

**WEEKLY PROGRESS REPORT – TRC SOLUTIONS**

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

**Project number: 283126**

**Period: October 8 to 12, 2018**

**Date of Report: October 17, 2018**

**Rev: 0**

**Prepared For: Gowanus Environmental Remediation Trust**



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

*Sevenson Environmental Services (SES)*

Water Treatment and Monitoring

- Discharged 4,914 and 540 gallons of treated water on 10/10 and 10/11/18, respectively.
- No exceedances of continuous monitoring.

Turbidity Monitoring

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

Capping Activities

- Continue placement of articulated concrete block mats in southern half of Turning Basin 4. Total of 91 mats placed via crane and divers during period. Cumulative total of 185 of required 255 placed.

Citizens Site Activities

- Continue decontaminating and demobilizing equipment.

*Quality Assurance and Control – Geosyntec*

- DWTS discharge sampling conducted on 10/11/18. Tabulated analytical data from samples collected in May through August attached.
- No exceedance of the turbidity trigger or action criteria
- Measurements for 10/8/18:
  - Daily average for ambient buoy – 5.5 NTU
  - Daily average for sentinel buoy – 2.0 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 0.6 NTU at 0730.
- Measurements for 10/9/18:
  - Daily average for ambient buoy – 13.1 NTU
  - Daily average for sentinel buoy – 1.6 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – no instances when turbidity measurement at the sentinel buoy exceeded the ambient buoy.
- Measurements for 10/10/18:
  - Daily average for ambient buoy – 24.6 NTU
  - Daily average for sentinel buoy – 2.3 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – no instances when turbidity measurement at the sentinel buoy exceeded the ambient buoy.
- Measurements for 10/11/18:
  - Daily average for ambient buoy – 19.2 NTU
  - Daily average for sentinel buoy – 1.9 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – no instances when turbidity measurement at the sentinel buoy exceeded the ambient buoy.



- Measurements for 10/12/18:
  - Daily average for ambient buoy – 1.3 NTU
  - Daily average for sentinel buoy – 0.4 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 0.9 NTU at 0845.

*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 µg/m<sup>3</sup>
  - Station 1 – 49 µg/m<sup>3</sup> recorded on 10/10/18
  - Station 2 – 41 µg/m<sup>3</sup> recorded on 10/10/18
  - Station 3 – 22 µg/m<sup>3</sup> recorded on 10/12/18
  - Station 4 – 31 µg/m<sup>3</sup> recorded on 10/10/18
  - Station 5 – 19 µg/m<sup>3</sup> recorded on 10/10/18
  - Station 6 – 29 µg/m<sup>3</sup> recorded on 10/10/18
  - Station 7 – <1 µg/m<sup>3</sup> recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
  - Station 1 – 15 ppb recorded on 10/10/18
  - Station 2 – <1 ppb recorded throughout the week
  - Station 3 – 41 ppb recorded on 10/09, 10/10, and 10/11/18
  - Station 4 – 154 ppb recorded on 10/12/18
  - Station 5 – 92 ppb recorded on 10/09/18
  - Station 6 – 111 ppb recorded on 10/08/18
  - Station 7 – <1 ppb recorded throughout the week
- 23-hour samples collected at ST-6 collected on 10/08 through 10/09 and ST-7 collected on 10/10 through 10/11. Laboratory turnaround time is 10 business days.
- Tabulated laboratory analytical results for 23-hour sample collected at ST-5 on 09/10 through 09/11, ST-6 (collocated) on 09/12 through 09/13, ST-1 on 09/20 through 09/21, ST-7 on 09/18 through 09/19, ST-2 on 09/24 through 09/25, and ST-3 on 09/25 through 09/26 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 exceedances of the hourly Leq noise limit of 80 dBA.
- Greatest hourly Leq noise measurements
  - Northern monitor (NM-1) – 71 dBA during 1000-1000 on 10/10/18
  - Southern monitor (NM-2) – 70.5 dBA during 0700-0800 on 10/12/18

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

- Conduct site inspection of segregated materials at Clean Earth Claremont on 10/09/18. Nothing potentially culturally significant identified.



### **Two-Week Look Ahead:**

Sevenson:

- Treatment and discharge of water accumulated during decontamination operations.
- Perform optical monitoring of bulkheads and surrounding structures with autonomous total survey stations. Along with weekly optical surveys conducted by subcontractor.
- Continue placement of articulated concrete block mats.
- Mobilize and commence placement of underwater concrete and grout within seams of articulated concrete block mats.
- Cleaning of rip rap adjacent to Whole Foods pending EPA approval.

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

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise monitoring,

AHRS – Finalize inventory and final report for EPA review.

### **Key Milestones**

- No milestones during week.

Attachments:

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



<b>Client Name:</b> Gowanus ERT	<b>Site Location:</b> TB-4 Pilot Study	<b>Project No.:</b> 283126.0000.0001
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<b>Photo No.</b> 001	<b>Date</b> 10-08-2018
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**Description**  
Diver ready to enter the water with tape to measure distance.



<b>Photo No.</b> 002	<b>Date</b> 10-08-2018
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**Description**  
Diver entering the water.



<b>Client Name:</b> Gowanus ERT	<b>Site Location:</b> TB-4 Pilot Study	<b>Project No.:</b> 283126.0000.0001
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<b>Photo No.</b> 003	<b>Date</b> 10-09-2018
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**Description**  
Lifting single mat, ready for placement in the turning basin.



<b>Photo No.</b> 004	<b>Date</b> 10-09-2018
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**Description**  
Hooking the mats to lifting device.



<b>Client Name:</b> Gowanus ERT	<b>Site Location:</b> TB-4 Pilot Study	<b>Project No.:</b> 283126.0000.0001
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<b>Photo No.</b> 005	<b>Date</b> 10-10-2018
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**Description**  
Staged barge with stacked ACB mats.



<b>Photo No.</b> 006	<b>Date</b> 10-03-2018
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**Description**  
Mats moving into position and divers readying for entry.



<b>Client Name:</b> Gowanus ERT	<b>Site Location:</b> TB-4 Pilot Study	<b>Project No.:</b> 283126.0000.0001
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<b>Photo No.</b> 007	<b>Date</b> 10-11-2018
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**Description**  
New tugboat – Shirley.



<b>Photo No.</b> 008	<b>Date</b> 10-11-2018
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**Description**  
Lowering mats with divers readying for entry.





<b>Client Name:</b> Gowanus ERT	<b>Site Location:</b> TB-4 Pilot Study	<b>Project No.:</b> 283126.0000.0001
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<b>Photo No.</b> 009	<b>Date</b> 10-11-2018
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**Description**  
Status of decontamination and demobilization of dredge water treatment system.



<b>Photo No.</b> 010	<b>Date</b> 10-12-2018
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**Description**  
Lowering mat for positioning by divers.



**GEOSYNTEC IN-CANAL WATER QUALITY MONITORING WEEKLY DATA SUMMARY**



*Prepared for*  
**Gowanus Canal  
Remedial Design  
Group**

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

Week of October 8<sup>th</sup>, 2018

## **Report Contents**

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

*Prepared by*

**Geosyntec**  **Beech and Bonaparte**   
consultants engineering p.c.

engineers | scientists | innovators

*an affiliate of Geosyntec Consultants*




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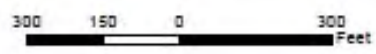
## **1. SCOPE OF MONITORING**

The following report summarizes water quality monitoring data collected during the week of October 8<sup>th</sup>, 2018. Two turbidity buoys were deployed to monitor turbidity during the pilot study. One turbidity buoy was deployed just outside of the 4<sup>th</sup> Street Turning Basin and is referred to as the sentinel buoy. A second turbidity buoy was deployed further upstream in RTA1 in order to monitor background turbidity unaffected by on-water construction activities. This turbidity buoy is referred to as the ambient buoy. A map indicating the approximate locations of the turbidity buoys is provided in Figure 1. Each turbidity buoy was equipped with a YSI 600 OMS water quality meter with optical turbidity sensor. The buoys were programmed such that readings were collected every 15 minutes. After each measurement, the turbidity data were transmitted to a FTP site via telemetry. This report provides the turbidity data collected every 15 minutes from both the ambient and sentinel buoys during each day between 7 AM and 5 PM during the week of October 8<sup>th</sup>. Average and maximum turbidity are also presented. No handheld measurements were collected during this reporting period. Visual observations of turbidity and sheen are summarized in Section 4. The data provided in this summary report have not yet been validated and should be considered preliminary.



**Legend**

-  Ambient Buoy
-  Sentinel Buoy
-  RTA Boundary



**Turbidity Buoy Locations**

Gowanus Canal, Brooklyn, NY

Gowanus Canal Remedial Design Group  
 Geosyntec consultants  
 Beech and Binigore engineering p.c.

Figure

1

Ewing, NJ

October 2017

## 2. TURBIDITY BUOY DATA

The following section provides turbidity data for the sentinel and ambient turbidity buoys from 7 AM to 5 PM from October 8<sup>th</sup> to October 12<sup>th</sup>, 2018. Background data prior to the start of dredging is provided in Appendix A. No exceedances to the numerical rolling average threshold criteria were observed during the reporting period. Negative values were observed during this reporting period. Since the numerical criteria is based on the difference between the ambient and sentinel turbidity buoy measurements, these negative values do not impact monitoring.

### 2.1 Monday, October 8<sup>th</sup>, 2018

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)
10/8/2018 7:00	0.0	-0.5	N	10/8/2018 12:15	7.3	3.2	N
10/8/2018 7:15	0.3	-0.6	N	10/8/2018 12:30	4.4	2.8	N
10/8/2018 7:30	0.5	1.1	Y	10/8/2018 12:45	5.4	2.0	N
10/8/2018 7:45	1.8	1.0	N	10/8/2018 13:00	4.8	2.1	N
10/8/2018 8:00	0.6	1.0	Y	10/8/2018 13:15	7.8	1.8	N
10/8/2018 8:15	0.7	1.0	Y	10/8/2018 13:30	8.3	2.8	N
10/8/2018 8:30	2.2	0.9	N	10/8/2018 13:45	5.1	2.6	N
10/8/2018 8:45	2.9	1.3	N	10/8/2018 14:00	6.2	2.3	N
10/8/2018 9:00	3.4	1.8	N	10/8/2018 14:15	6.1	2.4	N
10/8/2018 9:15	5.0	1.2	N	10/8/2018 14:30	7.3	2.4	N
10/8/2018 9:30	5.2	1.7	N	10/8/2018 14:45	5.2	2.5	N
10/8/2018 9:45	5.4	1.7	N	10/8/2018 15:00	5.0	2.1	N
10/8/2018 10:00	6.4	0.5	N	10/8/2018 15:15	8.7	2.5	N
10/8/2018 10:15	7.6	3.0	N	10/8/2018 15:30	4.4	3.3	N
10/8/2018 10:30	7.0	0.5	N	10/8/2018 15:45	4.5	4.7	Y
10/8/2018 10:45	11.8	3.3	N	10/8/2018 16:00	7.5	3.1	N
10/8/2018 11:00	8.9	2.0	N	10/8/2018 16:15	5.8	2.2	N
10/8/2018 11:15	10.3	1.9	N	10/8/2018 16:30	4.8	2.4	N
10/8/2018 11:30	11.0	0.7	N	10/8/2018 16:45	4.9	3.6	N
10/8/2018 11:45	7.9	0.8	N	10/8/2018 17:00	4.0	2.1	N
10/8/2018 12:00	7.8	2.9	N				

Average	5.5	2.0	N
Maximum	11.8	4.7	N

**Notes:**

No exceedance 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 9<sup>th</sup>, 2018

