SIXTH PERIODIC REVIEW REPORT

for

OLD BETHPAGE LANDFILL (Site No. 130001)
June 1, 2017 through May 31, 2018

Prepared for:

Town of Oyster Bay
Department of Public Works
150 Miller Place
Syosset, NY 11791

Prepared by:

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Syosset, NY 11791

Submitted to:

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau E, Section C
625 Broadway, 12th Floor
Albany, New York 12233-7017

June 20, 2018

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I. Executive Summary

This PRR (Periodic Review Report) for the OBL (Old Bethpage Landfill) covers the period from June 2017 through May 2018. It is being submitted at the request of the NYSDEC (New York State Department of Environmental Conservation) pursuant to a notice dated April 19, 2018 to the Town (Town of Oyster Bay). This is the sixth PRR for the OBL. Its format and content continue to reflect significant reductions in operation, monitoring and reporting requirements approved by the NYSDEC in 2016, specifically:

1. Effective October 1, 2016, the NYSDEC took over operation of the GTF (Ground-Water Treatment Facility), and Recovery Wells RW-1 and RW-2 were turned off. Accordingly, the Town's period of record for the GTF and recovery wells ended on September 30, 2016, and PRRs no longer contain GTF-related information.
2. The Town has entered post-termination monitoring for Recovery Wells RW-1 and RW-2, which entails sampling 13 monitoring wells semiannually for three years for RAP (Remedial Action Plan) parameters, and reporting. Two rounds of post-termination monitoring were completed during this reporting period. The results were submitted to the NYSDEC in separate reports, and are summarized in this PRR. RAP reports are no longer required. The third round of monitoring will be performed in June 2018, after this reporting period ends.
3. The frequency of ambient air-quality, soil gas-quality and soil-gas pressure monitoring was reduced from quarterly to annually, effective the second quarter of 2016. The results of the 2017 annual monitoring rounds were submitted to the NYSDEC in a separate report, and are summarized in this PRR. The next round of monitoring will be performed during the fourth quarter of 2018.
4. The frequency of monitoring perimeter gas wells, and on-site buildings and structures, for methane was reduced from quarterly to annually, effective the second quarter of 2016. The results of the 2017 annual monitoring rounds were submitted to the NYSDEC in a separate report, and are summarized in this PRR. The next round of monitoring will be performed during the fourth quarter of 2018.
5. The NYSDEC requested that the exhaust from the perimeter LFG (landfill gas) collection system, which is vented directly to the atmosphere, be monitored for VOCs (volatile organic compounds) annually. The results of the 2017 annual monitoring round were submitted to the NYSDEC in a separate report, and are summarized in this PRR. The next round of monitoring will be performed during the fourth quarter of 2018.

The other monitoring requirements remain unchanged. They entail weekly monitoring of the perimeter LFG collection system exhaust for methane, semiannual monitoring of the effluent from the (LTF) leachate treatment facility for permit-required parameters, and an annual zero gas migration survey along the OBL perimeter and OBSWDC (Old Bethpage Solid Waste Disposal Complex) property boundary. Semiannual monitoring of the LTF effluent for this reporting period was performed in June and September 2017. The 2017 annual zero gas migration survey was performed during the third quarter.

The OBL is a 65-acre former MSW (municipal solid waste) landfill located within the OBSWDC in Old Bethpage, NY. The OBL is owned, and was formerly operated by, the Town. In 1988, the Town entered into Consent Decree 83 Civ. 5357 with the State of New York to remediate the OBL. Appendix A of the Consent Decree specifies the RAP to "restore the quality of groundwater and air in the vicinity of the OBSWDC".

The key elements of the RAP necessary to meet the remedial objectives were: 1) remediating the off-site VOC ground-water plume from the OBL utilizing a GTF; 2) completing the landfill cap; 3) collecting the LFG; 4) maintaining zero percent LFG migration at the OBL boundary and in on-site buildings and structures; 5) continuing to operate the existing LTF; and 6) supplemental monitoring of ambient-air quality, soil-gas quality and soil-gas pressure. The thermal oxidizer is no longer in operation, and that monitoring has been superseded by monitoring the LFG collection system exhaust.

Recovery Wells RW-1 and RW-2 were basically non-detectable for VOCs for several years prior to the NYSDEC taking over operation of the GTF. Accordingly, the fourth PRR concluded that the off-site VOC plume associated with the OBL had likely been remediated to the extent feasible. It also stated the Town's intention to seek NYSDEC approval to turn off Recovery Wells RW-1 and RW-2, and enter post-termination monitoring for these recovery wells. Approval was granted, and on October 1, 2016 the Town shut off Recovery Wells RW-1 and RW-2, and turned over operation of the other three recovery wells and the GTF to the NYSDEC. The first two rounds of semiannual post-termination monitoring were performed during this reporting period, in June and September 2017, respectively, and the results were submitted to the NYSDEC.

The landfill cap is in good condition. The low-concentration LFG at the OBL perimeter is being collected and is not migrating offsite. It is being vented directly to the atmosphere and is monitored weekly for methane and annually for VOCs. The LTF effluent is permitted and meets County sewer discharge standards. Ambient-air monitoring results continue to indicate that the OBL is not significantly impacting ambient-air quality downwind of the OBL. Soil-gas data continue to be consistent with previous monitoring results. Access-restricting engineering controls remain in place. A deed restriction for the OBL was filed with the Office of the County Clerk in June 2017.

With NYSDEC approval, on October 1, 2016, the Town turned off Recovery Wells RW-1 and RW-2, and turned over operation of the other three recovery wells and the GTF to the NYSDEC. The Town has also initiated post-termination monitoring for these two recovery wells, which entails semiannual monitoring of 13 wells selected by the NYSDEC for three years. The landfill cap, constructed in several phases between 1983 and 1993, continues to be maintained. The LFG control system, constructed in phases from 1981 to 1993, is continuing to prevent off-site gas migration. In October 2012, the NYSDEC approved the Town's request to permanently cease operation of the landfill gas thermal oxidizer. The low-concentration LFG collected by the perimeter system is directly vented to the atmosphere via the stack bypass. Monitoring of the exhaust weekly for methane and annually for VOCs is being performed, and shows that emissions are acceptably low.

Annual zero percent LFG migration surveys are being conducted along the OBL boundary and OBSWDC property line. The results continue to demonstrate that subsurface LFG migration is being controlled. In early 2016, the Town also received NYSDEC approval to decrease the frequency of ambient-air quality, soil-gas quality, soil-gas pressure, perimeter well methane and on-site building methane monitoring to annually. The LTF, operational since 1983, is permitted and continues to operate. In 2016, the Town received County approval to bypass the LTF and discharge OBL leachate directly to the sewer system. A bypass may be constructed in the future.

Access to the OBL is restricted by appropriate engineering controls. Town personnel performed routine maintenance and repairs at the OBSWDC on an as-needed basis in accordance with the O&M (Operation and Maintenance) Plans developed for each of the remedial systems, except the GTF, which the Town is no longer responsible for. No changes are recommended at this time. Repairs requiring specialized expertise require hiring outside contractors in accordance with general municipal law requirements.

II. Site Overview

The OBL is located in east-central Nassau County, NY. The physical address of the OBL is 101 Bethpage-Sweet Hollow Road, Old Bethpage, NY 11804. A USGS quad map showing the location of the OBL is provided in Figure 1. The OBL occupies approximately 65 acres of the OBSWDC. The remainder of the OBSWDC is occupied by a guard booth, scale-house facility, MSW transfer station, recyclables transfer facility, yard waste transfer site, vehicle maintenance garage, two contractor-leased parcels used for materials storage and handling, the LFG control system, the LTF, and the GTF. A site plan is provided in Figure 2. The surrounding area is a mixture of commercial and residential properties, and a campground. An aerial photograph of the site showing the use of adjacent properties is provided in Figure 3.

The OBSWDC has been in operation since 1958, and is currently used to transfer and dispose of MSW generated in the Town of Oyster Bay Solid Waste Disposal District. MSW was burned in two on-site incinerators, and the ash was landfilled on-site in the OBL, as was raw MSW generated during incinerator outages. After the last operable incinerator ceased normal operations, and until the OBL closed in April 1986, MSW was compacted utilizing movable compactors, baled utilizing a high-density baler, and landfilled at the OBL. Since May 1986, the Town has shipped the MSW collected that was not recycled off of Long Island.

