



Aquatic Resource Alteration Permit

NRS22.320

Pursuant to the *Tennessee Water Quality Control Act of 1977* (T.C.A. §§ 69-3-101 to -148) and supporting regulations, a permit is required to alter the properties of waters of the state. Subject to conformance with accepted plans, specifications, and other information submitted in support of the application, the state of Tennessee hereby authorizes the activity described below pursuant to T.C.A. § 69-3-108(b):

PERMITTEE: Bedford County Utility District
P. O. Box 2755
Shelbyville, Tennessee 37160

AUTHORIZED WORK: Withdrawal of a maximum of 4.07 million gallons of water per day from the Duck River for public water supply. Of this amount, 1.7 million gallons per day constitutes an existing water withdrawal as of July 25, 2000. Pursuant to Rule 0400-40-07-.02(4), this withdrawal amount is exempted from the requirements of this permit if it does not adversely alter or affect classified uses in the Duck River.

LOCATION: The activity is located in the Duck River in Bedford County near river mile 200. Pursuant to T.C.A. § 10-7-504 and Rule 0400-01-01(4)(c)2, the precise location is confidential. Therefore, the exact location of the intake site will not be disclosed in this permit or otherwise made available to the public.

EFFECTIVE DATE: March 15, 2024

EXPIRATION DATE: March 14, 2029

A handwritten signature in blue ink that reads "April Gizzo".

for Jennifer Dodd, Director
Division of Water Resources

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PART I

Authorized Alterations

This permit authorizes aquatic alterations associated with the withdrawal of a maximum of 4.07 million gallons of water per day (MGD) from the Duck River for public water supply. Of this amount, 1.7 MGD constitutes an existing water withdrawal as of July 25, 2000. Pursuant to Rule 0400-40-07-.02(4), this withdrawal amount is exempted from the requirements of this permit if it does not adversely alter or affect classified uses in the Duck River.

The Bedford County Utility District (BCUD) currently owns and operates an existing 4 MGD water treatment plant in Bedford County that serves potable water to nearly 8,000 customers. Raw water is supplied by an intake in the Duck River near river mile 200. Precise location data is confidential under Tennessee law. BCUD serves industrial, commercial, and residential customers located within Bedford County outside the city limits of the City of Shelbyville, City of Bell Buckle and City of Wartrace.

BCUD is currently in the process of constructing new mixing, flocculation, and sedimentation facilities capable of providing primary treatment of up to 8 MGD of raw water. BCUD expects this project will be completed and placed into service in early 2023. BCUD plans to expand its existing 4 MGD water treatment plant to one capable of treating 6 MGD. These upgrades are within existing structures. No new construction is necessary to add additional filtration capacity to the water plant.

Special Conditions

1. The withdrawal volume shall not exceed 4.07 MGD.
2. Raw water withdrawal volumes shall be monitored and recorded daily.
3. Withdrawal data shall be reported to the Division on the corresponding comprehensive monthly operations reports for the Public Water Supply ID - TN0000517.
4. Withdrawal above 1.7 MGD shall cease when flow in the Duck River as measured at the Milltown USGS Gage (03599240) is at or below 175 cubic feet per second (CFS), subject to the following schedule of compliance.

