WEEKLY PROGRESS REPORT – TRC SOLUTIONS

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

Project number: 283126

Period: August 13 to 17, 2018

Date of Report: August 22, 2018

Rev: 0

Prepared For: Gowanus Environmental Remediation Trust

On-Site Activities Conducted During Week:

Sevenson Environmental Services (SES)

Water Treatment and Monitoring

- Discharged 17,466 and 20,274 gallons of treated decant water on 08/16 and 08/17/18, respectively.
- No exceedances of continuous monitoring.

Turbidity Monitoring

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

Sediment Stabilization Activities

- Approximately 453.9 tons of stabilized material were disposed off-site as daily cover. An approximate total of 20,210 tons of stabilized material has been shipped to Waste Management Fairless Hills.

Capping Activities

- Complete constructing hydraulic capping make-up water feed system.
- Complete installing hydraulic capping systems piping from Citizens Site to the 4th Street Turning Basin.
- Commence hydraulic capping demonstration area with placement of portion of oleophilic clay and sand treatment layer.
- Continue decontaminating and demobilizing equipment.

Quality Assurance and Control – Geosyntec

- DWTS discharge sampling conducted on 8/16/18.
- No turbidity data available due to equipment issues. Data to be provided in report for week ending 08/24/18.

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 – 36 $\mu g/m^3$ recorded on 08/16/18
  - Station 2 – 33 $\mu g/m^3$ recorded on 08/14/18
  - Station 3 – 5 $\mu g/m^3$ recorded on 08/16/18
  - Station 4 – 24 $\mu g/m^3$ recorded on 08/17/18
  - Station 5 – 50 $\mu g/m^3$ recorded on 08/16/18
  - Station 6 – 44 $\mu g/m^3$ recorded on 08/16/18
  - Station 7 – <1 $\mu g/m^3$ recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
  - Station 1 – 33 ppb recorded on 08/13, 08/14, 08/16, and 08/17/18
  - Station 2 – <1 ppb recorded throughout the week
  - Station 3 – 1 ppb recorded on 08/16/18
  - Station 4 – 3 ppb recorded on 08/16/18
  - Station 5 – 134 ppb recorded on 08/14/18
  - Station 6 – 117 ppb recorded on 08/16/18
  - Station 7 – <1 ppb recorded throughout the week
- All real-time readings of formaldehyde, hydrogen sulfide, or ammonia less than instrument reporting limit.

- 23-hour samples collected at ST-4 collected on 08/14 through 08/15 and ST-5 (collocated) collected on 08/15 through 08/16. Laboratory turnaround time is 10 business days.
- Tabulated laboratory analytical results for 23-hour sample collected at ST-3 on 07/17 through 07/18, ST-5 on 07/19 through 07/20, ST-4 (collocated) on 07/23 through 07/24, and and ST-6 on 07/26 through 07/27 presented in weekly CAMP report.

Noise and Vibration Monitoring – Wilson Ihrig

- Operated and maintained two (2) noise monitors: NM-1 (north side of canal on Whole Foods promenade) and NM-2 (south side of canal on southeast corner of 386 3rd Avenue).
- No exceedance of the hourly Leq noise limit of 80 dBA.
- Greatest hourly Leq noise measurements
    - Northern monitor (NM-1) – 74.1 dBA during 1000-1100 on 08/15/18
    - Southern monitor (NM-2) – 71.9 dBA during 1400-1500 on 08/16/18

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

- Perform final inspection on 08/14/18 of screened debris at Clean Earth Claremont to prepare inventory for EPA review

Two-Week Look Ahead:

Sevenson:

- Treatment and discharge of water decanted accumulated during decontamination operations.
- Produce treatment layers with mixing plant.
- Perform optical monitoring of bulkheads and surrounding structures with autonomous total survey stations. Along with weekly optical surveys conducted by subcontractor.
- Continue and complete placement of leveling layer, if required.
- Complete installation of hydraulic capping demonstration area.
- Commence hydraulic capping of remainder of Turning Basin 4.
- Install sand buttress to provide additional support for sheet piling at the Whole Foods property.
- Place oleophilic clay/sand mixture and gravel between sheet piling and existing bulkhead adjacent to Whole Foods.

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

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise monitoring,

AHRS – Prepare inventory and final report for EPA review.

Key Milestones

- Commence hydraulic capping demonstration area on 08/15/18.

Attachments:

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

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

Photo No.	Date
001	8-13-2018

Description
Completing installation hydraulic capping piping at TB4.

Photo No.	Date
002	8-13-2018

Description
Tightening leaking flanges and valves as the water supply system is tested.

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

Photo No.	Date
003	8-14-2018

Description
Completed ramps to load the hopper feeders.

Photo No.	Date
004	8-14-2018

Description
Pushing the spreader barge into the starting position for the hydraulic capping demonstration area.

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

Photo No.	Date
005	8-15-2018

Description
Beginning sand/OC material placement using the spreader barge.

Photo No.	Date
006	8-15-2018

Description
Spreader barge in operation, pumping water prior to the addition of the sand/OC mixture.

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

Photo No.	Date
007	8-16-2018

Description
Loading oleolphilic clay material into the feed hopper for hydraulic capping demonstration area.

Photo No.	Date
008	8-16-2018

Description
Test pan removed from the test area after two passes.

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

Photo No.	Date
009	8-17-2018

Description
Collecting core samples in the vicinity of MECH-2 catch pan test area, in which the sample pan may have been affected by surveyor boat propeller.

Photo No.	Date
010	8-17-2018

Description
Core sample collected today from mechanical test area.

GEOSYNTEC IN-CANAL WATER QUALITY MONITORING WEEKLY DATA SUMMARY

(TO BE PROVIDED NEXT WEEK)

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
45th Weekly Monitoring Period
Summary Report:

August 13th, through August 17th, 2018

Report Contents

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

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

Executive Summary – Week 45 Monitoring Period
August 13th through August 17th, 2018

The following report summarizes site air monitoring activities for the Week 45 monitoring period from August 13th through August 17th, 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 45 monitoring period there were no PM_{10} or TVOC exceedances of the action level of 150 ug/m^3 or 1,000 ppb respectively as defined in the *Community Air Monitoring Plan for the Gowanus Canal TB-4 Dredging and Pilot Study Project Brooklyn, NY, August 2017.*

Figure 1 depicts Total Volatile Organics (TVOC) daily averages and maximums. Figure 2 depicts particulate monitoring (PM_{10}) daily averages and maximums. Figure 3 depicts the station locations along the Gowanus Canal.

Additional monitoring for hydrogen sulfide, ammonia, and formaldehyde took place at all stations throughout the Week 45 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 45 monitoring period of August 13th through August 17th, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 4 and 5. The ST-4 sample was collected on August 14th, through August 15th 2018. Co-located samples (ST-5A and ST-5B) were collected at Station 5 on August 15th, through August 16th, 2018. All samples were collected over a 23-hour period and shipped to Con-Test Analytical Laboratory for analyses. The results of the summa canister sampling are pending lab analyses.

Table 2 presents the analytical results for 23-hour samples collected at Stations 3 and 5 during Week 41. The ST-3 sample was collected on July 17th through 18th, 2018 and the ST-5 sample was collected on July 19th through 20th, 2018. Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28th and 31st, 2017.

Table 3 presents the analytical results for 23-hour samples collected at Stations 4 and 6 during Week 42. Co-located samples (ST-4A and ST-4B) were collected at Station 4 on July 23rd through 24th, 2018. ST-6 sample was collected on July 26th through 27th, 2018 Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28th and 31st, 2017.

Site activities which were conducted at the Citizen Property during August 13th through August 17th, 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
- Complete constructing hydraulic capping make-up water feed system
- Continue decontaminating and demobilizing equipment

Site activities which were conducted at the 4th St Turning Basin Area of the Canal during August 13th through August 17th, 2018 included the following:

- Complete installing hydraulic capping systems piping from Citizens Site to the 4th Street Turning Basin.
- Commence hydraulic capping demonstration area with placement of portion of Oleophilic clay and sand treatment layer.
- Continue decontaminating and demobilizing equipment

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)
08/13/2018 06:30 AM - 08/13/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	33	ppb	Max.	13	ug/m^3
Avg.	19	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	19	ug/m^3
Avg.	<1	ppb	Avg.	12	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

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

Station 4 (Whole Foods Property Central Riverwalk Location)

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

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

TVOC			PM_{10}		
Max.	<1	ppb	Max.	17	ug/m^3
Avg.	<1	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

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

Station 7 (386 3rd Avenue along Canal Fencing)

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

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

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

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

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

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)
08/14/2018 00:00 AM - 08/14/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	33	ppb	Max.	29	ug/m^3
Avg.	18	ppb	Avg.	12	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	33	ug/m^3
Avg.	<1	ppb	Avg.	15	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

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

Station 4 (Whole Foods Property Central Riverwalk Location)

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

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

TVOC			PM_{10}		
Max.	134	ppb	Max.	33	ug/m^3
Avg.	60	ppb	Avg.	14	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

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

Station 7 (386 3rd Avenue along Canal Fencing)

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

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

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

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

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

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)
08/15/2018 00:00 AM - 08/15/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

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

Station 2 (Citizen Property near Pad Area)

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

Station 3 (Whole Foods Property NW Riverwalk Location)

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

Station 4 (Whole Foods Property Central Riverwalk Location)

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

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

TVOC			PM_{10}		
Max.	127	ppb	Max.	24	ug/m^3
Avg.	25	ppb	Avg.	11	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

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

Station 7 (386 3rd Avenue along Canal Fencing)

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

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

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

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

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

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)
08/16/2018 00:00 AM - 08/16/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	33	ppb	Max.	36	ug/m^3
Avg.	14	ppb	Avg.	26	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