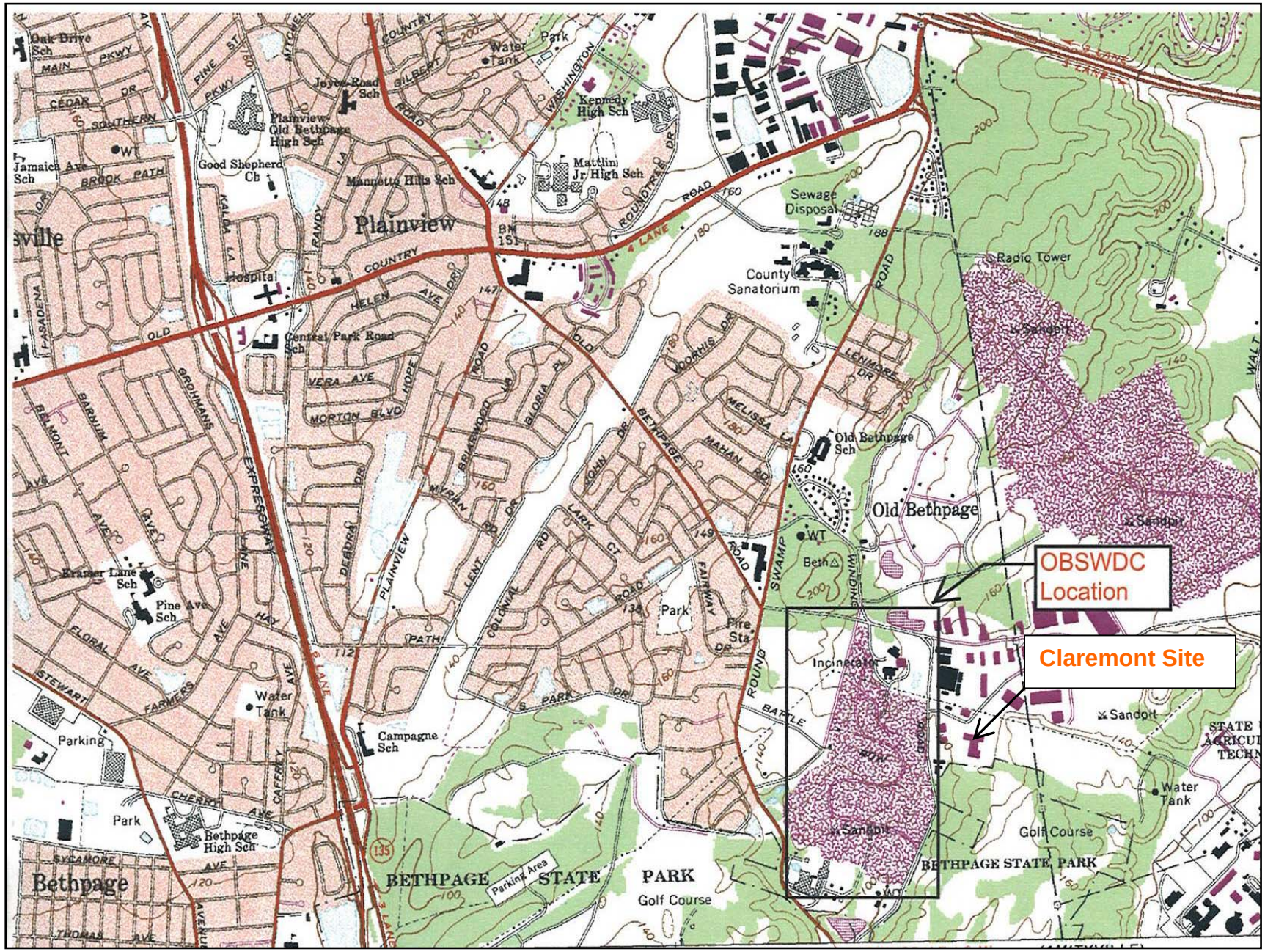
The nature and extent of the contaminated ground-water plume associated with the OBL were defined in a report titled "OBSWDC Offsite Groundwater Monitoring Program, Old Bethpage, Long Island, New York", by Geraghty & Miller, Inc. dated September 1986. The plume extended downgradient (southeast) of the OBL beneath the Bethpage State Park Golf Course. The Town is not aware of any report(s) documenting air-quality conditions prior to capping the OBL.

In June 1988, the Town entered into Consent Decree 83 CIV 5357 with the State of New York. The RAP in the Consent Decree required the Town to:

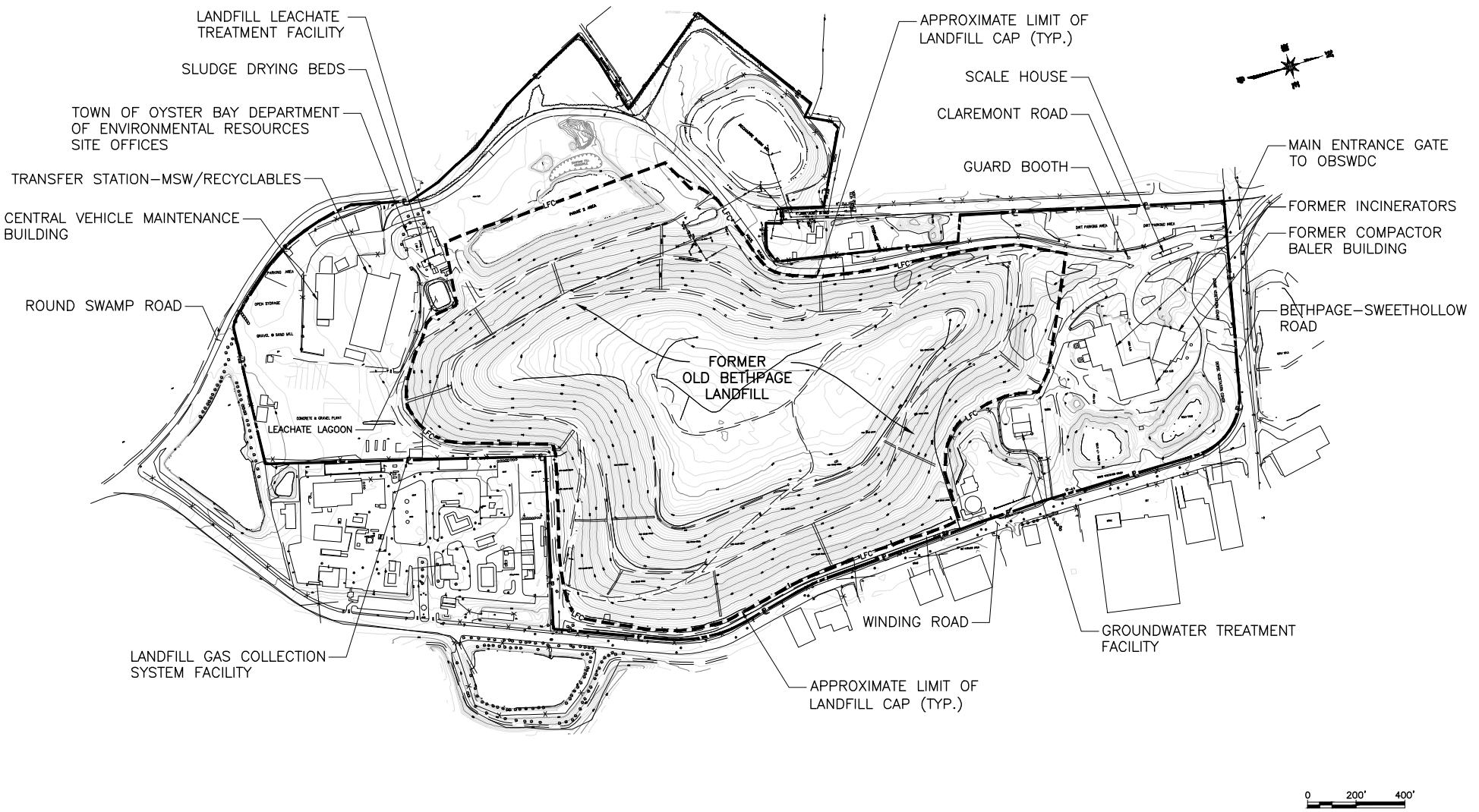
- design, construct and operate the GTF, to contain, recover and remediate the off-site VOC ground-water plume associated with the OBL
- design and construct a Part 360 cap for the OBL
- continue to operate the LFG migration control system
- continue to operate the LTF
- perform various monitoring functions designed to assess the adequacy of the remediation efforts, including ground-water, LFG and ambient-air monitoring

The GTF began operation on April 1, 1992. On October 1, 2016, operation of the GTF and Recovery Wells RW-3, RW-4 and RW-5 was turned over to the NYSDEC, and Recovery Wells RW-1 and RW-2 were turned off. The landfill cap was completed in early 1993, and has been maintained in good condition. The perimeter LFG migration control system continued to operate to control migration, and the low-concentration LFG

