

**WEEKLY PROGRESS REPORT – TRC SOLUTIONS**

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

**Project number: 283126**

**Period: December 18 to 22, 2017**

**Date of Report: January 10, 2018**

**Rev: 0**

**Prepared For: Gowanus Environmental Remediation Trust**



## **On-Site Activities Conducted During Week:**

### *Sevenson Environmental Services (SES)*

#### Sheet Pile Installation

- Installation of 22 pairs of sheet pile to approximate Station 6+04.
- Probing and locating of the timber crib bulkhead and installation of falsework to approximate Station 5+75.

#### Water Treatment and Monitoring

- Discharged 26,510 and 33,572 gallons of treated accumulated stormwater on 12/20/17 and 12/21/17, respectively.
- No exceedances of continuous monitoring.

#### Turbidity Monitoring

- Turbid water not observed migrating from the 4<sup>th</sup> Street Turning Basin.

#### Vibration Monitoring (subcontractor – Vibra-Tech)

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

### *Quality Assurance and Control – Geosyntec*

- No turbidity data available due to equipment transmission issues. Manually downloaded data to be provided in report for week ending 01/05/18.
- Water treatment system sampling performed on 12/20/17. Laboratory turnaround time is 10 business days.

### *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 4<sup>th</sup> Street Turning Basin Area.
- No exceedances of particulate matter of 10 microns in diameter or smaller (PM<sub>10</sub>) 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<sub>10</sub> in  $\mu\text{g}/\text{m}^3$ 
  - Station 1 – 45  $\mu\text{g}/\text{m}^3$  recorded on 12/18/17
  - Station 2 – 47  $\mu\text{g}/\text{m}^3$  recorded on 12/18/17
  - Station 3 – <1  $\mu\text{g}/\text{m}^3$  recorded throughout the week
  - Station 4 – 16  $\mu\text{g}/\text{m}^3$  recorded on 12/22/17
  - Station 5 – 47  $\mu\text{g}/\text{m}^3$  recorded on 12/18/17
  - Station 6 – 23  $\mu\text{g}/\text{m}^3$  recorded on 12/19/17
  - Station 7 – <1  $\mu\text{g}/\text{m}^3$  recorded throughout the week



- Maximum weekly measurements of TVOC in ppb
  - Station 1 – 31 ppb recorded on 12/19/17
  - Station 2 – 41 ppb recorded on 12/22/17
  - Station 3 – 27 ppb recorded on 12/19/17, 12/20/17, 12/21/17, and 12/22/17
  - Station 4 – 24 ppb recorded on 12/19/17
  - Station 5 – 61 ppb recorded on 12/19/17
  - Station 6 – 47 ppb recorded on 12/19/17 and 12/21/17
  - Station 7 – 27 ppb recorded on 12/20/17
- All real-time readings of hydrogen sulfide, ammonia, or formaldehyde less than instrument reporting limit except for the following hydrogen sulfide readings on 12/20/17.
  - ST-4 at 0720 – 2.8 ppb
  - ST-4 at 1350 – 7.2 ppb
- 24-hour sample collected at ST-3 on 12/18 through 12/19 and at ST-7 (collocated) on 12/19 through 12/20. Laboratory turnaround time is 10 business days.
- Tabulated laboratory analytical results for 24-hour sample collected at ST-4 on 11/20 through 11/21 and ST-5 on 11/21 through 11/22 presented in weekly CAMP report.

*Noise and Vibration Monitoring – Wilson Ihrig*

- Operated and maintained three (3) noise monitors: NM-1 (north side of canal on Whole Foods promenade), NM-2 (south side of canal on southeast corner of 386 3rd Avenue), and NM-3 (southeast corner of Whole Foods at 3rd Avenue Bridge).
- Exceedances of the hourly Leq noise limit of 80 dBA during sheet pile installation measured at all monitors. Mitigating measures being evaluated and implemented.
- Greatest hourly Leq noise measurements
  - Northern monitor (NM-1) – 87.9 dBA during 1500-1600 on 12/20/17
  - Southern monitor (NM-2) – 100.4 dBA during 1500-1600 on 12/20/17
  - 3<sup>rd</sup> Avenue Bridge monitor (NM-3) – 94.3 dBA during 1400-1500 on 12/21/17
- No exceedances of the commercial and industrial structures vibration criterion of 2.0 inches per second peak particle velocity.
- Greatest peak particle velocity measurements
  - Northern monitor (VM-1) – 0.113 in/sec event between 1300 and 1400 on 12/18/17
  - Southern monitor (VM-2) – 0.0487 in/sec event between 1200 and 1300 on 12/18/17

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

- No inspections conducted during week and expected prior to commencing Phase 1 dredging.

**Two-Week Look Ahead:**

Sevenson:

- Continue installation of steel sheet pile bulkhead supports.
- Perform vibration, benchmark, and optical monitoring of bulkheads and surrounding structures.

Geosyntec – Perform construction quality assurance responsibilities.

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise and vibration monitoring,

AHRS – No activities planned.



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

- None during this period.

Attachments:

1. Geosyntec In-Canal Water Quality Monitoring Weekly Data Summary (no data – to be provided in 01/05/18 report)
2. TRC Weekly CAMP Report
3. Wilson Ihrig Weekly Noise and Vibration Monitoring Report
4. AHRS Weekly Report (no activities during current week)
5. Water Treatment System Monitoring Analytical Laboratory Data (no activities during current week)
6. Cumulative Dredged Material Chart (no activities during current week)



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

<b>Photo No.</b> 001	<b>Date</b> 12-18-2107
-------------------------	---------------------------

**Description**  
Probing with pin pile and vibratory hammer.



<b>Photo No.</b> 002	<b>Date</b> 12-18-2017
-------------------------	---------------------------

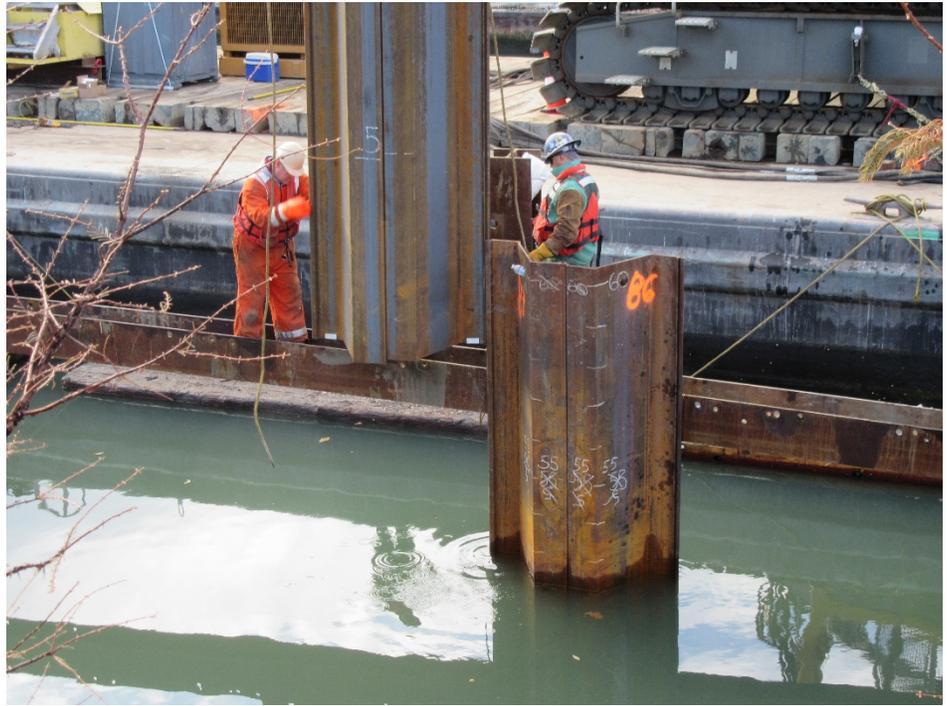
**Description**  
Working at low tide, notice wall in front of the installed sheet piles.



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

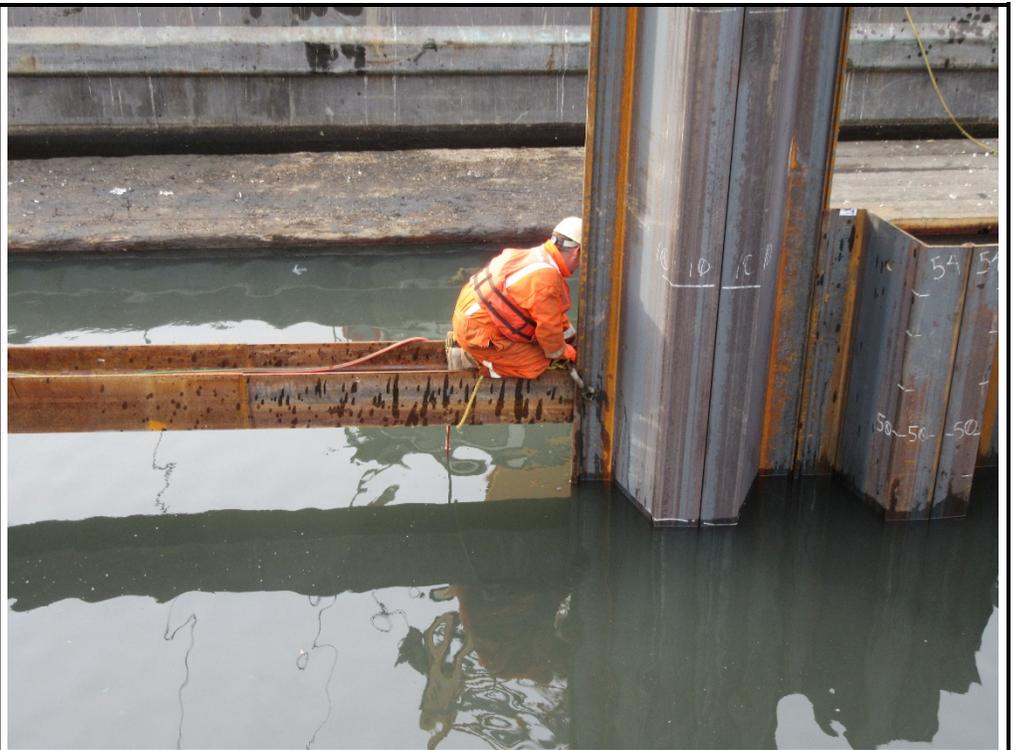
<b>Photo No.</b> 003	<b>Date</b> 12-19-2017
-------------------------	---------------------------

**Description**  
Threading the first pair of sheet piles for the day. Other sheet piles are driven to grade and under water (high tide).



<b>Photo No.</b> 004	<b>Date</b> 12-20-2017
-------------------------	---------------------------

**Description**  
Placing shackle on the leading edge of the sheet pile being driven to keep in place.



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

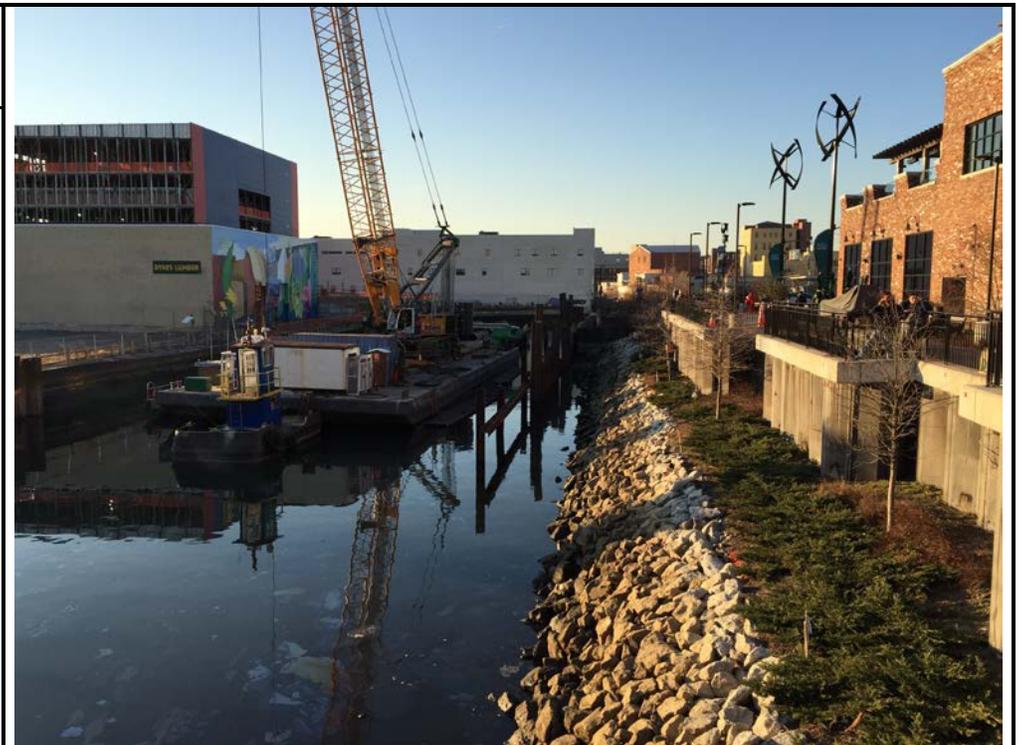
<b>Photo No.</b> 005	<b>Date</b> 12-20-2107
-------------------------	---------------------------

**Description**  
Driving leading sheet pile before driving rear sheet pile.



<b>Photo No.</b> 006	<b>Date</b> 12-21-17
-------------------------	-------------------------

