WEEKLY PROGRESS REPORT – TRC SOLUTIONS

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

Project number: 283126

Period: October 9 to October 13, 2017

Date of Report: October 28, 2017

Rev: 1

Prepared For: Gowanus Environmental Remediation Trust

On-Site Activities Conducted During Week:

Sevenson Environmental Services (SES)

Access Dredging:

- Access dredging activities continued throughout the period
  - 1,635 cubic yards of sediment were dredged during this week

Water Treatment and Monitoring

- Dredged water treatment system construction completed on 10/12/17.
- Clean water sample collected on 10/10/17. Laboratory turnaround time is 3 business days.

Air Curtain System

- Air curtain system working as approved as noted by Geosyntec. Sevenson to monitor and install diffuser ports as necessary.

Turbidity Monitoring

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

Odor and Vapor Suppression

- Odor and vapor suppression foam not deployed.

Debris Screening Activities at Citizens Site

- Screened approximately 1,971 cubic yards of material utilizing on-site 6-inch grizzly bar vibrator screener.
- Culturally significant debris not observed during dredging operations by dredge supervisor trained by AHRS. Accumulated material retained by screener removed and segregated daily for inspection by AHRS. Debris mainly unidentifiable prior to segregation and cleaning. Tires, timbers, and concrete majority of debris.

Sediment Stabilization Activities

- Placed and mixed 41.8 tons (1 ton per supersac) of Portland cement in 2,225 cubic yard hopper scow #1 (Alfalfa).
- Placed and mixed 63 tons (1 ton per supersac) of Portland cement in 2,225 cubic yard hopper scow #2 (Chubby).
- Paint filter testing of stabilized sediment not required – material not leaving site via truck.

Quality Assurance and Control - Geosyntec

- No exceedance of turbidity trigger level of a measurement over a one-hour period of the sentinel buoy 20 nephelometric turbidity units (NTUs) greater than the ambient buoy during access dredging.
- Measurements for 10/9/17:
  - Daily average for ambient buoy – 7.6 NTU
  - Daily average for sentinel buoy – 9.2 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval – 52.6 NTU at 1315 due to momentary prop wash from barge movements and not sustained.
- Measurements for 10/10/17:
  - Daily average for ambient buoy – 10.4 NTU
  - Daily average for sentinel buoy – 24.9 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval – 17.7 NTU at 1645
- Measurements for 10/11/17:
  - Daily average for ambient buoy – 8.8 NTU
  - Daily average for sentinel buoy – 13.6 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval – 5.6 NTU at 1330

- Measurements for 10/12/17:
  - Daily average for ambient buoy – 8.9 NTU
  - Daily average for sentinel buoy – 12.1 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval – 4.7 NTU at 1500
- Measurements for 10/13/17:
  - Daily average for ambient buoy – 13.5 NTU
  - Daily average for sentinel buoy – 15.2 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval – 7.6 NTU at 1030

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 – 18 $\mu g/m^3$ recorded on 10/13/17
  - Station 2 – 41 $\mu g/m^3$ recorded on 10/13/17
  - Station 3 – <1 $\mu g/m^3$ recorded throughout week
  - Station 4 – 18 $\mu g/m^3$ recorded on 10/9/17
  - Station 5 – 18 $\mu g/m^3$ recorded on 10/13/17
  - Station 6 – 23 $\mu g/m^3$ recorded on 10/10/17
  - Station 7 – 23 $\mu g/m^3$ recorded on 10/9/17
- Maximum weekly measurements of TVOC in ppb
  - Station 1 – 33 ppb recorded on 10/9/17 and 10/10/17
  - Station 2 – 41 ppb recorded on 10/9/17
  - Station 3 – 148 ppb recorded on 10/12/17
  - Station 4 – 145 ppb recorded on 10/10/17
  - Station 5 – 116 ppb recorded on 10/12/17
  - Station 6 – 47 ppb recorded on 10/10/17
  - Station 7 – 135 ppb recorded on 10/12/17
- All real-time readings of hydrogen sulfide, ammonia, or formaldehyde less than instrument reporting limit.
- 24-hour sample collected at ST-7 on 10/10 through 10/11 and at ST-3 on 10/11 through 10/12. Laboratory turnaround time is 10 business days.

Noise and Vibration Monitoring – Wilson-Ihrig

- Operated and maintained one (1) noise monitor on each side of the canal.
- No exceedances of the hourly Leq noise limit of 80 dBA for daytime and evening time periods.
- Greatest hourly Leq noise measurements
  - Northern monitor (NM-1) – 73.8 dBA during 1000-1100 on 10/12/17
  - Southern monitor (NM-2) – 72.9 dBA during 1000-1100 on 10/13/17
- Installed one (1) vibration monitor on each side of the canal.
- No exceedances of the commercial and industrial structures vibration criterion of 2.0 inches per second (in/sec) peak particle velocity.

- Greatest peak particle velocity measurements
    - Northern monitor (NM-1) – 0.0207 in/sec event between 1000 and 1100 on 10/13/17
    - Southern monitor (NM-2) – 0.0315 in/sec event between 1000 and 1100 on 10/13/17

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

- Conducted on-site inspection of debris on 10/11/17. Identified three (3) objects that may require additional coordination with SHPO and EPA. Objects included a metal gantry truck, wood beam with two (2) metal pulleys, and two (2) tree trunks.

Two-Week Look Ahead:

- Sevenson:
    - Continue and complete access dredging in preparation for sheet pile installation.
    - Screen and segregate debris from dredged material.
    - Perform bathymetric survey following access dredging.
    - Perform test pits in areas identified where known or suspected cultural resource are located nearby.
    - Mobilize steel sheeting in preparation of installation of bulkhead supports.
    - Commence installation of steel sheet pile bulkhead supports.
    - Collect and analyze sample for waste characterization of stabilized dredged sediment.
- Geosyntec – Perform construction quality assurance responsibilities. Collect first weekly effluent sample from wastewater treatment system.
- TRC CAMP Monitoring – Perform community air monitoring.
- Wilson-Ihrig – Perform noise and vibration monitoring
- AHRS – Conduct weekly on-site inspection of debris and observe test pit operations.

Project Milestones: Key project milestones either established or completed this period include the following:

- Dredged water treatment system construction completed on 10/12/17.

Attachments:

1. Geosyntec 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 – Plant not discharging at this time
6. Cumulative Dredged Material Chart

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

Photo No.	Date
001	10-9-2107

Description
Screening dredged material for debris.

Photo No.	Date
002	10-9-2017

Description
Adding Portland cement to the hopper scow for dredge material stabilization.

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

Photo No.	Date
003	10-10-2107

Description
Stacking screened debris onto asphalt pad.

Photo No.	Date
004	10-11-2017

Description
Material in loaded scow, awaiting tugboat move to Ferrara Brothers to moor there.

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

Photo No.	Date
005	10-11-2107

Description
Tug boat "Foxy 3" mooring empty scow at Citizens and moving full barge to Ferrara Brothers, mooring full barge there.

Photo No.	Date
006	10-12-2017

Description
Geosyntec performing sediment settling testing and measurements as part of pilot study.

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

Photo No.	Date
007	10-12-2107

Description
Relocated dock at end of Huntington Street.

Photo No.	Date
008	10-13-2017

Description
Maintenance of oversize hopper and grizzly shaker.

GEOSYNTEC 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

October 9th, 2017

Report Contents

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

Prepared by

Geosyntec consultants
engineers | scientists | innovators

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1. SCOPE OF MONITORING

The following report summarizes water quality monitoring data collected during the week of October 9th, 2017. 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 RTA 1 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 taken 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 of dredging between 7 AM and 5 PM during the week of October 9th. Average and maximum turbidity are also presented. Preliminary analysis of the turbidity data suggests that turbidity was not significantly elevated during operations. In addition to the turbidity buoy data, data from handheld measurements collected on October 12th are provided Section 3. 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.

Geosyntec consultants

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

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.

Ewing, NJ | October 2017

Figure 1

2. TURBIDITY BUOY DATA

The following section provides turbidity data for the sentinel and ambient turbidity buoys from 7 AM to 5 PM during dredge operations on October 9th to October 13th, 2017. Data prior to the start of dredging is provided in Appendix A. No exceedances to the rolling average threshold criteria were observed during the reporting period. One-time spikes in turbidity at the sentinel buoy were due to momentary prop wash from barge movements.

