ALLEGHENY COUNTY HEALTH DEPARTMENT
Air Quality Program

SUMMARY OF PUBLIC COMMENTS AND DEPARTMENT RESPONSES ON THE PROPOSED ISSUANCE OF CHAMBERS MONROEVILLE LANDFILL OPERATING PERMIT NO. 0215-OP25

[Notice of the opportunity for public comment appeared in the legal section of the Pittsburgh Post-Gazette on August 22, 2024. The public comment period ended on September 23, 2024.]

1. **COMMENT:** Conditions V.A.2.k.2.iii.A, V.A.2.l & V.A.2.m (currently condition V.A.2.l), Pages 38 & 39. Monroeville Landfill requests ACHD to remove any reference text related to utility flare because the landfill does not have a utility flare. (1 Commenter)

   RESPONSE: The Department made the requested change by deleting conditions V.A.2.k.2.iii.A, V.A.2.l and the reference to condition V.A.2.k.2.iii in condition V.A.2.m. However, the rest of Condition V.A.2.m remains unchanged as it is applicable to a control system designed and operated to reduce NMOC by 98 weight-percent, or to an enclosed combustion device used for control, that either reduces NMOC by 98 weight-percent or reduces the outlet NMOC concentration to less than 20 ppmv.

2. **COMMENT:** Conditions V.A.3.n; V.A.5.v.1.i & ii Pages 48 & 64. Monroeville Landfill requests ACHD to revise the condition to remove reference to nitrogen and oxygen because only temperature and pressure have a compliance standard in the revised rules. (1 Commenter)

   RESPONSE: The Department made the requested change by removing the reference to nitrogen and oxygen.

3. **COMMENT:** Condition V.B.1.a, Page 73. Monroeville Landfill requests ACHD to clarify the condition that the source testing shall demonstrate compliance with either *98% or 20* ppm requirements as stated in the Rule. (1 Commenter)

   RESPONSE: The Department acknowledged the "or 20 ppm" requirement in the NESHAP Subpart AAAA rule. However, it cannot modify the condition in the permit as requested because the 98% destruction efficiency was determined to be the Best Available Control Technology (BACT), while the 20 ppmv is not considered BACT.

4. **COMMENT:** Condition V.B.2.b, Page 74. Monroeville Landfill requests ACHD to add the condition below as stated in the Rule. (1 Commenter)

   "Testing shall demonstrate compliance with either a reduction of NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts-per-million by volume, dry basis as hexane at 3-percent oxygen or less. [(b)(2)(iii)(B)]"

   RESPONSE: Please refer to response to comment No. 3 above.

5. **COMMENT:** Condition V.C.1.a, Page 76. Monroeville Landfill requests ACHD to revise the condition as follows: (1 Commenter)

   The permittee shall at no time use any excavated soils contaminated with ~~HAPS or~~ total petroleum hydrocarbons (TPH) with a concentration of greater than 200 ~~ppmv~~ mg/kg as a soil cover without Department approval. [IP# 0215-I001, V.B.1.a.1; §2103.12.a.2.D]

   RESPONSE: The Department made the requested change by adding "excavated" before "soils" and "total" before "hydrocarbon." However, the Department does not see a reason to delete "HAPs" from the sentence, as the condition is intended to ensure that soils contaminated with HAPs are not used as cover. Furthermore, the facility did not provide an explanation for why HAPs should be removed or changed the hydrocarbon concentration unit from ppm in the underlined IP to mg/kg even though mg/kg is equivalent to ppm.

6. **COMMENT:** Condition V.C.1.b, Page 76. Monroeville Landfill requests ACHD to add the condition below to clearly identify the method in which alternative daily cover materials are handled on-site. (1 Commenter)

   The permittee shall at no time use any residual wastes as a daily cover that are not reviewed and approved by the landfill's PADEP approved program for internally identifying, accepting, and approving residual wastes for land application, without Department approval.

   RESPONSE: The Department made the requested change.

7. **COMMENT:** Condition V.C.2.a, Page 77. Monroeville Landfill requests ACHD to revise the condition as follows to clearly identify the method in which alternative daily cover materials are handled on-site. (1 Commenter)

   The permittee shall perform a waste profile analysis using ~~Method 8260 (TCLP)~~ Method 8015, or similar analytical procedure, to measure the content of TPH in excavated soil ~~HAP/VOC~~ to comply with Condition V.C.1.a. (§2108.02; §2103.12.h.1)

   RESPONSE: EPA Method 8260 is used to determine volatile organic compounds (VOCs) in solid waste samples. The facility did not clarify how Method 8015 can effectively measure HAP/VOC levels in soil and analyze waste profiles. Therefore, the condition remains unchanged.