**Description**  
Installed falsework an hour before low tide.



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

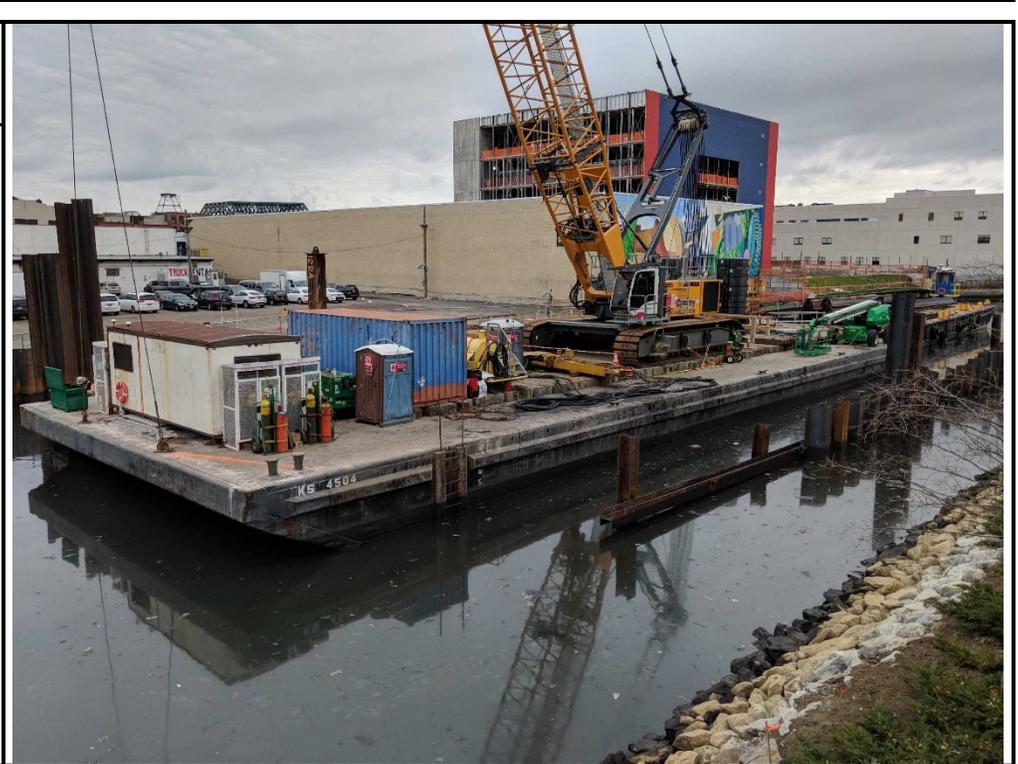
<b>Photo No.</b> 007	<b>Date</b> 12-22-2107
-------------------------	---------------------------

**Description**  
Moving last (sixth) pair into position for driving.



<b>Photo No.</b> 008	<b>Date</b> 12-22-17
-------------------------	-------------------------

**Description**  
Crane secured for the break.



**GEOSYNTEC IN-CANAL WATER QUALITY MONITORING WEEKLY DATA SUMMARY**  
**(TO BE INCLUDED IN 01/05/18 REPORT)**



**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  
12<sup>th</sup> Weekly Monitoring Period  
Summary Report:  
December 18<sup>th</sup> through December 22<sup>nd</sup>, 2017**

**Report Contents**

- Executive Summary
- Daily Data Summary Report – PM<sub>10</sub>/TVOC
  - Daily Meteorological Summary Report
    - Periodic Monitoring Results
- Volatile Organic Compounds (USEPA Method TO-15)

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

## **Executive Summary – Week 12 Monitoring Period December 18<sup>th</sup> through December 22<sup>nd</sup>, 2017**

The following report summarizes site air monitoring activities for the Week 12 monitoring period from December 18<sup>th</sup> through December 22<sup>nd</sup>, 2017. 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 4<sup>th</sup> 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 12 monitoring period there were no PM<sub>10</sub> or TVOC exceedances of the action level of 150ug/m<sup>3</sup> 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<sub>10</sub>) daily averages and maximums for Week 12.

Additional monitoring for hydrogen sulfide, ammonia, and formaldehyde took place at all stations throughout the Week 12 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 12 monitoring period of December 18<sup>th</sup>, through December 22<sup>nd</sup>, 2017 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 3 and 7. The ST-3 sample was collected on December 18<sup>th</sup>, through December 19<sup>th</sup>, 2017. Collocated samples (ST-7A and ST-7B) were collected at Station 7 on December 19<sup>th</sup>, through December 20<sup>th</sup>, 2017. All samples were collected over a 24-hour period. Samples were 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 24-hour samples collected at Stations 4 and 5 during Week 8. ST-4 was collected on November 20<sup>th</sup>, through November 21<sup>st</sup>, 2017. ST-5 was collected on November 21<sup>st</sup>, through November 22<sup>nd</sup>, 201. Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28<sup>th</sup> and 31<sup>st</sup>, 2017.

Site activities which were conducted at the Citizen Property on December 18<sup>th</sup> through December 22<sup>nd</sup>, 2017 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
- Construction of dredge water treatment plant enclosure

Site activities which were conducted at the 4<sup>th</sup> St Turning Basin Area of the Canal on December 18<sup>th</sup> through December 22<sup>nd</sup>, 2017 included the following:

- Installation of false work (i.e., vertical and horizontal alignment guide) in preparation for Sheet Piling east of Station 7+00
- Installation of 22 pairs of Sheet Piling on the north side of the canal near Whole Foods (up to Station 6+04)
- Probing to determine edge of toe of existing wooden crib bulkhead east of Station 7+00 near Whole Foods

# Gowanus Canal TB-4 Dredging and Capping Pilot Study

## Brooklyn, New York

Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)

12/18/2017 06:30 AM - 12/18/17 23:45 PM

### Station 1

TVOC			PM <sub>10</sub>		
Max.	29	ppb	Max.	46	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	29	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 2

TVOC			PM <sub>10</sub>		
Max.	21	ppb	Max.	47	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	29	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 3

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

### Station 4

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	5	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 5

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	47	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	18	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 6

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

### Station 7

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

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

# Gowanus Canal TB-4 Dredging and Capping Pilot Study

## Brooklyn, New York

Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)

12/19/2017 00:00 AM - 12/19/17 23:45 PM

### Station 1

TVOC			PM <sub>10</sub>		
Max.	31	ppb	Max.	32	ug/m <sup>3</sup>
Avg.	2	ppb	Avg.	19	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 2

TVOC			PM <sub>10</sub>		
Max.	10	ppb	Max.	35	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	19	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 3

TVOC			PM <sub>10</sub>		
Max.	27	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	5	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 4

TVOC			PM <sub>10</sub>		
Max.	24	ppb	Max.	27	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 5

TVOC			PM <sub>10</sub>		
Max.	61	ppb	Max.	23	ug/m <sup>3</sup>
Avg.	6	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 6

TVOC			PM <sub>10</sub>		
Max.	47	ppb	Max.	23	ug/m <sup>3</sup>
Avg.	21	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 7

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

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

# Gowanus Canal TB-4 Dredging and Capping Pilot Study

## Brooklyn, New York

Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)

12/20/2017 00:00 AM - 12/20/17 23:45 PM

### Station 1

TVOC			PM <sub>10</sub>		
Max.	1	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 2

TVOC			PM <sub>10</sub>		
Max.	20	ppb	Max.	14	ug/m <sup>3</sup>
Avg.	2	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 3

TVOC			PM <sub>10</sub>		
Max.	27	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	13	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 4

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	15	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 5

TVOC			PM <sub>10</sub>		
Max.	20	ppb	Max.	18	ug/m <sup>3</sup>
Avg.	13	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 6

TVOC			PM <sub>10</sub>		
Max.	7	ppb	Max.	16	ug/m <sup>3</sup>
Avg.	5	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 7

TVOC			PM <sub>10</sub>		
Max.	27	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	5	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

# Gowanus Canal TB-4 Dredging and Capping Pilot Study

## Brooklyn, New York

Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)

12/21/2017 00:00 AM - 12/21/17 23:45 PM

### Station 1

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	9	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 2

TVOC			PM <sub>10</sub>		
Max.	25	ppb	Max.	8	ug/m <sup>3</sup>
Avg.	7	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 3

TVOC			PM <sub>10</sub>		
Max.	27	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	11	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 4

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	5	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	3	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 5

TVOC			PM <sub>10</sub>		
Max.	20	ppb	Max.	11	ug/m <sup>3</sup>
Avg.	11	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 6

TVOC			PM <sub>10</sub>		
Max.	47	ppb	Max.	8	ug/m <sup>3</sup>
Avg.	18	ppb	Avg.	1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 7

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

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

# Gowanus Canal TB-4 Dredging and Capping Pilot Study

## Brooklyn, New York

Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)

12/22/2017 00:00 AM - 12/22/17 13:00 PM

### Station 1

TVOC			PM <sub>10</sub>		
Max.	9	ppb	Max.	15	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 2

TVOC			PM <sub>10</sub>		
Max.	41	ppb	Max.	19	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 3

TVOC			PM <sub>10</sub>		
Max.	27	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	16	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 4

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	16	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 5

TVOC			PM <sub>10</sub>		
Max.	20	ppb	Max.	16	ug/m <sup>3</sup>
Avg.	14	ppb	Avg.	8	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 6

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

### Station 7

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

TVOC – Total Volatile Organic Compounds

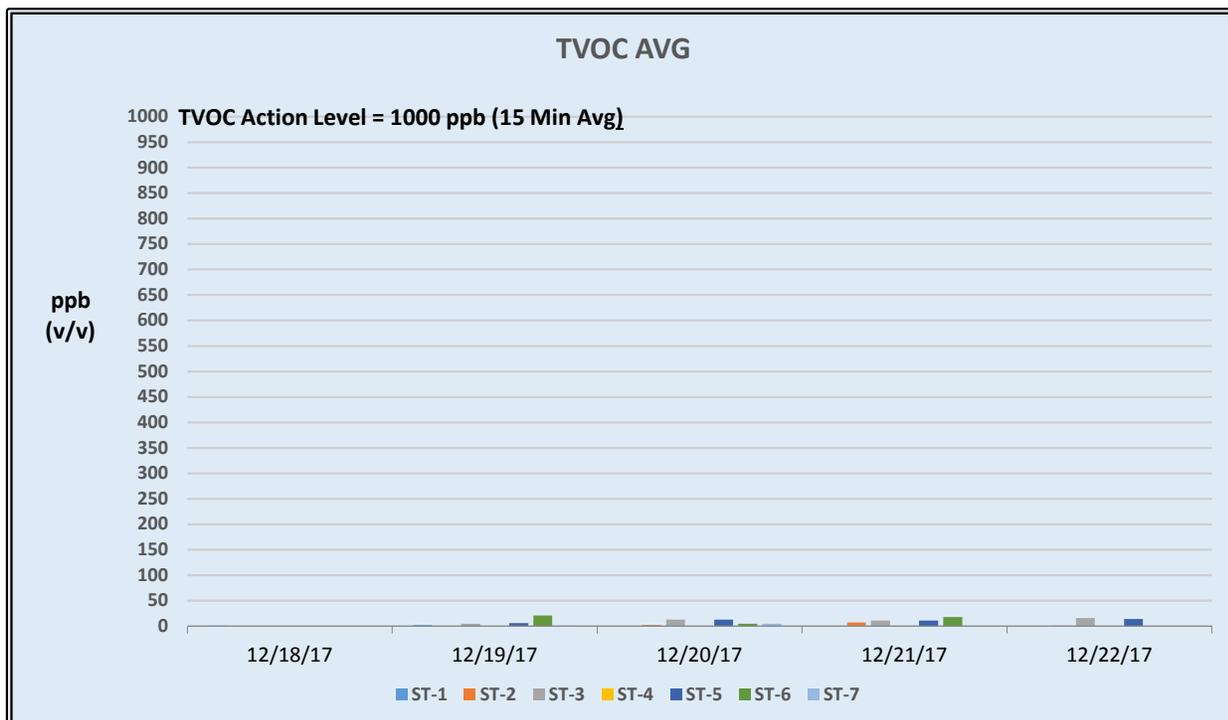
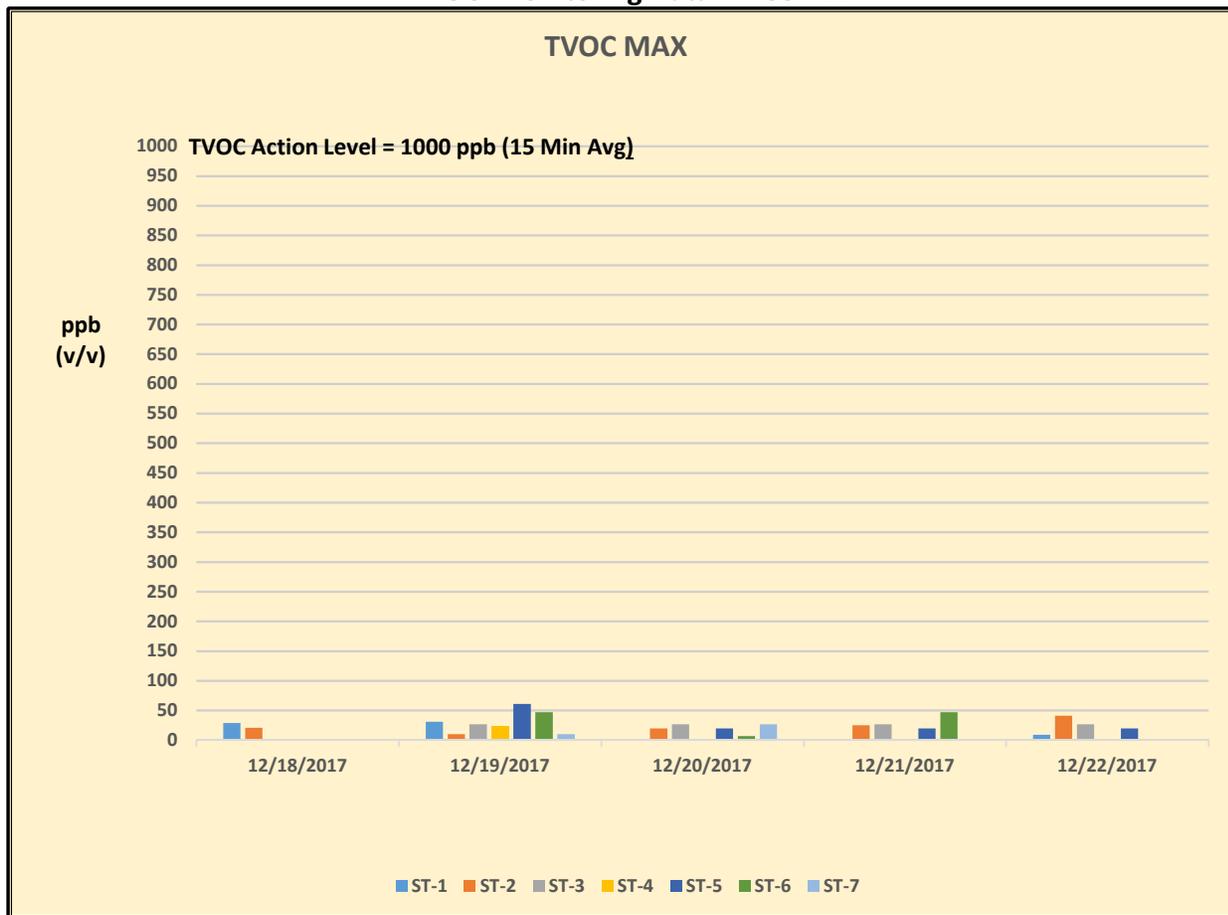
PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

