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Rulemaking Hearing Rule(s) Filing Form

Rulemaking Hearing Rules are rules filed after and as a result of a rulemaking hearing (Tenn. Code Ann. § 4-5-205).

Pursuant to Tenn. Code Ann. § 4-5-229, any new fee or fee increase promulgated by state agency rule shall take effect on July 1, following the expiration of the ninety (90) day period as provided in § 4-5-207. This section shall not apply to rules that implement new fees or fee increases that are promulgated as emergency rules pursuant to § 4-5-208(a) and to subsequent rules that make permanent such emergency rules, as amended during the rulemaking process. In addition, this section shall not apply to state agencies that did not, during the preceding two (2) fiscal years, collect fees in an amount sufficient to pay the cost of operating the board, commission or entity in accordance with § 4-29-121(b).

Agency/Board/Commission:	Board of Water Quality, Oil and Gas
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Revision Type (check all that apply):

X Amendment
___ New
___ Repeal

Rule(s) (**ALL** chapters and rules contained in filing must be listed here. If needed, copy and paste additional tables to accommodate multiple chapters. Please make sure that **ALL** new rule and repealed rule numbers are listed in the chart below. Please enter only **ONE** Rule Number/Rule Title per row)

Chapter Number	**Chapter Title**
0400-40-03	General Water Quality Criteria
Rule Number	**Rule Title**
0400-40-03-.01	Tennessee Board of Water Quality, Oil and Gas
0400-40-03-.02	General Considerations
0400-40-03-.03	Criteria for Water Uses
0400-40-03-.04	Definitions
0400-40-03-.05	Interpretation of Criteria
0400-40-03-.06	Antidegradation Statement

Chapter Number	**Chapter Title**
0400-40-04	Use Classifications For Surface Waters
Rule Number	**Rule Title**
0400-40-04-.01	Memphis Area Basin
0400-40-04-.02	Hatchie River Basin
0400-40-04-.03	Obion-Forked Deer Basin

0400-40-04-.04	Tennessee River Basin – Western Valley
0400-40-04-.05	Duck River Basin
0400-40-04-.06	Elk River Basin (including Shoal Creek)
0400-40-04-.07	Lower Tennessee River Basin (including Conasauga Basin)
0400-40-04-.08	Upper Tennessee River Basin
0400-40-04-.09	Clinch River Basin
0400-40-04-.10	French Broad River Basin
0400-40-04-.11	Holston River Basin
0400-40-04-.12	Lower Cumberland River Basin
0400-40-04-.13	Upper Cumberland River Basin
0400-40-04-.14	Barren River Watershed

Place substance of rules and other info here. Please be sure to include a detailed explanation of the changes being made to the listed rule(s). Statutory authority must be given for each rule change. For information on formatting rules go to http://sos-tn-gov-files.s3.amazonaws.com/forms/Rulemaking%20Guidelines_September2016.pdf.

Chapter 0400-40-03
General Water Quality Criteria

Amendments

Rule 0400-40-03-.01 Tennessee Board of Water Quality, Oil and Gas is amended by deleting it in its entirety and substituting instead the following:

0400-40-03-.01 Tennessee Board of Water Quality, Oil and Gas

The Water Quality Control Act, T.C.A., § 69-3-101, et seq., makes it the duty of the Board of Water Quality, Oil and Gas to study and investigate all problems concerned with the pollution of the Waters of the State and with its prevention, abatement, and control; and to establish such standards of quality for any Waters of the State in relation to their reasonable and necessary use as the Board shall deem to be in the public interest; and establish general policies relating to pollution as the Board shall deem necessary to accomplish the purposes of the Act. The following general considerations and criteria shall be used to determine the permissible conditions of waters with respect to pollution and preventative or corrective measures required to control pollution in various waters or in different sections of the same waters.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

Rule 0400-40-03-.02 General Considerations is amended by deleting it in its entirety and substituting instead the following:

(1) Tennessee water quality standards shall consist of the General Water Quality Criteria and the Antidegradation Statement found in Chapter 0400-40-03, and the Use Classifications for Surface Waters found in Chapter 0400-40-04.

(2) Waters have many uses which in the public interest are reasonable and necessary. Such uses include: sources of water supply for domestic and industrial purposes; propagation and maintenance of fish and other aquatic life; recreation in and on the waters including the safe consumption of fish and shellfish; livestock watering and irrigation; navigation; generation of power; propagation and maintenance of wildlife; and the enjoyment of scenic and aesthetic qualities of waters.

(3) The rigid application of uniform water quality is not desirable or reasonable because of the varying uses of such waters. The assimilative capacity of a stream for sewage and waste varies depending upon various factors and including the following: volume of flow, depth of channel, the presence of falls or rapids, rate of flow, temperature, natural characteristics, and the nature of the stream.

(4) In order to permit the reasonable and necessary uses of the Waters of the State, existing pollution should be corrected as rapidly as practicable, and future pollution prevented through the ~~best available technology economically achievable~~ level of treatment technology applicable to a specific source or that greater level of technology necessary to meet water quality standards; i.e., modeling and stream survey assessments, treatment plants or other control measures.

(5) Since all ~~Waters of the State~~ streams are classified for more than one use, the most stringent criteria will be applicable. ~~In cases where criteria for protection of more than one use apply at different stream flows (e.g., aquatic life versus recreation), the most protective will also be applicable.~~

(6) Waters identified as wet weather conveyances according to the definition found in Rule 0400-40-03-.04, shall be protective of humans and wildlife that may come in contact with them and shall not adversely affect the quality of downstream waters. Applicable water quality standards will be maintained downstream of wet weather conveyances.

(7) Where general water quality criteria are applied on a regional, ecoregional, or subecoregional basis, these criteria will be considered to apply to a stream if eighty percent (80%) of its watershed or catchment is contained within the unit upon which the criterion is based.

(8) All fish and aquatic life metals criteria are expressed as total recoverable, except cadmium, copper, lead, nickel, silver, and zinc which are expressed as dissolved. Translators will be used to convert the dissolved fraction into a total recoverable permit limit. One of three approaches to metals translation will be used: (1) translator is the same as the conversion factor, (2) translator is based on relationships derived from STORET data, (3) a site-specific translator is developed. Where available, a site-specific translator is preferred. For assessing whether criteria for cadmium, copper, lead, nickel, silver, and zinc are exceeded by ambient water quality conditions, the dissolved criteria will also be translated in order to allow direct comparison to the ambient data, if total recoverable. The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criteria (EPA-823-B-96-007) may be referenced in applying this provision.

(9) Site-specific numeric criteria studies may be conducted on any appropriate fish and aquatic life ~~criteria~~ criterion.

(a) Site-specific criteria studies based on a Water Effects Ratio (WER) calculated from the documented toxicity of a parameter in the stream in which it will be introduced may supersede the adopted criteria at a site. The Division shall approve a site-specific ~~criteria~~ criterion for metals developed by others provided that the WER methodology [Interim Guidance on Determination and Use of Water-effect Ratios for Metals (EPA-823-B-94-001)] or the Streamlined Water-effects Ratio Procedure for Discharges of Copper (EPA-822-R-01-001) is used, both the study plan and results are approved by the Department, and the U.S. Environmental Protection Agency has concurred with the final site specific criterion value(s).

(b) Any site specific criterion for other toxics based on methodologies other than the above-listed methodologies ~~WER methodology~~ which recalculate specific criterion, such as the Resident Species Method or the Recalculation Method or the Biotic Ligand Model (BLM) for copper, must be adopted as a revision to Tennessee water quality standards into this Chapter, and following EPA approval, can be used for Clean Water Act purposes.

References on this subject include, but are not limited to: Technical Support Document for Water Quality-based Toxics Control (EPA - 505/2-90-001); Technical Guidance Manual for Performing Waste Load Allocations: Book VIII (EPA/600/6-85/002a/002b/002c); MinteqA2, An Equilibrium Metal Speciation Model (EPA/600/3-87/012); Water Quality Standards Handbook, Second Edition (EPA-823-B-93-002); ~~The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criteria (EPA-823-B-96-007);~~ Interim Guidance on Determination and Use of Water-effect Ratios for Metals (EPA-823-B-94-001).

(10) Interpretation and application of narrative criteria shall be based on available scientific literature and EPA guidance and regulations.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

Rule 0400-40-03-.03 Criteria for Water Uses is amended by deleting it in its entirety and substituting instead the following:

(1) The criteria for the use of Domestic Water Supply are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not appreciably impair the usefulness of the water as a source of domestic water

supply.

(d) Total Dissolved Solids - The total dissolved solids shall at no time exceed 500 mg/l.

(e) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water as a source of domestic water supply.

(f) Turbidity or Color - There shall be no turbidity or color in amounts or characteristics that cannot be reduced to acceptable concentrations by conventional water treatment processes (See definition).

(g) Temperature - The maximum water temperature change shall not exceed 3°C relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2°C per hour. The temperature of impoundments where stratification occurs will be measured at a depth of 5 feet or mid-depth, whichever is less, and the temperature in flowing streams shall be measured at mid-depth.

(h) Coliform - The concentration of the E. coli group shall not exceed 630 colony forming units (cfu) per 100 ml as a geometric mean based on a minimum of 5 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purpose of determining the geometric mean, individual samples having an E. coli group concentration of less than 1 cfu per 100 ml shall be considered as having a concentration of 1 cfu per 100 ml.

(i) Taste or Odor - The waters shall not contain substances which will result in taste or odor that prevent the production of potable water by conventional water treatment processes.

(j) Toxic Substances - The waters shall not contain toxic substances, whether alone or in combination with other substances, which will produce toxic conditions that materially affect the health and safety of man or animals, or impair the safety of conventionally treated water supplies. Available references include, but are not limited to: Quality Criteria for Water (Section 304(a) of Public Law 92-500 as amended); Federal Regulations under Section 307 of Public Law 92-500 as amended; and Federal Regulations under Section 1412 of the Public Health Service Act as amended by the Safe Drinking Water Act, (Public Law 93-523). ~~Limits set for some of the most commonly occurring toxic substances are as follows:~~ In addition, the following numeric criteria are for the protection of domestic water supply:

Compound	Criteria (µg/L)	Compound	Criteria (µg/L)
Antimony	6	Diquat	20
Arsenic	10	Endothall	100
Beryllium	4	Glyphosate	700
Barium	2000	Hexachlorobenzene	1
Cadmium	5	Hexachlorocyclopentadiene	50
Chromium, total	100	Oxamyl (Vydate)	200
Lead	5	Picloram	500
Cyanide (as free cyanide)	200	Simazine	4
Mercury	2	2,3,7,8 TCDD (Dioxin)	0.00003
Nickel	100	Benzene	5
Selenium	50	Carbon tetrachloride	5
Thallium	2	1,2-Dichloroethane	5
Alachlor	2	1,1-Dichloroethylene	7
Atrazine	3	1,1,1-Trichloroethane	200
Carbofuran	40	Trichloroethylene	5
Chlordane	2	Vinyl chloride	2
Dibromo chloropropane	0.2	para-Dichlorobenzene	75

Compound	Criteria (µg/L)	Compound	Criteria (µg/L)
2,4 Dichlorophenoxyacetic Acid	70	cis 1,2-Dichloroethylene	70
Ethylene dibromide	0.05	1,2-Dichloropropane	5
Heptachlor	0.4	Ethyl benzene	700
Heptachlor epoxide	0.2	Monochlorobenzene	100
Lindane	0.2	ortho-Dichlorobenzene	600
Methoxychlor	40	Styrene	100
Polychlorinated biphenyls	0.5	Tetrachloroethylene	5
2,4,5 Trichlorophenoxyprioponic acid	50	Toluene	1000
		trans 1,2-Dichloroethylene	100
Pentachlorophenol	1	Xylenes, total	10000
Benzo(a)pyrene	0.2	Dichloromethane	5
Chlorobenzene	100	1,2,4-Trichlorobenzene	70
Dalapon	200	1,1,2-Trichloroethane	5
Di(2-ethylhexyl) adipate	400	Endrin	2.0
Di(2-ethylhexyl) phthalate	6	Toxaphene	3
Dinoseb	7	Nitrate	10000
		Nitrite	1000

(k) Other Pollutants - The waters shall not contain other pollutants in quantities that may be detrimental to public health or impair the usefulness of the water as a source of domestic water supply.

(2) The criteria for the use of Industrial Water Supply are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not appreciably impair the usefulness of the water as a source of industrial water supply.

(d) Total Dissolved Solids - The total dissolved solids shall at no time exceed 500 mg/l.

(e) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water as a source of industrial water supply.

(f) Turbidity or Color - There shall be no turbidity or color in amounts or characteristics that cannot be reduced to acceptable concentrations by conventional water treatment processes.

(g) Temperature - The maximum water temperature change shall not exceed 3°C relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2°C per hour. The temperature of impoundments where stratification occurs will be measured at a depth of 5 feet or mid- depth, whichever is less, and the temperature in flowing streams shall be measured at mid-depth.

(h) Taste or Odor - The waters shall not contain substances which will result in taste or odor that would prevent the use of the water for industrial processing.

(i) Toxic Substances - The waters shall not contain toxic substances whether alone or in combination with other substances, which will adversely affect industrial processing.

(j) Other Pollutants - The waters shall not contain other pollutants in quantities that may adversely affect the water for industrial processing.

(3) The criteria for the use of Fish and Aquatic Life are the following.

(a) Dissolved Oxygen - The dissolved oxygen shall not be less than 5.0 mg/l with the following exceptions.

1. In streams identified as trout streams, including tailwaters, dissolved oxygen shall not be less than 6.0 mg/L.

2. The dissolved oxygen concentration of trout waters ~~designated~~ identified as supporting a naturally reproducing population shall not be less than 8.0 mg/L. (Tributaries to trout streams or naturally reproducing trout streams should be considered to be trout streams or naturally reproducing trout streams, unless demonstrated otherwise. Additionally, all streams within the Great Smoky Mountains National Park should be considered naturally reproducing trout streams.)

3. In wadeable streams in subecoregion 73a, dissolved oxygen levels shall not be less than a daily average of 5.0 mg/L with a minimum dissolved oxygen level of 4.0 mg/L.

4. The dissolved oxygen level of streams in ecoregion 66 (Blue Ridge Mountains) not ~~designated~~ identified as naturally reproducing trout streams shall not be less than 7.0 mg/L.

Substantial and/or frequent variations in dissolved oxygen levels, including ~~diurnal~~ diel fluctuations, are undesirable if caused by man-induced conditions. ~~Diurnal~~ Diel fluctuations in wadeable streams shall not be substantially different than the fluctuations noted in reference streams in that region.

In lakes and reservoirs, the dissolved oxygen concentrations shall be measured at mid-depth in waters having a total depth of ten feet or less, and at a depth of five feet in waters having a total depth of greater than ten feet and shall not be less than 5.0 mg/L.

(b) pH - The pH value shall not fluctuate more than 1.0 unit over a period of 24 hours and shall not be outside the following ranges: 6.0 – 9.0 in wadeable streams and 6.5 – 9.0 in larger rivers, lakes, reservoirs, and wetlands.

(c) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life.

(d) Turbidity, Total Suspended Solids, or Color - There shall be no turbidity, total suspended solids, or color in such amounts or of such character that will materially affect fish and aquatic life. In wadeable streams, suspended solid levels over time should not be substantially different than conditions found in reference streams.

(e) Temperature - The maximum water temperature change shall not exceed 3°C relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2°C per hour. The temperature of recognized trout waters shall not exceed 20°C. There shall be no abnormal temperature changes that may affect aquatic life unless caused by natural conditions. The temperature in flowing streams shall be measured at mid-depth.

The temperature of impoundments where stratification occurs will be measured at mid-depth in the epilimnion (see definition in Rule 0400-40-03-.04) for warm water fisheries and mid-depth in the hypolimnion (see definition in Rule 0400-40-03-.04) for cold water fisheries. In the case of large impoundments (100 acres or larger) subject to stratification and recognized as trout waters, the temperature of the hypolimnion shall not exceed 20°C.

A successful demonstration as determined by the Department conducted for thermal discharge limitations under Section 316(a) of the Clean Water Act, (33 U.S.C. §1326), shall constitute compliance with this paragraph.

(f) Taste or Odor - The waters shall not contain substances that will impart unpalatable flavor to fish or result in noticeable offensive odors in the vicinity of the water or otherwise interfere with fish or aquatic life. References include, but are not limited to: Quality Criteria for Water (section 304(a) of Public Law 92-500 as amended).

(g) Toxic Substances - The waters shall not contain substances or a combination of substances including disease - causing agents which, by way of either direct exposure or indirect exposure through food chains, may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), physical deformations, or restrict or impair growth in fish or aquatic life or their offspring. References on this subject include, but are not limited to: Quality Criteria for Water (Section 304(a) of Public Law 92-500 as amended); Federal Regulations under Section 307 of Public Law 92-500 as amended. ~~The~~ In addition, the following numeric criteria are for the protection of fish and aquatic life:

Compound	Criterion Maximum Concentration µg/L (CMC)	Criterion Continuous Concentration µg/L (CCC)
Arsenic (III)* [1]	340	150
Cadmium** [2]	~~2.0~~ 1.8	~~0.25~~ 0.72
Chromium, III** [2]	570	74
Chromium, VI* [1]	16	11
Copper** [2]	13	9.0
Lead** [2]	65	2.5
Mercury* [1] (b)	1.4	0.77
Nickel**	470	52
Selenium (lentic)	20	~~5~~ 1.5 [3]
Selenium (lotic)	20	3.1 [3]
Silver** [2]	3.2	---
Zinc** [2]	120	120
Cyanide*** [4]	22	5.2
Chlorine (TRC)	19	11
Pentachlorophenol **** [5]	19	15
Acrolein	3.0	3.0
Aldrin	3.0	---
g-BHC – Lindane (b)	0.95	---
Carbaryl	2.1	2.1
Chlordane (b)	2.4	0.0043
Chlorpyrifos	0.083	0.041
4-4'-DDT (b)	1.1	0.001
Demeton	----	0.1
Diazinon	~~0.1~~ 0.17	~~0.1~~ 0.17
Dieldrin (b)	0.24	0.056
a-Endosulfan	0.22	0.056
b-Endosulfan	0.22	0.056
Endrin	0.086	0.036
Guthion	----	0.01
Heptachlor	0.52	0.0038
Heptachlor epoxide	0.52	0.0038
Malathion	----	0.1
Methoxyclor	----	0.03
Methoxyclor	----	0.001
Nonylphenol	28.0	6.6

Parathion	0.065	0.013
PCBs, total (b)	---	0.014
Toxaphene (b)	0.73	0.0002
Tributyltin (TBT)	0.46	0.072

(b) Bioaccumulative parameter.

* [1] Criteria for these metals are expressed as dissolved.