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

Station 3 (Whole Foods Property NW Riverwalk Location)

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

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	3	ppb	Max.	7	ug/m^3
Avg.	2	ppb	Avg.	4	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	47	ppb	Max.	50	ug/m^3
Avg.	27	ppb	Avg.	28	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	117	ppb	Max.	44	ug/m^3
Avg.	52	ppb	Avg.	20	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

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

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

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

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

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

Gowanus Canal Superfund Site
TB-4 Dredging and Capping Pilot Study
Brooklyn, New York
Daily Station Report – TVOC/PM_{10}
(TRC Project No.274286-0000-00000)
08/17/2018 00:00 AM - 08/17/2018 17:00 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	33	ppb	Max.	32	ug/m^3
Avg.	15	ppb	Avg.	23	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	16	ug/m^3
Avg.	<1	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.	24	ug/m^3
Avg.	<1	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	34	ppb	Max.	34	ug/m^3
Avg.	20	ppb	Avg.	11	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 6 (Maritime Estates Property along Canal Fencing)

TVOC			PM_{10}		
Max.	112	ppb	Max.	<1	ug/m^3
Avg.	44	ppb	Avg.	<1	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 7 (386 3rd Avenue along Canal Fencing)

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

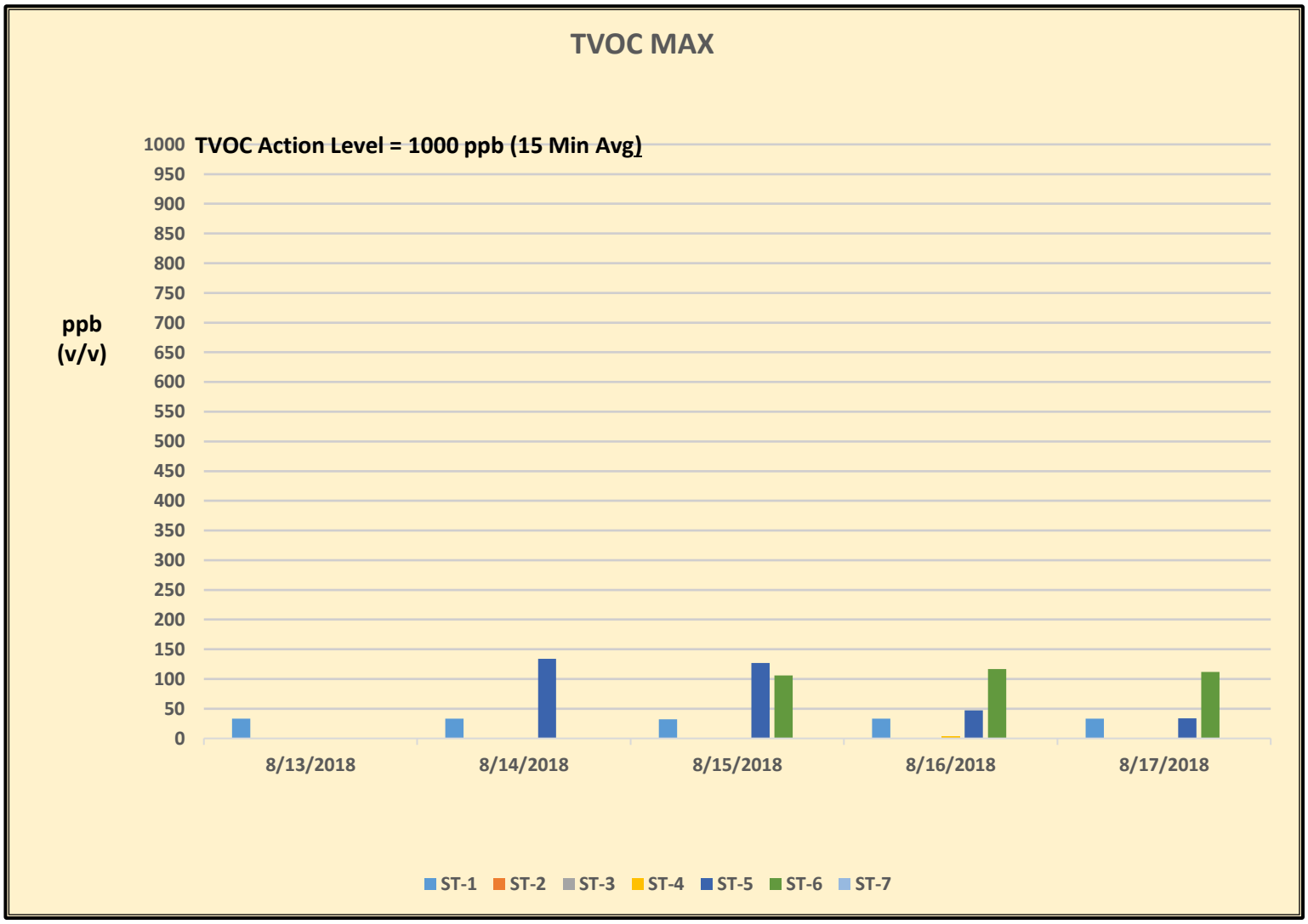
TVOC – Total Volatile Organic Compounds PM_{10} – Particulates as PM_{10}

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

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

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

Figure 1
Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program
TVOC Monitoring Data - Week 45