FIGURE 1 – SITE LOCATION ON USGS QUAD MAP



Source: Huntington, NY 7.5-Minute Quad



REV.	DATE	REMARKS	BY

CLIENT

TOWN OF OYSTER BAY

LOCKWOOD, KESSLER & BARTLETT, INC.
CONSULTING ENGINEERS SINCE 1889 SYOSSET, NEW YORK

DRAWING TITLE
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

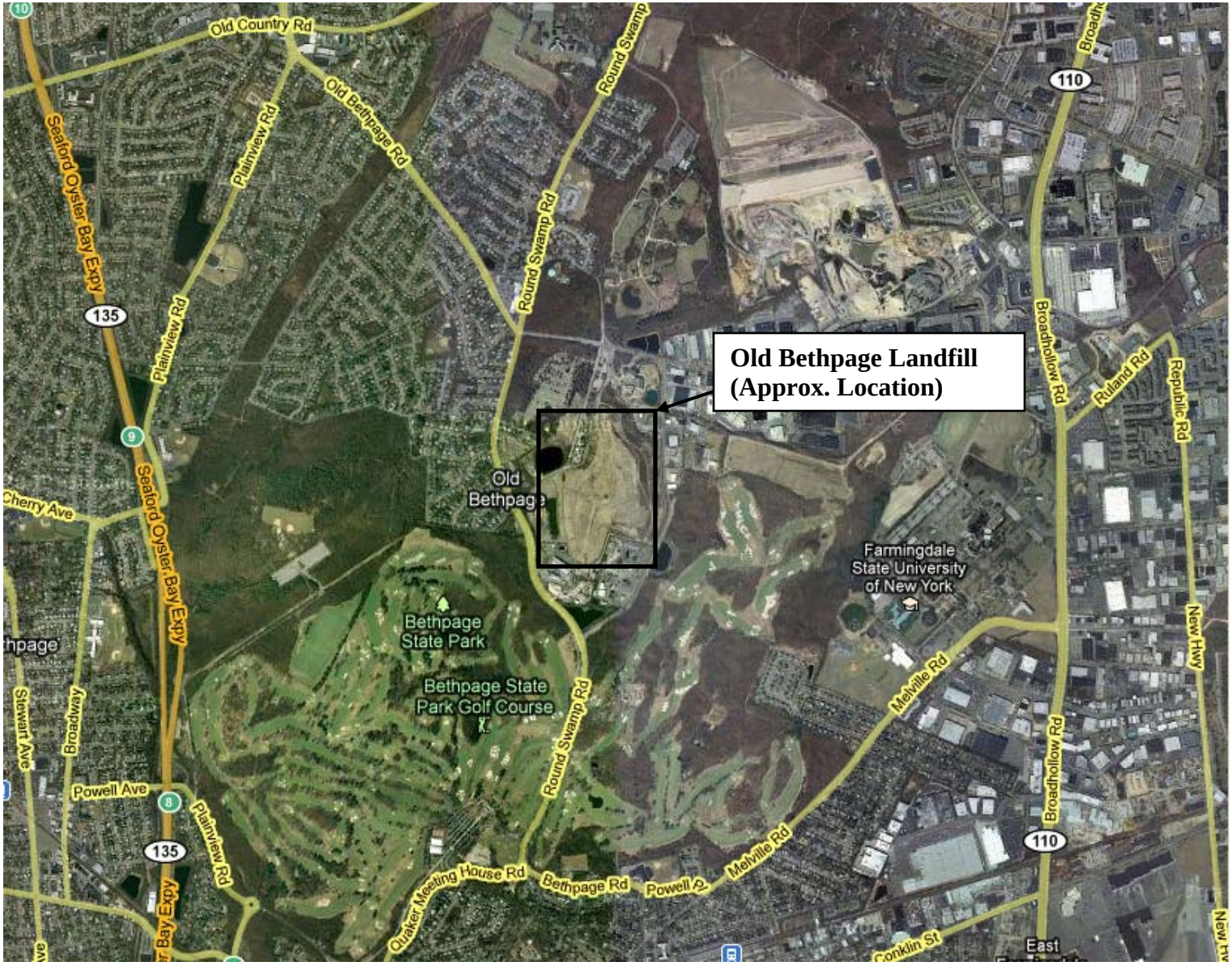
SITE PLAN

DESIGN BY: _
DRAWN BY: F.E.
CHECKED BY: T.H.
DATE: SEPT. 2012
SCALE: AS SHOWN

PROJECT NO.
2403–02

DRAWING NO.
FIGURE 2

FIGURE 3 – SITE AERIAL PHOTO



collected was vented to the atmosphere. Weekly monitoring of the exhaust for methane, and one round of annual monitoring of the exhaust for VOCs, were performed. Monitoring of groundwater, leachate, zero percent LFG migration, ambient-air and soil-gas quality, soil-gas pressure, perimeter well methane and on-site building and structure methane was performed per the Consent Decree and the reductions in scope approved by the NYSDEC in 2016.

The LTF continued to operate, and the effluent discharged to the Nassau County Sewer System continued to meet discharge permit requirements. Over time, the quality of the leachate has improved. Accordingly, the Town requested and received County approval to discharge OBL leachate directly to the sewer system. A bypass may be constructed in the future.

LFG did not migrate offsite. Ambient-air, soil-gas, building/structure, and perimeter vent exhaust monitoring results indicate that the OBL is not significantly impacting ambient-air quality. The results of the monitoring performed during this reporting period were submitted to the NYSDEC in separate reports, and are summarized in this PRR. Access-restricting engineering controls are in place. A deed restriction for the OBL was filed with the Office of the County Clerk in June 2017.

III. Evaluate Remedy Performance, Effectiveness and Protectiveness

As noted previously, as of October 1, 2016, the Town is no longer involved in the operation, maintenance or monitoring of the GTF. Accordingly, this and future PRRs for the OBL no longer contain GTF-related information. Instead, this section provides a summary of the post-termination monitoring for Recovery Wells RW-1 and RW-2 performed during the reporting period, and evaluates the other remedy components.

Post-Termination Monitoring for Recovery Wells RW-1 and RW-2

During this reporting period, two rounds of semiannual post-termination monitoring for Recovery Wells RW-1 and RW-2 were performed, in June and September 2017, respectively. Each round entailed sampling 12 of the 13 wells selected by the NYSDEC for RAP parameters. One water table-zone well, MW-6A, could not be sampled during either round because it was dry due to the near record-low water table in 2017. The results for the other wells were submitted to the NYSDEC previously, in separate reports. A cumulative report will also be submitted once three years of post-termination monitoring have been completed. A summary of the 2017 results is provided below.

The table below contains the total volatile organic compound (VOC) concentration results for the 12 wells sampled, for both monitoring rounds.

Total Volatile Organic Concentration, in ug/L		
Well Number	June 2017 Result	September 2017 Result
LF-1	None Detected	None Detected
LF-2	None Detected	24.2
MW-5B	None Detected	None Detected
MW-6B	6.01	21.6
MW-6C	None Detected	None Detected
MW-6E	1.3	5.6
MW-6F	None Detected	None Detected
MW-8A	11.1	14.7
MW-8B	None Detected	None Detected
MW-9B	None Detected	None Detected
MW-9C	None Detected	1.3
OBS-1	1.1	3

As indicated in the above table, total VOC concentrations were very low to non-detectable in most wells during both rounds. The types of compounds detected were consistent with historical results. Specifically, aromatic hydrocarbons were detected in Wells MW-6B and MW-6E, whereas Claremont-related chlorinated solvents were detected in Well MW-8A. During the second monitoring round, VOCs were detected at higher concentrations, and in more wells. This may be a temporary artifact of below-average recharge from precipitation during the months between monitoring rounds, which can result in apparent increases in contaminant concentrations in the aquifer.

Specifically, the weather station at Republic Airport in Farmingdale recorded only 8.79 inches of precipitation during the four-month period from June through September 2017. This is only 55 percent of the normal amount based on the four-inches-per-month typical year-round rate for Long Island. Moreover, since this period occurred during the growing season, most, if not all, of the available precipitation was utilized by plants and did not reach the aquifer.

Overall, except for iron, manganese and/or sodium, metals concentrations in the wells were low to non-detectable. The wells were sampled for both total dissolved metals, and based on comparison of the results, the concentrations of certain metals, such as iron, in the unfiltered samples were mainly associated with turbidity and were much lower in the filtered samples. The table below summarizes the exceedances of NYSDEC Class GA groundwater standards for dissolved metals in the filtered samples for both rounds.

Class GA Exceedances for Dissolved Metals in Filtered Samples		
Well Number	June 2017 Exceedances	September 2017 Exceedances
LF-1	Sodium	Iron, manganese and sodium
LF-2	Lead and sodium	Iron and sodium
MW-5B	Manganese and sodium	Manganese and sodium
MW-6B	Sodium	Iron and sodium
MW-6C	Sodium	Iron and sodium
MW-6E	Iron, manganese and sodium	Iron, manganese and sodium
MW-6F	Sodium	Sodium
MW-8A	Sodium	Sodium
MW-8B	Manganese and Sodium	Manganese and Sodium
MW-9B	Manganese and Sodium	Manganese and Sodium
MW-9C	No exceedances	Sodium
OBS-1	Manganese and Sodium	Manganese and sodium

As indicated in the above table, exceedances for sodium occurred in nearly every well during both rounds. A number of exceedances for manganese also occurred during both rounds. The number of exceedances, particularly for iron, increased during the second monitoring round. This may be attributed to the below-average recharge from precipitation during the months between monitoring rounds, as noted previously.

The table below summarizes the exceedances of NYSDEC Class GA groundwater standards for leachate indicator parameters in the samples for both rounds.

Class GA Exceedances for Leachate Indicator Parameters		
Well Number	June 2017 Exceedances	September 2017 Exceedances
LF-1	No exceedances	No exceedances
LF-2	Chloride	Chloride, ammonia and phenols
MW-5B	No exceedances	No exceedances
MW-6B	Chloride and ammonia	Chloride, ammonia and phenols
MW-6C	Ammonia	Ammonia and phenols
MW-6E	Chloride and ammonia	Chloride and ammonia

Class GA Exceedances for Leachate Indicator Parameters (Cont.)		
Well Number	June 2017 Exceedances	September 2017 Exceedances
MW-6F	No exceedances	Chloride
MW-8A	No exceedances	No exceedances
MW-8B	No exceedances	Chloride
MW-9B	No exceedances	No exceedances
MW-9C	No exceedances	No exceedances
OBS-1	Ammonia	Ammonia

As indicated in the above table, nearly all of the leachate indicator parameters were either not detected, or were only detected at concentrations lower than their Class GA standard, if applicable. During the first round, exceedances were limited to ammonia and/or chloride in just five of the 12 wells sampled. During the second round, there were more exceedances in more wells, seven in total, and exceedances occurred for phenols in addition to ammonia and chloride. The higher number of exceedances during the second round may be attributed to the below-average recharge from precipitation during the months between monitoring rounds, as noted previously.

Taken as a whole, the results of the two post-termination monitoring rounds performed during this reporting period are consistent with prior results for these wells. The results for the second round may be influenced by the below-normal recharge from precipitation during the months between rounds, as the temporary lack of aquifer recharge could result in apparent increases in contaminant concentrations.

Landfill Capping System

The landfill capping system was constructed in phases under several contracts between 1983 through 1993. Its surface is inspected and maintained on a regular basis by Town personnel. The system consists of a low permeability-soil cap, vegetated soil cover, gas-venting layer, drainage chutes, benches, and patrol roads, and is in good condition overall. Typical maintenance included regular mowing, removing vegetation from drainage chutes, and repairing eroded benches and/or roads. Current representative photographs showing the condition of the system, taken on June 4, 2018, are provided in Figures 4, 5 and 6. Based on its current condition, the landfill capping system is effective in minimizing infiltration of precipitation, and therefore the amount of leachate being generated. This finding is consistent with the fact that the amount of leachate collected from the lined phases of the OBL has continued to decrease over time.