- a. The permittee shall develop a plan for reducing the withdrawal of water from the Duck River to coincide with certain drought triggers. This reduction shall be measured either by a reduction in the instantaneous rate of withdrawal or total daily volume. This plan shall be submitted to the Division for its review not later than one year after the effective date of this permit. The permittee shall implement the plan beginning no later than 30 days after receiving written approval from the Division.
 - b. The permittee shall provide annual water loss reporting using the American Water Works Association M36 Water Audits and Loss Control Programs free water audit software v6 to determine the amount of potentially recoverable leakage, with a goal of achieving a 25% unavoidable annual real loss.
 - i. If the unavoidable annual real loss is greater than 25%, it shall develop and implement a plan to reduce water loss based on the potentially recoverable leakage.
 - ii. A plan that details the process and timelines by which the permittee would achieve this reduction shall be submitted to the Division for review and approval not later than 24 months after the effective date of this permit.
 - iii. The annual water loss reporting shall be submitted by October 31 of each year.
 - c. As reasonable and appropriate, the permittee shall participate in or perform studies necessary to determine the presence and extent of threatened and endangered mussels and other fish and aquatic life in the downstream portion of the Duck River impacted by the withdrawal, and flow requirements necessary to sustain these populations. These studies will include, but not be limited to, an evaluation of the efficacy of tapering withdrawal rates gradually downward. Participation may be through membership in the Duck River Agency.
 - d. The special condition to cease withdrawal above 1.7 MGD when flow in the Duck River as gaged at the Milltown USGS Gage (03599240) is at or below 175 CFS shall become effective five years from the date of this permit.
5. The permittee shall comply with provisions of the Duck River Agency's Duck River Regional Drought Management Plan, including revisions. The provisions include, but are not limited to:
- a. triggers for drought restrictions
 - b. water use restrictions for drought stages, and
 - c. levels of enforcement for drought management stages.
6. The permittee shall develop descriptions of restricted and prohibited activities and enforcement mechanisms for drought management specific to Bedford County.
- a. This report shall be submitted to the Division for review and approval within 180 days of the effective date of this permit.
 - b. The report shall be used for compliance with item # 5. above.

General Conditions

1. It is the responsibility of the permittee to convey all terms and conditions of this permit to all contractors. A copy of this permit, approved plans, and any other documentation pertinent to the activities authorized by this permit shall be maintained on site at all times during periods of construction activity.
2. All activities must be accomplished in conformance with the approved plans, specifications, data, and other information submitted in support of the ARAP application (form CN-1091) (except where no application is required as specified below) and the limitations, requirements, and conditions set forth herein. Failure to comply with the terms and conditions of this permit is a violation of the Act.
3. The permittee is responsible for obtaining the federal section 404 permit from the U. S. Army Corps of Engineers and section 26a permit from the Tennessee Valley Authority where necessary.
4. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in Rule 0400-40-03-.03. This consists of, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of waters of the state for any of the uses designated by Rule 0400-40-04. These uses include fish and aquatic life (including trout streams and naturally reproducing trout streams), livestock watering and wildlife, recreation, irrigation, industrial water supply, domestic water supply, and navigation.
5. Impacts to waters of the state other than those specifically addressed in the plans and this permit are prohibited. All streams, springs, and wetlands shall be fully protected prior, during, and after construction until the area is stabilized. Any questions, problems or concerns that arise regarding any stream, spring, or wetland either before or during construction shall be addressed to the Division of Water Resource's Columbia Environmental Field Office - 1421 Hampshire Pike, Columbia, TN 38401 931-380-3371 or the permit coordinator in the Division's Natural Resources Unit – 615-532-0710.
6. Adverse impact to formally listed state or federal threatened or endangered species or their critical habitat is prohibited.
7. This permit does not authorize adverse impacts to cultural, historical, or archeological features or sites.
8. This permit shall not be used incrementally to combine with other activities resulting in an appreciable permanent loss of water resource values.

PART II

Mitigation Requirements and Monitoring Procedures

Required Mitigation Activities

There are no mitigation requirements.

Monitoring Requirements and Procedures

The permittee shall submit the annual project report as described in Special Condition 4.b.iii. by October 31 of each year.

Submission of Monitoring Results

All reports must be submitted in report form to the Division of Water Resources, Natural Resources Unit, Division of Water Resources, Davy Crockett Tower, 9th Floor, 500 James Robertson Parkway, Nashville, Tennessee 37243, or via email at water.permits@tn.gov. Please be sure to indicate the ARAP permit number on your submittal.

Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation shall be retained for a minimum of five years, or longer, if requested by the Division.

Falsifying Results and/or Reports

Knowingly making any false statement on any report required by this permit or falsifying any result may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Water Pollution Control Act, as amended, and in Section 69-3-115 of the Tennessee Water Quality Control Act.

PART III

Duty to Reapply

The withdrawal of water from the Duck River above 1.7 MGD beyond the expiration date of this permit is not authorized. If the permittee chooses to continue this activity, it must submit a complete application to the Division not later than 90 days prior to the expiration of the permit.

Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

Water Rights

The waters of Tennessee are the property of the state and are held in public trust for the use of the people of the state. This permit does not grant or convey any prescriptive rights, appropriation, or allocation of water, nor does it authorize any injury to the riparian rights of others.