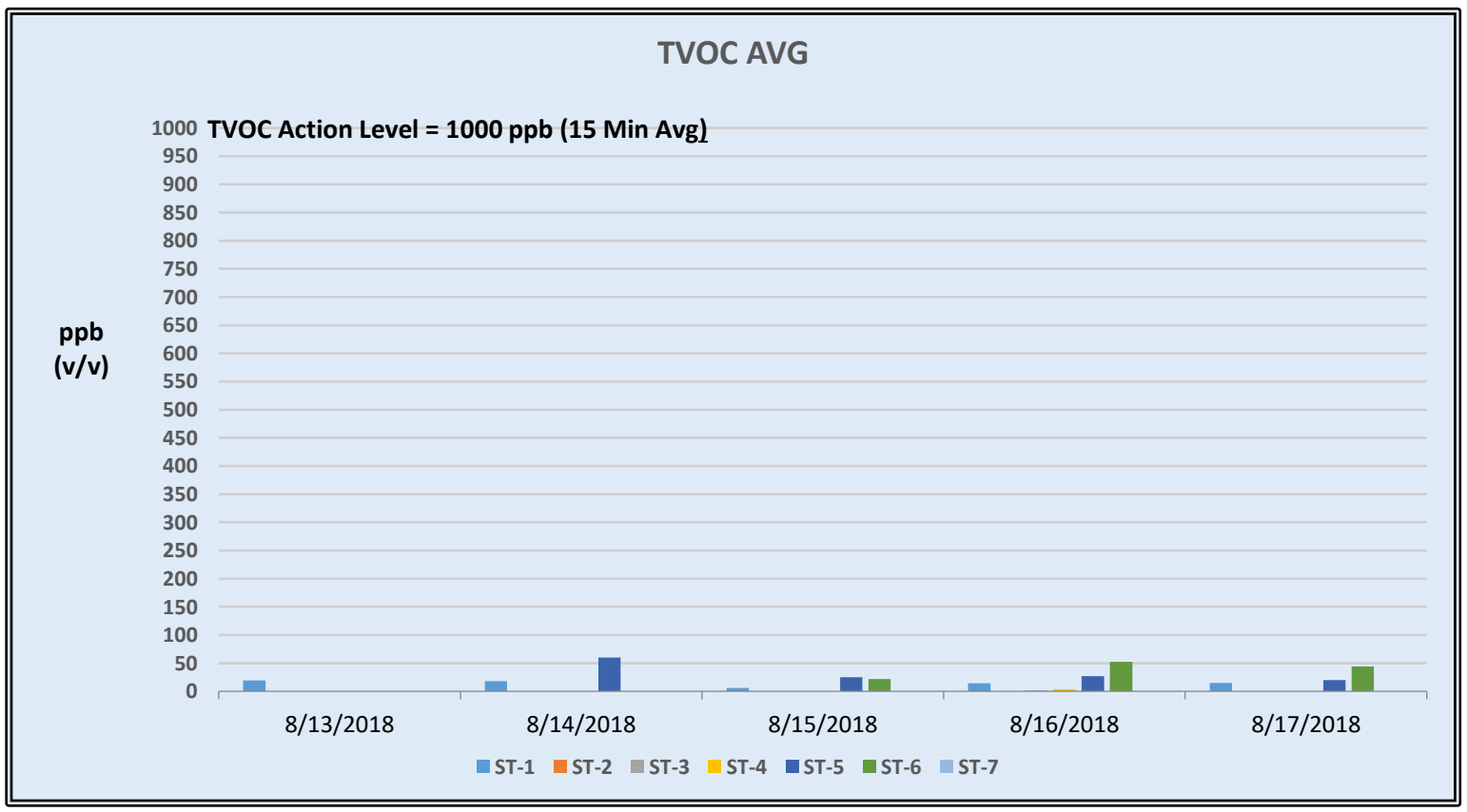
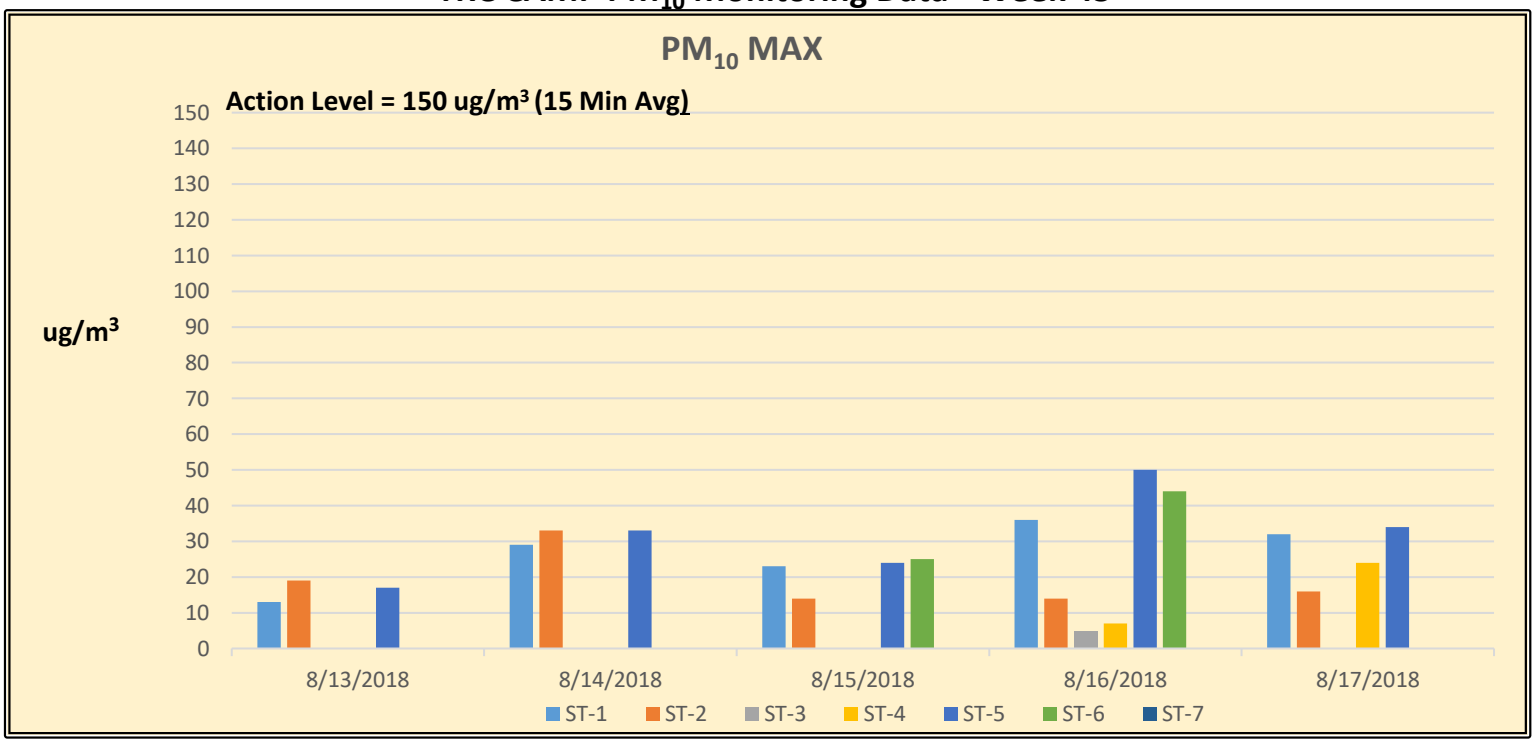
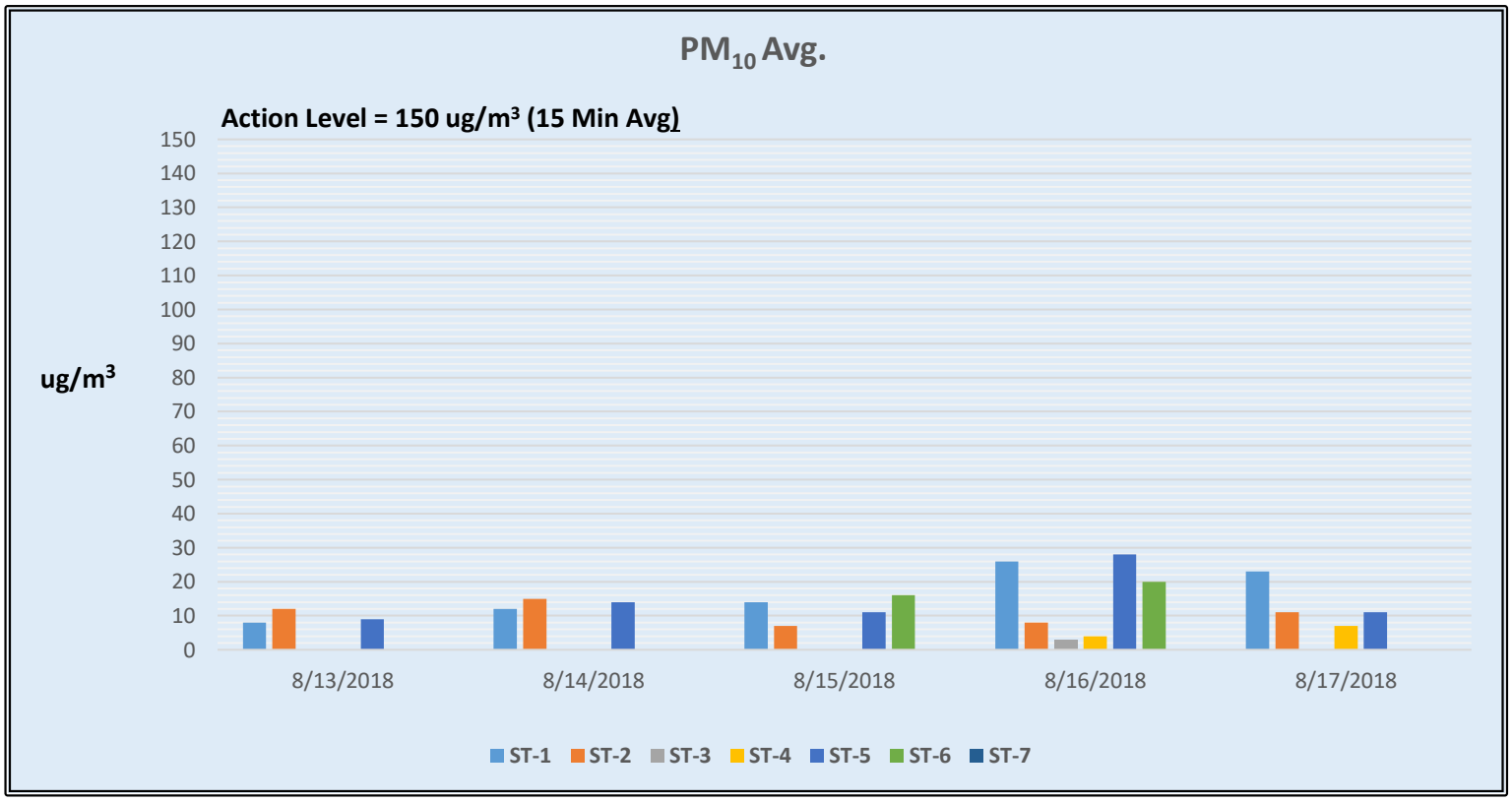
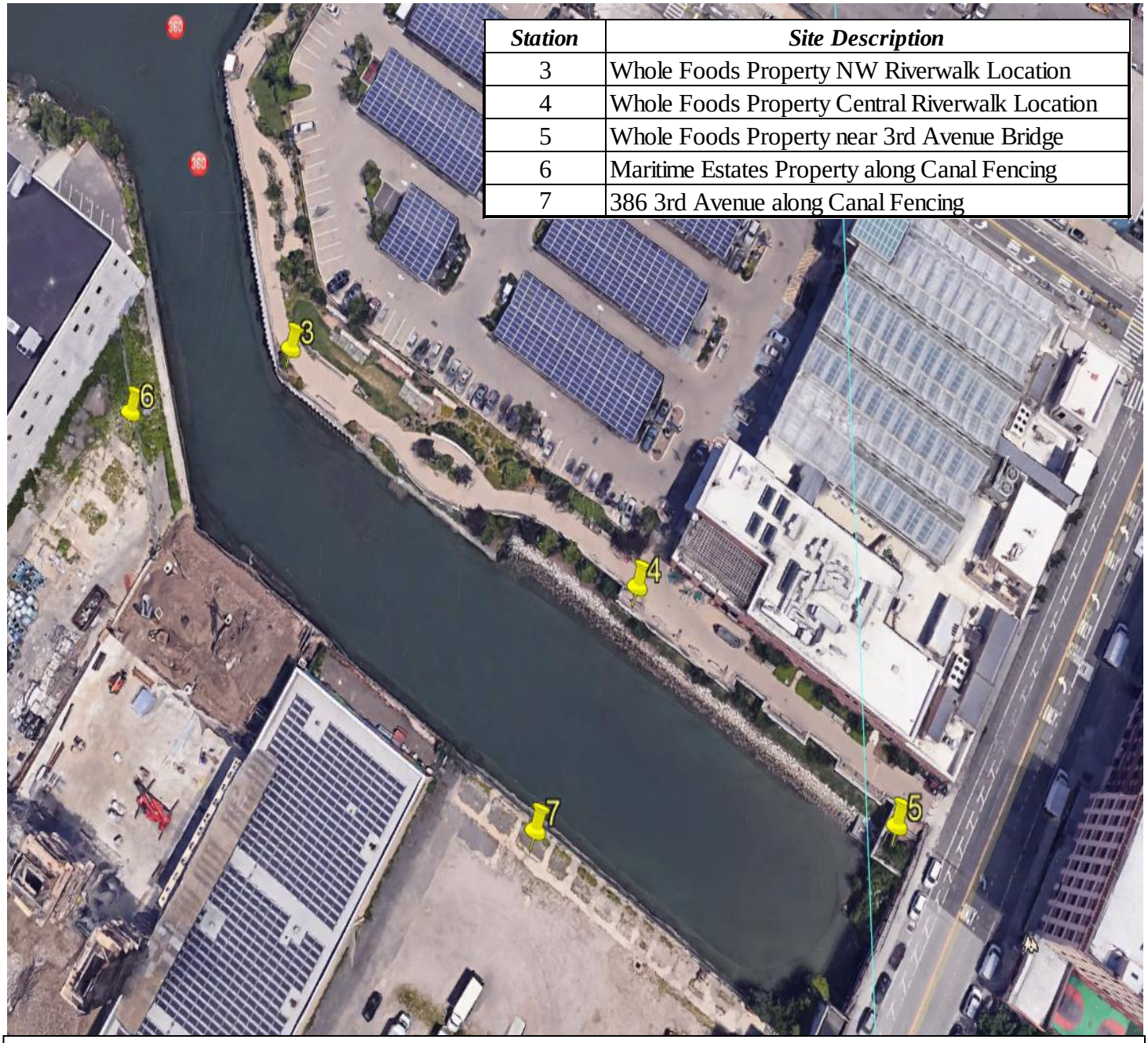


