SITE OBSERVATION REPORT

PROJECT No.:	170381202	**CLIENT:** 250 Seaport District, LLC c/o The Howard Hughes Corporation	**DATE:**	Wednesday, October 18, 2023
PROJECT:	250 Water Street		**WEATHER:**	Sunny, 55 – 63° F Wind: NW @ 0.1 – 1.2 mph
LOCATION:	New York, NY		**TIME:**	5:45 am – 6:30 pm
BCP SITE ID:	C231127		**MONITOR**	Gabriella DeGennaro

EQUIPMENT:
CAT 335 Excavator
CAT 328 Excavator
Komatsu PC210 Excavator
Delmag Drill Rig
Bauer RTG RG 27S
Bauer BG45 Drill Rig
Casagrande M6A-1 Tieback Drill Rig
Jerome J505 Mercury Vapor Analyzer
RKI GX-6000 Photoionization Detector (PID)
Aeroqual ASQ1 Air Monitoring Station

PRESENT AT SITE: **Day 227**
Langan (Environmental/Geotechnical) Gabriella DeGennaro, Michael Cole, Pradeep Pandey
Suffolk Construction (Suffolk) (General Contractor) Wyatt Favia
East Coast Drilling, Inc. (ECD) (Foundation Contractor) Danny Rodgers
New York State Department of Environmental Conservation (NYSDEC) Shawn Roberts
Earth Efficient (Soil Broker) Yinette Batista
AKRF, Inc. (Archaeologist) Theresa Imbriolo
Innovative Recycling Technologies, Inc. (IRT) (UST Cleaning/Removal Contractor)

OBSERVATIONS, DISCUSSIONS, TEST RESULTS, ETC.:

Langan was present to document remediation activities in accordance with the NYSDEC-approved November 2021 Remedial Action Work Plan (RAWP) at the 250 Water Street site (NYSDEC Brownfield Cleanup Program [BCP] Site No C231127).

Site Activities

- ECD used a Bauer RTG RG 27S drill rig to pre-drill three boreholes in the southeast part of the site to loosen the underlying soil in preparation for soil mix column installation.
- ECD used a Bauer BG45 drill rig to install three deep soil mix columns for support-of-excavation (SOE) system installation in the southeast part of the site (along Water Street). ECD's drill rig advanced a steel rod with two cutter blades at the bottom of the rod, while concurrently injecting grout through the cutting head and spinning and advancing the blades downward to depths between about 108 and 111 feet below grade surface (bgs).
    - No drilling spoils were generated during installation of the soil mix columns.
    - Excess grout was contained within a temporary containment area in the eastern part of the site and will be managed as construction and demolition (C&D) debris at a later date.
- ECD excavated an about 20-foot-long by 30-foot-wide area to a maximum depth of about 10 bgs in the western part of the site (waste characterization cell WC02) for removal and off-site disposal of C&D debris.
    - Excavated soil/fill was screened for odors, staining, organic vapors, and mercury vapor using a handheld PID and handheld Jerome® J505 mercury vapor analyzer, respectively. Evidence of impacts was not observed and the excavated soil/fill was separated from C&D debris using a sifting bucket. The C&D debris was either stockpiled adjacent to the excavation area or was live-loaded into securely covered tri-axle dump trucks for off-site disposal. Following removal of the C&D debris, the excavated soil/fill was temporarily backfilled into the excavation area for off-site disposal at a later date.

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- ECD excavated an about 40-foot-long by 5-foot-wide area to a maximum depth of about 2 feet below the existing grade (about 9 feet below sidewalk grade [bsg]) in the southern part of the site (waste characterization cell WC03 and WC06) to install timber lagging for the SOE system.
    - Excavated soil/fill was screened for odors, staining, organic vapors, and mercury vapor using a handheld PID and handheld Jerome® J505 mercury vapor analyzer, respectively. Evidence of impacts was not observed and the excavated soil/fill was separated from C&D debris using a sifting bucket. The C&D debris was either stockpiled adjacent to the excavation area or was live-loaded into securely covered tri-axle dump trucks for off-site disposal. Following removal of the C&D debris and installation of the timber lagging, the excavated soil/fill was temporarily backfilled into the excavation area for off-site disposal at a later date.
- ECD graded soil/fill in an about 100-foot-long by 100-foot-wide area in the eastern part of the site to stabilize the surface for SOE system installation.
    - Graded soil/fill was screened for odors, staining, organic vapors, and mercury vapor using a handheld PID and handheld Jerome® J505 mercury vapor analyzer, respectively. Evidence of impacts was not observed and the soil/fill generated from grading activities was added to the stockpile in the northeast part of the site for future off-site disposal.
- ECD continued installation of the concrete guide wall in the southern part of the site (along Water Street). The concrete guide wall will be used to facilitate installation of SOE along the perimeter of the site.
- IRT decommissioned the underground storage tank (UST) staged in the southern part of the site. Decommissioning activities included cutting a hole in the UST to render it unusable and removing residual tank contents. Following removal of the tank bottoms, the interior of the tank was cleaned using absorbent pads. The spent absorbent pads and the residual tank contents (petroleum-related sludge) were containerized in 55-gallon United Nations/Department of Transportation (UN/DOT)-approved 55-gallon steel drums for off-site disposal. No odors or PID readings were observed during decommissioning of the UST.

