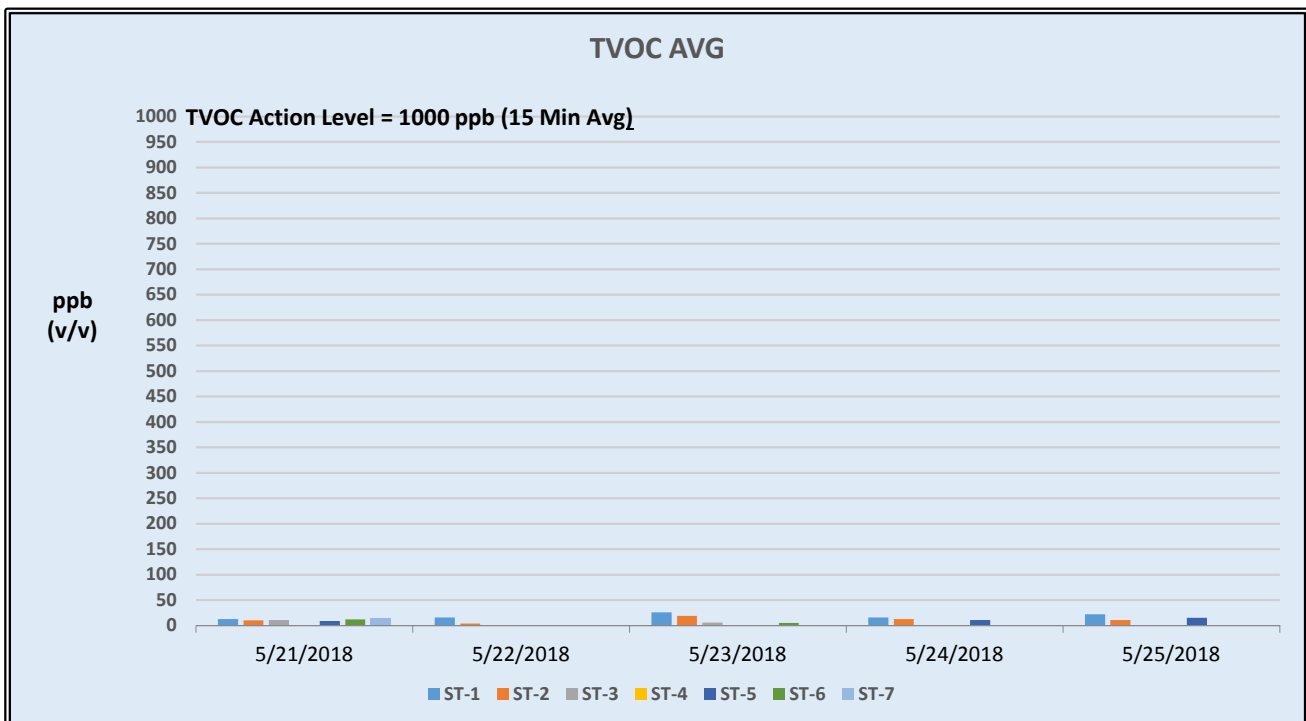
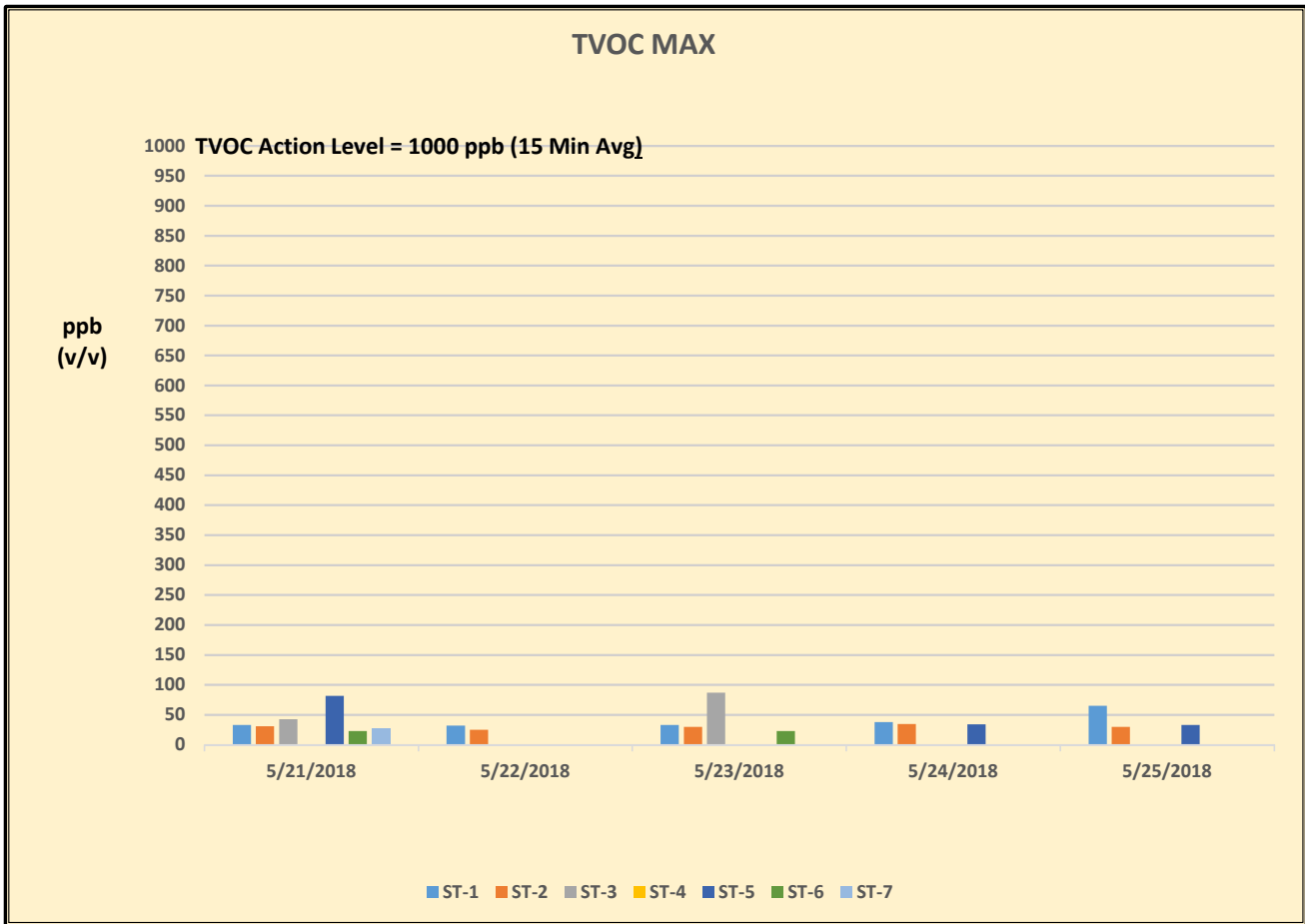