Other Permits

This permit does not preclude requirements of other federal, state, or local laws. This permit serves as both a section 401 certification and as a state of Tennessee aquatic resource alteration permit (ARAP) pursuant to the Tennessee Water Quality Control Act of 1977 (T.C.A. § 69-3-101 to -148).

Other Information

If the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Director, then it shall promptly submit such facts or information.

Changes Affecting the Permit Transfer/Change of Ownership

This permit may be transferred to another party, provided:

1. There are no activity or project modifications, no pending enforcement actions, or any other changes which might affect the permit conditions contained in the permit.
2. The permittee notifies the Director of the proposed transfer at least 30 days in advance of the proposed transfer date.
 - a. The notice consists of a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and contractual liability between them; and
 - b. The Director does not notify the current permittee and the new permittee, within 30 days of his or her intent to modify, revoke, reissue, or terminate the permit, or require that a new application be filed rather than agreeing to the transfer of the permit.
3. The permittee must provide the following information to the Division in its formal notice of intent to transfer ownership:
 - a. the permit number of the subject permit,
 - b. the effective date of the proposed transfer,
 - c. the name and address of the transferor,
 - d. the name and address of the transferee,
 - e. the names of the responsible parties for both the transferor and transferee,
 - f. a statement that the transferee assumes responsibility for the subject permit,
 - g. a statement that the transferor relinquishes responsibility for the subject permit,
 - h. the signatures of the responsible parties for both the transferor and transferee, and
 - i. a statement regarding any proposed modifications to the permitted activities or project, its operations, or any other changes which might affect the permit conditions contained in the permit.

Change of Mailing Address

The permittee shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

Noncompliance

Effect of Noncompliance

All withdrawals shall be consistent with the terms and conditions of this permit. Any permit noncompliance constitutes a violation of applicable state and federal laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

Reporting of Noncompliance

24-Hour Reporting

In the case of any noncompliance which could cause a threat to public drinking supplies, or any other withdrawal which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the Division of Water Resources in the appropriate Environmental Field Office within 24-hours from the time the permittee becomes aware of the circumstances. (The Environmental Field Office should be contacted for names and phone numbers of environmental response personnel).

1. A written submission must be provided within five days of the time the permittee becomes aware of the circumstances unless this requirement is waived by the Director on a case-by-case basis. The permittee shall provide the Director with the following information:
 - a. a description of the withdrawal and cause of noncompliance;
 - b. the period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
 - c. the steps being taken to reduce, eliminate, and prevent recurrence of the non-complying withdrawal.

Scheduled Reporting

For instances of noncompliance which are not reported under subparagraph a. above, the permittee shall report the noncompliance by contacting the permit coordinator and provide all information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including but not limited to, accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

Liabilities

Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the state of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the withdrawal from any surface waters. Additionally, notwithstanding this permit, it shall

be the responsibility of the permittee to conduct its withdrawal activities in a manner such that public or private nuisances or health hazards will not be created.

Liability under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or the Federal Water Pollution Control Act, as amended.

Reopener Clause

This permit may be modified, suspended, or revoked for cause, including:

1. Violation of any of the terms or conditions of this permit or of T.C.A §§ 69-3-101 to –148,
2. Obtaining the permit by misrepresentation or failing to disclose fully all relevant facts, or
3. A change in any condition that requires either a temporary or permanent change in the conditions of this permit.

Appeal

An appeal of this action may be made as provided in T.C.A. § 69-3-105(i) and Rule 0400-40-07-.04(9) by submitting a petition for appeal:

1. The petition must be filed within 30 days after notification of the issuance of the permit.
2. The petition must specify the basis for the appeal and state a claim for relief based on an alleged violation of the Tennessee Water Quality Control Act or the rules promulgated thereunder. Third parties shall specify facts sufficient to establish that they have satisfied the statutory and regulatory preconditions and otherwise have standing to appeal.
3. The petition should be addressed to the technical secretary of the Tennessee Board of Water Quality, Oil and Gas at the following address: Jennifer Dodd, Director, Division of Water Resources, William R. Snodgrass - Tennessee Tower, 312 Rosa L. Parks Avenue, Nashville, Tennessee 37243-1102, or you may submit such petition electronically to TDEC.Appeals@tn.gov. Any hearing would be in accordance with T.C.A. §§ 69-3-110 and 4-5-301 et seq.