Landfill Gas Control System

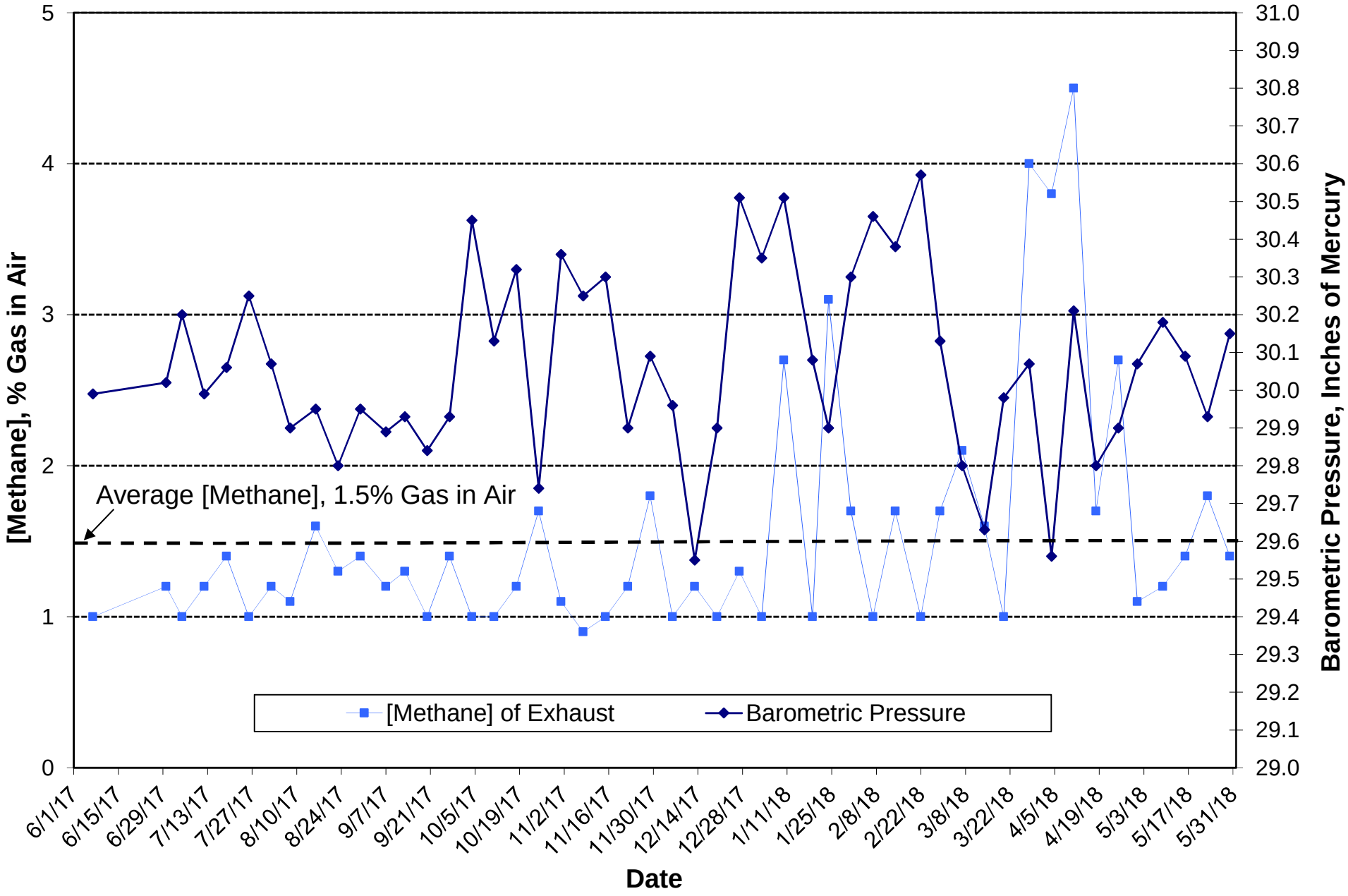
The landfill gas control system currently consists of 36 perimeter gas collection wells installed between 1981-1995, over 9,000 feet of interconnecting fiberglass pipe, and a three-skid blower station. Each skid has a flow capacity of either 500 cfm (cubic feet per minute) or 960 cfm depending on its blower piping configuration. Typically, two skids are operated, each at 500 cfm, and the third is a backup. This system previously included

FIGURE 4 – VIEW OF LANDFILL PLATEAU LOOKING SOUTH (JUNE 4, 2018)

FIGURE 5 – VIEW OF EASTERN SLOPE OF LANDFILL

FIGURE 6 – VIEW OF WESTERN SLOPE OF LANDFILL (JUNE 4, 2018)

Figure 7. [Methane] of Landfill Gas Collection System Exhaust, June 2017 - May 2018



interior gas collection wells, which have been abandoned; and a landfill gas thermal oxidizer, which ceased operating in May 2008, primarily due to insufficient gas.

With NYSDEC approval, the low-concentration landfill gas collected by the perimeter wells is being vented directly to the atmosphere via the bypass stack at the former thermal oxidizer. The methane concentration of the exhaust is monitored on an approximately weekly basis during normal operation. The results for this reporting period are summarized in Figure 7. As shown in Figure 7, the results ranged from 0.9% gas to 4.5% gas, and averaged 1.5% gas. The methane concentration of the exhaust was typically in the range of 1-2% gas, which is consistent with the fact that the OBL closed more than 30 years ago and continues to age. The sporadic higher results that occurred in March and April 2018 coincided with abrupt, significant drops in barometric pressure prior to storm events, and are not typical of exhaust methane concentrations during this reporting period.

The current average methane concentration of the exhaust is approximately one-third the 4.5% - 5.5% concentration in 2008 that the NYSDEC deemed an acceptable level by the NYSDEC to allow direct venting of the exhaust because it did not exceed permitting or regulatory thresholds, or significantly impact ambient air quality. Since the current methane concentration of the exhaust is much lower than in 2008 and the blower flow rate is the same, that assessment is still valid.

The NYSDEC has also requested that the Town monitor the VOC concentration of the exhaust on an annual basis. This monitoring was performed on August 16, 2017 and the results were submitted to the NYSDEC in RTP's 2017 Annual Master Report. It entailed collecting three one-hour-long samples in Summa canisters, testing the samples for VOCs via EPA Method TO-15, converting the laboratory results to standard conditions, and comparing the results to the NYSDEC DAR-1 short-term and annual guideline concentrations (SGCs and AGCs, respectively) and the Title V permit thresholds. The results indicate that individual VOC concentrations are lower than the NYSDEC DAR-1 SGCs, and total VOC emissions are below permitting thresholds. The concentrations of four VOCs in the exhaust (benzene, tetrachloroethene, vinyl chloride and 1,4-dichlorobenzene) are higher than their NYSDEC DAR-1 AGCs, but are subject to significant downwind dispersion and are therefore not a concern.

Zero Percent LFG Migration Survey

An annual zero percent LFG migration survey was completed during this reporting period, on August 17 and 21, 2017. The results were submitted to the NYSDEC in RTP's 2017 Annual Master Report. This survey entailed measuring shallow subsurface LFG concentrations at intervals of approximately 50 feet along the entire perimeter of the OBL, and along the OBSWDC property boundary. It should be noted that certain additional monitoring points that were part of the original 1986 scope of work, developed prior to the LFG collection system being completed, are no longer monitored as they are redundant and/or obsolete (e.g., within the abandoned incinerator plant buildings).

The results of the survey were nearly identical to prior surveys and indicate that the zero percent gas contours coincide with, or lie within, the perimeter of the landfill cap, and that no LFG was detected along the OBSWDC property line. This finding indicates that the perimeter LFG collection system is preventing off-site migration of LFG.

Perimeter Well and Building/Structure Interior Methane Monitoring

An annual perimeter well methane monitoring round was performed during this reporting period, on August 21, 2017. The results were submitted to the NYSDEC in RTP's 2017 Annual Master Report. It entailed monitoring a total of 44 wells located along the OBSWDC property near the OBL and on the Nassau County Fire Service Academy, for methane. Methane was not detected in any of the wells monitored. An annual building/structure interior methane monitoring round was also performed on August 21, 2017. The results were submitted to the NYSDEC in RTP's 2017 Annual Master Report. The interiors of the on-site buildings that are accessible were surveyed for methane. Methane was not detected at any of the monitoring locations.

Leachate Treatment Facility

The LTF is permitted to operate eight hours per day, five days per week. The LTF effluent is discharged to the Nassau County sewer under Industrial Discharge Permit No. 45. Self-monitoring is performed twice per year for permit-required parameters, and semiannual compliance reports are submitted to the County. The self-monitoring results for this reporting period, for the samples collected on June 23 and December 21, 2017, are provided in Appendix A. The three-year permit discharge permit was renewed during this reporting period, on September 1, 2017. A copy is provided in Appendix B.

In early 2016, the Town was granted approval from the County to bypass the LTF and discharge OBL leachate directly to the sewer system. The approval was based on sampling and laboratory analysis of raw leachate samples for County parameters, and comparison of the results to the County's discharge standards. A copy of the County approval was provided in the Fourth PRR. A bypass may be constructed in the future.

