

March 2, 2001

Ken Kloc and Lynn Saxton
Golden Gate University
Environmental Law and Justice Clinic
School of Law
536 Mission Street
San Francisco, CA 94105-2968

Subject: Public Comment on Title V permit for Gas Recovery Systems,
Facility B1668

Dear Mr. Kloc/Ms. Saxton:

Thank you for your letter of January 10, 2001, commenting on the permit for Gas Recovery Systems located in Menlo Park. Your letter raises three concerns:

1. Legal Insufficiency of the Schedule of Compliance Section
2. Mercury in Landfill Gas
3. Dioxin Emissions

Schedule of Compliance

There are several issues contained in your comments regarding the Schedule of Compliance. As we explained in our letter of January 24, 2001, to Lynn Saxton of Golden Gate University, EPA does not require a statement of compliance. These statements are the responsibility of the facility and are contained in the permit applications and yearly compliance certifications.

Your letter also objects to the specific language of the schedule of compliance. It is true that the language for the schedule of compliance is standard, and would only vary if the facility were out of compliance. EPA considers that our standard language is acceptable. We do not believe that changing the language in the first sentence from "shall comply" to "shall continue to comply" is necessary.

Your comment on the second sentence points out that part 70 states that the facility must comply with future requirements "on a timely basis." This permit does contain future requirements. We agree that inserting the phrase "on a timely basis" into this and future permits is useful.

Your letter also states that the schedule of compliance does not point out whether there are future requirements. There are future requirements in this permit. They are clearly shown in the Applicable Requirements tables in Section IV of the permit. These requirements are the ones that have a date in the "Future Effective Date" column.

In response to requests for additional information on compliance from the District, the District has decided to review compliance for each facility and prepare a report containing appropriate observations regarding compliance at the time of initial Title V permit issuance. Accordingly, every proposed Title V permit placed on public comment after December 15, 2000 will be accompanied by a staff report containing an evaluation of the recent compliance history and current status. In general, these reports will review compliance activities and violation history at the facility during the year prior to initial issuance of the permit. These reports will be prepared for the initial issuance and all renewals.

I will pass your comments on the Notices of Violation (NOVs) for Owens-Brockway to the Director of Enforcement and the Air Pollution Control Officer. Of course, these NOVs do not affect Gas Recovery Systems.

Mercury Emissions

The second issue concerns mercury emissions, which have not been addressed in the permit or in the evaluation. The reason is that there are no air-related applicable requirements concerning mercury at this time. Regulation 11, Rule 5, Mercury, does not apply to the facility. Neither does the National Emission Standard for Hazardous Air Pollutants (NESHAPS), Subpart E, National Emission Standard for Mercury. The proposed new NESHAPS for Municipal Solid Waste Landfills proposes no control.

The only standards that the District believes could apply are the District's Air Toxic Risk Management Policy and the obligation under state law to prepare Air Toxics Emissions Inventories contained in Health and Safety Code Sections 44300 et seq. (Air Toxics Hotspots Program (ATHS)).

The Air Toxic Risk Management Policy applies only to new and modified sources. These sources were installed in the mid-80's. If the engines were new or modified, applicability would depend on potential emissions. The emissions of mercury for the entire facility are estimated to be 0.0634 pounds/year as mercury. The emission calculations are attached to this letter in Appendix A. The District trigger for a risk assessment is 58 pounds/year for mercury and 190 pounds/year for methyl mercury. The trigger levels are based on Cal-EPA's Office of Environmental Health Hazard Assessment reference exposure levels.

The requirement for Air Toxics Emissions Inventories contained in Health and Safety Code Sections 44300 et seq. also is based on potential emissions. Since the emissions estimates for mercury and mercury compounds do not exceed 1.0 pound/year, the facility is exempt from the requirement to submit reports of emissions of mercury and mercury compounds pursuant to Health and Safety Code Sections 44300 et seq.

Dioxin Emissions

Information regarding the emissions of dioxin from landfill gas combustion is very limited. It is for this reason that EPA did not include this source category in their most recent draft national dioxin emissions inventory. It is also not possible, given the lack of available data, to assess dioxin emissions using facility-specific landfill gas data as you suggest.

You also request that the District establish testing requirements for dioxin in the Title V Permit. The emission inventory guideline regulation adopted by CARB for the Air Toxics Hot Spots (ATHS) Program establishes the sources that are required to establish dioxin emissions based on source testing. This regulation does not require dioxin source testing for landfill gas combustion sources because these emissions are not believed to be significant. CARB has indicated, however, that they will soon be completing additional source testing for the purpose of improving dioxin emissions data for certain source categories, and the District has requested that landfill gas combustion be included in that project. If additional source test data indicate that the dioxin emission from landfill gas combustion may be significant, appropriate requirements for addressing these emissions within the ATHS Program will be established.