APPENDIX

Permit Rationale

Bedford County Utility District
P. O. Box 2755
Shelbyville, Tennessee 37160
March 15, 2024
Permit Writer: Robert Baker

Summary

Permittee: Bedford County Utility District
Contact: Randy Head
Telephone #: 931-684-1667
Activity Location: The activity is located in the Duck River in Bedford County near river mile 200. Pursuant to T.C.A. § 10-7-504 and Rule 0400-01-01(4)(c)2, the precise location is confidential. Therefore, the exact location of the intake site will not be disclosed in this permit or otherwise made available to the public.
Authorized Activity: Withdrawal of a maximum of 4.5 million gallons of water per day (MGD) from the Duck River for public water supply.
Waterbody Name / ID: Duck River / TN06040002020_1000

Permit Status

Permit Type: ARAP
Effective Date: March 15, 2024
Expiration Date: March 14, 2029

Status of Affected Waters

Duck River ID TN06040002020_1000
Ecoregion - Inner Nashville Basin, 71i, Bedford County
Hydrologic Unit Code - 06040002 Upper Duck River

Designated Use	Use Support	Causes	Sources
livestock watering & wildlife	fully supporting		
irrigation	fully supporting		
recreation	not supporting	Escherichia coli (E. Coli)	Municipal (Urbanized High Density Area)
fish and aquatic life	fully supporting		
industrial water supply	fully supporting		

domestic water supply	fully supporting		
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Assessment Date: April 3, 2017

The affected waters have been determined to have available water withdrawal parameters.

The affected waters are designated as Exceptional Tennessee Waters. The basis for inclusion is as follows: Portion from river mile 133 to 179 USFWS designated Critical Habitat for Cumberlandian Fluted Kidneyshell, Slabside Pearlymussel and Purple Bean. Populations of federal endangered Tan Riffleshell, Birdwing Pearlymussel, and Cumberland Monkeyface, state threatened Striated Darter, Ashy Darter, Saddled Madtom and Coppercheek Darter. Portion designated state scenic river. Portions in Duck River Complex SNA and Henry Horton State Park.

Authorized Alterations

The Bedford County Utility District presently pumps 3.87 MGD during peak demand. This permit is predicated on providing a baseline for future permitting in the Duck River. The baseline is considered the recent peak demand plus water use projections for the five-year permit duration. The authorized maximum withdrawal rate is 4.07 MGD. The purpose of the withdrawal is for public water supply.

The authorized alteration to waters is withdrawal of a maximum of 4.07 million gallons of water per day (MGD) from the Duck River for public water supply. Of this amount, 1.7 million gallons per day constitutes an existing water withdrawal as of July 25, 2000. Pursuant to Rule 0400-40-07-.02(4), this withdrawal amount is exempted from the requirements of this permit if it does not adversely alter or affect classified uses in the Duck River

Alternatives Analysis and Selection of Least Impactful Practicable Alternative

The stated purpose of the authorized alterations to state water resources is to provide public water supply. The applicant has submitted an analysis of potentially practicable alternatives to the authorized activity and provided the following discussion of those alternatives:

- 1. Based on existing records, groundwater supply to supply this amount of water does not appear to exist near the vicinity of the plant.*
- 2. Constructing off-site storage in the capacity needed by BCUD would be a very expensive and environmentally significant option. Construction costs to install such a facility, depending on land availability and location, would be in the tens of millions of dollars. The environmental hurdles to construct this alternative would be significant.*
- 3. Purchasing water from SPWS would be costly and environmentally impactful due to water system improvements required by both systems. In addition, the unit cost of water would be more twice what BCUD can produce its treated water. The source of water for this option would be the Duck River.*
- 4. BCUD can expand its filtration capacity by installing new filters, raw and finished water pumps, electrical and piping within the existing treatment plant facility. The cost to construct this option would be about \$5,000,000. There would be virtually no environmental impacts associated with this project as work would take place within existing structures. Finally, the additional capacity at BCUD's water plant would provide greater redundancy and resilience for Bedford County and adjacent utilities and customers.*

Based on the available information, the Division has determined that the authorized activities represent the least impactful practicable alternative to accomplish the project's purpose and goals.