Figure 2
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
TRC CAMP PM_{10} Monitoring Data - Week 45







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

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

Table 1

Week 45
Summary of Additional Periodic (Daily) Monitoring Data

August 13th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	8:00	<50	<3	<1.0
	13:30	<50	<3	<1.0
ST-2	8:15	<50	<3	<1.0
	13:35	<50	<3	<1.0
ST-3	8:30	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-4	8:35	<50	<3	<1.0
	14:10	<50	<3	<1.0
ST-5	8:45	<50	<3	<1.0
	14:15	<50	<3	<1.0
ST-6	9:10	<50	<3	<1.0
	14:25	<50	<3	<1.0
ST-7	9:40	<50	<3	<1.0
	15:00	<50	<3	<1.0

August 14th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	7:30	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-2	7:40	<50	<3	<1.0
	14:40	<50	<3	<1.0
ST-3	8:00	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-4	8:10	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-5	8:20	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-6	8:45	<50	<3	<1.0
	16:00	<50	<3	<1.0
ST-7	9:00	<50	<3	<1.0
	15:45	<50	<3	<1.0

Table 1

Week 45
Summary of Additional Periodic (Daily) Monitoring Data

August 15th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	8:00	<50	<3	<1.0
	13:00	<50	<3	<1.0
ST-2	8:10	<50	<3	<1.0
	13:05	<50	<3	<1.0
ST-3	8:30	<50	<3	<1.0
	13:30	<50	<3	<1.0
ST-4	8:35	<50	<3	<1.0
	13:35	<50	<3	<1.0
ST-5	8:40	<50	<3	<1.0
	13:45	<50	<3	<1.0
ST-6	9:00	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-7	9:30	<50	<3	<1.0
	14:30	<50	<3	<1.0

August 16th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	8:15	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-2	8:20	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-3	8:40	<50	<3	<1.0
	14:25	<50	<3	<1.0
ST-4	8:45	<50	<3	<1.0
	14:40	<50	<3	<1.0
ST-5	8:45	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-6	9:15	<50	<3	<1.0
	14:55	<50	<3	<1.0
ST-7	9:45	<50	<3	<1.0
	15:15	<50	<3	<1.0

Table 1

Week 45
Summary of Additional Periodic (Daily) Monitoring Data

August 17th, 2018				
Station Id	**Time**	**Formaldehyde (CHO) (ppb)***	**Hydrogen Sulfide (H_2S) (ppb)***	**Ammonia (NH_3) (ppm)****
ST-1	9:00	<50	<3	<1.0
	13:00	<50	<3	<1.0
ST-2	9:05	<50	<3	<1.0
	13:05	<50	<3	<1.0
ST-3	9:15	<50	<3	<1.0
	13:30	<50	<3	<1.0
ST-4	9:20	<50	<3	<1.0
	13:35	<50	<3	<1.0
ST-5	9:25	<50	<3	<1.0
	13:40	<50	<3	<1.0
ST-6	9:40	<50	<3	<1.0
	13:45	<50	<3	<1.0
ST-7	10:00	<50	<3	<1.0
	14:00	<50	<3	<1.0

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

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

Table 2:
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
Week 41 VOCs Results: July 17th through 18th and July 19th through 20th

Sample ID	ST-3-VOC-071718		ST-5-VOC-071918	
Laboratory ID	18G1286-01		18G1286-02	
Date Sampled	7/17/18 09:00 - 7/18/18 08:00		7/19/18 11:00 - 7/20/18 10:00	
Location	Station 3		Station 5	
VOCs - TO-15	ppbV	ug/m3	ppbV	ug/m3
Acetone	**7**	**17**	**7.9**	**19**
Benzene	**0.34**	**1.1**	**0.19**	**0.59**
Benzyl chloride	<0.035	<0.18	<0.035	<0.18
Bromodichloromethane	<0.035	<0.24	<0.035	<0.24
Bromoform	<0.035	<0.36	<0.035	<0.36
Bromomethane	<0.035	<0.14	<0.035	<0.14
1,3-Butadiene	<0.035	<0.078	<0.035	<0.078
2-Butanone (MEK)	<1.4	<4.1	<1.4	<4.1
Carbon Disulfide	<0.35	<1.1	<0.35	<1.1
Carbon Tetrachloride	**0.074**	**0.47**	**0.076**	**0.48**
Chlorobenzene	<0.035	<0.16	<0.035	<0.16
Chloroethane	<0.035	<0.093	<0.035	<0.19
Chloroform	<0.035	<0.17	<0.035	<0.17
Chloromethane	**0.52**	**1.1**	**0.52**	**1.1**
Cyclohexane	<0.035	<0.12	<0.035	<0.12
Dibromochloromethane	<0.035	<0.30	<0.035	<0.30
1,2-Dibromoethane (EDB)	<0.035	<0.27	<0.035	<0.27
1,2-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
1,3-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
1,4-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
Dichlorodifluoromethane (Freon 12)	**0.46**	**2.3**	**0.48**	**2.4**
1,1-Dichloroethane	<0.035	<0.14	<0.035	<0.14
1,2-Dichloroethane	<0.035	<0.14	<0.035	<0.14
1,1-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
cis-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
trans-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
1,2-Dichloropropane	<0.035	<0.16	<0.035	<0.16
cis-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16
trans-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.035	<0.25	<0.035	<0.25
1,4-Dioxane	<0.35	<1.3	<0.35	<1.3
Ethanol	**4.8**	**9** J-	**7.4**	**14** J-
Ethyl Acetate	**0.27**	**0.96**	**0.27**	**0.96**
Ethylbenzene	**0.11**	**0.48**	**0.079**	**0.34**
4-Ethyltoluene	**0.038**	**0.19**	<0.035	<0.17
Heptane	**0.18**	**0.73**	**0.16**	**0.65**
Hexachlorobutadiene	<0.035	<0.37	<0.035	<0.37
Hexane	<1.4	<4.9	<1.4	<4.9
2-Hexanone (MBK)	<0.035	<0.14	<0.035	<0.14
Isopropanol	<1.4	<3.4	<1.4	<3.4
Methyl tert-Butyl Ether (MTBE)	<0.035	<0.13	<0.035	<0.13
Methylene Chloride	<0.35	<1.2	<0.35	<1.2
4-Methyl-2-pentanone (MIBK)	<0.035	<0.14	<0.035	<0.14
Naphthalene	**0.1**	**0.54**	**0.043**	**0.22**
Propene	<1.4	<2.4	<1.4	<2.4
Styrene	**0.036**	**0.15**	<0.035	<0.15
1,1,2,2-Tetrachloroethane	<0.035	<0.24	<0.035	<0.24
Tetrachloroethylene	**0.15**	**0.99**	**0.11**	**0.72**
Tetrahydrofuran	**0.11**	**0.33**	<0.035	<0.10
Toluene	**0.83**	**3.1**	**0.53**	**2**
1,2,4-Trichlorobenzene	<0.035	<0.26	<0.035	<0.26
1,1,1-Trichloroethane	<0.035	<0.19	<0.035	<0.19
1,1,2-Trichloroethane	<0.035	<0.19	<0.035	<0.19
Trichloroethylene	<0.035	<0.19	<0.035	<0.19
Trichlorofluoromethane (Freon 11)	**0.23**	**1.3**	**0.24**	**1.3**
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1	<0.14	<1.1
1,2,4-Trimethylbenzene	**0.14**	**0.67**	**0.088**	**0.43**
1,3,5-Trimethylbenzene	**0.038**	**0.19**	<0.035	<0.17
Vinyl Acetate	<0.70	<2.5	<0.70	<2.5
Vinyl Chloride	<0.035	<0.090	<0.035	<0.090
m&p-Xylene	**0.38**	**1.6**	**0.25**	**1.1**
o-Xylene	**0.14**	**0.59**	**0.097**	**0.42**

Notes:

Values in **bold** indicate detected concentrations

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

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

acetone, ethanol, methylene chloride and isopropanol

Table 3:
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
Week 42 VOCs Results: July 23rd through 24th (Co-located) and July 26th through 27th