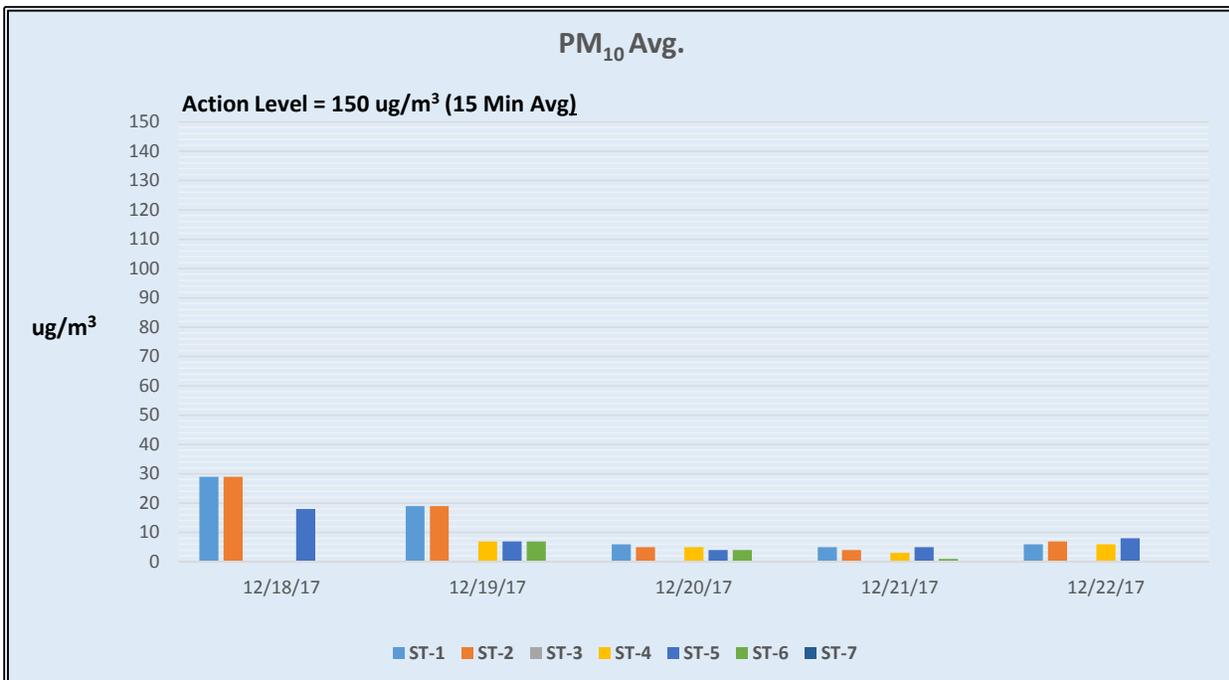
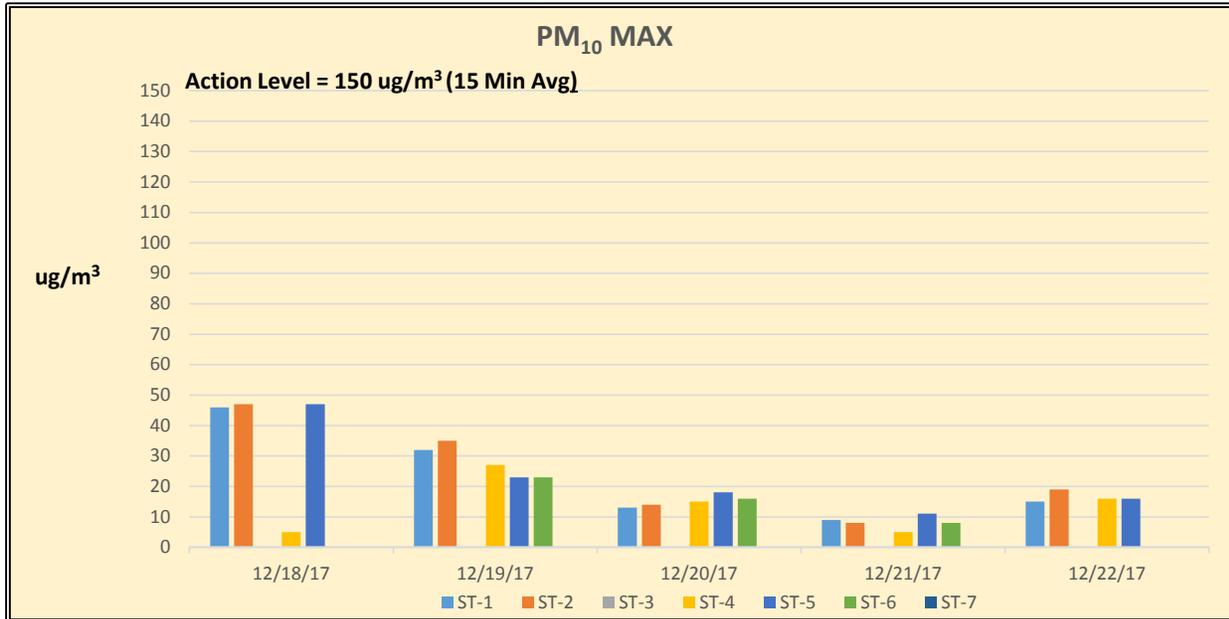
Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

**Figure 1**  
**Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program**  
**TVOC Monitoring Data - Week 12**



**Figure 2**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**TRC CAMP PM<sub>10</sub> Monitoring Data - Week 12**



**Table 1****Week 12****Summary of Additional Periodic (Daily) Monitoring Data**

December 18 <sup>th</sup> , 2017				
Station Id	Time	Formaldehyde (CHO) (ppb)	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)	Ammonia (NH <sub>3</sub> ) (ppm)
ST-1	7:30	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-2	7:35	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-3	7:55	<50	<3	<1.0
	15:50	<50	<3	<1.0
ST-4	8:10	<50	<3	<1.0
	16:00	<50	<3	<1.0
ST-5	8:15	<50	<3	<1.0
	16:10	<50	<3	<1.0
ST-6	9:00	<50	<3	<1.0
	16:30	<50	<3	<1.0
ST-7	9:15	<50	<3	<1.0
	16:40	<50	<3	<1.0

December 19 <sup>th</sup> , 2017				
Station Id	Time	Formaldehyde (CHO) (ppb)	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)	Ammonia (NH <sub>3</sub> ) (ppm)
ST-1	9:00	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-2	9:10	<50	<3	<1.0
	14:35	<50	<3	<1.0
ST-3	9:30	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-4	9:40	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-5	9:45	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-6	10:00	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-7	10:15	<50	<3	<1.0
	15:30	<50	<3	<1.0

**Table 1**

**Week 12**

**Summary of Additional Periodic (Daily) Monitoring Data**

December 20 <sup>th</sup> , 2017				
Station Id	Time	Formaldehyde (CHO) (ppb)	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)	Ammonia (NH <sub>3</sub> ) (ppm)
ST-1	9:00	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-2	9:05	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-3	9:20	<50	<3	<1.0
	16:00	<50	<3	<1.0
ST-4	9:35	<50	2.8	<1.0
	16:05	<50	7.2	<1.0
ST-5	9:40	<50	<3	<1.0
	16:10	<50	<3	<1.0
ST-6	10:00	<50	<3	<1.0
	16:30	<50	<3	<1.0
ST-7	10:15	<50	<3	<1.0
	16:45	<50	<3	<1.0

December 21 <sup>st</sup> , 2017				
Station Id	Time	Formaldehyde (CHO) (ppb)	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)	Ammonia (NH <sub>3</sub> ) (ppm)
ST-1	7:15	<50	<3	<1.0
	13:15	<50	<3	<1.0
ST-2	7:20	<50	<3	<1.0
	13:20	<50	<3	<1.0
ST-3	7:40	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-4	7:50	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-5	9:40	<50	<3	<1.0
	14:10	<50	<3	<1.0
ST-6	10:00	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-7	10:15	<50	<3	<1.0
	14:45	<50	<3	<1.0

**Table 1**

**Week 12**

**Summary of Additional Periodic (Daily) Monitoring Data**

December 22 <sup>nd</sup> , 2017				
Station Id	Time	Formaldehyde (CHO) (ppb)	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)	Ammonia (NH <sub>3</sub> ) (ppm)
ST-1	9:00	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-2	9:05	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-3	9:15	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-4	9:20	<50	<3	<1.0
	15:45	<50	<3	<1.0
ST-5	9:30	<50	<3	<1.0
	16:00	<50	<3	<1.0
ST-6	10:00	<50	<3	<1.0
	16:20	<50	<3	<1.0
ST-7	10:10	<50	<3	<1.0
	16:30	<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 8 VOCs Results: November 20th through 21st and November 21st through 22nd**

Sample ID	ST-4-VOC-112017		ST-5-VOC-112117			
Laboratory ID	17K1517-01		17K1517-02			
Date Sampled	11/20/17 11:30 - 11/21/17 11:30		11/21/17 13:00 - 11/22/17 13:00			
Location	Station 4		Station 5			
	ppbV	ug/m3	ppbV	ug/m3		
<b>VOCs - TO-15</b>						
Acetone	<b>4</b>	<b>9.6</b>	<b>4.2</b>	<b>10</b>		
Benzene	<b>0.23</b>	<b>0.755</b>	<b>0.33</b>	<b>1.1</b>		
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	<b>0.038</b>	<b>0.084</b>	<b>0.057</b>	<b>0.13</b>		
2-Butanone (MEK)	<1.4	<4.1	<1.4	<4.1		
Carbon Disulfide	<0.35	<1.1	<0.35	<1.1		
Carbon Tetrachloride	<b>0.073</b>	<b>0.46</b>	<b>0.074</b>	<b>0.46</b>		
Chlorobenzene	<0.035	<0.16	<0.035	<0.16		
Chloroethane	<0.035	<0.19	<0.035	<0.19		
Chloroform	<0.035	<0.17	<b>0.036</b>	<b>0.18</b>		
Chloromethane	<b>0.49</b>	<b>1</b>	<b>0.5</b>	<b>1</b>		
Cyclohexane	<b>0.1</b>	<b>0.36</b>	<b>0.1</b>	<b>0.36</b>		
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)	<b>0.3</b>	<b>1.5</b>	<b>0.28</b>	<b>1.4</b>		
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	<b>6.3</b>	<b>12</b>	J-	<b>9.6</b>	<b>18</b>	J-
Ethyl Acetate	<b>0.16</b>	<b>0.57</b>		<b>0.27</b>	<b>0.97</b>	
Ethylbenzene	<b>0.069</b>	<b>0.3</b>		<b>0.11</b>	<b>0.47</b>	
4-Ethyltoluene	<0.035	<0.17		<b>0.037</b>	<b>0.18</b>	
Heptane	<b>0.14</b>	<b>0.59</b>		<b>0.18</b>	<b>0.73</b>	
Hexachlorobutadiene	<0.035	<0.37	J-	<0.035	<0.37	J-
Hexane	<1.4	<4.9		<1.4	<4.9	
2-Hexanone (MBK)	<b>0.081</b>	<b>0.33</b>		<0.035	<0.29	
Isopropanol	<1.4	<3.4	J-	<b>1.9</b>	<b>4.7</b>	J-
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)	<b>0.065</b>	<b>0.27</b>		<b>0.078</b>	<b>0.32</b>	
Naphthalene	<0.14	<0.18	J	<0.14	<0.18	J
Propene	<1.4	<2.4		<1.4	<2.4	
Styrene	<0.035	<0.15		<b>0.038</b>	<b>0.16</b>	
1,1,2,2-Tetrachloroethane	<0.035	<0.24		<0.035	<0.24	
Tetrachloroethylene	<b>0.69</b>	<b>4.7</b>		<b>0.36</b>	<b>2.5</b>	
Tetrahydrofuran	<0.035	<0.10		<0.035	<0.10	
Toluene	<b>0.67</b>	<b>2.5</b>		<b>1.2</b>	<b>4.5</b>	
1,2,4-Trichlorobenzene	<0.070	<0.26	J-	<0.070	<0.26	J-
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)	<b>0.2</b>	<b>1.1</b>		<b>0.19</b>	<b>1.1</b>	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1		<0.14	<1.1	
1,2,4-Trimethylbenzene	<b>0.072</b>	<b>0.36</b>		<b>0.13</b>	<b>0.65</b>	
1,3,5-Trimethylbenzene	<0.035	<0.17		<b>0.037</b>	<b>0.18</b>	
Vinyl Acetate	<0.70	<2.5		<0.70	<2.5	
Vinyl Chloride	<0.035	<0.090		<0.035	<0.090	
m&p-Xylene	<b>0.23</b>	<b>0.98</b>		<b>0.35</b>	<b>1.5</b>	
o-Xylene	<b>0.083</b>	<b>0.36</b>		<b>0.13</b>	<b>0.56</b>	

Notes:

Values in **bold** indicate detected concentrations

J: The results for naphthalene are estimated.

J-: The results for 1,2,4-trichlorobenzene, ethanol, hexachlorobutadiene, and isopropanol 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



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

## Meteorological Summary

December 18<sup>th</sup> through December 22<sup>nd</sup>, 2017

December 18 <sup>th</sup> , 2017		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SSE	1.54	42.0

December 19 <sup>th</sup> , 2017		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SW	1.15	48.9

December 20 <sup>th</sup> , 2017		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
WSW	5.45	26.5

December 21 <sup>st</sup> , 2017		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SSW	3.09	27.9

December 22 <sup>nd</sup> , 2017		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
WSW	2.24	24.1

\*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.

\*All meteorological data represents an average for the time period of 00:00 to 14:00 for Friday.

