Bay Shore Former Manufactured Gas Plant

New York State MGP Program | Bay Shore, New York

WHO TO CONTACT

Comments and questions are always welcome and should be directed as follows:

PROJECT-RELATED QUESTIONS:

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Questions/Concerns can also be directed to the Bay Shore MGP Hotline. Please note that the National Grid Hotline for the site has changed. Any questions pertaining to the site can be posed by calling the new number at (631) 348-6250. (516) 545-3839

The New York State Department of Environmental Conservation (DEC) is actively overseeing the comprehensive cleanup of the Bay Shore Former Manufactured Gas Plant (MGP) site. Under the oversight of DEC and the state Department of Health (DOH), the current property owner National Grid has made significant progress to remove and clean up contamination resulting from historic gas manufacturing operations at the site dating as far back as the late 19th century. DEC's top priority is ensuring that the community is protected from any site-related contamination. DEC and DOH are coordinating with National Grid and the project contractors to expedite completion of this work to limit impacts to the community.

This update includes the latest information on progress to address contamination to date, as well as future actions planned for the site. We encourage all interested stakeholders to sign-up for our LISTSERV to continue receiving updates on these actions and future public information sessions.

New York's MGP Legacy

Manufactured Gas Plants have a long history in New York State, starting in 1826 with a small demonstration plant in New York City that produced gas from whale oil. The MGP production process involved the heating of coal and/or petroleum products to produce a gas mixture. Once cooled and purified, the gas was distributed through a local pipeline network. The gas was used for heating and cooking in much the same way that natural gas is used today. In the early years, the gas was also used for lighting in homes and streetlights.

Some of the waste created by the process, which are resistant to natural decay and often result in potential effects on public health and the environment, remain at former MGP sites. The primary waste was a dense, oily liquid known as coal tar which condensed out of the gas at various stages during its production, purification and distribution. Although some of the tar was collected for sale or reuse, recovery was incomplete and substantial amounts of tar leaked from storage and processing facilities or was discharged into nearby water bodies. Soils, groundwater and sediments which came into contact with the tar became heavily contaminated, and in many cases remain contaminated today.

New York's MGP Program oversees the investigation and cleanup of former manufactured gas plants. The MGP site cleanup process starts with a site characterization, progresses to an investigation of contamination, then to a feasibility study of cleanup options, and continues into the design and construction of the remedy. This approach has proven successful with more than 200 MGP sites across the state under order or agreement steadily moving forward through the cleanup process. For more information about MGPs, visit: http://www.dec.ny.gov/chemical/8430.html

History of Bay Shore's MGP Operations

This site is the location of a large former MGP which operated from the 1880s until 1972. The plant itself was located north of the LIRR tracks and encompassed a city block on either side of Clinton Avenue. The 10-acre cleanup site includes both halves of the former plant site, some additional properties south of the LIRR tracks where coal tar contamination has spread in the subsurface, plus an area to the east where the plant discharged a tar-water emulsion to a cesspool during operations, which led in turn to a pond and eventually to Watchogue Creek. The site lies on sandy soils with a high-water table, which has allowed rapid transport of soluble site contaminants away from the original source areas. Contamination created by the MGP operations and other activities on-site that are being addressed by the cleanup are coal tar and petroleum oil additives and their chemical components that include: benzene, ethylbenzene, toluene, naphthalene, and benzo(a)pyrene.

Former Bayshore MGP Site Cleanup History

In 1999, DEC executed an Order on Consent with then-owner Key Span (now National Grid). This enforcement measure required the company to conduct a thorough environmental investigation to determine the nature and extent of contamination and to develop a comprehensive cleanup plan. Following extensive public outreach to ensure concerns of the local community were addressed, DEC approved a final cleanup plan in 2003 clearing the way for cleanup to begin in 2004. Since that time, National Grid has continued the operation, maintenance, and monitoring of all cleanup measures implemented across the site. Subsequent sampling shows contaminant levels continue to decrease throughout the area. DEC, DOH, and National Grid will continue to monitor the effectiveness of all components of the cleanup until it is deemed completed and protective of public health and the environment. Detailed results are posted on the Bay Shore MGP website: www.bayshoreworksmgp.com.

