1350 Turk Hill Road
Fairport, NY 14450
Phone: (585) 223-0770
Fax: (585) 223-3629
Web: www.perinton.org

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CONTACT: Mitch Pritchard
Communications Manager
Cell: (585) 448-9500
Office: (585) 223-0770 ext. 1126
mpritchard@perinton.org

High Acres Landfill update from Perinton Town Supervisor Ciaran Hanna

DOCUMENT OF OBJECTIVES, ACTION ITEMS, & PROGRESS AT HIGH ACRES LANDFILL

Objectives

- For the Town of Perinton and Waste Management (WM) to work on the continued implementation of specific, meaningful, actionable, and time bound improvements to the landfill to control off-site gas and garbage odors and safeguard the health, safety and quality of life of the Town's resident.

- Formally modify the High Acres Landfill (HAL) Operations & Maintenance Manual to include additional proposed operational modifications and Facility Improvements to reduce the migration of off-site odors.

- Negotiate a new Host Community Agreement to include additional community safeguards, property protection plans, and maximize Town benefits.

Since January 2018

- Installed on-site back-up/emergency power generation to operate the gas collection and control system such that a power failure or gas plant shutdown will not affect the vacuum control system requirements.

- Implemented flow-induced vibration technologies that minimized flare vibration occurrences, which could and has resulted in what the community referred to as "tremors."

- Retained an independent 3rd party professional Industrial Hygienist to review weeks of Hydrogen Sulfide (rotten egg smell) monitoring data and render a health-risk assessment. The evaluation of this data concluded that hydrogen sulfide levels along with associated individual VOCs (volatile organic compounds) are below established thresholds and do not pose a health risk.

- Retrofitted Cells 10 & 11 (and going forward all future waste disposal cells) to conform with the most current version of 6 NYCRR 363-7.1 (e) (1), which mandates vertical wells and horizontal collectors be installed at prescribed intervals in order to effectively and more efficiently capture landfill gases. This was done to reduce the potential of landfill gas emissions. Landfill gas has an associated odor and minimizing gas emission lessens the potential for off-site gas odor concerns.

- Placed a two (2)-foot thick compacted interim soil cover over-top cells 10 & 11 to cap and better control gas emissions in those cells.

- Weekly gas well balancing is being conducted in Cells 10 & 11, and bi-weekly for the remainder of the wells throughout the Facility. This is being conducted to maximize the efficiency of the gas collection system and minimize gas emissions, which can result in off-site odor concerns.

- In addition to the permanent flares, a utility flare was installed in the area of Cells 10, 11, and 12 to enhance the reduction of gas odors, by burning excess gas emissions.

- Continuous hydrogen sulfide monitoring (H2S: or the rotten egg smell) is being conducted around the perimeter of the Facility and at the North-side/Dudley Elementary School. This monitoring program is being implemented to measure and understand/confirm the presence of off-site landfill gas emissions. The results of this data are posted on the Perinton website, under the High Acres Landfill page.

- Quarterly surface scans are being conducted over the entire surface of the landfill. These scans are identifying areas on the landfill where methane gas is leaking into the air instead of being captured in the gas collection system. The surface scan program is using a 200ppm action level of methane as an enhanced monitoring level instead of the 500ppm threshold that is required in State and Federal Regulations. Any areas on the landfill surface that exceed 200ppm of methane requires immediate correction. These deficient areas are re-scanned within 10 days to ensure that the deficiency has been repaired/corrected. This program is important because landfill gas has an odor and if it can be better captured, it will result in less off-site odor concerns and it can be better utilized as a green energy fuel source for the gas to electric power plant that resides at the landfill.

Since September 2018

- Initiated a detailed Odor Study to evaluated material delivered to the landfill by both truck and rail to determine the nature and extent of garbage odors. The objectives of this study are to:

    1. Evaluate the sources of municipal solid waste (MSW: otherwise known as garbage) its characteristics and relationships to odor generation prior to incorporation into the landfill.
    2. Evaluate conditions, including odor generation of MSW being delivered to the landfill from various sources and modes of transportation.
    3. Evaluate handling, transportation and storage operations and the potential effect on odor generation.
    4. Evaluate odors from MSW prior to incorporation into the landfill from various locations and modes of transportation, including travel time.
    5. Evaluate odors at the working face during the following operations:
        - Stripping of daily cover
        - Tipping of MSW from long haul trucks vs rail vs local garbage.
    6. Conduct a field study to identify "typical" waste streams from various sources.
    7. Collect air samples associated with MSW from various sources and modes of transportation to evaluate the presence of common compounds associated with odors.
    8. Conduct bench scale test of nitrogen purge on the generation of methane from containers.
    9. Research methods for recording temperature in shipping containers.
    10. Generate a report summarizing the activities performed and the results of the evaluations performed.

    Ultimately, this study will identify and recommend, as necessary, the implementation of additional odor mitigation measures with the underlining goal of reducing garbage odors overall, but especially during unloading activities. **This study is currently underway, with preliminary information due in February 2019.**

- Began design work associated with an enhanced odor neutralizing mist barrier system that will be installed near the working face as well as at the perimeter of the landfill. The intent of this system is to not mask odors, but biologically react with the odor causing molecules, rendering them near odorless. It is being designed as an odor barrier that uses natural ingredients, like fruit, vegetable and other plant

extracts and oils without harsh chemicals to help reduce off-site landfill odors. The odor control material is formulated to be used with a high-pressure water and/or oil-based atomization system that sprays a fine mist into the air that attracts and absorbs airborne odor molecules. **NYSDEC approval of the design is expected in January 2019, with construction starting during the 2nd Quarter of 2019.**

- Town staff and WM staff continue to participate in ongoing Bi-weekly Progress/Update Meetings to discuss operations, odor complaints, fill progression, gas collection, rail delivery, and the review of NYSDEC Inspection Reports. **Daily communications are also initiated as needed to address operational changes/adjustments, concerns, ideas, etc.**

- Conducting field testing of different/new cover technologies that would limit the need to strip daily cover in the early morning timeframe. **Field testing to begin in December 2018 and January of 2019.**

- Continue to monitor and evaluate all in-coming odor/general landfill complaints (phone, FAFE app, Hotline). Each of these complaints are cataloged and then shared with elected Town officials and staff on a weekly basis.

- Town Staff and WM Staff have been trained by third party odor science experts to identify various odor characters, and gauge the intensity of odors at the landfill and in the neighboring community using the industry standard N-Butanol Scale.

- Upgraded the gas collection system to include a dewatering system to prevent vertical gas wells in Cells 10 & 11 from being inundated with leachate, which can reduce gas collection efficiencies.

- Continuation of timely response to odor complaints that are submitted via the NYSDEC Hotline in order to verify, characterize and gauge the intensity of odors. Those responding to these odor complaints have been trained by a third party odor science expert.

Future

- The Town of Perinton and WM will work to adopt formal procedures to gauge odor intensity/duration using American Society for Testing and Materials standards; utilizing the N-Butanol Scale.

- The Town is requiring WM to design and develop specific engineered plans for work associated with tying into older waste cells; specifically the side-slopes of cells 10 and 11.

- Construction of additional cell capacity that would allow WM to move the landfilling operation to lower portions of the facility when environmental factors, such as wind may influence off-site odors. The Town is also involved in the discussions and decision making relative to the 5-year fill progression plan for the facility.

Other

- The Town will develop a simpler, more intuitive method to update, keep current and share information on its website. Information to be shared will include the Odor Study, odor neutralizer information, monitoring data, etc.

- Continue the coordination effort between the Town and WM and NYSDEC to effectively communicate information about the landfill to Town residents.