FOURTH PERIODIC REVIEW REPORT

for

OLD BETHPAGE LANDFILL
March 31, 2015 through May 31, 2016

Prepared for:

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

Prepared by:

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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 30, 2016

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I. Executive Summary

This PRR (Periodic Review Report) for the OBL (Old Bethpage Landfill) covers the period from March 31, 2015 through May 31, 2016. It is being submitted at the request of the NYSDEC (New York State Department of Environmental Conservation) pursuant to a notice dated April 22, 2016 to the Town (Town of Oyster Bay). This is the fourth PRR for the OBL. The First, Second and Third PRRs covered the periods from July 2008 through June 2009, July 2009 through June 2012, and July 2012 through June 2014, respectively. An updated certification for the Third PRR was submitted to the NYSDEC in March 2015 following completion of the Corrective Measures in that PRR, which included replacing the fouled air stripper media in December 2014.

The OBL is a 65-acre former MSW (municipal solid waste) landfill located within the OBSWDC (Old Bethpage Solid Waste Disposal Complex) 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 (Remedial Action Plan) 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 are: 1) remediating the off-site VOC (volatile organic compound) ground-water plume from the OBL utilizing a GTF (ground water-treatment facility); 2) completing the landfill cap; 3) collecting LFG (landfill gas); 4) maintaining zero percent LFG migration at the OBL boundary; 5) continuing to operate the existing LTF (leachate treatment facility); and 6) supplemental monitoring of ambient-air quality, soil-gas quality and soil-gas pressure. The thermal oxidizer is no longer in operation, and supplemental monitoring has been superseded by monitoring exhaust from the perimeter LFG collection system.

Recovery Wells RW-1 and RW-2 were basically non-detectable for VOCs during this reporting period. It therefore appears that the off-site VOC plume associated with the OBL has been remediated to the extent feasible. Accordingly, with NYSDEC approval, the Town intends to turn off Recovery Wells RW-1 and RW-2, and begin post-termination monitoring of the 13 monitoring wells selected by the NYSDEC.

Recovery Wells RW-3, RW-4 and RW-5 continued to contain several individual VOCs at concentrations exceeding Class GA standards during this reporting period. These three recovery wells are capturing a portion of the off-site VOC plume from the Claremont Polychemical Site, and since 2009 are capturing a portion of a high-concentration TCE (trichloroethene) plume from at least one other source in the vicinity of the OBL. The NYSDEC has informed the Town that it plans to take over operation of these three recovery wells and the GTF in the near future. This will entail replacing the current SAC (State Assistance Contract) with a Stipulation Agreement.

The GTF is operational and its treatment efficiency has remained near 100 percent since the fouled air stripper media were replaced in December 2014. The GTF effluent met its SPDES Permit Equivalency discharge limits. 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.

The LTF effluent is permitted and meets County sewer discharge standards. On March 29, 2016 the County issued a letter approving the Town's request to bypass the LTF, which has been operating since 1983, and discharge leachate directly to the sewer system. 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. The deed restriction for the OBL, required as an institutional control under Part 360, will be approved by the Town Board on July 12, 2016, and will then be filed with the Office of the County Clerk.

Ground-water remediation began on April 1, 1992 and is ongoing, as is quarterly monitoring and reporting. With NYSDEC approval, the Town intends to turn off Recovery Wells RW-1 and RW-2, and begin post-termination monitoring of 13 wells. Also, the NYSDEC intends to take over operation of the remaining three recovery wells and the GTF. 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. Weekly monitoring of the exhaust stack for methane is being performed and continues to show that emissions are acceptably low.

Annual zero percent LFG migration surveys are being conducted along the OBL and OBSWDC property boundaries, and in on-site structures, and continue to demonstrate that subsurface LFG migration is being controlled. Quarterly monitoring of ambient-air and soil-gas quality, and soil-gas pressure, was also performed through the first quarter of 2016. The Town received NYSDEC approval to decrease the frequency of ambient-air quality, soil-gas quality and soil-gas pressure to annually, beginning in the second quarter of 2016.

Access to the OBL is restricted by appropriate engineering controls. Town personnel perform 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. No changes are recommended at this time. Repairs requiring specialized expertise necessitate hiring outside contractors in accordance with general municipal law requirements. The only significant repair required during this reporting period was replacement of the pressure-relief valve in the pipeline connecting the recovery wells to the GTF because it developed a leak. The GTF was shut down until the new made-to-order valve was fabricated and installed.

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.

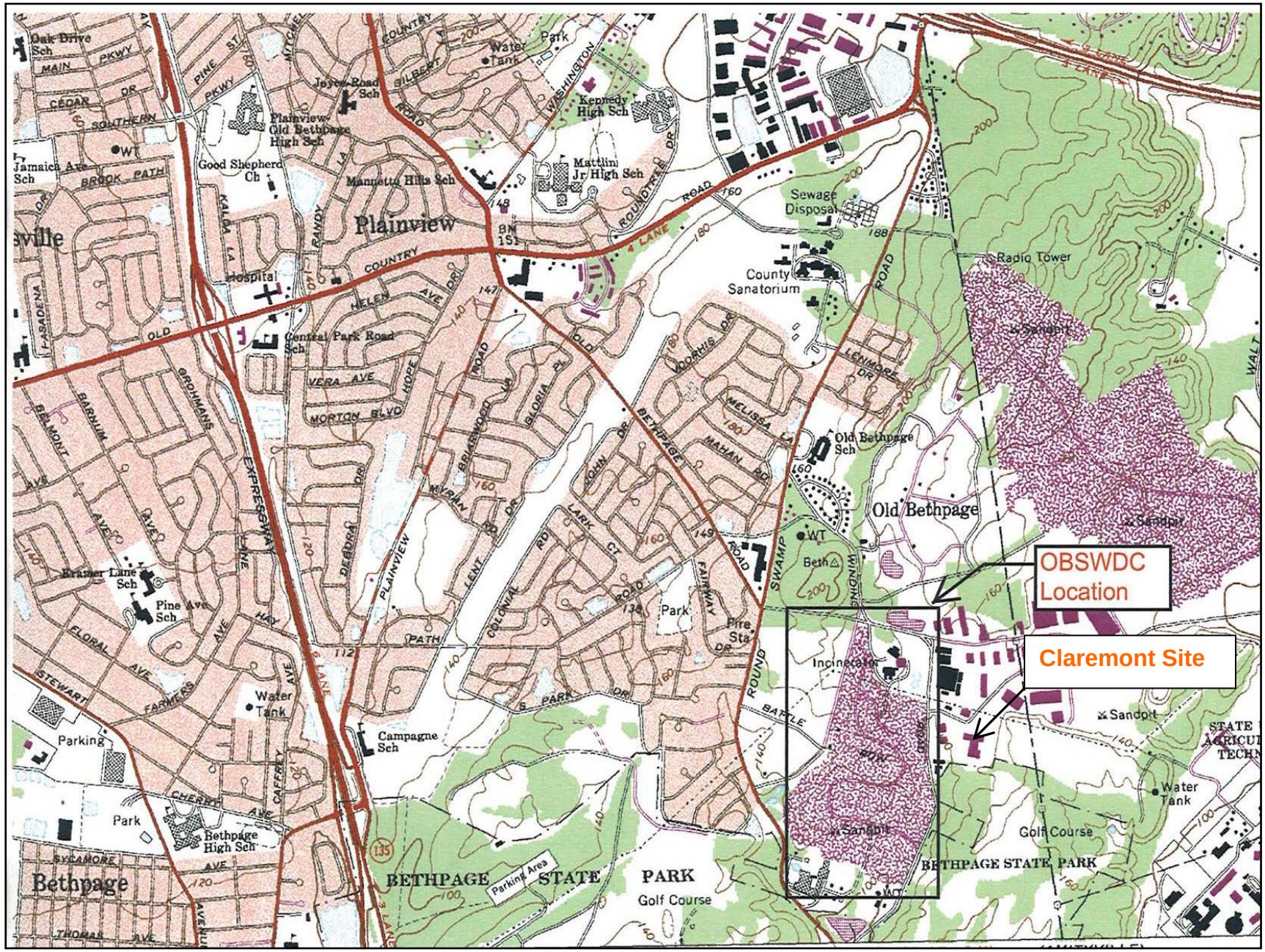
The nature and extent of the contaminated ground-water plume associated with the OBL were defined in a report titled "OBSWDC Offsite Groundwater Monitoring Program, Old Bethpage, Long Island, New York", by Geraghty & Miller, Inc. dated September 1986. The plume extended downgradient (southeast) of the 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:

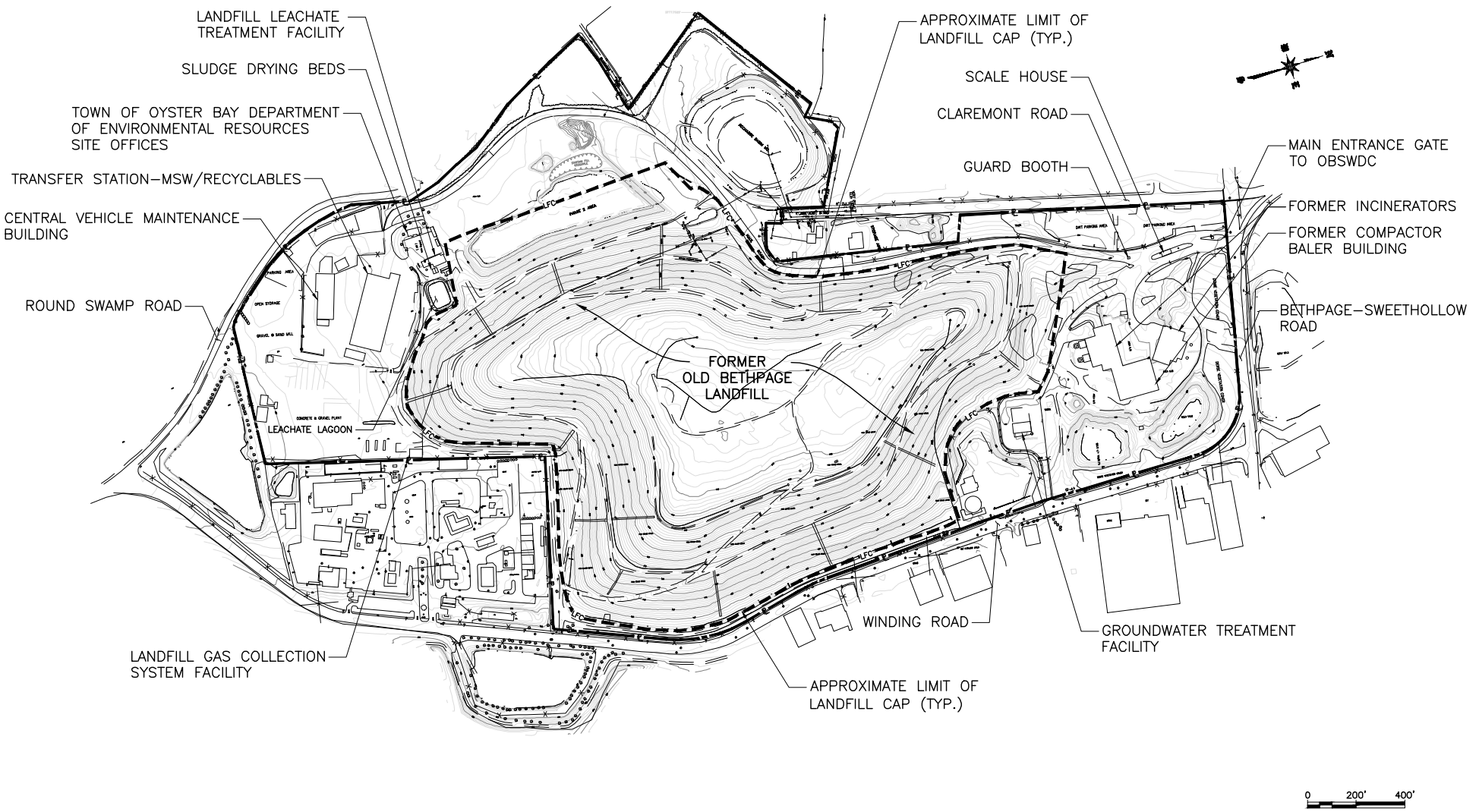
- design, construct and operate the GTF, to contain, recover and remediate the off-site VOC ground-water plume associated with the OBL
- design and construct a Part 360 cap for the OBL
- continue to operate the LFG migration control system
- continue to operate the LTF
- perform various monitoring functions 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 and continued to operate during this reporting period, except during periods when maintenance or repairs were required. 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 collected was vented to the atmosphere. Weekly

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

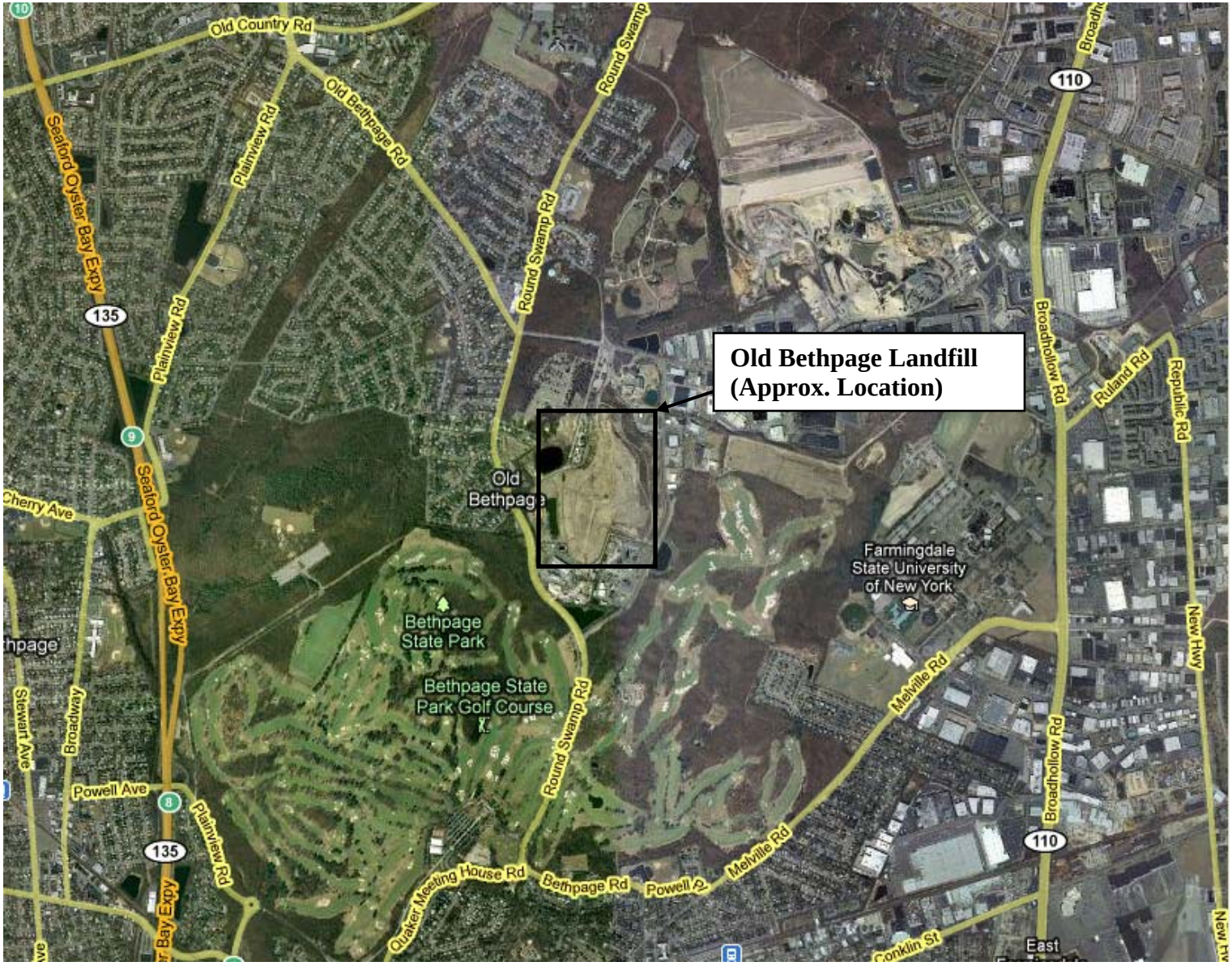
SITE PLAN

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



monitoring of the exhaust stack for methane was performed. Monitoring of ground water, leachate, zero percent LFG migration, ambient-air and soil-gas quality, and soil-gas pressure was performed per the Consent Decree.

During this reporting period, VOC concentrations in Recovery Wells RW-1 and RW-2 remained at very low to non-detectable levels. This indicates that the off-site VOC plume associated with the OBL has likely been remediated to the extent feasible. In contrast, the concentrations of up to three VOCs in Recovery Wells RW-3, RW-4 and RW-5 continued to exceed their Class GA standards. These three recovery wells are capturing a portion of the off-site VOC plume from the Claremont Polychemical Site, and since 2009 are capturing a portion of another high-concentration TCE plume associated with at least one unknown source in the vicinity of the OBL.