8. **COMMENT:** The Technical Support Document functions as the Statement of Basis and must detail the permitting and compliance history. ACHD failed to address compliance history in the TSD and failed to mention RACT Order No. 253, which is referenced throughout the Draft Permit as the basis for certain terms and conditions. The Technical Support Document also fails to mention the gas-to-energy plant associated with the Monroeville Landfill. The fact that landfill gas is distributed via a pipeline from the gas collection and control system to the gas-to-energy plant should be included in the facility description section of the TSD. (1 Commenter)

   RESPONSE: The gas-to-energy plant is not included in the components of the Title V Operating permit. It is owned and operated by Monroeville LFG LLC (formerly Magellan EnviroGas), which has no affiliation with Chambers (Monroeville) Landfill, and is a subsidiary of Montauk Renewables. The facility has its own permit and permit determination. A reference to RACT Order No. 253 was added to the TSD under "Permit Application Components". A section on compliance history was also added to the TSD under "Regulatory Applicability".

9. **COMMENT:** Conditions V.C.1.b & V.C.1.d. The Draft Permit includes emission limitations for fugitive dust for annual particulate matter ("PM"), PM_{10}, and $PM_{2.5}$. However, no testing requirements are applicable, and the Monitoring Requirements listed are "None unless provided elsewhere." ACHD has failed to include any

monitoring requirements to assure compliance with annual PM, PM_{10} and $PM_{2.5}$ limits for fugitive dust from landfill operations and construction and paved and unpaved roads. Accordingly, ACHD must include in the final permit adequate monitoring requirements to assure compliance with the annual PM, PM_{10} and $PM_{2.5}$ fugitive dust limits in the Draft Permit. (1 Commenter)

RESPONSE: Emissions from paved and unpaved roads, as well as landfill construction and operations, are classified as fugitive dust. This means they cannot be captured, and there are no testing requirements associated with them. Fugitive emissions from roadways are determined based on AP-42 emissions factors for paved and unpaved roads, car mileage traveled within the facility, average vehicle weight and other factors, while the landfill construction and operations are based of AP-42 Section 11.19 for controlled sources with wet suppression.

Work-practice requirements to control the dust generated during operations, along with recordkeeping requirements for control measures, are already incorporated into the permit and are used to demonstrate compliance with the fugitive particulate emission limitations. However, the Department has incorporated requirements to monitor the operations. The United State Environmental Protection agency (U.S. EPA) has not indicated that, in all cases, testing and monitoring must exactly mirror the averaging times of associated emissions limits. Moreover, based on the last five (5) years of inspection reports, the facility has consistently complied with the permit requirements, including section V.C of the permit.

10. **COMMENT:** Condition V.C.6. ACHD includes as Work Practice Standards the "reasonable precautions" and correctly mandates the use of the reasonable precautions—e.g. wet suppression and making available an on-site pressurized water truck. However, the Draft Permit fails to specify the required frequency, quantity and duration of dust suppression techniques. ACDH must specify the required frequency, quantity and duration of the "reasonable precautions" outlined in the Work Practice Standards to prevent particulate matter due to source activities from becoming airborne. (1 Commenter)

RESPONSE: See response to comment No. 9 above.

1) Condition V.C.6.b requires the facility to promptly remove earth or material deposited by trucking or other means on the roadways, which means immediately without any delay. The Department believes that the frequency of removal has already been specified.

2) Condition V.C.6.c: The condition requires the facility to make available sufficient pressurized water during Landfill Construction and Covering Operations to use as needed to reduce fugitive emissions. It also requires the facility to keep daily logs.

3) Conditions V.C.6.d & V.C.6.e: The conditions require the facility to apply water to suppress any dust generated during operation, on paved and unpaved roadways, shoulder of access roadways, and the shoulder of the public highway for a distance of 500 feet in the direction of egress at least "*twice a day*" and if chemical dust suppressant is used, it shall be applied "*monthly*" at minimum.

The Department believes that the frequency of control— "twice per day" for water usage, "once per month" for chemical control, and on an "as-needed basis"—has already been specified in the permit, and no other frequency of control is required. It is unnecessary in this instance for the Department to dictate which techniques facilities should employ or the quantities of water or chemicals to use during fugitive control, as the scope of operations varies. Additionally, Monroeville Landfill is required to keep records of control measures, including time and location.