2.1 Monday, October 9th, 2017

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)
10/9/2017 7:00	6.0	3.0	N	10/9/2017 12:15	8.8	9.6	Y
10/9/2017 7:15	4.6	2.7	N	10/9/2017 12:30	7.0	9.3	Y
10/9/2017 7:30	5.5	4.3	N	10/9/2017 12:45	8.2	10.8	Y
10/9/2017 7:45	5.6	4.3	N	10/9/2017 13:00	8.9	11.3	Y
10/9/2017 8:00	5.2	4.6	N	10/9/2017 13:15	8.4	61.0	Y
10/9/2017 8:15	4.8	4.6	N	10/9/2017 13:30	8.6	14.8	Y
10/9/2017 8:30	5.3	5.5	Y	10/9/2017 13:45	7.8	16.3	Y
10/9/2017 8:45	5.6	7.3	Y	10/9/2017 14:00	7.7	10.1	Y
10/9/2017 9:00	6.6	4.5	N	10/9/2017 14:15	9.1	8.4	N
10/9/2017 9:15	6.9	6.5	N	10/9/2017 14:30	9.2	7.4	N
10/9/2017 9:30	7.3	5.0	N	10/9/2017 14:45	9.0	6.9	N
10/9/2017 9:45	7.1	5.6	N	10/9/2017 15:00	8.8	6.9	N
10/9/2017 10:00	7.8	7.2	Y	10/9/2017 15:15	9.2	7.3	N
10/9/2017 10:15	7.6	5.7	N	10/9/2017 15:30	9.4	7.8	N
10/9/2017 10:30	8.4	8.0	Y	10/9/2017 15:45	8.7	6.8	N
10/9/2017 10:45	7.6	9.0	Y	10/9/2017 16:00	7.4	7.0	N
10/9/2017 11:00	6.9	8.1	Y	10/9/2017 16:15	7.3	6.9	N
10/9/2017 11:15	7.5	8.8	Y	10/9/2017 16:30	8.0	6.6	N
10/9/2017 11:30	7.7	14.0	Y	10/9/2017 16:45	8.7	7.8	N
10/9/2017 11:45	9.1	10.1	Y	10/9/2017 17:00	9.4	17.1	Y
10/9/2017 12:00	8.6	8.2	N				

Average	7.6	9.2	Y
Maximum	9.4	61.0	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, October 10th, 2017

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)
10/10/2017 7:00	5.9	3.5	N	10/10/2017 12:15	7.8	8.3	Y
10/10/2017 7:15	5.3	3.5	N	10/10/2017 12:30	7.3	9.8	Y
10/10/2017 7:30	5.5	4.7	N	10/10/2017 12:45	8.1	9.0	Y
10/10/2017 7:45	6.1	3.6	N	10/10/2017 13:00	8.3	8.2	N
10/10/2017 8:00	5.3	2.7	N	10/10/2017 13:15	8.4	9.1	Y
10/10/2017 8:15	5.8	4.2	N	10/10/2017 13:30	10.4	7.8	N
10/10/2017 8:30	7.5	3.4	N	10/10/2017 13:45	9.9	11.2	Y
10/10/2017 8:45	6.5	3.8	N	10/10/2017 14:00	8.1	10.2	Y
10/10/2017 9:00	7.8	3.4	N	10/10/2017 14:15	7.2	11.0	Y
10/10/2017 9:15	7.9	3.6	N	10/10/2017 14:30	6.8	8.6	Y
10/10/2017 9:30	8.0	3.5	N	10/10/2017 14:45	6.8	6.1	N
10/10/2017 9:45	8.0	6.3	N	10/10/2017 15:00	6.9	7.0	Y
10/10/2017 10:00	7.4	4.4	N	10/10/2017 15:15	7.4	6.8	N
10/10/2017 10:15	7.2	4.6	N	10/10/2017 15:30	6.9	9.4	Y
10/10/2017 10:30	6.9	5.4	N	10/10/2017 15:45	7.7	9.1	Y
10/10/2017 10:45	6.7	4.6	N	10/10/2017 16:00	8.1	6.9	N
10/10/2017 11:00	6.7	5.4	N	10/10/2017 16:15	6.5	6.7	Y
10/10/2017 11:15	6.5	5.1	N	10/10/2017 16:30	6.9	7.5	Y
10/10/2017 11:30	7.9	4.8	N	10/10/2017 16:45	7.2	24.9	Y
10/10/2017 11:45	6.4	9.0	Y	10/10/2017 17:00	7.2	15.4	Y
10/10/2017 12:00	6.3	7.1	Y				
Average	7.2	7.1	N				
Maximum	10.4	24.9	Y				

Notes:

No exceedances to rolling average threshold criteria during reporting period

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

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

2.3 Wednesday, October 11th, 2017

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)
10/11/2017 7:00	5.9	2.7	N	10/11/2017 12:15	7.3	5.6	N
10/11/2017 7:15	6.9	2.5	N	10/11/2017 12:30	6.5	7.6	Y
10/11/2017 7:30	5.8	5.3	N	10/11/2017 12:45	6.7	7.1	Y
10/11/2017 7:45	6.2	6	Y	10/11/2017 13:00	7.5	9.4	Y
10/11/2017 8:00	6.1	4.7	N	10/11/2017 13:15	7.1	8.5	Y
10/11/2017 8:15	6.3	3.9	N	10/11/2017 13:30	8	13.6	Y
10/11/2017 8:30	6.7	3.4	N	10/11/2017 13:45	7.4	10.3	Y
10/11/2017 8:45	7.3	3.6	N	10/11/2017 14:00	8.1	7	N
10/11/2017 9:00	7.8	4.1	N	10/11/2017 14:15	8.8	7.8	N
10/11/2017 9:15	8.6	5.5	N	10/11/2017 14:30	8.6	8.2	N
10/11/2017 9:30	8.1	5.6	N	10/11/2017 14:45	7.9	9.5	Y
10/11/2017 9:45	8.5	5.7	N	10/11/2017 15:00	7.4	7.9	Y
10/11/2017 10:00	8.3	5.6	N	10/11/2017 15:15	6.9	7.1	Y
10/11/2017 10:15	7.3	4.3	N	10/11/2017 15:30	7.3	9.5	Y
10/11/2017 10:30	7.7	5.1	N	10/11/2017 15:45	6.8	8.2	Y
10/11/2017 10:45	8.7	4.3	N	10/11/2017 16:00	7.2	6.6	N
10/11/2017 11:00	7.4	4.4	N	10/11/2017 16:15	7.2	8.3	Y
10/11/2017 11:15	7.8	5.7	N	10/11/2017 16:30	6.2	7.6	Y
10/11/2017 11:30	7.4	6.2	N	10/11/2017 16:45	6.6	6.6	N
10/11/2017 11:45	8.1	5.7	N	10/11/2017 17:00	6.8	7.3	Y
10/11/2017 12:00	7.3	4.5	N				
Average	7.3	6.4	N				
Maximum	8.8	13.6	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, October 12th, 2017

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)
10/12/2017 7:00	5.3	4.3	N	10/12/2017 12:15	6.5	7	Y
10/12/2017 7:15	5.9	3.8	N	10/12/2017 12:30	6.5	6.5	N
10/12/2017 7:30	5.3	4	N	10/12/2017 12:45	6.3	5.9	N
10/12/2017 7:45	6.6	3.9	N	10/12/2017 13:00	6.5	5.3	N
10/12/2017 8:00	6.4	5.3	N	10/12/2017 13:15	6.9	7.1	Y
10/12/2017 8:15	7	6	N	10/12/2017 13:30	6.5	5.8	N
10/12/2017 8:30	8	5.7	N	10/12/2017 13:45	6.8	7.6	Y
10/12/2017 8:45	7.1	5.7	N	10/12/2017 14:00	6.3	7.9	Y
10/12/2017 9:00	7.2	5.7	N	10/12/2017 14:15	6.7	9.3	Y
10/12/2017 9:15	7.7	6.9	N	10/12/2017 14:30	6.9	6.9	N
10/12/2017 9:30	7.8	6.7	N	10/12/2017 14:45	5.9	7.5	Y
10/12/2017 9:45	7.7	6.1	N	10/12/2017 15:00	7.4	12.1	Y
10/12/2017 10:00	7.9	5.9	N	10/12/2017 15:15	6.4	7.5	Y
10/12/2017 10:15	7.8	6.3	N	10/12/2017 15:30	6.4	9.5	Y
10/12/2017 10:30	8	8.1	Y	10/12/2017 15:45	7.1	7.7	Y
10/12/2017 10:45	7.4	6	N	10/12/2017 16:00	8.1	7.3	N
10/12/2017 11:00	7.2	6.4	N	10/12/2017 16:15	6.9	8.1	Y
10/12/2017 11:15	6.9	6.4	N	10/12/2017 16:30	6.8	7.1	Y
10/12/2017 11:30	8.9	6.2	N	10/12/2017 16:45	7.4	11.4	Y
10/12/2017 11:45	6.8	5.8	N	10/12/2017 17:00	6.7	7.4	Y
10/12/2017 12:00	7.1	6.5	N				
Average	7.0	6.7	N				
Maximum	8.9	12.1	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, October 13th, 2017