Ambient-Air Quality, Soil-Gas Quality and Soil-Gas Pressure Monitoring Results

An annual round of ambient-air quality, soil-gas quality and soil-gas pressure monitoring was performed during this reporting period, on September 12 and 13, 2017. The results were submitted to the NYSDEC in RTP's 2017 Annual Master Report, and continue to indicate that the OBL has little to no impact on ambient air VOC concentrations; and that background air quality is the primary source of most of the VOCs detected in both the upwind and downwind samples. Some VOCs were detected in the soil gas samples, but at concentrations much lower than the NYSDEC DAR-1 SGCs. Soil-gas pressures continue to zero or negative, indicating proper function of the perimeter LFG collection system. Moreover, this monitoring continues to demonstrate that direct-venting of the low-concentration LFG from the perimeter collection system does not significantly affect air quality in the vicinity of the OBL.

IV. IC/EC Plan Compliance Report

IC/EC Requirements and Compliance

Institutional Controls

The following four institutional controls in the RAP still apply to the OBL:

- The groundwater aquifer requirements in Table 2 of the RAP
- The need to operate the LFG collection system per state landfill regulations
- The need to operate the LTF in accordance with state and county requirements
- The analytical methods for groundwater listed in Table 6 of the RAP

The groundwater aquifer requirements in Table 2 of the RAP are used to assess the post-termination monitoring results for Recovery Wells RW-1 and RW-2. These limits are augmented by the NYSDEC Ambient Water Quality Standards and Guidance Values for Class GA (Potable Water) in TOGS 1.1.1. The semiannual monitoring results are compared to the VOC and inorganic limits in Table 2 of the RAP and TOGS 1.1.1.

The primary goal of the state landfill regulations for LFG is to prevent lateral subsurface migration of potentially explosive levels. During this reporting period, compliance was verified by the August 2017 zero percent LFG migration survey, and perimeter well and building/structure methane monitoring, which confirmed that LFG is not migrating beyond the perimeter of the landfill capping system. These results have been previously submitted to the NYSDEC. No changes are recommended at this time.

The Consent Decree requires that the Town complete, operate and maintain the gas collection system. The system was constructed between 1981 and 1995 and was designed to control off-site migration of the LFG generated by the OBL. As the OBL aged, the levels of LFG diminished, resulting in a gas-to-energy contractor leaving the site in 2003. In addition, in May 2008, the thermal oxidizer became inoperable, primarily due to low methane levels in the LFG, as well as equipment problems. The Town began direct-venting of the LFG collected by the perimeter system. An assessment by the Town's air monitoring consultant determined that this modification did not result in significant air-quality impacts. Accordingly, in 2011 the Town requested that it be allowed to discontinue operation of the LFG thermal oxidizer permanently, and provided supporting documentation to the NYSDEC. The request was approved in October 2012, and as required the Town began to monitor the methane concentration of the exhaust weekly to ensure that it remains acceptably low. In 2016, the Town also began monitoring VOC concentrations in the exhaust annually, as requested by the NYSDEC. No changes are recommended at this time.

The LTF effluent is permitted to discharge to the Nassau County sewer system under Industrial Discharge Permit No. 45. This three-year permit was renewed on September 1, 2017. Semiannual self-monitoring and reporting was performed per permit

requirements, and indicates that the LTF effluent complies with discharge limits. As noted previously, based on comparison of additional raw leachate monitoring results to County discharge standards, the Town requested and received approval to discharge OBL leachate directly to the sewer system. A bypass may be constructed in the future.

The analytical methods in Table 6 of the RAP are intended to ensure that analyses of groundwater are accurate, precise and reproducible. These are the methods that were current when the RAP was developed. They are still followed in principal, but have been updated periodically, as appropriate, to reflect advances in laboratory technology. All groundwater analyses were performed by State-certified environmental laboratories using current, approved methods. No changes are recommended at this time.

In addition to the above institutional controls, the OBSWDC is surrounded by a fence with a gated entrance to control access. The fence and gate are inspected on a regular basis. The entrance is manned by Town personnel during operating hours, and visitors must sign in. At all other times, the entrance gate is closed and locked. To date, the existing fence and gate have been sufficient to prevent unauthorized access to the OBSWDC. No changes are recommended at this time.

A deed restriction is required under state law to notify any future land owners of the existence of the former landfill. The document consists of a letter regarding the presence of the OBL, a map showing the boundaries of the OBL, and a statement meeting the regulatory requirements indicating that remedial systems are in place and future site activities shall not compromise these systems. It was filed with the Office of the County Clerk in June 2017. A copy of the filing receipt was provided in Appendix B of the Fifth PRR.

Engineering Controls

The RAP specified the following engineering controls for the OBL:

- The five recovery wells in Bethpage State Park
- The GTF and related appurtenances
- The recharge basin with leaching wells located on the west side of the OBL
- The Part 360 landfill cap
- The landfill gas collection system and thermal oxidizer
- The leachate collection and treatment system

The five recovery wells are located offsite, downgradient of the OBL in Bethpage State Park, and are screened in the intermediate and deep zones of the Magothy Aquifer. The purpose of the five recovery wells was to contain and recover the VOC plume from the OBL. Based on the hydraulic and water-quality monitoring results in previous PRRs these objectives appear to have been met. Specifically, Recovery Wells RW-1 and RW-2, which collected the VOC plume from the OBL only, were basically non-detectable for VOCs for several years prior to the NYSDEC taking over the GTF on October 1, 2016.

This indicated that the VOC plume from the OBL had likely been remediated to the extent feasible. Accordingly, with NYSDEC approval, the Town shut down Recovery Wells RW-1 and RW-2, and entered post-termination monitoring for these two recovery wells. The scope of this monitoring entails sampling of 13 wells selected by the NYSDEC for RAP parameters semiannually for three years, and reporting. The Town was not involved with the operation, maintenance or monitoring of the GTF or recovery wells during this reporting period. No further changes are proposed at this time.

The main recharge basin for the GTF is Recharge Basin No. 1, which is located on the west side of the OBL. A system of diffusion wells was installed in the bottom of this basin to improve percolation, but the basin has always had limited recharge capability. Therefore the Town has historically split the GTF flow between Recharge Basin No. 1 and Town Recharge Basin No. 33, which is located on the east side of the OBL across Winding Road, and although smaller, has good recharge capability. Following discussions with the Town, an agreement was executed between the Town and the NYSOPRHP (New York State Office of Parks, Recreation and Historic Preservation) whereby the NYSOPRHP installed a pump station adjacent to Town Recharge Basin No. 33, and since the spring of 2008 has utilized the treated water in this basin seasonally for golf course irrigation. Under the Site Transfer Agreement, the Town retained ownership of the recharge basins. Therefore, no changes are recommended.

The landfill capping system was designed and constructed in accordance with the Part 360 requirements in effect at that time, and consists of an 18-inch-thick low permeability clay cap overlain by a minimum 12-inch-thick vegetated growing medium. Patrol roads provide access, and a system of gabion chutes, benches and ditches collect storm water runoff, which is directed to recharge basins. The purpose of this system is to prevent infiltration of precipitation, thereby minimizing the amount of leachate generated by the OBL. Based on its current condition, as discussed previously in Section III of this PRR, this system is in good condition overall and therefore presumed to be effective in preventing infiltration of precipitation. No changes are proposed at this time.

The LFG collection system consists of 36 perimeter gas collection wells, approximately 9,000 feet of transmission header, and a blower station. Previously, it also had three interior wells, which have been abandoned; and a thermal oxidizer, which is no longer in operation. Since May 2008, the LFG collected by the perimeter wells has been vented directly to the atmosphere. The purpose of the LFG collection system is to prevent lateral subsurface migration of LFG. Based on the August 2017 zero-percent LFG migration survey and perimeter well and building/structure monitoring, this objective is being met. Specifically, no gas was detected at the OBL boundary, at the OBSWDC property line, or within accessible, existing on-site buildings and structures.

As reported previously in Section III, the thermal oxidizer became inoperable in May 2008, primarily due to insufficient LFG methane content of the LFG. Therefore, to continue preventing off-site subsurface gas migration while protecting air quality, the three remaining interior wells were disconnected and the LFG perimeter collection system continued to operate with the low-concentration LFG directly-vented to the

atmosphere. An assessment by the Town's air monitoring consultant determined that this modification did not exceed the permitting threshold or significantly impact ambient-air quality. This finding was supported by the results of subsequent quarterly ambient air monitoring rounds. In 2011, the Town requested approval to cease operation of the LFG thermal oxidizer permanently and continue direct-venting of the low-concentration LFG collected by the perimeter wells. The NYSDEC approved the Town's request in a letter dated October 17, 2012; and the Town implemented the weekly monitoring for methane requested by the NYSDEC. The results of this monitoring indicate that methane concentrations of the exhaust are currently approximately one-third the 2008 values that were used to determine that this modification does not result in air-quality impacts. In 2016, the Town also implemented annual monitoring of the exhaust for VOCs at the request of the NYSDEC. The results of the 2017 monitoring round indicate that exhaust VOC concentrations remain lower than the NYSDEC DAR-1 SGCs and that total VOC emissions remain below permitting thresholds. The concentrations of four VOCs in the exhaust were higher than their NYSDEC DAR-1 AGCs, but will be diluted by dispersion. Therefore, the modification continues to be acceptable and no changes are recommended at this time.

The LTF consists of leachate pumps, an equalization basin, physical/chemical treatment equipment, sludge drying beds, and a storage facility; and is permitted to discharge up to 144,000 gallons of treated leachate per day. The LTF effluent meets permit requirements. The quality of the OBL leachate has improved over time. In early 2016, the Town received County approval to discharge the OBL leachate directly to the sewer system. A bypass may be constructed in the future. The three-year discharge permit was renewed on September 1, 2017. No changes are recommended at this time.

IC/EC Certification

The Institutional and Engineering Controls Certification Form provided by the Department has been completed as appropriate, and is provided at the end of this section on Pages 14a-e.

