



REGION 3

PHILADELPHIA, PA 19103

Laura Socia
Director- Solid Waste
City of Bristol, VA
2655 Valley Drive
Bristol, Virginia 24201
laura.socia@bristolva.org

Re: Request for Landfill Gas Wellfield Higher Operating Value Approval
Bristol Integrated Solid Waste Management Facility – Bristol, Virginia

Dear Laura Socia:

The United States Environmental Protection Agency (EPA), Region 3, is in receipt of an electronic letter dated December 19, 2024, prepared by SCS Engineers (SCS) on behalf of the City of Bristol ("The City") requesting approval for a higher operating value (HOV) for temperature for eight select landfill gas (LFG) extraction wellheads located at the Bristol Integrated Solid Waste Management Facility ("Bristol Landfill" or "Facility") (Title V Permit No. SWRO11184) in Bristol, Virginia.

The Bristol Landfill is a municipality-owned solid waste landfill that began operation in the early 1990s and holds a Title V Permit No. SWRO11184, issued to the Facility (Registration number 11184) on March 13, 2021, by the Virginia Department of Environmental Quality (VADEQ). As a solid waste landfill, the Facility was subject to the rules found at 40 CFR Part 60 Subpart WWW until July 23, 2020, when EPA approved Virginia's state plan, which implements 40 CFR Part 60 Subpart Cf through 9VAC5-40 Article 43.1 including provisions to install and operate a gas collection and control system (GCCS) for the purposes of capturing landfill gases (LFG) and treating and combusting those gases. The provisions of the landfill rules are also incorporated into the Facility's Title V Permit. Historically, Bristol Landfill partnered with Ingenco to combust the landfill gas in turbines to produce electricity; however, as of May 1, 2024, the Ingenco facility ceased operations and no longer partners with the Bristol Landfill. Bristol owns and operates a flare system for LFG combustion. The landfill rules include compliance provisions for the LFG control system to ensure LFG is fully combusted, including use of an open flare, a system designed to reduce the non-methane hydrocarbon (NMOC) emissions by at least 98%, or a system that fully processes the LFG for resale.

The landfill rules require monitoring at each landfill gas well, which must meet standards for pressure, temperature, and either nitrogen or oxygen content. The temperature limitation in the rule is 62.8°C (145°F); however, if a landfill measures temperatures that exceed 145°F, it may request a higher operating value (HOV) for each exceeding well. The December 2024 Letter from SCS, indicates the Facility has identified six LFG extraction wells (EW-55, EW-56, EW-65, EW-82, EW-93, and EW-94) that are exceeding the 145°F temperature limit and two LFG extraction wells, EW-52 and EW-89, that are exceeding previously approved HOVs of 160 °F and 185 °F, respectively. The Facility has investigated the cause of the temperatures, and indicated in the December 19, 2024, letter that there is no indication of a fire (i.e., no smoke, or burning smells) and that the historical temperature data recorded at the eight wells is fairly uniform and consistent, which implies the wellfield is well balanced. Although the temperature values often exceed 63°C (145°F). The Facility indicates that it believes the conditions present in the vicinity of seven (7) wells (EW-52, EW-55, EW-56, EW-65, EW-82, EW-93, and EW-94), specifically low oxygen, low carbon monoxide (CO), reduced methane concentrations, elevated hydrogen, and elevated temperatures, suggest that this zone of the waste mass is experiencing a tendency to remain in the acid-forming stage of landfill gas production. However, the presence of some methane indicates that methanogenesis associated with anaerobic decomposition is occurring at these wellheads. The Facility stated in the vicinity of EW-89 the waste mass is experiencing a tendency of remaining entirely in the acid-forming state of landfill gas production. Furthermore, the Facility suggests there likely is some degree of anaerobic exothermic pyrolysis occurring in the immediate vicinity of this well, these conditions appear to be localized, since numerous surrounding wells, while experiencing temperatures above 145°F, typically record more normal methane concentrations associated with methanogenesis. The Facility believes continued LFG extraction at these locations will remove heat and relieve pressure from these areas, which are the fundamental response actions to these circumstances. Specifically, the Facility has requested establishing the following HOVs for temperature:

EW-52 ≤ 180 °F
 EW-55 ≤ 175 °F
 EW-56 ≤ 160 °F
 EW-65 ≤ 170 °F
 EW-82 ≤ 170 °F
 EW-89 ≤ 200 °F
 EW-93 ≤ 165 °F
 EW-94 ≤ 190 °F


Due to the evolving situation and ongoing construction at the site, EPA grants approval of the HOV temperatures as requested for EW-52, EW-55, EW-56, EW-65, EW-82, EW-89, EW-93, and EW-94; however, should temperatures be measured greater than the approved HOVs specified above, all provisions of 40 CFR Part 63 Subpart AAAAA will be applicable again. Approval of the HOVs listed herein will expire December 1, 2027, or 1-year after significant closure of the Bristol Landfill whichever occurs first. The following table summarizes all the valid HOV temperatures for the Bristol Landfill:

LFG Well	HOV Temperature	Expiration date
EW-49	165°F	December 1, 2027, or 1-year after significant closure
GW/EW-52	180°F	December 1, 2027, or 1-year after significant closure
GW/EW-53	180°F	December 1, 2027, or 1-year after significant closure
EW-54	190°F	December 1, 2027, or 1-year after significant closure
EW-55	175°F	December 1, 2027, or 1-year after significant closure
EW-56	160°F	December 1, 2027, or 1-year after significant closure
EW-57	180°F	December 1, 2027, or 1-year after significant closure
EW-61	180°F	December 1, 2027, or 1-year after significant closure
EW-64	160°F	December 1, 2027, or 1-year after significant closure
EW-65	170°F	December 1, 2027, or 1-year after significant closure
EW-66	165°F	December 1, 2027, or 1-year after significant closure
EW-67	180°F	December 1, 2027, or 1-year after significant closure
EW-77	165°F	December 1, 2027, or 1-year after significant closure
EW-80	165°F	December 1, 2027, or 1-year after significant closure
EW-81	175°F	December 1, 2027, or 1-year after significant closure
EW-82	170°F	December 1, 2027, or 1-year after significant closure
EW-83	190°F	December 1, 2027, or 1-year after significant closure
EW-84	180°F	December 1, 2027, or 1-year after significant closure
EW-85	175°F	December 1, 2027, or 1-year after significant closure
EW-86	160°F	December 1, 2027, or 1-year after significant closure
EW-88	190°F	December 1, 2027, or 1-year after significant closure
EW-89	200°F	December 1, 2027, or 1-year after significant closure
EW-90	180°F	December 1, 2027, or 1-year after significant closure
EW-91	175°F	December 1, 2027, or 1-year after significant closure
EW-93	165°F	December 1, 2027, or 1-year after significant closure
EW-94	190 °F	December 1, 2027, or 1-year after significant closure
EW-97	175°F	December 1, 2027, or 1-year after significant closure
EW-99	160°F	December 1, 2027, or 1-year after significant closure
EW-100	170°F	December 1, 2027, or 1-year after significant closure

While EPA, in cooperation with VADEQ, formulated this approval in order to alleviate some of the temperature issues at the facility, the Agency strongly cautions Bristol Landfill to use care when addressing the elevated temperature in the wells. It is important for Bristol Landfill and their contractors to ensure that air intrusion into the sub surface reaction (SSR) areas is tightly controlled to prevent a fire. A landfill fire would be a poor outcome at this type of facility and is extremely difficult to control. Further, nothing in this approval relieves Bristol Landfill or the City of Bristol, of compliance with the Title V Permit, the landfill rules, or any other applicable rule enforceable by EPA and/or VADEQ. If you have any further questions, please contact Alex Everhart, Environmental Scientist, at Everhart.Alex@epa.gov or 215-814-2114.

Sincerely,

Melvin,
Karen

 Digitally signed by Melvin,
Karen
Date: 2025.01.23
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Karen Melvin, Director
Enforcement and Compliance Assurance Division

cc:

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