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)
10/13/2017 7:00	5.5	4.1	N	10/13/2017 12:15	5.7	6	Y
10/13/2017 7:15	5.8	4.3	N	10/13/2017 12:30	6.3	5	N
10/13/2017 7:30	5.7	5	N	10/13/2017 12:45	6.7	5.3	N
10/13/2017 7:45	5.4	5.4	N	10/13/2017 13:00	6.3	5	N
10/13/2017 8:00	6.2	4.2	N	10/13/2017 13:15	6	5.3	N
10/13/2017 8:15	6	11.1	Y	10/13/2017 13:30	5.8	4.8	N
10/13/2017 8:30	6.6	5.5	N	10/13/2017 13:45	5.6	4.9	N
10/13/2017 8:45	7.9	9.6	Y	10/13/2017 14:00	5.8	4.6	N
10/13/2017 9:00	7.4	12.1	Y	10/13/2017 14:15	6.6	4.2	N
10/13/2017 9:15	8.1	8.7	Y	10/13/2017 14:30	6.1	4.4	N
10/13/2017 9:30	7.7	8	N	10/13/2017 14:45	6.7	6.3	N
10/13/2017 9:45	7.5	13.7	Y	10/13/2017 15:00	5.9	10.8	Y
10/13/2017 10:00	7.7	14.3	Y	10/13/2017 15:15	6.1	10.2	Y
10/13/2017 10:15	7.7	10.4	Y	10/13/2017 15:30	6.1	10.7	Y
10/13/2017 10:30	7.6	15.2	Y	10/13/2017 15:45	6.3	7	Y
10/13/2017 10:45	7.4	7.2	N	10/13/2017 16:00	7.4	7.9	Y
10/13/2017 11:00	7.2	6	N	10/13/2017 16:15	6.1	6.4	Y
10/13/2017 11:15	6.6	7.4	Y	10/13/2017 16:30	7.1	7.8	Y
10/13/2017 11:30	6.4	7	Y	10/13/2017 16:45	7.5	8.5	Y
10/13/2017 11:45	6.4	7	Y	10/13/2017 17:00	13.5	8.2	N
10/13/2017 12:00	5.7	7.3	Y				
Average	6.7	7.5	Y				
Maximum	13.5	15.2	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

3. HANDHELD MEASUREMENTS

Handheld measurements during access channel dredging were collected on Thursday, October 12. Handheld measurements were collected at a single point approximately five feet laterally from the clamshell bucket bite immediately after the clamshell bucket was lifted from the water and swung over to the scow for draining. This process was performed three times throughout the duration of the lifespan of each turbidity plume. During the first attempt a tug boat entered the work zone and disrupted the measurement. The maximum turbidity detected during the lifespan of the plume for attempt 2 and attempt 3 were 36.1 NTU and 63.3 NTU, respectively. Settling times for attempt 2 and attempt 3 were 3 minutes and 4 minutes, respectively. Settling time was defined as the time duration for turbidity to return to baseline conditions. It should be noted that baseline turbidity in the work zone measured approximately 20 NTU. This baseline turbidity is higher than turbidity readings detected outside of the work zone by the sentinel and ambient turbidity buoys.

4. SUMMARY OF VISUAL OBSERVATIONS

Visible turbidity plumes generated from dredging during the week of October 9th were limited in size and only seen in the vicinity of the dredge grabs and the loading scow. Visible turbidity plumes did not reach the air curtain. For each day of dredging, prior to opening the turbidity curtain at the start of the work day, sheen was observed on both sides of the turbidity curtain. On the first two days of dredging for the week this sheen was traced north of the 3rd Street Bridge heading downstream toward TB4. It was determined that this sheen outside of the work zone was not attributable to waterway construction activities.

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 TB-4 Dredging and Pilot Study
Brooklyn, New York
Weekly Report

(TRC Project No.274286-0000-00000)

Community Air Monitoring Project
2nd Weekly Monitoring Period
Summary Report:

October 9th, through October 13th, 2017

Report Contents

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

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

Executive Summary – Week 2 Monitoring Period
October 9th, through October 13th, 2017

The following report summarizes site air monitoring activities for the Week 2 monitoring period from October 9th, through October 13th, 2017. The start and stop times associated with each daily monitoring period are listed on the respective daily data sheets.

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 2 monitoring period of October 9th,through October 13th, 2017, there were no PM_{10} or TVOC exceedances of the action level of 150ug/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.*

Additional monitoring for hydrogen sulfide, ammonia, and formaldehyde took place at all stations throughout the weekly monitoring period at least twice daily. The results of these measurements were as follows:

Station	**Hydrogen Sulfide (H_2S) ppb**	**Ammonia (NH_3) ppm**	**Formaldehyde (CHO) ppb**
ST-1	<3.0	< 1.0	< 50
ST-2	<3.0	< 1.0	< 50
ST-3	<3.0	< 1.0	< 50
ST-4	<3.0	< 1.0	< 50
ST-5	<3.0	< 1.0	< 50
ST-6	<3.0	< 1.0	< 50
ST-7	<3.0	< 1.0	< 50

During the Week 2 monitoring period of October 9th, through October 13th, 2017, TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Station 3 and 7. A single sample was collected at ST-7 on October 10th, through October 11th, 2017, over a 24-hour sampling period. A co-located sample was collected at ST-3 on October 11th, through October 12th, 2017 over a 24-hour sampling period. Samples were shipped to Con-Test Analytical Laboratory for analyses. The results of the summa canister sampling are pending lab analyses.

Site activities were conducted at the Citizen Property on October 9th through October 13th, 2017 which included the following:

- Material and Equipment deliveries on Citizen Property
- General vehicular traffic site-wide throughout the monitoring period
- Soil screening and transferring to barge
- Barge shipping and delivery
- Offloading of large and small debris to the laydown area

Site activities were conducted at the 4th St Turning Basin Area of the Canal on October 9th , through October 13th, 2017 which included the following:

- Staging and maneuvering of the work barges;
- Pre-access dredging resulting in the removal of; small debris (timbers, tires and miscellaneous items)

Gowanus Canal TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)

10/9/2017 06:30 AM - 10/9/17 23:45 PM

Station 1

TVOC			PM_{10}		
Max.	33	ppb	Max.	15	ug/m^3
Avg.	22	ppb	Avg.	13	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2

TVOC			PM_{10}		
Max.	41	ppb	Max.	16	ug/m^3
Avg.	25	ppb	Avg.	13	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3

TVOC			PM_{10}		
Max.	27	ppb	Max.	<1	ug/m^3
Avg.	2	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4

TVOC			PM_{10}		
Max.	7	ppb	Max.	18	ug/m^3
Avg.	4	ppb	Avg.	14	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 5

TVOC			PM_{10}		
Max.	21	ppb	Max.	14	ug/m^3
Avg.	14	ppb	Avg.	12	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6

TVOC			PM_{10}		
Max.	29	ppb	Max.	18	ug/m^3
Avg.	18	ppb	Avg.	14	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7

TVOC			PM_{10}		
Max.	<1	ppb	Max.	23	ug/m^3
Avg.	<1	ppb	Avg.	17	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 TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)

10/10/2017 00:00 AM - 10/10/17 23:45 PM

Station 1

TVOC			PM_{10}		
Max.	33	ppb	Max.	9	ug/m^3
Avg.	11	ppb	Avg.	4	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2

TVOC			PM_{10}		
Max.	7	ppb	Max.	11	ug/m^3
Avg.	1	ppb	Avg.	4	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3

TVOC			PM_{10}		
Max.	101	ppb	Max.	<1	ug/m^3
Avg.	10	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4

TVOC			PM_{10}		
Max.	145	ppb	Max.	17	ug/m^3
Avg.	44	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 5

TVOC			PM_{10}		
Max.	60	ppb	Max.	12	ug/m^3
Avg.	23	ppb	Avg.	5	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6

TVOC			PM_{10}		
Max.	47	ppb	Max.	23	ug/m^3
Avg.	24	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7

TVOC			PM_{10}		
Max.	45	ppb	Max.	<1	ug/m^3
Avg.	11	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 TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)

10/11/2017 00:00 AM - 10/11/17 23:45 PM

Station 1

TVOC			PM_{10}		
Max.	29	ppb	Max.	13	ug/m^3
Avg.	6	ppb	Avg.	10	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2