**WILSON IHRIG WEEKLY NOISE AND VIBRATION MONITORING REPORT**





WI #15-081

**MEMORANDUM**

December 27, 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, 18 December – 22 December, 2017

**Noise Monitoring Locations**

Figure 1 shows the noise monitoring locations. NM-1 is installed at a light pole on the north side of TB4 and is approximately 25 feet from the north edge of the canal. NM-2 is installed at the existing guard rail on the south side of TB4, approximately 4 feet from the south edge of the canal. NM-3 is installed at a light pole on the north side of TB4 near 3rd Avenue, approximately 50 feet from the north edge of the canal. Photos 1, 2, and 3 show the recent field conditions at the monitors.

**Vibration Monitoring Locations**

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

**Noise Monitoring Results**

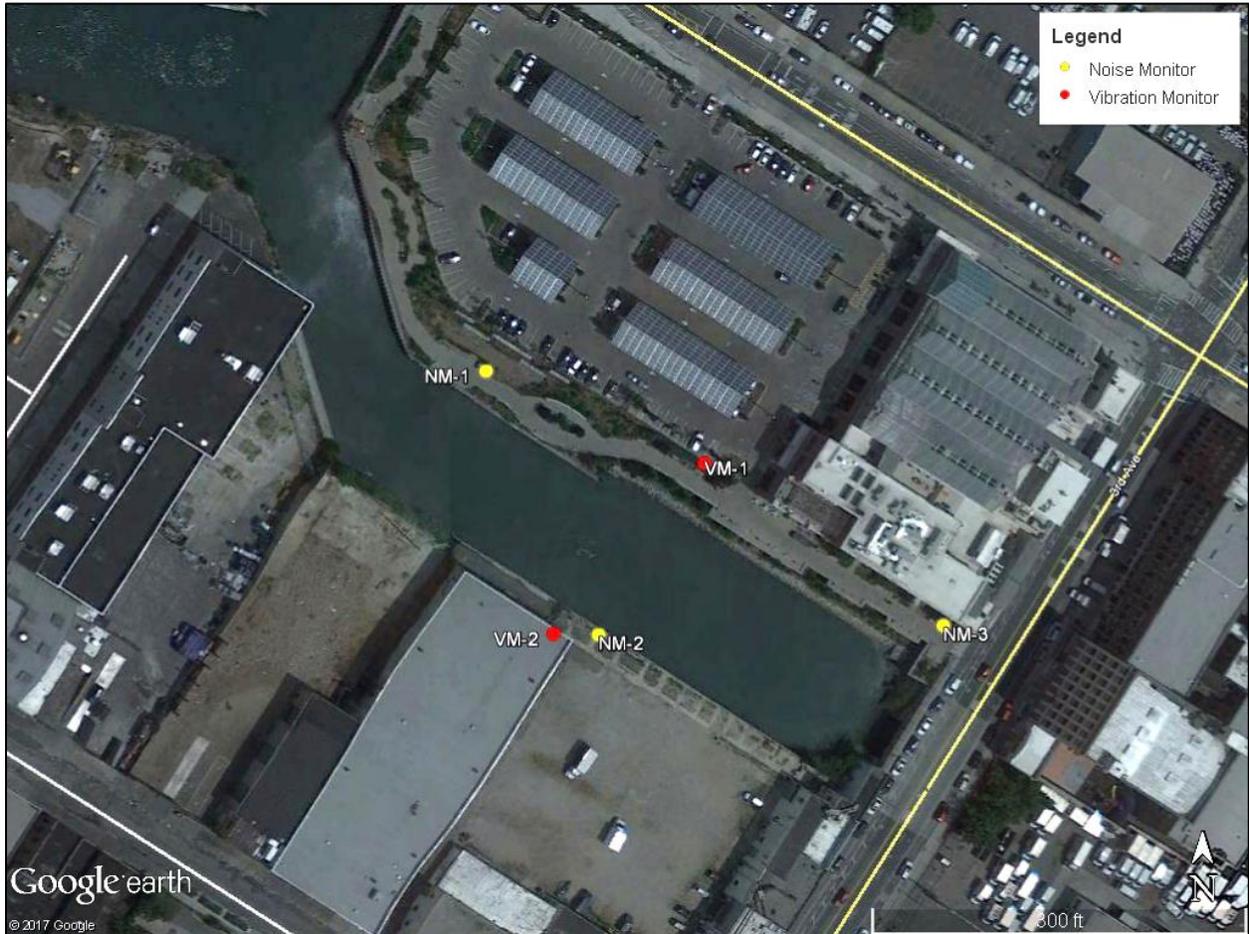
Figures 2 through 16 present the hourly Leq noise levels compared with the noise thresholds discussed in the noise monitoring plan<sup>1</sup>. Commercial and Industrial land uses are assigned an hourly Leq noise limit of 80 dBA for Daytime and Evening time periods. The average baseline noise measured in the project area in 2015 are also shown for reference<sup>2</sup>. Some noise level intervals for Northeast Monitor NM-3 are incomplete due to equipment issues.

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

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

### Vibration Monitoring Results

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



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

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



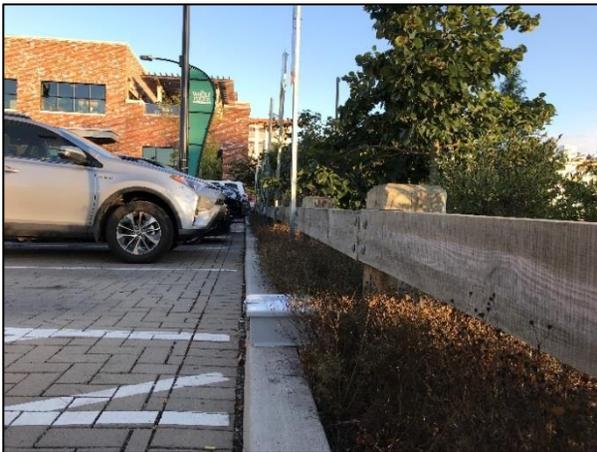
**Photo 1: Noise Monitoring Location NM-1  
(26 September 2017)**