** [2] Criteria for these metals are expressed as dissolved and are a function of total hardness (mg/L). Hardness-dependent metals criteria may be calculated from the following (values displayed above correspond to a total hardness of 100 mg/l and may have been rounded):

CMC (dissolved) = exp{mA[ln(hardness)]+bA } (CF)

CCC (dissolved) = exp{mC [ln(hardness)]+bC} (CF)

Chemical	MA	bA	MC	BC	Freshwater Conversion Factors (CF)	
					CMC	CCC
Cadmium	~~1.0166~~ 0.9798	~~-3.924~~ -3.866	~~0.7409~~ 0.7977	~~-4.719~~ -3.909	1.136672-[(ln hardness)(0.041838)]	1.101672-[(ln hardness)(0.041838)]
Chromium III	0.8190	3.7256	0.8190	0.6848	0.316	0.860
Copper	0.9422	-1.700	0.8545	-1.702	0.960	0.960
Lead	1.273	-1.460	1.273	-4.705	1.46203-[(ln hardness)(0.145712)]	1.46203-[(ln hardness)(0.145712)]
Nickel	0.8460	2.255	0.8460	0.0584	0.998	0.997
Silver	1.72	-6.59			0.85	
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

If criteria are hardness-dependent, the Criterion Maximum Concentration (CMC) and Criterion Continuous Concentration (CCC) shall be based on the actual stream hardness. When an ambient hardness of less than 25 mg/L is used to establish criteria for cadmium or lead, the hardness dependent conversion factor (CF) shall not exceed one. When ambient hardness is greater than 400 mg/L, criteria shall be calculated according to one of the following two options: (1) calculate the criterion using a default Water Effects Ratio (WER) of 1.0 and a hardness of 400 mg/L in the hardness based equation; or (2) calculate the criterion using a WER and the actual ambient hardness of the surface water in the hardness based equation. For information concerning metals translation and site-specific criteria, see paragraph (9) of Rule 0400-40-03-.02.

[3] The numeric water criteria for selenium are applicable for all purposes, but for water quality assessment, fish tissue values may be used to confirm or refute impacts to aquatic life in accordance with and using the values from EPA's Final Criterion: Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater (June 30, 2016). However, a lack of fish tissue data or the absence of fish from a waterbody will not prevent it from being assessed as impaired if a numeric water concentration criterion is exceeded. Fish tissue concentration alone may be used to establish use impairment.

*** [4] If Standard Methods 4500-CN I (Weak Acid Dissociable), 4500-CN G (Cyanides Amenable to Chlorination after Distillation), or OIA-1677 are used, this criterion may be applied as free cyanide.

**** [5] Criteria for pentachlorophenol are expressed as a function of pH. Values displayed above correspond to a pH of 7.8 and are calculated as follows:

CMC = exp(1.005(pH) - 4.869) CCC = exp(1.005(pH) - 5.134)

(h) Other Pollutants - The waters shall not contain other pollutants that will be detrimental to fish or aquatic life.

(i) Iron – The waters shall not contain iron at concentrations that cause toxicity or in such amounts that interfere with habitat due to precipitation or bacteria growth.

(j) Ammonia – The ~~one-hour average~~ concentration of total ammonia nitrogen (in mg N/L) shall not exceed the CMC (acute criterion) calculated using the following ~~equations~~ equation:

~~Where salmonid fish are present:~~

$$CMC = \frac{0.275}{1 + 10^{7.204-pH}} + \frac{39.0}{1 + 10^{pH-7.204}}$$

~~Or where salmonid fish are not present:~~

$$CMC = \frac{0.411}{1 + 10^{7.204-pH}} + \frac{58.4}{1 + 10^{pH-7.204}}$$

$$CMC = MIN\left(\left(\frac{0.275}{1 + 10^{7.204-pH}} + \frac{39.0}{1 + 10^{pH-7.204}}\right), \left(0.7249 \times \left(\frac{0.0114}{1 + 10^{7.204-pH}} + \frac{1.6181}{1 + 10^{pH-7.204}}\right) \times \left(23.12 \times 10^{0.036 \times (20-T)}\right)\right)\right)$$

The ~~thirty~~ 30-day average concentration of total ammonia nitrogen (in mg N/L) shall not exceed the CCC (chronic criterion) calculated using the following ~~equations~~ equation:

~~When fish early life stages are present:~~

$$CCC = \left[\frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}}\right] \cdot MIN\left(2.85, 1.45 \cdot 10^{0.028 \cdot (25-T)}\right)$$

~~When fish early life stages are absent:~~

$$CCC = \left[\frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}}\right] \cdot 1.45 \cdot 10^{0.028 \cdot (25-MAX(T,7))}$$

$$CCC = 0.8876 \times \left(\frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}}\right) \times \left(2.126 \times 10^{0.028\times(20-MAX(T,7))}\right)$$

In addition, the highest four-day average within the 30-day period shall not exceed 2.5 times the CCC.

(k) Nutrients - The waters shall not contain nutrients in concentrations that stimulate aquatic plant and/or algae growth to the extent that aquatic habitat is substantially reduced and/or the biological integrity fails to meet regional goals. Additionally, the quality of downstream waters shall not be detrimentally affected. Interpretation of this provision may be made using the document Development of Regionally-based Interpretations of Tennessee's Narrative Nutrient Criterion and/or other scientifically defensible methods.

Examples of parameters associated with the criterion include but are not limited to: nitrogen, phosphorus, potassium, calcium, magnesium, and various forms of each.

(l) Coliform - The concentration of the E. coli group shall not exceed 630 cfu per 100 ml as a geometric mean based on a minimum of 5 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purposes of determining the geometric mean, individual samples having an E. coli group concentration of less than 1 cfu per 100 ml shall be considered as having a concentration of 1 cfu per 100 ml. In addition, the concentration of the E. coli group in any individual sample shall not exceed 2,880 cfu per 100 ml.

(m) Biological Integrity - The waters shall not be modified through the addition of pollutants or through physical alteration to the extent that the diversity and/or productivity of aquatic biota within the receiving waters are substantially decreased or, in the case of wadeable streams, substantially different from conditions in reference streams in the same ecoregion. The parameters associated with this criterion are the aquatic biota measured. These are response variables.

Interpretation of this provision for any stream which (a) has at least 80% of the upstream catchment area contained within a single bioregion and (b) is of the appropriate stream order specified for the bioregion and (c) contains the habitat (riffle or rooted bank) specified for the bioregion, may be made using ~~the most current revision of the Department's~~ protocols found in TDEC's 2017 Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys and/or other scientifically defensible methods.

Interpretation of this provision for all other wadeable streams, lakes, and reservoirs may be made using Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers (EPA/841-B-99-002) or Lake and Reservoir Bioassessment and Biocriteria (EPA 841-B-98-007), and/or other scientifically defensible methods. Interpretation of this provision for wetlands or large rivers may be made using scientifically defensible methods. Effects to biological populations will be measured by comparisons to upstream conditions or to appropriately selected reference sites in the same bioregion if upstream conditions are determined to be degraded.

(n) Habitat - The quality of stream habitat shall provide for the development of a diverse aquatic community that meets regionally-based biological integrity goals. Examples of parameters associated with this criterion include but are not limited to: sediment deposition, embeddedness of riffles, velocity/depth regime, bank stability, and vegetative protection. Types of activities or conditions which can cause habitat loss include, but are not limited to: channel and substrate alterations, rock and gravel removal, stream flow changes, accumulation of silt, precipitation of metals, and removal of riparian vegetation. For wadeable streams, the in stream habitat within each subecoregion shall be generally similar to that found at reference streams. However, streams shall not be assessed as impacted by habitat loss if it has been demonstrated that the biological integrity goal has been met.

(o) Flow – Stream or other waterbody flows shall support the fish and aquatic life criteria.

(4) The criteria for the use of Recreation are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to recreation.

(d) Total Suspended Solids, Turbidity or Color - There shall be no total suspended solids, turbidity or color in such amounts or character that will result in any objectionable appearance to the water, considering the nature and location of the water.

(e) Temperature - The maximum water temperature change shall not exceed 3°C relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2°C per hour. The temperature of impoundments where stratification occurs will be measured at a depth of 5 feet, or mid- depth whichever is less, and the temperature in flowing streams shall be measured at mid-depth.

(f) Coliform - The concentration of the E. coli group shall not exceed 126 cfu ~~colony forming units~~ per 100 ml, as a geometric mean based on a minimum of 5 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purposes of determining the geometric mean, individual samples having an E. coli concentration of less than 1 cfu per 100 ml shall be considered as having a concentration of 1 cfu per 100 ml.

Additionally, the concentration of the E. coli group in any individual sample taken from a lake, reservoir, State Scenic River, Exceptional Tennessee Water or ONRW (0400-40-03-.06) shall not exceed 487 cfu ~~colony forming units~~ per 100 ml. The concentration of the E. coli group in any individual sample taken from any other waterbody shall not exceed 941 cfu ~~colony forming units~~ per 100 ml.

(g) Taste or Odor - The waters shall not contain substances that will result in objectionable taste or odor.

(h) Nutrients - The waters shall not contain nutrients in concentrations that stimulate aquatic plant and/or algae growth to the extent that the public's recreational uses of the waterbody or other downstream waters are detrimentally affected. Unless demonstrated otherwise, the nutrient criteria found in subparagraph (3)(k) of this rule will be considered adequately protective of this use.

(i) Nutrient Response Criteria for Pickwick Reservoir: those waters impounded by Pickwick Dam on the Tennessee River. The reservoir has a surface area of 43,100 acres at full pool, 9,400 acres of which are within Tennessee. Chlorophyll *a* (corrected, as described in Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998): the mean of the photic-zone (See definition) composite chlorophyll *a* samples collected monthly April through September shall not exceed 18 µg/L, as measured over the deepest point, main river channel, dam forebay.

(j) Toxic Substances - The waters shall not contain toxic substances, whether alone or in combination with other substances, that will render the waters unsafe or unsuitable for water contact activities including the capture and subsequent consumption of fish and shellfish, or will propose toxic conditions that will adversely affect man, animal, aquatic life, or wildlife. Human health criteria have been derived to protect the consumer from consumption of contaminated fish and water. The water and organisms criteria should only be applied to those waters classified for both recreation and domestic water supply. ~~The criteria for recreation are as follows:~~ In addition, the following numeric criteria are for the protection of recreation:

Compound	Water & Organisms Criteria *[1] (µg/L)	Organisms Only Criteria (µg/L)
INORGANICS		
Antimony	5.6	640
Arsenic (c)	10.0	10.0
Mercury (b)	0.05	0.051
Nickel	610	4600
Thallium	0.24	0.47
Cyanide	140	140
Selenium	170	4200
Zinc	7400	26000
Dioxin **[2] (b)	0.000001	0.000001
VOLATILES		
Acrolein	6	9
Acrylonitrile (c)	0.51	2.5
Benzene (c)	22	510
Bromoform (c)	43	1400
Carbon tetrachloride (c)	2.3	16
Chlorobenzene	130	1600
Chlorodibromomethane (c)	4.0	130
Chloroform (c)	57	4700
Dichlorobromomethane (c)	5.5	170
1,2-Dichloroethane (c)	3.8	370
1,1-Dichloroethylene	330	7100
1,2-Dichloropropane (c)	5.0	150
1,3-Dichloropropene (c)	3.4	210
Ethylbenzene	530	2100
Methyl bromide	47	1500
Methylene chloride (c)	46	5900
1,1,2,2-Tetrachloroethane (c)	1.7	40
Tetrachloroethylene (c)	6.9	33
Toluene	1300	15000
1,2-Trans-Dichloroethylene	140	10000
1,1,2-Trichloroethane (c)	5.9	160
Trichloroethylene (c)	25	300
Vinyl chloride (c)	0.25	24

Compound	Water & Organisms Criteria *[1] (µg/L)	Organisms Only Criteria (µg/L)
ACID EXTRACTABLES		
2-Chlorophenol	81	150
2,4-Dichlorophenol	77	290
2,4-Dimethylphenol	380	850
2-Methyl-4,6-dinitrophenol	13	280
Dinitrophenols	69	5300
Pentachlorophenol (c) (pH)	2.7	30
Phenol	10000	860000
2,4,6-Trichlorophenol (c)	14	24
BASE NEUTRALS		
Acenaphthene	670	990
Anthracene	8300	40000
Benzidine (c)	0.00086	0.0020
Benzo(a)anthracene (c)	0.038	0.18
Benzo(a)pyrene (c)	0.038	0.18
Benzo(b)fluoranthene (c)	0.038	0.18
Benzo(k)fluoranthene (c)	0.038	0.18
Bis(2-Chlorethyl)ether (c)	0.30	5.3
Bis(2-Chloro-isopropyl)ether	1400	65000
Bis(2-Ethylhexyl)phthalate (c)	12	22
Bis(Chloromethyl)ether (c)	0.0010	0.0029
Butylbenzyl Phthalate (c)	1500	1900
2-Chloronaphthalene	1000	1600
Chrysene (c)	0.038	0.18
Dibenz(a,h)Anthracene (c)	0.038	0.18
1,2-Dichlorobenzene	420	1300
1,3-Dichlorobenzene	320	960
1,4-Dichlorobenzene	63	190
3,3-Dichlorobenzidine (c)	0.21	0.28
Diethyl phthalate	17000	44000
Dimethyl phthalate	270000	1100000
Di-n-butyl phthalate	2000	4500
2,4-Dinitrotoluene (c)	1.1	34
1,2-Diphenylhydrazine (c)	0.36	2.0
Fluoranthene	130	140
Fluorene	1100	5300
Hexachlorobenzene (b)(c)	0.0028	0.0029
Hexachlorobutadiene (b)(c)	4.4	180
Hexachlorocyclohexane-Technical (b)(c)	0.123	0.414
Hexachlorocyclopentadiene	40	1100
Hexachloroethane (c)	14	33
Ideno(1,2,3-cd)Pyrene (c)	0.038	0.18
Isophorone (c)	350	9600
Nitrobenzene	17	690
Nitrosamines	0.0008	1.24
Nitrosodibutylamine (c)	0.063	2.2
Nitrosodiethylamine (c)	0.008	2.4
Nitrosopyrrolidine (c)	0.16	340
N-Nitrosodimethylamine (c)	0.0069	30
N-Nitrosodi-n-Propylamine (c)	0.05	5.1
N-Nitrosodiphenylamine (c)	33	60

Compound	Water & Organisms Criteria *[1] (µg/L)	Organisms Only Criteria (µg/L)
Pyrene	830	4000
Pentachlorobenzene (b)	1.4	1.5
1,2,4,5-Tetrachlorobenzene (b)	0.97	1.1
1,2,4-Trichlorobenzene	35	70
2,4,5-Trichlorophenol	1800	3600
PESTICIDES		
Aldrin (c)	0.00049	0.00050
a-BHC (c)	0.026	0.049
b-BHC (c)	0.091	0.17
g-BHC - Lindane (b)	0.98	1.8
Chlordane (b)(c)	0.0080	0.0081
4-4'-DDT (b)(c)	0.0022	0.0022
4,4'-DDE (b)(c)	0.0022	0.0022
4,4'-DDD (b)(c)	0.0031	0.0031
Dieldrin (b)(c)	0.00052	0.00054
a-Endosulfan	62	89
b-Endosulfan	62	89
Endosulfan Sulfate	62	89
Endrin	0.059	0.06
Endrin Aldehyde	0.29	0.30
Heptachlor (c)	0.00079	0.00079
Heptachlor epoxide (c)	0.00039	0.00039
PCB, total (b)(c)	0.00064	0.00064
Toxaphene (b)(c)	0.0028	0.0028

(b) Bioaccumulative parameter.

(c) Carcinogenic pollutant. 10^{-5} risk level is used for all carcinogenic pollutants.

* [1] These criteria are for protection of public health due to consumption of water and organisms and should only be applied to these waters designated for both recreation and domestic water supply.

** [2] Total dioxin is the sum of the concentrations of all dioxin and dibenzofuran isomers after multiplication by Toxic Equivalent Factors (TEFs). Following are the TEFs currently recommended by EPA (subject to revision):

DIOXIN ISOMERS	TEF	FURAN ISOMERS	TEF
Mono-, Di-, & TriCDDs	0.0	Mono-, Di-, & TriCDFs	0.0
2,3,7,8 TCDD	1.0	2,3,7,8 TCDF	0.1
Other TCDDs	0.0	Other TCDFs	0.0
1,2,3,7,8 PeCDD	~~0.5~~ 1.0	1,2,3,7,8 PeCDF	~~0.05~~ 0.03
Other PeCDDs	0.0	2,3,4,7,8 PeCDF	~~0.5~~ 0.3
		Other PeCDFs	0.0
1,2,3,4,7,8 HxCDD	0.1	~~Other PeCDFs~~ 1,2,3,4,7,8 HxCDF	~~0.0~~ 0.1

1,2,3,6,7,8 HxCDD	0.1	1,2,3,6,7,8 HxCDF	0.1
1,2,3,7,8,9 HxCDD	0.1	1,2,3,7,8,9 HxCDF	0.1
Other HxCDDs	0.0	2,3,4,6,7,8 HxCDF	0.1
		Other HxCDFs	0.0
1,2,3,4,6,7,8 HpCDD	0.01	1,2,3,4,6,7,8 HpCDF	0.01
		1,2,3,4,7,8,9 HpCDF	0.01
Other HpCDDs	0.0	Other HpCDFs	0.0
OCDD	~~0.001~~ 0.0003	OCDF	~~0.001~~ 0.0003

(k) Other Pollutants - The waters shall not contain other pollutants in quantities which may have a detrimental effect on recreation.

(l) Fish Consumption Advisories - A public fishing advisory will be considered when the calculated risk of additional cancers exceeds 10-4 for typical consumers or 10-5 for atypical consumers (See definition). A "do not consume" advisory will be issued for the protection of typical consumers and a "precautionary advisory" will be issued for the protection of atypical consumers. The following formula will be used to calculate the risk of additional cancers, using the current risk calculation factors and assumptions used by EPA unless better site-specific information is available:

R = qE

where:

R= Plausible-upper-limit risk of cancer associated with a chemical in a fisheries species for a human subpopulation.

q = Carcinogenic Potency Factor for the chemical (mg kg-1 day-1)-1 estimated as the upper 95% confidence limit of the slope of a linear dose-response curve. Scientifically defensible Potency Factors will be used.

E = Exposure dose of the chemical (mg kg-1 day-1) from the fish species for the human subpopulation in the area. E is calculated by the following formula:

$$E = \frac{C \; I \; X}{W}$$ where:

C = Concentration of the chemical (mg/kg) in the edible portion of the species in the area. The average levels from multiple fillet samples of the same species will be used. Catfish will be analyzed skin-off with the belly flap included in the sample. Gamefish and carp will be analyzed skin-on with the belly flap included in the sample. Sizes of fish collected for analysis will represent the ranges of sizes likely to be collected and consumed by the public. References on this subject include, but are not limited to: EPA's Guidance for Assessing Chemical Contaminant Data for use in Fish Advisories.

I = Mean daily consumption rate (g/day averaged over 70 year lifetime) of the fish species by the human subpopulation in the area. ~~6.5 g/day will be used unless better site-specific information is available.~~

X = Relative absorption coefficient, or the ratio of human absorption efficiency to test animal absorption efficiency of the chemical. ~~Assumed to be 1.0 unless better information is available.~~

W = Average human mass (kg). ~~75 kg will be used.~~

For substances for which the public health concern is based on toxicity, a "do not consume" advisory will be considered warranted when average levels of the substance in the edible portion of fish exceed U.S. Food and Drug Administration (FDA) Action Levels or EPA national criteria. Based on the rationale used by FDA or EPA for their levels, the Commissioner may issue precautionary advisories at levels appropriate to protect sensitive populations.