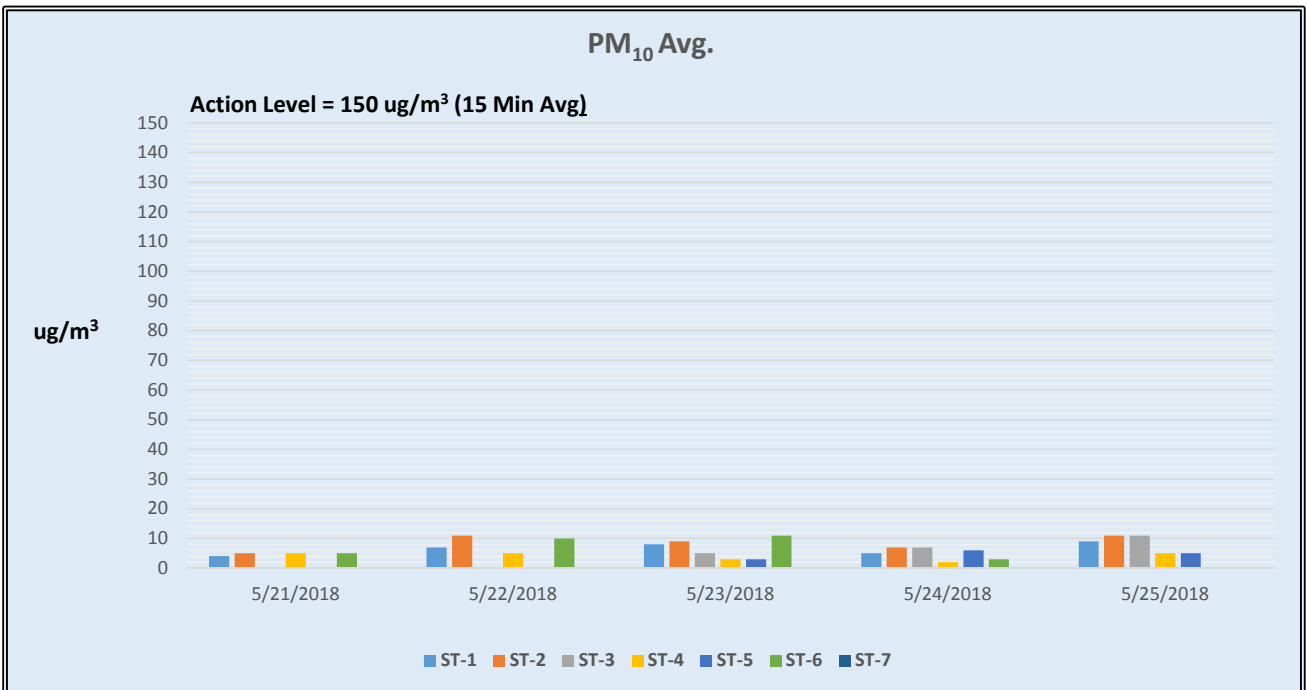
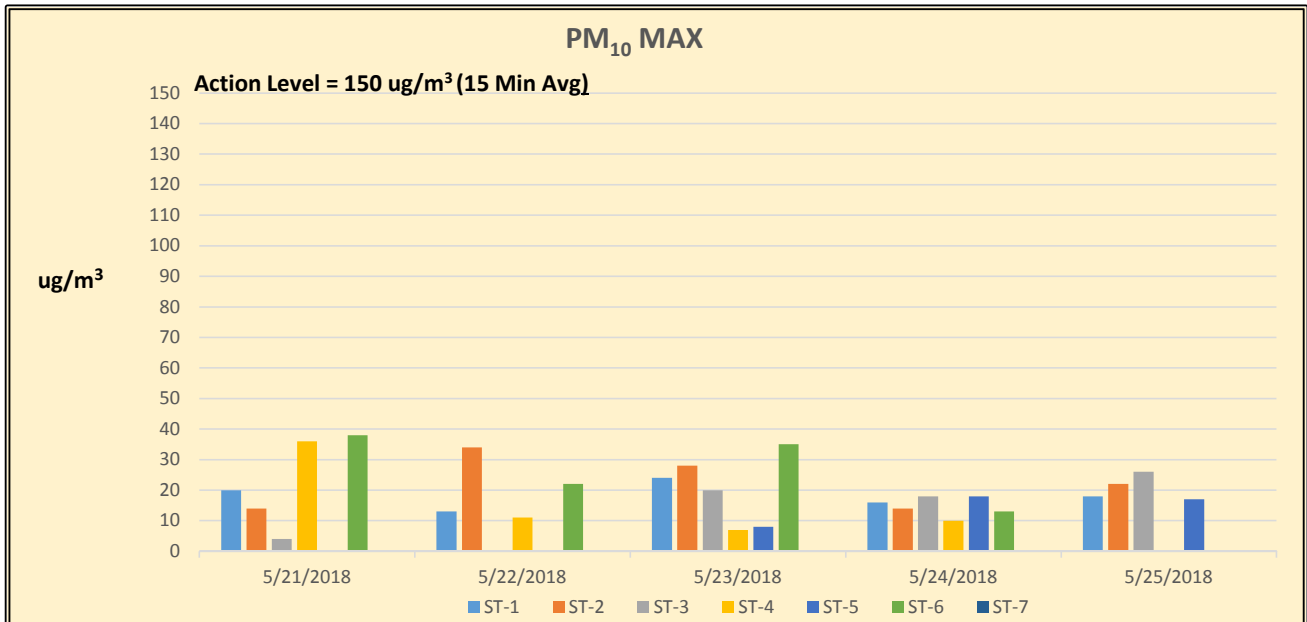