The site has been divided into four separate areas called Operable Units (OU). Each area has separate environmental impacts caused by the MGP operations and a separate cleanup plan:

- OU-1 constitutes the main site area where gas manufacturing operations once took place (the primary source of contamination) and properties immediately to the west and south;
- OU-2 consists of the contaminated groundwater plume downgradient of OU-1 which has moved southward towards Lawrence Creek;
- OU-3 includes the Brightwaters Yard where fuel for the gas making process was stored, and the contaminated groundwater plume which originates from it; and
- OU-4 includes an area east of the main plant site where treated MGP wastewater was discharged to a surface waterbody.

Site Cleanup Update

Active cleanup activities have been completed in all of the operable units after the removal of much of the MGP contamination source and installation of multiple groundwater treatment systems. Monitoring of the site and systems is ongoing.

Operable Unit No. 1

Cleanup of the most significant, central portion of OU-1 where gas making operations took place has been largely completed since 2009. The cleanup included the excavation of contaminated soils, installation of a subsurface barrier to prevent coal tar migration, and operation of an ozone treatment system behind the wall to destroy the highly concentrated groundwater contamination found in this area. Impacted groundwater is treated as it passes through the subsurface barrier wall. In February 2013, an additional recovery well was installed inside of the barrier wall to increase the physical removal of coal tar from the subsurface. The ozone system is functioning well and is designed to continue operating indefinitely into the future.

Operable Unit No. 2

The OU-2 groundwater plume consists of contaminated water which had already migrated southward from OU-1 prior to cleanup of the OU-1 source areas several years ago.

To date, National Grid has installed six oxygen injection systems to treat groundwater in OU-2. The purpose of these systems is to increase the amount of dissolved oxygen in the groundwater throughout the OU-2 area, allowing naturally-occurring soil bacteria to consume the contaminants in place rather than waiting for the flushing process to be completed.

Groundwater contamination in OU-2 has responded very well to the oxygen injection treatment and the plume has been sharply reduced. In particular, the water closest to the surface, which presents the highest possibility for human exposure has been reduced to levels which meet drinking water standards, with the exception of a small area near the corner of Union Boulevard and North Clinton Avenue which continues to decrease since modification of the system in 2015.

No drinking water supplies are impacted. As a result of the groundwater concentration reductions, two of the six OU-2 oxygen injection systems were deactivated and removed in March 2015 and a portion of a third system was deactivated in 2019.

A pocket of contaminated groundwater remains in OU-2 at depths greater than 50 feet below the ground surface. This area is responding more slowly to treatment, but contaminant levels are dropping and there is currently no risk of exposure to the public.

Operable Unit No. 3

OU-3 is at the western end of the site and includes the “Brightwaters Yard” portion of the original plant site west of North Clinton Ave., and the plume of contaminated groundwater which originated in

this area and previously extended southward as a narrowband in the vicinity of Lanier Lane. A large fuel storage tank and associated piping once stood in this area, containing a kerosene-like petroleum product that was used as the feedstock for the gas manufacturing process. Several other, smaller tanks were also present.

As was the case with OU-1 and OU-2, the cleanup strategy in OU-3 has been to remove as much of the contaminated source material as possible from the original MGP plant site, and to introduce oxygen into the groundwater to encourage soil bacteria to consume the contaminants that have already dissolved in groundwater and migrated beyond the site boundaries.

Contaminated soil in the Brightwaters Yard was removed during several rounds of excavation, including the temporary relocation of the LIRR tracks adjacent to the site in 2010 to allow the excavation of contaminated soil below the tracks. A line of oxygen injection wells, similar to those in OU-2, was installed along the south side of Union Boulevard in 2000. This system was replaced in 2010 with a new system located on the north side of Community Road. An area of high groundwater contaminant concentrations was present in the area between the 2010 LIRR excavation and the new oxygen injection line. In response, National Grid upgraded the new Community Road injection system in 2012 and installed an additional oxygen injection system in August 2013 upgradient (north) of the Community Road system and south of the LIRR to accelerate the destruction of groundwater contamination in this area. This system was effective in significantly reducing groundwater impacts in this area.

