

## AIR QUALITY REGULATORY IMPACTS

MRWMD - January 18, 2008

The purpose of the presentation to be made at the Board Meeting on January 18, 2008 is to provide an overview of current, pending, and probable air quality rules and regulations that will impact operations at the Monterey Peninsula Landfill.

### Current Regulations

Current regulatory oversight is provided by the U.S. Environmental Protection Agency, California Air Resources Board (ARB), and the Monterey Bay Unified Air Pollution Control District (MBUAPCD). Where regulatory programs overlap, the most stringent governs. The Monterey Regional Waste Management District (MRWMD)'s Monterey Peninsula Landfill is subject to the following:

- Federal Operating Permit Program (Title V)
- Air Toxics Hot Spots Program (AB2588)
- Air Toxics Control Measures for Stationary Diesel Fueled Engines (ATCM)
- MBUAPCD Rules and Regulations – specifically the local rules and regulations not captured in the Title V permit

The Monterey Peninsula Landfill is in compliance with the air quality rules and regulations to which it is currently subject. It should be noted that expansion of the landfill gas to energy plant beyond current capacity or the addition of other landfill gas control capacity will require installation of best available control technology (BACT) for criteria pollutants but does not require the purchase of offset credits if the control device is to be installed in order to comply with other regulations. The identification of off-site users of the landfill gas or non-combustion control options represents desirable options that should be carefully considered. In addition, expansion of current composting operations may also result in the application of BACT and require the purchase of offsets (see future regulations).

### Pending Regulations

A number of regulations are in place (but to which the landfill is not yet subject) or pending:

- New Source Performance Standards/Emission Guidelines (NSPS/EG) – This regulation is in effect. To become applicable, the non-methane organic compound emission rate from the landfill must exceed 55.2 tons per year. Current Monterey Peninsula Landfill emissions are equal to 8.4 tons per year (based on the 2006 emissions inventory submitted to the MBUAPCD) and are not expected to exceed the threshold in the foreseeable future.
- National Emission Standard for Hazardous Air Pollutants (NESHAPs) – Similar to the NSPS/EG threshold, the Monterey Peninsula Landfill emission rate of 1.1 tons per year does not exceed the regulatory threshold of 25 tons per year.
- Off-Road Diesel Powered Mobile Sources – The off-road diesel-powered mobile sources that would be subject to these regulations include vehicles with engines as small as 25 horsepower (hp) to greater than 2500 hp. Examples of vehicle types affected include backhoes, bulldozers, loaders, trenchers, scrapers, forklifts, snow cats, baggage tugs, cargo handlers, belt loaders, and others. The Monterey Peninsula Landfill must comply with these regulations beginning on March 1, 2009 by preparing an inventory of off-road vehicles, engine age, and size (by hp), identifying and verifying low use vehicles (<100 hours), and establishing a written idling policy. Compliance requirements are for (ozone precursor) oxides of nitrogen (NOx) and for diesel particulate matter emissions; the compliance dates are a function of the size of the fleet of vehicles. The Monterey Peninsula Landfill fleet consists of 24 vehicles and pieces of equipment with engine size totaling 6,545.5 hp, a large fleet by definition. Therefore, compliance with the first target emission limit is required by March 1, 2010. Considering that NOx compliance is segregated by engine size, the Monterey Peninsula Landfill can be compliant by modifying one-53 hp engine (device number S123 – manufactured in 1992) to a Tier 3-certified engine or by retiring the unit and removing it from the site. With other already planned engine retrofits, the next compliance action would not be required until 2012.

Similarly for particulate matter compliance, the same actions taken for NOx compliance will satisfy the particulate matter requirement for one of four engine size categories. For the remaining categories, it will be necessary to either upgrade all Tier 1 engines to Tier 3 certified engines or to add particulate matter traps to the exhaust stacks of all Tier 1 engines (a total of 6 traps) and continue with the plan to retire landfill compactor LF05 from the inventory.

- On-Road Diesel Powered Mobile Sources – All Monterey Peninsula landfill vehicles permitted for on-road operation are captured in the regulation. All pre-2004 engine model years (100% of the fleet) must reduce NOx emissions by 70% by December 31, 2010 and 85% by 2013. For particulate matter, all vehicles in the fleet must be equipped with the highest level of verified diesel emission control system (VDECS) by December 31, 2010. Some relief can be obtained by demonstrating compliance based on fleet averaging. Compliance with this regulation has the potential of a high cost impact over the next three year period.
- California Global Warming Solutions Act of 2006 (AB32) – AB32 requires that the current emission rate of green house gases (GHG) be reduced to 1990 levels by 2020. To demonstrate reductions as soon as possible, a list of ‘Discreet Early Actions’ was published in mid-2007. Landfills are targeted as sources of near term reductions. The Command and Control Options currently under discussion (draft regulations expected in September 2008) include:
  - Applicability threshold 500,000 tons waste in place for Gas Collection and Control Systems (GCCS)
  - Accelerated GCCS installation schedule
  - 50-parts per million (ppm) average surface methane concentration (500 maximum reading at any one location)
  - 25-foot spacing grid for surface emission monitoring (reduced from 100 feet)
  - More frequent monitoring
  - Higher destruction efficiency in existing GCCS systems
  - Incentives for landfill gas to energy projects

The regulations are anticipated to be effective by Jan 1, 2010. Although the Monterey Peninsula Landfill currently has a GCCS, it will be required to monitor and control landfill surface emissions in a manner that is not currently required.

The other action that must be taken by the MRWMD is to report its GHG ‘footprint’ or emissions inventory (anticipated submittal date is April 30, 2009). The protocols for calculating the emissions inventory are not finalized at this time.

### **Future Regulations**

This final category of regulatory activity has the potential of impacting the MRWMD and the Monterey Peninsula Landfill. Three potential areas of regulatory activity are discussed below:

- Composting – In the Bay Area and South Coast Air Quality Management Districts, composting operations have been determined to be large emitters of air pollutants including ammonia, volatile organic compounds, and green house gases. BACT has been established for co-composting operations (enclosures with air pollution control). At this time, the MBUAPCD is not considering establishing regulations governing composting operations. The expansion of the existing composting operation can occur as long as compliance with the nuisance rules (odor and visible emissions) is maintained.
- Bioreactor Landfill – two bioreactor landfills are operating in California: the Yolo-Solano Landfill test facility and the Kettleman Hills Landfill site. The Yolo-Solano test facility is operated as a research site. The Kettleman Hills facility is designed as a research site with the intent to expand the operation to other facilities if successful. Both facilities required authorization from the California Integrated Waste Management Board and an EPA research permit. It should be noted that a large bioreactor landfill project could result in an increase in the generation rate of landfill gas sufficient to exceed the New Source Performance Standards threshold with a significant increase in the monitoring, recordkeeping, and reporting activities necessary to demonstrate compliance.
- Green House Gas Offsets - The Solid Waste Association of North America California Legislative Task Force is tracking a number of bills in Congress?. The most anticipated legislation is expected to address a market-based compliance program for GHG. One such bill, AB6 by Guy Houston, has been introduced and is in committee.