Figure 2
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
TRC CAMP PM₁₀ Monitoring Data - Week 33



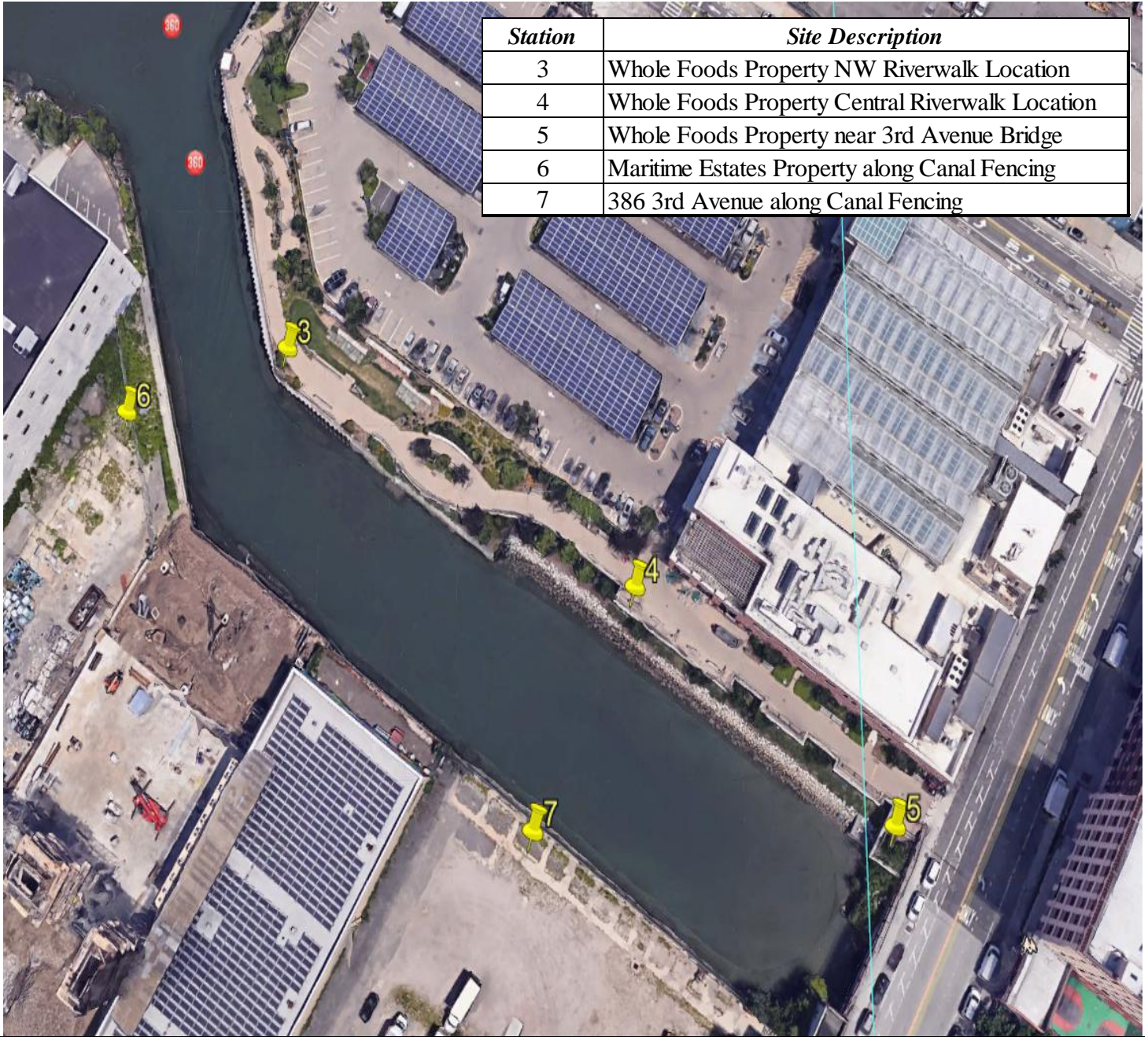


FIGURE 3
Gowanus Canal Superfund Site-TB4
Dredging and Capping Pilot Program

Table 1

Week 33

Summary of Additional Periodic (Daily) Monitoring Data

May 21 st , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H ₂ S) (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	9:30	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-4	9:35	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	9:40	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-6	9:55	<50	<3	<1.0
	15:35	<50	<3	<1.0
ST-7	10:30	<50	0.01	0.07
	15:45	<50	<3	<1.0

May 22 nd , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H ₂ S) (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
	13:45	<50	<3	<1.0
ST-4	7:55	<50	<3	<1.0
	13:50	<50	<3	<1.0
ST-5	8:00	<50	<3	<1.0
	13:55	<50	<3	<1.0
ST-6	8:20	<50	<3	<1.0
	14:10	<50	<3	<1.0
ST-7	8:40	<50	<3	<1.0
	14:25	<50	<3	<1.0

Table 1

Week 33

Summary of Additional Periodic (Daily) Monitoring Data

May 23 rd , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H ₂ S) (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
	15:15	<50	<3	<1.0
ST-4	9:30	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	9:40	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-6	9:55	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-7	10:15	<50	<3	<1.0
	15:55	<50	<3	<1.0

May 24 th , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H ₂ S) (ppb)*	Ammonia (NH ₃) (ppm)**
ST-1	9:30	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-2	9:35	<50	<3	<1.0
	14:40	<50	<3	<1.0
ST-3	9:50	<50	<3	<1.0
	15:00	4.51	<3	<1.0
ST-4	9:55	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-5	10:05	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-6	10:15	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-7	10:30	<50	<3	<1.0
	15:50	<50	<3	<1.0

Table 1

Week 33

Summary of Additional Periodic (Daily) Monitoring Data

May 25 th , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H ₂ S) (ppb)*	Ammonia (NH ₃) (ppm)**
ST-1	9:00	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-2	9:05	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-3	9:15	<50	<3	<1.0
	14:15	<50	<3	<1.0
ST-4	9:20	<50	<3	<1.0
	14:20	<50	<3	<1.0
ST-5	9:25	<50	<3	<1.0
	14:25	<50	<3	<1.0
ST-6	9:40	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-7	10:00	<50	<3	<1.0
	15:00	<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
May 21st through May 25th, 2018**

May 21 st , 2018 *		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
ESE	3.68	87.8

May 22 nd , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
E	2.86	84.4

May 23 rd , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
WSW	1.45	83.2

May 24 th , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SW	2.23	76.5

May 25, 2018 ***		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SW	1.28	65.5

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

** Tuesday's 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 14:00.

WILSON IHRIG WEEKLY NOISE AND VIBRATION MONITORING REPORT





WI #15-081

MEMORANDUM

May 29, 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, 21 May – 25 May, 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 plan¹. 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 reference².