Enclosure 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **130001**

Site Name Old Bethpage Landfill

Site Address: Bethpage-Sweethollow Road Zip Code: 11804
City/Town: Old Bethpage
County: Nassau
Site Acreage: 65.0

Reporting Period: ~~May 31~~, 2017 to May 31, 2018
June 1

	YES	NO
1. Is the information above correct?	☐	☒
If NO, include handwritten above or on a separate sheet. (See new start date above.)		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☒*	☐
*County permit (IDP #45) for leachate discharge to sewer renewed on 9/1/17. **If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.** Copy of current permit is provided in Appendix B of PRR.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Industrial	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Not Applicable
Signature of Owner, Remedial Party or Designated Representative

Date

SITE NO. 130001 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
47-153-8	TOWN OF OYSTER BAY	
* Scope of groundwater monitoring by Town limited to semi-annual monitoring of 13 offsite wells selected by NYSDEC for post-termination monitoring for Recovery Wells RW-1 and RW-2, which remediated Old Bethpage Landfill plume and were shut down on 10/1/16 when NYSDEC took over operation of the groundwater treatment system to continue operating Recovery Wells RW-3, RW-4 and RW-5 to remediate the Claremont Site offisite plume.		Ground Water Use Restriction Landuse Restriction Monitoring Plan * Site Management Plan (SMP) O&M Plan(Serves as SMP)

Decision document: Consent Decree signed March 1988. The Consent Decree required the Town to design, construct, operate, maintain, and monitor remedial activities at the Old Bethpage Landfill. Details of the activities are provided in the Consent Decree, but also summarized below:

1. Install a system of groundwater recovery wells;

2. Operate and maintain these groundwater recovery wells to create a hydraulic barrier and to attain specified groundwater criteria;

3. Treat and discharge the extracted and collected groundwater in compliance with the site groundwater and air discharge requirements;

4. Complete, maintain, and monitor the current capping and gas and leachate collection programs as per the closure requirements of New York State Regulation 6 NYCRR Part 360;

5. Carry out and comply with the requirements for sampling, analysis and health and safety.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
47-153-8	Groundwater Treatment System * Vapor Mitigation Cover System Groundwater Containment * Leachate Collection ~~Vapor Mitigation~~ ~~Cover System~~ (Deleted because already listed above) ~~Leachate Collection~~ Fencing/Access Control

* NYSDEC took over operation of the groundwater treatment system on 10/1/16. Since then the Town's obligations have been limited to post-termination monitoring for Recovery Wells RW-1 and RW-2.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Not Applicable

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 130001

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Richard W. Lenz, PE (print name) at 150 Miller Place, Syosset, NY 11791 (print business address),

am certifying as Commissioner, Town of Oyster Bay DPW (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Signature of Owner, Remedial Party, or Designated Representative Rendering Certification — Date: 6/22/18

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Matthew Russo, PE (print name) at 150 Miller Place, Syosset, NY 11791 (print business address),

am certifying as a Professional Engineer for the Town of Oyster Bay, DPW (Owner or Remedial Party)

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

6/18/18
Date

V. Monitoring Plan Compliance Report

The current components of the monitoring plan for the OBL are summarized below:

COMPONENT	FREQUENCY OF MONITORING			
	SEMIANNUALLY	ANNUALLY	WEEKLY	OTHER
GROUNDWATER-QUALITY MONITORING				
Post-Termination RW-1 and RW-2	X			
LFG COLLECTION SYSTEM MONITORING				
Perimeter collection system exhaust		X (VOCs)	X (Methane)	
Zero percent migration survey		X		
LEACHATE COLLECTION AND TREATMENT SYSTEM MONITORING				
Self-monitoring and reporting	X			
Permit renewal				Every 3 Years
SUPPLEMENTAL MONITORING OF AMBIENT AIR AND SOIL GAS				
Ambient air quality at 3 locations		X		
Soil-gas quality at 6 locations		X		
Soil-gas pressure at 3 locations		X		
Perimeter mon. wells for methane		X		
Buildings/structures for methane		X		

The status of each type of monitoring during the reporting period is summarized below:

- The first two rounds of post-termination monitoring for Recovery Wells RW-1 and RW-2 were performed during this reporting period, in June and September 2017, respectively. The results were submitted to the NYSDEC in separate reports, and are summarized in Section III of this PRR.
- The perimeter LFG collection system continued to operate two skids, at 500 cfm each. Monitoring of the exhaust from the perimeter LFG collection system for methane was performed on an approximately weekly basis, and indicates that the average methane concentration of the exhaust is now approximately one-third the 2008 value used to determine that direct venting to the atmosphere does not result in air-quality impacts. The second round of annual monitoring of the exhaust for VOCs was performed during this reporting period, and indicates that VOC levels in the exhaust are also suitably low. Therefore, direct-venting of the LFG perimeter collection system exhaust continues to be acceptable.
- The results of the most recent zero gas migration survey, performed on August 17 and 21, 2017, continue to indicate that landfill gas is not migrating beyond the landfill cap boundary or offsite. The results are consistent with the annual perimeter well and building/structure monitoring, which did not detect methane.
- Semiannual self-monitoring and reporting for the LTF effluent was performed during the reporting period, and indicate that it meets County discharge limits. The results are not submitted to the NYSDEC, so they are provided in Appendix A of this PRR. The three-year permit was renewed on September 1, 2017. A copy of the current permit is provided in Appendix B of this PRR.

- Annual monitoring of ambient-air quality, soil-gas quality and soil-gas pressure was performed during the third quarter of 2017. The results were submitted to the NYSDEC in RTP's 2017 Annual Master Report. They continue to indicate that the OBL had very little or no impact on ambient air VOC concentrations and that background air quality and/or off-site sources are likely the primary sources of most of the VOCs detected in both the upwind and downwind samples. Some VOCs were detected in the soil gas samples, but at concentrations much lower than the NYSDEC DAR-1 SGCs. Soil-gas pressures were zero or negative indicating proper function of the perimeter LFG collection system. These results are consistent with previous quarterly ambient-air and soil-gas monitoring results.

Based on the above information, all required monitoring and reporting was performed during this reporting period, and all required permits are in place.

VI. Operation & Maintenance (O&M) Plan Compliance Report

The remedial program for the OBL predates the requirements for the preparation of a site management plan. The requirements of the RAP are stipulated in the Consent Decree. The O&M requirements for the RAP systems are included in the individual O&M manual for each system. These O&M manuals provide general guidance to resolve issues that could be expected to occur during system operation. The Consent Decree also stipulates reporting and data requirements during the operating period. RAP Reports were prepared and submitted to the NYSDEC quarterly through the third quarter of 2016. With NYSDEC takeover of the GTF on October 1, 2016, RAP reports were no longer required. The results of the semiannual post-termination monitoring for Recovery Wells RW-1 and RW-2 are submitted to the NYSDED in separate reports, and will include a final cumulative report at the end of the three-year monitoring period.

In addition to the RAP systems, the OBSWDC contains the Town's solid waste management facilities including a municipal solid waste transfer station, a scale-house facility, recyclables facilities, yard waste transfer site, and CVM (Central Vehicle Maintenance) facility. Therefore, the Town has a staff of approximately 20 employees onsite who conduct the operation and maintenance activities. Consequently, visual inspections are typically performed on a daily basis and routine maintenance is subsequently performed by Town forces as necessary. When maintenance requirements are beyond the abilities of Town personnel, contracts are prepared to conduct the maintenance or repair work.

The following paragraphs provide a description of typical operation and maintenance activities for each of the RAP systems that the Town was involved with during this reporting period, and the specific activities performed during this reporting period.

Landfill Capping System

Typical operation and maintenance activities for the landfill capping system include: inspection and routine maintenance of cap surface including mowing vegetation during the growing season; filling in areas where material may have settled or eroded to maintain proper slopes; removing vegetation and/or debris from drainage ditches; and maintaining surface material in access roads and benches. Work during this reporting period included mowing vegetation, ditch maintenance and repair of eroded areas.

Landfill Gas Control System

Typical operation and maintenance activities for the LFG control system include: inspection and routine maintenance of extraction wells; header pipe; blower station, controls and the exhaust stack. Activities during this reporting period included weekly monitoring of the perimeter collection system exhaust for methane and annual monitoring of the exhaust for VOCs, to ensure that emissions are acceptably low.

Leachate Treatment Facility

Typical operation and maintenance activities for the LTF include: inspection and routine maintenance of leachate collection well vaults, pumps, appurtenances; influent/effluent pumps; tanks; building facilities; controls; equalization basin and sludge drying beds. The effluent was also monitored semiannually for permit-required parameters and is in compliance with discharge limits. The Town received County approval to discharge leachate directly to the sewer system without treatment in 2016, and a bypass may be constructed in the future. The three-year permit was renewed on September 1, 2017.