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



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



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



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

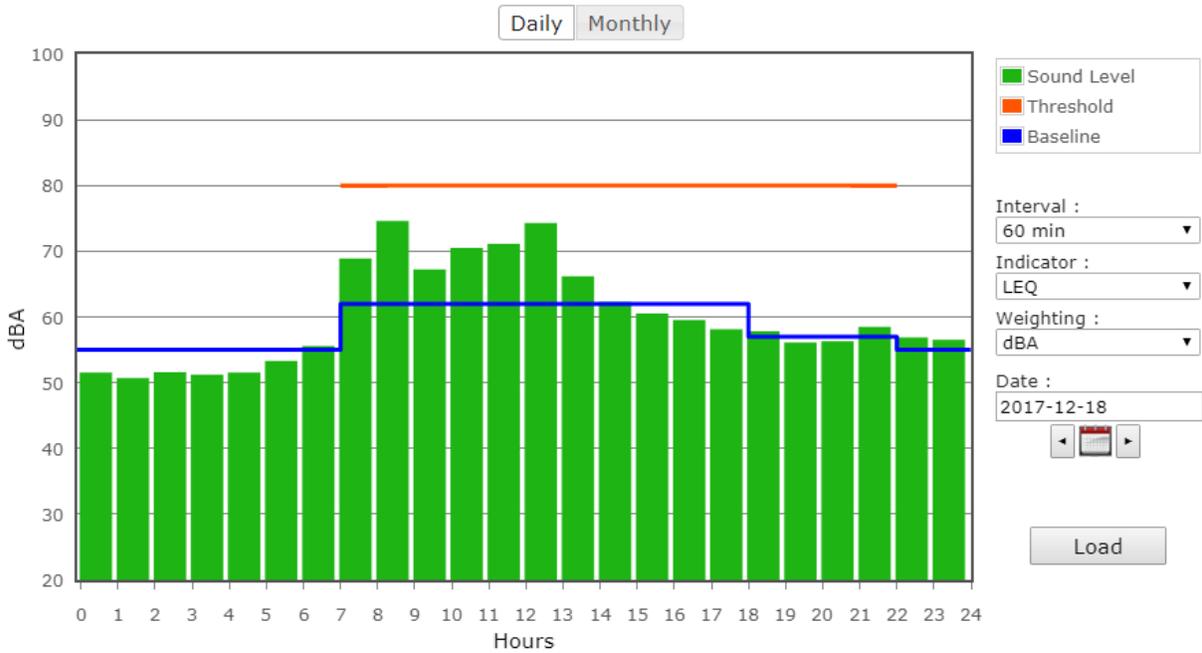


Figure 2: North Monitor NM-1 on Monday

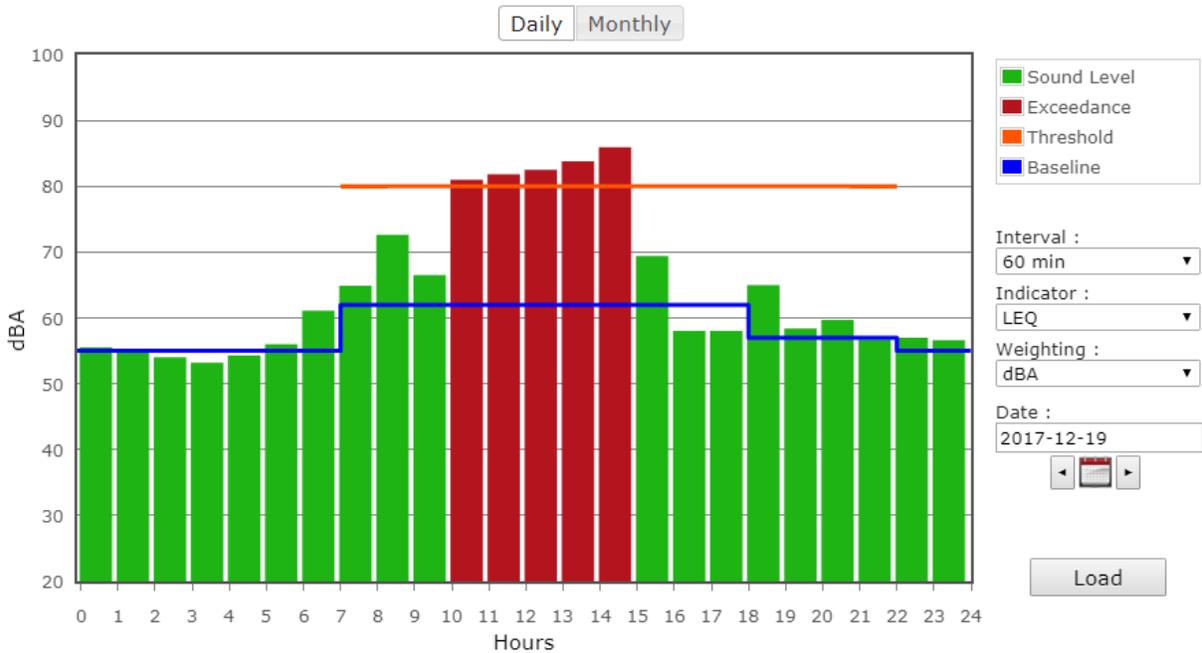


Figure 3: North Monitor NM-1 on Tuesday

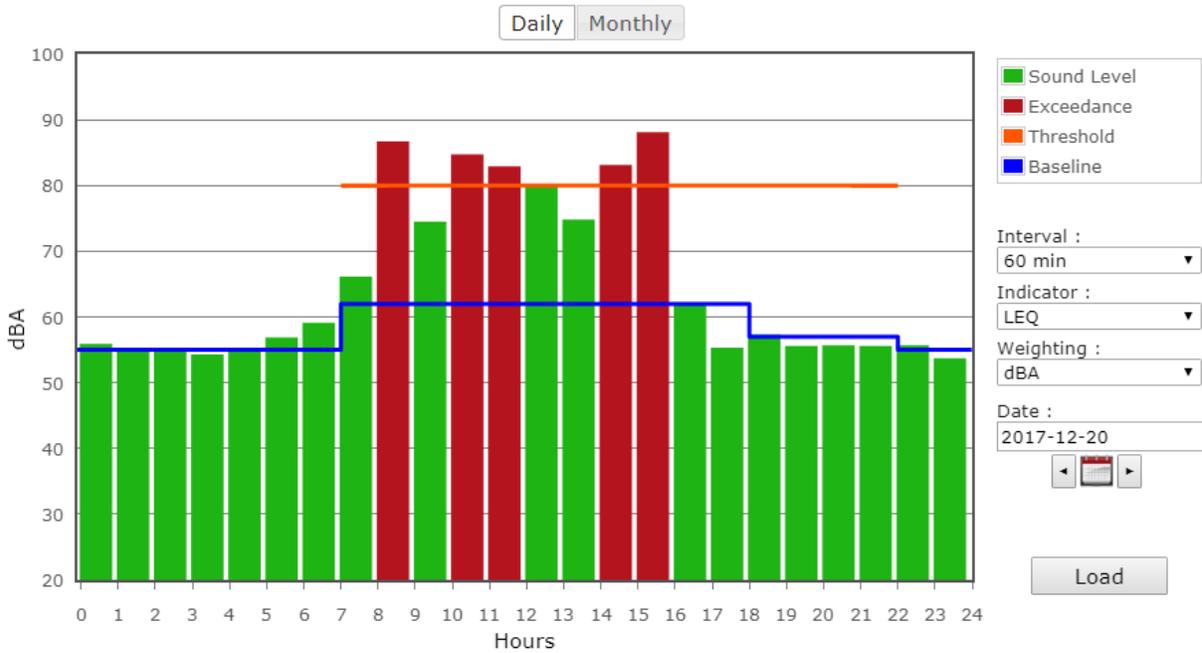


Figure 4: North Monitor NM-1 on Wednesday

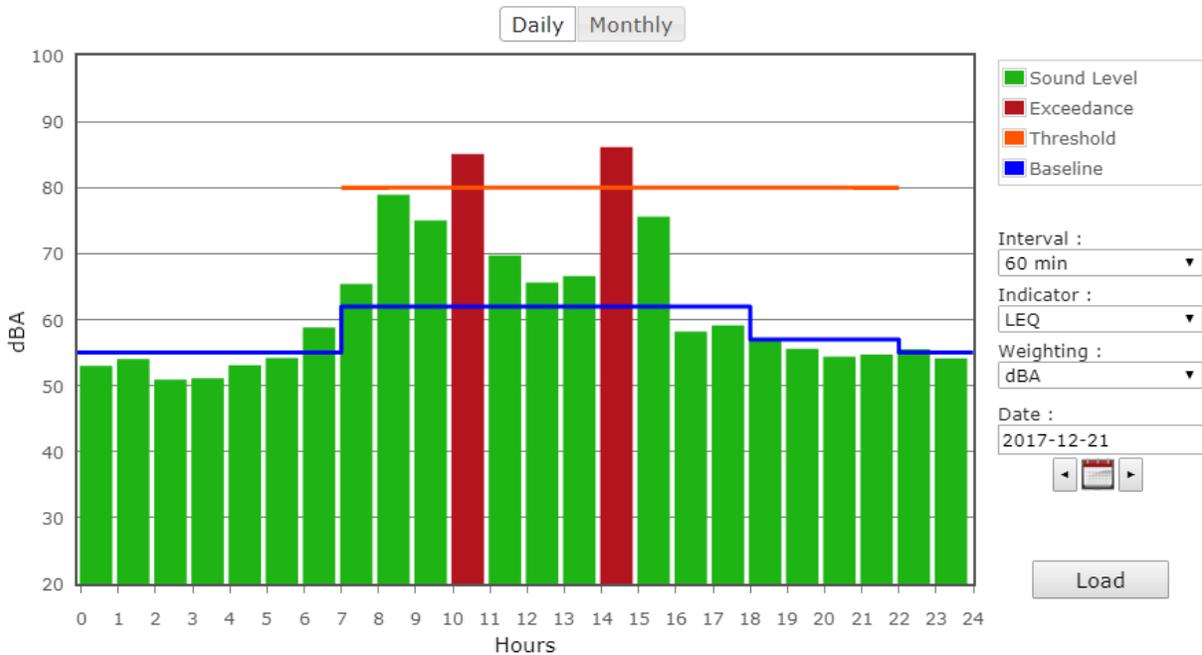


Figure 5: North Monitor NM-1 on Thursday

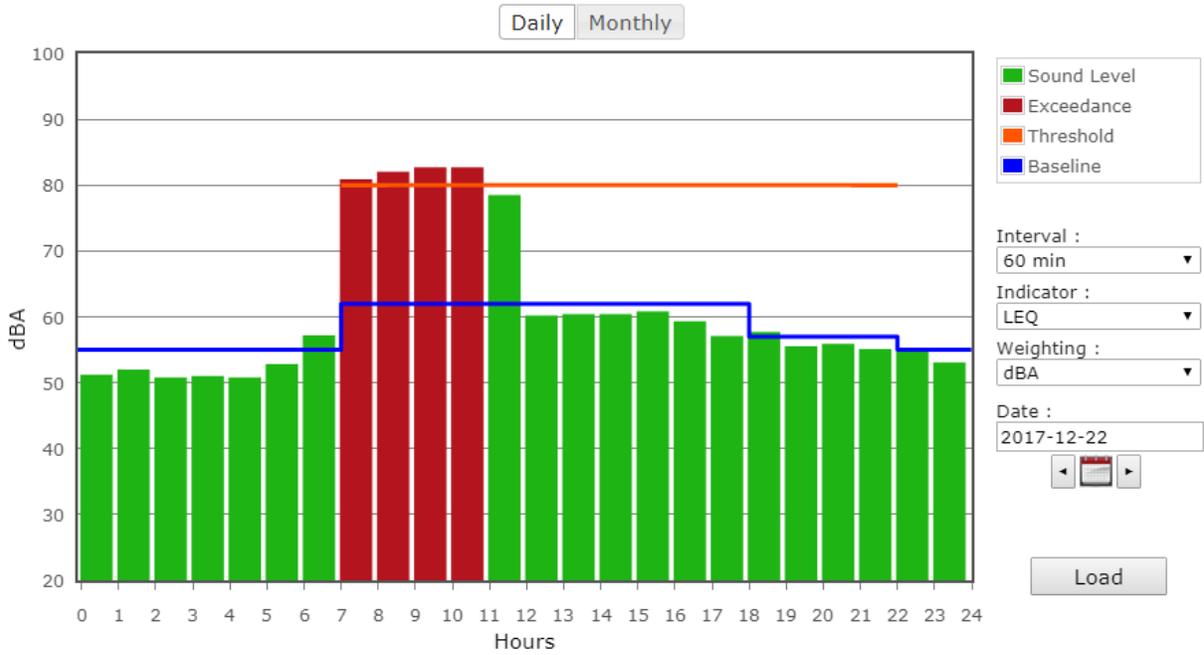


Figure 6: North Monitor NM-1 on Friday

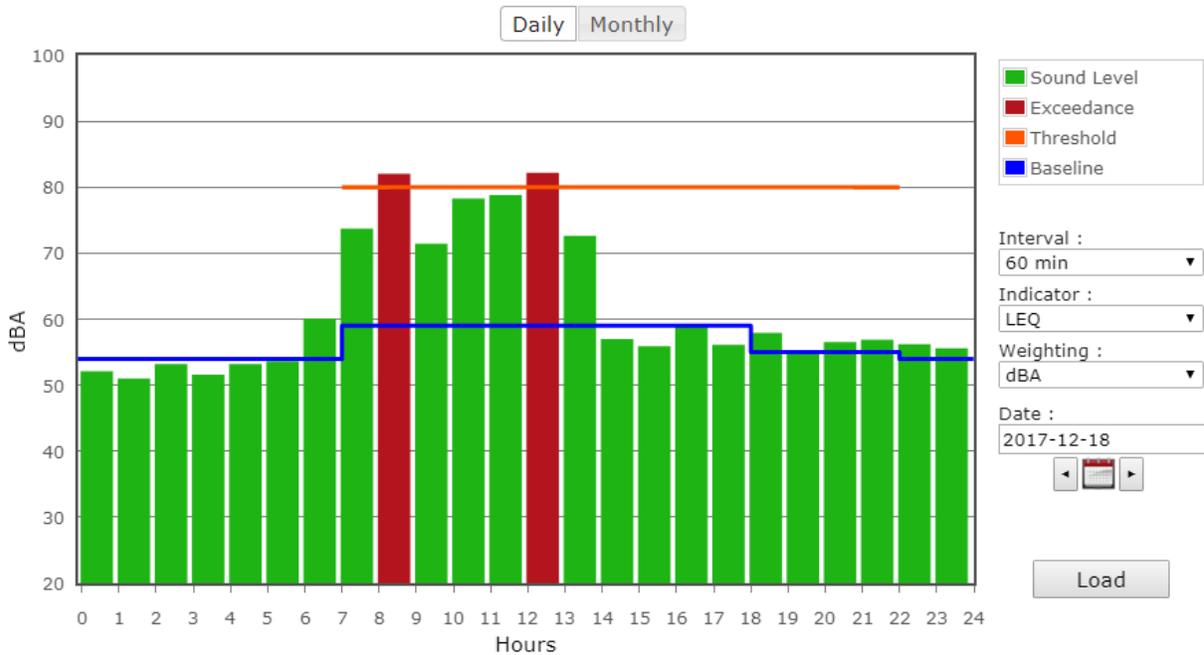
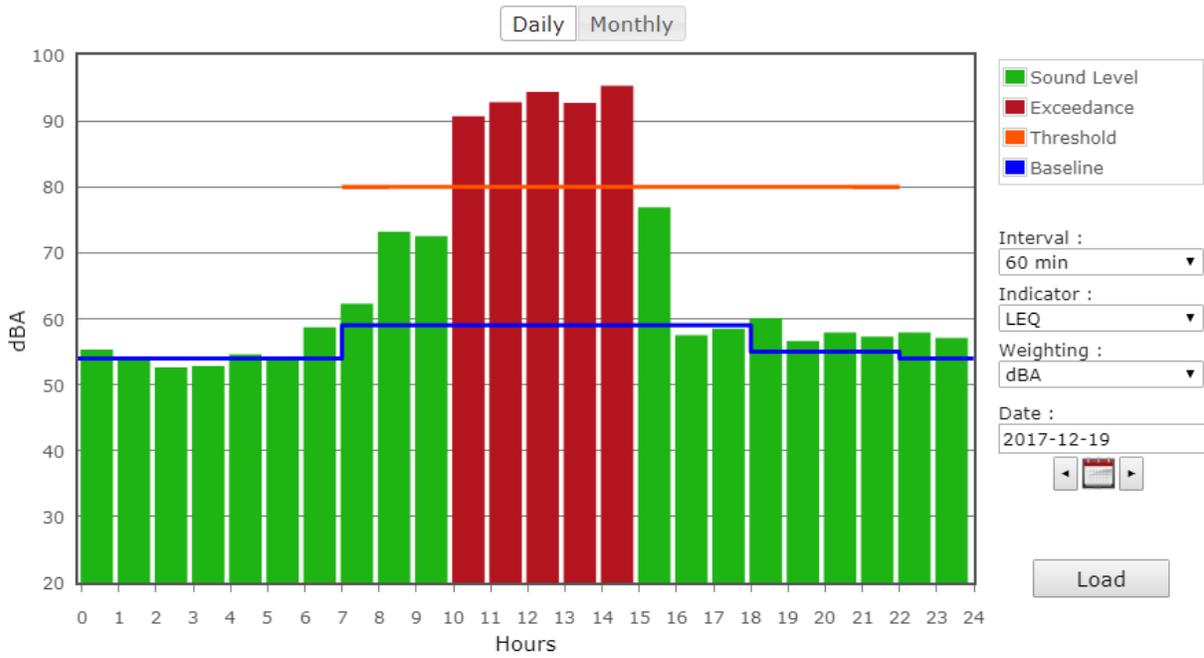
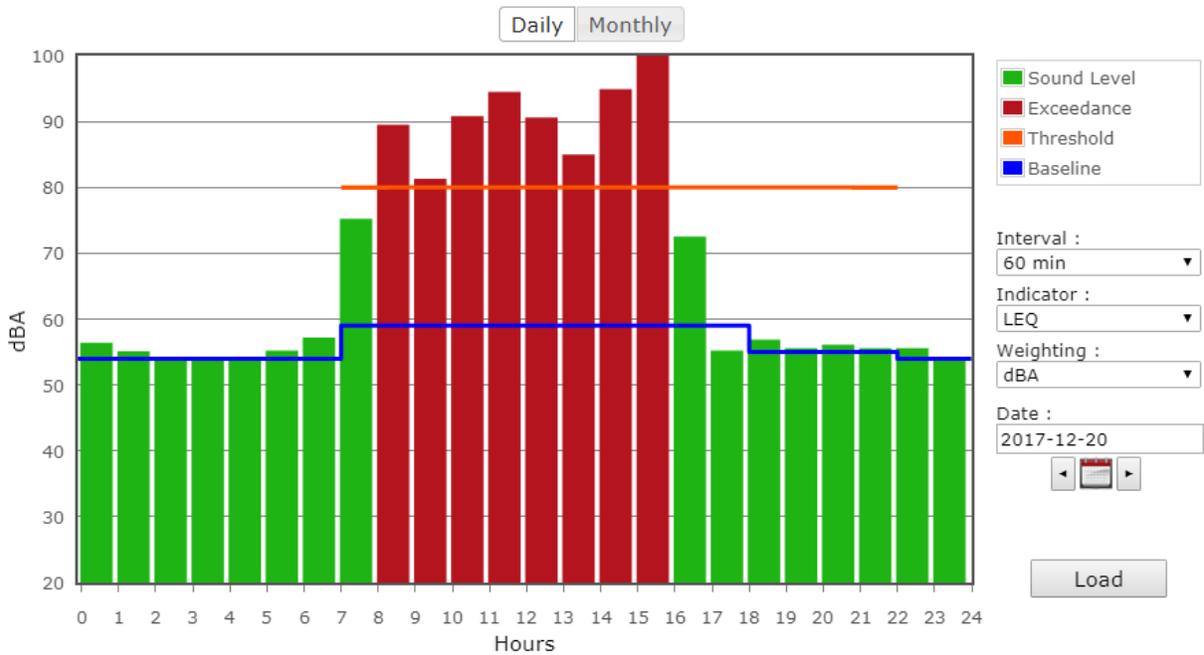


