HARPETH
CONSERVANCY

June 5, 2023

SENT VIA EMAIL to Water.Permits@tn.gov

Tennessee Department of Environment and Conservation
Division of Water Resources
Water Based Systems Unit
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37243-1102

Re: Comments supporting TDEC's proposed denial of East Hickman Water Reclamation Facility NPDES Permit No. TN0082376

To Whom It May Concern:

Harpeth Conservancy, a science-based conservation organization working across Tennessee to advocate for clean water and healthy river ecosystems, commends the Tennessee Department of Environment and Conservation for applying our state's antidegradation statement in an appropriate—and common sense—way to propose denying the permit for an "East Hickman Water Reclamation Facility," which would discharge treated sewage into Lick Creek. *See* Rationale, Water Authority of Dickson County, NPDES Permit Application TN0082376, Page R-2 (Apr. 5, 2023) [hereafter "Rationale"]. Harpeth Conservancy asks TDEC to finalize its denial of the proposed permit.

Lick Creek is a rare and exceptional waterway with a threatened species that needs continued protection, and Lick Creek experiences natural low flow conditions that would be substantially altered by the addition of millions of gallons a day of treated sewage. *See* Rationale, R-4 (citing 7Q10 low flow conditions as 13.2 cubic feet per second, an estimate established "in the absence of sufficient gage data" for Lick Creek).[1] Using Lick Creek as an element of a multi-county sewage management

[1] Notably, the permit applicant eliminated from consideration all streams with a slightly smaller flow (e.g., streams with 7Q10 < 12 cfs) because "they would likely not have sufficient flow to allow discharge of 12 mgd while meeting water quality standards." *See* Engineering Report: East Hickman County Water Reclamation Facility Supplemental Information for Water Authority of Dickson County, at p. 11 & Table 5 (Dec. 2022) [TDEC DataViewer Entry Dec. 9, 2022]; *see also* Rationale, R-6 ("At the Department's request, WADC submitted a revised PER…which evaluated alternative discharge locations. . . . of at least 12 cubic feet per second."). By comparison, low flow conditions on the Cumberland River near downtown Nashville are 2,790 cfs (1Q10). *See* Nashville Central STP, NPDES Permit No. TN0020575, Rationale Page R-1.

program neither reflects long-term solutions for Tennessee's growth nor satisfies current regulatory standards. Further, denial is appropriate because, as discussed below, the permit applicant provided insufficient data for the Division of Water Resources to responsibly analyze potential impacts to Lick Creek.[2]

I. Antidegradation standards are fundamental to protecting water quality, and permission to degrade waters is necessarily tethered to resulting conditions at the impact site.

According to the Antidegradation Statement, TDEC must establish that there are no "practicable alternatives" to degradation before permitting certain activities in Tennessee's waterways.[3] Importantly, "practicable alternatives" does not merely mean alternate outfalls. Alternatives may include no action, actions that do not result in discharges, and shifting the location of the outfall to a receiving stream with significantly greater assimilative capacity. *See* Tenn. Comp. R. & Regs. 0400-40-03-.06(1)(b)3(i) (identifying examples of practicable alternatives, *including* "connection to an existing collection system, land application, water reuse, water recycling, or other treatment alternatives to prevent or reduce the level of degradation").

When Harpeth Conservancy commented on the 2022 triennial review of Tennessee's water quality standards promulgated in Tennessee Rules and Regulations Chapters 0400-40-03 and 0400-40-04, HC specifically supported TDEC's addition of the language "in which the waters are located" to clarify that the required economic or social development analysis concerns the area of the proposed impact. We explained:

> The draft revisions insert "in which the waters are located" throughout the anti-degradation section. For example, proposed new or increased discharges, water withdrawals, habitat degradation, as well as new impoundments (as proposed), will only be authorized if there is no practicable alternative and the degradation (which is not pollution per the regulations) is "necessary to accommodate important economic or social development in the area in which the waters are located and the degradation will not violate the water quality criteria for the uses existing in the receiving waters." We would like to note that this language insertion throughout the anti-degradation statement simply reinforces what is already stated in the General section in section (1)(a)

[2] HC will focus these comments on the antidegradation analysis for the proposed activity. However, HC notes that the Division also preliminarily determined that sufficient effluent limits could be placed on a 2 MGD discharge to protect water quality in Lick Creek. *See* Rationale, R-14. The Division does not include its water quality analysis in the Rationale, though, because antidegradation principals prevent the discharge altogether. *See id.*, R-4. Therefore, it is premature for HC to address water quality standards, but HC is skeptical about even this preliminary determination because the permit applicant indicated a desire to serve "unidentified, hypothetical" industrial clients. *See* Rationale, R-14, R-12.