11. **COMMENT:** Conditions V.B.2.a & b. Testing conditions are required once every five (5) years to determine NMOC destruction efficiency, and once every five (5) years to test for NO_X and CO. Monitoring requirements

require that Chambers Development Company continuously measure the flue gas temperature to the flare, and further specifies in Condition V.B.3.b. that the flare is also subject to the National Emission Standards for Hazardous Air Pollutants ("NESHAP") monitoring requirements for flares.

ACHD has failed to explain how monthly measurement of pressure, temperature, nitrogen and oxygen demonstrate compliance with the annual and hourly limits for PM, SO_2, NO_X, CO, VOCs and NMOC. Accordingly, ACHD has failed to include monitoring requirements for the flares that are reasonably related to the averaging time, hourly and annual, to determine compliance with the limits in Condition V.B.1.g. (1 Commenter)

RESPONSE: The landfill flare is designed to control landfill gas and NMOC/VOC generated intermittently during the anaerobic activity, rather than to control PM, SO_2, NO_X, and CO, which are emitted as part of its operation. The landfill flare also is designed to operate at a specific temperature; in the case of Monroeville Landfill, this is a minimum temperature of 1,500 degrees Fahrenheit and a minimum NMOC/VOC destruction efficiency of 98 percent.

The facility is required to monitor the flue gas temperature to demonstrate compliance with the minimum temperature and destruction efficiency. Operating under these parameters and following good combustion practices ensures compliance with NMOC/VOC standards, which in turn indicates low PM, SO_2, NO_X, and CO emissions.

The flare has demonstrated compliance with the required operating temperature through stack testing, as shown in the table below. Maintaining this temperature ensures complete combustion and helps minimize the formation CO and PM formation. According to EPA-453/R-94-021, higher concentrations of oxygen and nitrogen in the landfill gas are an indication of air infiltration. Proper oxygen levels are necessary for complete combustion and for reducing emissions of CO, NO_X, and PM, and excess nitrogen can reduce combustion temperature and affect destruction efficiency.

The permit conditions require the facility to perform stack testing once every five (5) years to demonstrate compliance with the limits. The 2015 and 2020 stack test results, shown in the table below, demonstrate compliance with temperature, control efficiency, NO_X and CO, which are indicators the facility has consistently complied with the permit requirements. Please refer to the compliance report in the Technical Support Document (TSD) under Regulatory Applicability.

The testing frequency, monitoring, and work practice requirements outlined in the permit combined with good combustion practices are sufficient to demonstrate compliance with the flare restrictions. Therefore, there is no justification for increasing the testing frequency. A search of the RACT/BACT/LAER Clearinghouse (RBLC) indicates that, for a landfill flare, pollution prevention is achieved through the implementation of good combustion practices.

Additionally, the EPA has not indicated that in all cases testing and monitoring must mirror the exact averaging times of associated emissions limits. The Department believes the requirements in the draft permit are adequate to ensure continuous compliance with the limits.

Pollutant	**Permit Limit**		**2020 Stack Test Result**	**2015 Stack Test Result**	**2023 Emission Inventory**
	lb/hr	**tons/yr**			
NMOC	0.65	1.11	<0.001		
NMOC DRE (% by weight)	98%		>99.2	99.79	
NO_X	9.6	42.05	0.35	0.35	1.54
CO	24	105.12	0.03	0.023	0.15

12. **COMMENT:** Condition V.A.1.k. ACHD includes an emission limit for the gas collection and control system ("GCCS"). This limit was established in installation permits. VOCs are limited to 20.03 tons per year and NMOC is limited to 51.34 tons per year. The draft permit lists Subpart OOO requirements in Conditions V.A.2 that provide for testing requirements, and none of these testing requirements are cited to assure compliance with the annual VOC and NMOC limits. In addition, no monitoring requirements assure compliance with the annual VOC and NMOC limits in Condition V.A.1.k. ACHD must include monitoring requirements in the final permit that identify a reasonable averaging time to determine compliance with the GCCS VOC and NMOC limits. (1 Commenter)

RESPONSE: The testing requirements outlined in section V.A.2 are set to estimate or forecast the maximum or potential concentration of Non-Methane Organic Compounds (NMOC) for comparison with the standard of 34 or 50 megagrams per year. These requirements also assess whether a gas collection and control system (GCCS) are necessary or to conduct a surface emission monitoring demonstration.