(m) Flow – Stream flows shall support recreational uses.

(5) The criteria for the use of Irrigation are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not impair its use for irrigation.

(d) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water for irrigation purposes.

(e) Temperature - The temperature of the water shall not interfere with its use for irrigation purposes.

(f) Toxic Substances - The waters shall not contain toxic substances whether alone or in combination with other substances which will produce toxic conditions that adversely affect the quality of the waters for irrigation.

(g) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detrimental to the waters used for irrigation.

(6) The criteria for the use of Livestock Watering and Wildlife are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not impair its use for livestock watering and wildlife.

(d) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as to interfere with livestock watering and wildlife.

(e) Temperature - The temperature of the water shall not interfere with its use for livestock watering and wildlife.

(f) Toxic Substances - The waters shall not contain substances whether alone or in combination with other substances, which will produce toxic conditions that adversely affect the quality of the waters for livestock watering and wildlife.

(g) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detrimental to the water for livestock watering and wildlife.

(7) The criteria for the use of Navigation are the following.

(a) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as to interfere with navigation.

(b) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detrimental to the waters used for navigation.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

Rule 0400-40-03-.04 Definitions is amended by deleting it in its entirety and substituting instead the following:

In addition to the meanings provided in the Water Quality Control Act (T.C.A. § 69-3-103), terms used in these rules shall mean the following:

(1) Atypical consumers - Those persons in the vicinity of a stream or lake who due to physiological factors or previous exposure are more sensitive to specific pollutants than is the population in general. Examples of atypical consumers may include, but are not limited to: children; pregnant or nursing women; subsistence fishermen; frequent purchasers of commercially harvested fish; and agricultural, industrial, or military personnel who may have had previous occupational exposure to the contaminant of concern.

(2) Conventional Water Treatment - Conventional water treatment as referred to in the criteria denotes coagulation, sedimentation, filtration, and chlorination or disinfection.

(3) Degradation - The alteration of the properties of waters by the addition of pollutants, withdrawal of water, or removal of habitat, except those alterations of a short duration.

(4) De Minimis degradation – Degradation of a small magnitude, as provided in this paragraph.

(a) Discharges and withdrawals

1. Subject to the limitation in part 3 of this subparagraph, a single discharge ~~other than those from new domestic wastewater sources~~ will be considered de minimis if it uses less than five percent of the available assimilative capacity for the substance being discharged.

(Note: Consistent with T.C.A. § 69-3-108, special consideration will be given to bioaccumulative substances to confirm the effect is de minimis, even if they are less than five percent (5%) of the available assimilative capacity.)

2. Subject to the limitation in part 3 of this subparagraph, a single water withdrawal will be considered de minimis if it removes less than five percent of the 7Q10 flow of the stream.

3. If more than one activity described in part 1 or 2 of this subparagraph has been authorized in a segment and the total of the authorized and proposed impacts uses no more than 10% of the assimilative capacity, or 7Q10 low flow, they are presumed to be de minimis. Where the total of the authorized and proposed impacts uses 10% of the assimilative capacity, or 7Q10 low flow, additional degradation may only be treated as de minimis if the Division finds on a scientific basis that the additional degradation has an insignificant effect on the resource.

(b) Habitat alterations authorized by an Aquatic Resource Alteration Permit (ARAP) are de minimis if the Division finds that the impacts, individually and cumulatively are offset by impact minimization and/or in-system mitigation, provided however, in ONRWs the mitigation must occur within the ONRW.

(5) Domestic wastewater discharge – A discharge of sanitary and other non-process wastewater from a treatment facility other than a publicly-owned treatment works (POTW) treating municipal sewage and/or

industrial waste. Examples of domestic wastewater discharges include, but are not limited to, homes, subdivisions, campgrounds, hotels, travel centers, parks, and schools.

~~(5)~~(6) Ecoregion - A relatively homogeneous area defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables.

~~(6)~~(7) Epilimnion – The upper layer of water in a thermally stratified lake or reservoir. This layer consists of the warmest water and has a fairly uniform (constant) temperature.

~~(7)~~(8) Ground water – Water beneath the surface of the ground within the zone of saturation, whether or not flowing through known and definite channels.

~~(8)~~(9) Ground water table – The upper surface of the zone of saturation by ground water.

~~(9)~~(10) Hypolimnion – The lowest layer in a thermally stratified lake or reservoir. This layer consists of colder, more dense water, has a constant temperature and no mixing occurs. The hypolimnion of a eutrophic lake is usually low or lacking in oxygen.

~~(10)~~(11) Interflow – The runoff infiltrating into the surface soil and moving toward streams as shallow, perched water above the main ground-water level.

(12) In-system mitigation – mitigation for habitat alterations sufficient to result in no overall net loss of resource values, if provided in the same eight-digit hydrologic unit code as the alteration, or in another area proximate to the alteration as approved by the division to offset the loss of resource values in the area. In-system mitigation may not occur within a different major river drainage basin as the alteration (*i.e.*, Tennessee River, Cumberland River, Mississippi River).

(13) Lentic – Still water aquatic ecosystems such as ponds, lakes, or reservoirs.

(14) Lotic – Flowing water aquatic ecosystems such as streams and rivers.

~~(11)~~(15) Measurable degradation, as used in the context of discharges or withdrawals – Changes in parameters of waters that are of sufficient magnitude to be detectable by the best available instrumentation or laboratory analyses.

(Note: Because analytical techniques change, the Department may consider either the most sensitive detection method needed to comply with state standards or any biological, chemical, physical, or analytical method, conducted in accordance with U.S. EPA approved methods as identified in 40 C.F.R. part 136. Consistent with T.C.A. § 69-3-108, for scenarios involving cumulative, non-measurable activities or parameters that are managed by a narrative criterion, the Department will use mathematical models and ecological indices to ensure no degradation will result from the authorization of such activities, consistent with the state's mixing zone policy.)

(16) Minimum Level (ML) – a term referring to the lowest sample concentration at which reliable quantitative measurements can be made as defined in Appendix A of 40 C.F.R. part 136 (2018).

~~(12)~~(17) Mixing Zone - That section of a flowing stream or impounded waters in the immediate vicinity of an outfall where an effluent becomes dispersed and mixed.

~~(13)~~(18) Multiple populations – Two or more individuals from each of two or more distinct taxa, in the context of obligate lotic aquatic organisms.

(19) New or increased discharge – A new discharge of pollutants to waters of the state or an increase in the authorized loading of a pollutant above either (1) numeric effluent limitations established in a National Pollutant Discharge Elimination System permit for that discharge, or (2) if no such limitations exist, the actual discharges of that pollutant.

~~(14)~~(20) Normal weather conditions – Those within one standard deviation of the cumulative monthly precipitation means for at least the three months prior to the hydrologic determination investigation, based on a 30-

year average computed at the end of each decade. Precipitation data shall come from National Oceanographic and Atmospheric Agency's National Climatic Data Center, National Resources Conservation Service's National Climatic Data Center, Natural Resources Conservation Service's National Water and Climate Center, or other well-established weather station.

~~(15)~~(21) Obligate lotic aquatic organisms - Organisms that require flowing water for all or almost all of the aquatic phase of their life cycles.

~~(16)~~(22) Parameter – A biological, chemical, radiological, bacteriological, or physical property of water that can be directly measured. Some criteria are expressed in terms of a single parameter; others, such as habitat, nutrients, and biological integrity are not directly measured, but are derived from measurements of parameters.

~~(17)~~(23) Perched water – Water that accumulates above an aquitard that limits downward migration where there is an unsaturated interval below it, between the aquitard and the zone of saturation.

~~(18)~~(24) Photic Zone - the region of water through which light penetrates and where photosynthetic organisms live.

~~(19)~~(25) Reference condition - A parameter-specific set of data from regional reference sites that establish the statistical range of values for that particular substance at least-impacted streams.

~~(20)~~(26) Reference Site - Least impacted waters within an ecoregion that have been monitored to establish a baseline to which alterations of other waters can be compared.

(27) Resource values – The physical, chemical, and biological properties of the water resource that help maintain classified uses. These properties may include, but are not limited to, the ability of the water resource to:

(a) filter, settle, and/or eliminate pollutants;

(b) prevent the entry of pollutants into downstream waters;

(c) assist in flood prevention;

(d) provide habitat for fish, aquatic life, and wildlife;

(e) provide drinking water for wildlife and livestock;

(f) provide and support recreational and navigational uses; and

(g) provide both safe quality and adequate quantity of water for domestic water supply and other applicable classified uses.

~~(21)~~(28) Response Variable – a characteristic of water quality that can be measured and changes as a result of an alteration of habitat, water withdrawal, or discharge of pollutants, as distinguished from agents that cause changes in aquatic systems.

(29) Significant degradation – an appreciable permanent loss of resource values resulting from a habitat alteration in a waterbody with unavailable parameters for habitat, unless mitigation sufficient to ensure no overall net loss of resource values is provided.

~~(22)~~(30) Stratification – The tendency in lakes and reservoirs for distinct layers of water to form as a result of vertical change in temperature and, therefore, in the density of water. During stratification, dissolved oxygen, nutrients, and other parameters of water chemistry do not mix well between layers, establishing chemical as well as thermal gradients.

~~(23)~~(31) Stream - A surface water that is not a wet weather conveyance.

~~(24)~~(32) Subecoregion - A smaller, more homogenous area that has been delineated within an ecoregion.

~~(25)~~(33) Thermocline – The middle layer in a thermally stratified lake or reservoir. In this layer there is a rapid decrease in temperature with depth. Also called the metalimnion.

~~(26)~~(34) Wadeable streams - Streams that can be sampled using a hand held, one meter square or smaller kick net without water and materials escaping over the top of the net.

~~(27)~~(35) Watercourse - A man-made or natural hydrologic feature with a defined linear channel which discretely conveys flowing water, as opposed to sheet-flow.

~~(28)~~(36) Wet weather conveyance - Man-made or natural watercourses, including natural watercourses that have been modified by channelization:

(a) That flow only in direct response to precipitation runoff in their immediate locality;

(b) Whose channels are at all times above the ground water table;

(c) That are not suitable for drinking water supplies; and

(d) In which hydrological and biological analyses indicate that, under normal weather conditions, due to naturally occurring ephemeral or low flow there is not sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months.

~~(29)~~(37) Wet weather conveyance determination - The decision based on site specific information of whether a particular watercourse is a stream or a wet weather conveyance. It is synonymous with "stream determination" and "hydrologic determination."

~~(30)~~(38) Zone of saturation – A subsurface zone below the ground water table in which all of the interconnected voids and pore spaces are filled with water.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

Rule 0400-40-03-.05 Interpretation of Criteria is amended by deleting it in its entirety and substituting instead the following:

0400-40-03-.05 Interpretation of Criteria

(1) Interpretation of the above criteria shall conform to any rules and regulations or policies adopted by the Board of Water Quality, Oil and Gas.

(2) ~~The~~ For measuring compliance with permit conditions, the effect of treated sewage or waste discharge on the receiving waters shall be considered beyond the mixing zone except as provided in this paragraph. ~~The extent to which this is practicable depends upon local conditions and the proximity and nature of other uses of the waters.~~ Such mixing zones (See definition) shall be restricted in area and length; and shall not (a) prevent the free passage of fish or cause aquatic life mortality in the receiving waters; (b) contain materials in concentrations that exceed acute criteria beyond the zone immediately surrounding the outfall; (c) result in ~~offensive~~ objectionable colors, odors, or other conditions; (d) produce undesirable aquatic life or result in dominance of a nuisance species; (e) endanger the public health or welfare; or (f) ~~adversely affect the reasonable and necessary~~ impair classified uses ~~of the area~~; (g) create a condition of chronic toxicity beyond the edge of the mixing zone; (h) adversely affect nursery and spawning areas; or (i) adversely affect species with special state or federal status. Mixing zones shall not apply to the discharge of bioaccumulative pollutants to waters of the state where the risk-based factors in Rule 0400-40-03-.03(4)(l) are exceeded for the pollutant group.

(3) ~~The technical and economical feasibility of waste treatment, recovery, or adjustment of the method of discharge to provide correction shall be considered in determining the time to be allowed for the development of practicable methods and for the specified correction, to the extent allowable under paragraph (5) of Rule 0400-40-03-.06~~ Permits for the discharge of pollutants may establish a schedule of

compliance when necessary to allow a reasonable opportunity to comply with these water quality standards. When the division establishes a compliance schedule, it shall consider the technical and economic feasibility of waste treatment, recovery, or adjustment of the method of discharge. Any such schedule of compliance shall require compliance with an enforceable final effluent limitation as soon as possible and include a final compliance date. If compliance will take longer than one year, the schedule of compliance shall establish enforceable interim requirements, establish dates for compliance with these requirements that are no longer than one year apart, and require reporting of interim compliance actions within fourteen days of the applicable deadline. If the time necessary for completion of any requirement is more than one year and the requirement is not readily divisible into stages for completion, the permit shall require, at a minimum, specified dates for annual submission of progress reports on the status of interim requirements.

(4) Water quality criteria for fish and aquatic life and livestock watering and wildlife set forth shall generally be applied in permits on the basis of the following stream flows: unregulated streams - stream flows equal to or exceeding the 7-day minimum, 10-year recurrence interval; regulated streams - all flows in excess of the minimum critical flow occurring once in ten years as determined by the Division. ~~However, criteria that are wholly or partially based on measurements of ambient aquatic community health, such as the nutrient, biological integrity, and habitat criteria for the fish and aquatic life use, shall support the designated use. These criteria should be considered independent of a specified minimum flow duration and recurrence.~~ All other criteria shall be applied in permits on the basis of stream flows equal to or exceeding the 30 day minimum 5 year recurrence interval.

(5) In general, deviations from normal water conditions are undesirable, but the frequency, magnitude and duration of the deviations shall be considered in interpreting the above criteria in assessing use support. Excursions from water quality criteria of a magnitude, frequency, and/or duration such that a specific use classification is no longer supported by existing water quality is the condition of impairment. When interpreting pathogen data, samples collected during or immediately after significant rain events may be treated as outliers unless caused by point source dischargers. Such outlier data may be given less weight in assessment decisions than non-rain event sampling results.

(6) ~~The criteria and standards provide that all~~ All discharges of sewage, industrial waste, and other waste shall receive the degree of treatment or effluent reduction necessary to comply with water quality standards, or state or federal laws and regulations pursuant thereto, and where appropriate will comply with the "Standards of Performance" as required by the Tennessee Water Quality Control Act, (T.C.A., §§ 69-3-101, et seq.).

(7) Where naturally formed conditions (e.g., geologic formations) or background water quality conditions are substantial impediments to attainment of the water quality standards, these natural or background conditions shall be taken into consideration in establishing any effluent limitations or restrictions on discharges to such waters. For purposes of water quality assessment, with the exception of pathogens, exceedances of water quality standards caused by natural conditions will not be considered the condition of ~~pollution~~ impairment. Examples of natural conditions include alterations caused by beaver activity, non-construction related rockslides of pyritic materials, and groundwater with naturally elevated metals or low dissolved oxygen levels.

~~(8) There are cases in which the in-stream criteria as established by this rule are less than current chemical technological capabilities for analytical detection. In instances where permit limits established through implementation of these criteria are below analytical capabilities, compliance with those limits will be determined using the following reporting limits, unless in specific cases other reporting limits are demonstrated to be the best achievable because of the particular nature of the wastewater being analyzed. Such a demonstration shall be made at the time results are submitted and shall affirm that using methods, personnel, training, and equipment appropriate to reach applicable RRLs, the laboratory was unable to do so due to the nature of the sample. The methods, equipment, and general nature of the interference shall be provided. Inability to accurately quantify the level of a contaminant shall not be acceptable grounds for a higher reporting level if the permit requirement is based on detection/non-detection.~~

~~REQUIRED REPORTING LEVELS [RRL] (µg/L)~~

Approved EPA Methods Must Be Used)

INORGANICS	RRL
Antimony	3.0
Arsenic, total (c)	1.0
Arsenic (III) (c)	1.0
Beryllium (c)	1.0
Cadmium	1.0
Chromium, total	1.0
Chromium (III)	1.0
Chromium (VI)	10.0
Copper	1.0
Lead	1.0
Mercury	0.2
Nickel	10.0
Selenium	2.0
Silver	1.0
Zinc	1.0
Cyanide	5.0
Dioxin	0.00001

BASE NEUTRALS	RRL
Acenaphthylene (c)	2.3
Anthracene	0.7
Benzo(a)anthracene (c)	0.3
Benzo(a)pyrene (c)	0.3
3,4-Benzofluoranthene (c)	0.3
Benzo(k)fluoranthene (c)	0.3
Bis(2-Chloroethyl)ether (c)	1.0
Bis(2-Ethylhexyl)phthalate(c)	2.5
Chrysene	2.5
1,2-Dichlorobenzene	2.0
1,3-Dichlorobenzene	2.0
1,4-Dichlorobenzene - para-Dichlorobenzene	4.4
Diethyl phthalate	1.9
Dimethyl phthalate	1.6
Di-n-Butyl phthalate	2.5
2,4-Dinitrotoluene (c)	1.0
Fluoranthene	2.2

INORGANICS	RRL
VOLATILES	
Acrolein	1.0
Acrylonitrile (c)	1.0
Benzene (c)	1.0
Bromoform - Tribromomethane (c)	1.0
Carbon tetrachloride (c)	1.0
Chloroform - Trichloromethane (c)	0.5
Dichlorobromomethane (c)	1.0
1,2-Dichloroethane (c)	1.0
1,1-Dichloroethylene (c)	1.0
1,3-Dichloropropylene	1.0
Ethylbenzene	1.0
Methyl chloride - Chloromethane (c)	1.0
Methylene chloride - Dichloromethane (c)	1.0
1,1,2,2-Tetrachloroethane (c)	0.5
Tetrachloroethylene (c)	0.5
Toluene	1.0
1,1,1-Trichloroethane	1.0
1,1,2-Trichloroethane (c)	0.2
Trichloroethylene (c)	1.0
Vinyl chloride (c)	2.0

BASE NEUTRALS	RRL
Fluorene	0.3
Hexachlorobenzene (c)	1.9
Hexachlorobutadiene (c)	5.0
Hexachloroethane (c)	0.5
Nitrobenzene	10.0
Phenanthrene	0.7
Pyrene	0.3
PESTICIDES	
Aldrin (c)	0.5
g-BHC - Lindane (c)	0.5
Chlordane (c)	0.1
4-4'-DDT (c)	0.1
4,4'-DDE (c)	0.1
4,4'-DDD (c)	0.1
Dieldrin (c)	0.05
a-Endosulfan	0.1
b-Endosulfan	0.05
Endrin	0.1
Heptachlor (c)	0.05
Heptachlor epoxide (c)	0.08
PCB-1242 (c)	0.5
PCB-1254 (c)	0.5
PCB-1221 (c)	0.5
PCB-1232 (c)	0.5
PCB-1248 (c)	0.5
PCB-1260 (c)	0.5

ACID EXTRACTABLES	
2-Methyl-4,6-dinitrophenol- 4,6-Dinitro-o-cresol	24.0
2,4-Dinitrophenol	42.0
Pentachlorophenol	5.0
2,4,6-Trichlorophenol (c)	2.7

PCB-1016 (c)	0.5
PCB, total (c)	0.5
Toxaphene (c)	0.5

~~(c) carcinogen~~

(8) All chemical data reported under this rule shall be generated using "sufficiently sensitive" analytical methods approved under 40 C.F.R. part 136 (2018) or required under 40 C.F.R. chapter I, subchapter N or O (2018). An approved method is "sufficiently sensitive" when:

(a) The method minimum level (ML) is at or below the level of the applicable water quality criterion or the effluent limit established by the permit for the measured pollutant or pollutant parameter; or

(b) The method ML is above the applicable water quality criterion or the effluent limit established by the permit, but the amount of the pollutant or pollutant parameter actually measured is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter; or

(c) Demonstration is made showing that the method used has the lowest ML of the approved methods for the measured pollutant or pollutant parameter in the sample/matrix being analyzed. (Documentation supporting this demonstration is to be submitted with reported data and shall include narrative justification for why the method chosen is believed to have the lowest ML of all approved methods identified in 40 CFR part 136 (2018). The Director shall determine whether the submitted information demonstrates sufficient method sensitivity.)

