NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

COMMUNITY UPDATE

Brookhaven Landfill
Town of Brookhaven, New York

350 Horseblock Road
Yaphank, NY-11004

March 2021

Where to Find Information:

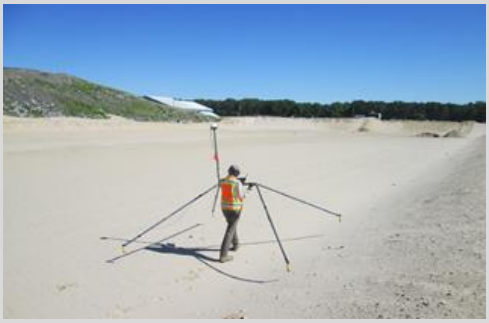
Access previous factsheets at
http://www.dec.ny.gov/public/111038.html

For more information from DEC, visit our website:
https://www.dec.ny.gov

Whom to Contact:
Comments and questions are welcome and should be directed to:

Aphrodite Montalvo, Public Participation Specialist
Phone: (631) 444-0249
Email: R1info@dec.ny.gov

"To report an odor complaint"
DEC Odor Hotline: (631) 444-0380



Electrical check for leaks in newly installed landfill liner in Cell 6 Phase XI prior to obtaining certification for construction, and commencing landfilling activities

Hydrogen Peroxide (H_2O_2) dosing system

INTRODUCTION

New York State is committed to protecting the environment and public health of the Brookhaven community around the Brookhaven landfill. DEC continues to rigorously oversee all operations at the landfill and has taken actions to respond to community concerns and minimize impacts on quality of life. This update includes the latest information on DEC's oversight of operations at the landfill and requirements for compliance with all applicable environmental laws and regulations; it also reports on DEC's responses to community concerns regarding the facility.

FACILITY BACKGROUND

The Town of Brookhaven Landfill is a DEC-permitted facility located in the hamlet of Yaphank, Town of Brookhaven, Suffolk County. The landfill began operating in 1974 and initially accepted household waste, or municipal solid waste (MSW). This MSW was placed in Cells 1-4. The disposal of MSW ceased in 1990 in compliance with the Long Island Landfill Law. Construction of Cells 5 and 6 took place after 1990. Cell 5, which accepted construction and demolition debris and ash from local resource recovery facilities, has been capped; the last phase of capping was completed in 2019.

Cell 6, which lies adjacent to Woodside Ave between Station Road and Horseblock Road, is currently active and accepting construction and demolition debris, ash, and other authorized materials. This landfill cell was permitted in May 2002 and planned for progressive construction in 13 phases.

The Town is currently landfilling in Phase XI of Cell 6 and completed construction of Phase XII. The Town will close and cap the landfill under DEC oversight once the facility reaches the approved design capacity.

LANDFILL CORRECTIVE ACTION PLAN

Significant Action Items

In September 2019, DEC's ongoing responsiveness to community odor concerns culminated with DEC ordering the town of Brookhaven to take immediate steps to evaluate odor-producing conditions and take aggressive corrective measures that will minimize odors in the future, enhance community air monitoring, and further improve landfill gas collection. Among other actions, DEC required the Town to conduct an Expedited Holistic Evaluation (EHE) of the landfill during peak odor-producing conditions and identify any new or previously unidentified landfill odor sources. The Town was also required to provide an addendum to the existing Corrective Action Plan (CAP) to support enhanced landfill performance, monitoring, and odor control. The implementation status of these items is provided in the table below.