The Town operated the five recovery wells and the GTF during this reporting period and the NYSDEC will reimburse the Town for the costs associated with operating Recovery Wells RW-3, RW-4 and RW-5 under the State Assistance Contract (SAC) No. C303233. In a March 1, 2016 correspondence, the NYSDEC proposed that the Town could shut down Recovery Wells RW-1 and RW-2, and initiate post-termination monitoring of 13 monitoring wells located within the area of the former OBL VOC plume. The NYSDEC also notified the Town that it plans to take over operation of Recovery Wells RW-3, RW-4 and RW-5, and the GTF in the near future to continue Operable Unit 5 for the Claremont Polychemical Site. This will entail replacing SAC No. C303233 with a Stipulation Agreement that is acceptable to the Town and the NYSDEC.

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. On October 27, 2015 and December 8, 2015, the Town collected samples of raw OBL leachate and had them analyzed for the County sewer discharge parameters. Based on comparison of the laboratory results to the discharge limits, the quality of the raw leachate now generally meets discharge limits. Flow is also low. Accordingly, the Town requested and received County approval to discharge OBL leachate directly to the sewer system.

LFG did not migrate offsite. Ambient-air monitoring results indicated that the OBL is not significantly impacting ambient-air quality. Accordingly, in early 2016 the NYSDEC approved the Town's request to reduce the frequency of ambient-air quality, soil-gas quality and soil-gas pressure monitoring from quarterly to annually. The Town implemented this reduction in the second quarter of 2016. Access-restricting engineering controls are in place. The deed restriction required by 6NYCRR Part 360 was prepared and has been accepted by the NYSDEC and the USEPA (United States Environmental Protection Agency). It will be approved by the Town Board on July 12, 2016, and will then be filed with the Office of the County Clerk.

III. Evaluate Remedy Performance, Effectiveness and Protectiveness

Ground Water Remediation System

Based on the daily operating reports for this reporting period, the GTF was on-line 96 percent of the time and maintained an average daily flow rate of 0.94 MGD (Million Gallons per Day), which equates to approximately 402 million gallons of ground water being remediated. Previous analysis has shown that this rate of GTF pumpage is sufficient to contain the off-site VOC plume from the OBL. The actual daily flow data are summarized in Figure 4 on the following page. As shown in Figure 4, only three notable periods of downtime and changes in flow rate occurred during this reporting period. They are numbered in Figure 4 and identified/explained below:

1. The GTF was off-line on April 8, 2015. The reason for this outage was not recorded.

2. On September 25, 2015, the autodialer, which shuts down the GTF if a problem occurs when it is unmanned and then notifies the Town by phone, malfunctioned. As a precaution against potential damage, the GTF was manually shut down over the weekend and then operated during the manned day shift only until September 29, 2015, when the autodialer was returned to service. The autodailer malfunction was caused by its dedicated phone line being accidentally severed by a utility company tree-trimming crew working in the area.

3. The GTF was shut down during the period from April 26, 2016 through June 14, 2016 because a leak developed in the pressure-relief valve on the pipeline that connects the recovery wellfield to the GTF. This valve is a made-to-order item, so it had to be fabricated by the manufacturer prior to being delivered and installed. The new valve was installed on June 15, 2016 and the GTF was turned back on.

In addition to the notable periods of downtime and changes in flow listed above, there were occasions when individual recovery wells were off-line and/or the GTF was shut down for short periods of time. These minor periods are identified in the RAP reports so they are not included in this PRR.

The influent [TVOC] (Total VOC Concentration(s)) data collected during this reporting period are summarized in Figure 5. Review of Figure 5 indicates that the [TVOC] of the GTF influent exhibited an overall downward trend, and averaged 98.1 ug/L (micrograms per Liter). Effluent samples were collected concurrently with the influent samples, and all of them were non-detectable for VOCs. This indicates that the GTF maintained a treatment efficiency of near 100 percent during this reporting period. Since all of influent sample [TVOC] results were non-detectable, they are not shown in Figure 5.

The RAP Reports have consistently documented that the three easternmost recovery wells, specifically Recovery Wells RW-3, RW-4 and RW-5, are intercepting a portion of the off-site VOC plume from the Claremont Polychemical Site, and that this is a key

Figure 4 - Temporal Variation in Facility Flow, March 31, 2015 - May 31, 2016

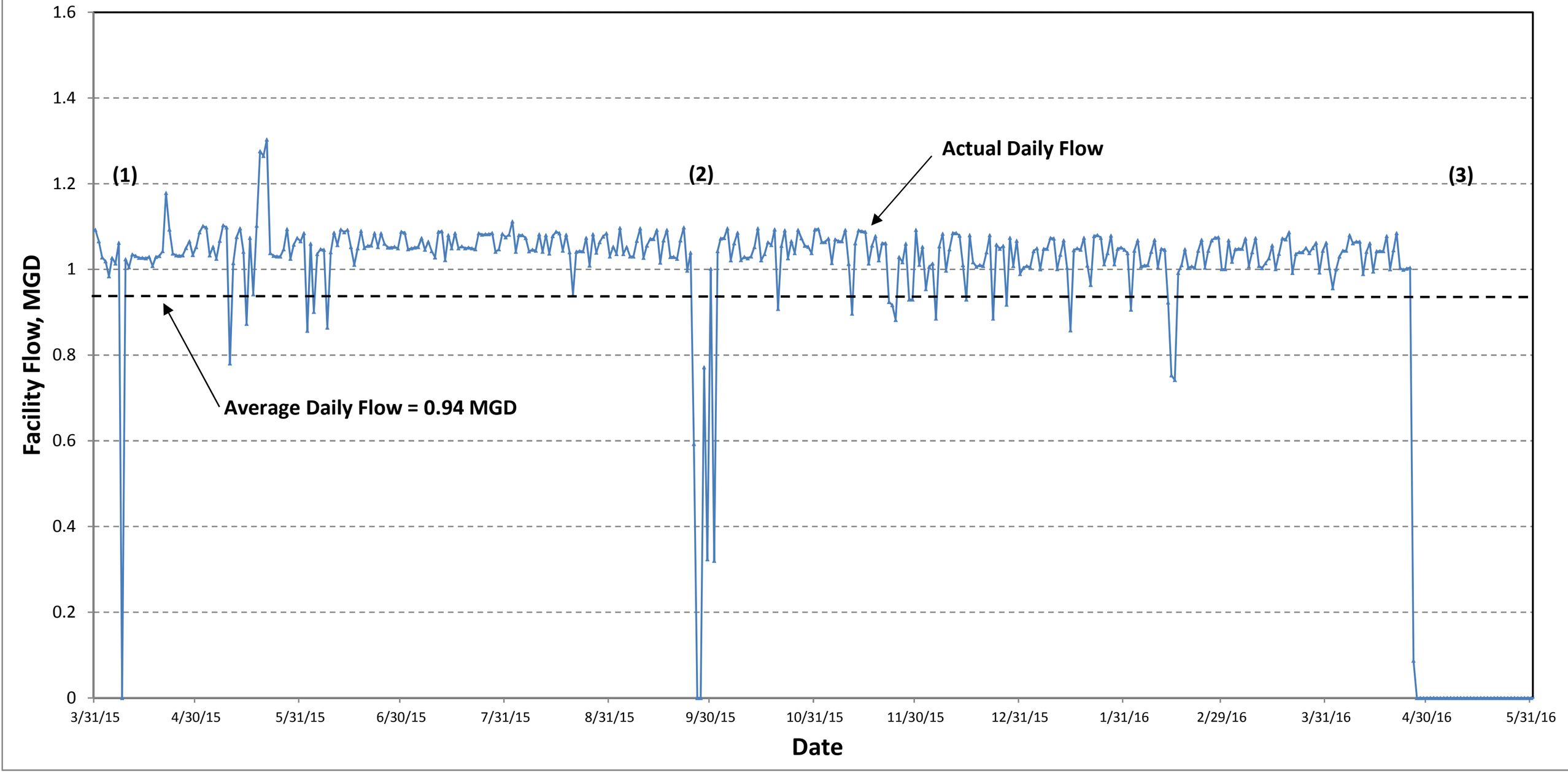
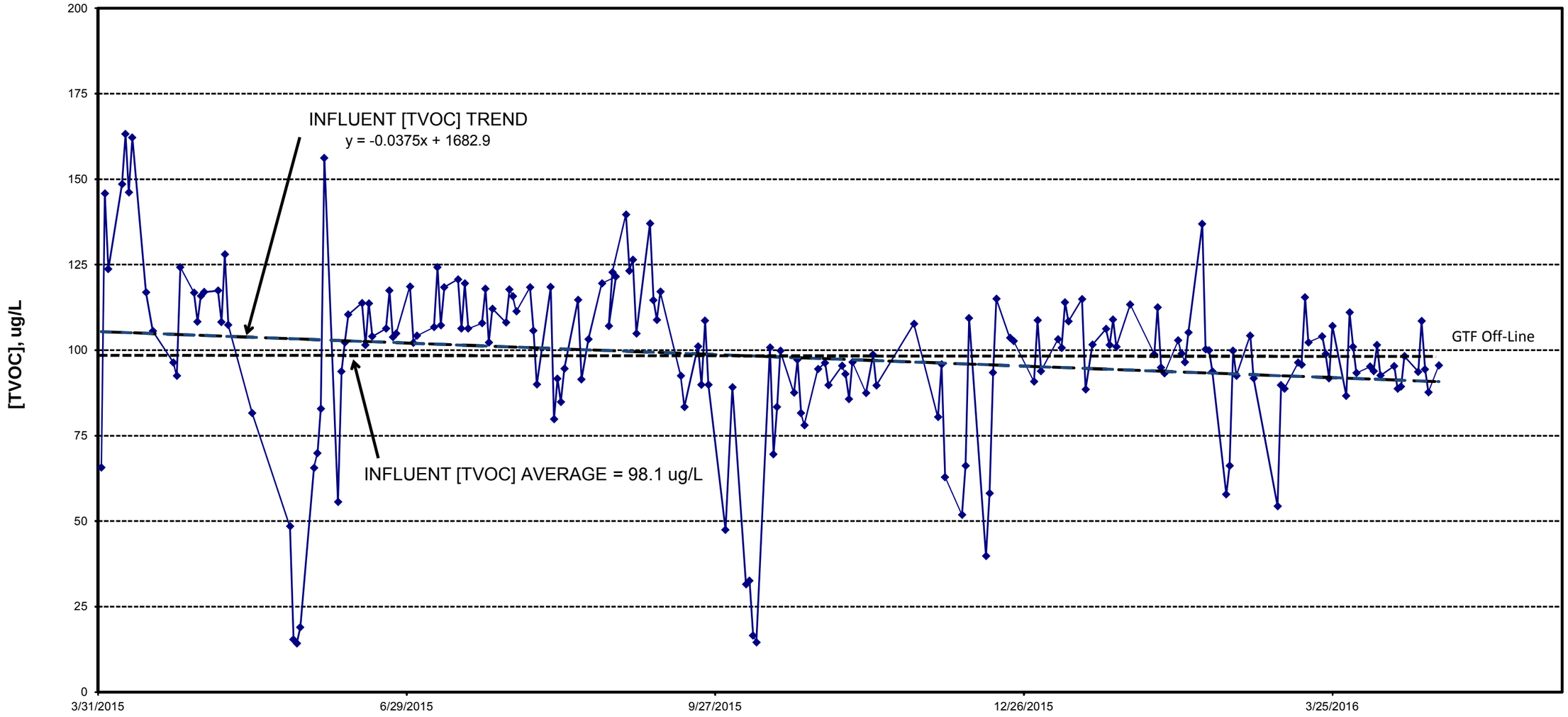