Note: When there is no analytical method that has been approved under 40 C.F.R. part 136 (2018) or required under 40 C.F.R. chapter I, subchapter N or O (2018), and a specific method is not otherwise required by the Director, the applicant may use any suitable method but shall provide a description of the method. When selecting a suitable method, factors such as a method's precision, accuracy, or resolution, must be considered when assessing the performance of the method.

(9) Standard operating procedures for making stream and wet weather conveyance determinations (hydrologic determinations)

(a) General

1. Because a primary purpose of the Water Quality Control Act is to protect the Waters of the State for the public, and since streams receive a higher level of protection than wet weather conveyances, anyone desiring to alter a watercourse who wishes to avoid unnecessary expense and delay, may request the department to process a permit application or issue an authorization under a general permit with the presumption that the watercourse is a stream. In that instance, a full hydrologic determination would not be performed under these rules. However, nothing shall preclude an applicant from subsequently seeking a wet weather conveyance determination.

2. The procedures detailed in this rule are intended to be used in situations where there is some question whether a watercourse is a stream or wet weather conveyance. In situations where it is obvious that a watercourse is a stream, such as named rivers or streams with watersheds larger than a square mile, or spring-fed streams with consistent flow greater than one cubic foot per second, it is not necessary to conduct a detailed hydrologic determination.

3. It is the purpose of this rule to set out the framework for making stream and wet weather conveyance determinations taking into consideration all relevant and necessary information on the biology, geology, geomorphology, precipitation, hydrology, and other scientifically based principles. Staff of the Department and certified hydrologic professionals not employed by the Department who are making a submission pursuant to T.C.A. § 69-3-108(r) shall follow these rules and the Guidance for Making Hydrologic Determinations (Guidance) which contains the instructions and examples for proper application of these rules to situations in the field that has been developed pursuant to T.C.A. § 69-3-107(25) in making these determinations.

4. The format for documenting these determinations is provided in the Hydrologic Determination Field Data Sheet (Data Sheet) in the Guidance. All available field

characteristics necessary to make an accurate determination shall be evaluated, and all evidence utilized in making a determination shall be documented using the Data Sheet or as an addendum. Applicants may choose to submit additional hydrological or geotechnical data not included in the standard procedure in support of a hydrologic determination. Any additional relevant information submitted to the Department shall be considered by the Division in its determination.

5. Any significant revision to the Data Sheet or Guidance shall be subject to a 30-day public comment period prior to adoption. The Department shall advertise its intent to modify the Data Sheet or Guidance by posting notice of proposed changes on the Department's internet web site and by sending to the permit mailing list. Significant modifications include the addition or deletion or substantive modification of either the primary or secondary indicators or a change in the scoring system. The Department shall consider the need for modifications to the Data Sheet and Guidance periodically and whenever a significant comment is submitted in regard to them.

6. To be classified as a wet weather conveyance, a watercourse must meet all four elements of the definition in T.C.A. § 69-3-103. Therefore, if it is determined that any one of the four elements does not apply to a watercourse, the watercourse is a stream.

7. Because natural variation and human activities can alter hydrologic conditions over time, hydrologic determination will only be considered valid for a maximum of five years or the term of a permit based on it.

8. Because there can be considerable variability within a given reach of a watercourse, wet weather conveyance determinations should not be made on a single point but must also investigate up and down channel and consider the watercourse's landscape context.

9. All of the indicators referred to in these rules and the Guidance are evidence relevant to the presence or absence of one or more of the four elements of the wet weather conveyance definition. The difference between the primary and secondary indicators is that each of the primary indicators is considered presumptive evidence alone regarding one or more of the four elements, and will allow for an immediate hydrologic determination to be made in most cases. Some of the primary indicators involve direct observations of the presence or absence of one or more of the elements. The primary indicators of wet weather conveyances are:

   (i) ~~hydrologic~~ Hydrologic feature exists solely due to a process discharge,

   (ii) ~~defined~~ Defined bed and bank absent, watercourse dominated by upland vegetation/ grass,

   (iii) ~~watercourse~~ Watercourse dry anytime during February through April 15th under normal precipitation/ ground water conditions, and

   (iv) ~~daily~~ Daily flow and precipitation records showing feature only flows in direct response to rainfall.

10. Primary indicators of streams are:

   (i) ~~presence~~ Presence of multiple populations of obligate lotic organisms with two months or longer aquatic phase,

   (ii) ~~presence~~ Presence of fish (except Gambusia),

   (iii) ~~presence~~ Presence of naturally occurring ground water table connection,

   (iv) ~~flowing~~ Flowing water in channel seven days or more since the last precipitation in the local watershed, and

(v) ~~evidence~~ Evidence watercourse has been used as a supply of drinking water.

11. When primary indicators cannot be observed or documented, then the investigator must evaluate the watercourse using secondary indicators. The secondary indicators are an aggregate set of observations that in total are used to evaluate the presence or absence of one or more of the elements of a wet weather conveyance. Secondary indicators are:

(i) ~~continuous~~ Continuous bed and bank,

(ii) ~~sinuous~~ Sinuous channel,

(iii) ~~in~~ In-channel structure, riffle-pool sequences,

(iv) ~~sorting~~ Sorting of soil textures or other substrate,

(v) ~~active~~ Active/relic floodplain,

(vi) ~~depositional~~ Depositional bars or benches,

(vii) ~~braided~~ Braided channel,

(viii) ~~recent~~ Recent alluvial deposits,

(ix) ~~natural~~ Natural levees,

(x) ~~headcuts~~ Headcuts,

(xi) ~~grade~~ Grade controls,

(xii) ~~natural~~ Natural valley ~~draingeway~~ drainageway,

(xiii) ~~at~~ At least second order channel on United States Geological Survey or Natural Resources Conservation Service map,

(xiv) ~~subsurface~~ Subsurface flow/discharge into channel,

(xv) ~~water~~ Water in channel more than forty-eight hours since rain,

(xvi) ~~leaf~~ Leaf litter in channel,

(xvii) ~~sediment~~ Sediment on plants or on debris,

(xviii) ~~organic~~ Organic debris lines or piles (wrack lines),

(xix) ~~hydric~~ Hydric soils in channel bed or sides,

(xx) ~~fibrous~~ Fibrous roots in channel,

(xxi) ~~rooted~~ Rooted plants in channel,

(xxii) ~~crayfish~~ Crayfish in channel (exclude in floodplain),

(xxiii) ~~bivalves~~ Bivalves/mussels,

(xxiv) ~~amphibians~~ Amphibians,

(xxv) ~~macrobenthos~~ Macrobenthos,

(xxvi) ~~filamentous~~ Filamentous algae, periphyton,

(xxvii) ~~iron~~ Iron-oxidizing bacteria/fungus, and

(xxviii) ~~wetland~~ Wetland plants in channel.

12. The secondary indicators shall be scored in accordance with the instructions in the Guidance. Hydrologic determinations will often be made on the basis of secondary indicators because none of the primary indicators is present at the time of investigation. Any of the primary indicators contained in these rules and the Guidance may be considered conclusive after consideration of appropriate background information including recent weather and precipitation, in the absence of any directly contradictory evidence. However, since hydrologic determinations are required to be made at all times of year, secondary indicators of hydrologic status will be used, in accordance with the Guidance and these rules, as determinant evidence in the absence of primary indicators. The secondary indicators used in the Guidance shall be based on sound scientific principles.

13. Watercourses in which flow is solely a result of process or wastewater discharge or other non-natural sources shall not be regulated as streams even though they may exhibit characteristics of a stream rather than a wet weather conveyance.

(b) The specific procedures outlined herein are intended to consider each of the four elements necessary for a watercourse to be classified as a wet weather conveyance.

1. Because the duration of the flow in a watercourse is the central inquiry of hydrologic determinations, all of the primary and secondary indicators are relevant to evaluating it. Although other factors may also be relevant, at a minimum the following procedures shall be used to determine if a watercourse flows only in direct response to precipitation runoff in its immediate vicinity.

(i) Prior to conducting a field evaluation, the investigator should review recent precipitation patterns for the local area, the longer-term seasonal precipitation trends, and any other available information such as historic land use, regional geology and soil types, or previous hydrologic determinations near the site to be investigated.

(ii) The investigator must decide if the determination is being conducted under “normal weather conditions.” The procedure for determining if weather conditions are normal, or either wetter or drier than normal, is contained in the Guidance. If conditions are either wetter or drier than normal the investigator must take this into consideration in making a hydrologic determination.

(iii) The vast majority of wet weather conveyances will generally cease to flow within 48 hours of almost all except some of the largest rain events. This is especially true in urbanized, impervious areas, or other areas with low infiltration rates, such as mowed lawns. The investigator shall document the presence or absence of flow within the watercourse. If in-stream surface flow is observed within the evaluated reach, and it has been at least seven days since the last rainfall event in the upstream watershed, the flow will not be considered a direct storm response, and the investigator shall conclude that the feature is a stream. The investigator shall document the source of the precipitation data. The source used shall be as close as feasible to the watercourse.

(iv) When subsurface water discharges such as seeps, interstitial flow, perched water, or interflow are observed and used as indicators of hydrology, investigators shall consider the influence of recent precipitation events and localized soil and geologic conditions on these features to determine if these features provide adequate hydrology such that the watercourse flows more than

in direct response to precipitation. For example, since some such features have more flow when there has been significant recent precipitation, if they are flowing when there has not been much recent precipitation, it is more likely that they flow for sustained periods. In some instances, there may be observable outcroppings of a confining layer such as shale or clay that causes interstitial flow to discharge to a watercourse. In this situation, the capacity of up-gradient conditions such as the permeability and volume of the soils above the confining layer to sustain extended periods of surface flow should be considered. These types of sustained discharges should not be considered a direct response to rainfall. In other instances, such as in areas with a highly karst geology, observed seeps into a watercourse may be not be able to sustain extended periods of flow, and may be considered a more direct response to rainfall.

(v) Field investigations for hydrologic determinations should not be conducted if a one-inch precipitation event in 24 hours has occurred in the area of investigation within the previous 48 hours.

2. The following procedures are to determine if the channel is above the ground water table at all times. Under the definition of wet weather conveyance in T.C.A. § 69-3-103, if there are any times that the channel is not above the ground water table, it is a stream.

(i) Since larger streams and rivers are frequently in contact with the ground water table, the investigator shall review topographic maps to determine if the watercourse is within the floodplain of, or within 20 feet in elevation of a larger stream or river known to carry perennial flow. Flow in such a watercourse should not be considered conclusive evidence of a ground water table connection, but is contributing evidence to be considered in the determination. Therefore further investigation into additional factors including those listed below is necessary to determine that the watercourse in question is in contact with the ground water table.

(ii) Since the presence of wetlands often indicates a shallow depth to the ground water table, the investigator shall search for the presence of wetlands in the immediate vicinity of the watercourse both on topographic maps and in the field. The presence of wetlands in the vicinity of the watercourse being examined should not be considered conclusive evidence of a ground water table connection, but is contributing evidence to be considered in the determination. Therefore further investigation into other factors including those listed below is necessary to determine that the watercourse in question is in contact with the ground water table.

(iii) The investigator shall review United States Department of Agriculture soil surveys. Their soil descriptions often contain information on depth to water table. For watercourses whose channels are at a depth that indicates contact with the ground water table for the soil type in which they are formed, the investigator can conclude that the watercourse is in contact with the water table, absent contradicting field information.

(iv) The investigator shall review site geological characteristics affecting the elevation of the ground water table with respect to the elevation of the channel, including the presence of karst bedrock features, erodibility of watershed soils, thickness of regolith and channel alluvium, depth to bedrock or laterally persistent silt or clay horizons, land-use disturbances, and other watershed conditions controlling or contributing to the presence or absence of channel base flow.

(v) If data are available from water wells within one mile of and in similar landscape position to a watercourse under investigation, and if the surface elevation of standing water in the well is at or above the elevation of the bottom of the

channel of the watercourse, then the investigator can conclude that the watercourse is in contact with the ground water table.

(vi) The observed emergence of water from the ground is not necessarily water from the ground water table and should not be considered as conclusive for the purpose of this element. Therefore further investigation into factors including those listed above is necessary to determine the source of the emergent water.

3. The following procedures are to determine if a watercourse is suitable for drinking water supplies. The investigator should note spring boxes, water pipes to carry water from the watercourse to a residence, or other observable evidence the watercourse is being used as a household water supply upstream of or within the segment being evaluated. When these features are noted, the investigator can conclude that the watercourse is a stream absent contradicting information.

4. The following procedures are to determine if a watercourse, under normal weather conditions, due to naturally occurring ephemeral or low flow does not have sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months.

(i) The presence of the requisite aquatic life is a primary indicator that the watercourse supports that aquatic life. In order to find that the requisite aquatic life is present, the investigator must document more than one individual of at least two qualifying taxa in the evaluated reach under normal weather conditions. Unhatched eggs or any other stage of a taxon's life cycle that could be found in a wet weather conveyance or lentic habitat (such as a deceased winged adult) should not be considered as a primary indicator that a watercourse is a stream. The specific taxa found should be noted on the Data Sheet. Representative individuals of the taxa used to make this determination should be collected for confirmation of identification. All aquatic life observed should be noted, even if some do not qualify as primary indicators. These organisms may also be relevant as secondary field indicators.

(ii) Indigenous members of taxa within the benthic macroinvertebrate groups listed below are obligate lotic aquatic organisms and thus are primary indicators that a watercourse is a stream when two or more specimens of two or more taxa are documented under normal weather conditions.

(I) Gastropoda: Pleuroceridae, Viviparidae, Valvatidae

(II) Bivalvia: Unionidae

(III) Coleoptera: Dryopidae, Elmidae, Psephenidae, Ptilodactylidae, Staphylinidae

(IV) Diptera: Athericidae, Blephariceridae, Chironomidae (except: Chironomini or red midges), Empididae, Ptychopteridae, Tanyderidae, and some Tipulidae (Antocha, Rhabdomastix, Dicranota, Hexatoma, Limnophila, Tipula)

(V) Ephemeroptera: all members, except: Siphlonuridae, and some Ephemeridae (Hexagenia)

(VI) Megaloptera: all members, except: (Chauliodes)

(VII) Odonata: Aeshnidae, Calopterygidae, Cordulegastridae, Gomphidae, some Coenagrionidae (Argia, Chromagrion, Amphiagrion), some Libellulidae (Perithemis) and some Corduliidae (Epitheca, Helocordulia, Neurocordulia)

(VIII) Plecoptera: all members

(IX) Trichoptera: all members, except: Molannidae, some Leptoceridae (Nectopsyche, Triaenodes), and some Limnephilidae (Ironoquia, Limnephilus, Hesperophylax)

(X) Oligochaetes: Branchiobdellidae, Lumbriculidae, Sparganophilidae, some Tubificidae (subfamily Naidinae, Ilyodrilus, Rhyacodrilus, Varichaetadrilus), and some Lumbricidae (Eiseniella tetraedra only).

(iii) The presence of any indigenous fish species, other than the Mosquitofish (*Gambusia*), documented under normal weather conditions, is also a primary indicator that the watercourse is a stream, and constitutes support of the requisite aquatic life.

(iv) There are conditions in which a stream may be dry for a period of weeks or even months, but supports multiple populations of lotic aquatic organisms or fish at other times during a year. In such conditions, an investigator could appropriately determine that there is sufficient water on an annual basis to support such populations even though there were not any present on a particular date. In addition, manmade pollution or other water quality issues may preclude support of these organisms. Therefore, the absence of lotic aquatic organisms at the time of the investigation cannot be the sole basis for a determination that a watercourse meets the fourth element of the definition. When multiple populations of lotic aquatic organisms or fish cannot be documented to occur in a watercourse, then the investigator must consider the hydrologic and biologic factors referred to as secondary indicators in these rules and the Guidance to make a hydrologic determination.

(v) Under normal weather conditions, if the investigator documents the absence of water due to naturally occurring conditions in a watercourse between February 1 and April 15, then the investigator can conclude the watercourse is unable to support fish or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months and is therefore a wet weather conveyance.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

Rule 0400-40-03-.06 Antidegradation Statement is amended by deleting it in its entirety and substituting instead the following:

(1) General

(a) 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. ~~Additionally, the Tennessee Water Quality Standards shall not be construed as permitting the degradation (see definition) of high quality surface waters.~~ 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 in which the waters are located as established herein. In such waters, there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources in that stream segment and ~~S~~sources or activities exempted from permit requirements under the Water Quality Control Act in that stream segment should utilize all cost-effective and reasonable best management practices to prevent degradation of waters. Where new or increased temperature alterations are proposed, a successful demonstration as determined by the Department under Section 316(a) of the Clean Water Act, 33 U.S.C. § 1326, shall be considered to be in compliance

with this rule.

(b) To apply this antidegradation statement ~~in the permitting context~~ to permits for new or increased discharges, new or increased water withdrawals, or new or expanded habitat alterations, the Department shall first determine if the application is complete. Absent extraordinary circumstances, the Department shall notify the applicant that an application is complete or of any deficiencies within 30 days of receipt of the application. When the Department determines the application is complete, it shall provide notice to the applicant in writing.

1. A complete application will include all of the information requested on the forms provided by the Department. For activities other than new ~~domesic~~ domestic wastewater discharges, a complete application will include the applicant's basis for concluding that the proposed activity:

   (i) ~~will~~ Will not cause measurable degradation (for withdrawals or discharges), ~~or~~

   (ii) ~~will~~ Will only cause de minimis degradation, ~~or~~

   (iii) Will cause no significant degradation (for habitat alterations), or

   ~~(iii)~~(iv) ~~will~~ Will cause more than de minimis degradation.