Sample ID	ST-4A-VOC-072318			ST-4B-VOC-072318				ST-6-VOC-072618		
Laboratory ID	18G1283-01			18G1283-02			Relative Percent	18G1291-01		
Date Sampled	7/23/18 12:00 - 7/24/18 11:00			7/23/18 12:00 - 7/24/18 11:00			Difference	7/26/18 08:00 - 7/27/18 07:00		
Location	Station 4			Station 4 Duplicate			Station 4 Pair	Station 6		
VOCs - TO-15	ppbV	ug/m3		ppbV	ug/m3			ppbV	ug/m^3	
Acetone	**6.2**	**15**	**J**	**12**	**29**	**J**	**63.6%**	**9.3**	**22**	**J**
Benzene	**0.11**	**0.36**		**0.15**	**0.49**		**30.6%**	**0.12**	**0.37**	
Benzyl chloride	<0.035	<0.18		<0.035	<0.18		NC	<0.035	<0.18	
Bromodichloromethane	<0.035	<0.24		<0.035	<0.24		NC	<0.035	<0.24	
Bromoform	<0.035	<0.36		<0.035	<0.36		NC	<0.035	<0.36	
Bromomethane	<0.035	<0.27		<0.035	<0.27		NC	<0.035	<0.27	
1,3-Butadiene	<0.035	<0.078		<0.035	<0.078		NC	<0.035	<0.078	
2-Butanone (MEK)	<1.4	<41		<1.4	<41		NC	**1.5**	**4.4**	
Carbon Disulfide	<0.35	<1.1		**0.51**	**1.6**		NC	<0.35	<1.1	
Carbon Tetrachloride	**0.076**	**0.48**		**0.079**	**0.49**		**2.1%**	**0.073**	**0.46**	
Chlorobenzene	<0.035	<0.16		<0.035	<0.16		NC	<0.035	<0.16	
Chloroethane	<0.035	<0.093		<0.035	<0.093		NC	<0.035	<0.093	
Chloroform	<0.035	<0.17		<0.035	<0.17		NC	<0.035	<0.17	
Chloromethane	**0.54**	**1.1**		**0.59**	**1.2**		**8.7%**	**0.55**	**1.1**	
Cyclohexane	<0.035	<0.24		<0.035	<0.24		NC	<0.035	<0.24	
Dibromochloromethane	<0.035	<0.30		<0.035	<0.30		NC	<0.035	<0.30	
1,2-Dibromoethane (EDB)	<0.035	<0.27		<0.035	<0.27		NC	<0.035	<0.27	
1,2-Dichlorobenzene	<0.035	<0.21		<0.035	<0.21		NC	<0.035	<0.21	
1,3-Dichlorobenzene	<0.035	<0.21		<0.035	<0.21		NC	<0.035	<0.21	
1,4-Dichlorobenzene	<0.035	<0.21		<0.035	<0.21		NC	<0.035	<0.21	
Dichlorodifluoromethane (Freon 12)	**0.42**	**2.1**		**0.48**	**2.4**		**13.3%**	**0.46**	**2.3**	
1,1-Dichloroethane	<0.035	<0.14		<0.035	<0.14		NC	<0.035	<0.14	
1,2-Dichloroethane	<0.035	<0.14		<0.035	<0.14		NC	<0.035	<0.14	
1,1-Dichloroethylene	<0.035	<0.15		<0.035	<0.15		NC	<0.035	<0.15	
cis-1,2-Dichloroethylene	<0.035	<0.16		<0.035	<0.16		NC	<0.035	<0.16	
trans-1,2-Dichloroethylene	<0.035	<0.17		<0.035	<0.17		NC	<0.035	<0.17	
1,2-Dichloropropane	<0.035	<0.16		<0.035	<0.16		NC	<0.035	<0.16	
cis-1,3-Dichloropropene	<0.035	<0.16		<0.035	<0.16		NC	<0.035	<0.16	
trans-1,3-Dichloropropene	<0.035	<0.16		<0.035	<0.16		NC	<0.035	<0.16	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.035	<0.25		<0.035	<0.25		NC	<0.035	<0.25	
1,4-Dioxane	<0.35	<1.3		<0.35	<1.3		NC	<0.35	<1.3	
Ethanol	**4.2**	**7.8**	**J-**	**7.7**	**14**	**J-**	**56.9%**	**4.8**	**9**	**J-**
Ethyl Acetate	**0.54**	**2**		**0.67**	**2.4**		NC	**0.24**	**0.86**	
Ethylbenzene	**0.058**	**0.25**		**0.13**	**0.56**		**76.5%**	**0.059**	**0.26**	
4-Ethyltoluene	<0.035	<0.17		<0.035	<0.17		NC	<0.035	<0.17	
Heptane	**0.12**	**0.49**		**0.21**	**0.85**		**53.7%**	**0.14**	**0.56**	
Hexachlorobutadiene	<0.035	<0.37		<0.035	<0.37		NC	<0.035	<0.37	
Hexane	<1.4	<4.9		**1.8**	**6.3**		NC	<1.4	**<4.9**	
2-Hexanone (MBK)	<0.035	<0.14		<0.035	<0.14		NC	<0.035	<0.14	
Isopropanol	<1.4	<3.4		**2.9**	**7.2**		NC	**1.4**	**3.6**	
Methyl tert-Butyl Ether (MTBE)	<0.035	<0.13		<0.035	<0.13		NC	<0.035	<0.13	
Methylene Chloride	<0.35	<1.2		**1.3**	**4.4**		NC	**1.3**	**4.4**	
4-Methyl-2-pentanone (MIBK)	<0.035	<1.4		**0.097**	**0.4**		NC	<0.035	<0.14	
Naphthalene	**0.048**	**0.25**		**0.076**	**0.4**		**46.2%**	**0.039**	**0.2**	
Propene	<1.4	<2.4		<1.4	<2.4		NC	<1.4	<2.4	
Styrene	<0.035	<0.15		<0.035	<0.15		NC	<0.035	<0.15	
1,1,2,2-Tetrachloroethane	<0.035	<0.24		<0.035	<0.24		NC	<0.035	<0.24	
Tetrachloroethylene	**0.039**	**0.26**		**0.06**	**0.41**		**44.8%**	**0.045**	**0.3**	
Tetrahydrofuran	<0.035	<0.10		**0.12**	**0.37**		NC	<0.035	<0.10	
Toluene	**0.44**	**1.7**		**0.71**	**2.7**		**45.5%**	**0.4**	**1.5**	
1,2,4-Trichlorobenzene	<0.035	<0.26		<0.035	<0.26		NC	<0.035	<0.26	
1,1,1-Trichloroethane	<0.035	<0.19		<0.035	<0.19		NC	<0.035	<0.19	
1,1,2-Trichloroethane	<0.035	<0.19		<0.035	<0.19		NC	<0.035	<0.19	
Trichloroethylene	<0.035	<0.19		<0.035	<0.19		NC	<0.035	<0.19	
Trichlorofluoromethane (Freon 11)	**0.21**	**1.2**		**0.24**	**1.3**		**8.0%**	**0.23**	**1.3**	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1		<0.14	<1.1		NC	<0.14	<1.1	
1,2,4-Trimethylbenzene	**0.065**	**0.32**		**0.16**	**0.79**		**84.7%**	**0.065**	**0.32**	
1,3,5-Trimethylbenzene	<0.035	<0.17		**0.04**	**0.2**		NC	<0.035	<0.17	
Vinyl Acetate	<0.70	<2.5		<0.70	<2.5		NC	<0.70	<2.5	
Vinyl Chloride	<0.035	<0.090		<0.035	<0.090		NC	<0.035	<0.090	
m&p-Xylene	**0.18**	**0.79**	**J**	**0.28**	**1.2**	**J**	**41.2%**	**0.19**	**0.82**	**J**
o-Xylene	**0.071**	**0.31**		**0.11**	**0.47**		**41.0%**	**0.072**	**0.31**	

Notes:

Values in **bold** indicate detected concentrations

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

J: The reported results for acetone and m&p-xylene are flagged as estimates due to decreased precision for these analytes.

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

acetone, ethanol, methylene chloride and isopropanol

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

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

where: X1 = original sample, X2 = duplicate sample

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

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

Meteorological Summary
August 13th through August 17th, 2018

August 13th, 2018 *		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SSE	**1.65**	**86.7**

August 14th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
S	**1.33**	**83.5**

August 15th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
WSW	**1.37**	**83.7**

August 16th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SW	**1.00**	**84.3**

August 17th, 2018 ***		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SSE	**1.65**	**86.7**

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

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

*** Friday's meteorological data represents an average for the time period of 00:00 to 17:00.

WILSON IHRIG WEEKLY NOISE AND VIBRATION MONITORING REPORT

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

WI #15-081

MEMORANDUM

August 20, 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, 13 August – 17 August, 2018

Noise Monitoring Locations

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

Noise Monitoring Results

Figures 2 through 11 present the hourly Leq noise levels compared with the noise thresholds discussed in the noise monitoring plan[1]. Commercial and Industrial land uses are assigned an hourly Leq noise limit of 80 dBA for Daytime and Evening time periods. The average baseline noise measured in the project area in 2015 are also shown for reference[2].