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.

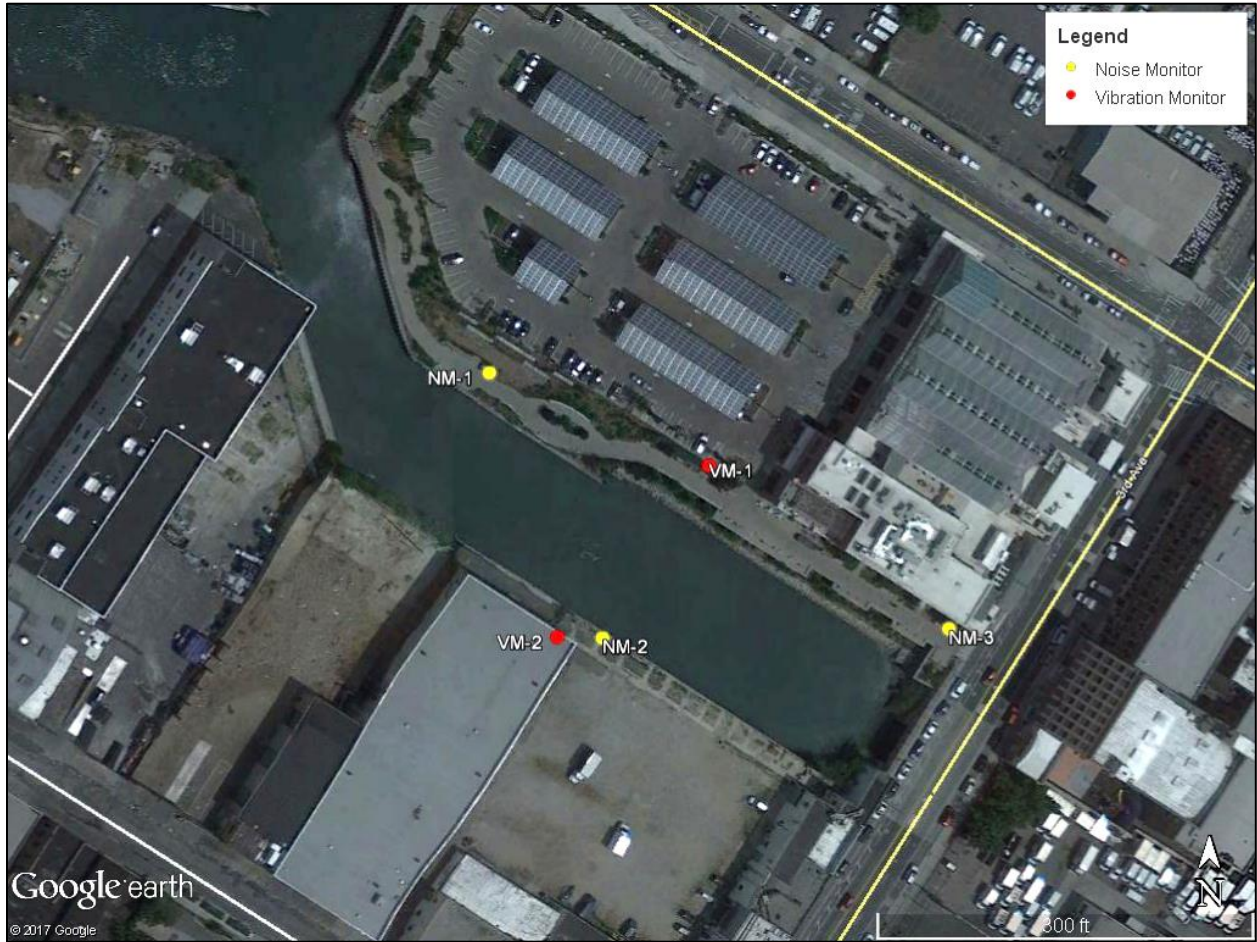
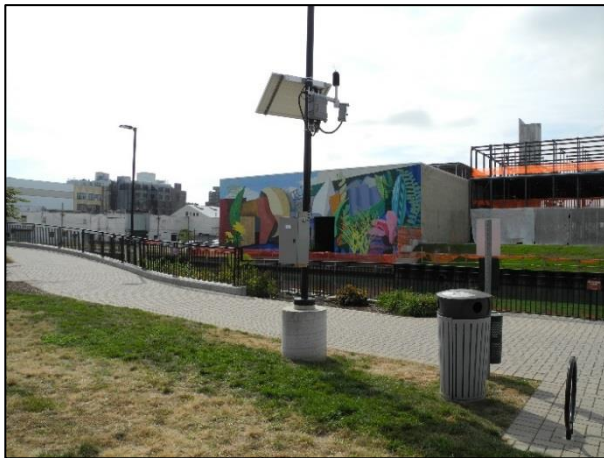


Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study



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



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

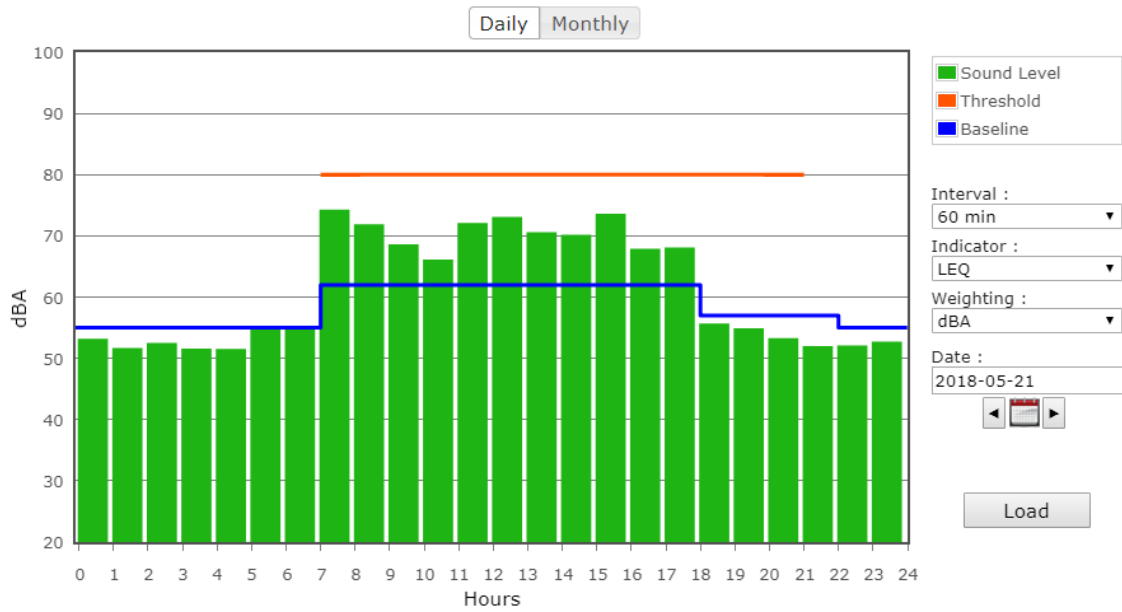


Figure 2: North Monitor NM-1 on Monday

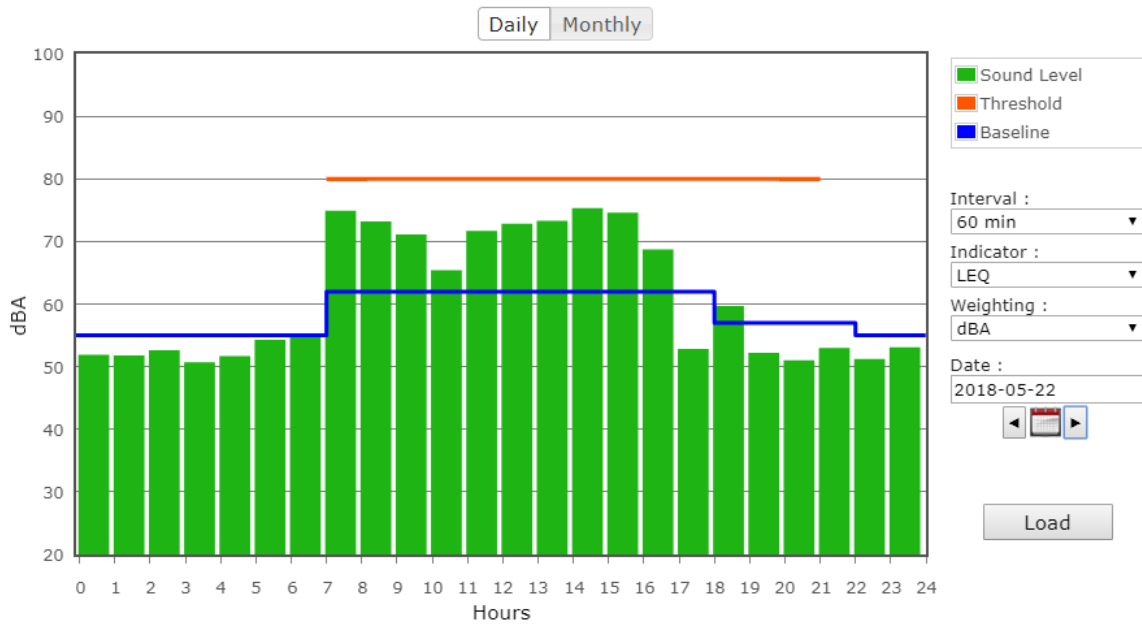


Figure 3: North Monitor NM-1 on Tuesday

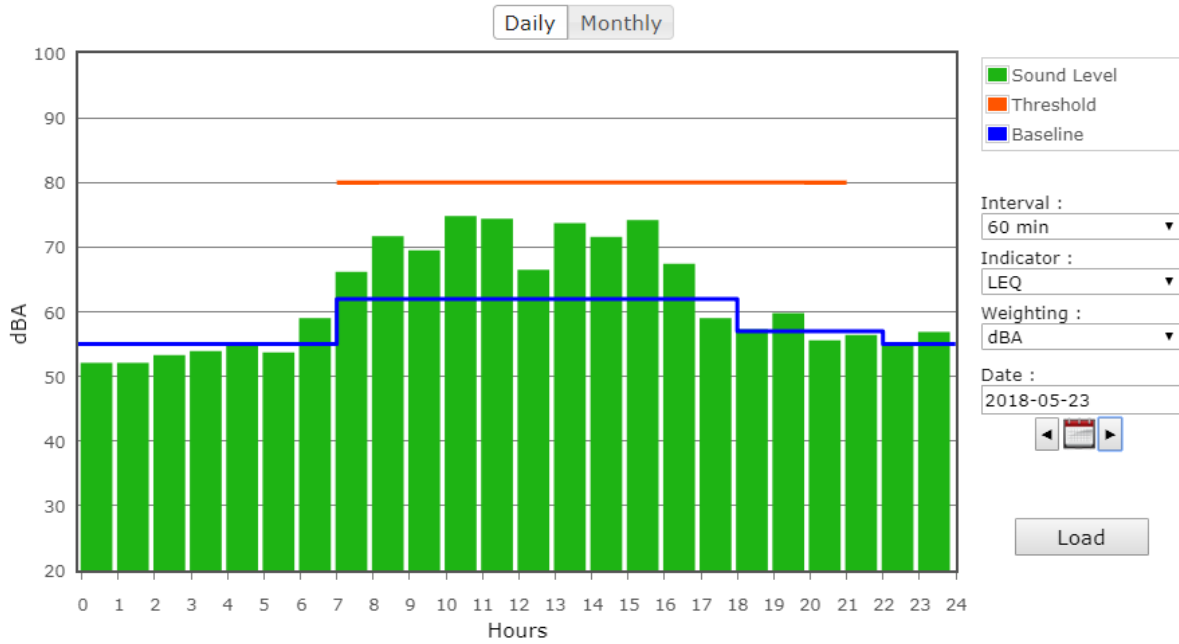


Figure 4: North Monitor NM-1 on Wednesday

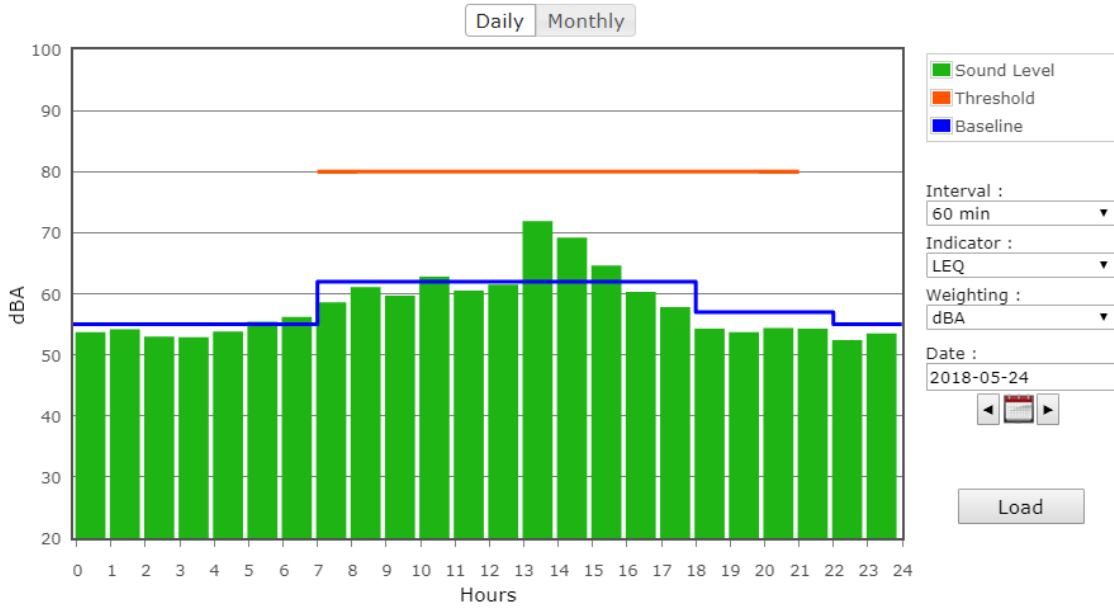


Figure 5: North Monitor NM-1 on Thursday

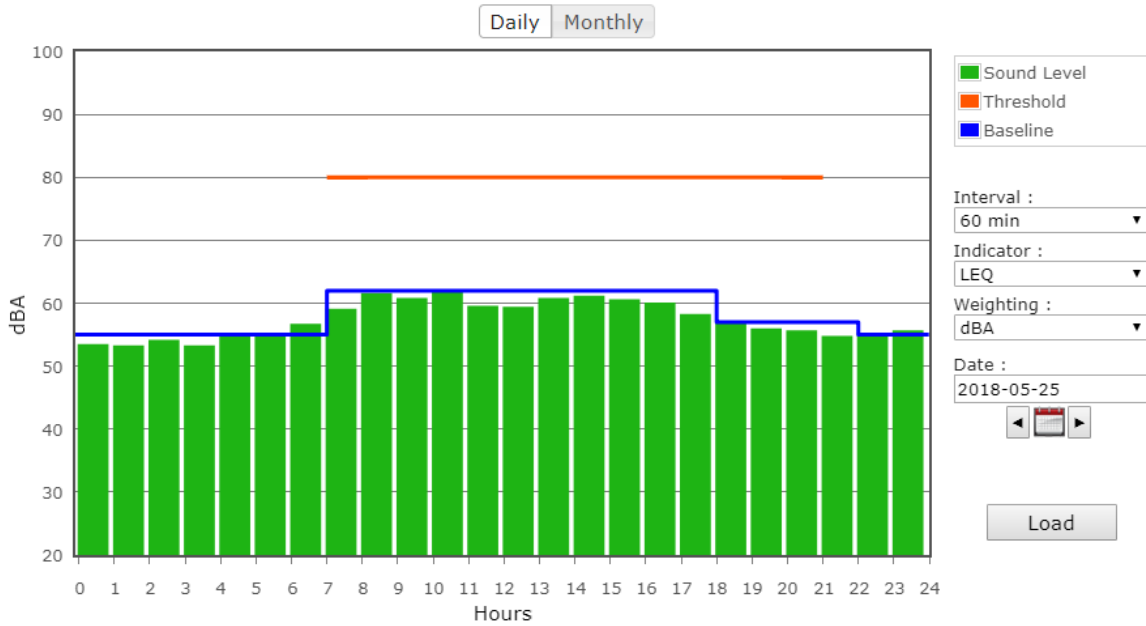


Figure 6: North Monitor NM-1 on Friday

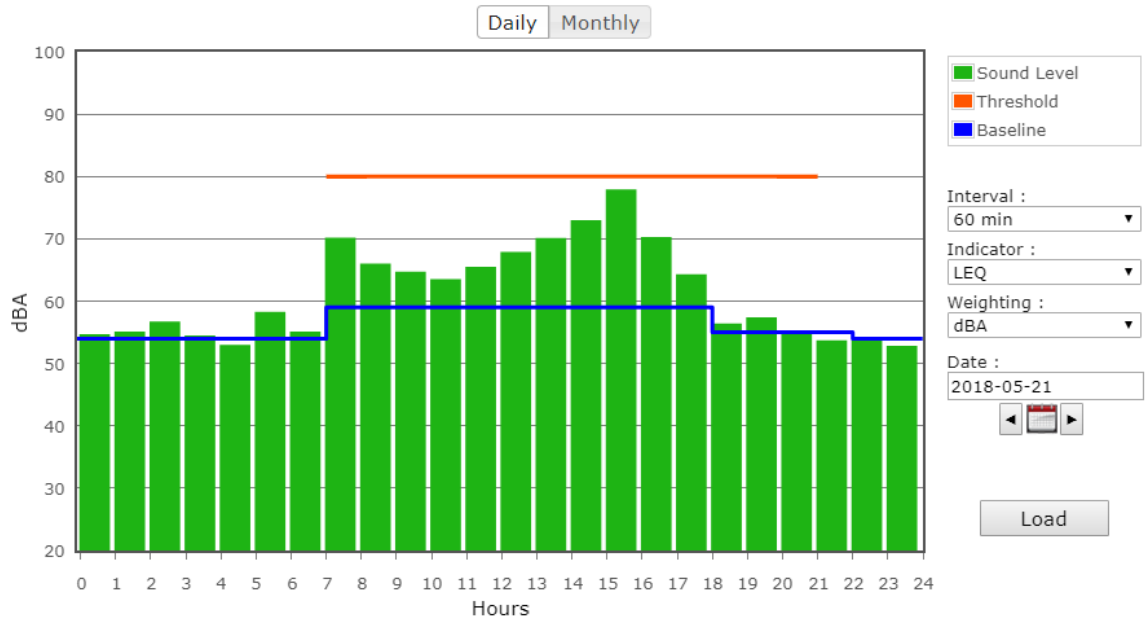


Figure 7: South Monitor NM-2 on Monday

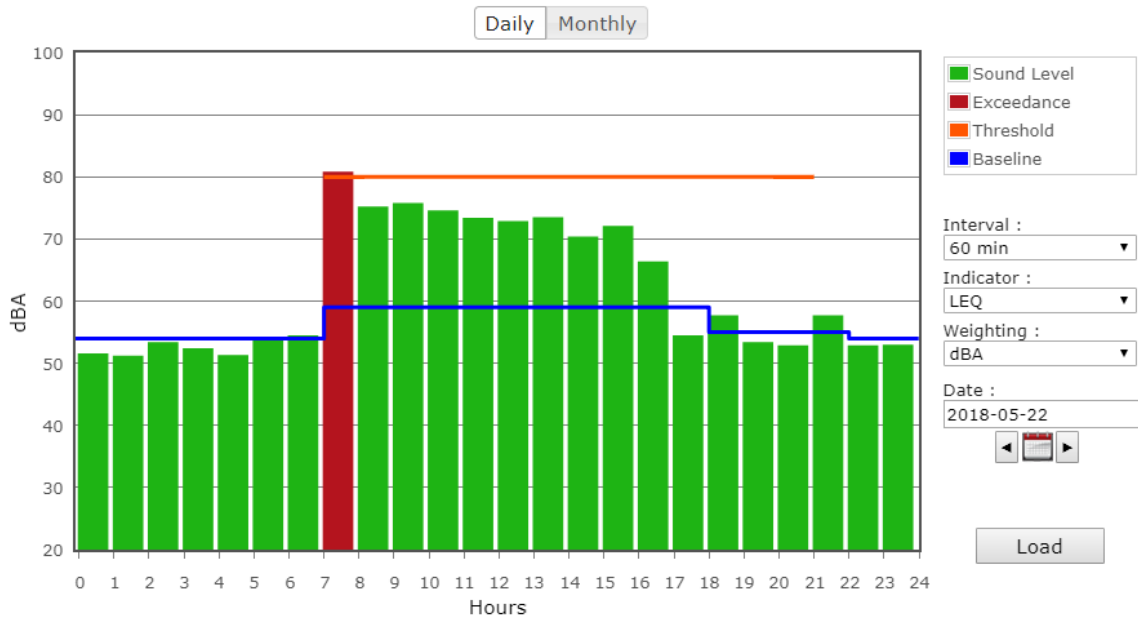


Figure 8: South Monitor NM-2 on Tuesday