Material Tracking

- IRT exported the UST carcass for off-site disposal as scrap metal at the Gershow Recycling facility, located in Brooklyn, NY.
- IRT exported three UN/DOT-approved 55-gallon drum containing spent absorbent pads for off-site disposal at the Republic Environmental Systems facility, located in Hatfield, PA.
- ECD exported 12 truckloads (about 240 cubic yards [CY]) of C&D debris for off-site disposal at the Earth Efficient MSM facility located in East Stroudsburg, PA.
- ECD exported one truckload (about 20 CY) of soil/fill for off-site disposal at the Middlesex County Landfill (MCUA) facility in East Brunswick, NJ.
- No material was imported to the site.

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Material Import Summary								
Facility Name Location Type of Material	**Stone Industries, Inc. Haledon, NJ 1.5/2.5-inch Virgin Stone**		**Stone Industries, Inc. Haledon, NJ 0.75-inch Virgin Stone**		**Impact Reuse & Recovery Center or Impact Materials Jersey City, Lyndhurst/Jersey City, NJ 1.5-inch Clean Bluestone**		**Impact Reuse & Recovery Center, Lyndhurst, NJ General Fill**	
Quantities	No. of Loads	Approx. Volume (Tons)	No. of Loads	Approx. Volume (Tons)	No. of Loads	Approx. Volume (Tons)	No. of Loads	Approx. Volume (Tons)
Today	0	0	0	0	0	0	0	0
Project Total	13	309.28	0	0	15	339.65	374	9,157.85
NYSDEC Approved:	1,800 tons*				720 tons*		19,500 tons*	

*0.75-inch, 1.5-inch, and 2.5-inch virgin stone from the Stone Industries, Inc. facility and 1.5-inch clean bluestone from the Impact Reuse & Recovery Center (IRRC) facility were approved for import of 1,000 cubic yards (CY) and 400 CY, respectively. Assuming a conversion factor of 1.8, each quantity was converted to tons in order to accurately compare with import weight tickets. General fill from the IRRC facility was approved for import of 13,000 CY and a conversion factor of 1.5 is applied.

Material Export Summary (1 of 3)								
Facility Name Location Type of Material	**Allocco Recycling Brooklyn, NY Construction & Demolition (C&D) Debris**		**IRRC Lyndhurst, NJ C&D Debris**		**Earth Efficient MSM East Stroudsburg, PA C&D Debris**		**Clean Earth of North Jersey Kearny, NJ Hazardous Lead-Impacted Soil/Fill**	
Quantities	No. of Loads	Approx. Volume (CY)	No. of Loads	Approx. Volume (CY)	No. of Loads	Approx. Volume (CY)	No. of Loads	Approx. Volume (CY)
Today	0	0	0	0	12	240	0	0
Project Total	5	85	42	840	213	4,260	107	2,140

Material Export Summary (2 of 3)						
Facility Name Location Type of Material	**Middlesex County Landfill East Brunswick, NJ Non-hazardous Soil/Fill**		**Bayshore Soil Management Keasbey, NJ Petroleum-Impacted Soil/Fill**		**Clean Earth of Carteret, NJ Carteret, NJ Non-hazardous Soil/Fill**	
Quantities	No. of Loads	Approx. Volume (CY)	No. of Loads	Approx. Volume (CY)	No. of Loads	Approx. Volume (CY)
Today	1	20	0	0	0	0
Project Total	314	6,280	267	5,340	66	1,320

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Material Export Summary (3 of 3)						
Facility Name Location Type of Material	**Clean Earth of North Jersey Kearny, NJ Non-hazardous Soil/Fill**		**Cycle Chem, Inc. Elizabeth, NJ Hazardous Lead - Impacted Soil/Fill**		**Harmony Foul Rift (HFR) Belvidere, NJ Non-hazardous Soil/Fill**	
Quantities	No. of Loads	Approx. Volume (CY)	No. of Loads	Approx. Volume (CY)	No. of Loads	Approx. Volume (CY)
Today	0	0	0	0	0	0
Project Total	201	4,020	10	200	27	540

Sampling

- No samples were collected.