Residual impacts were identified north of this system under the LIRR property and to expedite the elimination of groundwater impacts in this area, DEC required modifications to the oxygen injection system north of Community Road in June 2015. This system has been effective in reducing impacts on the LIRR property and downgradient. A small area of localized shallow and intermediate groundwater impacts remains on the southern portion of the Brightwaters Yard immediately north of the LIRR and is being addressed.

A small area of shallow groundwater contamination was identified near the intersection of Lanier Lane and Cooper Lane and treated in March and August 2013. The area was treated in March and August 2013 with an application of a slurry-based oxygen release compound (ORC) that is simpler, quicker, and can be equally as effective as oxygen injection by using a chemical compound which slowly dissolves and releases oxygen over several months. Data indicates that these efforts were successful in treating the small area of groundwater impacts and there have been no impacts in the vicinity of this property since April 2014.

Contaminant levels south of Union Boulevard declined sharply following cleanup efforts in OU-3. Groundwater impacts at concentrations above drinking water criteria have not been detected downgradient of Union Boulevard in OU-3 since the second quarter of 2014 and continue to be monitored.

National Grid has made improvements to the Brightwaters Yard facilities including landscaping and improved site drainage. National Grid Gas Operations is in the process of completing construction on a new garage/maintenance building on the southeast corner of the Brightwaters Yard.

Operable Unit No. 4

Significant projects in OU-4 include the cleanup and creek bank restoration of Watchogue Creek/Crum's Brook in 2000 and the removal of contaminated soils in the vicinity of the former cesspool structure and replacement of a portion of the Oak Street storm drain line in 2005. In 2009-2010 an in-situ chemical oxidation project was also completed in the Cesspool Area of the site to attempt to address deeper source material. In the spring and summer of 2011, the excavation of remaining contamination in the upper 10 feet of soil was completed in designated areas throughout OU-4 and site restoration activities, including replacement of grass and impervious surfaces, were completed in the spring of 2012.

Final restoration activities associated with the OU-4 excavation activities on the Town of Islip LIRR parking lot and two adjoining Union Boulevard properties were completed in April 2012, which concluded major cleanup activities in this area. Follow-up sampling has shown that the sediments in the streambed of Watchogue Creek remains free of MGP-related contamination. Groundwater impacts in OU-4 are present in a localized area beneath the Town of Islip LIRR parking lot and National Grid and the DEC are continuing to monitor those impacts and will take action if data indicates treatment is necessary.

WHERE TO FIND INFORMATION

Project documents are at these locations:

Bay Shore/Brightwaters Public Library
1 South Country Road
Brightwaters, NY 11718
(631) 665-4350
Repository is open during library hours.

NYSDEC Region 1 Office
50 Circle Road, Stony Brook, NY 11790
Contact: Mr. Walter Parish
(631) 444-0240
Hours: M-F: 8:30 AM – 4:45 PM (by appointment)