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

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

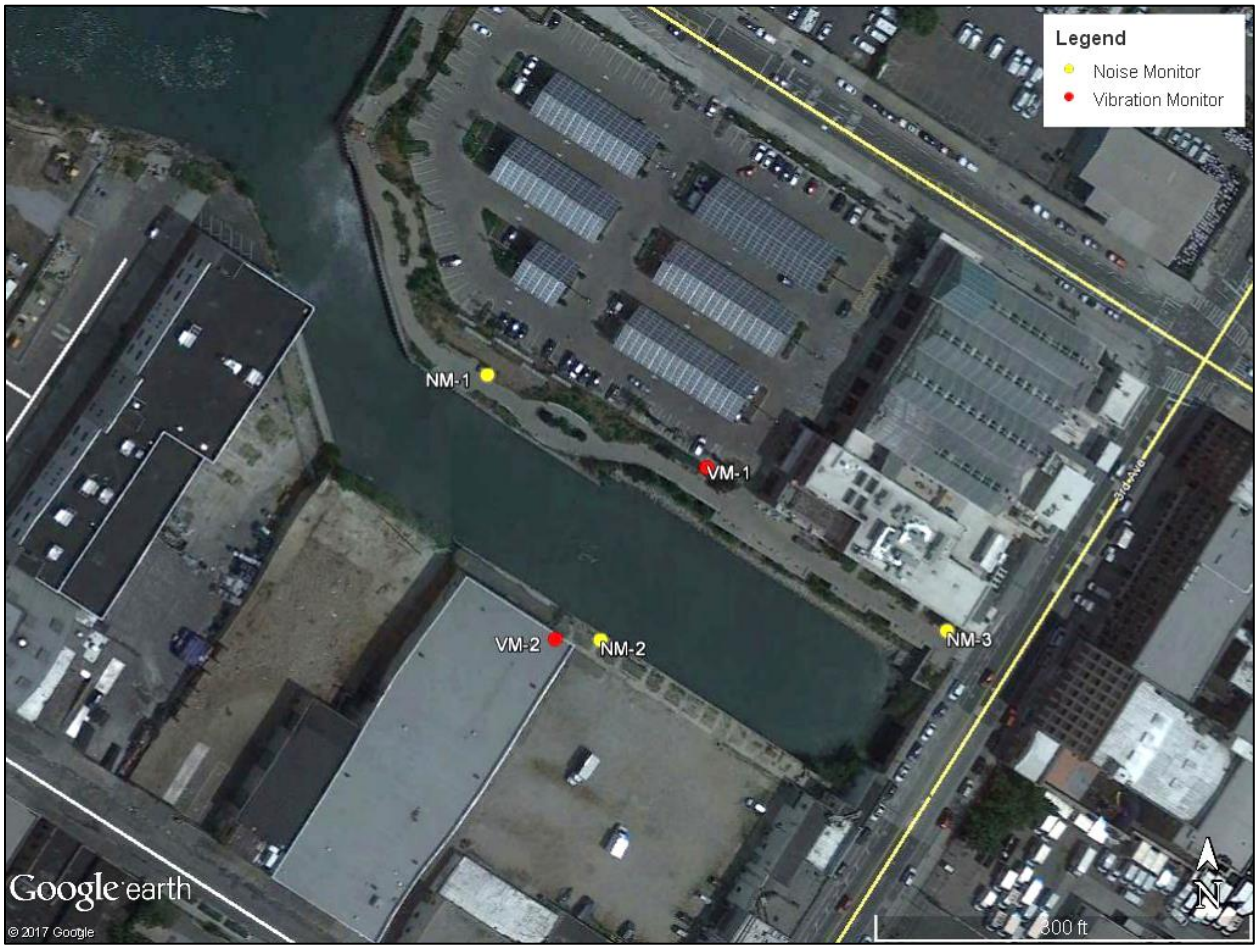


Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study

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

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

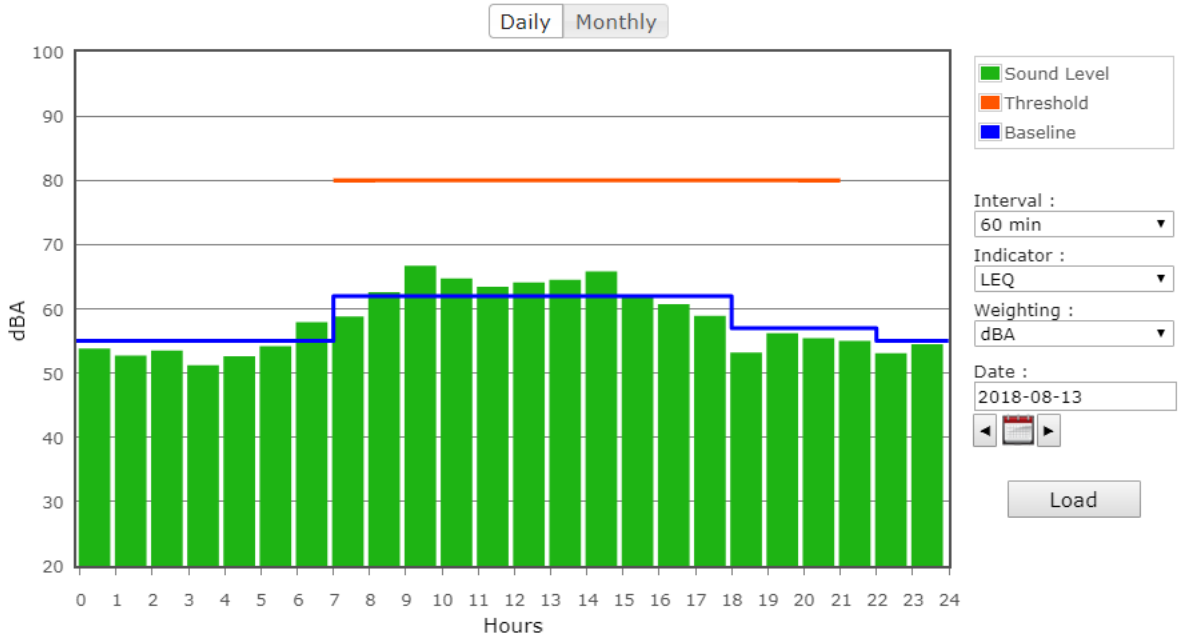


Figure 2: North Monitor NM-1 on Monday

**Levels for the 17:00 – 18:00 interval are unavailable due to intermittent equipment issues.*

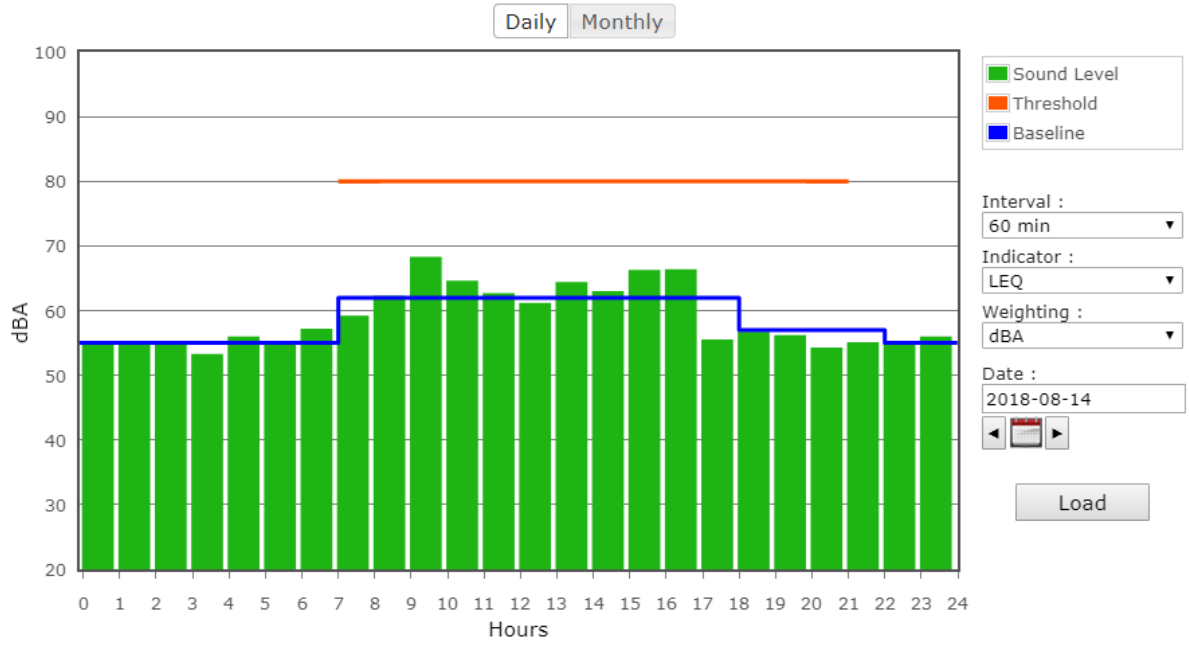