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)
10/9/2018 7:00	5.1	0.8	N	10/9/2018 12:15	11.5	2.3	N
10/9/2018 7:15	3.4	-0.1	N	10/9/2018 12:30	10.0	3.5	N
10/9/2018 7:30	2.9	0.2	N	10/9/2018 12:45	11.1	2.5	N
10/9/2018 7:45	1.6	0.7	N	10/9/2018 13:00	12.1	2.1	N
10/9/2018 8:00	2.0	-0.4	N	10/9/2018 13:15	17.4	2.7	N
10/9/2018 8:15	2.6	-0.2	N	10/9/2018 13:30	18.4	1.4	N
10/9/2018 8:30	3.3	0.1	N	10/9/2018 13:45	14.9	0.7	N
10/9/2018 8:45	2.7	0.1	N	10/9/2018 14:00	29.5	1.4	N
10/9/2018 9:00	3.0	0.2	N	10/9/2018 14:15	25.4	0.8	N
10/9/2018 9:15	6.0	0.8	N	10/9/2018 14:30	20.4	2.7	N
10/9/2018 9:30	3.8	1.0	N	10/9/2018 14:45	18.3	1.9	N
10/9/2018 9:45	6.8	0.3	N	10/9/2018 15:00	27.7	0.9	N
10/9/2018 10:00	6.2	1.4	N	10/9/2018 15:15	22.2	2.8	N
10/9/2018 10:15	7.7	1.4	N	10/9/2018 15:30	28.0	2.1	N
10/9/2018 10:30	9.1	1.4	N	10/9/2018 15:45	34.9	3.1	N
10/9/2018 10:45	9.4	0.7	N	10/9/2018 16:00	28.8	3.5	N
10/9/2018 11:00	8.2	2.4	N	10/9/2018 16:15	11.3	3.7	N
10/9/2018 11:15	17.3	2.3	N	10/9/2018 16:30	11.7	1.9	N
10/9/2018 11:30	9.5	2.3	N	10/9/2018 16:45	35.0	1.6	N
10/9/2018 11:45	12.5	3.4	N	10/9/2018 17:00	8.9	3.8	N
10/9/2018 12:00	15.8	2.6	N				

Average	13.1	1.6	N
Maximum	35.0	3.8	N

**Notes:**

No exceedance 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 10<sup>th</sup>, 2018

<b>Time (Local)</b>	<b>Ambient Turbidity (NTU)</b>	<b>Sentinel Turbidity (NTU)</b>	<b>Sentinel &gt;Ambient (Y/N)</b>	<b>Time (Local)</b>	<b>Ambient Turbidity (NTU)</b>	<b>Sentinel Turbidity (NTU)</b>	<b>Sentinel &gt;Ambient (Y/N)</b>
10/10/2018 7:00	14.3	0.2	N	10/10/2018 12:15	31.3	2.6	N
10/10/2018 7:15	27.5	0.6	N	10/10/2018 12:30	138.3	3.9	N
10/10/2018 7:30	16.9	1.1	N	10/10/2018 12:45	7.9	5.0	N
10/10/2018 7:45	13.2	1.1	N	10/10/2018 13:00	6.3	3.1	N
10/10/2018 8:00	14.3	0.8	N	10/10/2018 13:15	7.2	4.3	N
10/10/2018 8:15	13.6	1.7	N	10/10/2018 13:30	5.1	4.2	N
10/10/2018 8:30	40.2	1.2	N	10/10/2018 13:45	8.3	2.6	N
10/10/2018 8:45	13.0	0.8	N	10/10/2018 14:00	8.9	1.9	N
10/10/2018 9:00	22.7	1.5	N	10/10/2018 14:15	16.1	1.2	N
10/10/2018 9:15	31.7	1.5	N	10/10/2018 14:30	16.2	3.2	N
10/10/2018 9:30	38.8	2.3	N	10/10/2018 14:45	16.6	2.0	N
10/10/2018 9:45	29.1	0.5	N	10/10/2018 15:00	21.1	1.5	N
10/10/2018 10:00	27.2	1.1	N	10/10/2018 15:15	14.9	2.2	N
10/10/2018 10:15	30.3	1.3	N	10/10/2018 15:30	29.1	3.2	N
10/10/2018 10:30	29.6	1.6	N	10/10/2018 15:45	33.0	1.5	N
10/10/2018 10:45	53.7	3.2	N	10/10/2018 16:00	15.6	2.5	N
10/10/2018 11:00	66.2	2.1	N	10/10/2018 16:15	18.6	4.3	N
10/10/2018 11:15	13.2	3.1	N	10/10/2018 16:30	7.2	4.7	N
10/10/2018 11:30	18.3	2.5	N	10/10/2018 16:45	22.6	3.0	N
10/10/2018 11:45	15.6	2.0	N	10/10/2018 17:00	6.8	3.6	N
10/10/2018 12:00	46.9	3.1	N				
<b>Average</b>	24.6	2.3	N				
<b>Maximum</b>	138.3	5.0	N				

**Notes:**

No exceedance 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 11<sup>th</sup>, 2018

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)
10/11/2018 7:00	15.3	-0.4	N	10/11/2018 12:15	5.4	1.8	N
10/11/2018 7:15	23.1	-0.2	N	10/11/2018 12:30	10.3	2.9	N
10/11/2018 7:30	14.9	-0.1	N	10/11/2018 12:45	12.2	2.7	N
10/11/2018 7:45	14.5	0.3	N	10/11/2018 13:00	32.9	3.4	N
10/11/2018 8:00	10.3	0.3	N	10/11/2018 13:15	8.8	1.8	N
10/11/2018 8:15	10.7	0.8	N	10/11/2018 13:30	76.6	2.6	N
10/11/2018 8:30	11.2	0.4	N	10/11/2018 13:45	7.2	3.2	N
10/11/2018 8:45	15.2	0.3	N	10/11/2018 14:00	8.9	1.9	N
10/11/2018 9:00	12.7	0.7	N	10/11/2018 14:15	18.7	4.3	N
10/11/2018 9:15	18.4	0.5	N	10/11/2018 14:30	66.1	5.0	N
10/11/2018 9:30	18.8	0.7	N	10/11/2018 14:45	25.1	2.5	N
10/11/2018 9:45	19.0	0.4	N	10/11/2018 15:00	10.1	2.6	N
10/11/2018 10:00	4.7	3.0	N	10/11/2018 15:15	107.6	3.5	N
10/11/2018 10:15	4.3	0.3	N	10/11/2018 15:30	64.5	2.1	N
10/11/2018 10:30	6.2	1.3	N	10/11/2018 15:45	17.4	2.8	N
10/11/2018 10:45	5.6	0.1	N	10/11/2018 16:00	9.4	3.1	N
10/11/2018 11:00	5.1	-0.2	N	10/11/2018 16:15	13.4	3.4	N
10/11/2018 11:15	5.0	1.8	N	10/11/2018 16:30	5.8	4.1	N
10/11/2018 11:30	4.1	1.1	N	10/11/2018 16:45	13.8	1.9	N
10/11/2018 11:45	5.9	1.8	N	10/11/2018 17:00	36.6	7.7	N
10/11/2018 12:00	11.1	1.9	N				

Average	19.2	1.9	N
Maximum	107.6	7.7	N

**Notes:**

No exceedance 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 12<sup>th</sup>, 2018

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)
10/12/2018 7:00	0.1	0.9	Y	10/12/2018 12:15	2.6	-0.5	N
10/12/2018 7:15	0.6	-0.1	N	10/12/2018 12:30	3.0	-0.7	N
10/12/2018 7:30	0.1	0.8	Y	10/12/2018 12:45	2.8	0.2	N
10/12/2018 7:45	-0.3	0.0	Y	10/12/2018 13:00	3.0	-0.4	N
10/12/2018 8:00	-0.3	0.3	Y	10/12/2018 13:15	2.4	-0.1	N
10/12/2018 8:15	-0.7	0.1	Y	10/12/2018 13:30	3.2	1.0	N
10/12/2018 8:30	0.0	-0.4	N	10/12/2018 13:45	2.5	2.3	N
10/12/2018 8:45	-0.7	0.2	Y	10/12/2018 14:00	2.2	2.1	N
10/12/2018 9:00	-0.7	-0.7	N	10/12/2018 14:15	2.5	1.8	N
10/12/2018 9:15	-0.5	-0.1	Y	10/12/2018 14:30	1.9	1.8	N
10/12/2018 9:30	-0.7	-0.6	Y	10/12/2018 14:45	2.3	1.4	N
10/12/2018 9:45	0.3	-0.8	N	10/12/2018 15:00	2.3	2.3	N
10/12/2018 10:00	-0.6	-0.2	Y	10/12/2018 15:15	2.4	2.2	N
10/12/2018 10:15	-0.1	-0.7	N	10/12/2018 15:30	2.2	1.4	N
10/12/2018 10:30	0.4	-0.7	N	10/12/2018 15:45	2.4	1.5	N
10/12/2018 10:45	1.5	-0.8	N	10/12/2018 16:00	3.2	1.7	N
10/12/2018 11:00	0.7	-1.0	N	10/12/2018 16:15	2.2	0.8	N
10/12/2018 11:15	0.2	-1.0	N	10/12/2018 16:30	1.9	1.4	N
10/12/2018 11:30	0.5	-0.5	N	10/12/2018 16:45	2.2	0.8	N
10/12/2018 11:45	1.1	-0.8	N	10/12/2018 17:00	2.9	0.9	N
10/12/2018 12:00	2.2	-0.1	N				

Average	1.3	0.4	N
Maximum	3.2	2.3	N

**Notes:**

No exceedance to rolling average threshold criteria during reporting period

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

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

### 3. HANDHELD MEASUREMENTS

No handheld measurements were collected during this reporting period.

### 4. SUMMARY OF VISUAL OBSERVATIONS

Visual observations were consistent with background conditions.

### 5. REPORT OF EXCEEDANCES

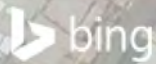
No exceedances of the water quality monitoring threshold criteria were met during the reporting period. Refer to the Water Quality Monitoring Plan for In-waterway Construction Activities (Geosyntec 2017) for further information regarding the Trigger and Action Criteria. Threshold criteria are summarized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

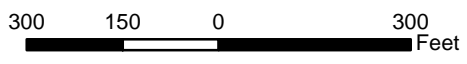


X:\03\_GIS\mxd\Canal\_Wide\_Turbidity\_Buoy\_Locations.mxd: acarnes: 10/19/2017



**Legend**

-  Ambient Buoy
-  Sentinel Buoy
-  RTA Boundary



**Turbidity Buoy Locations**

Gowanus Canal, Brooklyn, NY

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

Figure

1

Ewing, NJ

October 2017

**APPENDIX A**  
**PRE-DREDGE TURBIDITY BUOY DATA**

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

**TRC WEEKLY COMMUNITY AIR MONITORING PROJECT REPORT**







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

**Community Air Monitoring Project  
53<sup>rd</sup> Weekly Monitoring Period  
Summary Report:**

October 8<sup>th</sup>, through October 12<sup>th</sup>, 2018

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

## **Executive Summary – Week 53 Monitoring Period October 8<sup>th</sup> through October 12<sup>th</sup>, 2018**

The following report summarizes site air monitoring activities for the Week 53 monitoring period from October 8<sup>th</sup> through October 12<sup>th</sup>, 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 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 53 monitoring period there were no PM<sub>10</sub> or TVOC exceedances of the action level of 150 ug/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. 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 53 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 53 monitoring period of October 8<sup>th</sup> through October 12<sup>th</sup>, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 6 and 7. The ST-6 sample was collected on October 8<sup>th</sup> through October 9<sup>th</sup>, 2018 and the ST-7 sample was collected on October 10<sup>th</sup> through October 11<sup>th</sup>, 2018. Both samples were collected over a 23-hour period and shipped to Con-Test Analytical Laboratory for analyses. The results of the summa canister sampling are pending lab analyses..

Table 2 presents the analytical results for 23-hour samples collected at Station 6 during Week 49. Co-located samples (ST-6A and ST-6B) were collected at Station 6 on September 12<sup>th</sup>, through September 13<sup>th</sup>, 2018. 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.

Table 3 presents the analytical results for 23-hour samples collected at Stations 1 and 7 during Week 50. The ST-1 sample was collected on September 20<sup>th</sup> through 21<sup>st</sup>, 2018 and The ST-7 sample was collected on September 18<sup>th</sup> through 19<sup>th</sup>, 2018. 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.