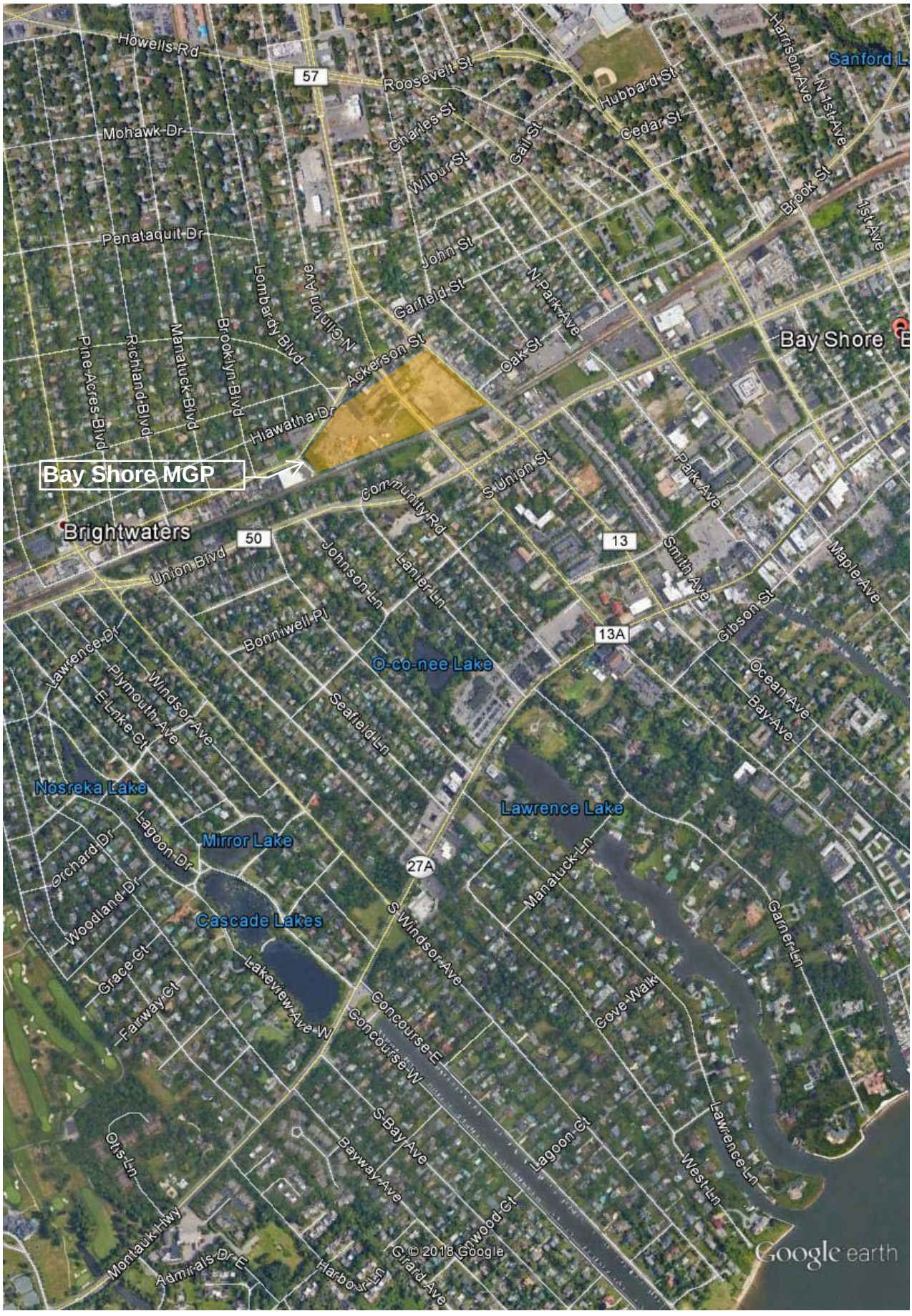
Project documents are also available on the NYSDEC website at:
https://www.dec.ny.gov/data/DecDocs/152172/

LISTSERV: SIGN-UP TO STAY INFORMED

https://www.dec.ny.gov/chemical/61092.html

NEXT STEPS

DEC is carefully reviewing the effectiveness of cleanup operations site-wide to determine if additional action beyond ongoing system maintenance and monitoring is warranted. There continues to be no risks of public exposure to contaminants and DEC and DOH will continue to ensure the community's health and environment are fully protected.