Figure 3: North Monitor NM-1 on Tuesday

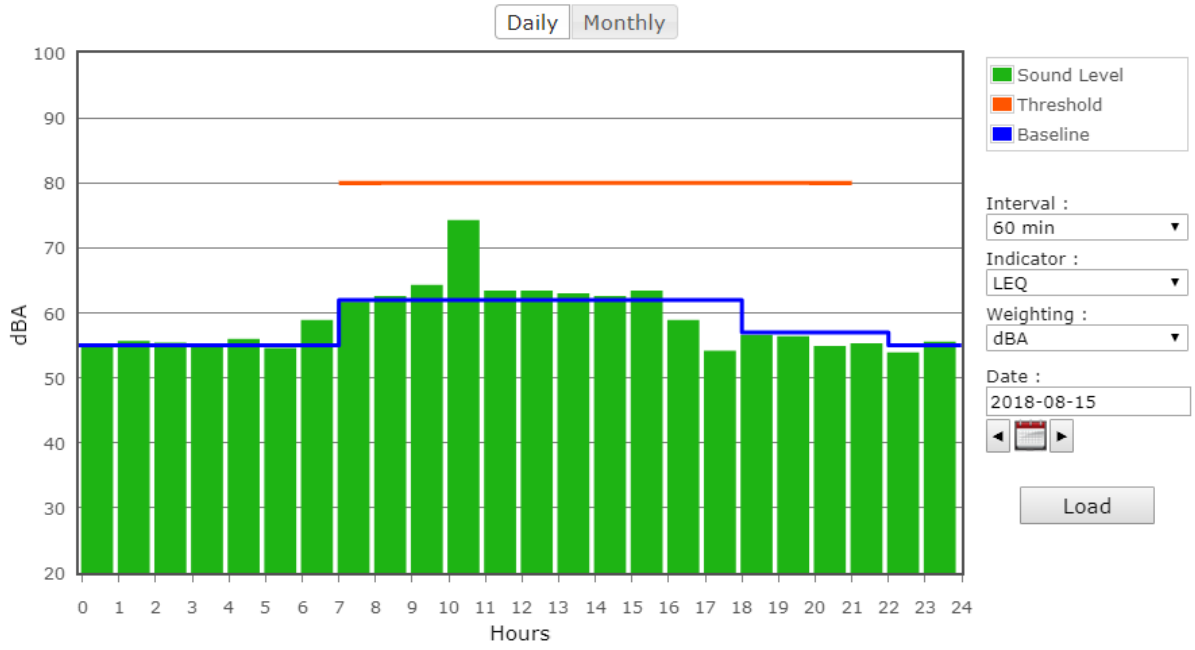


Figure 4: North Monitor NM-1 on Wednesday

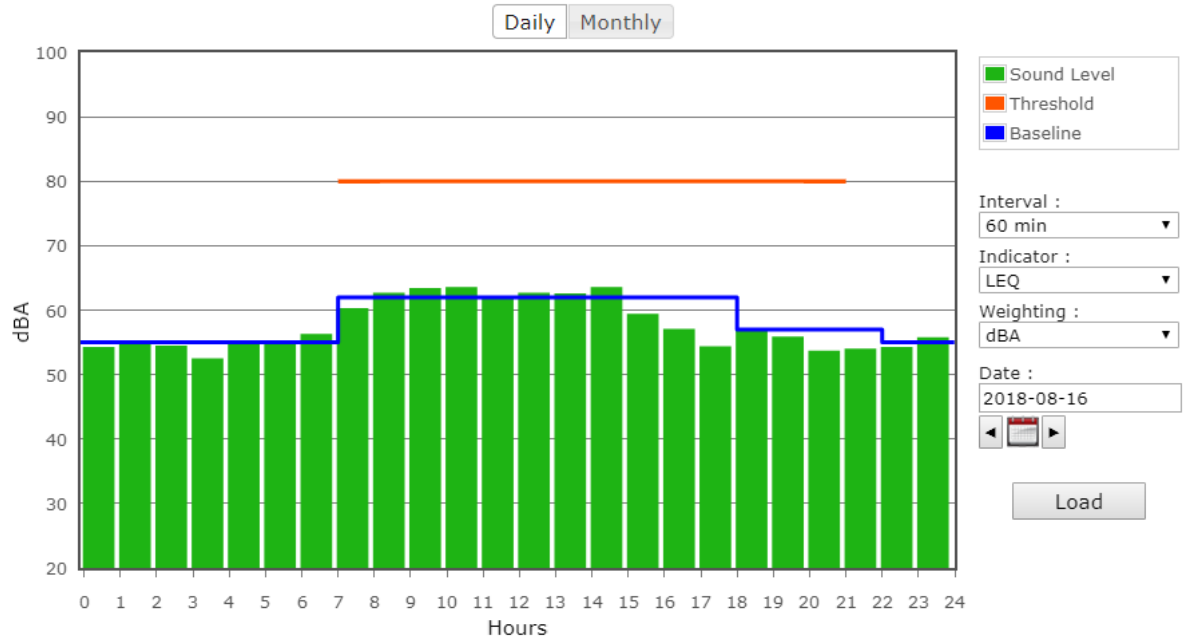


Figure 5: North Monitor NM-1 on Thursday

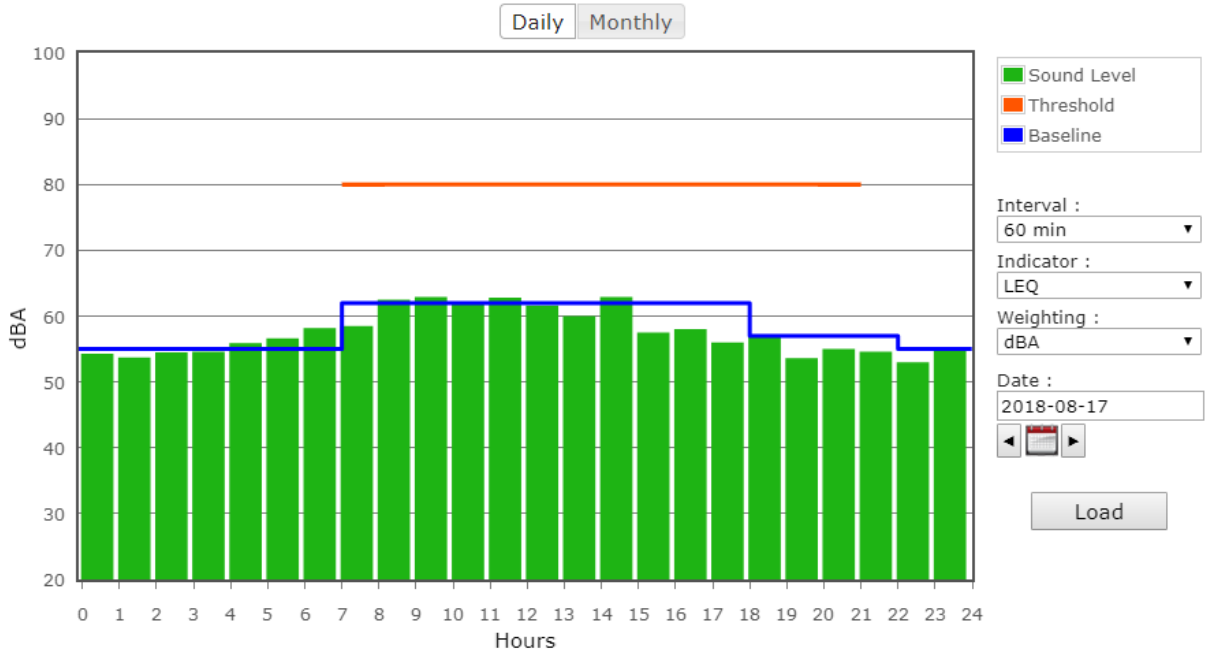


Figure 6: North Monitor NM-1 on Friday

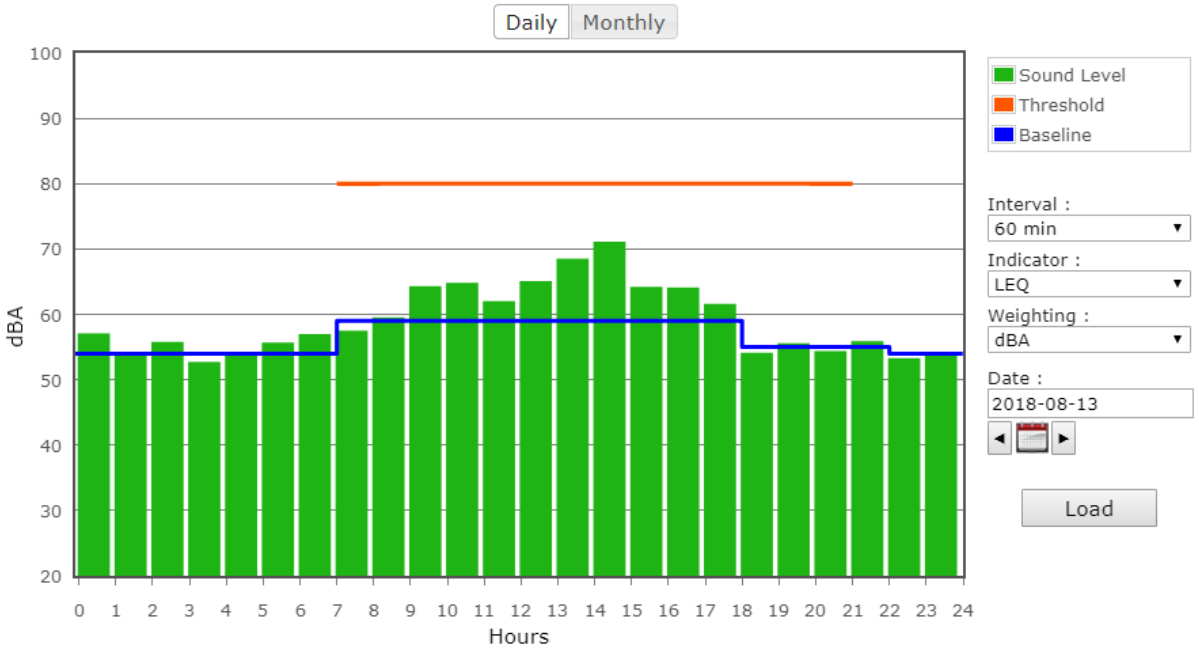


Figure 7: South Monitor NM-2 on Monday

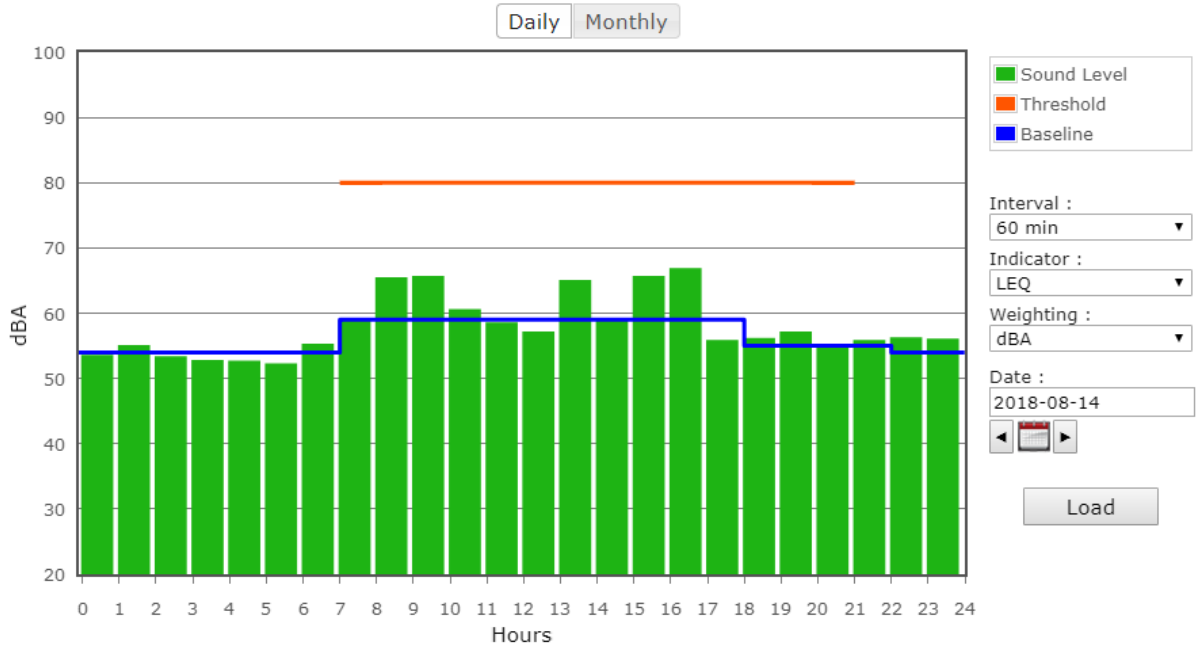