Table 4 presents the analytical results for 23-hour samples collected at Stations 2 and 3 during Week 51. The ST-2 sample was collected on September 24<sup>th</sup> through 25<sup>th</sup>, 2018 and The ST-3 sample was collected on September 25<sup>th</sup> through 26<sup>th</sup>, 2018. 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 during October 8<sup>th</sup> through October 12<sup>th</sup>, 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
- Continue decontaminating and demobilizing equipment

Site activities which were conducted at the 4<sup>th</sup> St Turning Basin Area of the Canal during October 8<sup>th</sup> through October 12<sup>th</sup>, 2018 included the following:

- Continued placement of articulated concrete block mats in southeast corner of 4<sup>th</sup> St Turning Basin.
- Total of 91 mats of the required 255 placed via crane and divers during period

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

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	2	ppb	Max.	17	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	10	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	21	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	13	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	35	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	28	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	20	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	10	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

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

TVOC			PM <sub>10</sub>		
Max.	77	ppb	Max.	18	ug/m <sup>3</sup>
Avg.	7	ppb	Avg.	10	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	111	ppb	Max.	18	ug/m <sup>3</sup>
Avg.	25	ppb	Avg.	9	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

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 Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
10/09/2018 00:00 AM - 10/09/2018 23:45 PM

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	7	ppb	Max.	18	ug/m <sup>3</sup>
Avg.	3	ppb	Avg.	9	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	38	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	12	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	41	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	30	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	15	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	11	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

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

TVOC			PM <sub>10</sub>		
Max.	92	ppb	Max.	16	ug/m <sup>3</sup>
Avg.	18	ppb	Avg.	12	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	69	ppb	Max.	26	ug/m <sup>3</sup>
Avg.	33	ppb	Avg.	12	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

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 Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
10/10/2018 00:00 AM - 10/10/2018 23:45 PM

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	15	ppb	Max.	49	ug/m <sup>3</sup>
Avg.	3	ppb	Avg.	10	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	41	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	12	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	41	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	32	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	31	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	12	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

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

TVOC			PM <sub>10</sub>		
Max.	<1	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 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	29	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	8	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

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 Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
10/11/2018 00:00 AM - 10/11/2018 23:45 PM

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	8	ppb	Max.	36	ug/m <sup>3</sup>
Avg.	3	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

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

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	41	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	29	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	16	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	9	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

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

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

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 7 (386 3rd Avenue along Canal Fencing)**

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 Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
10/12/2018 00:00 AM - 10/12/2018 19:00 PM

**Station 1 (Citizen Property near Construction Trailers)**

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

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	11	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	32	ppb	Max.	22	ug/m <sup>3</sup>
Avg.	17	ppb	Avg.	3	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	154	ppb	Max.	5	ug/m <sup>3</sup>
Avg.	9	ppb	Avg.	1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

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

TVOC			PM <sub>10</sub>		
Max.	45	ppb	Max.	11	ug/m <sup>3</sup>
Avg.	14	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	47	ppb	Max.	14	ug/m <sup>3</sup>
Avg.	15	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

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>

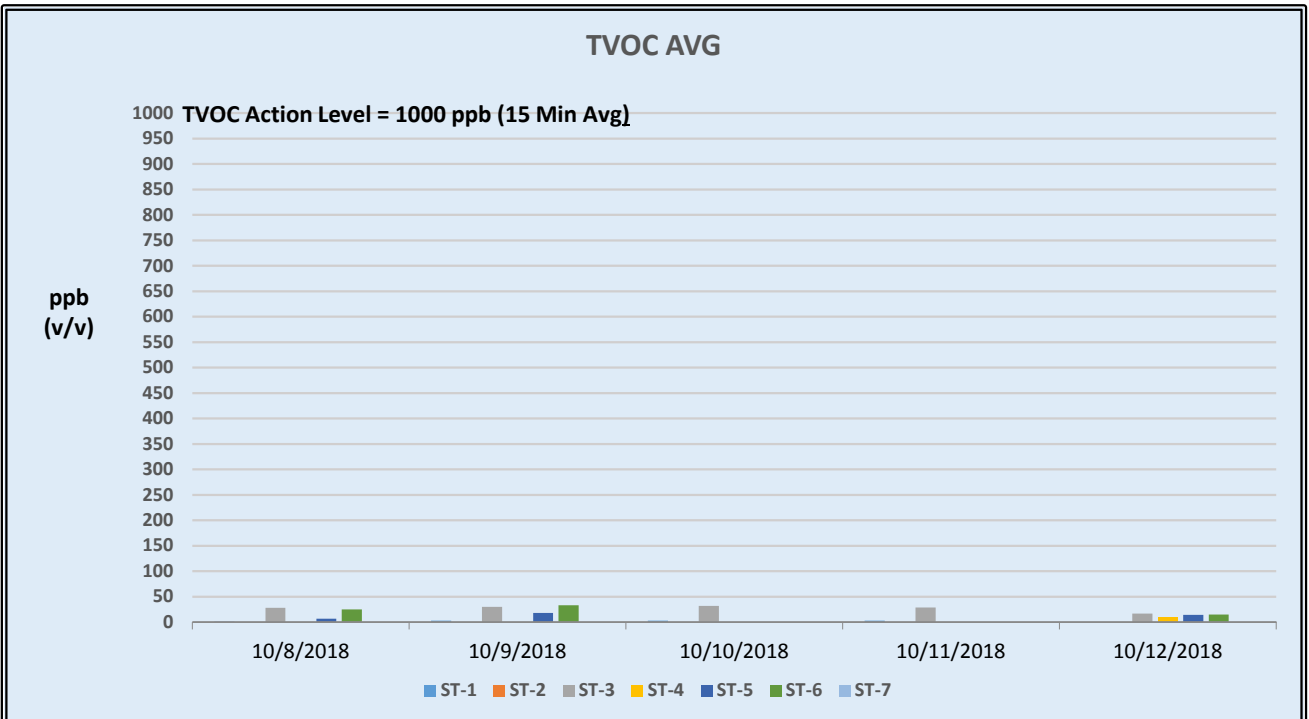
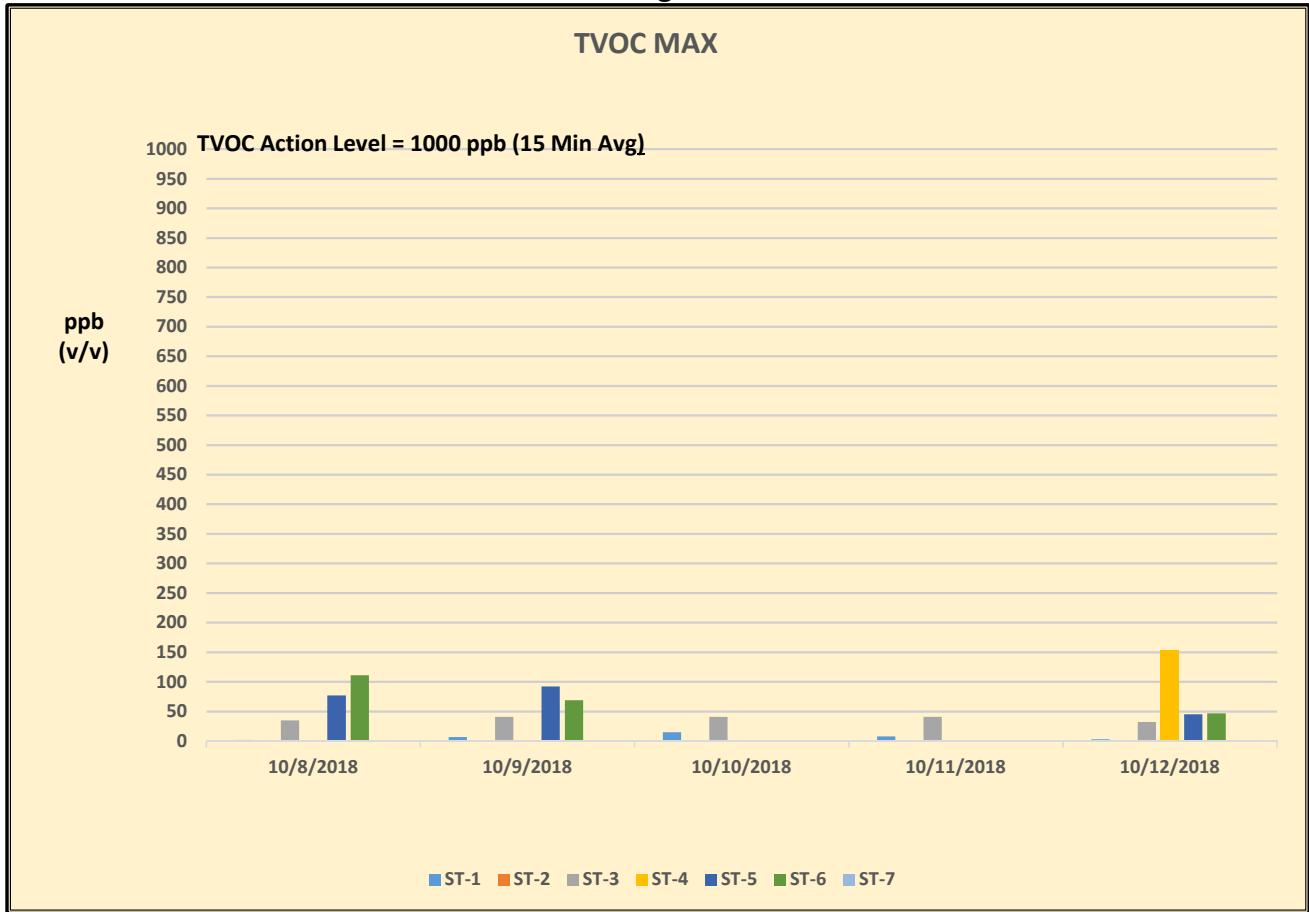
Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

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

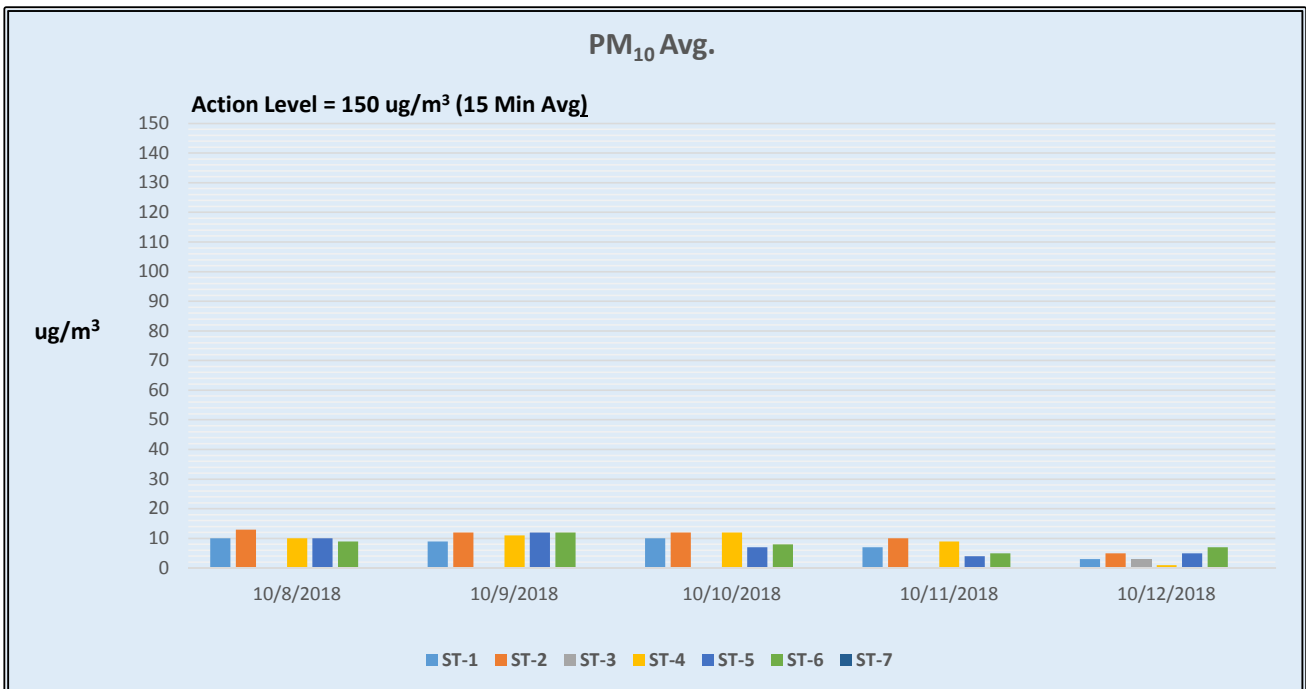
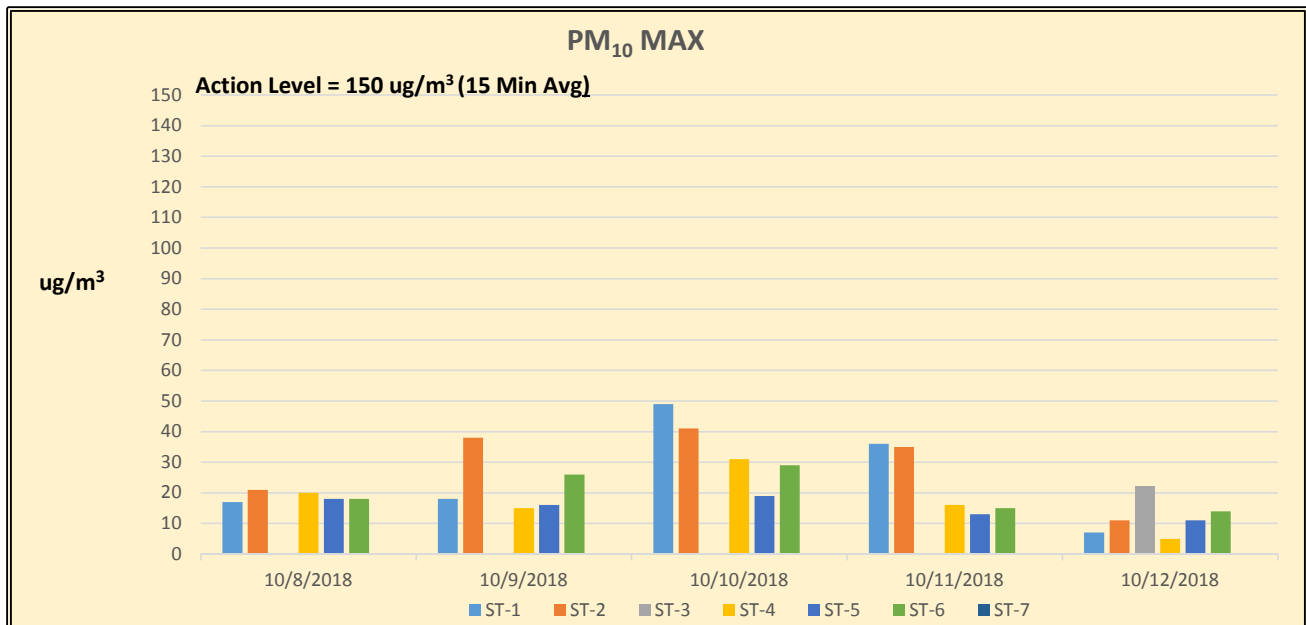
Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