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CAMP Activities

Langan performed air monitoring at the perimeter of the site, at the northern sidewalk of Pearl Street, at the western sidewalk of Beekman Street, at the eastern sidewalk of Peck Slip, and at the southern sidewalk of Water Street at eight total locations for mercury vapor, volatile organic compounds (VOCs), and particulate matter less than 10 microns in diameter (PM10) from about 6:42am to 5:45pm. There were no fifteen-minute average concentrations for mercury vapor, VOCs or PM10 that approached or exceeded the action levels established by the CAMP (1.00 µg/m^3, 5.0 ppm, or 0.100 mg/m^3, respectively).

Background Concentrations

Prior to implementation of CAMP, instantaneous background concentrations of mercury vapor and VOCs were recorded using a handheld Jerome® J505 mercury vapor analyzer and a handheld PID, respectively.

- Background concentrations of mercury vapor at each CAMP station were recorded at 0.00 µg/m^3.
- Background concentrations of VOCs at each CAMP station were recorded at 0.0 ppm.

Perimeter and Work Zone Concentrations

Daily Average Concentrations

Station ID	Particulate (mg/m^3)	Organic Vapor (ppm)	Mercury Vapor (µg/m^3)
PM-1	0.007	0.00	0.01
PM-2	0.008	0.01	0.01
PM-3	0.006	0.00	0.00
PM-4	0.007	0.01	0.02
WZ-1	0.005	0.00	0.01
WZ-2	0.006	0.00	0.00
WZ-3	0.006	0.01	0.01
WZ-4	0.006	0.01	0.01

Maximum 15-Minute-Average Concentrations

Station ID	Particulate (mg/m^3)	Organic Vapor (ppm)	Mercury Vapor (µg/m^3)
PM-1	0.011	0.05	0.05
PM-2	0.017	0.17	0.03
PM-3	0.010	0.02	0.01
PM-4	0.016	0.12	0.05
WZ-1	0.010	0.01	0.26
WZ-2	0.010	0.07	0.01
WZ-3	0.009	0.02	0.02
WZ-4	0.009	0.04	0.03

●mg/m^3 = milligrams per cubic meter ●ppm = parts per million ●µg/m^3 = micrograms per cubic meter

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Ambient Air (Handheld Jerome® J505 and Handheld PID)

- The dedicated mobile monitor (Langan) used a handheld Jerome® J505 mercury vapor analyzer to monitor ambient air conditions at various heights throughout the site. Instantaneous mercury vapor concentrations throughout the site ranged from 0.00 µg/m^3 to 0.09 µg/m^3.
- The dedicated mobile monitor (Langan) used a handheld PID to monitor VOC concentrations throughout the site. Instantaneous VOC concentrations were not detected above background concentrations throughout the workday.

Off-site CAMP Stations

- CAMP station WZ-1 was placed on the western sidewalk of Beekman Street from about 6:43am to 5:15pm.
- CAMP station WZ-2 was placed on the southern sidewalk of Water Street from about 6:46am to 5:38pm.
- CAMP station WZ-3 was placed on the eastern sidewalk of Peck Slip from about 6:48am to 4:57pm.
- CAMP station WZ-4 was placed on the northern sidewalk of Pearl Street from about 6:53am to 5:08pm.

Prior to CAMP Shutdown

Prior to discontinuing CAMP, mercury vapor and VOC concentrations were confirmed to return to background conditions at each perimeter station using the handheld Jerome® J505 mercury vapor analyzer and handheld PID, respectively. Perimeter CAMP stations were discontinued sequentially between 5:45pm and 5:52pm.

- Background concentrations of mercury vapor at each CAMP station were recorded at 0.00 µg/m^3.
- Background concentrations of VOCs at each CAMP station were recorded at 0.0 ppm.

Anticipated Activities

- ECD will continue exporting C&D and soil/fill from the eastern part of the site for off-site disposal.
- ECD will continue installing soil mix columns and/or soldier piles for SOE installation along Pearl Street and Water Street.
- ECD will continue installing tiebacks for the SOE system along Beekman and Pearl Streets.