FIGURE 5 - TEMPORAL VARIATION OF INFLUENT TOTAL VOC CONCENTRATIONS [TVOC]



OLD BETHPAGE LANDFILL GROUNDWATER TREATMENT FACILITY

MARCH 31, 2015 THROUGH May 31, 2016

contributor to the higher levels of VOCs in these recovery wells. Based on observed increases in [TCE] since 2009, particularly in Monitoring Well MW-7B-R and Recovery Well RW-4, these three recovery wells also appear to be capturing a portion of a high-concentration TCE plume associated with at least one other unknown source located in the vicinity of the OBL. The presence of such sources was documented in the USEPA's March 4, 2014 Second Five-Year Review Report for the Claremont Corporation Superfund Site, which also stated that the extent of this TCE contamination has not been delineated.

The [TVOC] results for the Town recovery well samples collected during this reporting period are summarized in Figure 6. As shown in Figure 6, [TVOC] were typically highest in Recovery Well RW-4, followed by Recovery Wells RW-5 and RW-3, respectively. [TVOC] in all three of these recovery wells exhibited decreasing trends, based on the available data. In Recovery Wells RW-1 and RW-2, [TVOC] were very low to non-detectable during the entire reporting period.

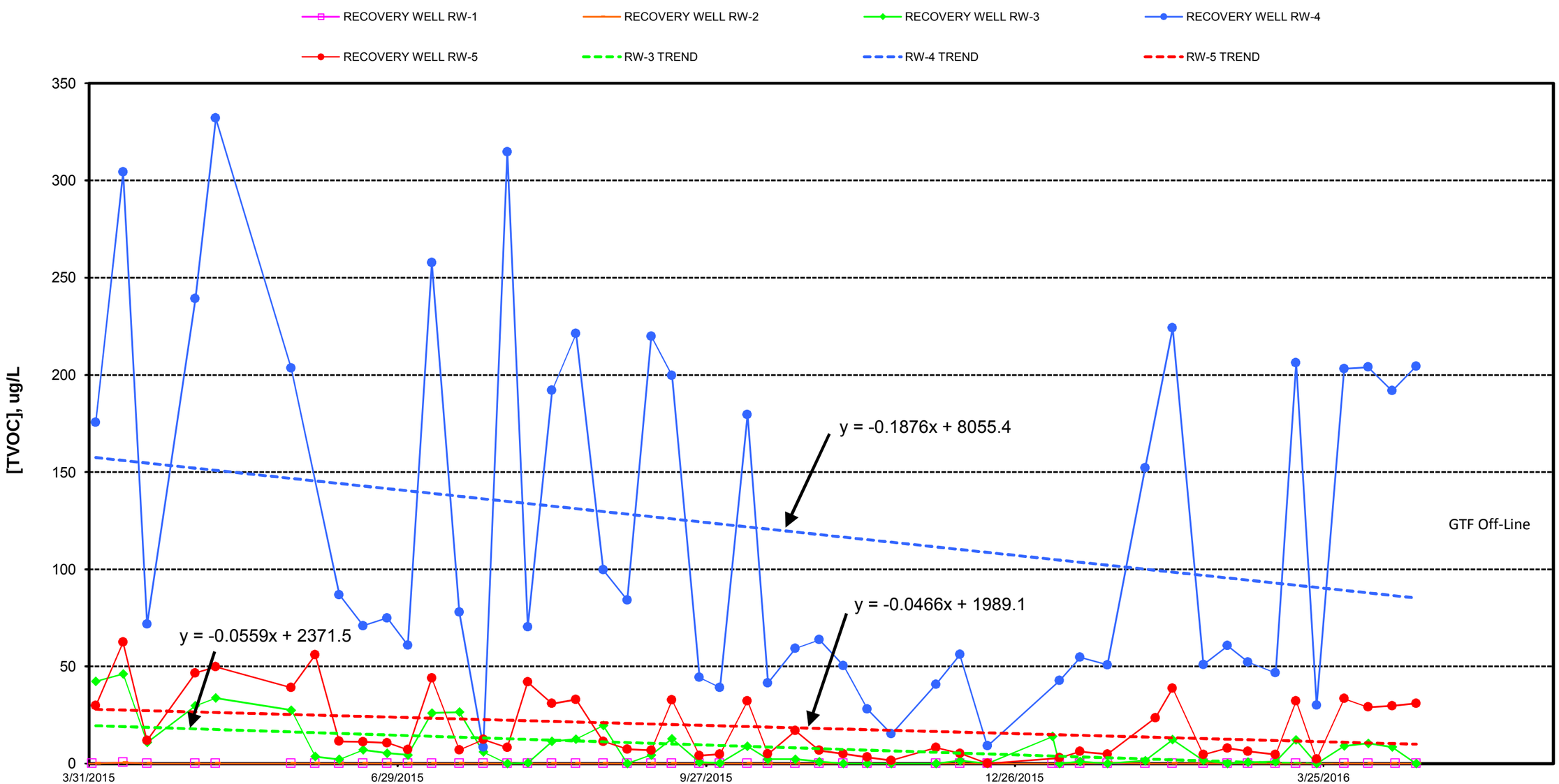
Based on the results from the weekly samples collected from the Town's recovery wells during this reporting period, total and individual VOC concentrations in Recovery Wells RW-1 and RW-2 were lower than the NYSDEC Ambient Water Quality Standard or Guidance Values. In Recovery Wells RW-3, RW-4 and/or RW-5, the concentrations of up to three individual VOCs: TCE, PCE and cis-1,2-DCE exceeded their 5-ug/L Class GA ground water-quality standard in at least one sample.