Actionable Item	Status of Implementation	Completed
a. Expedited Holistic Evaluation	The Town completed an EHE of the landfill during peak odor-producing conditions. These conditions typically occur in the early morning and evening hours when temperature inversions are common. The study was conducted over a four-week period to identify any new or previously unidentified landfill odor sources. No new sources were identified, and it was concluded that low-pressure and temperature inversions may contribute to odors observed by the community. The Town is investigating whether these incidents could be addressed by increasing the landfill gas collection and control system vacuum to offset approaching low-pressure weather systems. DEC is working with the Town to address any additional measures to be incorporated during low pressure weather systems.	Yes
b. Enhanced operating and intermediate cover material protocol	The Town continues to apply loamy soil as intermediate cover material in areas where no new waste was received for over 12 months, as required by DEC. Loamy soil is a natural mixture of sand, silt, and clay and is a more effective form of cover material for odor control than other types of soil. The Town also installed a temporary geosynthetic cover system in addition to soil intermediate covers over 13 acres of landfill slopes along the north side of Cell 6. This cover prevents soil washouts on long slopes, helps enhance the containment and collection of landfill gases, and provides improved odor control. Daily operational cover materials are placed over the working face.	Yes
c. Design details for improved H_2O_2 dosing equipment	Construction of the Improved Hydrogen Peroxide (H_2O_2) Dosing System has begun. H_2O_2 dosing into the landfill leachate neutralizes odor associated with leachate storage structures. The improved system is a permanent, automated, corrosion-resistant H_2O_2 dosing design. The system can automatically adjust dosing rates of H_2O_2 based on sulfur concentration in the leachate. The system Operations and Maintenance (O&M) Plan will be incorporated into the landfill O&M Manual upon completion of the plan.	Under Construction
d. Investigation of a secondary H_2O_2 pretreatment system for west side Cell 5 pump station	A secondary H_2O_2 dosing system was installed and is currently operational. The system reduces hydrogen sulfide (H_2S) formation during the travel time in the leachate transport pipelines to the leachate storage tanks by treating leachate where it is initially collected in pump station sumps.	Yes
e. Amendments to the landfill O&M Manual to include intense waste screening, revised cover material plan, and reduced working face procedures	As part of the Cell 6 permit renewal, the Town submitted an update to the Operation and Maintenance (O&M) Manual that includes intense screening of accepted waste. Revisions to the cover material plan and reduced the active landfilling area were provided. The Town also implemented a revised protocol for screening alternate daily cover received at the landfill (see Actionable Item J below). Alternate daily cover is often made from fine grain construction and demolition material. DEC is requiring enhanced chemical testing of this material to ensure it does not contribute to odor events.	Yes
f. Enhanced air monitoring plan, including intensified testing at the active Cell 6 fill area and off-site	A new continuous monitoring system for H_2S and particulate matter is being tested at the landfill and off-site. The system developed by Envirosuite Platform was partially installed in January 2020 and continues to undergo acceptance trial testing to ensure the system produces accurate results. In addition, the Town's consultant continues to perform routine air monitoring of the landfill with a handheld H_2S monitor (Jerome meter) at all previously identified areas of concern and any additional areas as necessary. The monitoring is conducted three times per week and is immediately reported directly to DEC if elevated levels of H_2S are detected. The Town implemented a Rapid Interactive Response Network (RIRN) to assist in identifying new sources of odors, implement and document follow-up corrective action(s), and verify the problems are properly addressed. Town employees also generate a report of any odor issues that they discover at the landfill. DEC receives all Town-generated odor related reports and continues to encourage residents to immediately contact the odor hotline if odors are observed: (631) 444-0380.	Continuous

g.	Conceptual design details for replacement of the existing flare	Conceptual design details were submitted to DEC, and the new flare was installed the first week of January 2021. It is being integrated into the existing gas collection and control system at the site. The new flare is currently being tested to ensure it operates efficiently and will continuously destroy the collected landfill gas.	In progress
h.	Conceptual design details for updating the landfill gas collection and control system	The upgrading of the landfill gas collection system and the conceptual design details will be prepared this year. The upgrade will help minimize fugitive emissions.	Planning and implementation begin in 2021
i.	Alternative Daily Cover Material (ADCM) reduction plan	The Alternative Daily Cover Material reduction plan has been submitted and incorporated into the landfill's O&M Manual. This reduction plan helps to reduce risk of potential odor caused by ADCM. The Town was required to reducing the percentage of ADCM by 40 percent by 2023. The Town was in compliance with the approved ADCM reduction targets in 2020.	Yes
j.	Enhanced Alternative Daily Cover Material (ADCM) testing/screening protocol, including reduced sulfur parameter guidelines	DEC required and the Town implemented a new alternative daily cover material testing and screening protocol which included reduced sulfur content guidelines. As a result, the Town is using cover materials that contain less sulfur; this change has dramatically improved the quality of ADCM and significantly reduced H_2S generation and odors.	Yes