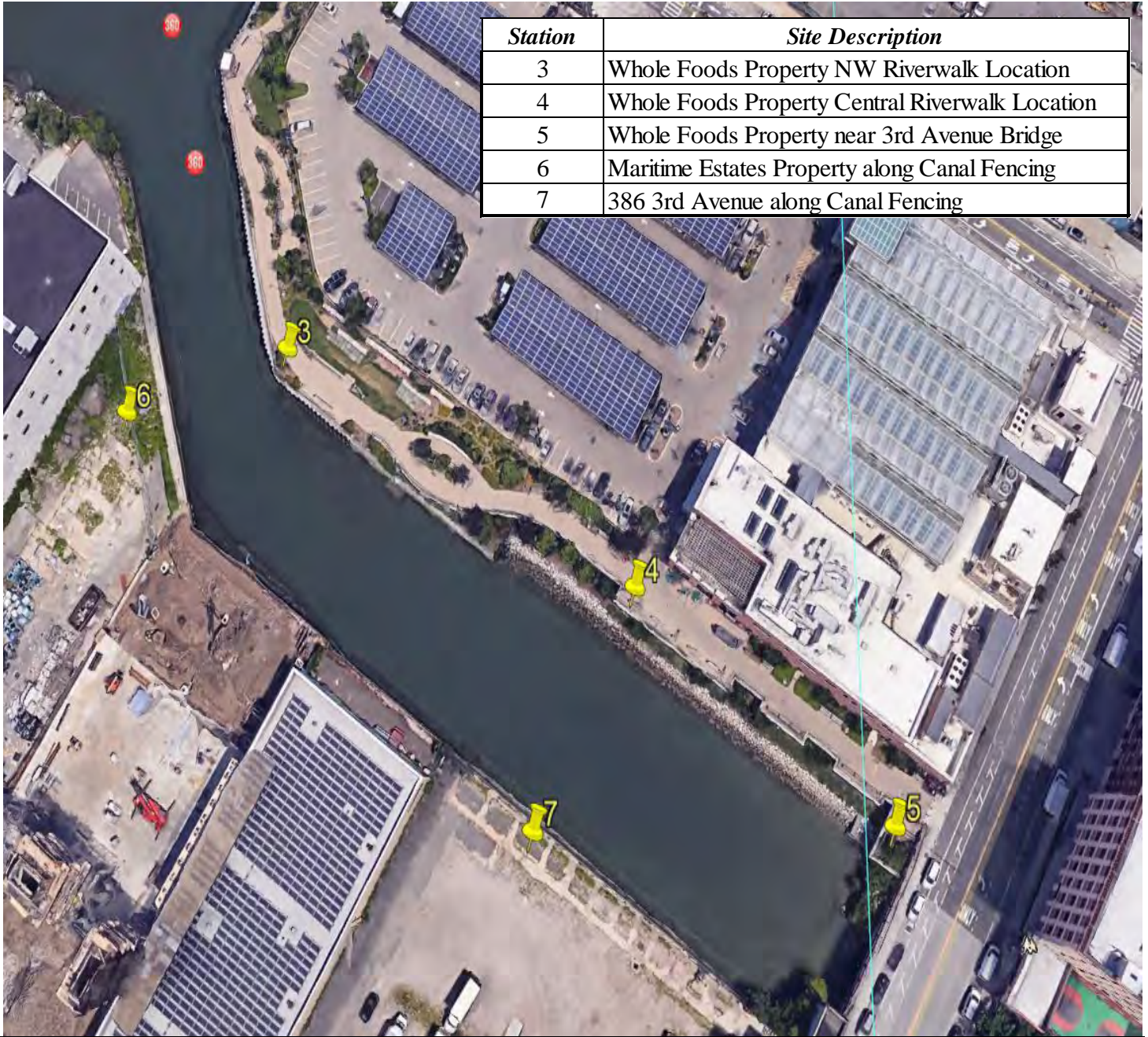


**Figure 1**  
**Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program**  
**TVOC Monitoring Data - Week 53**



**Figure 2**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**TRC CAMP PM<sub>10</sub> Monitoring Data - Week 53**





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

**Units Table 1**

**Week 53**

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

October 8 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)*	Ammonia (NH <sub>3</sub> ) (ppm)**
ST-1	8:00	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-2	8:10	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-3	8:30	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-4	8:40	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-5	8:50	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-6	9:10	<50	<3	<1.0
	16:00	<50	<3	<1.0
ST-7	9:30	<50	<3	<1.0
	16:20	<50	<3	<1.0

October 9 <sup>th</sup> , 2018				
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
	13:45	<50	<3	<1.0
ST-2	7:50	<50	<3	<1.0
	13:50	<50	<3	<1.0
ST-3	8:10	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-4	8:20	<50	<3	<1.0
	14:10	<50	<3	<1.0
ST-5	8:40	<50	<3	<1.0
	14:20	<50	<3	<1.0
ST-6	9:00	<50	<3	<1.0
	14:40	<50	<3	<1.0
ST-7	9:20	<50	<3	<1.0
	14:55	<50	<3	<1.0

**Units Table 1**

**Week 53**

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

October 10th, 2018				
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
	16:00	<50	<3	<1.0
ST-2	9:05	<50	<3	<1.0
	16:05	<50	<3	<1.0
ST-3	9:15	<50	<3	<1.0
	16:15	<50	<3	<1.0
ST-4	9:20	<50	<3	<1.0
	16:20	<50	<3	<1.0
ST-5	9:25	<50	<3	<1.0
	16:25	<50	<3	<1.0
ST-6	0:00	<50	<3	<1.0
	16:40	<50	<3	<1.0
ST-7	10:00	<50	<3	<1.0
	16:55	<50	<3	<1.0

October 11 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)*	Ammonia (NH <sub>3</sub> ) (ppm)**
ST-1	8:00	<50	<3	<1.0
	17:00	<50	<3	<1.0
ST-2	8:10	<50	<3	<1.0
	17:10	<50	<3	<1.0
ST-3	8:25	<50	<3	<1.0
	17:30	<50	<3	<1.0
ST-4	8:35	<50	<3	<1.0
	17:40	<50	<3	<1.0
ST-5	8:40	<50	<3	<1.0
	17:50	<50	<3	<1.0
ST-6	9:00	<50	<3	<1.0
	18:10	<50	<3	<1.0
ST-7	9:15	<50	<3	<1.0
	18:30	<50	<3	<1.0

**Units Table 1**

**Week 53**

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

October 12 <sup>th</sup> , 2018				
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
	17:30	<50	<3	<1.0
ST-2	7:35	<50	<3	<1.0
	17:35	<50	<3	<1.0
ST-3	8:00	<50	<3	<1.0
	17:50	<50	<3	<1.0
ST-4	8:10	<50	<3	<1.0
	18:00	<50	<3	<1.0
ST-5	8:20	<50	<3	<1.0
	18:10	<50	<3	<1.0
ST-6	8:40	<50	<3	<1.0
	18:25	<50	<3	<1.0
ST-7	9:00	<50	<3	<1.0
	18:35	<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 49 VOCs Results: September 12th through 13th (Co-located)**