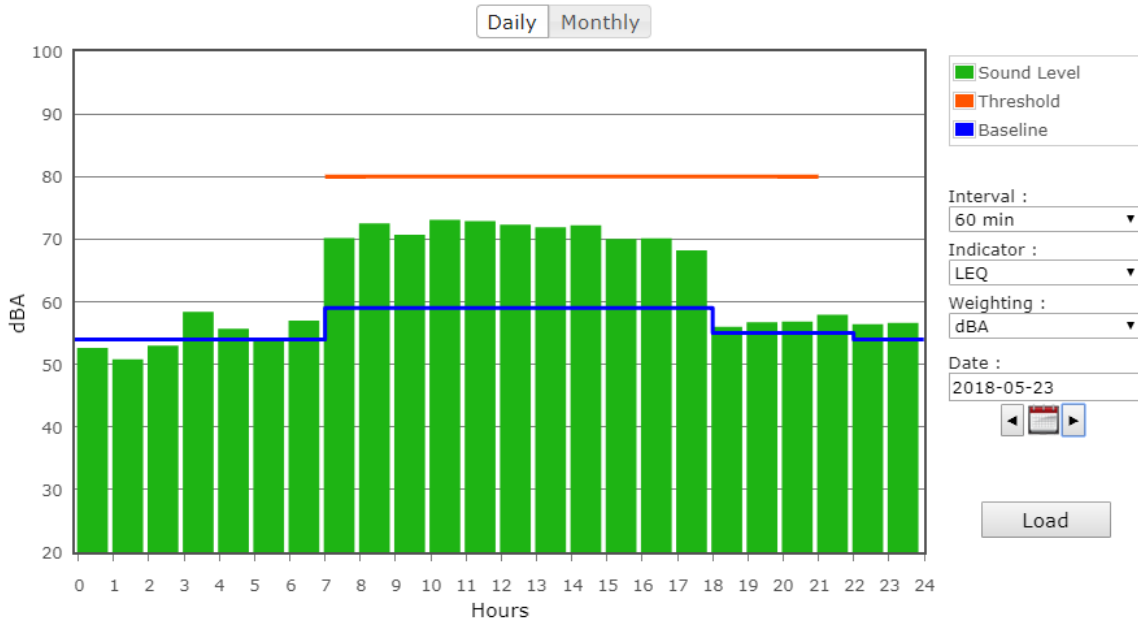


Figure 9: South Monitor NM-2 on Wednesday

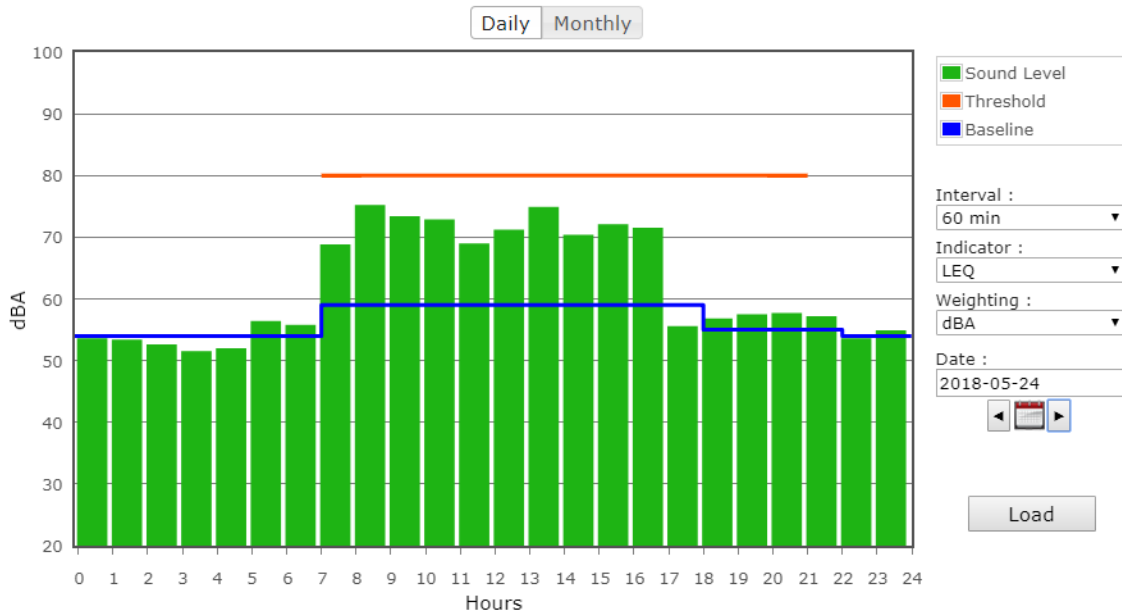


Figure 10: South Monitor NM-2 on Thursday

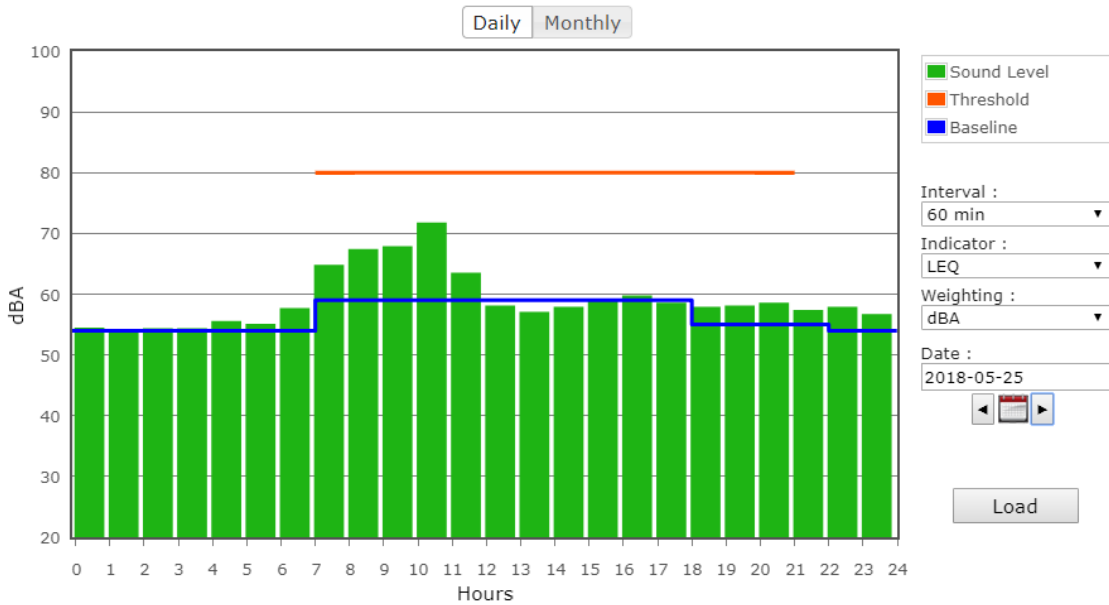


Figure 11: South Monitor NM-2 on Friday

20180529 Wilson Ihrig Weekly Noise and Vibration Report 21 May - 25 May 2018

AHRS WEEKLY REPORT





ARCHAEOLOGY & HISTORIC RESOURCE SERVICES

Cultural Resource Consultants

ARCHAEOLOGY MONITORING REPORT

PROJECT	DATES	PROJECT LOCATION	AHRS PERSONNEL IN FIELD
Turning Basin 4 Pilot Capping and Dredging	5/21 to 5/25/18	TB4/Citizens Site & Clean Earth - Claremont	Jonathan Bream

Week Overview

AHRS is conducting Level 1 archaeological monitoring in coordination with soft sediment dredging in TB4. AHRS archaeologist