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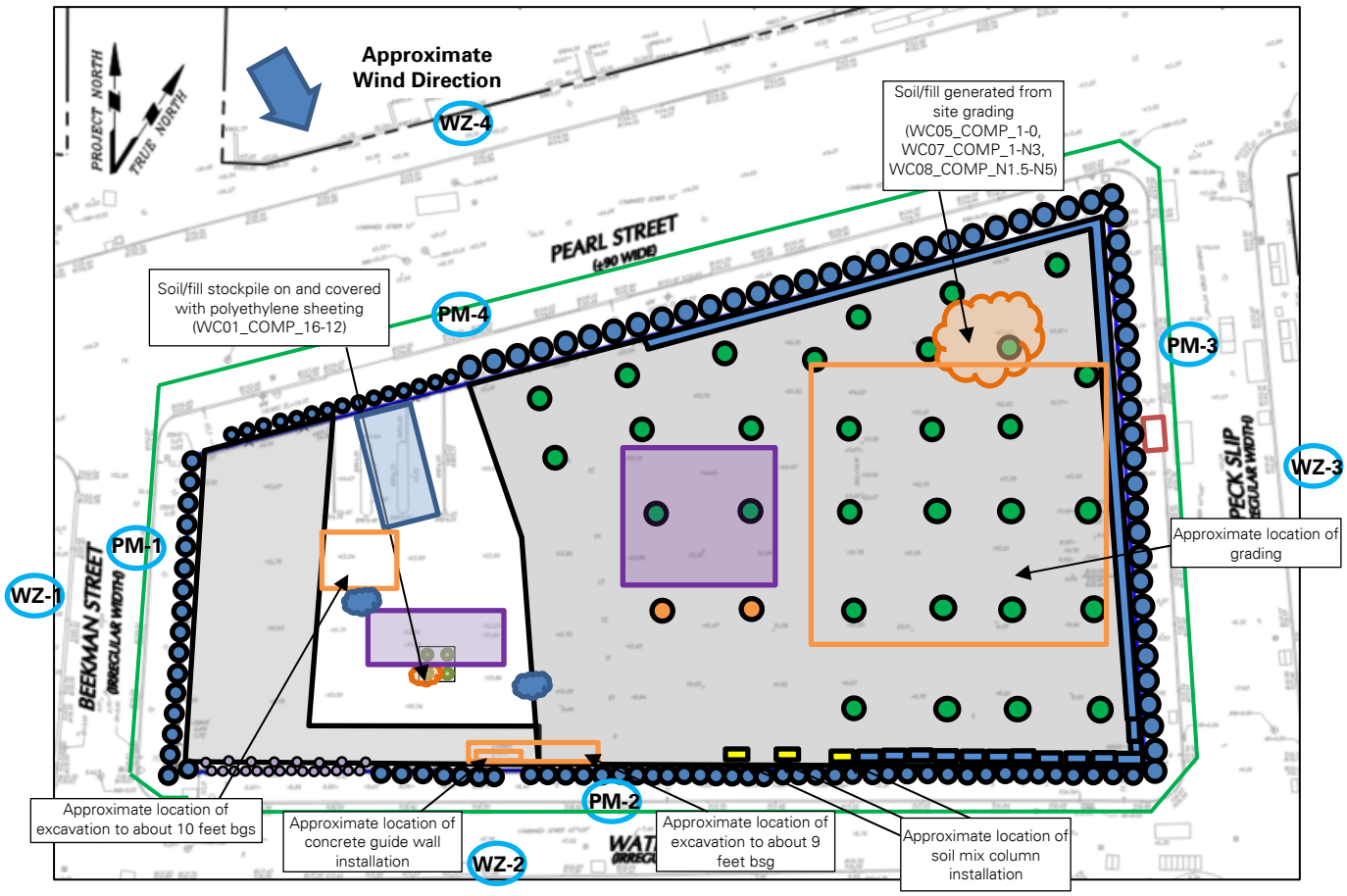
Site Map



Legend:

- PM-1 — Approximate Location of Air Monitoring Station
- Approximate Work Area
- Approximate Location of Installed Pile Cap
- Approximate Location of Foundation Piles Completed
- Approximate Location of Truck Tracking Pad
- Approximate Location of Underground Storage Tank
- Approximate Location of C&D Stockpile
- Approximate Location of Soil/Fill Stockpile
- Approximate Perimeter Construction Fence Location
- Approximate Location of Soldier Pile
- Approximate Location of Soil Mix Column Installed Today
- Approximate Location of Soil Mix Column Installed Previously
- Approximate Previous Excavation Area
- Approximate Excavation Area
- Approximate Location of Documentation Sample
- Approximate Location of Previously Collected Endpoint Sample
- Approximate Location of Imported Fill/Stone

Notes:
1) Locations of air monitoring stations are approximate.

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Select Site Photographs:

Photo 1: ECD excavating soil/fill in the western part of the site (facing southeast)

Photo 2: IRT decommissioning a UST prior to off-site disposal (facing southeast)

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