Sample ID	ST-6A-VOC-091218		ST-6B-VOC-091218		Relative Percent Difference
Laboratory ID	18I0903-02		18I0903-03		
Date Sampled	9/12/18 14:00 - 9/13/18 13:00		9/12/18 14:00 - 9/13/18 13:00		
Location	Station 6		Station 6 Duplicate		Station 6 Pair
VOCs - TO-15	ppbV	ug/m3	ppbV	ug/m3	
<b>Acetone</b>	<b>12</b>	<b>28</b> J	<b>4.7</b>	<b>11</b> J	<b>87.2%</b>
<b>Benzene</b>	<b>0.31</b>	<b>0.99</b>	<b>0.24</b>	<b>0.76</b>	<b>26.3%</b>
<b>Benzyl chloride</b>	<0.035	<0.18	<0.035	<0.18	NC
<b>Bromodichloromethane</b>	<0.035	<0.24	<0.035	<0.24	NC
<b>Bromoform</b>	<0.035	<0.36	<0.035	<0.36	NC
<b>Bromomethane</b>	<0.035	<0.27 J-	<0.035	<0.27 J-	NC
<b>1,3-Butadiene</b>	<0.035	<0.078	<0.035	<0.078	NC
<b>2-Butanone (MEK)</b>	<b>2.7</b>	<b>8</b>	<1.4	<4.1	NC
<b>Carbon Disulfide</b>	<0.35	<1.1	<0.35	<1.1	NC
<b>Carbon Tetrachloride</b>	<b>0.076</b>	<b>0.48</b>	<b>0.073</b>	<b>0.46</b>	<b>4.3%</b>
<b>Chlorobenzene</b>	<0.035	<0.16	<0.035	<0.16	NC
<b>Chloroethane</b>	<0.035	<0.093	<0.035	<0.093	NC
<b>Chloroform</b>	<0.035	<0.17	<0.035	<0.17	NC
<b>Chloromethane</b>	<b>0.46</b>	<b>0.95</b>	<b>0.63</b>	<b>1.3</b>	<b>31.1%</b>
<b>Cyclohexane</b>	<0.035	<0.24	<0.035	<0.24	NC
<b>Dibromochloromethane</b>	<0.035	<0.30	<0.035	<0.30	NC
<b>1,2-Dibromoethane (EDB)</b>	<0.035	<0.27	<0.035	<0.27	NC
<b>1,2-Dichlorobenzene</b>	<0.035	<0.21	<0.035	<0.21	NC
<b>1,3-Dichlorobenzene</b>	<0.035	<0.21	<0.035	<0.21	NC
<b>1,4-Dichlorobenzene</b>	<0.035	<0.21	<0.035	<0.21	NC
<b>Dichlorodifluoromethane (Freon 12)</b>	<b>0.23</b>	<b>1.2</b> J-	<b>0.26</b>	<b>1.3</b> J-	<b>8.0%</b>
<b>1,1-Dichloroethane</b>	<0.035	<0.14	<0.035	<0.14	NC
<b>1,2-Dichloroethane</b>	<0.035	<0.14	<0.035	<0.14	NC
<b>1,1-Dichloroethylene</b>	<0.035	<0.15	<0.035	<0.15	NC
<b>cis-1,2-Dichloroethylene</b>	<0.035	<0.16	<0.035	<0.16	NC
<b>trans-1,2-Dichloroethylene</b>	<0.035	<0.17	<0.035	<0.17	NC
<b>1,2-Dichloropropane</b>	<0.035	<0.16	<0.035	<0.16	NC
<b>cis-1,3-Dichloropropene</b>	<0.035	<0.16	<0.035	<0.16	NC
<b>trans-1,3-Dichloropropene</b>	<0.035	<0.16	<0.035	<0.16	NC
<b>1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)</b>	<0.035	<0.25 J-	<0.035	<0.25 J-	NC
<b>1,4-Dioxane</b>	<0.35	<1.3	<0.35	<1.3	NC
<b>Ethanol</b>	<b>6.1</b>	<b>11</b> J-	<b>4.9</b>	<b>9.2</b> J-	<b>17.8%</b>
<b>Ethyl Acetate</b>	<b>0.18</b>	<b>0.64</b>	<b>0.16</b>	<b>0.59</b>	<b>8.1%</b>
<b>Ethylbenzene</b>	<b>0.12</b>	<b>0.52</b>	<b>0.072</b>	<b>0.31</b>	<b>50.6%</b>
<b>4-Ethyltoluene</b>	<0.035	<0.17	<0.035	<0.17	NC
<b>Heptane</b>	<b>0.2</b>	<b>0.81</b> J+	<b>0.12</b>	<b>0.49</b> J+	<b>49.2%</b>
<b>Hexachlorobutadiene</b>	<0.035	<0.37	<0.035	<0.37	NC
<b>Hexane</b>	<1.4	<4.9	<1.4	<4.9	NC
<b>2-Hexanone (MBK)</b>	<b>0.45</b>	<b>1.8</b>	<0.035	<0.14	NC
<b>Isopropanol</b>	<1.4	<3.4	<1.4	<3.4	NC
<b>Methyl tert-Butyl Ether (MTBE)</b>	<0.035	<0.13	<0.035	<0.13	NC
<b>Methylene Chloride</b>	<0.35	<1.2	<0.35	<1.2	NC
<b>4-Methyl-2-pentanone (MIBK)</b>	<b>0.12</b>	<b>0.51</b> J+	<0.035	<0.14	NC
<b>Naphthalene</b>	<b>0.086</b>	<b>0.45</b> J-	<b>0.046</b>	<b>0.24</b> J-	<b>60.9%</b>
<b>Propene</b>	<b>2.3</b>	<b>3.9</b>	<1.4	<2.4	NC
<b>Styrene</b>	<0.035	<0.15	<0.035	<0.15	NC
<b>1,1,2,2-Tetrachloroethane</b>	<0.035	<0.24	<0.035	<0.24	NC
<b>Tetrachloroethylene</b>	<b>0.073</b>	<b>0.49</b>	<b>0.075</b>	<b>0.51</b>	<b>4.0%</b>
<b>Tetrahydrofuran</b>	<0.035	<0.21	<0.035	<0.21	NC
<b>Toluene</b>	<b>0.69</b>	<b>2.6</b>	<b>0.64</b>	<b>2.4</b>	<b>8.0%</b>
<b>1,2,4-Trichlorobenzene</b>	<0.035	<0.26 J-	<0.035	<0.26 J-	NC
<b>1,1,1-Trichloroethane</b>	<0.035	<0.19	<0.035	<0.19	NC
<b>1,1,2-Trichloroethane</b>	<0.035	<0.19	<0.035	<0.19	NC
<b>Trichloroethylene</b>	<0.035	<0.19	<0.035	<0.19	NC
<b>Trichlorofluoromethane (Freon 11)</b>	<b>0.21</b>	<b>1.2</b>	<b>0.2</b>	<b>1.1</b>	<b>8.7%</b>
<b>1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)</b>	<0.14	<1.1	<0.14	<1.1	NC
<b>1,2,4-Trimethylbenzene</b>	<b>0.13</b>	<b>0.65</b>	<0.035	<0.17	NC
<b>1,3,5-Trimethylbenzene</b>	<0.035	<0.17	<0.035	<0.17	NC
<b>Vinyl Acetate</b>	<b>1.1</b>	<b>3.9</b>	<0.70	<2.5	NC
<b>Vinyl Chloride</b>	<0.035	<0.090	<0.035	<0.090	NC
<b>m&amp;p-Xylene</b>	<b>0.39</b>	<b>1.7</b>	<b>0.22</b>	<b>0.96</b>	<b>55.6%</b>
<b>o-Xylene</b>	<b>0.13</b>	<b>0.56</b>	<b>0.078</b>	<b>0.34</b>	<b>48.9%</b>

Notes:

Values in **bold** indicate detected concentrations

J-: The results reported for 1,2,4-trichlorobenzene, naphthalene, 1,2-dichloro-1,1,2,2-tetrafluoroethane (Freon 114), bromomethane, dichlorodifluoromethane (Freon 12), and ethanol are estimated values and may be biased low.

J+: The results reported for heptane and 4-methyl-2-pentanone (MIBK) are estimated values and may be biased high.

J: The results reported for acetone are qualified as estimated values due to the RPD between collocated samples.

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 calculable due to a non-detect result in one or both co-located sample

**Table 3:**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**Week 50 VOCs Results: September 18th through 19th and September 20th through 21st**

Sample ID	ST-7-VOC-091818		ST-1-VOC-092018	
Laboratory ID	1811247-02		1811247-01	
Date Sampled	9/18/18 11:00 - 9/19/18 10:00		9/20/18 09:00 - 9/21/18 08:00	
Location	Station 7		Station 1	
VOCs - TO-15	ppbV	ug/m3	ppbV	ug/m3
Acetone	<b>4.3</b>	<b>10</b>	<b>3.2</b>	<b>7.5</b>
Benzene	<b>0.095</b>	<b>0.3</b>	<b>0.087</b>	<b>0.28</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	<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	<b>0.062</b>	<b>0.39</b>	<b>0.073</b>	<b>0.46</b>
Chlorobenzene	<0.035	<0.16	<0.035	<0.16
Chloroethane	<0.035	<0.093	<0.035	<0.093
Chloroform	<0.035	<0.17	<0.035	<0.17
Chloromethane	<b>0.44</b>	<b>0.92</b>	<b>0.48</b>	<b>1</b>
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)	<b>0.44</b>	<b>2.2</b>	<b>0.45</b>	<b>2.2</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>7.2</b>	<b>14</b>	<b>3.9</b>	<b>7.4</b>
Ethyl Acetate	<0.035	<0.13	<0.035	<0.13
Ethylbenzene	<0.035	<0.15	<0.035	<0.15
4-Ethyltoluene	<0.035	<0.17	<0.035	<0.17
Heptane	<b>0.064</b>	<b>0.26</b>	<b>0.052</b>	<b>0.21</b>
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	<0.035	<0.18	<b>0.042</b>	<b>0.22</b>
Propene	<1.4	<2.4	<1.4	<2.4
Styrene	<0.035	<0.15	<0.035	<0.15
1,1,2,2-Tetrachloroethane	<0.035	<0.24	<0.035	<0.24
Tetrachloroethylene	<0.035	<0.24	<b>0.078</b>	<b>0.53</b>
Tetrahydrofuran	<0.035	<0.10	<0.035	<0.10
Toluene	<b>0.23</b>	<b>0.87</b>	<b>0.38</b>	<b>1.4</b>
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)	<b>0.21</b>	<b>1.2</b>	<b>0.25</b>	<b>1.4</b>
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1	<0.14	<1.1
1,2,4-Trimethylbenzene	<b>0.049</b>	<b>0.24</b>	<b>0.046</b>	<b>0.22</b>
1,3,5-Trimethylbenzene	<0.035	<0.17	<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	<b>0.11</b>	<b>0.46</b>	<b>0.11</b>	<b>0.46</b>
o-Xylene	<b>0.038</b>	<b>0.16</b>	<b>0.036</b>	<b>0.16</b>

Notes:

Values in **bold** indicate detected concentrations

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

acetone, ethanol, methylene chloride and isopropanol



**Table 4:**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**Week 51 VOCs Results: September 24th through 25th and September 25th through 26th**

Sample ID	ST-2-VOC-092418		ST-3-VOC-092518	
Laboratory ID	1811238-01		1811238-02	
Date Sampled	9/24/18 06:00 - 9/25/18 05:00		9/25/18 10:00 - 9/26/18 09:00	
Location	Station 2		Station 3	
VOCs - TO-15	ppbV	ug/m3	ppbV	ug/m3
<b>Acetone</b>	<b>3</b>	<b>7</b>	<b>4.8</b>	<b>11</b>
<b>Benzene</b>	<b>0.095</b>	<b>0.3</b>	<b>0.16</b>	<b>0.52</b>
<i>Benzyl chloride</i>	<0.035	<0.18	<0.035	<0.18
<i>Bromodichloromethane</i>	<0.035	<0.24	<0.035	<0.24
<i>Bromoform</i>	<0.035	<0.36	<0.035	<0.36
<i>Bromomethane</i>	<0.035	<0.14	<0.035	<0.14
<i>1,3-Butadiene</i>	<0.035	<0.078	<0.035	<0.078
<i>2-Butanone (MEK)</i>	<1.4	<4.1	<1.4	<4.1
<i>Carbon Disulfide</i>	<0.35	<1.1	<0.35	<1.1
<i>Carbon Tetrachloride</i>	<b>0.073</b>	<b>0.46</b>	<b>0.057</b>	<b>0.36</b>
<i>Chlorobenzene</i>	<0.035	<0.16	<0.035	<0.16
<i>Chloroethane</i>	<0.035	<0.093	<0.035	<0.093
<i>Chloroform</i>	<0.035	<0.17	<0.035	<0.17
<i>Chloromethane</i>	<b>0.52</b>	<b>1.1</b>	<b>0.59</b>	<b>1.2</b>
<i>Cyclohexane</i>	<0.035	<0.12	<0.035	<0.12
<i>Dibromochloromethane</i>	<0.035	<0.30	<0.035	<0.30
<i>1,2-Dibromoethane (EDB)</i>	<0.035	<0.27	<0.035	<0.27
<i>1,2-Dichlorobenzene</i>	<0.035	<0.21	<0.035	<0.21
<i>1,3-Dichlorobenzene</i>	<0.035	<0.21	<0.035	<0.21
<i>1,4-Dichlorobenzene</i>	<0.035	<0.21	<0.035	<0.21
<i>Dichlorodifluoromethane (Freon 12)</i>	<b>0.49</b>	<b>2.4</b>	<b>0.47</b>	<b>2.3</b>
<i>1,1-Dichloroethane</i>	<0.035	<0.14	<0.035	<0.14
<i>1,2-Dichloroethane</i>	<0.035	<0.14	<0.035	<0.14
<i>1,1-Dichloroethylene</i>	<0.035	<0.14	<0.035	<0.14
<i>cis-1,2-Dichloroethylene</i>	<0.035	<0.14	<0.035	<0.14
<i>trans-1,2-Dichloroethylene</i>	<0.035	<0.14	<0.035	<0.14
<i>1,2-Dichloropropane</i>	<0.035	<0.16	<0.035	<0.16
<i>cis-1,3-Dichloropropene</i>	<0.035	<0.16	<0.035	<0.16
<i>trans-1,3-Dichloropropene</i>	<0.035	<0.16	<0.035	<0.16
<i>1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)</i>	<0.035	<0.25	<0.035	<0.25
<i>1,4-Dioxane</i>	<0.35	<1.3	<0.35	<1.3
<b>Ethanol</b>	<b>4.3</b>	<b>8</b>	<b>5.7</b>	<b>11</b>
<i>Ethyl Acetate</i>	<b>0.79</b>	<b>2.9</b>	<0.035	<0.13
<i>Ethylbenzene</i>	<b>0.035</b>	<b>0.15</b>	<b>0.097</b>	<b>0.42</b>
<i>4-Ethyltoluene</i>	<0.035	<0.17	<0.035	<0.17
<b>Heptane</b>	<b>0.072</b>	<b>0.29</b>	<b>0.11</b>	<b>0.45</b>
<i>Hexachlorobutadiene</i>	<0.035	<0.37	<0.035	<0.37
<i>Hexane</i>	<1.4	<4.9	<1.4	<4.9
<i>2-Hexanone (MBK)</i>	<0.035	<0.14	<0.035	<0.14
<i>Isopropanol</i>	<1.4	<3.4	<1.4	<3.4
<i>Methyl tert-Butyl Ether (MTBE)</i>	<0.035	<0.13	<0.035	<0.13
<i>Methylene Chloride</i>	<0.35	<1.2	<0.35	<1.2
<i>4-Methyl-2-pentanone (MIBK)</i>	<0.035	<0.14	<0.035	<0.14
<b>Naphthalene</b>	<b>0.044</b>	<b>0.23</b>	<b>0.18</b>	<b>0.93</b>
<i>Propene</i>	<1.4	<2.4	<1.4	<2.4
<i>Styrene</i>	<0.035	<0.15	<0.035	<0.15
<i>1,1,2,2-Tetrachloroethane</i>	<0.035	<0.24	<0.035	<0.24
<i>Tetrachloroethylene</i>	<b>0.11</b>	<b>0.72</b>	<b>0.095</b>	<b>0.64</b>
<i>Tetrahydrofuran</i>	<0.035	<0.10	<0.035	<0.10
<b>Toluene</b>	<b>0.37</b>	<b>1.4</b>	<b>0.62</b>	<b>2.3</b>
<i>1,2,4-Trichlorobenzene</i>	<0.035	<0.26	<0.035	<0.26
<i>1,1,1-Trichloroethane</i>	<0.035	<0.19	<0.035	<0.19
<i>1,1,2-Trichloroethane</i>	<0.035	<0.19	<0.035	<0.19
<i>Trichloroethylene</i>	<0.035	<0.19	<0.035	<0.19
<i>Trichlorofluoromethane (Freon 11)</i>	<b>0.24</b>	<b>1.3</b>	<b>0.23</b>	<b>1.3</b>
<i>1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)</i>	<0.14	<1.1	<0.14	<1.1
<i>1,2,4-Trimethylbenzene</i>	<b>0.055</b>	<b>0.27</b>	<b>0.1</b>	<b>0.5</b>
<i>1,3,5-Trimethylbenzene</i>	<0.035	<0.17	<0.035	<0.17
<i>Vinyl Acetate</i>	<0.70	<2.5	<0.70	<2.5
<i>Vinyl Chloride</i>	<0.035	<0.090	<0.035	<0.090
<i>m&amp;p-Xylene</i>	<b>0.11</b>	<b>0.48</b>	<b>0.28</b>	<b>1.2</b>
<i>o-Xylene</i>	<b>0.041</b>	<b>0.18</b>	<b>0.1</b>	<b>0.43</b>