Specifically, Recovery Well RW-3 exhibited relatively consistent exceedances for TCE during the reporting period, and occasional exceedances for PCE through July 2015. Recovery Well RW-4 exhibited relatively consistent exceedances for TCE, PCE and cis-1,2-DCE during the reporting period. Recovery Well RW-5 exhibited relatively consistent exceedances for TCE and PCE during the reporting period.

It should be noted that during long-term continuous operation, due to radial flow of ground water, a portion of the ground water collected by each recovery well includes ground water from the downgradient side of the recovery wellfield. Correspondingly, the VOC concentrations detected in the recovery wells samples reflect dilution associated with recovery of ground water from the downgradient side of the recovery wellfield. This dilution also influences the results for monitoring wells that are located downgradient of the recovery wellfield.

Per Consent Decree requirements, the Town sampled 16 of its monitoring wells on a quarterly basis and analyzed the samples for VOCs and certain Part 360 leachate indicator and inorganic parameters. In addition, the Town analyzed split-samples collected from selected Claremont Site monitoring wells (which include some Town wells that the Town is not required to monitor) and provided to the Town for VOCs.

FIGURE 6 - TEMPORAL VARIATION IN RECOVERY WELL TOTAL VOC CONCENTRATIONS [TVOC]



OLD BETHBAGE LANDFILL GROUNDWATER TREATMENT FACILITY

MARCH 31, 2015 THROUGH MAY 31, 2016

The most recent VOC results for the 16 Town-monitored wells, from May 2016, are summarized by well and parameter group below:

Well Number	[TVOC]	[Total VHO]*	[Total Aromatics]	[PCE] / [TCE]
Limits:	50	N/A	N/A	5 / 5
LF-1	1.7	ND	1.7	ND / 1.0
M-30B-R	ND	ND	ND	ND / ND
MW-5B	ND	ND	ND	ND / ND
MW-6A	17.3	ND	ND	ND / **17.3**
MW-6B	4.6	ND	4.6	ND / ND
MW-6C	ND	ND	ND	ND / ND
MW-6E	ND	ND	ND	ND / ND
MW-6F	ND	ND	ND	ND / ND
MW-7B-R	**413**	36.5	ND	**19.6** / **357**
MW-8A	1.2	ND	ND	1.2 / ND
MW-8B	0.3 J	ND	0.3 J	ND / ND
MW-9B	ND	ND	ND	ND / ND
MW-9C	ND	ND	ND	ND /ND
MW-11A	15.7 J	13.4 J	2.3	ND / ND
MW-11B	1.4	ND	1.4	ND / ND
OBS-1	ND	ND	ND	ND / ND

Notes: Results are in micrograms per Liter (ug/L); bold font indicates exceedance of Limit.
VHO = Volatile Halogenated Organics.
*Excluding PCE and TCE.
[PCE] / [TCE] = Tetrachloroethene concentration / Trichloroethene concentration.
N/A = Not Applicable, these standards are compound-specific.
ND = Not Detected.
J = Estimated result.

Review of the above table indicates that VOCs are currently at non-detectable levels in eight of the 16 wells, and that [TVOC] in seven of the eight other wells are much lower than the 50-ug/L Consent Decree Limit for ground water. The [TVOC] in Well MW-7B-R is approximately eight times higher than this limit, primarily due to TCE. The [TVOC] in Well MW-6A is also due to TCE. In contrast, the low [TVOC] in Well MW-6B is due to aromatic hydrocarbons, the low [TVOC] in Well MW-8A is due to PCE, and the [TVOC] in Well MW-11A is primarily due to cis-1,2-DCE. In addition, low concentrations of toluene were detected in Wells MW-8B, MW-11A, MW-11B and LF-1.

In addition to the exceedances indicated in the table above, the concentrations of cis-1,2-DCE in the May 2016 samples from Wells MW-7B-R and MW-11A exceeded the 5-ug/L Class GA standard. Overall, these results are consistent with the results for the other quarterly monitoring rounds performed during this reporting period.

The most recent VOC results for the Claremont Site split-samples, from March 2016, were recently submitted to the NYSDEC in the First Quarter 2016 RAP Report, dated June 2016, and therefore are not included in this PRR. The second quarter 2016 split-samples were not collected until after this reporting period ended.

The Part 360 leachate indicator and inorganic parameter results for the Town's monitoring wells during this reporting period are included in the RAP Reports. Those results indicate that while a number of these parameters are present at detectable concentrations in the monitoring wells located downgradient of the OBL, most concentrations are lower than their respective NYSDEC Class GA ground water-quality standard or guidance value. Exceedances in the May 2016 samples are listed below:

- Ammonia: Wells MW-6B, MW-6C, MW-6E, MW-9C and OBS-1
- Chloride: Wells MW-6B, MW-6E, MW-6F and MW-8B
- Iron: Wells MW-6B, MW-6C and MW-6E
- Manganese: Wells MW-5B, MW-6E, MW-8B, MW-9B and OBS-1
- Sodium: Wells MW-5B, MW-6A, MW-6B, MW-6C, MW-6E, MW-6F, MW-8A, MW-8B, MW-9B, MW-9C and OBS-1
- Total Dissolved Solids: Wells MW-6B, MW-6C, MW-6E, MW-6F and MW-8B

It should be noted that the majority of these exceedances were relatively low in magnitude, and that they occurred in wells located upgradient of the Town's recovery wellfield and/or are within its capture zone. Overall, these results are consistent with past results. Exceedances for phenols occurred in a number of wells this quarter, but an exceedance also occurred in the field blank. Therefore, these exceedances are attributed to background, equipment or lab contamination, and not ground-water quality.

The fact that significant concentrations of OBL-related inorganic contaminants have historically not been detected in Wells MW-7B-R and Well Cluster MW-11, which monitor the deeper zones of the aquifer downgradient of the Town's recovery wellfield, is consistent with the capture of the OBL VOC plume by the Town's recovery wellfield.

Based on the ground water-monitoring results for this reporting period, the GTF contained, collected and treated the VOC portion of the OBL plume, as designed, as well as portions of the off-site VOC plume from the Claremont Site and a high-concentration TCE plume from at least one other source in the vicinity of the OBL. The GTF also appears to be substantially containing the inorganic plume from the OBL.

With NYSDEC approval, the Town intends to shut down Recovery Wells RW-1 and RW-2, and initiate post-termination monitoring of 13 monitoring wells located within the area of the former OBL VOC plume. The NYSDEC has also informed the Town that it intends to take over operation of Recovery Wells RW-3, RW-4 and RW-5, and the GTF in the near future to continue OU-5 for the Claremont Polychemical Site. This will entail terminating SAC No. C303233 and replacing it with a Stipulation Agreement that is acceptable to the Town and the NYSDEC.

Landfill Capping System

The 6NYCRR Part 360 landfill cap was constructed in phases under several contracts between 1983 through 1993. The cap surface is inspected and maintained on a regular basis by Town personnel. The Landfill Capping System, which consists of a low permeability-soil cap, vegetated soil cover, gas-venting layer, drainage chutes, benches, and patrol roads, are generally in good condition overall. Typical maintenance included regular mowing, removing vegetation from drainage chutes, and repairing eroded benches and/or roads. Recent representative photographs showing the current status of the Landfill Capping System are provided in Figures 7, 8 and 9. Based on the current condition of the landfill cap, it 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 with a per-skid flow capacity of 500 or 960 cfm (cubic feet per minute) depending on the dual-blower configuration utilized. This System previously included 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. The results for this reporting period are shown in Figure 10. As shown in Figure 10, the results ranged from 0.5% gas to 2.9% gas, averaged 1.7% gas, and exhibited a very slight downward trend based on the available data. The methane concentration of the exhaust was typically in the range of 1-3% gas, which is consistent with the fact that the OBL closed 30 years ago and continues to age.

The current average methane concentration of the exhaust is approximately one-third the 4.5% - 5.5% concentration in 2008 that was used to determine that direct venting of the exhaust did not exceed permitting or regulatory thresholds or significantly impact ambient air quality. Since current the methane concentration of the exhaust is much lower, and the blower flow rate is the same or less, this assessment is still valid.