Figure 7: South Monitor NM-2 on Monday

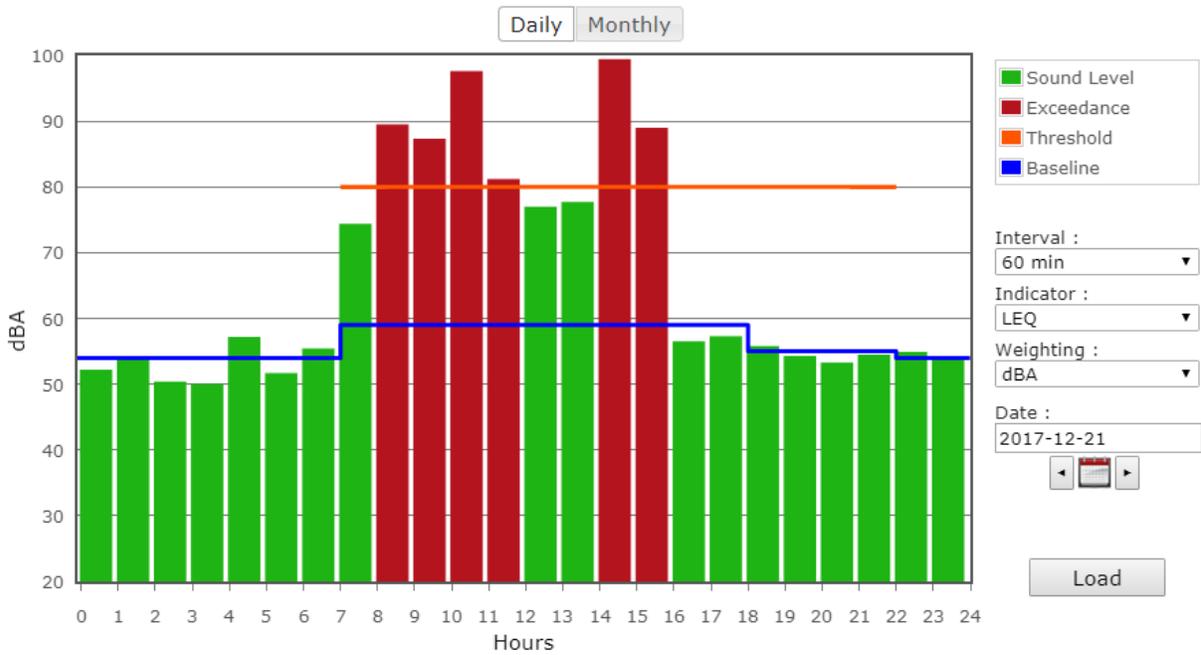


**Figure 8: South Monitor NM-2 on Tuesday**

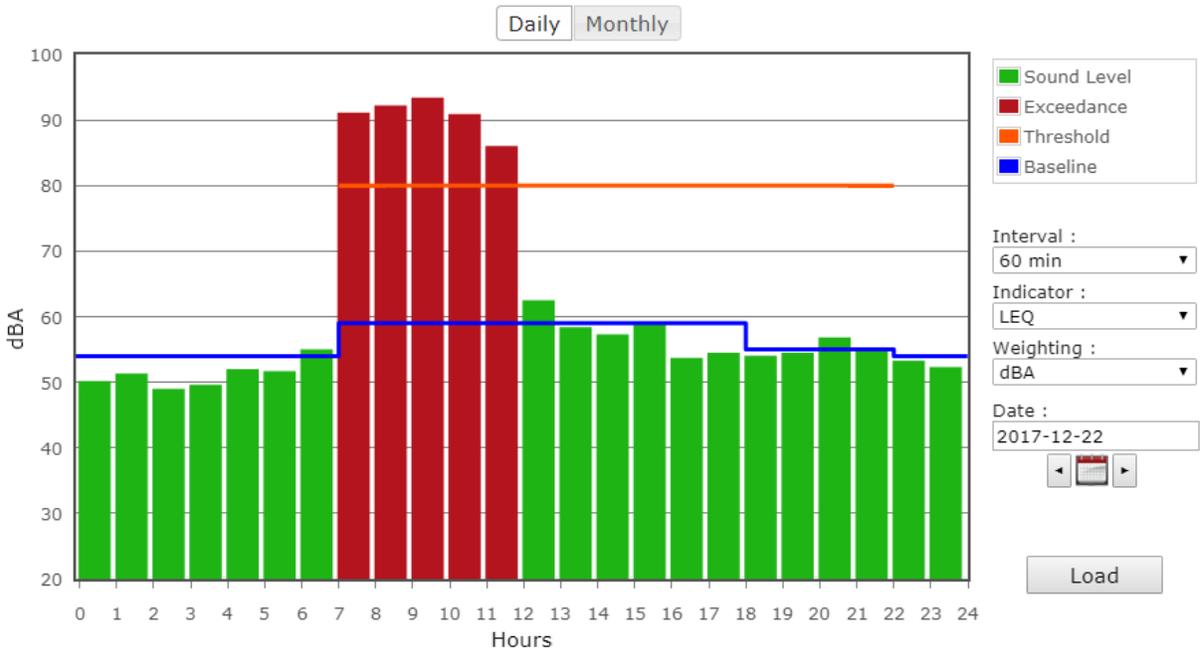


**Figure 9: South Monitor NM-2 on Wednesday**

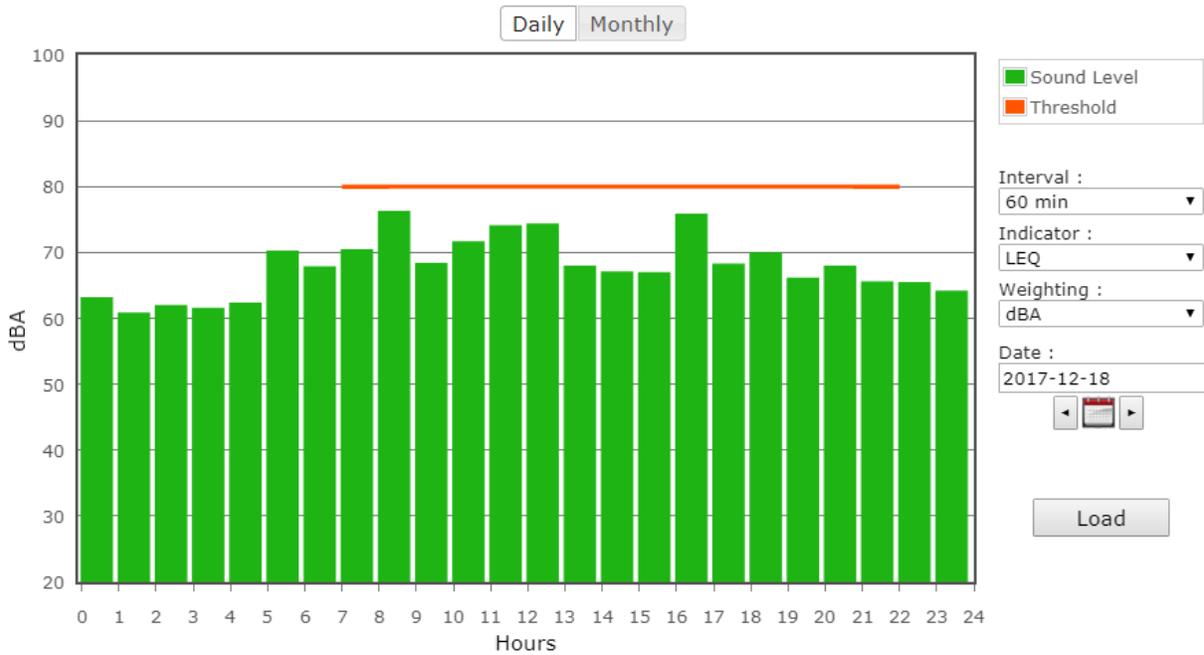
\*Noise Level for the 15:00-16:00 interval was 100.4 dBA.



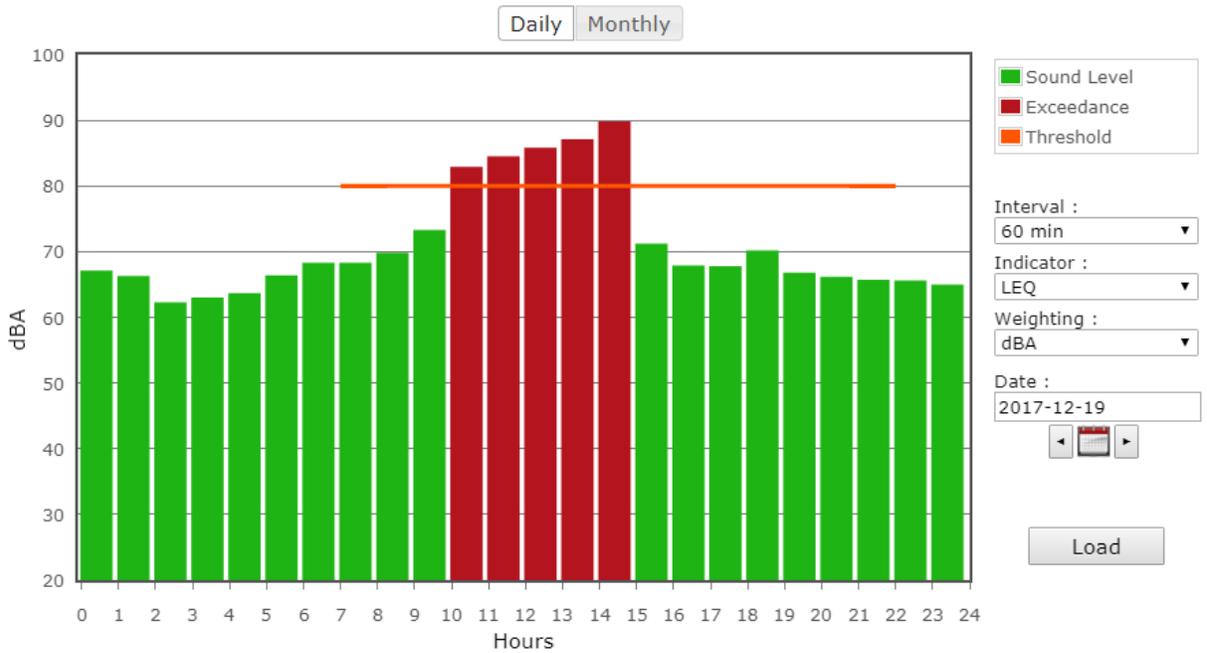
**Figure 10: South Monitor NM-2 on Thursday**



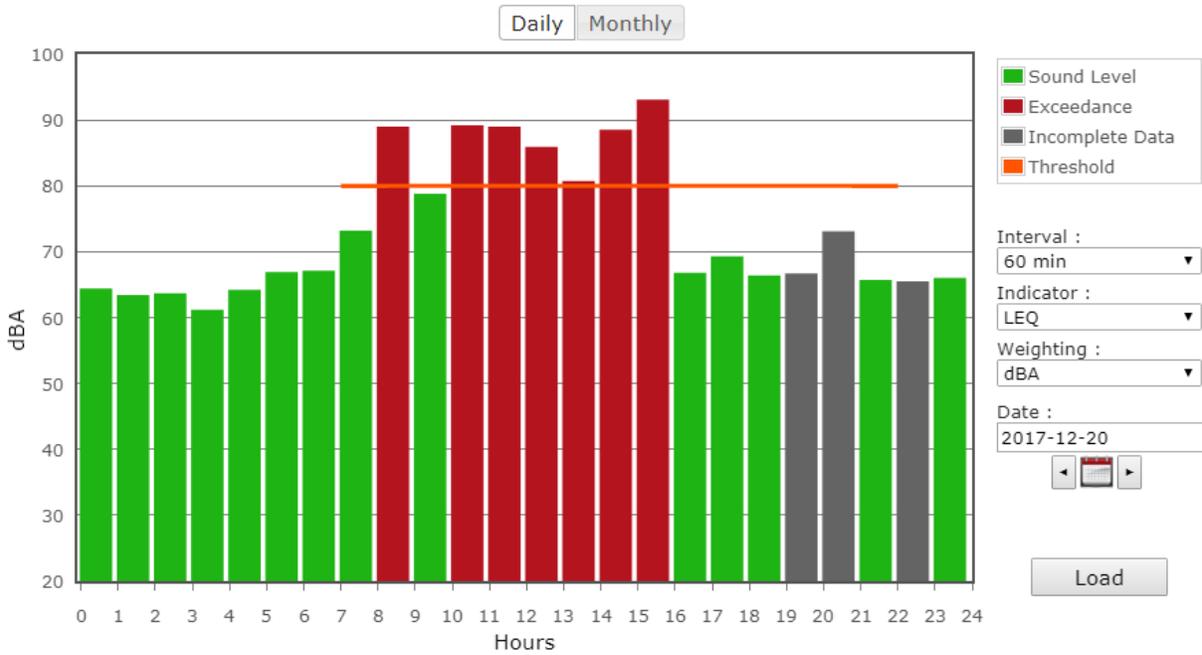
**Figure 11: South Monitor NM-2 on Friday**



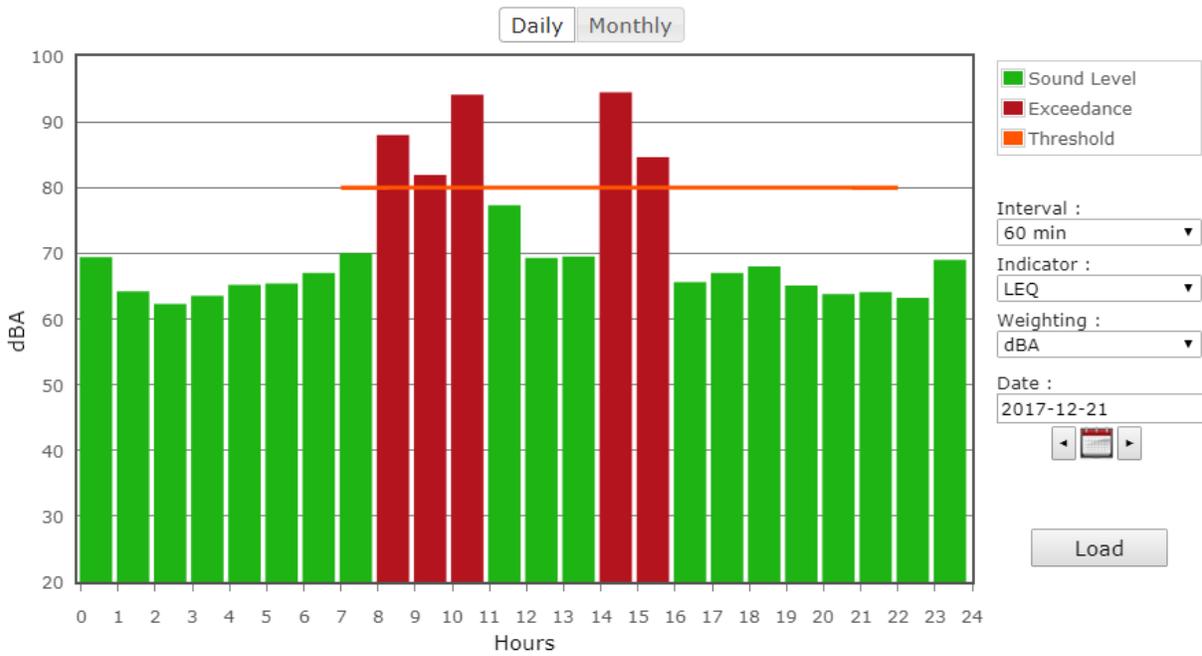
**Figure 12: Northeast Monitor NM-3 on Monday**