Figure 8: South Monitor NM-2 on Tuesday

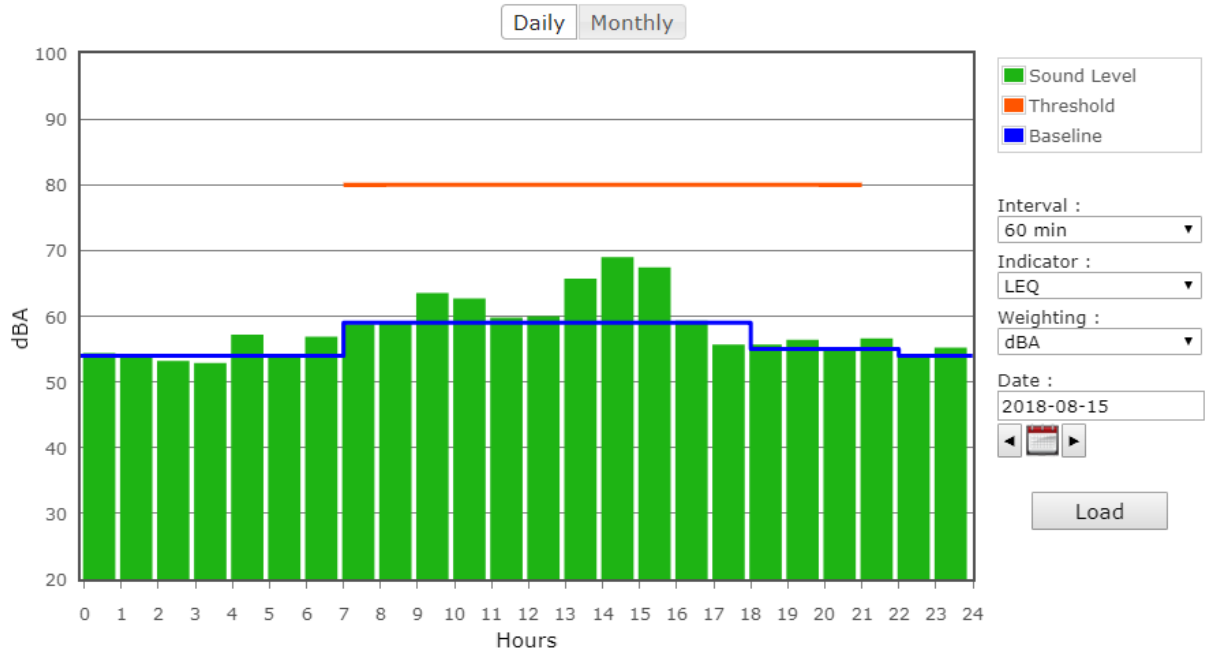


Figure 9: South Monitor NM-2 on Wednesday

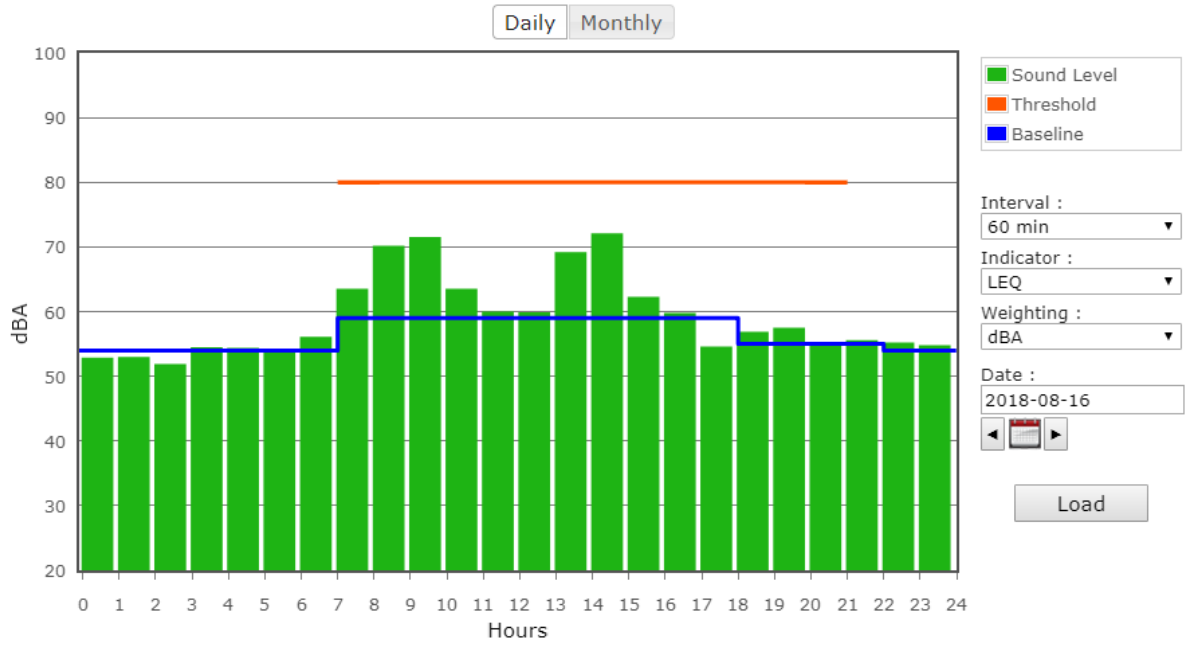


Figure 10: South Monitor NM-2 on Thursday

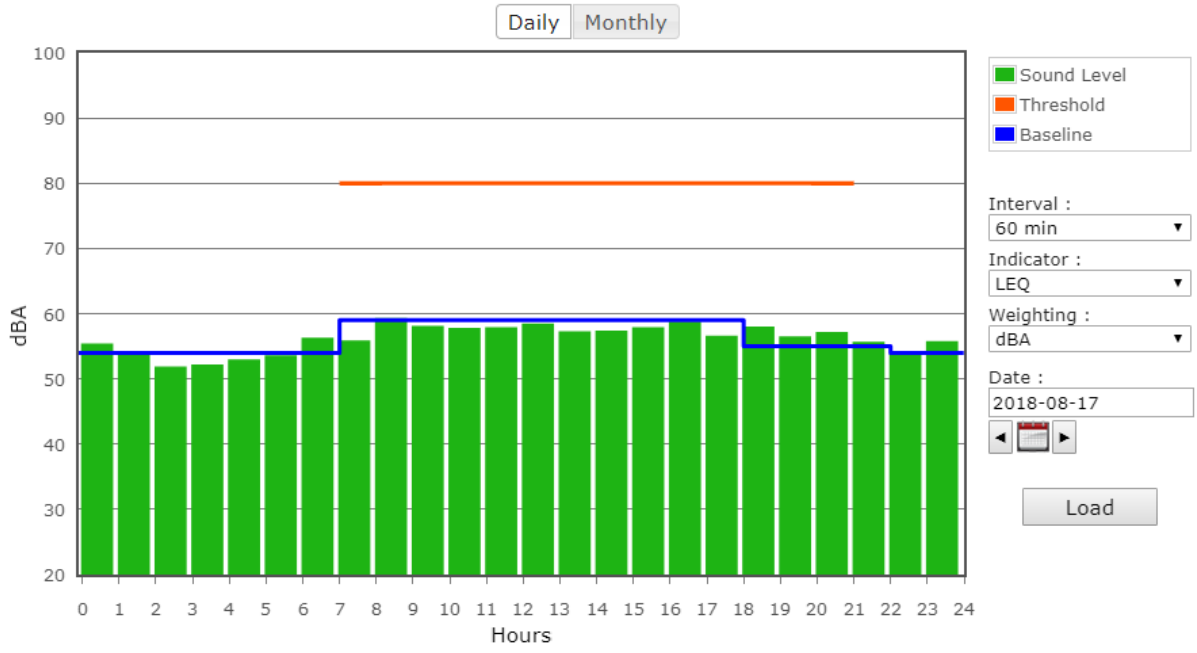


Figure 11: South Monitor NM-2 on Friday

AHRS WEEKLY REPORT

(NO ACTIVITIES DURING WEEK)

WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA

(NO ACTIVITIES DURING WEEK)

CUMULATIVE DREDGED MATERIAL CHART

(NO ACTIVITIES DURING WEEK)