VII. Overall PRR Conclusions and Recommendations

Based on the above information, the Town concludes that during this reporting period it complied with Consent Decree Civ. 5357, as well as the institutional and engineering requirements that are applicable to the OBL. This conclusion in based on the following:

- The Town initiated post-termination monitoring for Recovery Wells RW-1 and RW-2, and performed the first two rounds of this monitoring in June and September 2017, respectively. The results were submitted to the NYSDEC in separate reports.
- The Town maintained the landfill capping system in good condition, thereby preventing infiltration of precipitation and minimizing the amount of leachate generated by the OBL.
- The Town operated the perimeter LFG collection system and maintained a zero percent LFG migration line at the OBL boundary, as documented by the results of the August 2017 zero-percent LFG migration survey, and perimeter gas well and building/structure monitoring.
- The Town monitored the perimeter LFG collection system exhaust weekly for methane and performed annual monitoring of the exhaust for VOCs on August 16, 2017. The results continue to indicate that emissions are acceptably low.
- The Town operated the LTF, and renewed its three-year discharge permit on September 1, 2017. Self-monitoring and reporting was performed semiannually as required, and the LTF effluent continued to meet discharge limits. Due to improved leachate quality, the Town obtained County permission to discharge leachate untreated to the sewer system, and a bypass may be constructed in the future.
- The Town performed regular inspection, and maintenance as appropriate, of the gas collection system, landfill capping system, LTF and related appurtenances as required in the respective O&M Manuals for the OBSWDC.
- The Town performed the supplemental monitoring of ambient-air quality, soil-gas quality and soil-gas pressure, and the results continued to show that the OBL does not significantly impact ambient air quality at the OBSWDC.
- The Town compiled the post-termination groundwater data, and supplemental ambient air and soil gas monitoring data, compared it to applicable limits, and submitted reports of the results to the NYSDEC.
- The Town filed a deed restriction for the OBL with the Office of the County Clerk in June 2017.

Accordingly, the Town believes that during this reporting period its remaining obligations under the RAP were performed adequately, and that they achieved remedial objectives for the OBL.

APPENDIX A

Laboratory Results for June 23 and December 21, 2017
LTF Effluent Samples

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE TREATMENT 6/23
Pace Project No.: 7022294

Sample: LTF EFFLUENT **Lab ID: 7022294001** Collected: 06/23/17 12:45 Received: 06/23/17 13:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Copper	**<25.0**	ug/L	25.0	1	06/28/17 11:08	07/05/17 18:02	7440-50-8	
Lead	**<50.0**	ug/L	50.0	10	06/28/17 11:08	07/06/17 16:35	7439-92-1	
Zinc	**<20.0**	ug/L	20.0	1	06/28/17 11:08	07/05/17 18:02	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM22 2540D							
Total Suspended Solids	**13.0**	mg/L	10.0	1		06/29/17 18:40		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	**377**	mg/L	10.0	1	07/07/17 11:01	07/07/17 13:47		
4500H+ pH, Electrometric	Analytical Method: SM22 4500-H+B							
pH at 25 Degrees C	**8.3**	Std. Units	0.10	1		06/23/17 22:49		H3,H6, N3
4500 Chloride	Analytical Method: SM22 4500-Cl-E							
Chloride	**500**	mg/L	20.0	10		06/27/17 14:06	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: Semi-Annual Leachate-12/21
Pace Project No.: 7038815

Sample: OBL LTF EFFLUENT **Lab ID: 7038815001** Collected: 12/21/17 10:30 Received: 12/21/17 10:34 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Copper	**<25.0**	ug/L	25.0	1	12/26/17 13:02	12/29/17 22:30	7440-50-8	
Lead	**<5.0**	ug/L	5.0	1	12/26/17 13:02	12/29/17 22:30	7439-92-1	
Zinc	**56.2**	ug/L	20.0	1	12/26/17 13:02	12/29/17 22:30	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM22 2540D							
Total Suspended Solids	**14.4**	mg/L	4.0	1		12/26/17 17:21		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	**106**	mg/L	10.0	1	01/03/18 10:28	01/03/18 13:02		
4500H+ pH, Electrometric	Analytical Method: SM22 4500-H+B							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		12/21/17 18:15		H1,H6, N3
4500 Chloride	Analytical Method: SM22 4500-Cl-E							
Chloride	**86.9**	mg/L	10.0	5		12/26/17 11:34	16887-00-6	

REPORT OF LABORATORY ANALYSIS

APPENDIX B

Copy of Industrial Discharge Permit No. 45
Renewed on September 1, 2017

MR
NB
EW

Meeting of October 3, 2017 Resolution No. 631-2017

WHEREAS, Richard W. Lenz, P.E., Commissioner of the Department of Public Works, by memorandum dated September 13, 2017, has indicated that the Town holds an Industrial Discharge Permit issued by the Nassau County Department of Public Works in order to operate the leachate treatment facility located at the former Old Bethpage Landfill; and

WHEREAS, the Department of Public Works submitted an application to Nassau County to renew said permit, which has an effective date of September 1, 2017, and carries a fee of $213.00; and

Reviewed By Office of Town Attorney

WHEREAS, Commissioner Lenz has requested that the Town Board authorize and direct the Comptroller to issue an encumbrance order in the amount of $213.00 in order to satisfy the permit fee, with funds to be drawn from Account No. DER SR05 8160 47900 000 0000,

NOW, THEREFORE, BE IT RESOLVED, That the request as hereinabove set forth is approved nunc pro tunc to September 1, 2017, and the Comptroller is authorized and directed to issue an encumbrance order in the amount of $213.00 in order to satisfy the Nassau County Industrial Discharge permit fee, with funds to be drawn from Account No. DER SR05 8160 47900 000 0000.

-#-

The foregoing resolution was declared adopted after a poll of the members of the Board; the vote being recorded as follows:

Supervisor Saladino	Aye
Councilman Muscarella	Aye
Councilman Macagnone	Aye
Councilwoman Alesia	Aye
Councilwoman Johnson	Aye
Councilman Imbroto	Aye
Councilman Hand	Absent

cc: Supervisor
Town Attorney
Comptroller (2)
Public Works

MR
EW - FOLLOW-U

COUNTY OF NASSAU
DEPARTMENT OF PUBLIC WORKS

Memo

To: Richard Lenz

From: Pasquale Assalone

Date: August 22, 2017

Subject: Nassau County IPP
IDP No. 45

Please find enclosed the draft industrial discharge permit for the landfill leachate treatment plant at the Old Bethpage Solid Waste Disposal Complex.

Please sign the permit and return it to me for final processing, along with the permit fee of $213.00 made payable to the Treasurer of Nassau County, at the following address:

Nassau County DPW
Industrial Pretreatment Program
Attention: Pasquale Assalone, P.E.
1194 Prospect Avenue
Westbury, New York 11590-2723

Thanks.

Nassau County
Department of Public Works

Industrial Pretreatment Program
1194 Prospect Avenue, Westbury, NY 11590-2723

INDUSTRIAL DISCHARGE PERMIT NO. 45
This Permit Is Not Transferable

Effective Date: September 1, 2017
Expires: August 31, 2020

Amendment to Sewer Connection Permit: No. S125101

Permit Authorization: _____
Shila Shah-Gavnoudias, P.E.
Commissioner of Public Works

In compliance with the requirements of the Federal Water Pollution Control Act (also known as the Clean Water Act as amended), Nassau County Ordinance No. 266-1985, categorical and local discharge limitations, in accordance with the renewal application dated August 2, 2017 and other conditions set forth herein:

Company: Town of Oyster Bay – Old Bethpage Solid Waste Disposal Complex
Landfill Leachate Treatment Plant

Description: Landfill leachate treatment

Classified by SIC Codes: 4953 4952 NAICS Codes: 562219 221320

Subject to Categorical Pretreatment Standards: Y [ ] N [X]

Name of Standards: N/A

Subcategory: N/A

Effective Date of Compliance: N/A

Permitted to discharge wastewater from its facility located at: 101 Bethpage-Sweethollow Road
Old Bethpage, New York 11804
Section: 47 Block: 153 Lot: 3

into the sewers tributary to the Cedar Creek Water Pollution Control Plant.

The Permittee agrees to:

1. Discharge wastewater only in accordance with the terms and conditions of this Permit and comply with all the requirements and limits of the Nassau County Sewer Use Ordinance and appropriate categorical limitations (the more stringent limit shall apply).

2. Provide complete cooperation to the County, its employees, agents and representatives allowing reasonable access to the plant and pretreatment facilities for all inspections including, but not limited to, measurement and sampling of wastewater.

3. Maintain all records relating to the wastewater discharge flow rate, sampling results and methods of analyses for a minimum of three (3) years.

4. Provide the Department of Public Works as far in advance as is reasonably practicable all information relating to any actual or proposed material change in:

   a) Volume of discharge (gpd)
   b) Processes or chemicals used at the facility
   c) Pretreatment facilities
   d) Average daily rate of production
   e) Content of discharge
   f) New sewer connection
   g) Expansion or new construction
   h) Termination of discharge

5. Submit a Semi-Annual Compliance Report twice a year. If requested, forms along with analyses results of industrial wastewater discharge will be furnished to the Applicant by the County and shall be returned within one month from their receipt.

   In those instances when the Applicant's facility exceeded its discharge limitations twice consecutively during a six month period, a Schedule of Compliance must also be submitted.

   Any delay in the submission of Semi-Annual Compliance Reports, Self-Monitoring Reports or any other required reporting in excess of thirty (30) days from the due date shall be deemed a violation of this Permit and the Applicant will be subject to an enforcement action.

6. Pay for <u>each</u> monitoring inspection and sampling procedure following notification of violation of the discharge limitations contained herein. The fee for such inspection and/or procedure shall vary in amount from a minimum of not less than One Hundred Dollars ($100) to a maximum of not more than Five Hundred Dollars ($500) depending upon the continued nature of the violation.

7. Operate the pretreatment facilities in an efficient manner at all times. By-passes of pretreatment facilities are strictly prohibited.

   Applicant shall provide appropriate containment facilities to prevent an accidental or slug discharge of prohibited materials.

   <u>Immediate</u> notification of a slug load (or extraordinary discharge) is required. The <u>company</u> is required to immediately notify the County at 516-571-7319 or 516-571-7365 (evenings and weekends) if there is any slug discharge to the public sewer system. All of the Applicant's employees, agents and representatives shall be notified of the foregoing emergency notification procedure.

This notice must be followed immediately thereafter with a detailed written report of each such incident including a description of its causes and duration as well as any preventive measures undertaken. Failure to notify DPW about any such incident in the proper manner within five working days will be considered as a violation of this Permit.