TVOC			PM_{10}		
Max.	26	ppb	Max.	28	ug/m^3
Avg.	6	ppb	Avg.	11	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3

TVOC			PM_{10}		
Max.	63	ppb	Max.	<1	ug/m^3
Avg.	30	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4

TVOC			PM_{10}		
Max.	68	ppb	Max.	17	ug/m^3
Avg.	10	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 5

TVOC			PM_{10}		
Max.	81	ppb	Max.	12	ug/m^3
Avg.	26	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6

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

Station 7

TVOC			PM_{10}		
Max.	108	ppb	Max.	20	ug/m^3
Avg.	46	ppb	Avg.	7	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 TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)

10/12/2017 00:00 AM - 10/12/17 23:45 PM

Station 1

TVOC			PM_{10}		
Max.	3	ppb	Max.	12	ug/m^3
Avg.	<1	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2

TVOC			PM_{10}		
Max.	4	ppb	Max.	21	ug/m^3
Avg.	<1	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3

TVOC			PM_{10}		
Max.	148	ppb	Max.	<1	ug/m^3
Avg.	50	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4

TVOC			PM_{10}		
Max.	36	ppb	Max.	15	ug/m^3
Avg.	19	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 5

TVOC			PM_{10}		
Max.	116	ppb	Max.	10	ug/m^3
Avg.	64	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6

TVOC			PM_{10}		
Max.	36	ppb	Max.	11	ug/m^3
Avg.	24	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7

TVOC			PM_{10}		
Max.	135	ppb	Max.	<1	ug/m^3
Avg.	61	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 TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)

10/13/2017 00:00 AM - 10/13/17 18:00 PM

Station 1

TVOC			PM_{10}		
Max.	3	ppb	Max.	18	ug/m^3
Avg.	<1	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2

TVOC			PM_{10}		
Max.	18	ppb	Max.	41	ug/m^3
Avg.	3	ppb	Avg.	12	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3

TVOC			PM_{10}		
Max.	61	ppb	Max.	<1	ug/m^3
Avg.	14	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4

TVOC			PM_{10}		
Max.	66	ppb	Max.	13	ug/m^3
Avg.	4	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 5

TVOC			PM_{10}		
Max.	45	ppb	Max.	18	ug/m^3
Avg.	26	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6

TVOC			PM_{10}		
Max.	36	ppb	Max.	14	ug/m^3
Avg.	13	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7

TVOC			PM_{10}		
Max.	108	ppb	Max.	<1	ug/m^3
Avg.	37	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 TB-4 Dredging and Pilot Study
Brooklyn, New York
Meteorological Summary
October 9th , through October 13th, 2017

October 9th , 2017		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
ESE	**3.62**	**72.7**

October 10th , 2017		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
W	**1.64**	**74.8**

October 11th , 2017		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
NE	**5.57**	**64.4**

October 12th , 2017		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
NE	**8.62**	**60.8**

October 13th , 2017		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
NE	**6.42**	**70.6**

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

*All meteorological data represents averages for the time period of 00:00 to 23:45 for Tuesday, Wednesday, and Thursday.

*All meteorological data represents an average for the time period of 00:30 to 18:00 for Friday.

WILSON-IHRIG WEEKLY NOISE AND VIBRATION MONITORING REPORT

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

WI #15-081

MEMORANDUM

October 16, 2017

To: William Lee/ de maximis, inc.
Kirsten Meyers / TRC

From: Silas Bensing, Ani Toncheva / Wilson Ihrig

Subject: Gowanus Canal 4th Street Turning Basin Dredging and Capping Pilot Study, Weekly Noise and Vibration Monitoring Report, 9 – 13 October, 2017

Noise Monitoring Locations

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

Vibration Monitoring Locations

Figure 1 shows the vibration monitoring locations. One monitor is installed at the parking lot curb on the north side of TB4, labeled VM-1. A second vibration monitor is installed near the corner of existing building on the south side of TB4, labeled VM-2. VM-1 is approximately 45 feet from the north edge of the canal and VM-2 is approximately 24 feet from the south edge of the canal. Photos 3 and 4 show the recent field conditions at the monitors. VM-1 and VM-2 were installed on Thursday, Oct. 12.

Noise Monitoring Results

Figures 2 through 10 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]. Due to cellular connectivity issues, no data are available for NM-1 before 10AM on Tuesday, Oct. 10.

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

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

Vibration Monitoring Results

Figures 11 and 12 present the maximum peak particle velocity (PPV) vibration events compared with the thresholds discussed in the vibration monitoring plan[3]. Commercial and Industrial structures are assigned a PPV vibration criterion of 2.0 inches/second.

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

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

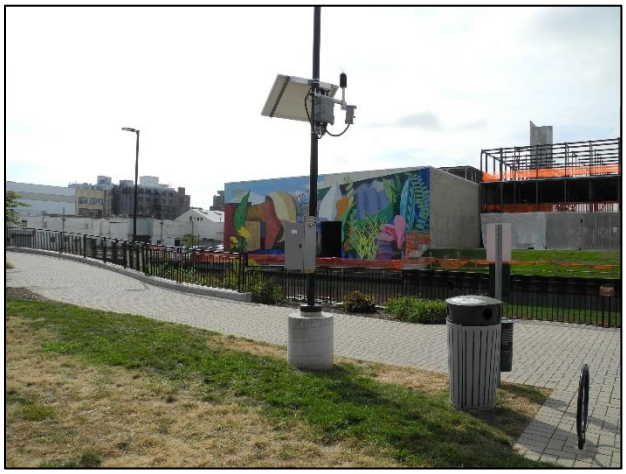


Photo 1: Noise Monitoring Location NM-1 (26 September 2017)

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

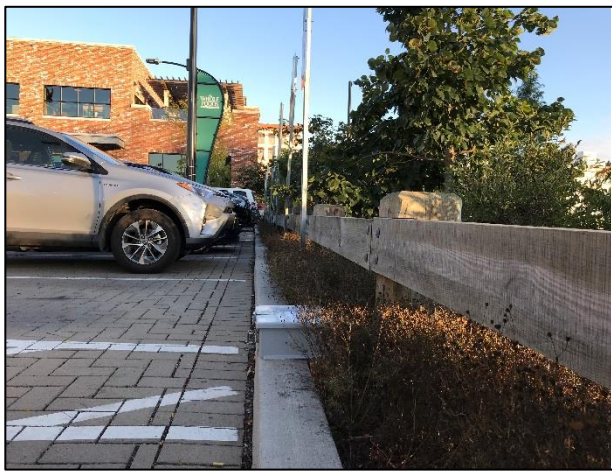


Photo 3: Vibration Monitoring Location VM-1 (12 October 2017)

Photo 4: Vibration Monitoring Location VM-2 (12 October 2017)