NMOC and VOC emissions are estimated based on the annual waste acceptance rate, methane generation rate, and methane generation potential, using LandGEM software to project landfill gas and emissions, with the peak year for Monroeville Landfill expected to be 2045. The enclosed flare in section V.B is used to control the NMOC/VOC in the collected landfill gas. See response to comment No. 11 above.

13. **COMMENT:** Condition V.B.1.g, Table V-B-1. The underlying installation permit, amended in 2011, includes hourly (2.01 lb/hr) and annual (8.8 tons per year) limits for SO_2 emissions from the ground flare, which are the same limits are included in the current Title V permit. In its application for renewal of the Title V permit, Chambers Development Company (CDC) requests an increase of this limit to 5.98 lb/hr and 26.12 ton/year, which would make allowable emissions almost three times higher than currently permitted. CDC also requested revisions to its annual emission limits for fugitive emissions (PM, PM_{10}, $PM_{2.5}$, CO, NO_X, SO_2, VOCs, NMOC, methane ("CH_4"), CO_2 and CO_2e) in its permit application, including replacing "HCl" with "Toluene" and also changing this emission limit. The Draft Permit contains some of these changes. The Draft Permit does not cite an underlying permit for these limits, indicating these limits are being increased as part of the Title V renewal process.

The CDC should have properly applied to have its emission limits increased through the Title V permit. ACHD must either require that CDC establish the limits in Condition VIII, Table VIII-1 in an installation permit, or include a citation to this permit, which establishes these limits in this condition (and including only the limits in the underlying permit, and not those requested in CDC's permit application, if different). (1 Commenter)

RESPONSE: The Department concurs with the commenter and will advise the facility to revise SO_2 emissions through an amendment to the existing installation permit IP #0215-I002.

Regarding the annual emissions in Section V.III, the emissions were revised because landfill emissions, specifically VOC and NMOC, vary based on the annual waste acceptance rate. The waste acceptance rate has increased since the last Title Operating Permit was issued in 2019 and amended in 2020, which has resulted in an increase in NMOC, VOC, methane (CH_4), CO_2, and CO_2e emissions.

LandGEM software was used to estimate and quantify emissions based on the model year's waste acceptance rate and total waste in place. During the 2019 renewal process, the permit application submitted in March 2016 used the 2015 waste acceptance rate of 386,656 megagrams and a total waste in place of 15,938,814 megagrams. Since the landfill remains active and continues to receive waste, the facility's records show a 2022 waste acceptance rate of 510,545 megagrams and a total waste in place of 18,768,493 megagrams. These updated figures were used in the emissions estimation for the current Title V renewal application submitted in February 2023 and the proposed Title V operating permit. The landfill's permitted design capacity is

193,700,000 megagrams. It is important to note that the waste acceptance rate and total waste in place may increase by the next Title V renewal period.

This necessitates a revision to the annual emissions. The table below shows the difference between the annual emissions in the amended Title Operating Permit issued on December 9, 2020, and the proposed renewal Title Operating Permit annual emissions:

Annual Emission Limitations Summary

Pollutant	2024 Proposed Annual Emission Limit (tons/year)*	2020 Amended Annual Emission Limit (tons/year)*	Difference (tons/year)
Particulate Matter	68.58	69.61	-1.03
PM_{10}	42.70	43.73	-1.03
$PM_{2.5}$	34.61	35.64	-1.03
CO	105.12	129.43	-24.31
Nitrogen Oxides	42.05	46.52	-4.47
Sulfur Oxides	8.8	9.90	-1.10
Volatile Organic Compounds	21.14	17.78	3.36
NMOC	54.19	45.57	8.62
Single HAP (HCl)	4.25 (- HCl)	7.25 (toluene + HCl)	
Total HAPs	17.72	17.98	-0.26
CO_2e (both CH_4 & CO_2)	305,327	282,355	22,972

*A year is defined as any consecutive twelve-month period.

Regarding the reference to toluene, the Department did not replace the single HAP HCl with toluene as suggested in the application. The Department believes that the facility erroneously made this substitution, as the emission spreadsheet calculation shows that the landfill operation's single HAP is toluene (3.68 tons), while the flare's single HAP is HCl (4.25 tons). Please refer to Appendix A, Tables B & E of the Technical Support Document (TSD) for the landfill and flare HAPs emissions summary. Please note, the Department has incorporated single HAP HCl in the Emission Summary Table, Section V.III as it inadvertently was omitted from the draft permit.