This notification shall not relieve the Permittee of any expense, loss, damage or other liability incurred as a result of damage to any person, collection system and/or processes at the POTW.

8. Users who have violated, or continue to violate any provision of this discharge permit, or order hereunder, or any other pretreatment standard or requirement, shall be liable to the County for a maximum civil penalty of not less than $1,000 per violation, per day.

   The imposition of a penalty pursuant to the foregoing paragraphs shall result in the probation of this Permit. Accordingly, the Permittee shall immediately cease violation and undertake whatever corrective measures are warranted.

9. In the event the Permittee, its employees, agents or representatives continue to exceed its discharge limitations during the probationary period, or is unwilling to comply with its Schedule of Compliance, the County Attorney will immediately commence appropriate legal action to terminate the Applicant's authorization to dispose of industrial wastewater into the Public Sewer System.

10. The Permittee shall apply for the Discharge Permit re-issuance a minimum of sixty (60) days prior to the expiration date of the existing Permit. The terms and conditions of the Permit may be subject to modification by the County during the term of the Permit. The Permittee shall be informed of any proposed changes at least 30 days prior to the effective date of change.

11. Permits are issued to a specific sewer user for a specific operation. A permit shall not be reassigned or transferred or sold to a new owner or new sewer user, or to different premises, or for a new or changed operation without the advance approval of the County.

12. Additional requirements:

    The Applicant shall install, operate and maintain in proper working order at all times the following equipment necessary to monitor the industrial wastewater discharged to the Public Sewer:

Testing Chamber required:	Y [X]	N [ ]
Locking Device required:	Y [X]	N [ ]
Flowmeter required:	Y [X]	N [ ]
Self-Monitoring required:	Y [X]	N [ ]

Frequency of Self-Monitoring: Monthly [ ] Quarterly [ ] Semi-Annually [X]

A Discharge Monitoring Report shall be submitted semi-annually.

Parameters to be monitored:
- pH
- COD
- TSS
- Chlorides
- Copper, Lead, Zinc

Monitoring is required from one waste stream: Manhole adjacent to treatment plant.

Monitoring for pH shall be a minimum of four grab samples per work day. Monitoring for metals, chlorides, chemical oxygen demand (COD) and total suspended solids (TSS) shall be a composite sample

representative of the working day and must be obtained through flow proportional composite sampling techniques. The grab and composite samples must be collected at the end of the regulated process, after pretreatment and prior to mixing with other waste streams.

The Permittee is required to submit any effluent monitoring results for analyses performed using procedures in 40 CFR 136. The results shall be submitted to the County in conjunction with the Semi-Annual Compliance Reports.

In the event that a required monitoring result indicates a non-compliance with applicable local or federal limits, the Permittee must notify the County within 24-hours of the receipt of the result and the Permittee shall resample as soon as possible, but not later than 30 days, of becoming aware of the excess/violation.

Permit evaluated as to form and content:

Pasquale Assalone — August 22, 2017
Pasquale Assalone — Date
Sanitary Engineer III

Permit conditions and stipulations acknowledged and accepted by Town of Oyster Bay representative:

Signature — NOV. 2, 2017
Signature — Date

Print Name: RICHARD LENZ
Title: COMMISSIONER DPW/ HIGHWAY

Industrial Waste Control Unit Permit Approval:

Richard Cotugno — August 22, 2017
Richard Cotugno — Date
Superintendent of Sewage Plants
Acting Head of Environmental Operations

Industrial Discharge Permit No. 45

Supplementary Information and Special Conditions

Permittee:	Town of Oyster Bay –	Old Bethpage Solid Waste Disposal Complex Landfill Leachate Treatment Plant
Effective Date:	September 1, 2017	
Expiration Date:	August 31, 2020	

Schedule of Compliance

Task	Completion Date

Nassau County Industrial Pretreatment Program Responsibility:

Nassau County DPW representatives may sample and inspect the Applicant's facility several times per year. If requested, the results of the analyses will be mailed to the Permittee on or about January 31 and July 31 of each year and in the case of an exceedance of discharge limitations within thirty days.

The County's monitoring will be performed at the end of process and may be done as a grab or composite sample.

The DPW will notify the Permittee of any changes in the applicable pretreatment requirements.

Frequency of County Monitoring: **Annually**

Note: If composite sampling is performed by the Permittee, the sample is to be preserved according to relevant standards until it is retrieved. Please feel free to consult with the Industrial Pretreatment Program at (516) 571-7353 if you have any questions.

Prohibited Wastes

No person shall discharge deposit, cause or allow to be deposited or discharged into the Public Sewer or the POTW any waste which causes or contains, but not necessarily limited to, the following:

1. a. Explosive Wastes:

Any liquids, solids or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the POTW or to the operation of the POTW. At no time shall two successive readings on an explosion hazard meter, at the point of discharge into the system (or at any point in the system), be more than five percent (5%) nor any single reading over ten percent (10%) of the Lower Explosive Limit (LEL) of the meter or any material(s) with a closed cup flashpoint of less than 140°F or 63°C. Prohibited materials include, but are not limited to, gasoline, fuel oil, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides, sulfides and any other substances which the County, the State or EPA has notified the User is a fire hazard to the system.

b. Corrosive Wastes:

Wastes which cause corrosion or deterioration of the equipment of the treatment plant or collection system such as sulfides and concentrated acids. All wastes shall have a pH not less than 5.5 or greater than 9.5.

c. Solid Which May Create Obstructions:

Solid or viscous substances in amounts which may cause obstruction to the flow in a sewer or other interference or pass-through with the proper operation of the wastewater treatment facilities such as, but not limited to: grease as defined hereinafter, ground or unground garbage, animal carcass wastes, ashes, cinders, sand, lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, bark, wood sawdust, plastics, gas, tar, asphalt residues, residues from refining or processing of fuel or lubricating oil, whether emulsified or not, in excess of one hundred (100) mg/L or containing substances which may solidify or become viscous at temperatures between thirty-two (32) and one hundred and fifty (150) degrees Fahrenheit (0 and 65 degrees C).

d. Extremely Hazardous Wastes:

Those wastes designated by the USEPA as sufficiently toxic that they shall not be discharged to a sanitary sewer in any concentration.

e. Radioactive Wastes:

Radioactive wastes or isotopes of such half-life or concentration that they do not comply with regulations or orders issued by the appropriate authority having control over their use and which cause hazards to the personnel operating the sewerage system or POTW.

f. Toxic Pollutants:

Any wastewater containing toxic pollutants in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere with any wastewater treatment process, to constitute a hazard to humans or animals, to create a toxic effect in the receiving waters of the POTW, or to exceed the limitation set forth in a Categorical Standard. A toxic pollutant shall include, but not be limited to, any pollutant identified pursuant to Section 307(a) of the Clean Water Act.

g. Excessive Discoloration:

Such as, but not limited to, dye wastes, tanning solutions, etc.

h. Temperature:

Any liquid, solid, or vapor having a temperature higher than 150°F (65°C); however, such liquid, solid or vapor shall not cause the temperature of the influent to the sewage treatment plant to be greater than 104°F (40°C).

i. Extreme Variations:

Industrial wastes discharged in a slug of such volume or strength that may cause a hydraulic overload on the collection system, a treatment process upset or loss of POTW efficiency.

j. Unpolluted Wastes:

Any unpolluted water including, but not limited to, stormwater, surface and groundwater, roof runoff, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process water which will increase the hydraulic load on the POTW.

k. Dilution Water:

No water shall be added for the purpose of diluting wastes which would otherwise exceed applicable maximum concentration limits.

Nassau County Department of Public Works

Industrial Waste Control Unit

Permit Number: 45
Permittee: TOB - Landfill Treatment Plant
Address: 101 Old Bethpage-Sweethollow Road
Old Bethpage, New York 11804
Effective Date of Permit: September 1, 2017
Expiration Date of Permit: August 31, 2017

Industrial Discharge - Permit Standards/Limitations

Parameters	Applicable Standard of Maximum Concentration of Industrial Wastewater Discharge to the Public Sewer		Categorical Standard Applied at the Point of Discharge from the Regulated Operation		Maximum Concentration of Industrial Discharge to the Public Sewer (Nassau County Sewer Ordinance)
	Daily Maximum [mg/L]	Monthly Average [mg/L]	Daily Maximum [mg/L]	Monthly Average [mg/L]	Daily Maximum [mg/L]
Oil/Grease (O/G)					**100**
pH - Maximum	**9.5**	**9.5**			**9.5**
pH - Minimum	**5.5**	**5.5**			**5.5**
Antimony (Sb)					**0.18**
Arsenic (As)					**0.1**
Barium (Ba)					**2.0**
Cadmium (Cd)					**0.2**
Chromium - Total (Cr)					**2.0**
Chromium - Hexavalent (Cr^{+6})					**0.1**
Copper (Cu)					**2.0**
Cyanide - Total (Cn)					**1.0**
Cyanide - (Amenable)					
Fluoride (F)					**10.0**
Iron (Fe)					**4.0**
Lead (Pb)					**0.1**
Manganese (Mn)					**2.0**
Mercury (Hg)					**0.1**
Nickel (Ni)					**2.0**
Selenium (Se)					**0.1**
Silver (Ag)					**0.1**
Zinc (Zn)					**5.0**
TTO					

Notes:

1. The term TTO shall mean the sum of the concentrations for halogenated and aromatic compounds regulated for the industry found in the discharge of the facility at a concentration greater than 0.01 mg/L (10 ppb).
2. The most stringent (local or categorical standard) limit is considered the applicable discharge standard and shall be applied at the point of discharge. The applicable discharge standard is a daily maximum.