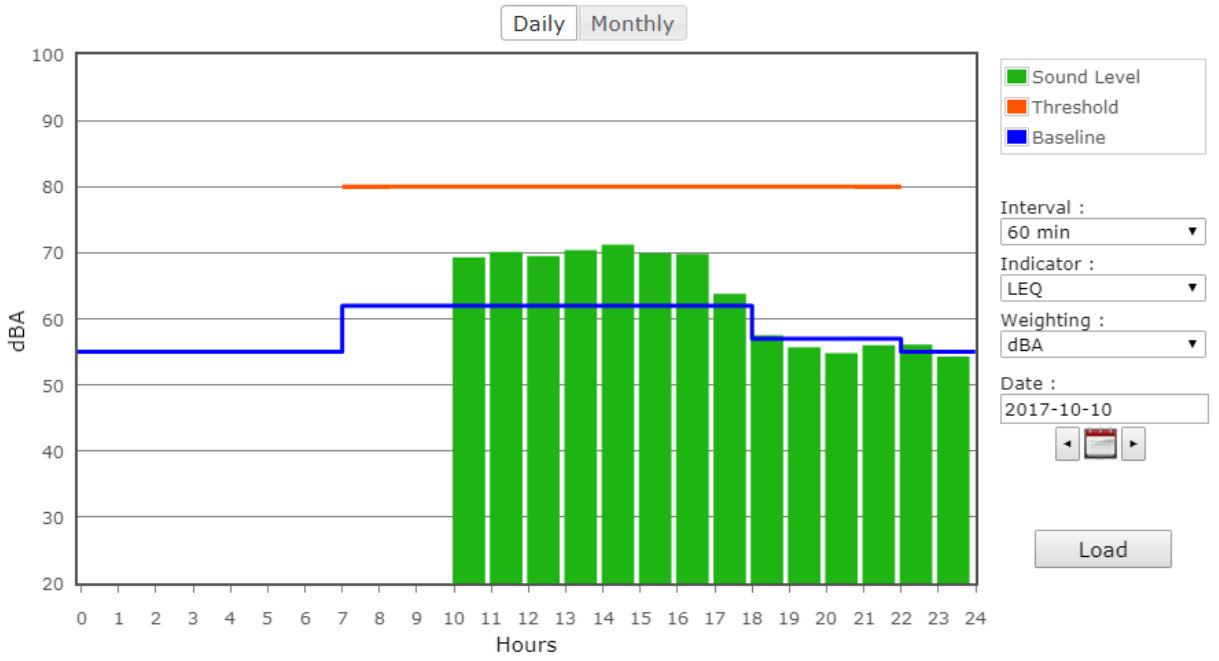


Figure 2: North Monitor NM-1 on Tuesday

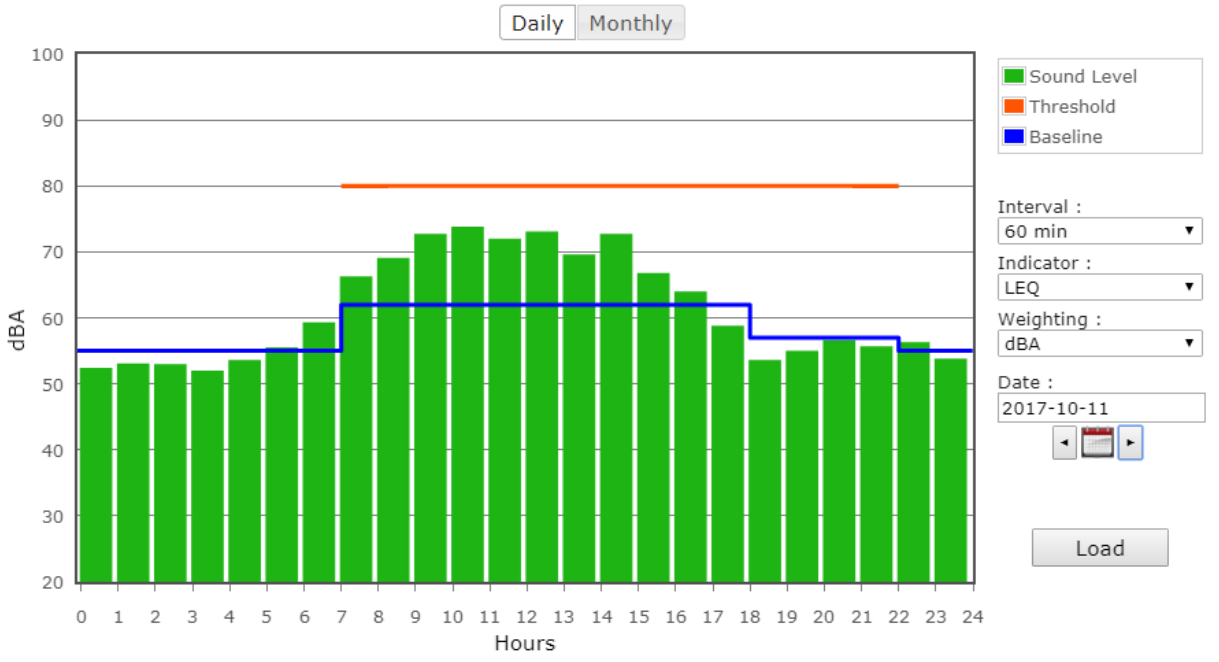


Figure 3: North Monitor NM-1 on Wednesday

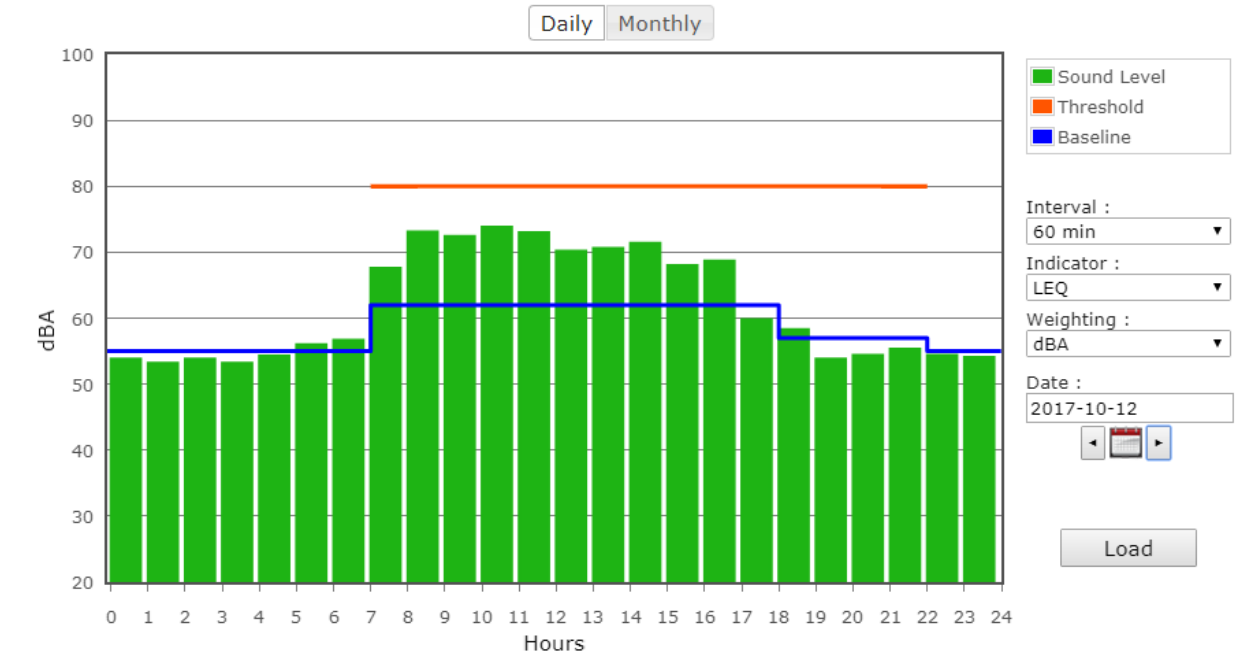


Figure 4: North Monitor NM-1 on Thursday

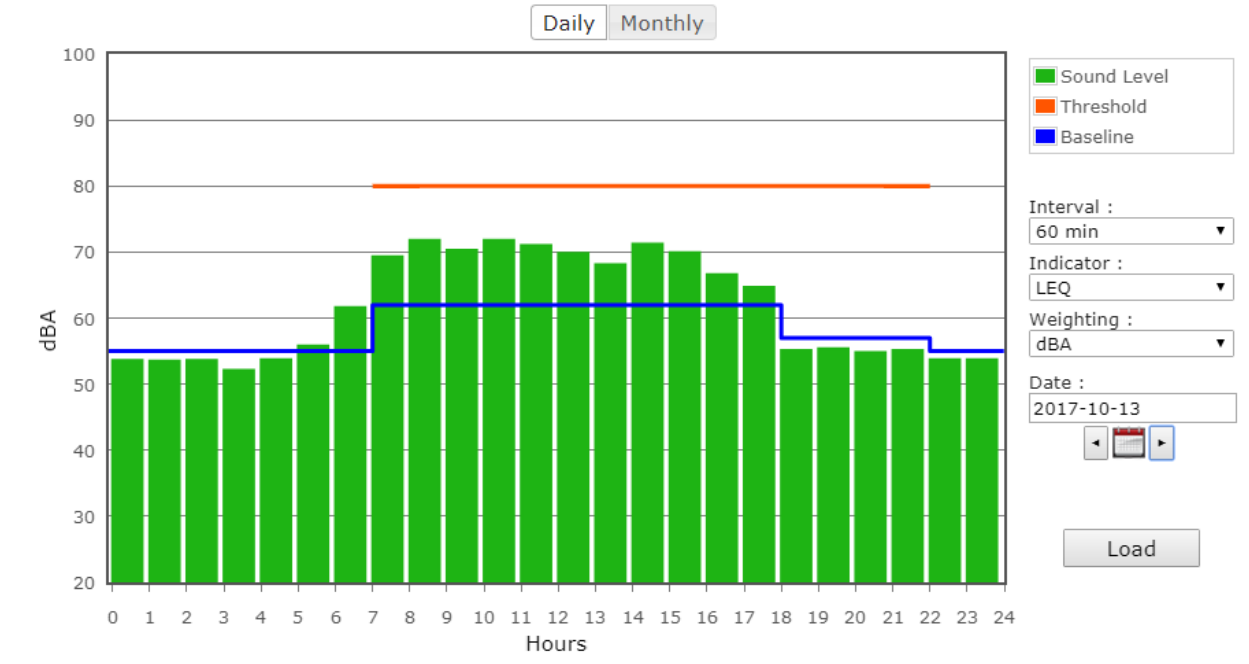


Figure 5: North Monitor NM-1 on Friday

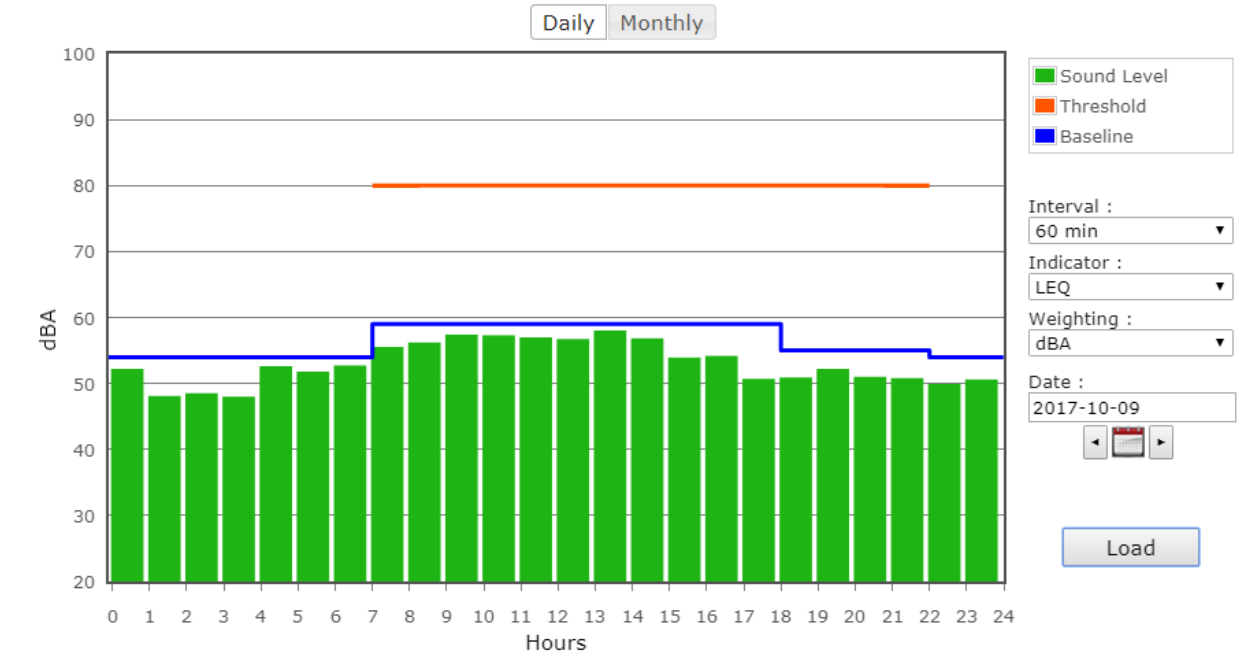


Figure 6: South Monitor NM-2 on Monday

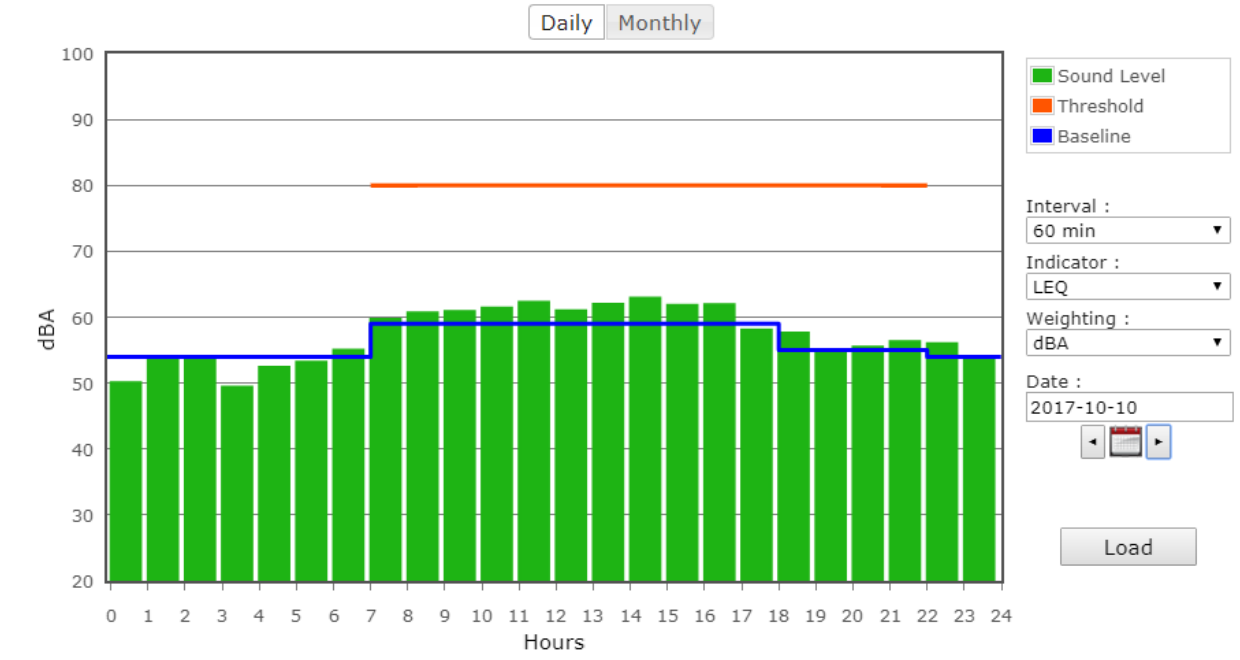


Figure 7: South Monitor NM-2 on Tuesday

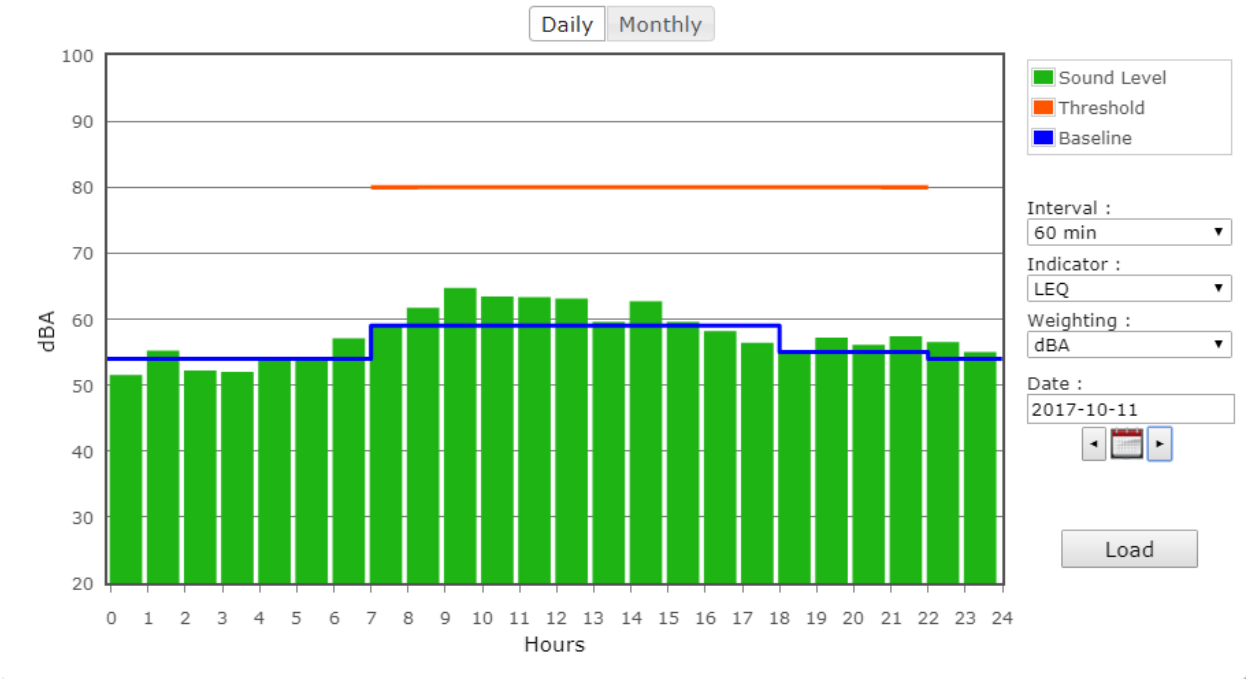


Figure 8: South Monitor NM-2 on Wednesday

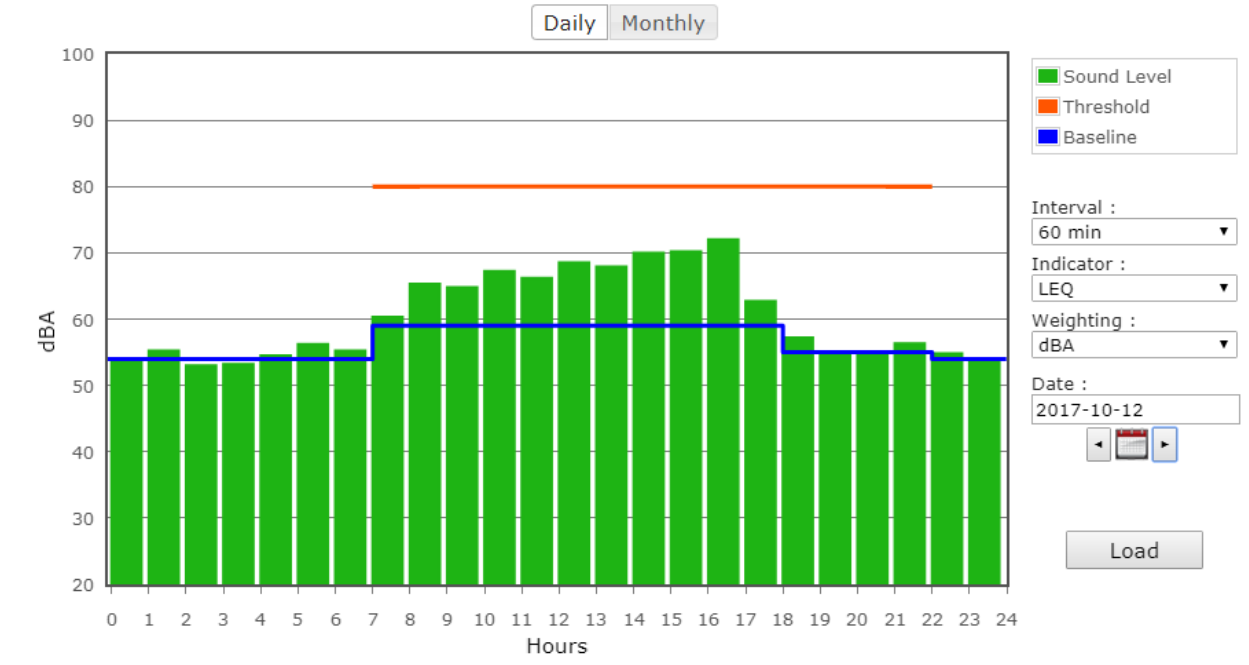


Figure 9: South Monitor NM-2 on Thursday

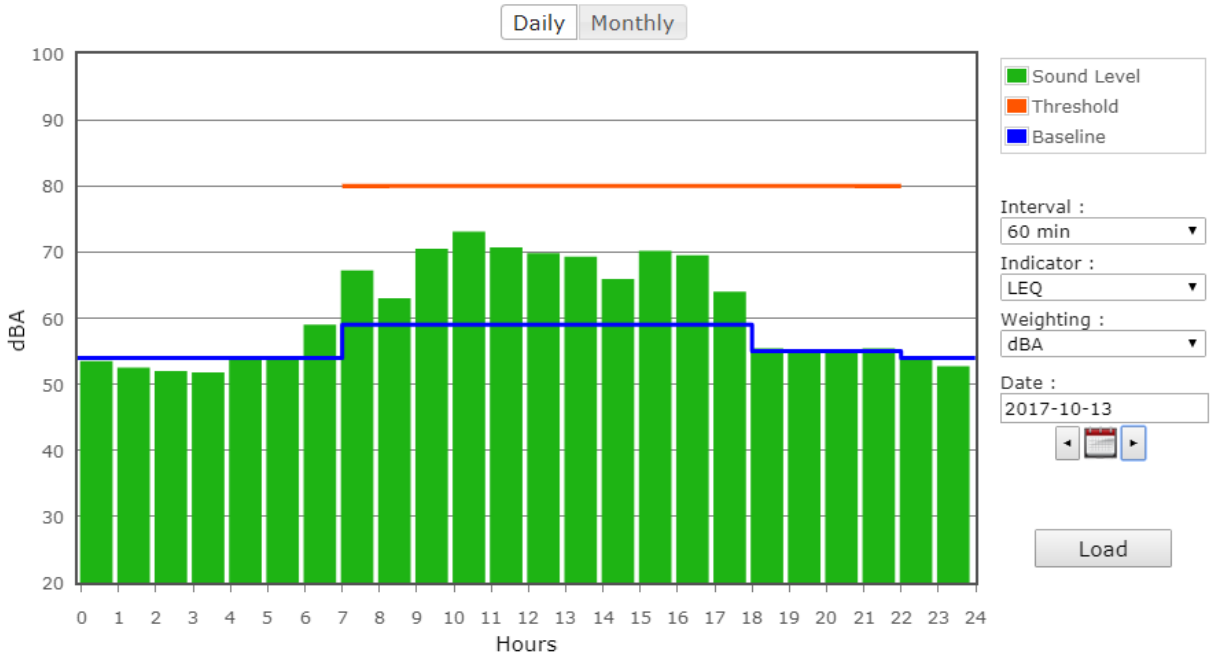


Figure 10: South Monitor NM-2 on Friday