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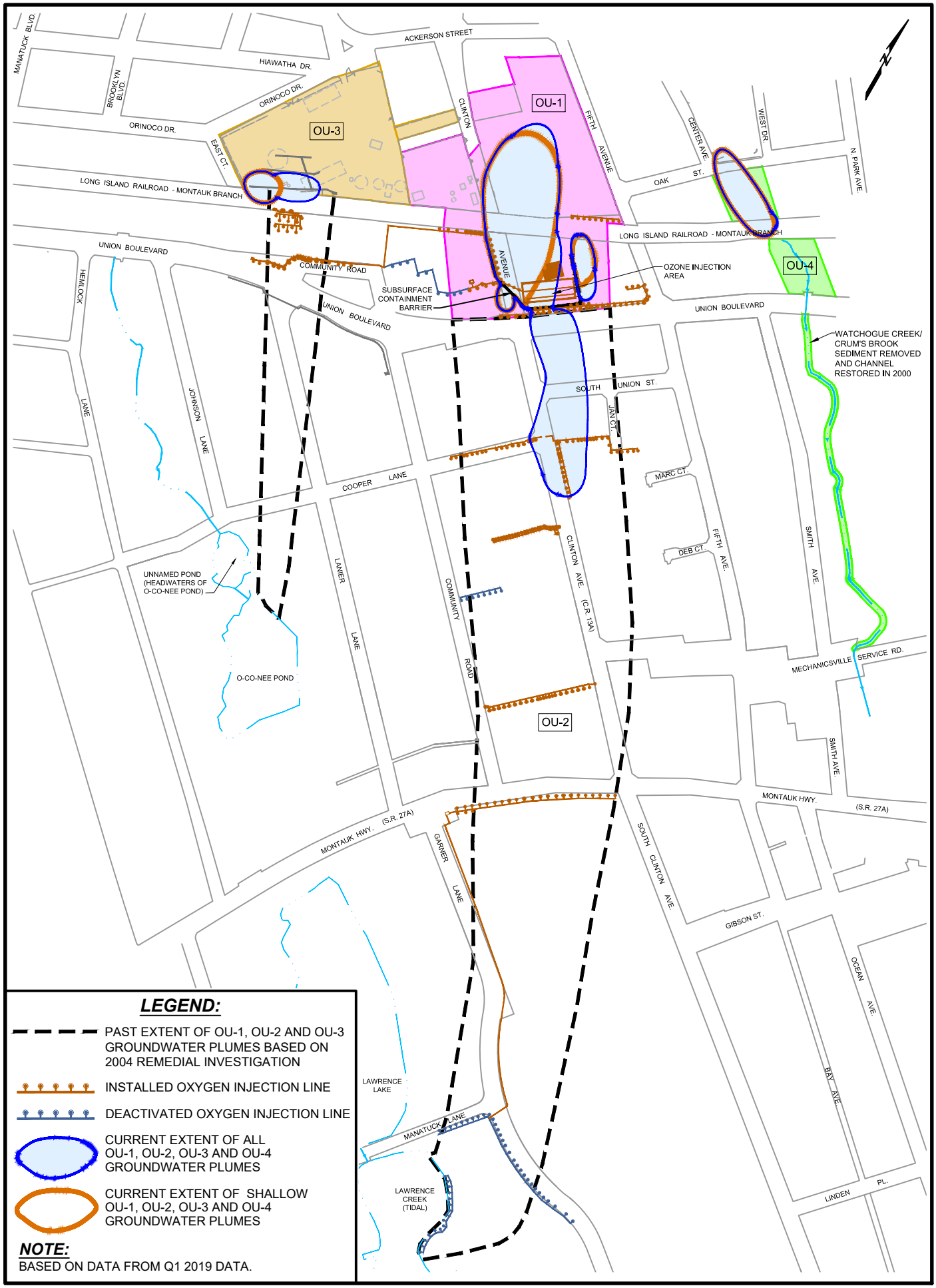
Bay Shore Manufactured Gas Plant



LEGEND:

- PAST EXTENT OF OU-1, OU-2 AND OU-3 GROUNDWATER PLUMES BASED ON 2004 REMEDIAL INVESTIGATION
- INSTALLED OXYGEN INJECTION LINE
- DEACTIVATED OXYGEN INJECTION LINE
- CURRENT EXTENT OF ALL OU-1, OU-2, OU-3 AND OU-4 GROUNDWATER PLUMES
- CURRENT EXTENT OF SHALLOW OU-1, OU-2, OU-3 AND OU-4 GROUNDWATER PLUMES

NOTE:
BASED ON DATA FROM Q1 2019 DATA.