Notes:

Values in **bold** indicate detected concentrations

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

acetone, ethanol, methylene chloride and isopropanol



**Gowanus Canal Superfund Site  
TB-4 Dredging and Capping Pilot Study  
Brooklyn, New York  
Meteorological Summary  
October 8<sup>th</sup> through October 12<sup>th</sup>, 2018**

<b>October 8<sup>th</sup>, 2018 *</b>		
<b>Wind Direction (°)</b>	<b>Wind Speed (mph)</b>	<b>Temperature (°F)</b>
<b>S</b>	<b>3.17</b>	<b>69.0</b>

<b>October 9<sup>th</sup>, 2018 **</b>		
<b>Wind Direction (°)</b>	<b>Wind Speed (mph)</b>	<b>Temperature (°F)</b>
<b>SSE</b>	<b>2.15</b>	<b>71.5</b>

<b>October 10<sup>th</sup>, 2018 **</b>		
<b>Wind Direction (°)</b>	<b>Wind Speed (mph)</b>	<b>Temperature (°F)</b>
<b>SE</b>	<b>2.09</b>	<b>64.0</b>

<b>October 11<sup>th</sup>, 2018 **</b>		
<b>Wind Direction (°)</b>	<b>Wind Speed (mph)</b>	<b>Temperature (°F)</b>
<b>SE</b>	<b>2.23</b>	<b>64.0</b>

<b>October 12<sup>th</sup>, 2018 ***</b>		
<b>Wind Direction (°)</b>	<b>Wind Speed (mph)</b>	<b>Temperature (°F)</b>
<b>WSW</b>	<b>4.42</b>	<b>63.0</b>

\* 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 19:00.

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





WI #15-081

**MEMORANDUM**

October 15, 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, 8 October – 12 October, 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<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>.

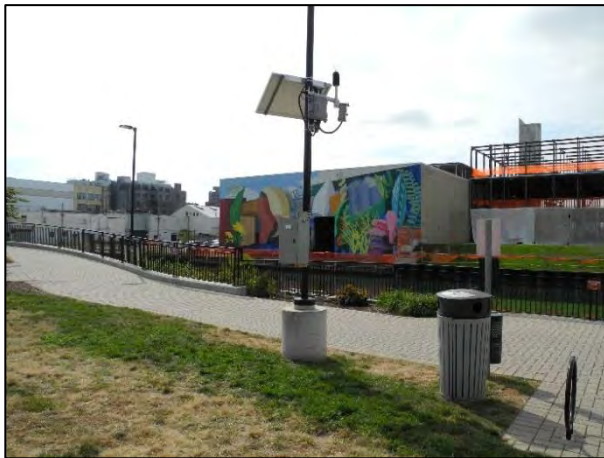
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<sup>1</sup> Wilson Ihrig. *Gowanus Canal 4<sup>th</sup> Street Turning Basin Dredging and Capping Pilot Study Noise and Vibration Monitoring Plan*. California: prepared for Gowanus Canal Remedial Design Group, DRAFT May 2017

<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.



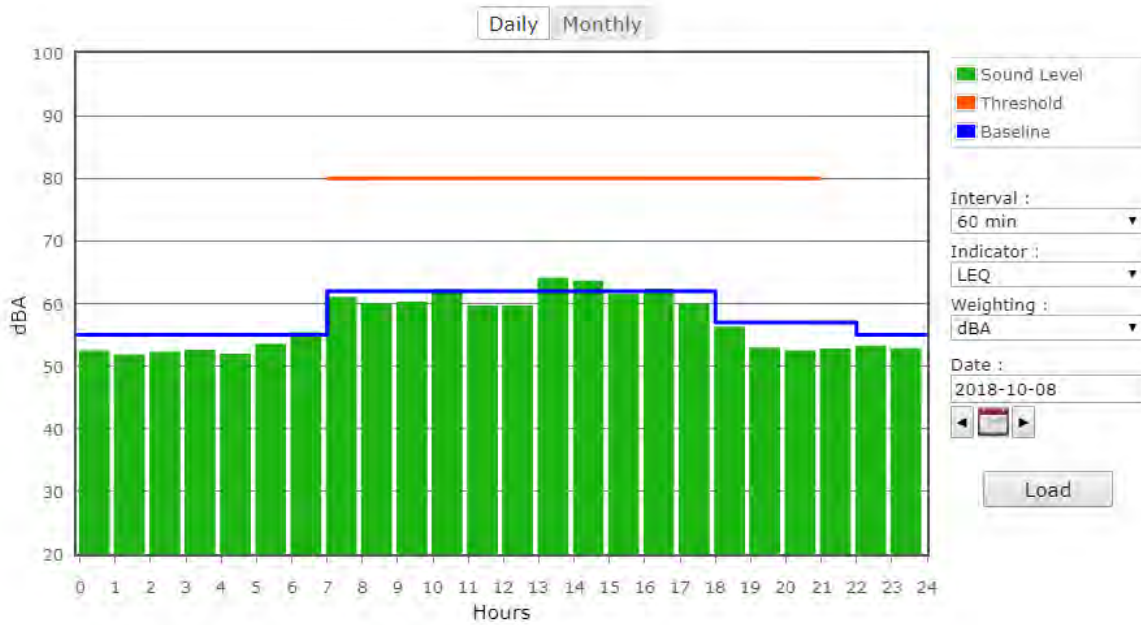
**Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study**



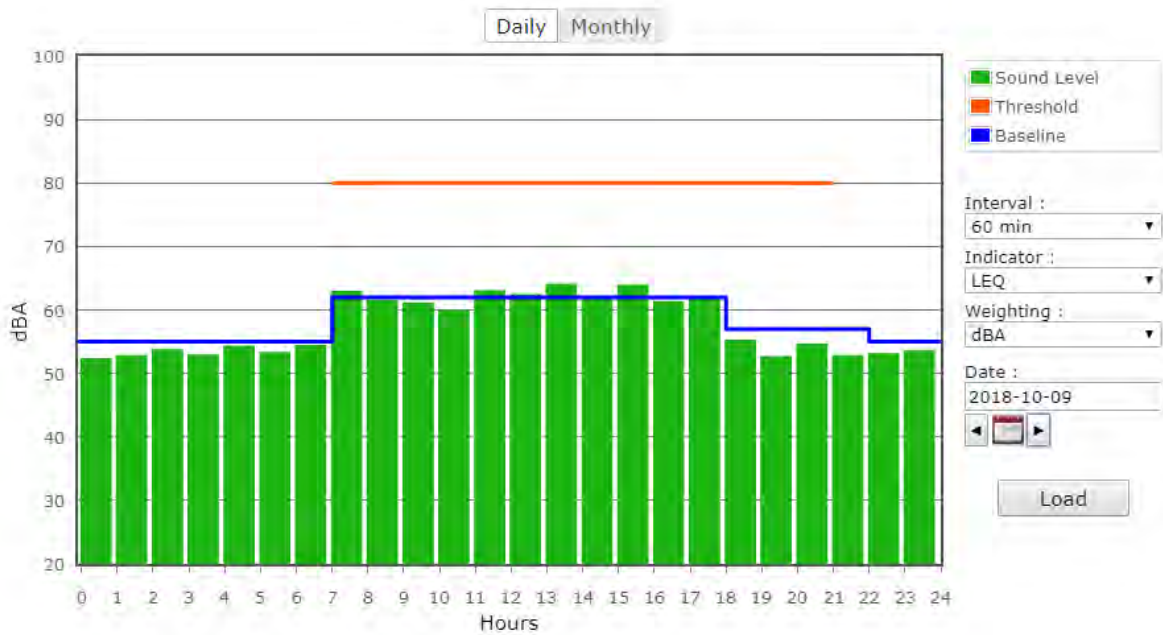
**Photo 1: Noise Monitoring Location NM-1  
(26 September 2017)**



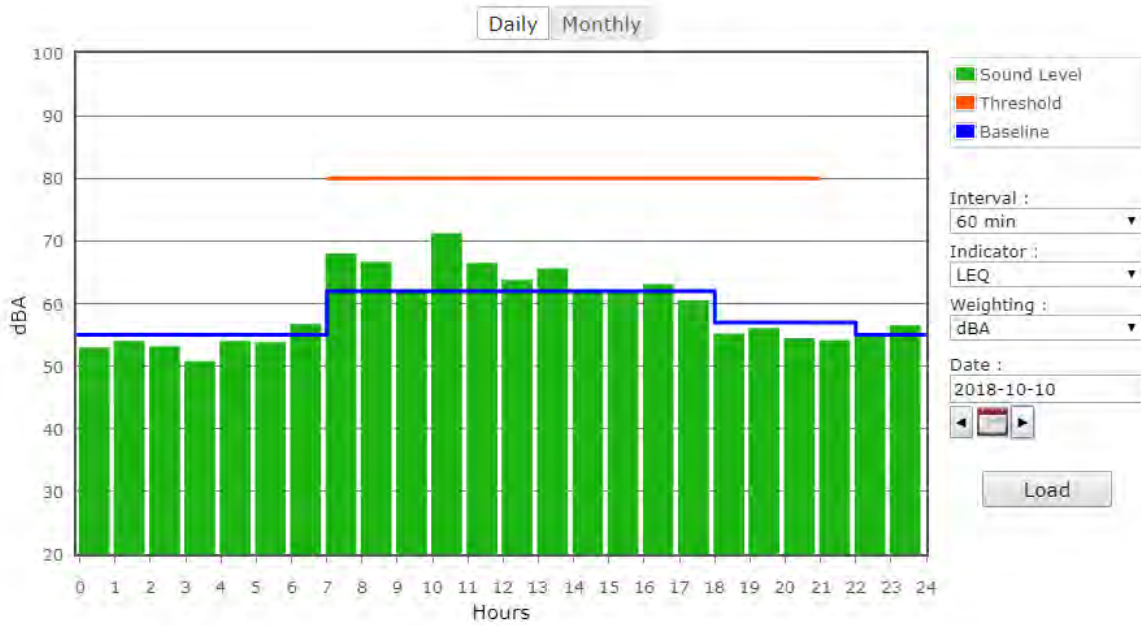
**Photo 2: Noise Monitoring Location NM-2  
(25 September 2017)**