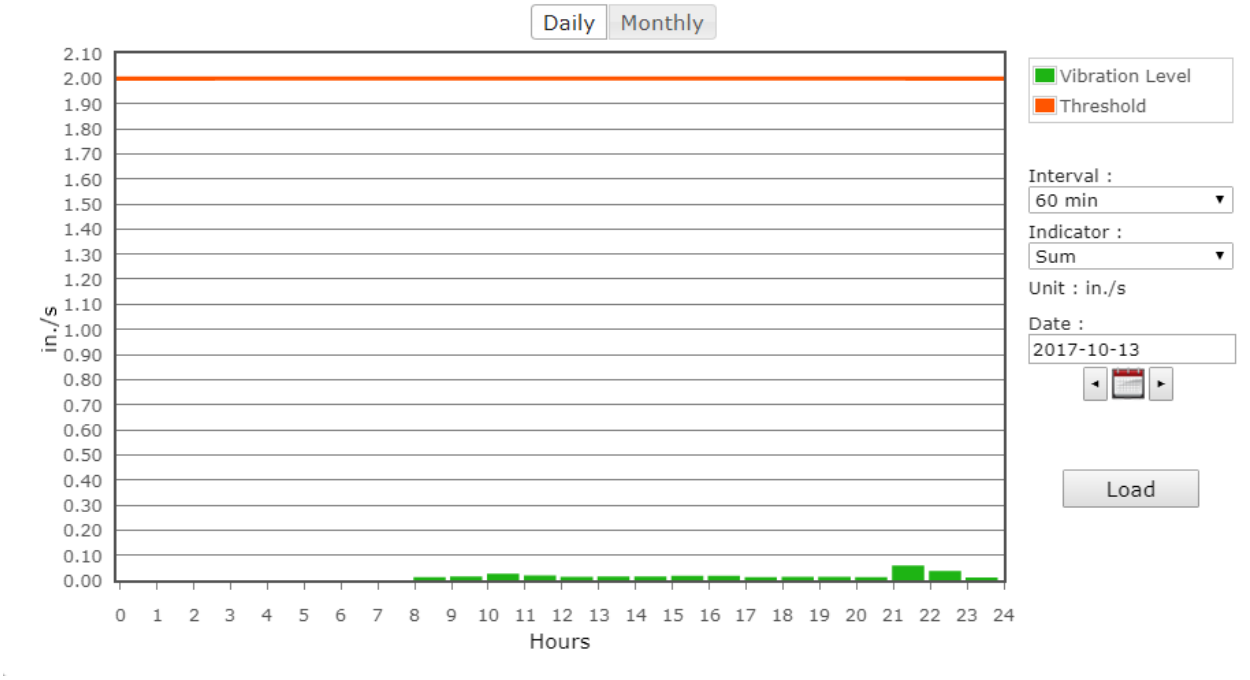


Figure 11: North Vibration Monitor VM-1 on Friday

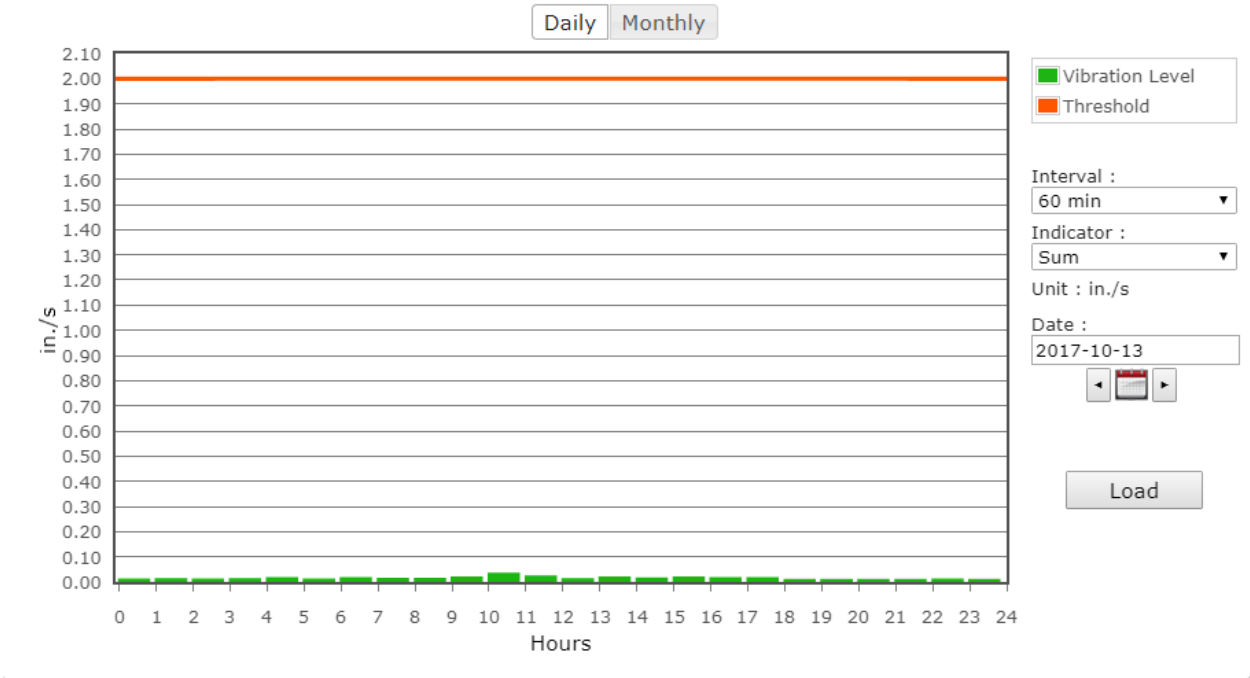


Figure 12: South Vibration Monitor VM-2 on Friday

20171016 Wilson Ihrig Weekly Noise and Vibration Report 9 Oct - 13 Oct 2017.docx

AHRS WEEKLY REPORT

Weekly Report

Jonathan Bream of AHRS conducted the first inspection of the objects recovered from the sediments screened from the Access Dredging activities. The inspection took place on Wednesday, October 11, 2017. Sevenson crew had the objects separated into like objects (e.g. wood, tires). The piles of objects were photographed and noted. Two large metal pieces (gantry truck and two pulleys) had been separated into individual piles. In the wood piles were two tree trunks and some beams connect to other beams with metal fasteners. Also recovered was a large metal sash weights.