Zero Percent LFG Migration Survey

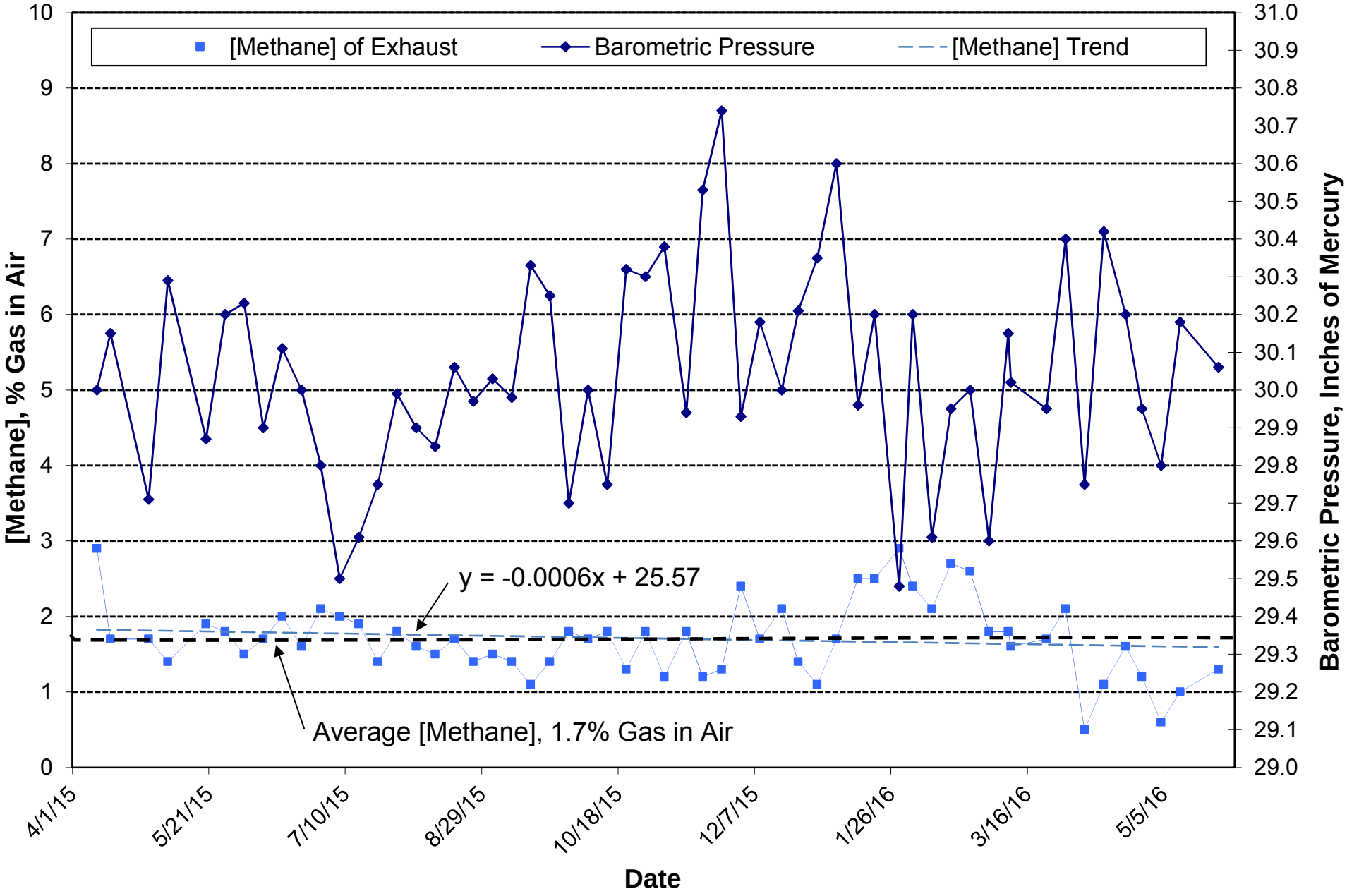
One annual zero percent LFG migration survey was completed during this reporting period, in October 2015, and the results have been submitted to the NYSDEC. This survey entailed measuring shallow subsurface LFG concentrations at intervals of approximately 50 feet along the entire perimeter of the OBL, and along the OBSWDC property boundary. It should be noted that certain additional monitoring points that were

FIGURE 7 – VIEW OF LANDFILL PLATEAU LOOKING SOUTH

FIGURE 8 – VIEW OF EASTERN SLOPE OF LANDFILL

FIGURE 9 – VIEW OF WESTERN SLOPE OF LANDFILL

Figure 10. [Methane] of Landfill Gas Collection System Exhaust, April 2015 - May 2016



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 former 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.

Leachate Treatment Facility

The LTF is permitted to operate 8 hours per day, 5 days per week. The LTF effluent is permitted to discharge to the Nassau County Sewer under Industrial Discharge Permit No. 45. Self-monitoring is performed twice per year for permit-required parameters, and reports are submitted to the County twice per year. These results are not included in the RAP Reports. Therefore, the most recent self-monitoring results, for the sample collected on March 30, 2016, are provided in Appendix A.

In early 2016 the Town obtained approval from the County to bypass the LTF and discharge OBL leachate directly to the sewer system. This 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, as well as low flow. A copy of the County's approval letter is provided in Appendix B.

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

Monitoring of ambient-air quality, soil-gas quality and soil-gas pressure was performed on a quarterly basis during the reporting period. The results to date have been submitted to the NYSDEC in the RAP Reports. This monitoring continues 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, except for occasional slightly positive readings at one location with the OBSWDC property boundary, indicating proper function of the perimeter LFG collection system. Moreover, this monitoring continues to demonstrate that discontinuing operation of the thermal oxidizer with direct-venting of the low-concentration LFG from the perimeter collection system does not significantly affect air quality in the vicinity of the OBL. Per NYSDEC approval, the Town reduced the frequency of this monitoring from quarterly to annually beginning in the second quarter of 2016.

IV. IC/EC Plan Compliance Report

IC/EC Requirements and Compliance

Institutional Controls

The RAP for the OBL specifies the following institutional controls, which are still applicable:

- The air stripper air discharge requirements in Table 1 of the RAP
- The groundwater aquifer and treated water requirements in Table 2 of the RAP
- The need to operate the LFG collection system in accordance with Part 360
- The need to operate the LTF in accordance with Part 360 and Nassau County requirements
- The analytical methods for groundwater listed in Table 6 of the RAP

The average quarterly concentration of individual VOCs in the air stripper exhaust are calculated based on the VOC data for the GTF influent and effluent, and the estimated blower air flow. As reported in the RAP Reports, except for a slight exceedance for TCE during the third quarter of 2015, the concentrations individual VOCs in the air stripper exhaust were all lower than the limits in Table 1 of the RAP during this reporting period. The average stack concentration of TCE during 2015 was lower than the limit. Moreover, previous dispersion modeling of higher TCE concentrations demonstrated that TCE concentrations at the downwind property line are lower than the NYSDEC DAR-1 AGCs and therefore not a concern. These findings are consistent with quarterly ambient air monitoring results. The Town therefore concludes that air stripper stack emissions were acceptable during the reporting period. No changes are recommended at this time.

The groundwater aquifer and treated water requirements in Table 2 of the RAP are used to assess the progress of the ongoing ground-water remediation. These limits are augmented by the NYSDEC Ambient Water Quality Standards and Guidance Values for Class GA (Potable Water) in TOGS 1.1.1, and the discharge limits in the GTF's SPDES Permit Equivalency. The influent, effluent and recovery well sample results are compared to the VOC limits in Table 2 of the RAP and TOGS 1.1.1. The effluent results are also compared to the discharge limits in the GTF SPDES Permit Equivalency. The quarterly monitoring well sample results are compared to the VOC and inorganic limits in Table 2 of the RAP and TOGS 1.1.1. No changes in this assessment procedure are recommended at this time.

The primary goal of Part 360 with respect to LFG is to prevent lateral subsurface migration of LFG. During this reporting period, this was verified by the October 2015 zero percent LFG migration survey, which confirmed that LFG is not migrating beyond the perimeter of the landfill cap. These survey results have been previously submitted to the NYSDEC.

The Consent Decree required that the Town complete, operate and maintain the gas collection system. The system was constructed between 1981 and 1995 and was designed to control the off-site migration of LFG generated at 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, as well as equipment problems. The Town began direct-venting of the LFG collected by the perimeter system, which typically has very low LFG concentrations. An assessment by the Town's air monitoring consultant determined that this modification does 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 the Town monitors the methane concentration of the exhaust weekly to ensure that it remains acceptably low. No changes are recommended at this time.

The LTF effluent is permitted to discharge to the Nassau County sewer system under Industrial Permit No. 45. The current permit is valid through August 31, 2017. Semi-annual reporting and self-monitoring was performed per permit requirements. The LTF effluent complied with permit limits. As noted previously, based on comparison of raw leachate monitoring results to discharge standards, and low flow, the Town recently received County approval to discharge OBL leachate directly to the sewer system.