14. **COMMENT:** Condition V.B.1.g, Table V-B-1. The enclosed flare SO_2 limits appear to be calculated using an unexplained assumption about the concentration of hydrogen sulfide ("H_2S"). In particular, in the TSD, the assumed H_2S concentration value is 132 ppmv, but the same concentration is 150 ppmv in the permit application. Moreover, the unexplained assumption about the concentration of H_2S is higher than observed concentrations of H_2S in the 2021 and 2022 Annual Operation Reports.

ACHD fails to explain in the TSD, or in other materials available as part of the permitting record, the inconsistent use of H_2S concentrations or the conflicting H_2S concentrations (150 ppmv, 132 ppmv and 50 ppmv), and ignores the presence of other reduced sulfur compounds that may contribute to SO_2 formation when incinerated by the flare. It appears the calculations assume that H_2S is the only sulfur compound found in landfill gas and convert the assumed quantity of H_2S to SO_2. This would be appropriate for a facility combusting sour gas where H_2S is the primary contaminant being burned.

ACHD must explain and/or correct its calculation methodologies, and/or creation of any emission limits, in any future revisions of installation permits. (1 Commenter)

RESPONSE: The SO_2 limit was determined based on a Total Reduced Sulfur (TRS) concentration of 110 ppm from lab analysis conducted on September 29, 2021, rather than H_2S concentration. A 20 percent safety factor was included to account for variability, resulting in a total TRS concentration of 132 ppm. The reference to the flare SO_2 limit revision has been removed from the Technical Support Document (TSD) because the revision will be addressed through an amendment to the installation permit IP #0215-I002.

15. COMMENT: Condition V.A.6.j. The condition includes the wellhead temperature standard of 145 degrees Fahrenheit. This condition does not cite to anything other than the SIP and NESHAP requirements. However, RACT Order No. 253, cited throughout the permit, includes a lower temperature requirement of 55 degrees centigrade (131 degrees Fahrenheit) in Condition 1.7. ACHD neither included the RACT limit in the Draft Permit nor explained in the TSD, or elsewhere, why the higher limit in Condition V.A.6.j is included instead of the RACT limit. Therefore, ACHD must either include the RACT limit instead of the 145-degree Fahrenheit limit or explain why the RACT limit does not apply. (1 Commenter)

RESPONSE: Prior to September 28, 2021, all landfills were required to meet the requirements of 40 CFR Part 60, Subpart WWW. Beginning September 28, 2021, 60 Subpart WWW is no longer applicable, and landfills instead must meet the requirements of 40 CFR Part 63, Subpart AAAA. The temperature of 55 degrees Celsius (131 degrees Fahrenheit) specified in the RACT Order is derived from NSPS Subpart WWW, which is no longer applicable to landfills. However, since the RACT I order has been incorporated into the SIP, Condition V.A.1.k has been added to the permit, requiring the facility to comply with the RACT I interior wellhead temperature limit of 55 degrees centigrade (131 degrees Fahrenheit). It should be noted that the purpose of the landfill gas temperature limit is to reduce inhibition of anaerobic decomposition and thus reduce CO emissions, not VOC emissions (the subject of RACT).

16. COMMENT: Typographical Errors

1) The Draft Permit refers to an “off-gas collection system,” which appears to come from RACT Order No. 325. This term is inconsistent with the underlying requirements cited that refer instead to “gas collection and control systems” (see 40 C.F.R. §62.16714(b)) and other conditions in the permit referring to the “gas collection system” (see condition V.A.1.k). Accordingly, ACHD should correct these errors.
2) Condition V.2.d is listed as “e3”. Presumably this should be corrected to “Tier 3”.

RESPONSE: The Department does not find any reason to revise the references to "off-gas collection system" or "gas collection system," as both terms are relevant and refer to the same landfill gas. As noted in the comment, one term pertains to RACT, while the other refers to 40 CFR 62, Subpart OOO for Municipal Solid Waste Landfills. However, the Department has corrected the spelling error regarding "Tier."

List of Commenters

Name	Affiliation
Tom Spears Gas Operations Manager	Chambers Development Company-Monroeville Landfill
Haley Lewis Attorney	Environmental Integrity Project
Gillian Graber Executive Director	ProtectPT