[3] Tenn. Comp. R. & Regs. 0400-40-03-.06(4)(c)1.

under 0400-40-03-.06. See the underlined existing language below that is already in the regulation that is simply being inserted throughout the Anti-degradation section for emphasis with this revision.

> "It is the purpose of Tennessee's standards to fully protect existing uses of all surface waters as established under the Act. Existing uses are those actually attained in the waterbody on or after November 28, 1975. Where the quality of Tennessee waters is better than the level necessary to support propagation of fish, shellfish, and wildlife, or recreation in and on the water, that quality will be maintained and protected unless the Department finds, after intergovernmental coordination and public participation, that lowering water quality is necessary to accommodate important economic or social development in the area <u>in which the waters are located</u> as established herein."

While the addition of this phrase may not be necessary since it is already in the general section for the entire Anti-degradation statement, Harpeth Conservancy encourages the addition of the phrase to reinforce that the anti-degradation analysis for proposed authorization of degradation in waterways with available parameters and for Exceptional Tennessee Waters is required to be based on an analysis of whether the proposed degradation is necessary to "accommodate important economic or social development" in the area of the waterway segment being affected.

HC therefore supports the Division's conclusion that the permit applicant's estimated, theoretical economic benefits are too geographically separated from the discharge to justify degrading Lick Creek. *See* Rationale, R-12 to -13.

II. Activities that degrade Tennessee's waterways must be rigorously evaluated; accuracy suffers without robust empirical data.

Permission to degrade Tennessee waters should be based on the best science. When information necessary to evaluate an activity's impacts on water quality is either inaccurate or missing, or when a permit applicant requests permission to degrade in conjunction with a speculative waste stream, the public is effectively being asked to tolerate risky decisions about water quality. The public should feel confident that the Division knows whether a proposed discharge could lead to harmful algal blooms, reduced oxygen, or insufficiently assimilated waste streams containing un- or under-regulated substances like synthetic organic compounds or PFAS.[4]

[4] *See* TDEC, Annual Report on Potable Water Supplies in Tennessee Watersheds, at § 5.2.B (Jan. 31, 2022), available at

Here, the permit file for the proposed Water Reclamation Facility contains a report prepared by a third-party environmental engineering firm to evaluate the permit applicant's submitted water quality model. *See* AquAeTer Initial Review of Lick Creek QUAL2K Water Quality Model Report [TDEC DataViewer Entry Feb. 2, 2023]. AquAeTer concluded that the model is "fatally" flawed; Harpeth Conservancy has reviewed the report, which suggests that many of the issues with the submitted model are related to a lack of empirical data for Lick Creek. As noted earlier, a lack of empirical data on Lick Creek is reflected in the fact that the Division relied on USGS Streamstats to calculate the low flow statistics. *See* Rationale, R-4.

Harpeth Conservancy agrees with AquAeTer's analysis regarding rate constants and model inputs. Indeed, models are generally only as reliable as the accuracy of the input data. So, for example, water quality and flow data collected more than a decade ago may not accurately represent the current conditions of Lick Creek due to changes in land use, weather and climate patterns, or pollution load. Better information is needed before approving the addition of a waste stream to Lick Creek and assuming it can meet water quality standards.

III. Conclusion.

Tennessee's freshwater streams, especially when they are as exceptional as Lick Creek, should be protected from socially and economically unnecessary and risky degradation. Harpeth Conservancy therefore supports TDEC's proposed denial.

Sincerely,

/s/ Grace Stranch, CEO

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https://www.tn.gov/content/dam/tn/environment/water/drinking-water-unit/wr_wq_report_protection-potable-water-supplies-tn-watersheds-2022.pdf (identifying cryptosporidium, disinfection byproducts, human and veterinary pharmaceuticals, synthetic organic compounds, harmful algal blooms, and per- and polyfluoroalkyl substances as emerging problems). "Over the past decade, water quality surveys have indicated that numerous areas of the United States, including Tennessee, have pharmaceuticals and steroid hormones in their waterways. Additional studies have linked the exposure of fish and amphibians to natural and synthetic steroids to reproductive and endocrine disruption (estrogens and/or androgens). Within the State of Tennessee, little is currently known about the potential for pharmaceutical compounds and/or endocrine disrupting compounds to contaminate drinking water supplies." *Id.*