

## Landfill Gas

- Landfill gas is generated during waste decomposition.
- Landfill gas is approximately 50% methane, an odorless gas, with the remainder being mostly carbon dioxide.
- Trace amounts of other gases, including hydrogen sulfide (H<sub>2</sub>S), make up the remainder of the landfill gas.
- H<sub>2</sub>S has a “rotten egg” smell detectable at levels as low as 4 parts per billion (ppb), or about 0.000000004%.
- OSHA health standards require concentrations of H<sub>2</sub>S to be below 20,000 ppb.
- The highest level of H<sub>2</sub>S recorded in communities around the landfill was 48 ppb, well below OSHA limits.
- H<sub>2</sub>S at these low levels is not toxic or hazardous.

## Why are the Odors Stronger this Year?

- The active landfill is growing.
- Landfill elevation is above the treeline.
- High rainfall increases odor generation.
- Prevailing winds are towards the north and northwest during rainy season.
- Starting in April 2013, Construction and Demolition (C&D) waste was disposed of with the Municipal Solid Waste (MSW, or household waste).
- It has been found that C&D mixed with MSW produces higher concentrations of H<sub>2</sub>S than MSW or C&D alone.

## Actions Taken to Date

- Expanded landfill gas collection system.
- Installed misters designed to reduce objectionable odors.
- Initiated closure of a portion of the landfill.
- Hired SCS/HSA Golden JV to evaluate the odor situation and help develop solutions.
- Established a weekly monitoring program to measure H<sub>2</sub>S in areas around the landfill.
- Began separating C&D waste from the MSW.

## Short Term Solutions

- Increase use of soil cover on landfill.
- Continue to log odor related communications.
- Expand use of misting systems throughout the landfill.
- Apply odor control agents directly to the waste at the end of each day.
- Separate C&D from the MSW.
- Maintain landfill gas and stormwater collection systems after recent extensive rain.
- Continue to monitor for H<sub>2</sub>S in surrounding communities.

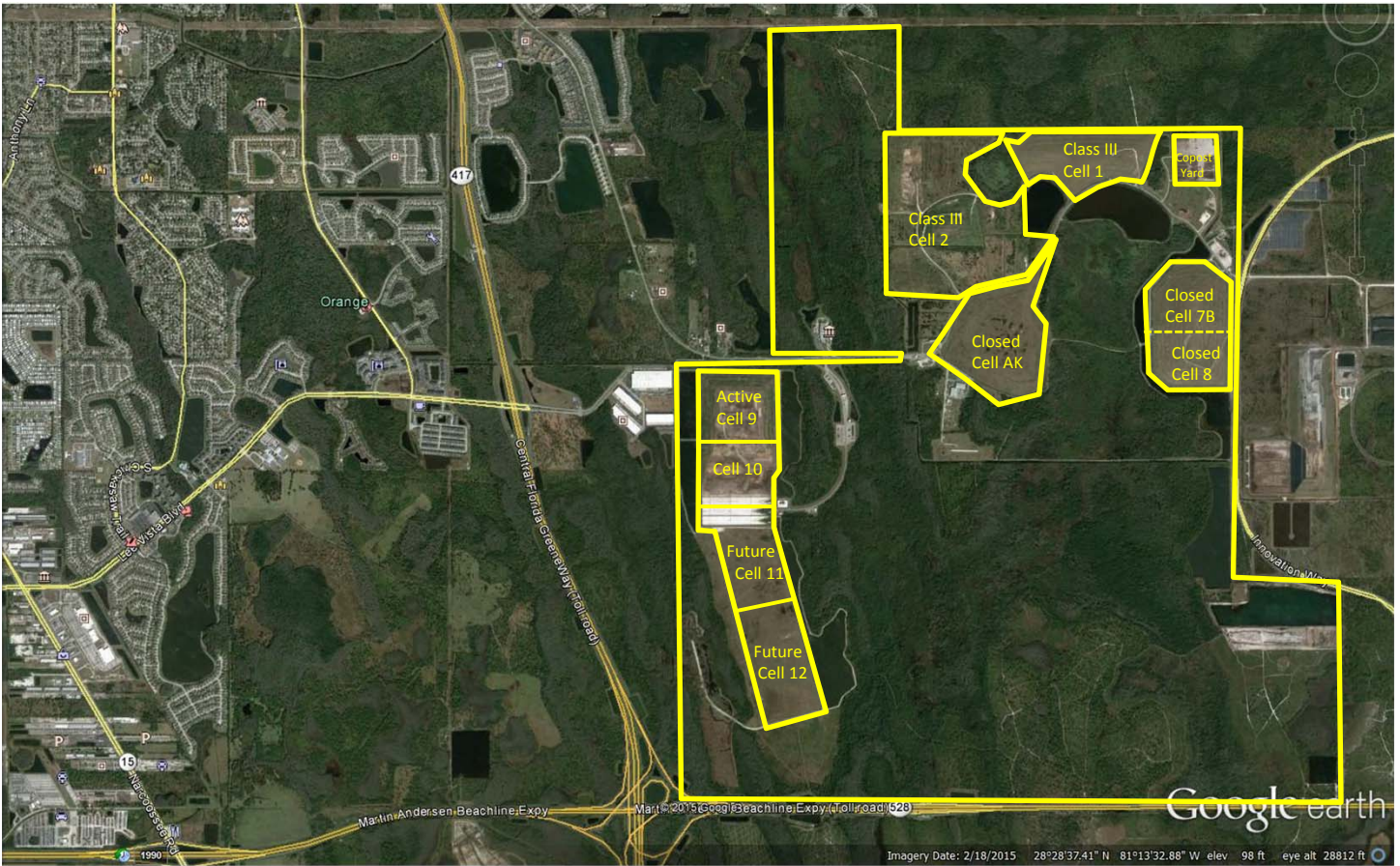
## Long Term Solutions

- Expand landfill gas collection system capacity.
- Continue to install final cover over portions of landfill that have reached final elevation.
- Evaluate landfill operational procedures.
- Continue to separate C&D and MSW.
- Implement recommendations resulting from Consultant’s odor assessment and control plan.

---

Orange County has contracted with the SCS/HSA Golden JV and their subconsultant, Grove Scientific & Engineering to provide odor control consulting for the Orange County Landfill.

# Orange County Landfill



# Locations of Odor Complaints in 2015