DEC Off-site Ambient Air Quality Monitoring around the Brookhaven Landfill

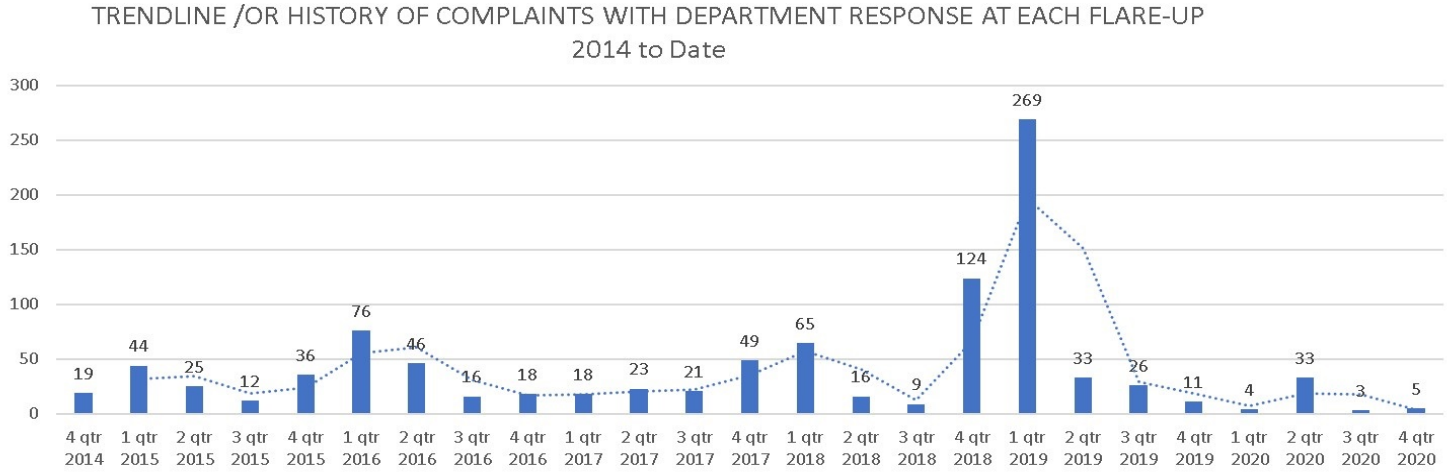
- In 2017, 2018, 2019 and 2020, DEC installed instruments that record H_2S every ten minutes
- These instruments (OdaLog and Acrulog) only work during the warmer months
- During the cooler months, staff use a handheld Jerome meter
- OdaLogs and Acrulog are effective screening tools because they operate on a continuous basis; however, they cannot be used as an enforcement tool because of potential interference with other gases (such as vehicle emissions)

Frank P Long H_2S Results (OdaLogs and AcruLogs)

Year	Number of Readings	Number of H_2S Detections	Percentage of H_2S Detections (%)
2017	17,465	47	0.27
2018	21,100	2	0.0095
2019	25,310	13	0.051
2020	34,869	29	0.083

Pallets-R-Us H_2S Results (OdaLogs and Acrulogs)

Year	Number of Readings	Number of H_2S Detections	Percentage of H_2S Detections (%)
2017	19,027	585	3.1
2018	21,100	146	0.69
2019	26,705	255	0.95
2020	30,787	103	0.33



2015/2016 - The increase in complaints was related to landfill gas emmisions during the cutting and grading of the landfill to prepare the section for Phase F capping project. S Department approved landfill Corrective Action Plan was implemented

2018/2019 - DEC's investigation concluded that this increase in complants to stalled construction activites caused by the extremely wet season during the Phase-G capping project. This resulted in a three-month delay in connecting the newly installed gas extraction wells to the gas collection and control system designed to safely manage landfill gas emmisions. A Consent Order was signed, and a Corrective Action Plan Addendum was required and developed.

A handheld Jerome meter is used to detect low concentrations of hydrogen sulfide at levels that people usually begin to observe

On long slopes, the Town installed temporary geosynthetic intermediate covers to prevent washouts during major rain events

Aerial view of the newly-installed flare

PAST LANDFILL INFRASTRUCTURE UPGRADES 2017-2018

Since 2016, the Landfill has undergone major upgrades to the infrastructure and operations. For more details, please see:
https://www.dec.ny.gov/docs/regions_pdf/brooklf2019.pdf

BROOKHAVEN LANDFILL FAQ'S

What is the current status of the Landfill Solid Waste Permit?

DEC is in the process of reviewing the application to renew the Cell 6 permit originally issued in May 2002. A solid waste permit is renewed every five years, giving DEC an opportunity to require the Town to update the O&M Manual. The facility manual will incorporate all aspects of the Corrective Action Plan and Addendum.

When is the landfill considered closed?

The landfill is considered closed when it stops accepting waste, is fully capped, and the post closure monitoring and maintenance plan is fully implemented.
DEC's stringent regulatory requirements for a closed landfill ensures protection of public health and the environment.

Does DEC monitor the landfill after the landfill reaches capacity and closes?

DEC continues to monitor closed and capped landfills. The Town will be required to monitor all applicable operations including maintaining the landfill gas and leachate collection systems, monitoring surrounding groundwater, and maintaining the integrity of the final cover system.

The Town must acquire a DEC landfill closure permit and will be required to submit annual reports of the monitoring and maintenance activities.

After the landfill closes, DEC will continue to enforce the regulations, address any violations that take place, and take appropriate action on concerns raised by the community.

Why were there increased odors in early 2021?

As the Town is in the process of commissioning the new landfill gas flare, the flare had malfunctioned, shutting off and restarting several times. The Town worked quickly to correct the problems, adjusting blowers, repairing a connector that had snapped, and other necessary actions to repair the issues and bring the system back online. The flare is currently operational, and DEC staff will continue to monitor the situation and be in regular contact with the Town to follow up on the flare operation.