2. If the proposed activity will cause degradation of any available parameter above a de minimis level, or if it is a new discharge of domestic wastewater, a complete application will:

   (i) ~~analyze all reasonable alternatives and describe the level of degradation caused by each of the feasible alternatives~~ Analyze a range of potentially practicable alternatives to prevent or lessen the degradation associated with the proposed activity;

   (ii) ~~discuss the~~ Demonstrate that the proposed degradation is necessary to accommodate important social ~~and~~ or economic ~~consequences of each alternative~~ development in the area in which the waters are located; and

   (iii) ~~demonstrate~~ Demonstrate that the proposed degradation will ~~not violate the~~ maintain water quality ~~criteria for uses~~ sufficient to protect existing uses in the receiving waters ~~and is necessary to accommodate important economic and social development in the area~~.

3. ~~Such alternatives analyses shall include, at a minimum, completed and accurate Worksheets A and B for public sector applicants or Worksheets A and G for private system applicants, or shall provide alternative information subject to approval by the Department. Additionally, to provide information to the Department regarding the applicant's claim of economic or social necessity, public sector applicants shall provide the relevant information from Forms O, P, Q, S, T, U, and AA, found in the EPA guidance document (Economic Guidance); private sector applicants shall provide the relevant information from Forms O, R, V, W, X, Y, Z, and AB, found in the EPA guidance document (Economic Guidance). Either type of applicant shall submit alternative or additional information regarding economic or social necessity as directed by the Department. These forms are found in the EPA guidance document entitled Interim Economic Guidance for Water Quality Standards: Workbook (EPA 823/B 95 002) (Economic Guidance). Reasonable~~ An alternative to degradation is practicable if it is technologically possible, able to be put into practice, and economically viable. Potentially practicable alternatives ~~for the various activities~~ include, but are not limited to, the following: ~~actions.~~

   (i) Alternatives for discharges include connection to an existing collection system, land application, water reuse, water recycling, or other treatment alternatives to

prevent or reduce the level of degradation. For small domestic discharges, connection to an existing system or land application will be considered preferable.

(ii) For water withdrawals, alternatives include water conservation, water reuse or recycling, off-stream impoundments, water harvesting during high flow conditions, regionalization, withdrawing water from a larger waterbody, use of ground water, connection to another water supply with available capacity, and pricing structures that encourage a reduction in consumption.

(iii) For activities that cause habitat alterations, alternatives that avoid or minimize degradation should be explored and explained by the applicant. These avoidance or minimization activities could include maintaining or enhancing buffer zones, bridging a stream rather than culverting it, altering the footprint of a project instead of relocating a stream, or using a culvert without a bottom, instead of one that is fully concreted.

4. To demonstrate that greater than de minimis degradation is necessary to accommodate important social or economic development in the area in which the waters are located, the applicant shall provide a written justification to include, as applicable, a description of the project, the number of jobs anticipated to be created (including salaries/benefits, duration, and type), tax revenue to be generated, impact of the proposed degradation to development potential in the area, other social/cultural impacts, and any other justification. Applicants shall submit alternative or additional information regarding economic or social necessity as directed by the Department. The justification should demonstrate an overall benefit to the local community, not just a benefit to the applicant.

(c) ~~When the Department determines that a permit application is complete, it shall notify~~ The Department shall propose a permit action by notifying the applicant ~~by letter or email~~ in writing and ~~shall notify~~ by notifying the public and the state and federal agencies with jurisdiction over fish, wildlife, shellfish, plant and wildlife resources, parks, and historic preservation by posting a notice on the Department's web site and sending email to persons who have asked to be notified of permit actions. In the case of new or expanded habitat alterations or new or increased water withdrawals this public notice shall be a part of the public notice ~~of a permit application~~ under paragraph (4) of Rule 0400-40-07-.04 and shall contain the information required by, and be governed by the procedures of, that paragraph of the rules. For a new or increased discharge, the public notice shall summarize the information given by the applicant pursuant to subparagraph (b) of this paragraph and shall contain the information required by, and be governed by the procedures of, Rule 0400-40-05-.06. Public notices should also include the Department's preliminary determination of the level of degradation and the antidegradation category of the affected waters.

(d) ~~Next,~~ After completion of the public notice and comment period, the Department shall ~~determine~~ make a final determination of the level of degradation that would occur as a result of the proposed activity. Not all activities cause an addition of pollutants, diminish flows, or impact habitat.

1. In the case of discharges, if the department determines that no measurable degradation will occur as a result of the activity, no further review under this rule is required regardless of the antidegradation classification of the receiving stream, unless the activity:

(i) is a new domestic wastewater discharge, or

(ii) introduces a parameter identified as bioaccumulative, or

(iii) introduces a parameter with a criterion below the current method detection level for that substance, or

(iv) is proposed to occur in an ONRW.

2. In the case of water withdrawals requiring permits from waters other than ONRWs, if the Department determines that no measurable degradation will occur, no further review under this rule is required regardless of the antidegradation classification of the receiving stream.

3. In the case of habitat alterations, if the department determines that no ~~degradation or only~~ more than de minimis degradation will occur, no further review under the rule is required regardless of the antidegradation classification of the receiving stream.

(e) If the steps described in subparagraphs (b), (c) and (d) of this paragraph do not conclude the review under this rule, the Department shall ~~determine~~ make a final determination whether the waters impacted by the activity are ones with available parameters, unavailable parameters, Exceptional Tennessee Waters, or Outstanding National Resource Waters, or if they are in more than one category. For example, a stream segment may be unavailable for one parameter and be available for others and Exceptional Tennessee Waters may also be unavailable for certain parameters. If an activity is proposed in a waterbody that is in more than one category, it must meet all of the applicable requirements.

(2) Waters with unavailable parameters

Unavailable parameters exist where water quality is at, or fails to meet, the levels specified in water quality criteria in Rule 0400-40-03-.03, even if caused by natural conditions. In the case of a criterion that is a single response variable or is derived from measurement of multiple ~~responsible~~ response variables, the unavailable parameters shall be the agents causing water quality to be at or failing to meet the levels specified in criteria. For example, if the biological integrity criterion (derived from multiple response variables) is violated, the unavailable parameters shall be the pollutants causing the violation, not the response variables.

(a) In waters with unavailable parameters, new or increased discharges that would cause measurable degradation of the parameter that is unavailable shall not be authorized. Nor will discharges be authorized in such waters if they cause additional loadings of unavailable parameters that are bioaccumulative or that have criteria below current method detection levels.

(b) In waters with unavailable parameters, no new or ~~expanded~~ increased water withdrawals that will cause additional measurable degradation of the unavailable parameter shall be authorized.

(c) Where one or more of the parameters comprising the habitat criterion are unavailable, ~~activities~~ habitat alterations that cause ~~additional~~ significant degradation ~~of the unavailable parameter or parameters above the level of de minimis~~ shall not be authorized.

(3) Waters with available parameters

Available parameters exist where water quality is better than the levels specified in water quality criteria in Rule 0400-40-03-.03.

(a) In waters with available parameters, new or increased discharges that would cause degradation above the level of de minimis for any available parameter for any criterion, or a new domestic wastewater discharge, will only be authorized if the applicant has demonstrated to the Department that ~~reasonable~~ there are no practicable alternatives to prevent or lessen degradation ~~are not feasible~~ associated with the proposed activity and the degradation is necessary to accommodate important economic or social development in the area and the degradation will not violate the water quality criteria for uses existing in the receiving waters. If one or more practicable alternatives is identified, the Department shall only find that a lowering is necessary if those alternative(s) are selected for implementation.

(b) In waters with available parameters, new or ~~expanded~~ increased water withdrawals that would cause degradation above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that ~~reasonable~~ there are no practicable alternatives to prevent

or lessen degradation ~~are not feasible~~ associated with the proposed activity and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters. If one or more practicable alternatives is identified, the Department shall only find that a lowering is necessary if those alternative(s) are selected for implementation.

(c) In waters with available parameters, an activity that would cause degradation of habitat above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that ~~reasonable~~ there are no practicable alternatives to prevent or lessen degradation ~~are not feasible~~ associated with the proposed activity and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters. If one or more practicable alternatives is identified, the Department shall only find that a lowering is necessary if those alternative(s) are selected for implementation.

(4) Exceptional Tennessee Waters

(a) Exceptional Tennessee Waters are surface waters other than wet weather conveyances that are in any one of the following categories:

1. Waters within state or national parks, wildlife refuges, forests, wilderness areas, or natural areas;

2. State Scenic Rivers or Federal Wild and Scenic Rivers;

3. Federally-designated critical habitat or other waters with documented non-experimental populations of state or federally-listed threatened or endangered aquatic or semi-aquatic plants~~,~~ or ~~aquatic~~ animals;

4. Waters within areas designated as Lands Unsuitable for Mining pursuant to the federal Surface Mining Control and Reclamation Act where such designation is based in whole or in part on impacts to water resource values;

5. Waters with naturally reproducing trout;

6. Waters with exceptional biological diversity as evidenced by a score of 40 or 42 on the Tennessee Macroinvertebrate Index (or a score of 28 or 30 in subecoregion 73a) using protocols found in TDEC's ~~2011~~ 2017 Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys, provided that the sample is considered representative of overall stream conditions; or

7. Other waters with outstanding ecological, or recreational value as determined by the Department. When application of this provision is a result of a request for a permit, such preliminary determination is to be made within 30 days of receipt of a complete permit application.

(b) The Department will maintain a list of waterbodies that have been reviewed and are known to have one or more of the above characteristics on its website and will make paper copies of that list available upon request.

(c) Authorization of Activities in Exceptional Tennessee Waters

1. In waters identified as Exceptional Tennessee Waters new or increased discharges that would cause degradation of any available parameter above the level of de minimis and ~~discharges of~~ new domestic wastewater discharges will only be authorized if the applicant has demonstrated to the Department that ~~reasonable~~ there are no practicable alternatives to prevent or lessen degradation ~~are not feasible~~ associated with the proposed activity, ~~are not feasible and~~ the degradation is necessary to accommodate important economic or social development in the area, and the discharge will not violate

the water quality criteria for uses existing in the receiving waters. If one or more practicable alternatives is identified, the Department shall only find that a lowering is necessary if those alternative(s) are selected for implementation. At the time of permit renewal, previously authorized discharges, including upstream discharges, which presently degrade Exceptional Tennessee Waters above a de minimis level, will be subject to a review of updated analysis of alternatives ~~analysis~~ information provided by the applicant, but not to a determination of economic/social necessity. Public participation for these existing discharges will be provided in conjunction with permitting activities. ~~Sources exempted from permit requirements under the Water Quality Control Act should utilize all cost-effective and reasonable best management practices.~~

2. In waters identified as Exceptional Tennessee Waters, new or increased water withdrawals that would cause degradation of any available parameter above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that ~~reasonable~~ there are no practicable alternatives to prevent or lessen degradation ~~are not feasible~~ associated with the proposed activity and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters. If one or more practicable alternatives is identified, the Department shall only find that a lowering is necessary if those alternative(s) are selected for implementation.

3. In waters identified as Exceptional Tennessee Waters, an activity that would cause degradation of habitat above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that ~~reasonable~~ there are no practicable alternatives to prevent or lessen degradation ~~are not feasible~~ associated with the proposed activity, and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters. If one or more practicable alternatives is identified, the Department shall only find that a lowering is necessary if those alternative(s) are selected for implementation.

(d) Determination of Economic/Social Necessity - The Department's determination that degradation above a de minimis level of Exceptional Tennessee Waters resulting from a proposed new or increased discharge, new or expanded habitat alteration, or new or increased water withdrawal is, or is not, necessary to accommodate important economic ~~and~~ or social development in the area shall be subject to review by the Board of Water Quality, Oil and Gas under the following procedures.

1. If the Department determines after completion of the public notice and comment procedures established in subparagraph (1)(c) of this rule that an activity that would cause degradation above a de minimis level of Exceptional Tennessee Waters is necessary to accommodate important economic or social development in the area, it shall give notice to the applicant, the public, and federal and state agencies with jurisdiction over fish, wildlife, shellfish, plant and wildlife resources, parks, and advisory councils for historic preservation. ~~In the case of an application for a discharge, this notice may be combined with the notice of a draft permit under this rule. In the case of an application for a habitat alteration or water withdrawal, this~~ This notice shall be given by being posted on the Department's web site and by sending email to persons who have asked to be notified of permit actions. Within 30 days after the date of the notification, any affected intergovernmental coordination agency or affected third person may petition the Board for a declaratory order under T.C.A. § 4-5-223, and the Board shall convene a contested case. After the Board has convened a contested case in response to a declaratory order petition under this part, the Department shall within 5 business days thereafter transmit the petition to the Administrative Procedures Division of the Secretary of State so the contested case may be docketed and an administrative law judge may be assigned to the case. If a declaratory order petition is timely filed, the Department shall not proceed further in processing the permit application until the petition has been resolved before the Board. In the contested case, the petitioner shall have the burden of proof, and the Department's determination shall carry no presumption of correctness

before the Board. The applicant is a necessary party to the declaratory order contested case, and if the applicant does not participate in the contested case, the Board shall render a decision that degradation is not necessary to accommodate important economic or social development in the area. If no intergovernmental coordination agency or third person petitions for a declaratory order within 30 days of the notification date, or if one is filed after the 30 days expires, then the Department shall proceed with processing the permit application.

2. A declaratory order contested case conducted under this subparagraph shall be subject to the following procedures. Mediation may occur if all the parties agree. Any proposed agreed order resulting from mediation shall be subject to approval by the Board. In order to provide for an expedited proceeding, the contested case is subject to the following time limitations. The time periods specified in this part shall commence on the day after the contested case has been docketed by the Administrative Procedures Division of the Secretary of State and an administrative law judge has been assigned to the case. Any alteration of the time periods set out in this part shall be granted only upon agreement of all the parties, or when there have been unforeseen developments that would cause substantial prejudice to a party, or when the parties have agreed to mediation. Within 20 days, the parties shall confer to try and develop a proposed agreed scheduling order. If the parties are unable to agree, then each party shall submit a proposed scheduling order, and the administrative law judge, after a hearing, shall enter a scheduling order. All discovery shall be completed no later than 20 days prior to the date the hearing before the Board is to begin. Within 120 days, the hearing before the Board shall begin, but the Board on its own initiative may exceed 120 days to complete the hearing and render its final decision. In order for degradation of Exceptional Tennessee Waters to proceed pursuant to these rules, the Board must make a finding approving degradation by a majority vote of the members of the Board present and voting.

3. If the Department determines that degradation is not necessary to accommodate important economic or social development in the area, it will notify the applicant, the federal and state agencies with jurisdiction over fish, wildlife, shellfish, plant and wildlife resources, parks, and advisory councils for historic preservation, and third persons who have asked to be notified of permit actions. The Department also will issue a tentative decision to deny the permit because degradation is not necessary. In accordance with paragraph (4) of this rule, the Department will provide the public with notice of and an opportunity to comment on its tentative denial decision. If no public hearing is requested within the 30 day public comment period, and if the Department does not alter its tentative decision to deny, the Department shall notify the applicant of its final decision to deny the permit because degradation is not necessary. Within 30 days after receiving notice of the final decision to deny the permit, the applicant may seek review of the decision that the degradation is not necessary to accommodate important economic or social development in the area in a contested case before the Board in accordance with T.C.A. § 69-3-105(i). Within 5 business days after the Department receives an applicant's written request for a contested case hearing before the Board, the Department shall transmit the written request to the Administrative Procedures Division of the Secretary of State so the contested case may be docketed and an administrative law judge may be assigned to the case. In the contested case, the applicant shall have the burden of proof, and the Department's determination shall carry no presumption of correctness before the Board. The federal and state intergovernmental coordination agencies, and third persons who requested notification of the Department's degradation determination will be notified by the Department of the applicant's permit appeal. The intergovernmental coordination agencies and third persons may seek to intervene in the contested case in accordance with T.C.A. § 4-5-310.

(5) Outstanding National Resource Waters

(a) The following streams or portions of streams are designated as ONRW:

WATERBODY	PORTION DESIGNATED AS ONRW

1.	Little River	Portion within Great Smoky Mountains National Park.
2.	Abrams Creek	Portion within Great Smoky Mountains National Park.
3.	West Prong Little Pigeon River	Portion within Great Smoky Mountains National Park upstream of Gatlinburg
4.	Little Pigeon River	From the headwaters within Great Smoky Mountains National Park downstream to the confluence of Mill Branch.
5.	Big South Fork Cumberland River	Portion within Big South Fork National River and Recreation Area.
6.	Reelfoot Lake	Tennessee portion of the lake and its associated wetlands.

7. The portion of the Obed River that is designated as a federal wild and scenic river as of June 22, 1999 is designated as ONRW, provided however, that if the current search for a regional water supply by the Cumberland Plateau Regional Water Authority results in a determination that it is necessary to utilize the Obed River as its source of drinking water, for that purpose the Obed shall be designated as an Exceptional Tennessee Water and any permit issued for that project, whether state, federal, or otherwise, shall be considered under the requirements for Exceptional Tennessee Waters.

(b) The Department may recommend to the Board of Water Quality, Oil and Gas that certain waterbodies be designated as Outstanding National Resource Waters (ONRWs). These shall be high quality waters which constitute an outstanding national resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance. Designation of ONRWs must be made by the Board of Water Quality, Oil and Gas and will be accomplished in accordance with T.C.A. § 69-3-105(a)(1) of the Tennessee Water Quality Control Act and through the appropriate rulemaking process.

1. In surface waters designated by the Board of Water Quality, Oil and Gas as ONRWs, no new discharges, expansions of existing discharges, water withdrawals or mixing zones will be permitted unless such activity will not result in either measurable degradation or discernible effect. At the time of permit renewal, previously authorized discharges, including upstream discharges and withdrawals, which presently degrade an ONRW, will be subject to an analysis of alternatives ~~analysis~~. Public participation for these existing discharges will be provided in conjunction with permitting activities.