**Figure 13: Northeast Monitor NM-3 on Tuesday**



**Figure 14: Northeast Monitor NM-3 on Wednesday**



**Figure 15: Northeast Monitor NM-3 on Thursday**

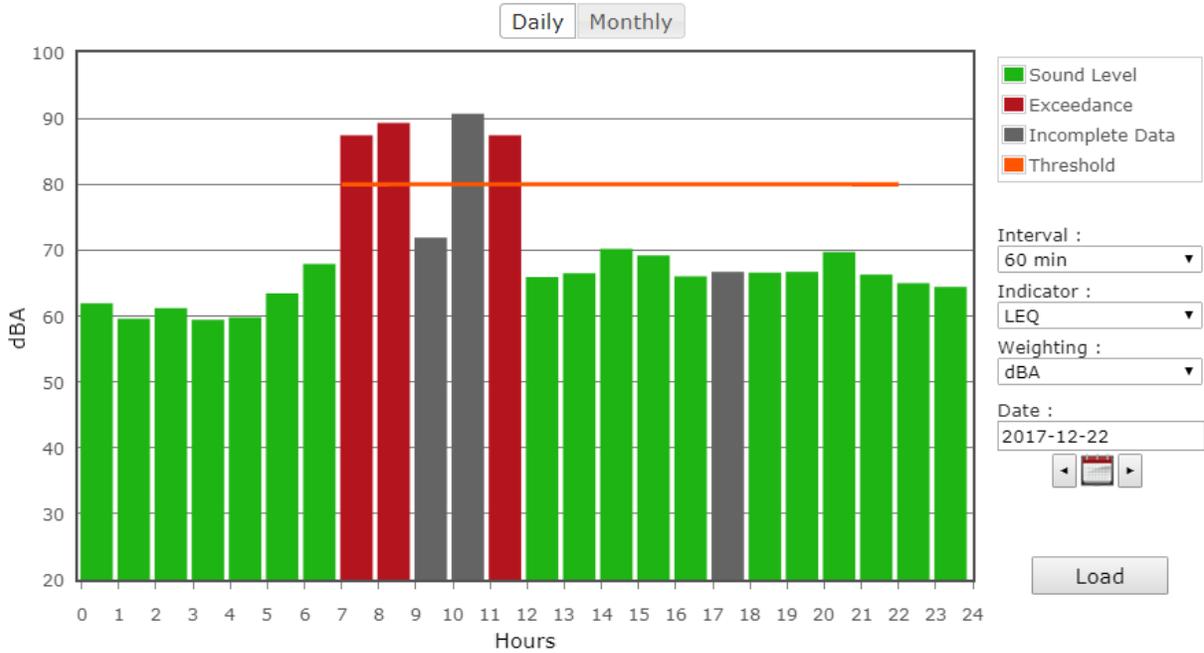


Figure 16: Northeast Monitor NM-3 on Friday

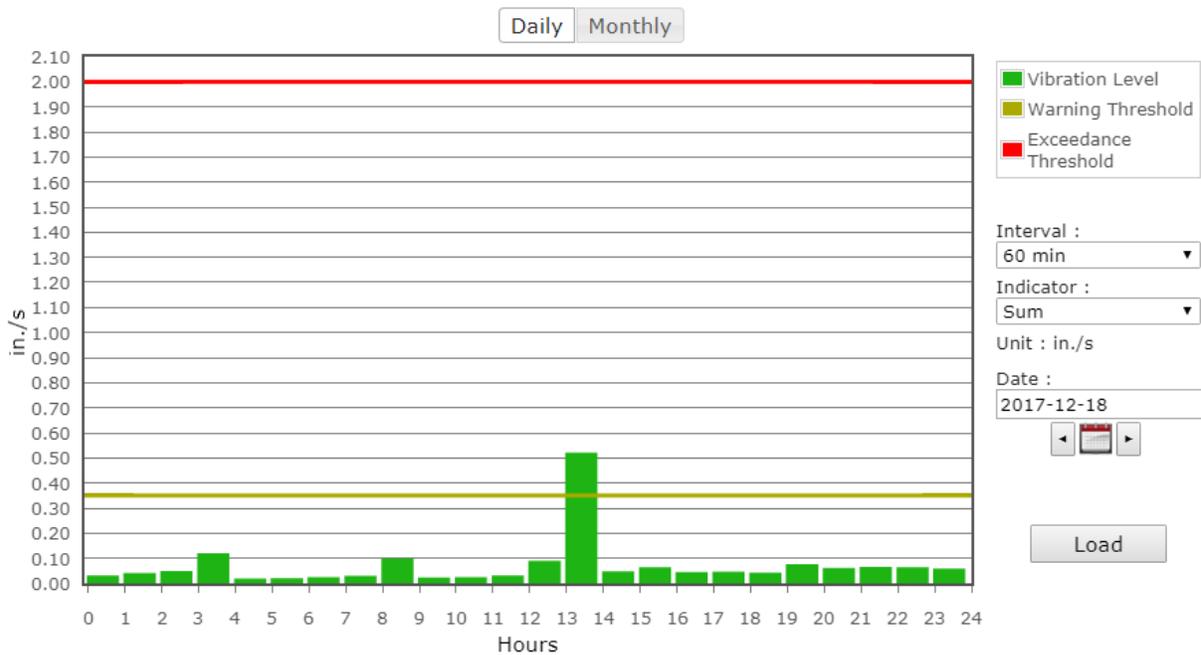


Figure 17: North Vibration Monitor VM-1 on Monday

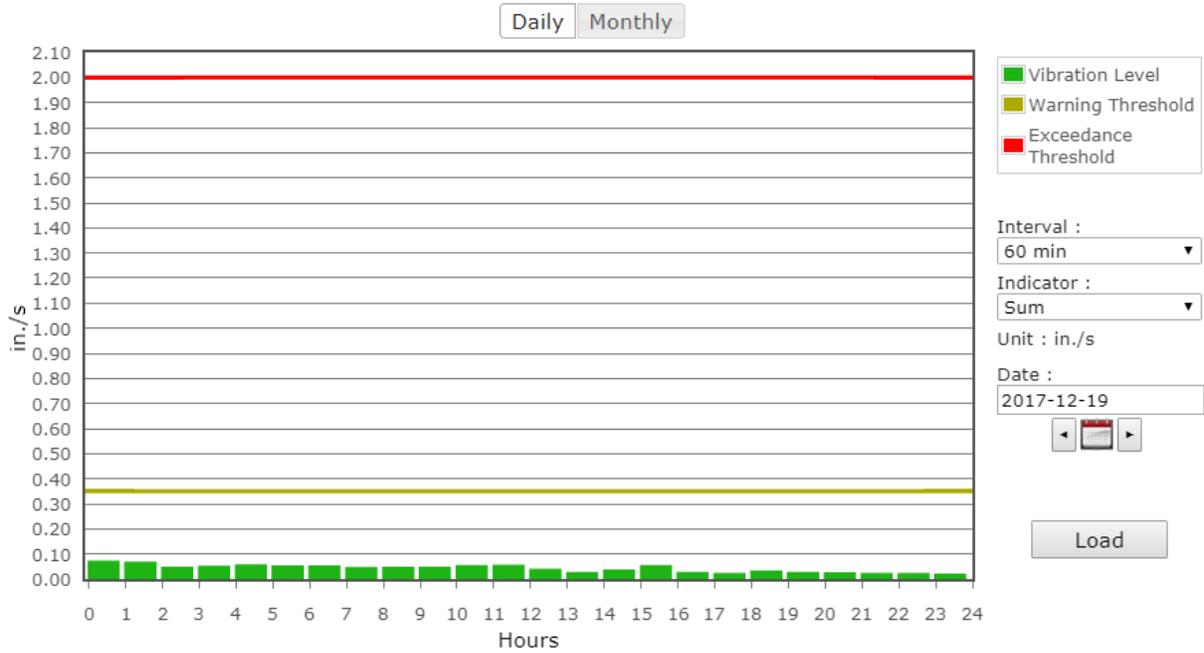


Figure 18: North Vibration Monitor VM-1 on Tuesday

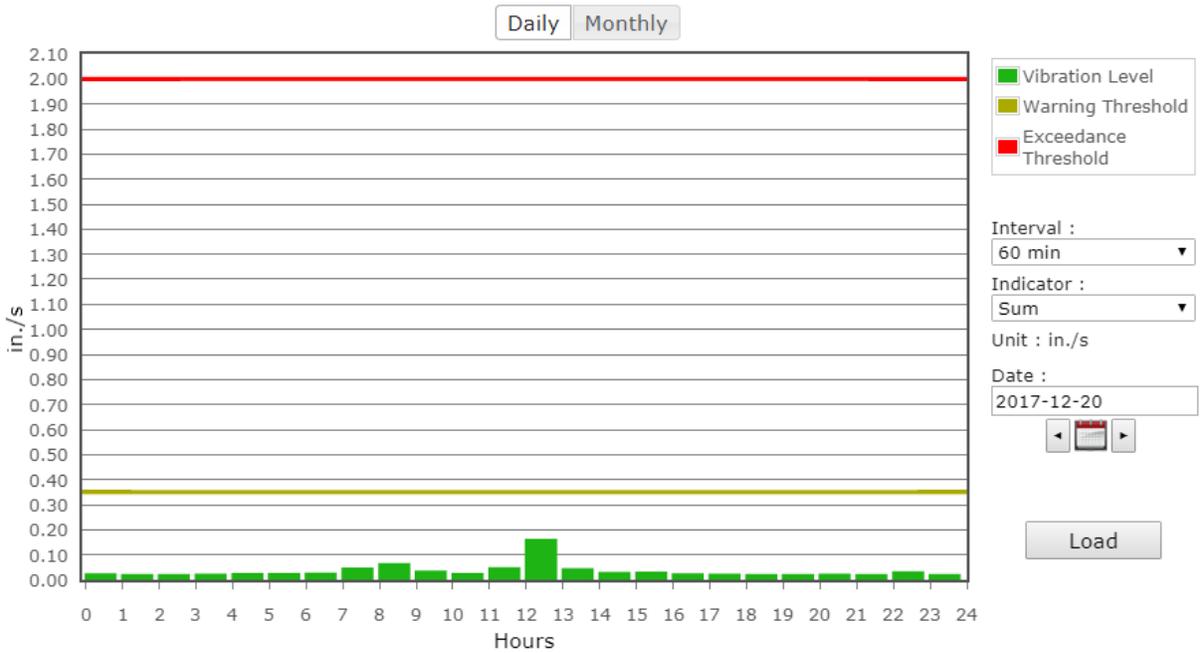


Figure 19: North Vibration Monitor VM-1 on Wednesday

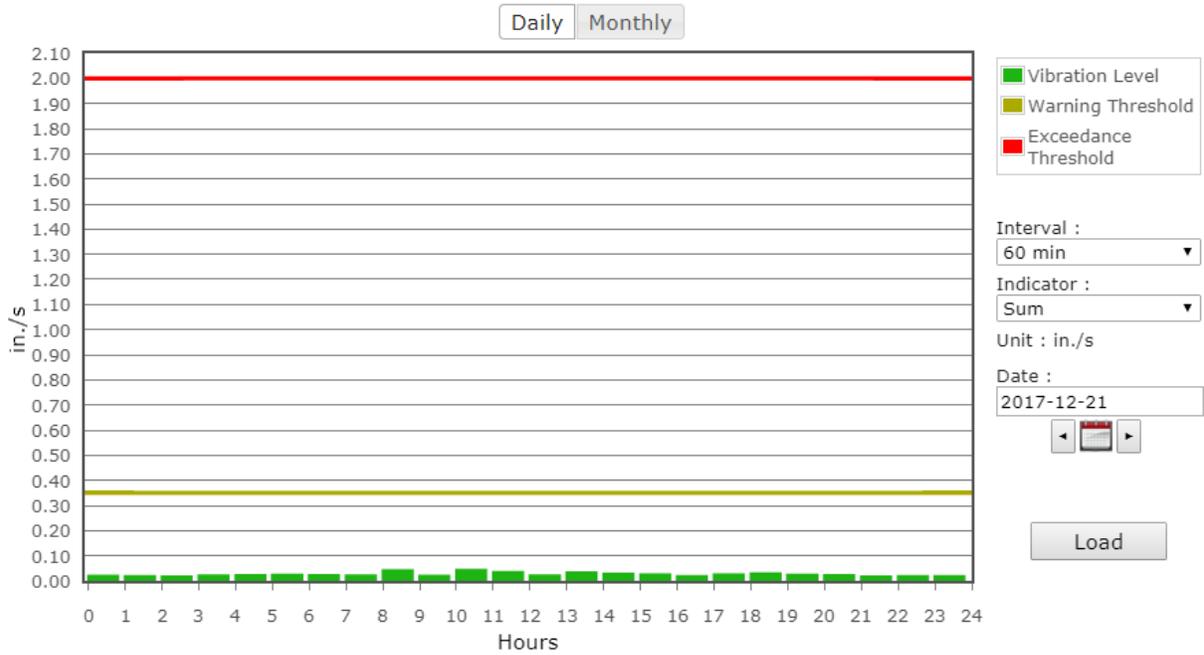


Figure 20: North Vibration Monitor VM-1 on Thursday

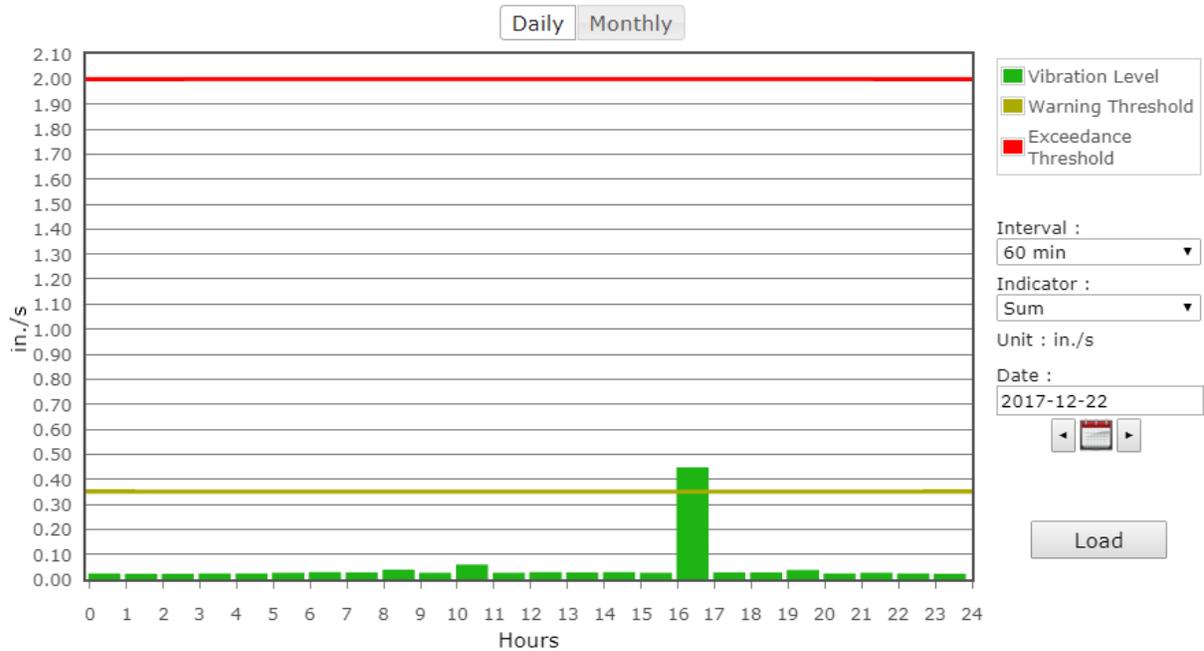
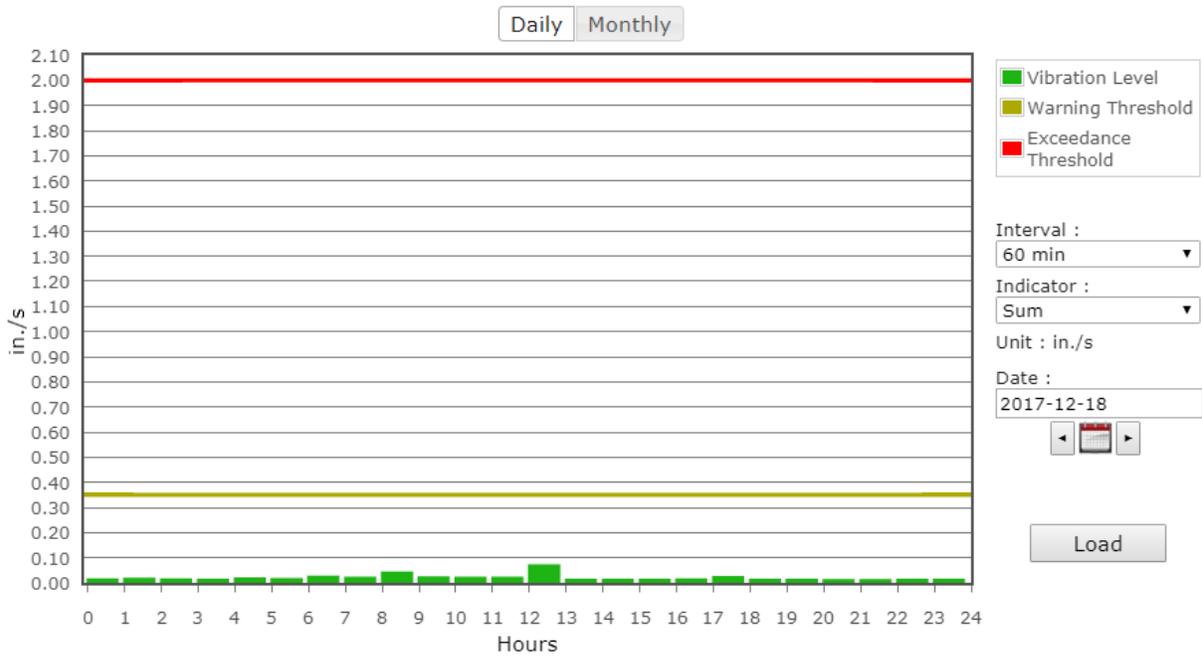
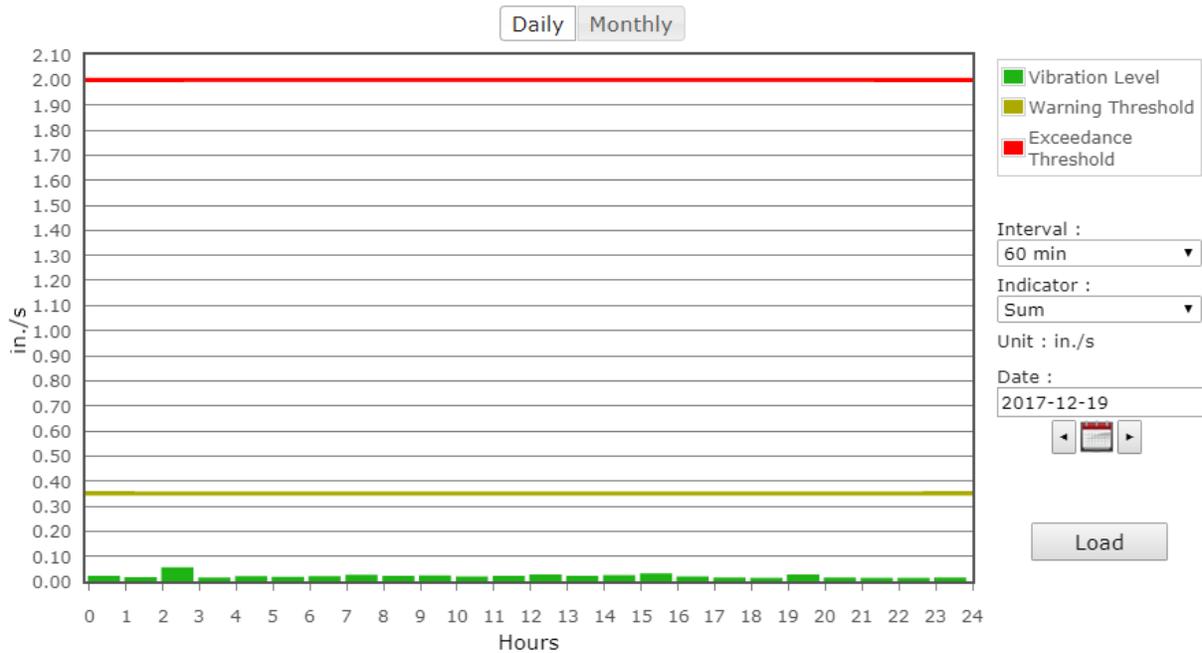