These objects were give six separate field numbers/object numbers. They are:

Object 1: Metal gantry truck, (84cm X 170 cm)
Object 2: Wood beam with two metal pulleys (175 cm X 190 cm)
Object 3: Two tree trunks
Object 4: Beams with metal fasteners
Object 5: Metal sash weight
Object 6: Metal support beam (518cm X 66cm X 40cm)

AHRS recommends that object numbers 1, 2, and 3 be quarantined on the sorting pad as potential cultural resources and be retained until the end of the access dredging and for consultation with the USEPA and SHPO. Below are photographs of these objects. The remainder of the objects recovered and separated can be disposed of.

The next field inspection is anticipated to be conducted on Monday, October 23, 2017. Sevenson did not upload any photographs onto the portal for review before the field inspection.

Photograph 1 – Object 1: TB4 AD 1-1, Metal gantry truck.

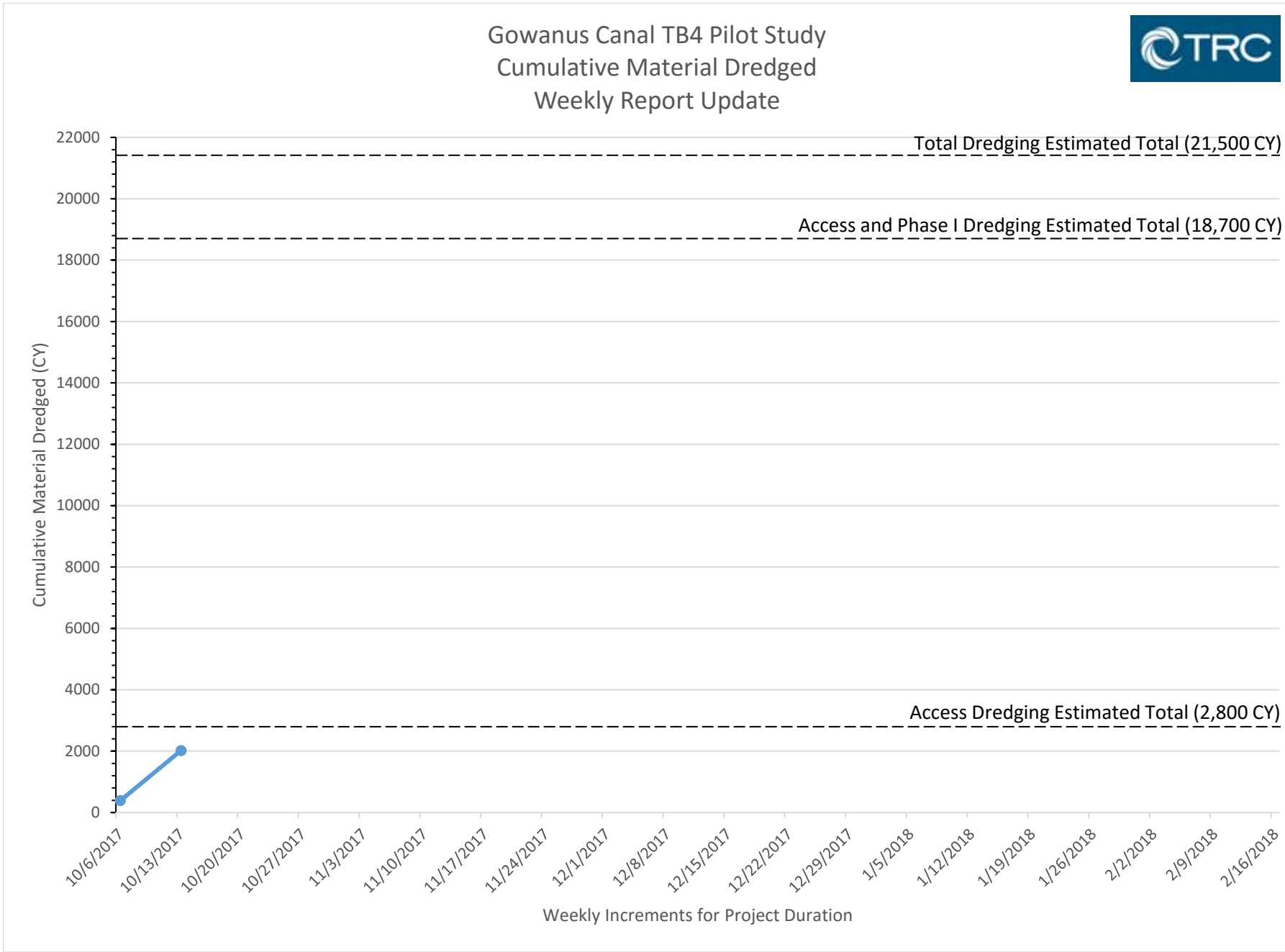
Photograph 2 – Object 2: TB4 AD 2-1, Wood beam with two metal pulleys.

Photograph 3 – Object 2: TB4 AD 3-1, Two tree trunks.

WATER TREATMENT SYSTEM MONITORING ANALYTICAL LABORATORY DATA

(PLANT NOT DISCHARGING AT THIS TIME)

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
10/13/2017
10/20/2017
10/27/2017
11/3/2017
11/10/2017
11/17/2017
11/24/2017
12/1/2017
12/8/2017
12/15/2017
12/22/2017
12/29/2017
1/5/2018
1/12/2018
1/19/2018
1/26/2018
2/2/2018
2/9/2018
2/16/2018
Weekly Increments for Project Duration