REGION 3
PHILADELPHIA, PA 19103

January 9, 2024

Mr. Randall Eads
City Manager
Bristol Virginia
2125 Shakesville Road
Bristol, Virginia 24201
CityManager@bristolVA.org

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

Dear Mr. Eads:

The United States Environmental Protection Agency (EPA), Region 3, is in receipt of an electronic letter dated November 8, 2023, submitted by SCS Engineers (SCS) on behalf of the City of Bristol ("The City") requesting approval for a higher operating value (HOV) for temperature for seven 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. Bristol Landfill partners with Ingenco to combust the landfill gas in turbines to produce electricity. Bristol also owns and operates a flare system for LFG combustion when the Ingenco units are unavailable, or the gas quality doesn't meet turbine requirements. 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 November 2023 Letter from SCS indicates the Facility has identified seven LFG extraction wells (EW-52, EW-64, EW-81, EW-85, EW-88, EW-89, EW-91, and EW-99) that are exceeding the 145°F temperature limit and one LFG extraction well, EW-89, that is exceeding its previously approved HOV of 170°F. The Facility has investigated the cause of the temperatures and indicated in the November 2023 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 seven of 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 believes the conditions present in the vicinity of wells EW-52, EW-64, EW-81, EW-85, EW-88, EW-89, EW-91, and EW-99, 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 anerobic decomposition is occurring at these wellheads with the exception of EW-89. The Facility noted that conditions at EW-89 suggest that this zone of waste mass is experiencing a tendency of remaining entirely in the acid-forming stage of landfill gas production. 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≤ 160°F
EW-64≤ 160°F
EW-81≤ 175°F
EW-85≤ 175°F
EW-88≤ 160°F
EW-89≤ 185°F
EW-91≤ 175°F
EW-99≤ 160°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-64, EW-81, EW-85, EW-88, EW-89, EW-91, and EW-99; however, should temperatures be measured greater than the approved HOVs specified above, all provisions of 40 CFR Part 63 Subpart AAAA will be applicable again. Approval of the HOVs listed herein will expire one year after the date of issuance of this letter or following the completion of landfill closure in the areas of EW-52, EW-64, EW-81, EW-85, EW-88, EW-89, EW-91, and EW-99, whichever occurs first. The following table summarizes all the valid HOV temperatures for the Bristol Landfill:

LFG Well	HOV Temperature	Expiration date
GW/EW-37	165°F	7/27/24[1]
GW/EW-57	180°F	7/27/24[1]
GW/EW-67	180°F	7/27/24[1]
EW-52	160°F	One year from issuance of this letter[1]
EW-53	180°F	9/28/24[1]
EW-61	180°F	9/28/24[1]
EW-64	160°F	One year from issuance of this letter[1]
EW-81	175°F	One year from issuance of this letter[1]

EW-84	180°F	9/28/24[1]
EW-85	175°F	One year from issuance of this letter[1]
EW-86	160°F	9/28/24[1]
EW-88	160°F	One year from issuance of this letter[1]
EW-89	185°F	One year from issuance of this letter[1]
EW-90	180°F	9/28/24[1]
EW-91	175°F	One year from issuance of this letter[1]
EW-99	160°F	One year from issuance of this letter[1]
EW-100	170°F	9/28/24[1]

[1] or following the completion of landfill closure in the area of the wells whichever comes first

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,

KAREN MELVIN

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Karen Melvin, Director
Enforcement and Compliance Assurance Division
U.S. Environmental Protection Agency, Region 3

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