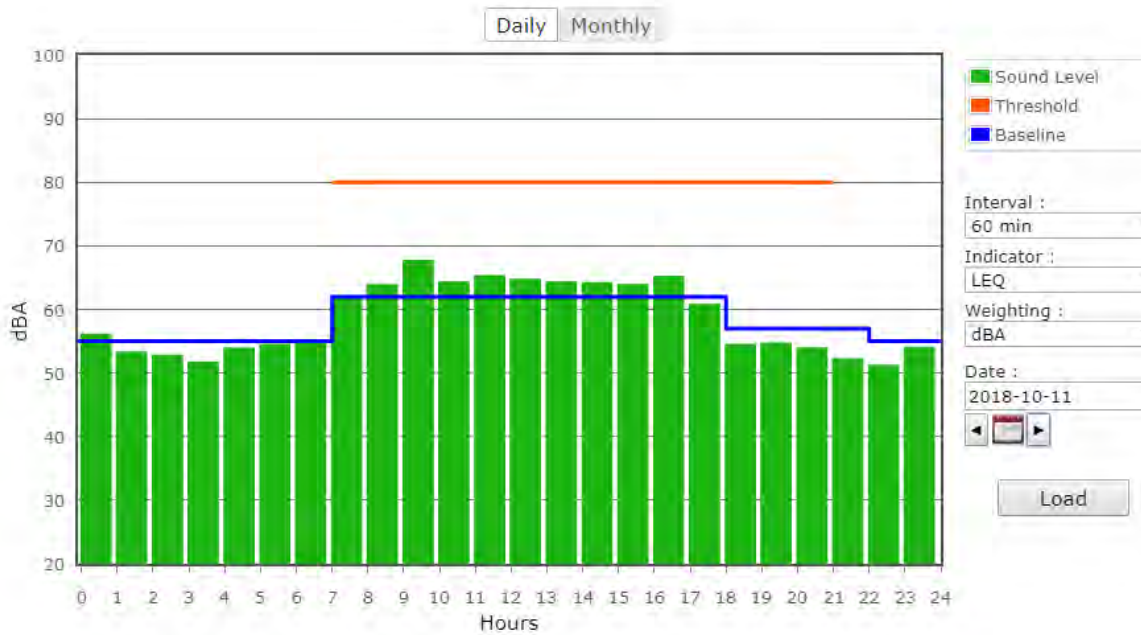
**Figure 2: North Monitor NM-1 on Monday**



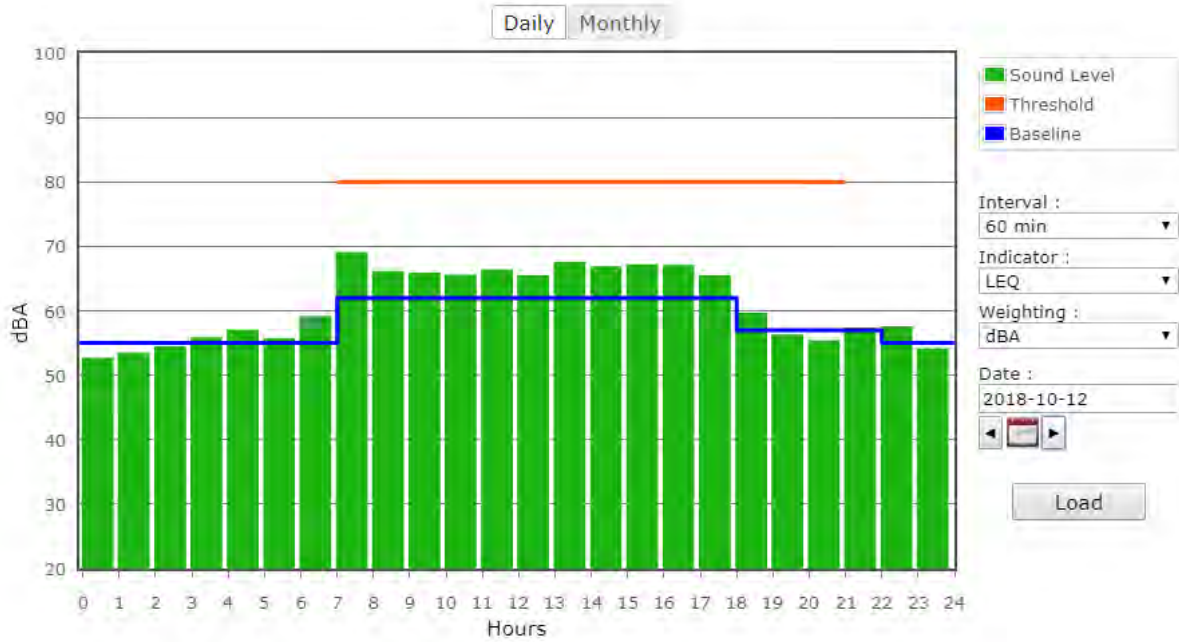
**Figure 3: North Monitor NM-1 on Tuesday**



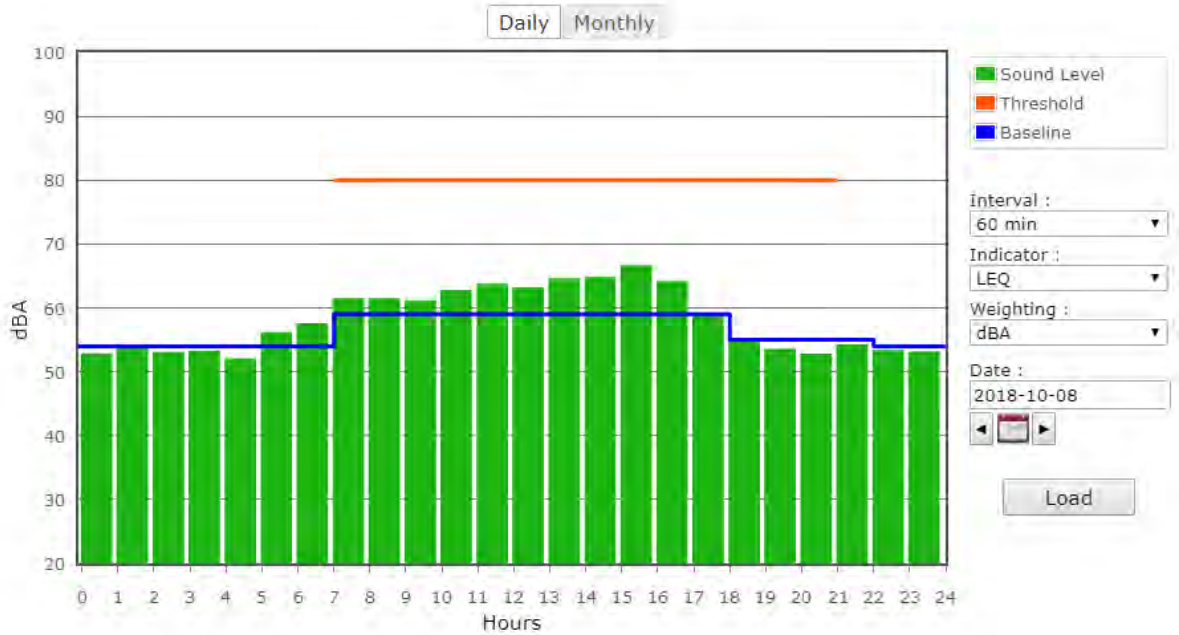
**Figure 4: North Monitor NM-1 on Wednesday**