K. French reviewed photographs of artifacts of large debris staged at Citizens Site and photographs of screened debris from Clean Earth. Project archaeologist J. Bream also conducted a site visit to Clean Earth's Claremont facility and the Citizens Site on 5/21/2018 to review accumulated debris. Additional red brick with maker's stamp, iron industrial debris, and wood debris are being retained at Clean Earth for recording after additional washing. All other debris reviewed was cleared by AHRS for disposal.

Monday, May 21

Reviewed Clean Earth photos of debris screened 5/15 and 5/18. Reviewed Citizens Site photo of debris recovered 5/11. Conducted site visit to Clean Earth.

Tuesday, May 22

Reviewed Clean Earth photos of debris screened 5/21. Reviewed photos from Citizens Site of wood debris collected.

Wednesday, May 23

No photos posted from Clean Earth or Citizens Site.

Thursday, May 24

Reviewed photos from Citizens Site of steel beam recovered 5/23. Reviewed photographs posted from Clean Earth of debris collected 5/23.

Friday, May 25

Clean Earth requested that the archaeologist site visit be postponed one week to Friday, June 1. No photos posted from Clean Earth or Citizens to review.

NEXT WEEK

Continue to review daily pictures from Citizens Site and Clean Earth. Archaeologist site visit tentatively scheduled for Clean Earth 6/1/18.

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



CUMULATIVE DREDGED MATERIAL CHART



Gowanus Canal TB4 Pilot Study
Cumulative Material Dredged
Weekly Report Update