2. In waters designated by the Board of Water Quality, Oil and Gas as ONRWs, no new or ~~increased~~ expanded habitat alteration that would cause degradation of habitat above the level of de minimis or degrade water chemistry for more than a short duration will be authorized.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

Chapter 0400-40-04
Use Classifications For Surface Waters

Amendments

Chapter 0400-40-04 Use Classifications For Surface Waters is amended by deleting it in its entirety and substituting instead the following:

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Abbreviations for Designated Uses and Trout Streams:

Domestic Water Supply	DOM
Industrial Water Supply	IWS
Fish and Aquatic Life	FAL
Trout Stream	TS
Naturally Reproducing Trout Stream	NRTS
Recreation	REC
Livestock Watering and Wildlife	LWW
Irrigation	IRR
Navigation	NAV

0400-40-04-.01 MEMPHIS AREA BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mississippi River	Mississippi-Tennessee State Line (Mile 714.0) to Upstream End of Loosahatchie Bar (Mile 741.0)		X	X	X	X	X	X		
McKellar Lake	Mouth on Mississippi R. to Origin		X	X	X			X		
Nonconnah Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf River	Mile 0.0 to 6.7 (L & N Railroad Bridge)			X	X	X	X			
Cypress Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf River	Mile 6.7 to Miss.-TN State Line (Mile 77.0)		X	X	X	X	X	X		
Loosahatchie River	Mile 0.0. to 20.9 (Austin Peay Hwy Bridge)			X	X	X	X			
Big Creek	Mile 0.0 to Origin			X	X	X	X			
North Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Crooked Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 3.0 of Crooked Creek	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 20.9 (Austin Peay Hwy) to 30.7			X	X	X	X			
Clear Creek Canal	Mile 0.0 to Origin at Mile 2.6 (Confluence of Hall Creek and Cypress Creek Canal)			X	X	X	X			
Cypress Creek Canal	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 30.7 to 45.5			X	X	X	X			
Middle Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
West Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
East Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
Little Cypress Creek Canal	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 45.5 to 50.2			X	X	X	X			
Davis Creek	Mile 0.0 to Origin			X	X	X	X			
Town Branch	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 50.2 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
All other surface waters named and unnamed in the Memphis Area Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.02 HATCHIE RIVER BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mississippi River	Mile 741.0 to 820.0	X	X	X	X	X	X	X		
Hatchie River	Mile 0.0 to Mile 129.0	X	X	X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Alston Creek	Mile 0.0 to Origin			X	X	X	X			
Big Muddy Canal	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib. to Mile 3.1 of Big Muddy Canal	Mile 0.0 to Origin			X	X	X	X			
Sugar Creek	Mile 0.0 to Origin			X	X	X	X			
Mill Creek	Mile 2.0 to Origin			X	X	X	X			
Pugh Creek South	Mile 0.0 to Origin			X	X	X	X			
Mill Creek	Mile 2.0 to Origin			X	X	X	X			
Hatchie River	Mile 129.0 to Mile 131.0		X	X	X	X	X			
Hatchie River	Mile 131.0 to Miss-Tenn State Line (Mile 188.5)	X	X	X	X	X	X			
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Cypress Creek	Mile 0.0 to Origin			X	X	X	X			
Tuscumbia River	Mile 0.0 to Miss-Tenn State Line (Mile 10.5)	X		X	X	X	X			
Cypress Creek	Mile 0.0 to 14.2			X	X	X	X			
Cypress Creek	Mile 14.2 to 15.2			X	X	X	X			
Cypress Creek	Mile 15.2 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Hatchie Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.03 OBION-FORKED DEER BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mississippi River	Mile 820.0 to Mile 905.0 (Kentucky State Line)	X	X	X	X	X	X	X		
Obion River	Mile 0.0 to Confluence of North and			X	X	X	X			
	South Fork Obion River (Mile 71.8)			X	X	X	X			
Running Reelfoot Bayou	Mile 0.0 to Reelfoot Lake Spillway			X	X	X	X			
Reelfoot Lake	Entirety			X	X	X	X			
Biffle Creek	Mile 0.0 to Origin			X	X	X	X			
Reeds Creek	Mile 0.0 to Origin			X	X	X	X			
Cool Springs Branch	Mile 0.0 to Origin			X	X	X	X			
North Fork Obion River	Mile 0.0 to Origin			X	X	X	X			
Hoosier Creek	Mile 0.0 to Origin			X	X	X	X			
First Creek	Mile 0.0 to Origin			X	X	X	X			
Grove Creek	Mile 0.0 to Origin			X	X	X	X			
Harris Fork Creek	Mile 0.0 to Kentucky-Tennessee State Line			X	X	X	X			
Walnut Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 3.8 of Walnut Fork Creek	Mile 0.0 to Origin			X	X	X	X			
South Fork Obion River	Mile 0.0 to 38.9 (Formed at Confluence of Beaver			X	X	X	X			
	Creek and Crooked Creek)									
Mud Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 9.8 of Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 11.0 of Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Brassfield Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 0.5 of Brassfield Creek	Mile 0.0 to Origin			X	X	X	X			
Rutherford Fork	Mile 0.0 to Origin			X	X	X	X			
Carroll Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
E. Fork Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 27.7 of Rutherford Fork	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Middle Fork Obion River	Mile 0.0 to Origin			X	X	X	X			
Buckor Ditch	Mile 0.0 to Origin			X	X	X	X			
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Pritchett Branch	Mile 0.0 to Origin			X	X	X	X			
Bradford Creek	Mile 0.0 to Origin			X	X	X	X			
Reedy Creek	Mile 0.0 to Origin			X	X	X	X			
Lick Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to Origin			X	X	X	X			
Beaver Creek	Mile 0.0 to Origin		X	X	X	X	X			
Crooked Creek	Mile 0.0 to Origin		X	X	X	X	X			
Guins Creek	Mile 0.0 to Origin		X	X	X	X	X			
Trib. to Mile 9.7 of Guins Creek	Mile 0.0 to Origin			X	X	X	X			
Forked Deer River	Mouth at Obion River Mile 3.3 to Mile 20.3 at Confluence of North and South Fork			X	X	X	X	X		
South Fork Forked Deer	Mile 0.0 to 48.8			X	X	X	X	X		
Nixon Creek	Mile 0.0 to Origin			X	X	X	X			
Little Nixon Creek	Mile 0.0 to Origin			X	X	X	X			
Old Channel Forked Deer-Trib. at Mile 35.8	Mile 0.0 to Origin			X	X	X	X			
South Fork Forked Deer River	Mile 48.8 to 70.3			X	X	X	X	X		
North Fork of South Fork Forked Deer River	Mile 0.0 to Origin			X	X	X	X			
Johnson Creek	Mile 0.0 to Origin			X	X	X	X			
Anderson Branch	Mile 0.0 to Origin			X	X	X	X			
Turkey Creek	Mile 0.0 to 1.2			X	X	X	X			
Trib. to Mile 1.0 of Turkey Creek	Mile 0.0 to Origin			X	X	X	X			
Turkey Creek	Mile 1.2 to Origin			X	X	X	X			
South Fork Forked Deer River	Mile 70.3 to Origin			X	X	X	X			
Sugar Creek	Mile 0.0 to Origin			X	X	X	X			
North Fork Forked Deer River	Mile 0.0 to 5.8			X	X	X	X	X		

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
North Fork Forked Deer River	Mile 5.8 to 33.9			X	X	X	X			
Middle Fork Forked Deer River	Mile 0.0 to Origin			X	X	X	X			
Mosquito Creek	Mile 0.0 to Origin			X	X	X	X			
Moize Creek	Mile 0.0 to Origin			X	X	X	X			
Dyer Creek	Mile 0.0 to Origin			X	X	X	X			
North Mud Creek	Mile 0.0 to Origin			X	X	X	X			
Cow Creek	Mile 0.0 to Origin			X	X	X	X			
Sand Creek	Mile 0.0 to Origin			X	X	X	X			
North Fork Forked Deer River	Mile 33.9 to Origin			X	X	X	X			
Trib. to Mile 857.5 of Mississippi River	Mile 0.0 to Origin			X	X	X	X			
Harris Ditch	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Obion-Forked Deer Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.04 TENNESSEE RIVER BASIN - WESTERN VALLEY.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Mile 49.1 (Tenn-Ky Line) to 215.1 (Tn-Miss Line)	X	X	X	X	X	X	X		
Big Sandy River	Mile 0.0 to 15.1		X	X	X	X	X	X		
Big Sandy River	Mile 15.1 to Origin		X	X	X	X	X			
West Sandy Creek	Mile 0.0 to Origin			X	X	X	X			
Holly Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Bailey Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Big Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
Little Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
Little Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X		X	
S. Fk Hurricane Cr	Mile 0.0 to Origin			X	X	X	X			
Beaverdam Creek	First bridge above mouth to origin.			X	X	X	X		X	
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Trace Creek	Mile 0.0 to Origin			X	X	X	X			
Cypress Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
North Indian Creek	Mile 0.0 to Origin			X	X	X	X			
Birdsong Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
Eagle Creek	Mile 0.0 to Origin			X	X	X	X			
Morgan Creek	Mile 0.0 to Origin			X	X	X	X			
Beech River	Mile 0.0 to 7.2	X	X	X	X	X	X	X		
Beech River	Mile 7.2 to 27.4	X	X	X	X	X	X			
Beech River	Mile 27.4 to 30.4		X	X	X	X	X			
Beech River	Mile 30.4 to Origin	X	X	X	X	X	X			
Rushing Creek	Mile 0.0 to Origin			X	X	X	X			
Harmon Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
Doe Creek	Mile 0.0 to Origin			X	X	X	X			
East Prong Doe Creek	Mile 0.0 to Origin			X	X	X	X			
White Oak Creek	Mile 0.0 to Origin			X	X	X	X			
Little Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			
Horse Creek	Mile 0.0 to Origin			X	X	X	X			
Beason Creek	Mile 0.0 to Origin			X	X	X	X			
South Fork Beason Creek	Mile 0.0 to Origin			X	X	X	X			
Dollar Creek	Mile 0.0 to Origin			X	X	X	X			
Beech Creek	Mile 0.0 to Origin			X	X	X	X			
Leatherwood Creek	First bridge to origin			X	X	X	X		X	
E. Fork Leatherwood Cr	Mile 0.0 to second tributary			X	X	X	X		X	
N. Fork Leatherwood Cr	Mile 0.0 to second tributary			X	X	X	X		X	
Town Branch	Mile 0.0 to Origin			X	X	X	X			
Chambers Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Western Valley Tennessee River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.05 DUCK RIVER BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Duck River	Mile 0.0 to 67.0	X	X	X	X	X	X			
Blue Creek	Mile 0.0 to 14.0	X	X	X	X	X	X			
Blue Creek	Mile 14.0 to 16.2		X	X	X	X	X			
Blue Creek	Mile 16.2 to Origin			X	X	X	X			
Buffalo River	Mile 0.0 to 24.0	X	X	X	X	X	X			
Cane Creek	Hickman Co. line to Lewis Co. line			X	X	X	X		X	
Buffalo River	Mile 24.0 to 26.0		X	X	X	X	X			
Buffalo River	Mile 26.0 to 38.0	X	X	X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			X
Sinking Creek	Mile 0.0 to Origin			X	X	X	X		X	
Buffalo River	Mile 38.0 to 41.1		X	X	X	X	X			
Buffalo River	Mile 41.1 to Origin	X	X	X	X	X	X			
Green River	Mile 0.0 to 9.0	X	X	X	X	X	X			
Green River	Mile 9.0 to 11.7		X	X	X	X	X			
Green River	Mile 11.7 to Origin	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Rockhouse Creek	Mile 0.0 to 6.0	X	X	X	X	X	X			
Rockhouse Creek	Mile 6.0 to 9.5		X	X	X	X	X			
Rockhouse Creek	Mile 9.5 to Origin	X	X	X	X	X	X			
Little Buffalo River	Mile 0.0 to Origin			X	X	X	X		X	
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X		X	
Beaverdam Creek	Highway 100 to Sulfur Fork Cr			X	X	X	X			X
Sulfur Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Piney River	Mile 0.0 to Origin	X	X	X	X	X	X			X
Mill Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Little Spring Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Spring Creek	Mile 0.0 to Origin			X	X	X	X			X
Garner Creek	Mile 0.0 to Origin			X	X	X	X		X	
Bear Creek	Mile 0.0 to Origin			X	X	X	X			X
East Piney River	Mile 0.0 to 4.0	X	X	X	X	X	X			
East Piney River	Mile 4.0 to 6.1		X	X	X	X	X			
East Piney River	Mile 6.1 to Origin	X	X	X	X	X	X			
Defeated Camp Creek	Mile 0.0 to 4.4		X	X	X	X	X			
Defeated Camp Creek	Mile 4.4 to Origin			X	X	X	X			
Defeated Branch	Mile 0.0 to Origin			X	X	X	X			
Duck River	Mile 67.0 to 71.5		X	X	X	X	X			
Duck River	Mile 71.5 to 123.2	X	X	X	X	X	X			
Big Bigby Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Sugar Fork	Mile 0.0 to 1.9	X	X	X	X	X	X			
Sugar Fork	Mile 1.9 to 2.9		X	X	X	X	X			
Sugar Creek	Mile 0.0 to 0.7		X	X	X	X	X			
Sugar Creek	Mile 0.7 to Origin	X	X	X	X	X	X			
Quality Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Big Swan Creek	Mile 0.0 to Origin	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Little Swan Creek	Mile 0.0 to Origin			X	X	X	X		X	
Cathey's Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Duck River	Mile 123.2 to 127.2		X	X	X	X	X			
Little Bigby Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Rutherford Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Duck River	Mile 127.2 to 217.0	X	X	X	X	X	X			
Big Rock Creek	Mile 0.0 to 14.0	X	X	X	X	X	X			
Big Rock Creek	Mile 14.0 to 16.9		X	X	X	X	X			
Big Rock Creek	Mile 16.9 to Origin	X	X	X	X	X	X			
Duck River	Mile 217.0 to 221.3		X	X	X	X	X			
Duck River	Mile 221.3 to 244.0	X	X	X	X	X	X			
Duck River	Mile 244.0 to 248.6 (Normandy Dam)	X		X	X	X	X		X	
Duck River	Mile 248.6 to 266.5	X	X	X	X	X	X			
Garrison Fork Creek	Mile 0.0 to 2.7	X	X	X	X	X	X			
Garrison Fork Creek	Mile 2.7 to 3.3		X	X	X	X	X			
Garrison Fork Creek	Mile 3.3 to Origin	X	X	X	X	X	X			
Duck River	Mile 266.5 to 268.5		X	X	X	X	X			
Duck River	Mile 268.5 to Origin	X	X	X	X	X	X			
Little Duck River	Mile 0.0 to Origin	X	X	X	X	X	X			
All other surface waters named and unnamed in the Duck River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.06 ELK RIVER BASIN (INCLUDING SHOAL CREEK).

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Shoal Creek	Tenn-Ala State Line (Mile 20.6) to Mile 56.9	X	X	X	X	X	X			
Clack Branch	Mile 0.0 to Origin		X	X	X	X	X			
Loretto Branch	Mile 0.0 to Origin		X	X	X	X	X			
Little Shoal Creek	Mile 0.0 to Origin		X	X	X	X	X			
Shoal Creek	Mile 56.9 to Origin (Jct of B. Dry Branch & Beeler Fk)		X	X	X	X	X		X	
Factory Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Chisholm Creek	Mile 0.0 to Origin			X	X	X	X		X	
Crowson Creek	Mile 0.0 to Origin			X	X	X	X			X
Elk River	Tenn-Ala State Line (Mile 33.6) to 36.3	X	X	X	X	X	X	X		
Elk River	Mile 36.3 to 90.5	X	X	X	X	X	X			
Richland Creek	Mile 0.0 to 20.0		X	X	X	X	X			
Buchannan Creek	Mile 0.0 to Origin			X	X	X	X			
Richland Creek	Mile 20.0 to 23.3			X	X		X			
Richland Creek	Mile 23.3 to Origin	X	X	X	X	X	X			
Pigeon Roost Creek	Mile 0.0 to Origin		X	X	X	X	X			
Robertson Fork	Mile 0.0 to Origin		X	X	X	X	X			
Town Creek	Mile 0.0 to Origin		X	X	X	X	X			
Holland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Elk River	Mile 90.5 to 119.0	X	X	X	X	X	X			
Mulberry Creek	Mile 0.0 to Origin		X	X	X	X	X			
East Fork Mulberry Cr.	Mile 0.0 to 11.1		X	X	X	X	X			
East Fork Mulberry Cr.	Mile 11.1 to Origin	X	X	X	X	X	X			
Spring Branch	Mile 0.0 to Origin	X	X	X	X	X	X			
Elk River	Mile 119.0 to 133.3 (Tims Ford Dam)	X	X	X	X	X	X		X	
Elk River	Mile 133.3 to Origin	X	X	X	X	X	X			
Beans Creek	Mile 0.0 to Origin		X	X	X	X	X			
Factory Branch	Mile 0.0 to Origin		X	X	X	X	X			
Mathias Branch	Mile 0.0 to Origin		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Hurricane Creek	Mile 0.0 to Origin		X	X	X	X	X			
Boiling Fork Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Wagner Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Rock Creek	Mile 0.0 to Origin		X	X	X	X	X			
Rollins Creek	Mile 0.0 to 2.5	X	X	X	X	X	X			
Rollins Creek	Mile 2.5 to Origin			X	X	X	X			
Mud Creek	Mile 0.0 to Origin		X	X	X	X	X			
Caldwell Creek	Mile 0.0 to Origin		X	X	X	X	X			
All other surface waters named and unnamed in the Elk River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.07 LOWER TENNESSEE RIVER BASIN (INCLUDING CONASAUGA RIVER).