Existing Conditions/Authorized Loss of Resource Values

The Duck River in this segment is fully supporting of its classified uses. This segment of the Duck River is Exceptional Tennessee Waters. Over 50 freshwater mussel species are extant in this reach of the Duck River including the federally endangered Birdwing Pearlymussel, Cumberland Monkeyface, Fanshell, Duck River Dartersnapper, Cumberland Combshell, Catspaw, Snuffbox, Pink Mucket, Slabside Pearlymussel, Fluted Kidneyshell, and Pale Liliput as well as the federally threatened Rabbitsfoot. This reach of the Duck River specifically harbors the only viable populations of the Birdwing Pearlymussel, Cumberland Monkeyface, and Duck River Dartersnapper throughout their global range.

The Department's rules exempt water withdrawals that existed on July 25, 2000, from permit requirements to the extent that they do not interfere with classified uses. BCUD's peak withdrawal during the summer of 2000 was 1.7 MGD. This amount is therefore exempted from permit requirements. The remaining portion of the withdrawal is considered new or increased. That total (4.07 MGD – 1.7 MGD) is 2.37 MGD.

The increased withdrawal is subject to the minimum flow restriction and schedule of compliance in the Special Conditions. These conditions are protective of the resource values of this river segment. The Division has determined that the activity will not result in an appreciable permanent loss of resource values.

Antidegradation

The Department's rules state a single water withdrawal will be considered *de minimis* if it removes less than five percent of the minimum 7-day average streamflow with a 10-year recurrence interval (7Q10) flow of the stream. If more than one withdrawal has been authorized or proposed in a segment and the total of the authorized and proposed withdrawals uses no more than 10% of the assimilative capacity, or 7Q10 low flow, they are presumed to be *de minimis*.

The calculated 7Q10 using the USGS SW Toolbox 1.0.4 for the period of record from April 1, 1991 – March 31, 2022, at the gage 03598000 Duck River near Shelbyville, TN in this river segment is 140.45 CFS or 90.15 MGD. There are no other registered withdrawals in this river segment.

The withdrawal rate authorized by this permit is 4.07 million gallons per day for public water supply. This amount is 4.51 % of the 7Q10 flow.

The affected waters are designated as Exceptional Tennessee Waters. In accordance with the Tennessee Antidegradation Statement (Rule 0400-40-03-.06), the Division has determined that the authorized activities will result in no more than *de minimis* degradation of water quality parameters of an Exceptional Tennessee Water

For more information, please reference Tennessee's Antidegradation Statement which is found in Chapter 0400-40-03 of the Rules of the Tennessee Department of Environment and Conservation.

Program SWStat U.S. GEOLOGICAL SURVEY Seq 00001
 Ver. 5.0 Log-Pearson & Pearson Type III Statistics Run Date / Time
 03/13/2018 based on USGS Program A193 4/12/2023 3:41 PM

Notice -- Log-Pearson Type III or Pearson Type III distributions are used for these computations. Users are responsible for assessment and interpretation.

Description: 03598000 DUCK RIVER NEAR SHELBYVILLE, TN
 Year Boundaries: April 1 - March 31
 Period in report: April 1, 1992 - March 31, 2023
 Parameter: 7-day low
 Non-zero values: 30
 Zero values: 0
 Negative values: 1 (ignored)

Input time series (zero and negative values not included in listing.)

156.290	177.710	194.570	223.000	177.430	181.570	159.860	163.710
174.430	175.860	182.290	158.860	165.570	146.710	136.570	122.290
165.140	152.710	173.140	142.710	178.000	154.290	182.140	129.290
249.430	204.140	181.710	226.570	183.140	174.430		

LOG PEARSON TYPE III Frequency Curve Parameters
 (based on logs of the non-zero values)

Mean (logs)	2.233
Variance (logs)	0.005
Standard Deviation (logs)	0.068
Skewness (logs)	0.180
Standard Error of Skewness (logs)	0.427
Serial Correlation Coefficient (logs)	0.208
Coefficient of Variation (logs)	0.030

Frequency Curve - Parameter values at selected probabilities

Non-exceedance Probability	Recurrence Interval	Parameter Value	Variance of Estimate	95-Pct Confidence Intervals	
				Lower	Upper
0.1000	10.00	140.450	1.001	127.920	149.550