The analytical methods in Table 6 of the RAP are intended to ensure that analyses of ground water and treated water samples 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 ground water and treated water analyses are performed by 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 6NYCRR Part 360 to notify any future land owners of the existence of the former landfill. The Town is in the process of complying with this requirement. 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 has been approved by the NYSDEC and the USEPA. The deed restriction will be approved by the Town Board on July 12, 2016, and will then be filed with the Office of the County Clerk.

Engineering Controls

The RAP for the OBL specifies the following engineering controls:

- 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 is to contain and recover the VOC plume from the OBL. Based on the results of post-closure hydraulic and water-quality monitoring for this reporting period, which are discussed in detail in Section III of this report, these objectives appear to have been met. Specifically, Recovery Wells RW-1 and RW-2, which collect the VOC plume from the OBL only, have been basically non-detectable for VOCs for some time. This indicates that the VOC plume from the OBL has likely been remediated to the extent feasible. Accordingly, with NYSDEC approval, the Town intends to shut down Recovery Wells RW-1 and RW-2, and begin post-termination monitoring of the 13 monitoring wells selected by the NYSDEC.

Recovery Wells RW-3, RW-4 and RW-5 continue to capture a portion of the off-site VOC plume from the Claremont Polychemical Site; and since 2009 are also capturing a portion of a high-concentration TCE plume from at least one other source in the vicinity of the OBL. Accordingly, in early 2016 the NYSDEC informed the Town that it intends to take over operation of these three recovery wells and the GTF in the near future in lieu of reimbursing the Town for operating them under the current SAC. The Town and the NYSDEC are currently in the process of developing a Stipulation Agreement for this transfer of responsibility.

The GTF consists of transmission piping, wet wells, pumps, an air stripper and a recharge basin. The purpose of the GTF is to remove VOCs from the recovered ground water. The NYSDEC issued a SPDES Permit Equivalency for the GTF discharge in a letter dated October 24, 2012. This document expired on May 11, 2016. The Town submitted a renewal application to the NYSDEC on March 31, 2016.

After its attempts to improve the treatment efficiency by acid-rinsing and power-washing the fouled air stripper media were unsuccessful, the Town replaced the media in December 2014. This action restored the treatment efficiency to near 100 percent. Pressure-monitoring ports were also installed on the air stripper tower, and the pressure buildup across the media is monitored on an approximately weekly basis to check for a recurrence of fouling. The accessible portions of the media are also visually examined

on a regular basis. To date, indications of a reoccurrence of significant media fouling have not been indicated or observed. Therefore no acid rinses were required during this reporting period.

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. No changes are recommended at this time.

The landfill cap 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 stormwater runoff which is directed to recharge basins. The purpose of the Part 360 landfill cap is to prevent infiltration of precipitation, thereby minimizing the amount of leachate generated by the OBL. Based on the current condition of the landfill cap, as discussed previously in Section III of this PRR, it 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 of 2008, the low-concentration 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 October 2015 zero-percent LFG migration survey, this objective is being met. Specifically, the survey indicated that no gas is present at the OBL cap boundary or the OBSWDC property line.

As reported previously in Section III, the thermal oxidizer became inoperable in May 2008, primarily due to diminishing LFG methane content, and would have required extensive rehabilitation in order to be returned to service. Therefore, to continue preventing off-site gas migration while protecting air quality, the three remaining interior wells were disconnected and the LFG perimeter collection system continues to operate. The low-concentration LFG is directly-vented to the atmosphere. An assessment by the Town's air monitoring consultant determined that this modification does not exceed the permitting threshold or significantly impact ambient-air quality. This finding is 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 has 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. 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.

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 in Pages 15a-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: March 31, 2015 to May 31, 2016

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
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?	☒ *	☐

* Renewal for GTF discharge SPDES Equivalency submitted to DEC 3/31/16.

If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.

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?	☒ **	☐

** Deed restriction will be approved by Town Board 7/12/16, it will then be filed with the County Clerk. The GTF was returned to service on June 15, 2016.

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.

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	Monitoring Plan Site Management Plan O&M Plan (Serves as SMP) Part 360 Deed Restriction

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 Fencing/Access Control

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
*** Deed restriction will be approved by Town Board on 7/12/16. It will then be filed with the Office of the County Clerk.	☒ ***	☐

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.

_____ _____

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 T. Betz (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

June 29, 2016
Date

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)

6/29/2016

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification — Stamp (Required for PE) — Date

V. Monitoring Plan Compliance Report

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

COMPONENT	FREQUENCY OF MONITORING				
	ANNUAL	QUARTERLY	MONTHLY	WEEKLY	OTHER
GTF-RELATED WATER-QUALITY MONITORING					
GTF influent and effluent			X (SPDES)	3X/Week*	
5 Town recovery wells				X	
16 Town monitoring wells		X**			
Claremont Site split-samples		X			
LFG COLLECTION SYSTEM MONITORING					
Perimeter collection system exhaust				X	
Zero percent migration survey	X				
LEACHATE COLLECTION AND TREATMENT SYSTEM MONITORING					
Self-monitoring and reporting					2X/Year
Permit renewal					1X/3 Yrs
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***			

* Note that more frequent monitoring of influent and effluent [VOC] has been performed since the fourth quarter of 2013 to assist in assessing the treatment efficiency of the air stripper.

** Thirteen wells will be monitoring during post-termination monitoring of the OBL VOC plume once Recovery Wells RW-1 and RW-2 are turned off.

*** The frequency of this monitoring was reduced to annually beginning in the second quarter of 2016.

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

- Self-monitoring of the GTF influent and effluent for selected performance-related parameters, such as dissolved oxygen, iron and manganese, was performed on an approximately weekly basis. Monitoring of the influent and effluent for VOCs was performed approximately three times per week to assess the treatment efficiency of the air stripper. These inorganic parameter results were provided in the RAP Reports. These VOC results are summarized in Section III of this PRR.
- SPDES permit equivalency monitoring of the GTF influent and effluent by an outside laboratory was performed on a monthly basis. The effluent results are discussed and compared to discharge limits in the RAP Reports. The SPDES permit equivalency expired on May 11, 2016. The Town submitted a renewal application to the NYSDEC on March 31, 2016.
- Self-monitoring of the Town's recovery wells for VOCs was performed approximately once per week, weather permitting, on an ongoing basis year-round. These VOC results are provided in the RAP Reports and are summarized in Section III of this PRR.

- Monitoring of the 16 Town wells specified in the Consent Decree was performed on a quarterly basis, for the parameters listed in Table 6 of the RAP. The results are provided in the RAP Reports. The most current results for this reporting period, from May 2016, were discussed in Section III of this PRR.
- VOC analyses of split-samples from additional Town monitoring wells and Claremont Site monitoring wells was performed on a quarterly basis. The results are included in the quarterly and annual RAP Reports. The most recent results, from March 2016, were recently submitted to the NYSDEC in the First Quarter 2016 RAP Report, and therefore are not included in this PRR.
- Self-monitoring and reporting of the treated LTF effluent was performed biannually during the reporting period. These results are not included in the RAP Reports. Therefore, the most recent monitoring results, for the sample collected on March 30, 2016, are provided in Appendix A of this PRR. They indicate that the effluent meets permit requirements.
- Monitoring of ambient-air quality, soil-gas quality and soil-gas pressure was performed on a quarterly basis through the first quarter of 2016. The results are presented in the quarterly and annual RAP Reports. 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. Except for occasional slightly positive readings at a location within the OBSWDC property boundary, soil-gas pressures were zero to slightly negative indicating proper function of the perimeter LFG collection system. These results are consistent with previous quarterly ambient-air and soil-gas monitoring results. The frequency of this monitoring was reduced to annually beginning in the second quarter of 2016.
- The perimeter LFG collection system continued to operate at either 500 or 960 cfm depending on the blower configuration utilized. Monitoring of the exhaust from the perimeter LFG collection system for methane was performed on weekly basis, and indicated that the average methane concentration of the exhaust is currently approximately one-third the 2008 value used to determine that direct venting to the atmosphere does not result in air-quality impacts. Therefore, direct-venting of the LFG perimeter collection system exhaust continues to be acceptable.

Based on the above information, there were no significant monitoring deficiencies during this reporting period. As noted previously, with NYSDEC approval, the Town intends to shut down Recovery Wells RW-1 and RW-2, and implement post-termination monitoring of Wells LF-1, LF-2, MW-5B, MW-6A, MW-6B, MW-6C, MW-6E, MW-6F, MW-8A, MW-8B, MW-9C, MW-9C and OBS-1. This monitoring will be performed biannually for three years as per Consent Decree requirements.

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 operation and maintenance requirements for the RAP systems are included in the individual O&M (operation and maintenance) 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. Reports are prepared and submitted to the NYSDEC quarterly. The annual summary report has been combined with the fourth quarter report, as allowed by the RAP.