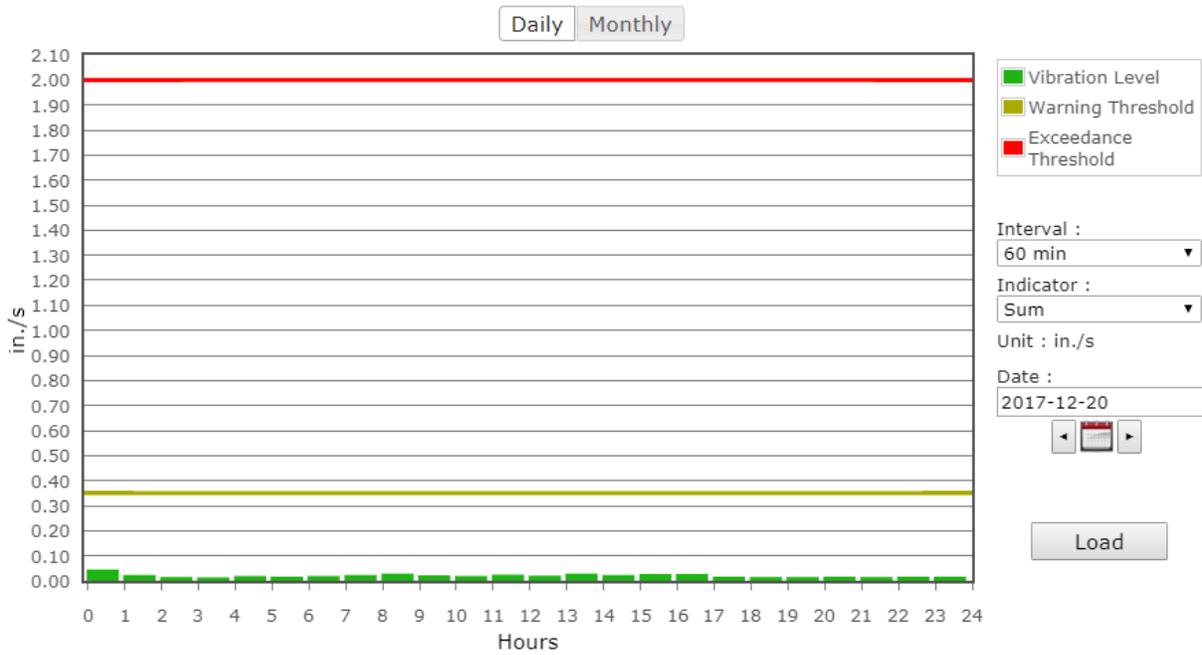
Figure 21: North Vibration Monitor VM-1 on Friday



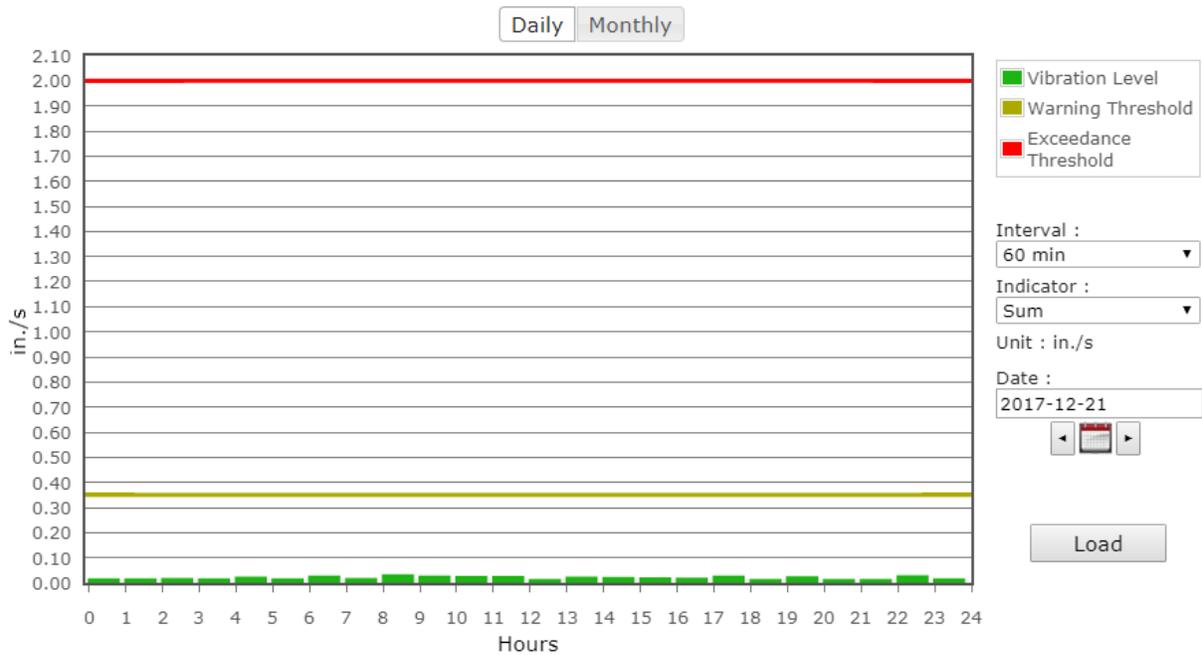
**Figure 22: South Vibration Monitor VM-2 on Monday**



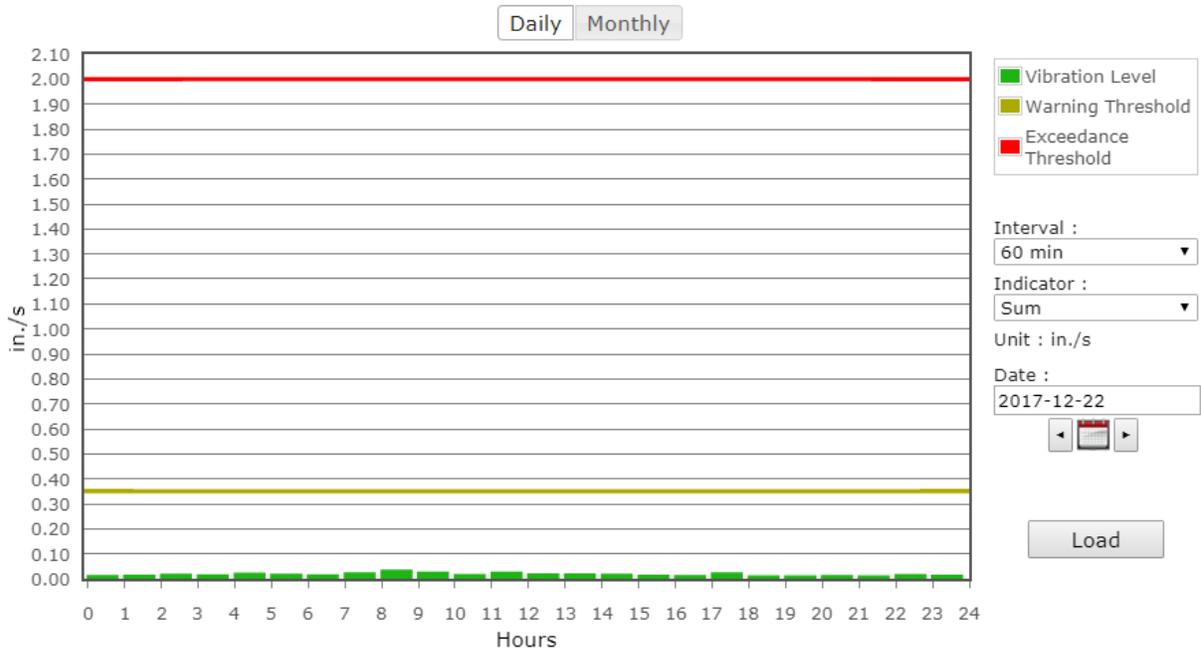
**Figure 23: South Vibration Monitor VM-2 on Tuesday**



**Figure 24: South Vibration Monitor VM-2 on Wednesday**



**Figure 25: South Vibration Monitor VM-2 on Thursday**



**Figure 26: South Vibration Monitor VM-2 on Friday**

20171227 Wilson Ihrig Weekly Noise and Vibration Report 18 Dec - 22 Dec 2017.docx

**AHRS WEEKLY REPORT**  
**(NO ACTIVITIES DURING CURENT WEEK)**



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

**CUMULATIVE DREDGED MATERIAL CHART  
(NO ACTIVITIES DURING CURENT WEEK)**