**Figure 5: North Monitor NM-1 on Thursday**

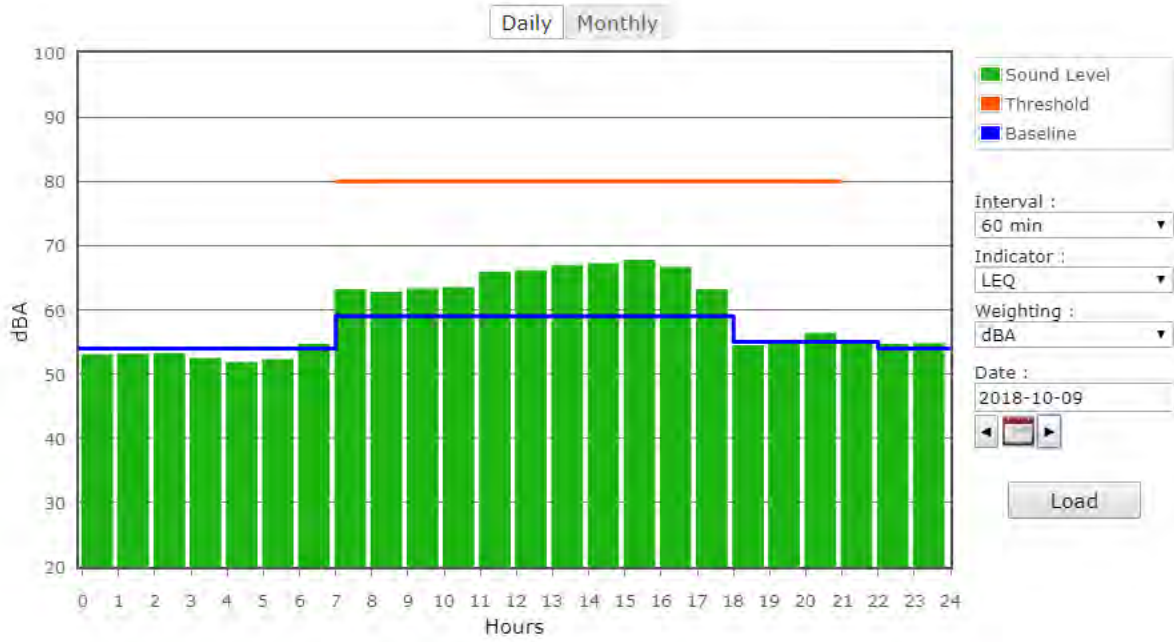


**Figure 6: North Monitor NM-1 on Friday**

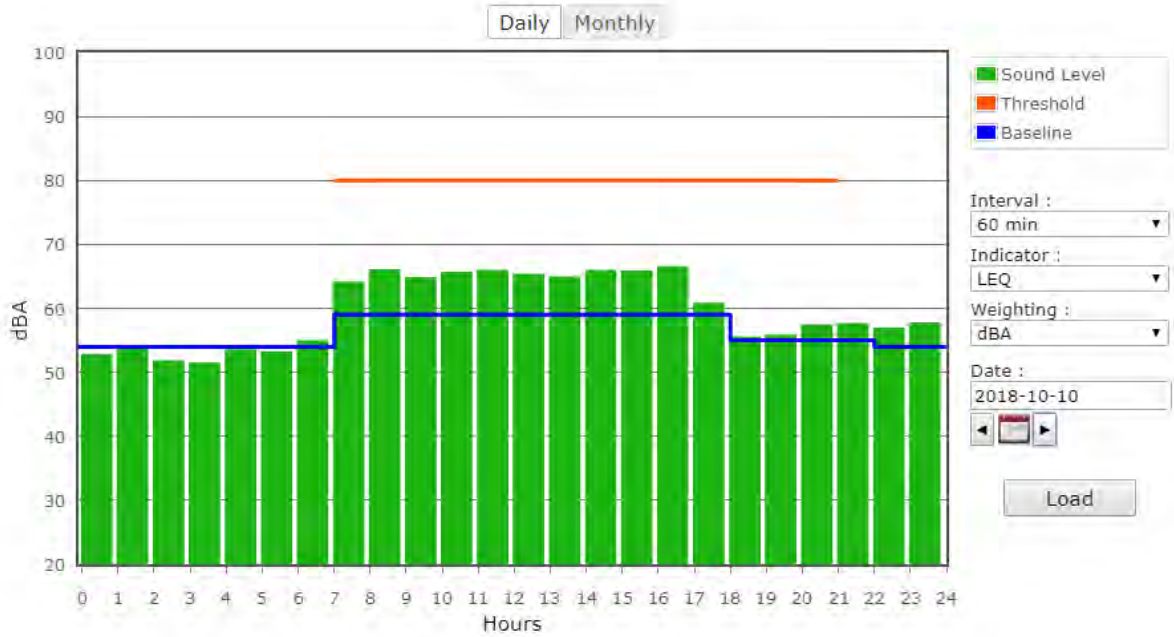


**Figure 7: South Monitor NM-2 on Monday**

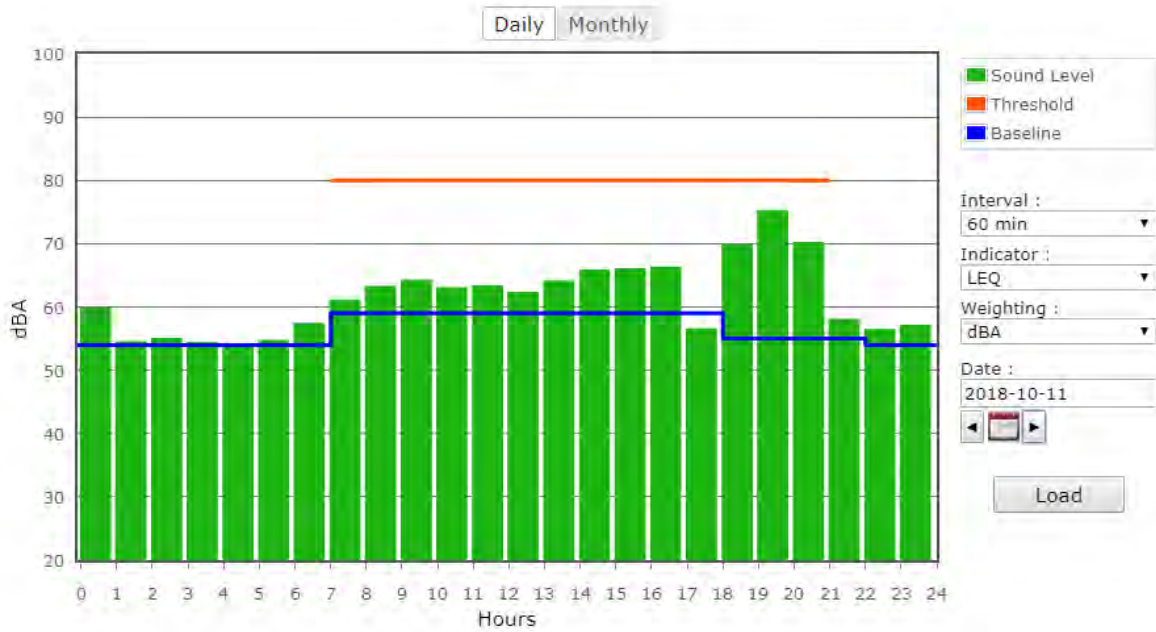




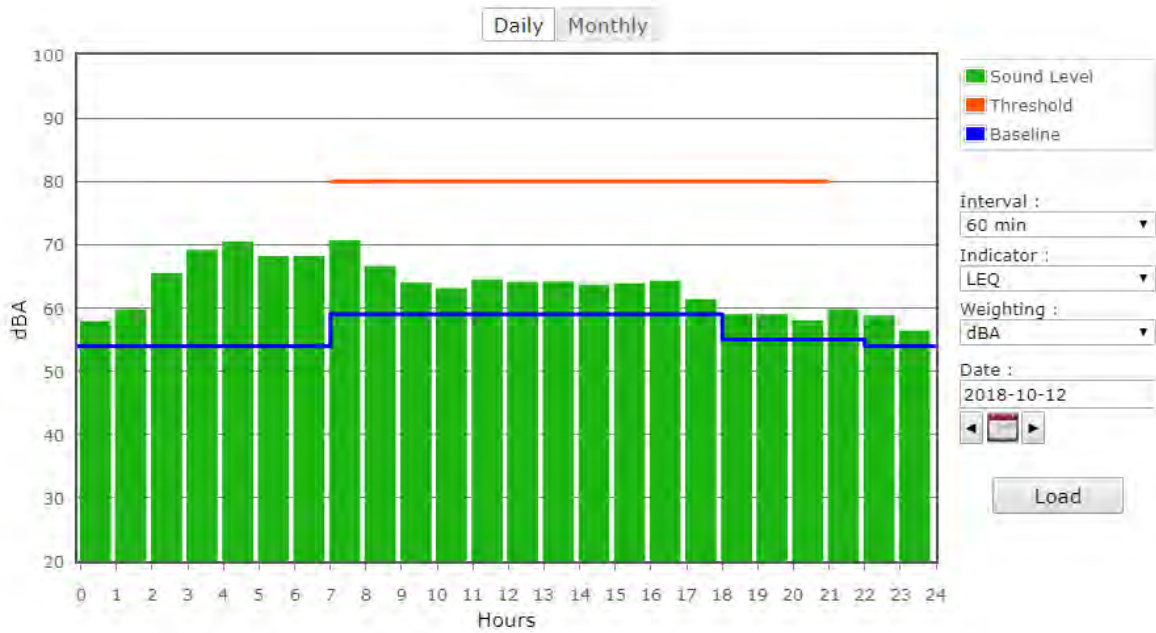
**Figure 8: South Monitor NM-2 on Tuesday**



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



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



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

**AHRS WEEKLY REPORT**



Gowanus Project – Clean Earth October 10, 2018

Arrived at Clean Earth at 9:00 am. Site activity included the inspection of final barge (Ld# 29 Weeks 80 - Oversize Debris) of debris received from Citizen Site.

The debris to be inspected was scattered onto the cement pad. Among the debris there mainly tires. Two of the tires were used as bumpers on bulkheads or boats. Nothing was retained. Finish with debris inspection at 11:00 am.



Photo 1: Showing many tires and chunks of concrete



Photo 2: Showing many tires and chunks of concrete



Photo 3: Close up of tire once used as a bulkhead or boat bumper



Photo 4: Showing many tires and chunks of concrete



Photo 5: Showing many tires and chunks of concrete



THE SATURDAY EVENING POST October 6, 1926



## "Tough as a Rhino"

UP UP UP! And plenty for your cheap motor. The growing reputation of Cupples Co. is now on a world basis. The achievement of 16 years of Cupples engineering experience and work of our leading engineers make us keep the leadership of the Cupples Co. It is a costly product—thoroughly produced and distributed. Each with a mile will stand up to the toughest road with your motor, the Cupples Diamond Safety Tread for a road, back road, or highway is a standard of toughness that has no equal in any road today—at any price. In the Cupples treatment of rubber grain and manufacturing quality that will last up the road give us which the British production has given. For Comfort — Safety — Good Looks and Wear, make your next tire a Cupples Co. Co. Its toughness means value. CUPPLES COMPANY - SAINT LOUIS A National Institution Since 1911.

Qualifications for Cupples Tires:  
 1. They are made of the best material.  
 2. They are made in the best way.  
 3. They are made in the best place.  
 4. They are made in the best time.  
 5. They are made in the best way.  
 6. They are made in the best place.  
 7. They are made in the best time.

# Cupples

TIRES TUBES

Cupples Tire Ad "Tough As a Rhino" (1926)

**WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA  
(MAY THROUGH AUGUST 2018 SAMPLING RESULTS)**



**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS**

Analyte	Analytical Results			
	5/24/18 Result	Qualifier	Discharge Limit	Units
pH	7.41	--	Monitor	s.u.
Ammonia	14		Monitor	mg/l
Biological Oxygen Demand	6.4	J	20	mg/l
Dissolved oxygen	6.89	--	Monitor	mg/l
Oil and grease	1.4	J	15	mg/l
Total suspended solids	3.7		20	mg/l
Copper	ND	U	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

s.u. = standard units

J-qualifier indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U-qualifier indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - WEEKLY**

Analyte	Analytical Results			
	5/31/18 Result	Qualifier	Discharge Limit	Units
pH	7.40	--	Monitor	s.u.
Biological Oxygen Demand	14	J	20	mg/l
Dissolved oxygen	6.42	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	2.6		20	mg/l
Copper	ND	U	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

s.u. = standard units

J-qualifier indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U-qualifier indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS**

Analyte	Analytical Results			
	6/14/18 Result	Qualifier	Discharge Limit	Units
pH	7.31	--	Monitor	s.u.
Ammonia	13	B	Monitor	mg/l
Biological Oxygen Demand	44		20	mg/l
Dissolved oxygen	2.57	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	1.9		20	mg/l
Copper	ND	U	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

s.u. = standard units

U-qualifier indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

B-qualifier indicates the analyte was found in the blank and the sample

**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - WEEKLY**

Analyte	Analytical Results			
	6/21/18 Result	Qualifier	Discharge Limit	Units
pH	7.68	--	Monitor	s.u.
Biological Oxygen Demand	22	b	20	mg/l
Dissolved oxygen	4.33	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	4.8		20	mg/l
Copper	5.9	J	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

s.u. = standard units

U-qualifier indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J-qualifier indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

b-qualifier indicates the result was detected in the unseeded control blank.

**Effluent Monitoring Results**  
**4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS**

Analyte	Analytical Results		Discharge Limit	Units
	7/10/18 Result	Qualifier		
Biological Oxygen Demand	ND	U	20	mg/l
Chemical Oxygen Demand	62		Monitor	mg/l
Total suspended solids	1.1		20	mg/l

**Notes:**

mg/l = milligrams per liter

ND = not detected

U-qualifier indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

**Effluent Monitoring Results**  
**4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS**

Analyte	Analytical Results		Discharge Limit	Units
	7/12/18 Result	Qualifier		
Biological Oxygen Demand	4.5	b	20	mg/l
Chemical Oxygen Demand	95		Monitor	mg/l
Total suspended solids	6.5		20	mg/l

**Notes:**

mg/l = milligrams per liter

b-qualifier indicates the result was detected in the unseeded control blank.



**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - WEEKLY**

Analyte	Analytical Results			
	7/18/18 & 7/19/218 Result	Qualifier	Discharge Limit	Units
pH	7.38	--	Monitor	s.u.
Biological Oxygen Demand	13	J	20	mg/l
Dissolved oxygen	5.27	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	2.8		20	mg/l
Copper	ND	U	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

s.u. = standard units

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J-qualifier indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - WEEKLY**

Analyte	Analytical Results			
	7/26/18 Result	Qualifier	Discharge Limit	Units
pH	7.35	--	Monitor	s.u.
Dissolved oxygen	7.07	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Copper	ND	U	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

s.u. = standard units

U-qualifier indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - MONTHLY**

Analyte	Analytical Results			
	8/2/18 Result	Qualifier	Discharge Limit	Units
pH	8.03	--	Monitor	s.u.
Ammonia	0.68	B	Monitor	mg/l
Biological Oxygen Demand	2.9	b	20	mg/l
Dissolved oxygen	14.49	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	1.6		20	mg/l
Copper	ND	U	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

s.u. = standard units

U-qualifier indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

b-qualifier indicates the result was detected in the unseeded control blank.

B-qualifier indicates the compound was found in the blank and sample

**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - WEEKLY**

Analyte	Analytical Results			
	8/9/18 Result	Qualifier	Discharge Limit	Units
pH	7.31	--	Monitor	s.u.
Biological Oxygen Demand	ND	U	20	mg/l
Dissolved oxygen	6.1	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	4.2		20	mg/l
Copper	ND	U	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

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**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - WEEKLY**

Analyte	Analytical Results			
	8/16/18 Result	Qualifier	Discharge Limit	Units
pH	7.22	--	Monitor	s.u.
Biological Oxygen Demand	4.2	b	20	mg/l
Dissolved oxygen	6.21	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	3.2		20	mg/l
Copper	4.1	J	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

s.u. = standard units

U-qualifier indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J-qualifier indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

b-qualifier indicates the result was detected in the unseeded control blank.

**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - WEEKLY**

Analyte	Analytical Results			
	8/24/18 Result	Qualifier	Discharge Limit	Units
pH	7.10	--	Monitor	s.u.
Biological Oxygen Demand	ND	U	20	mg/l
Dissolved oxygen	6.94	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	0.9		20	mg/l
Copper	13	J	79	ug/l
Lead	ND	U	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

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