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Tenn-Ala State Line (Mile 416.5) to the POT Light (Mile 448.0)	X	X	X	X	X	X	X		
Unnamed Tributary	At Tenn. River Mile 417.5; Mile 0.0 to Origin			X	X	X	X			
Battle Creek	Mile 0.0 to 17.3 (Martin Spring)	X	X	X	X	X	X		X	
Swedens Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Fiery Gizzard	Mile 0.0 to 4.5			X	X	X	X			
Little Fiery Gizzard	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Little Fiery Gizzard Mile 0.6; Mile 0.0 to Origin			X	X	X	X			
Big Fiery Gizzard	Mile 4.5 to 5.5			X	X	X	X		X	
Big Fiery Gizzard	Mile 5.5 to Origin			X	X	X	X			
Battle Creek	Mile 17.3 to Origin	X	X	X	X	X	X			
Sequatchie River	Mile 0.0 to 3.5	X	X	X	X	X	X	X		

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Little Sequatchie River	Mile 0.0 to confluence of Sawmill Creek			X	X	X	X			
Little Sequatchie River	Confluence of Sawmill Creek to confluence of Grays Creek		X	X	X	X		X		
Little Sequatchie River	Confluence of Grays Creek to Origin			X	X	X	X			
Pocket Creek	Mile 0.0 to Origin			X	X	X	X		X	
Clifty Creek	Mile 0.0 to Origin			X	X	X	X			
Sewanee Creek	Mile 0.0 to 4.0			X	X	X	X			
Sewanee Creek	Mile 4.0 to Origin	X		X	X	X	X			
Holywater Creek	Mile 0.0 to Origin	X		X	X	X	X			
Scott Creek	Mile 0.0 to Origin	X		X	X	X	X			
Coops Creek	Mile 0.0 to Origin			X	X	X	X			
Sequatchie River	Mile 41.0 to 43.9			X	X	X	X			
Sequatchie River	Mile 43.9 to 74.0	X	X	X	X	X	X			
Sequatchie River	Mile 74.0 to 78.4			X	X	X	X			
Sequatchie River	Mile 78.4 to 105.9	X	X	X	X	X	X			
Sequatchie River	Mile 105.9 to 108.9	X	X	X	X	X	X		X	
Sequatchie River	108.8 to Origin			X	X	X	X			
Tennessee River	Mile 448.0 to 460.6 (Chattanooga Creek)		X	X	X	X	X	X		
Shoal Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Tenn. River Mile 458.7; Mile 0.0 to Origin			X	X	X	X			
Lookout Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Black Creek	Mile 0.0 to Origin			X	X	X	X			
Chattanooga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Tennessee River	Mile 460.6 to 499.4 (Hiwassee)	X	X	X	X	X	X	X		
Citico Creek	Mile 0.0 to Origin			X	X	X	X			
South Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Friar Branch	Mile 0.0 to Origin			X	X	X	X			
West Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Spring Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Mackey Branch	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Ryall Springs Br.	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Tenn. River Mile 469.2; Mile 0.0 to Origin			X	X	X	X			
North Chickamauga Creek	Mile 0.0 to 13.2			X	X	X	X			
Unnamed Tributary	At N. Chickamauga Creek Mile 0.7; Mile 0.0 to Origin			X	X	X	X			
North Chickamauga Creek	Mile 13.2 to 15.0			X	X	X	X		X	
North Chickamauga Creek	Mile 15.0 to Origin			X	X	X	X			
Wolftever Creek	Mile 0.0 to Origin			X	X	X	X			
Sale Creek	Mile 0.0 to Origin			X	X	X	X			
Roaring Creek	Mile 0.0 to Origin			X	X	X	X			
Brush Creek	Mile 0.0 to Origin			X	X	X	X			
Hiwassee River	Mile 0.0 to 23.9	X	X	X	X	X	X	X		
Candies Creek	Mile 0.0 to Origin			X	X	X	X			
South Mouse Creek	Mile 0.0 to Origin			X	X	X	X			
Chatata Creek	Mile 0.0 to Origin			X	X	X	X			
Little Chatata Cr.	Mile 0.0 to Origin			X	X	X	X			
Chestuee Creek	Mile 0.0 to Origin			X	X	X	X			
Middle Creek	Mile 0.0 to 1.9			X	X	X	X			
Middle Creek	Mile 1.9 to Origin	X		X	X	X	X			
Ocoee River	Mile 0.0 to Benton Station Bridge	X	X	X	X	X	X		X	
Ocoee River	Benton Station Bridge to mile 17.0	X	X	X	X	X	X			
Sylco Creek	Mile 0.0 to Origin			X	X	X	X		X	
Dutch Creek	Mile 0.0 to Origin			X	X	X	X		X	
Greasy Creek	Mile 0.0 to Origin			X	X	X	X			
Rock Creek	Mile 0.0 to Origin			X	X	X	X		X	
Clear Creek	Mile 0.0 to Origin			X	X	X	X		X	
Ocoee River	Mile 17.0 to Ocoee #3 Powerhouse		X	X	X	X	X			
Caney Creek (East Fork)	Mile 0.0 to Origin			X	X	X	X		X	
Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Goforth Creek	Mile 0.0 to Origin			X	X	X	X		X	