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, and the activities performed during this reporting period.

Ground Water-Treatment Facility

Typical operation and maintenance activities for the GTF include: inspection and routine maintenance of the recovery well pumps, vaults, appurtenances; GTF influent/effluent pumps; air stripper tower, blower and media; control panel; building facilities and recharge basins. In-house laboratory analysis of GTF influent and effluent for operational purposes is performed on an ongoing basis year round.

In addition to these routine activities, the following maintenance/repair work was completed during this reporting period:

- The pump motors in Recovery Wells RW-1, RW-2 and RW-4, which were damaged by an electrical phase outage in Bethpage State Park, were replaced.
- Phase protection was installed on all five recovery wells to prevent future electrical phase outage damage to the recovery well pump motors.
- The fouled air stripper media was replaced in December 2014, which restored the treatment efficiency to near 100 percent.
- The pressure change across the air stripper media, which could be indicative of a renewed buildup of fouling, was monitored on an approximately weekly basis and were lower than the recommended acid-rinse threshold in the O&M Manual.

- A faulty electrical relay in Recovery Well RW-3 was replaced.
- The pressure-relief valve on the influent pipeline connecting the recovery wells to the GTF was replaced because it developed a leak.

Landfill Capping System

Typical operation and maintenance activities for the landfill cap 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. Activities during this reporting period included weekly monitoring of the perimeter collection system exhaust for methane to ensure that emissions continue to be 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. During this reporting period, the pumps in the leachate collection wells were replaced.

VII. Overall PRR Conclusions and Recommendations

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

- The Town operated the five recovery wells and GTF to the extent feasible, and ground-water quality continued to improve, based on the available data.
- The Town performed ground-water monitoring on a quarterly basis, as per the Consent Decree, to monitor the progress of the ongoing remediation. The Town also voluntarily analyzed quarterly split-samples from selected Claremont Site wells for VOCs.
- The Town maintained the Part 360 cap 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 October 2015 zero-percent LFG migration survey.
- The Town monitored the perimeter LFG collection system exhaust weekly for methane, and the results continued to indicate that emissions are acceptably low.
- The Town operated the LTF, and its current three-year discharge permit does not expire until August 31, 2017. Self-monitoring and reporting was performed twice per year as required, and the LTF effluent continued to meet permit limits. Due to improved leachate quality, the Town recently obtained permission to discharge the leachate untreated to the County sewer system.
- The Town performed regular inspection, and maintenance as appropriate, of the GTF, gas collection system, Part 360 cap, LTF and related appurtenances as required in the respective O&M Manuals for the OBSWDC. During this reporting period the Town: replaced the damaged pump motors in Recovery Wells RW-1, RW-2 and RW-4, installed phase protection on all five recovery wells, replaced a faulty electrical relay in Recovery Well RW-3, and replaced the leaking pressure-relief valve on the influent pipeline.
- The Town performed the supplemental monitoring of ambient air and soil gas, and the results continued to show that the OBL does not significantly impact ambient air quality at the OBSWDC.
- The Town compiled the GTF operational data, and the ground-water and supplemental ambient air and soil gas monitoring data, compared it to Consent Decree limits, termination criteria and discharge limits, and submitted quarterly operating and annual summary RAP reports to the NYSDEC. As allowed by the RAP, the annual reports were combined with the fourth quarter reports.

- The deed restriction document required under 6NYCRR Part 360 will be approved by the Town Board on July 12, 2016, and will then be filed with the Office of the County Clerk, satisfying this IC requirement.

Accordingly, the Town believes that during this reporting period the RAP was performed adequately and achieved the remedial objectives for the OBL.

APPENDIX A

Laboratory Results for March 30, 2016 LTF Effluent Sample

Pace Analytical
575 Broad Hollow Road , Melville, NY 11747
TEL: (631) 694-3040 FAX: (631) 420-8436
NYSDOH ID#10478 www.pacelabs.com

LABORATORY RESULTS

Results are only for the samples and analytes requested.

The lab is not directly responsible for the integrity of the sample before receipt at the lab and is responsible only for the tests requested.

Town of Oyster Bay
150 Miller Place
Syosset, NY 11791
Attn To : Matt Russo
Collected : 3/30/2016
Received : 3/30/2016 8:40:00 AM
Collected By LH99

Lab No. : 1603N81-001
Client Sample ID: LTF EFFLUENT

Sample Information:
Type : Aqueous

Origin: Effluent

Analytical Method: SW6010C : Prep Method: SW3005A Prep Date: 3/31/2016 6:30:00 AM Analyst: CGZ

Parameter(s)	Results	Qualifier	D.F.	Units	Analyzed:	Container:
Copper	< 0.025		1	mg/L	03/31/2016 9:30 PM	Container-01 of 01
Lead	9.1		1	ug/L	03/31/2016 9:30 PM	Container-01 of 01
Zinc	0.088		1	mg/L	03/31/2016 9:30 PM	Container-01 of 01

Analytical Method: SM22 4500-CL-E : Analyst: bka

Parameter(s)	Results	Qualifier	D.F.	Units	Analyzed:	Container:
Chloride	381	D	10	mg/L	03/31/2016 12:11 PM	Container-01 of 01

Analytical Method: E410.4 : Analyst: VaS

Parameter(s)	Results	Qualifier	D.F.	Units	Analyzed:	Container:
Chemical Oxygen Demand	306	D	4	mg/L	04/01/2016 10:42 AM	Container-01 of 01

Analytical Method: SM4500-H B : IOC Analyst: EJ

Parameter(s)	Results	Qualifier	D.F.	Units	Analyzed:	Container:
pH	8.1	H +	1	pH Units	03/30/2016 7:36 PM	Container-01 of 01
pH Temperature	16.1	H +	1	°C	03/30/2016 7:36 PM	Container-01 of 01

Analytical Method: SM22 2540D : Analyst: SH2

Parameter(s)	Results	Qualifier	D.F.	Units	Analyzed:	Container:
Suspended Solids (Residue, Non-Filterable)	10.0		1	mg/L	03/30/2016 6:43 PM	Container-01 of 01

Qualifiers: E = Value above quantitation range, Value estimated.
B = Found in Blank
D.F. = Dilution Factor D = Results for Dilution
c = Calibration acceptability criteria exceeded for this analyte.Value estimated
H = Received/analyzed outside of analytical holding time
J = Estimated value - below calibration range
M-, M+ = Matrix Spike recovery below / above control limit
N = Indicates presumptive evidence of compound
P = Duplicate RPD outside of control limit
r = Reporting limit below calibration range. Value estimated.
S = Recovery outside of control limits for this analyte
+ = NYSDOH ELAP does not offer certification for this analyte / matrix / method

Client Services Manager : Jennifer Aracri

Test results meet the requirements of NELAC unless otherwise noted.

Date Reported : 4/7/2016

APPENDIX B

Copy of March 29, 2016 County Letter Approving Direct Discharge of Leachate

EDWARD P. MANGANO
COUNTY EXECUTIVE

SHILA SHAH-GAVNOUDIAS, P.E.
COMMISSIONER

COUNTY OF NASSAU
DEPARTMENT OF PUBLIC WORKS
1194 PROSPECT AVENUE
WESTBURY, NEW YORK 11590-2723

March 29, 2016

Mr. Richard T. Betz
Commissioner
Department of Public Works
Town of Oyster Bay
150 Miller Place
Syosset, New York 11791-5699

Re: Nassau County Pretreatment Program
Industrial Discharge Permit Number 45
Old Bethpage Landfill – Leachate Treatment Plant

Dear Mr. Betz,

The Pretreatment Unit of the Nassau County Department of Public Works has reviewed the request conveyed in your correspondence dated March 11, 2016 (copy attached), regarding the cessation of the leachate treatment system at the closed Old Bethpage Landfill.

The data furnished thus far does seem to indicate that the untreated leachate could possibly be discharged into the sanitary sewer system. Although some parameters did exceed the standards of the Nassau County Sewer Use Ordinance, given the relatively minor loading that would ensue a conditional waiver would be considered. Accordingly, please find attached an application for an amendment to the site's existing Industrial Discharge Permit (IDP). Please note that a revised IDP will mostly likely require daily flow monitoring and recording, as well as quarterly sampling and analyses of the untreated leachate.

Should you have any questions or comments concerning the above, please contact me at (516) 571-6889.

Very truly yours,

Richard Cotugno

Richard Cotugno
Superintendent of Sewage Plants
Unit Head of Environmental Operations

Enc.

c: NCDPW - Commissioner Shila Shah-Gavnoudias, Chief Deputy Commissioner Richard P. Millet
Pasquale Assalone
SWLI - Alan Weland
LKB - Paul Lappano