We do encourage you to contact CARB to inquire about testing of landfill engines in California. The appropriate person to contact is Richard Boyd, Stationary Source Division, telephone (916) 327-5983.

The District intends to issue the Title V permit to Gas Recovery Systems soon. I will enclose a copy of your comment and this response in our submittal to EPA. Thank you for your constructive comments.

If you have any questions about this issue, please call me at (415) 749-4704.

Yours truly,

William deBoisblanc,
Director, Permit Services

Attachments

cc: Helen Kang, Golden Gate University,
Amy Zimpfer, Environmental Protection Agency

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APPENDIX A

Calculation of mercury emissions

Data used for calculations:

There are four engines that burn landfill gas: S-2, S-3, S-4, and S-5. All four engines have the same capacity: 6.75 million BTU/hr (MM BTU/hr)

Equipment Capacity: 6.75 MM BTU/hour per engine
27 MM BTU/hour (all engines combined)
648 MM BTU/day (all engines combined)
236,520 MM BTU/year (all engines combined)

Landfill Gas Assumptions:

55% methane (default concentration from AP-42¹, page 2.4-4, 11/98)
0.000292 ppmv mercury (default concentration from AP-42¹, page 2.4-10, 11/98)
landfill gas temperature = 77 °F (default temperature from AP-42¹, page 2.4-5, 11/98)

Heat Content of Methane (HHV) = 1013 BTU/scf
(from Chemical Engineering Handbook, Perry & Chilton, Fifth Edition, page 9-16)

Heat Content of Landfill Gas =
(0.55 scf methane/scf landfill gas) * (1013 BTU/scf methane)
= 557.15 BTU/scf landfill gas

Molecular Weight of Mercury: 200.61

Maximum Potential Mercury Emissions from Plant #11668:

Assumes all mercury in landfill gas is emitted with no reduction by combustion.

$(236,520 \text{ MM BTU/year}) * (1,000,000 \text{ BTU/MM BTU}) * (\text{scf landfill gas}/557.15 \text{ BTU}) =$
424.5 million scf landfill gas

Multiplying the amount of landfill gas by the concentration in parts per million:
424.5 million scf landfill gas/yr * 0.00000000292
= 0.1240 scf of mercury gas/yr

Using the gas law to calculate the moles of mercury gas:
 $n = PV/RT$

where: $P = 1$ atmosphere
 $V = 0.1240$ scf
 $R = 0.7302$ atmosphere-cf/° Rankine-lb moles
 $T = (460 + 77)$ ° Rankine = 537 ° Rankine
 $n =$ lb moles of mercury gas

$n = 0.000316$ lb moles of mercury gas

Converting from lb-moles to lbs:

lbs mercury = lb-moles/molecular weight of mercury

lbs mercury = 0.000316 lb moles * (200.61 lb mercury/lb mole mercury)
= 0.0634 lbs mercury/yr

Maximum Potential Mercury Emissions: = 0.0634 pounds/year as Hg

BAAQMD Risk Screen Trigger Levels:

Mercury and Mercury Compounds (inorganic) = 58 pounds/year as Hg

Methyl Mercury = 190 pounds/year

From the limited AP-42 data available, the concentration of mercury expected to be found in the collected landfill gas is very low (< 0.3 parts per billion by volume). In order for the results to be meaningful, any monitoring of collected landfill gas for mercury would require source testing and analytical methods capable of detecting parts per trillion levels of mercury. Testing that would attain such a low detection limit would be very difficult and expensive and is not justifiable.

Although the AP-42 emission factor rating for the default mercury concentration discussed above is "E", maximum potential mercury emissions from this facility are 3 orders of magnitude below the lowest BAAQMD Risk Screen Trigger Level. Therefore, mercury emissions from this site are not expected to result in any significant risk to the surrounding community. Furthermore, the proposed MACT floor for metal HAP emissions (including mercury) due to landfill gas combustion is "no control". Even if monitoring collected landfill gas demonstrated that mercury emissions were 1 or 2 orders of magnitude higher than current estimates, the resulting risk to the community would still be considered not significant and there are no available control measures. For Title V Permits, enhanced monitoring requirements are only required if the monitoring is necessary to demonstrate compliance with a limit. In this case, monitoring for mercury content in landfill gas would be just for the sake of gathering data and is beyond the scope of what is allowed by Part 70.

¹ AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume 1, published by EPA

Terms:

BTU: British Thermal Unit

ppmv: parts per million by volume

scf: standard cubic feet

*: multiplication