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Ocoee River	Ocoee #3 Powerhouse to Rock Creek		X	X	X	X	X		X	
Rock Creek	Mile 0.0 to Origin			X	X	X	X		X	
Ocoee River	Rock Creek to Mile 37.9 (Georgia-Tenn State Line)		X	X	X	X	X			
Rough Creek	Mile 0.0 to Origin			X	X	X	X			X
West Fork Rough Creek	Mile 0.0 to Origin			X	X	X	X			X
North Potato Creek	Mile 0.0 to North Carolina-Tenn State Line			X	X	X	X			
Burra Creek	Mile 0.0 to 1.5			X	X	X	X			
Brush Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Belcher Creek	Mile 0.0 to Origin			X	X	X	X			
Deweese Creek	Mile 0.0 to Origin	X		X	X	X	X			
Conasauga Creek	Mile 0.0 to Cog Hill Mill Dam			X	X	X	X		X	
Conasauga Creek	Cog Hill Mill Dam to Ruralville Mill			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			
Crockett Spring Cr	Mile 0.0 to Origin			X	X	X	X			
Conasauga Creek	Ruralville Mill to Origin			X	X	X	X		X	
Gee Creek	Mile 0.0 to Origin			X	X	X	X			X
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Yellow Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Lost Creek	Mile 0.0 to Origin			X	X	X	X		X	
Little Lost Creek	Mile 0.0 to Origin			X	X	X	X		X	
Smith Creek	Mile 0.0 to Origin			X	X	X	X		X	
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			X
Turtletown Creek	Mile 0.0 to N. Carolina Line			X	X	X	X		X	
Brushy Creek	Mile 0.0 to N. Carolina Line			X	X	X	X		X	
Coker Creek	Joe Brown Highway to Origin			X	X	X	X		X	
Hiwassee River	Mile 23.9 to 34.4	X	X	X	X	X	X	X		
North Mouse Creek	Mile 0.0 to 10.0	X	X	X	X	X	X			
Spring Creek	Mile 0.0 to 18.7		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Spring Creek	Mile 18.7 to Origin			X	X	X	X			
Dry Valley Creek	Mile 0.0 to Origin			X	X	X	X			
North Mouse Creek	Mile 10.0 to 30.1		X	X	X	X	X			
Little North Mouse Cr.	Mile 0.0 to 4.1			X	X	X	X			
Little North Mouse Cr.	Mile 4.1 to Origin			X	X	X	X			
North Mouse Creek	Mile 30.1 to Origin			X	X	X	X			
Oostanaula Creek	Mile 0.0 to 26.0	X	X	X	X	X	X			
Oostanaula Creek	Mile 26.0 to 28.0		X	X	X	X	X			
Oostanaula Creek	Mile 28.0 to 33.8		X	X	X	X	X			
Oostanaula Creek	Mile 33.8 to 37.5	X	X	X	X	X	X			
Oostanaula Creek	Mile 37.5 to Origin			X	X	X	X			
Hiwassee River	Mile 34.4 to 64.9 (North Carolina Line)	X	X	X	X	X	X		X	
All other surface waters named and unnamed in the Lower Tennessee River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.08 UPPER TENNESSEE RIVER BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Mile 499.4 (Hiwassee) to 567.8 (Clinch)	X	X	X	X	X	X	X		
Richland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Little Richland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Broyles Branch	Mile 0.0 to Origin		X	X	X	X	X			
Piney River	Mile 0.0 to 5.5		X	X	X	X	X	X		
Piney River	Mile 5.5 to 6.5 (U.S. Hwy. 27 Bridge)	X	X	X	X	X	X			
Piney River	Mile 6.5 to Origin		X	X	X	X	X			
Town Creek	Mile 0.0 to Origin		X	X	X	X	X			
Whites Creek	Mile 0.0 to 5.1			X	X	X	X	X		
Whites Creek	Mile 5.1 to Origin			X	X	X	X			
Black Creek	Mile 0.0 to Origin			X	X	X	X			
Caney Creek	Mile 0.0 to Origin			X	X	X	X			
Post Oak Creek	Mile 0.0 to Origin			X	X	X	X			
Cardiff Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to 3.0			X	X	X	X		X	
Tennessee River	Mile 567.8 to 601.1	X	X	X	X	X	X	X		
Martin Branch	Mile 0.0 to Origin			X	X	X	X			
Stamp Creek	Mile 0.0 to Origin			X	X	X	X			
Greenbriar Branch	Mile 0.0 to Origin			X	X	X	X			
Hines Creek	Mile 0.0 to Origin			X	X	X	X			
Sweetwater Creek	Mile 0.0 to 9.4	X	X	X	X	X	X			
Bacon Creek	Mile 0.0 to Origin			X	X	X	X			
Sweetwater Creek	Mile 9.4 to 19.0			X	X	X	X			
Sweetwater Creek	Mile 19.0 to 21.0	X		X	X	X	X			
Sweetwater Creek	Mile 21.0 to Origin	X	X	X	X	X	X			
Unnamed Spring Branch	Mile 0.0 to Origin			X	X	X	X			
Little Tennessee River	Mile 0.0 to 19.0	X	X	X	X	X	X	X		
Fork Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Unnamed Tributary	Mile 0.0 to Origin			X	X	X	X			
Bat Creek	Mile 0.0 to Origin			X	X	X	X			
Tellico River	Mile 0.0 to 5.0	X	X	X	X	X	X	X		
Tellico River	Mile 5.0 to 28.0	X	X	X	X	X	X			
Ballplay Creek	Upper 7 miles			X	X	X	X		X	
Cane Creek	Mile 0.0 to Origin			X	X	X	X		X	
Tellico River	Mile 28.0 to 41.0	X		X	X	X	X		X	
Wildcat Creek	Mile 0.0 to Origin			X	X	X	X		X	
Turkey Creek	Mile 0.0 to Origin			X	X	X	X		X	
Bald River	Mile 0.0 to Origin			X	X	X	X			X
Kirkland Creek	Mile 0.0 to Origin			X	X	X	X			X
Henderson Creek	Mile 0.0 to Origin			X	X	X	X			X
Barrett Branch	Mile 0.0 to Origin			X	X	X	X			X
Service Branch	Mile 0.0 to Origin			X	X	X	X			X
Brookshire Branch	Mile 0.0 to Origin			X	X	X	X			X
North River	Mile 0.0 to Origin			X	X	X	X			X
Long Branch	Mile 0.0 to Origin			X	X	X	X		X	
Hemlock Branch	Mile 0.0 to Origin			X	X	X	X		X	
McNabb Creek	Mile 0.0 to Origin			X	X	X	X			X
Laurel Branch	Mile 0.0 to Origin			X	X	X	X			X
Big Cove Branch	Mile 0.0 to Origin			X	X	X	X			X
Round Mountain Br	Mile 0.0 to Origin			X	X	X	X			X
Service Tree Br	Mile 0.0 to Origin			X	X	X	X			X
Sugar Cove Br	Mile 0.0 to Origin			X	X	X	X			X
Meadow Branch	Mile 0.0 to Origin			X	X	X	X			X
Roaring Br	Mile 0.0 to Origin			X	X	X	X			X
Indian Creek	Mile 0.0 to Origin			X	X	X	X			X
Panther Branch	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tellico River	Mile 41.0 to 50.0 (TN - NC Line)	X	X	X	X	X	X			X
Sycamore Creek	Mile 0.0 to Origin			X	X	X	X			X
Rough Ridge Creek	Mile 0.0 to Origin			X	X	X	X			X
Little Tennessee River	Mile 19.0 to 30.0	X	X	X	X	X	X	X	X	
Citico Creek	Mile 4.5 to 16.0			X	X	X	X		X	
Jakes Creek	Mile 0.0 to 3.0			X	X	X	X			X
Slide Hollow	Mile 0.0 to 2.0			X	X	X	X		X	
Little Citico Creek	Mile 0.0 to 3.5			X	X	X	X			X
Jake Best Creek	Mile 0.0 to Origin			X	X	X	X			X
Doublecamp Creek	Mile 0.0 to Origin			X	X	X	X			X
Mill Branch	Mile 0.0 to Origin			X	X	X	X			X
Flint Branch	Mile 0.0 to Origin			X	X	X	X			X
Crowder Branch	Mile 0.0 to Origin			X	X	X	X			X
Citico Creek	Mile 16.0 to Origin			X	X	X	X			X
N. Fk Citico Creek	Mile 0.0 to Origin			X	X	X	X			X
Indian Valley Br	Mile 0.0 to Origin			X	X	X	X			X
South Fork Citico Creek	Mile 0.0 to Origin			X	X	X	X			X
Ike Camp Branch	Mile 0.0 to Origin			X	X	X	X			X
Falls Branch	Mile 0.0 to Origin			X	X	X	X			X
Cochran Creek	Mile 0.0 to mile 2.0			X	X	X	X		X	
Abrams Creek	Mile 0.0 to Origin			X	X	X	X			X
Panther Creek	Mile 0.0 to Origin			X	X	X	X			X
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Bell Cove Branch	Mile 0.0 to Origin			X	X	X	X		X	
Kingfisher Creek	Mile 0.0 to Origin			X	X	X	X		X	
Buckshank Branch	Mile 0.0 to Origin			X	X	X	X		X	
Rabbit Creek	Mile 0.0 to Origin			X	X	X	X			X
Hannah Branch	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Peckerwood Br	Mile 0.0 to Origin			X	X	X	X			X
Wilson Branch	Mile 0.0 to Origin			X	X	X	X		X	
Stony Branch	Mile 0.0 to Origin			X	X	X	X		X	
Arbutus Branch	Mile 0.0 to Origin			X	X	X	X		X	
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Forge Creek	Mile 0.0 to Origin			X	X	X	X			X
Coalen Ground Br	Mile 0.0 to Origin			X	X	X	X		X	
Bower Creek	Mile 0.0 to Origin			X	X	X	X			X
Tipton Sugar Cove	Mile 0.0 to Origin			X	X	X	X		X	
Ekanneetlee Br	Mile 0.0 to Origin			X	X	X	X			X
Tater Branch	Mile 0.0 to Origin			X	X	X	X		X	
McCaulley Branch	Mile 0.0 to Origin			X	X	X	X		X	
Rowans Branch	Mile 0.0 to Origin			X	X	X	X			X
Anthony Creek	Mile 0.0 to Origin			X	X	X	X			X
Shop Creek	Mile 0.0 to Origin			X	X	X	X			X
Tabcat Creek	Mile 0.0 to Origin			X	X	X	X			X
Parson Branch	Mile 0.0 to Origin			X	X	X	X			X
Bible Creek	Mile 0.0 to Origin			X	X	X	X			X
Slickrock Creek	Tennessee portion			X	X	X	X			X
Little Slickrock Cr	Mile 0.0 to Origin			X	X	X	X			X
Little Tennessee River	Mile 30.0 to 49.7 (TN.-N.C. Line)	X	X	X	X	X	X		X	
Morgan Branch	Mile 0.0 to Origin			X	X	X	X			
Abrams Branch	Mile 0.0 to Origin			X	X	X	X			
First Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Tennessee River	Mile 601.1 to 636.6 (Little River)	X	X	X	X	X	X	X		
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Gallagher Creek	Mile 0.0 to Origin			X	X	X	X			
Turkey Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek #1	Mile 0.0 to Origin	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Ten Mile Creek	From Sink to Origin			X	X	X	X			
Sinking Creek #2	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	Mile 0.0 to Origin			X	X	X	X			
Lackey Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			
Little River	Mile 0.0 to 33.0	X	X	X	X	X	X			
Polecat Branch	Mile 0.0 to Origin			X	X	X	X			
Stock Creek	Mile 0.0 to Origin			X	X	X	X			
McCall Branch	Mile 0.0 to Origin			X	X	X	X			
Russell's Branch	Mile 0.0 to Origin			X	X	X	X			
Pistol Creek	Mile 0.0 to Origin			X	X	X	X			
Duncan Branch	Mile 0.0 to Origin			X	X	X	X			
Culton Creek	Mile 0.0 to Origin			X	X	X	X			
Tedford Br	Mile 0.0 to Origin			X	X	X	X			
Hesse Creek	Upper 5 miles			X	X	X	X		X	
Cane Creek	Upper 2.0 miles			X	X	X	X		X	
Beard Cane Cr	Upper 1.5 miles			X	X	X	X		X	
Little River	Mile 33.0 to Origin	X		X	X	X	X			X
M. Pr. Little River	Mile 0.0 to Origin			X	X	X	X			X
W. Prong Little R.	Mile 0.0 to Origin			X	X	X	X			X
Laurel Creek	Mile 0.0 to Origin			X	X	X	X			X
Meadow Br	Mile 0.0 to Origin			X	X	X	X			X
Spruce Flats Br	Mile 0.0 to Origin			X	X	X	X			X
Sams Creek	Mile 0.0 to Origin			X	X	X	X			X
Thunderhead Pr	Mile 0.0 to Origin			X	X	X	X			X
Shut-in Cr	Mile 0.0 to Origin			X	X	X	X			X
Lynn Camp Prong	Mile 0.0 to Origin			X	X	X	X			X
Marks Creek	Mile 0.0 to Origin			X	X	X	X			X
Meigs Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Little Greenbriar Creek	Mile 0.0 to Origin			X	X	X	X			X
Mannis Branch	Mile 0.0 to Origin			X	X	X	X			X
Blanket Creek	Mile 0.0 to Origin			X	X	X	X			X
Shields Branch	Mile 0.0 to Origin			X	X	X	X			X
Jakes Creek	Mile 0.0 to Origin			X	X	X	X			X
Newt Prong	Mile 0.0 to Origin			X	X	X	X			X
Laurel Branch	Mile 0.0 to Origin			X	X	X	X			X
Fish Camp Prong	Mile 0.0 to Origin			X	X	X	X			X
Goshen Prong	Mile 0.0 to Origin			X	X	X	X			X
Silers Prong	Mile 0.0 to Origin			X	X	X	X			X
Rich Branch	Mile 0.0 to Origin			X	X	X	X			X
Rough Creek	Mile 0.0 to Origin			X	X	X	X			X
Meigs Post Prong	Mile 0.0 to Origin			X	X	X	X			X
Grouse Creek	Mile 0.0 to Origin			X	X	X	X			X
Tennessee River	Mile 636.6 to 638.6	X	X	X	X	X	X	X		
Tennessee River	Mile 638.6 to 640.0		X	X	X	X	X	X		
Tennessee River	Mile 640.0 to 643.4	X	X	X	X	X	X	X		
Tennessee River	Mile 643.4 to 646.4		X	X	X	X	X	X		
Tennessee River	Mile 646.4 to 652.2	X	X	X	X	X	X	X		
Knob Creek	Mile 0.0 to Origin			X	X	X	X			
Flenniken Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			
Fourth Creek	Mile 0.0 to Origin			X	X	X	X			
Third Creek	Mile 0.0 to 4.9			X	X	X	X			
Third Creek	Mile 4.9 to Origin	X	X	X	X	X	X			
Second Creek	Mile 0.0 to Origin		X	X	X	X	X			
First Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
All other surface water named and unnamed in the Upper Tennessee River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.09 CLINCH RIVER BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Clinch River	Mile 0.0 to 4.4 (Emory River)	X	X	X	X	X	X	X		
Emory River	Mile 0.0 to Origin	X	X	X	X	X	X			
Little Emory River	Mile 0.0 to Origin	X	X	X	X	X	X			
Middle Fork Little Emory River	Mile 0.0 to Origin			X	X	X	X			
Davis Branch	Mile 0.0 to 0.2			X	X	X	X			
Unnamed Tributary	At Emory River (Mile 16.4); Mile 0.0 to 1.0			X	X	X	X			
Crooked Fork Creek	Mile 0.0 to 4.9			X	X	X	X			
Unnamed Tributary	At Crooked Fork Creek (Mile 4.9); Mile 0.0 to Origin			X	X	X	X			
Crooked Fork Creek	Mile 4.9 to Origin	X		X	X	X	X			
Flat Fork Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Unnamed Tributary	At Flat Fork (Mile 2.3); Mile 0.0 to Origin			X	X	X	X		X	
Stockstill Creek	Mile 0.0 to Origin			X	X	X	X			
Obed River	Mile 0.0 to 40.1			X	X	X	X			
Daddy's Creek	Mile 0.0 to Origin			X	X	X	X			
Basses Creek	Mile 0.0 to Origin			X	X	X	X			
Fox Creek	Mile 0.0 to Origin			X	X	X	X			
Scantling Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Scantling Branch (Mile 1.2); Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Obed River (Mile 34.6); Mile 0.0 to Origin			X	X	X	X			
Obed River	Mile 40.1 to Origin	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Unnamed Tributary	At Obed River (Mile 45.4); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 4.4 to 12.0 (Poplar Creek)	X	X	X	X	X	X	X		
Poplar Creek	Mile 0.0 to 0.5		X	X	X	X	X			
Poplar Creek	Mile 0.5 to Origin			X	X	X	X			
East Fork Poplar Creek	Mile 0.0 to Origin			X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Indian Creek	At Poplar Creek (Mile 14.3); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 12.0 to 20.0	X	X	X	X	X	X			
White Oak Creek	Mile 0.0 to Origin			X	X		X			
Melton Branch	Mile 0.0 to Origin			X	X		X			
Clinch River	Mile 20.0 to 39.6	X	X	X	X	X	X	X		
Beaver Creek	Mile 0.0 to 8.4	X	X	X	X	X	X			
Beaver Creek	Mile 8.4 to 10.4		X	X	X	X	X			
Beaver Creek	Mile 10.4 to 17.5	X	X	X	X	X	X			
Beaver Creek	Mile 17.5 to 17.9		X	X	X	X	X			
Beaver Creek	Mile 17.9 to 21.6	X	X	X	X	X	X			
Beaver Creek	Mile 21.6 to 23.6			X	X	X	X			
Beaver Creek	Mile 23.6 to 29.4	X	X	X	X	X	X			
Beaver Creek	Mile 29.4 to 31.4			X	X	X	X			
Beaver Creek	Mile 31.4 to Origin	X	X	X	X	X	X			
Unnamed Tributary	At Beaver Creek (Mile 44.1); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 39.6 to 41.1	X	X	X	X	X	X	X		
Scarboro Creek	Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 41.1 to 46.7	X	X	X	X	X	X	X		
Bull Run Creek	Mile 0.0 to 1.0			X	X	X	X			
Bull Run Creek	Mile 1.0 to Origin	X		X	X	X	X			
Nelson Branch	Mile 0.0 to Origin			X	X	X	X			
Blaze Branch	At Nelson Branch (Mile 5.0); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 46.7 to 47.8	X	X	X	X	X	X	X		
Worthington Branch	At Clinch River (Mile 47.8); Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Clinch River	Mile 47.8 to 50.7	X	X	X	X	X	X	X		
Braden Branch	At Clinch River (Mile 50.7); Mile 0.0 to 1.7			X	X		X			
Braden Branch	Mile 1.7 to Origin			X	X	X	X			
Clinch River	Mile 50.7 to 51.1	X	X	X	X	X	X	X		
Unnamed Tributary	At Clinch River (Mile 51.1); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 51.1 to 61.5	X	X	X	X	X	X	X		
Clinch River	Mile 61.5 to 66.2	X	X	X	X	X	X			
Hinds Creek	At Clinch River (Mile 65.0); Mile 0.0 to Origin			X	X	X	X			
Buffalo Creek	Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 66.2 to 79.8	X	X	X	X	X	X		X	
Cane Creek	At Clinch River (Mile 71.3); Mile 0.0 to Origin			X	X	X	X			
Blowing Spring Fork	At Cane Creek (Mile 1.9); Mile 0.0 to Origin			X	X	X	X			
Coal Creek	At Clinch River (Mile 75.0); Mile 0.0 to Origin			X	X	X	X		X	
Unnamed Tributary	At Coal Creek (Mile 8.6); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 79.8 to 202.1 (Virginia Stateline)	X	X	X	X	X	X			
Cove Creek	Mile 0.0 to 15.1	X	X	X	X	X	X			
Unnamed Tributary	At Cover Creek (Mile 13.7); Mile 0.0 to Origin			X	X	X	X			
Cove Creek	Mile 15.1 to 16.1		X	X	X	X	X			
Cove Creek	Mile 16.1 to Origin	X	X	X	X	X	X			
Bruce (Brush) Creek	Mile 0.0 to Origin			X	X	X	X			
Dog Creek	At Bruce Creek (Mile 0.9); Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Dog Creek (Mile 2.0); Mile 0.0 to Origin			X	X	X	X			
Big Creek	At Clinch River (Mile 83.0); Mile 0.0 to 15.6	X	X	X	X	X	X			
Big Creek	Mile 15.6 to 17.6		X	X	X	X	X			
Big Creek	Mile 17.6 to Origin			X	X	X	X			
Ollis Creek	At Big Creek (Mile 20.4); Mile 0.0 to Origin	X	X	X	X	X	X			
Powell River	At Clinch River (Mile 88.8); Mile 0.0 to 115.7	X	X	X	X	X	X			
Gap Creek	At Powell River (Mile 57.7); Mile 0.0 to Origin			X	X	X	X			
Unnamed Spring Br.	From Sinkhole to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Russell Creek	At Powell River (Mile 82.4); Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to 2.0			X	X	X	X		X	
White Creek	Mile 0.0 to 2.0			X	X	X	X		X	
Mill Creek	At Clinch River (Mile 98.0); Mile 0.0 to Origin			X	X	X	X			
Byram's Creek	At Mill Creek (Mile 0.5); Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Byram's Creek (Mile 2.3); Mile 0.0 to Origin			X	X	X	X			
Ball Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Poorland Creek	At Clinch River (Mile 104.2); Mile 0.0 to Origin			X	X	X	X			
Dry Tributary	At Poorland Creek (Mile 2.5); Mile 0.0 to Waste Outfall			X	X		X			
Hunting Creek	At Clinch River (Mile 118.3); Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Hunting Creek (Mile 2.0); Mile 0.0 to Origin			X	X	X	X			
Big War Creek	At Clinch River (Mile 164.4); Mile 0.0 to 8.0			X	X	X	X			
Flat Gap Creek	At Big War Branch (Mile 7.0); Mile 0.0 to Origin			X	X	X	X			
Big War Creek	Mile 8.0 to Origin			X	X	X	X			
North Fork Clinch River	At Clinch River (Mile 192.0); Mile 0.0 to 2.2			X	X	X	X		X	
All other surface waters named and unnamed in the Clinch River Basin, with the exception of wet weather conveyances, which have not been specifically treated shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.10 FRENCH BROAD RIVER BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
French Broad River	Mile 0.0 to 102.2 (N. Carolina-Tenn Line)	X	X	X	X	X	X			
Hines Creek	Mile 0.0 to Origin		X	X	X	X	X			
Unnamed Tributary	At Hines Creek (Mile 1.7)			X	X		X			
Unnamed Tributary	At Hines Creek (Mile 3.7)			X	X		X			
Cement Mill Creek	Mile 0.0 to Origin		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Boyds Creek	Mile 0.0 to Origin		X	X	X	X	X			
Unnamed Tributary	At Boyds Creek (Mile 9.7)			X	X		X			
Unnamed Tributary	At Boyds Creek (Mile 11.5)			X	X		X			
Little Pigeon River	Mile 0.0 to 2.9	X	X	X	X	X	X			
Gist (Guess) Creek	Mile 0.0 to Origin			X	X	X	X			
Little Pigeon River	Mile 2.9 to 4.8		X	X	X	X	X			
W. Prong Little Pigeon R.	Mile 0.0 to 4.5	X	X	X	X	X	X			
W. Prong Little Pigeon R.	Mile 4.5 to 7.9	X	X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 7.9 to 8.8		X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 8.8 to 13.0	X	X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 13.0 to 14.0		X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 14.0 to 19.0		X	X	X	X	X		X	
Dudley Creek	Mile 0.0 to Origin			X	X	X	X		X	
Little Dudley Creek	Mile 0.0 to Origin			X	X	X	X		X	
Roaring Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Baskins Creek	Mile 0.0 to Origin			X	X	X	X		X	
Norton Creek	Mile 0.0 to Origin			X	X	X	X			X
Leconte Creek	Mile 0.0 to Origin			X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 19.0 to Origin	X		X	X	X	X			X
Twomile Creek	Mile 0.0 to Origin			X	X	X	X			X
Fighting Creek	Mile 0.0 to Origin			X	X	X	X			X
Sugarland Branch	Mile 0.0 to Origin			X	X	X	X			X
Big Branch	Mile 0.0 to Origin			X	X	X	X			X
Road Prong	Mile 0.0 to Origin			X	X	X	X			X
Cole Branch	Mile 0.0 to Origin			X	X	X	X			X
Alum Cave Creek	Mile 0.0 to Origin			X	X	X	X			X
Walker Camp Pr	Mile 0.0 to Origin			X	X	X	X			X
Little Pigeon River	Mile 4.8 to 20.3	X	X	X	X	X	X			
Little Pigeon River	Mile 20.3 to Origin	X		X	X	X	X		X	
E.F. Little Pigeon R.	Mile 0.0 to Origin	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Dunn Creek	Mile 0.0 to 15.8	X	X	X	X	X	X		X	
Dunn Creek	Mile 15.8 to Origin	X	X	X	X	X	X			X
Ogle Springs Br	Mile 0.0 to Origin			X	X	X	X			
Bird Creek	Mile 0.0 to Origin			X	X	X	X			
Webb Creek	Mile 0.0 to Great Smoky Mtns Pk Boundary (Mile 5.8)			X	X	X	X		X	
Soak Ash Creek	Mile 0.0 to Origin			X	X	X	X			X
Timothy Creek	Mile 0.0 to Origin			X	X	X	X			X
Redwine Creek	Mile 0.0 to Origin			X	X	X	X			X
Noisy Creek	Mile 0.0 to Origin			X	X	X	X			X
Texas Creek	Mile 0.0 to Origin			X	X	X	X			X
Webb Creek	Great Smoky Mts boundary to origin			X	X	X	X			X
Copeland Creek	Mile 0.0 to Origin			X	X	X	X		X	
Injun Creek	Mile 0.0 to Origin			X	X	X	X		X	
Rhododendron Creek	Mile 0.0 to Origin			X	X	X	X		X	
Porters Creek	Mile 0.0 to Origin			X	X	X	X		X	
False Gap Prong	Mile 0.0 to Origin			X	X	X	X		X	
Kalanu Prong	Mile 0.0 to Origin			X	X	X	X		X	
Long Branch	Mile 0.0 to Origin			X	X	X	X		X	
Cannon Creek	Mile 0.0 to Origin			X	X	X	X		X	
Lowes Creek	Mile 0.0 to Origin			X	X	X	X		X	
Boulevard Prong	Mile 0.0 to Origin			X	X	X	X		X	
Shutts Prong	Mile 0.0 to Origin			X	X	X	X		X	
Middle Prong Little Pigeon	Mile 0.0 to Origin			X	X	X	X		X	
Ramsey Prong	Mile 0.0 to Origin			X	X	X	X		X	
Chapman Prong	Mile 0.0 to Origin			X	X	X	X		X	
Eagle Rocks Branch	Mile 0.0 to Origin			X	X	X	X		X	
Lost Prong	Mile 0.0 to Origin			X	X	X	X		X	
Buck Fork	Mile 0.0 to Origin			X	X	X	X		X	
Muddy Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to Origin	X		X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
City Spring Tributary	Mile 0.0 to Origin			X	X	X	X			
Indian Creek	Mile 0.0 to Origin			X	X	X	X			
Ball Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Ball Creek (Mile 2.9); Mile 0.0 to Origin			X	X		X			
Leadvale Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to Origin			X	X	X	X			
Nolichucky River	Mile 0.0 to 5.3	X	X	X	X	X	X			
Long Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	Mile 0.0 to Origin			X	X	X	X			
Nolichucky River	Mile 5.3 to 7.7		X	X	X	X	X			
Nolichucky River	Mile 7.7 to 100.8 (N. Carolina-Tenn Line)	X	X	X	X	X	X			
Slate Creek	Mile 0.0 to Origin			X	X	X	X			
Bent Creek	Mile 0.0 to Origin			X	X	X	X			
Mud Creek	Mile 0.0 to Origin			X	X	X	X			
Williams Branch	Mile 0.0 to Origin			X	X	X	X			
Lick Creek	Mile 0.0 to 49.0		X	X	X	X	X			
Lick Creek	Mile 49.0 to Origin	X	X	X	X	X	X			
Black Creek	Mile 0.0 to Origin			X	X	X	X			
War Branch	Mile 0.0 to 0.5			X	X	X	X			
Unnamed Tributary	At Lick Creek (Mile 36.1); Mile 0.0 to Origin			X	X		X			
Little Chucky Creek	Mile 0.0 to Origin			X	X	X	X			
Mosheim Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Mosheim Branch (Mile 2.0); Mile 0.0 to Origin			X	X		X			
Unnamed Tributary	At Little Chucky Creek (Mile 17.2); Mile 0.0 to Origin			X	X	X	X			
Gap Creek	Mile 0.0 to Origin			X	X	X	X			
Furness Branch	Mile 0.0 to Origin			X	X	X	X			
Cove Creek	Mile 0.0 to Origin			X	X	X	X			
Flag Branch	Mile 0.0 to Origin			X	X	X	X			
Richland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Crazy Creek	Sinkhole to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Unnamed Tributary	At Crazy Creek (Mile 1.3); Mile 0.0 to 0.5			X	X	X	X			
Unnamed Tributary	Mile 0.5 to Origin			X	X		X			
Camp Creek	Mile 0.0 to Origin		X	X	X	X	X			X
Jennings Creek	Mile 0.0 to Origin			X	X	X	X			X
Dry Creek	Mile 0.0 to 1.3			X	X	X	X			
Dry Creek	Mile 1.3 to Origin			X	X	X	X			X
Davis Creek	Mile 0.0 to Origin			X	X	X	X			X
College Creek	Mile 0.0 to Origin			X	X	X	X			
Moon Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	Mile 0.0 to Origin			X	X	X	X			
Little Limestone Creek	Mile 0.0 to Origin			X	X	X	X			
Horse Creek	Mile 0.0 to Origin			X	X	X	X			X
Squibb Branch	Mile 0.0 to Origin			X	X	X	X			X
Cassi Creek, East and West Fork	Mile 0.0 to Origin			X	X	X	X			X
Painter Creek	Mile 0.0 to Origin			X	X	X	X			X
Clarks Creek	Mile 0.0 to Origin			X	X	X	X			X
Devil Fork Branch	Mile 0.0 to Origin			X	X	X	X			X
Long Arm Branch	Mile 0.0 to Origin			X	X	X	X			X
Chigger Branch	Mile 0.0 to Origin			X	X	X	X			X
Dry Creek	Mile 0.0 to Origin			X	X	X	X			X
Ramsey Creek	Mile 0.0 to Origin			X	X	X	X			X
Briar Creek	Mile 0.0 to Origin			X	X	X	X			X
Straight Creek	Mile 0.0 to Origin			X	X	X	X			X
Bumpus Cove Creek	Mile 0.0 to Origin			X	X	X	X			X
Broad Shoal Creek	Mile 0.0 to Origin			X	X	X	X			X
California Creek	Mile 0.0 to Origin			X	X	X	X			X
North Indian Creek	Upstream of Erwin	X	X	X	X	X	X			X
Rock Creek	Mile 0.0 to Origin			X	X	X	X			X
Duck Creek	Mile 0.0 to Origin			X	X	X	X			X
Red Fork Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Clear Fork Branch	Mile 0.0 to Origin			X	X	X	X			X
South Indian Creek	Mile 0.0 to Origin			X	X	X	X			X
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Granny Lewis Creek	Mile 0.0 to Origin			X	X	X	X			X
Lower Higgins Creek	Mile 0.0 to Origin			X	X	X	X			X
Birchfield Camp Br	Mile 0.0 to Origin			X	X	X	X			X
Big Branch	Mile 0.0 to Origin			X	X	X	X			X
Spivey Creek	Mile 0.0 to Origin			X	X	X	X			X
Coffee Ridge Cr	Mile 0.0 to Origin			X	X	X	X			X
Watts Branch	Mile 0.0 to Origin			X	X	X	X			X
Tumbling Creek	Mile 0.0 to Origin			X	X	X	X			X
Rocky Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Flint Creek	Mile 0.0 to Origin			X	X	X	X			X
Devil Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Sams Creek	Mile 0.0 to Origin			X	X	X	X			X
Upper Higgins Creek	Mile 0.0 to Origin			X	X	X	X			X
E. Fk Higgins Cr	Mile 0.0 to Origin			X	X	X	X			X
Rice Creek	Mile 0.0 to Origin			X	X	X	X			X
Jones Creek	Mile 0.0 to Origin			X	X	X	X			X
Long Branch	Mile 0.0 to Origin			X	X	X	X			X
Pigeon River	Mile 0.0 to 25.9 (Tenn-N. Car. Line)		X	X	X	X	X			
Matthew Creek	Mile 0.0 to Origin			X	X	X	X		X	
Sinking Creek	Mile 0.0 to 5.2		X	X	X	X	X			X
Sinking Creek	Mile 5.2 to Origin	X		X	X	X	X		X	
Cosby Creek	Mile 0.0 to 4.3			X	X	X	X		X	
Cosby Creek	Mile 4.3 to Origin			X	X	X	X			X
N. Fork Bogard Cr	Mile 0.0 to Origin			X	X	X	X		X	
Indian Camp Creek	Mile 0.0 to Origin			X	X	X	X			X
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Big Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Gulf Fork Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Trail Fork Big Creek	Mile 0.0 to Origin			X	X	X	X		X	
Dry Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Bailey Branch	Mile 0.0 to Origin			X	X	X	X		X	
Bear Branch	Mile 0.0 to Origin			X	X	X	X		X	
Laurel Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Moss Camp Creek	Mile 0.0 to Origin			X	X	X	X			X
Deep Gap Creek	Mile 0.0 to Origin			X	X	X	X			X
M. Prong Gulf Fork	Mile 0.0 to Origin			X	X	X	X			X
Laurel Creek	Mile 0.0 to Origin			X	X	X	X			X
Brown Gap Creek	Mile 0.0 to Origin			X	X	X	X			X
Tom Creek	Mile 0.0 to Origin			X	X	X	X		X	
Wolf Creek	Mile 0.0 to 2.0			X	X	X	X		X	
Wolf Creek	Mile 2.0 to Origin			X	X	X	X			X
Brush Creek	Mile 0.0 to 1.0			X	X	X	X		X	
Paint Creek	Mile 0.0 to Origin			X	X	X	X			X
All other surface waters named and unnamed in the French Broad River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.11 HOLSTON RIVER BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Holston River	Mile 0.0 to 131.5 (Church Hill Bridge)	X	X	X	X	X	X			
Unnamed Branch	At Holston River (Mile 1.0); Mile 0.0 to Origin			X	X	X	X			
Sand Branch	Mile 0.0 to Origin			X	X	X	X			
Swan Pond Creek	Mile 0.0 to 5.0			X	X	X	X			
Pratt Branch	Mile 0.0 to Origin			X	X	X	X			
Woods Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Holston River (Mile 6.7); Mile 0.0 to Origin			X	X	X	X			
Maccash Branch	At Holston River (Mile 10.8); Mile 0.0 to Origin			X	X	X	X			
Roseberry Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Roseberry Creek (Mile 1.7); Mile 0.0 to 0.5			X	X	X	X			
Unnamed Branch	Mile 0.5 to 0.7			X	X	X	X			
Big Flat Creek	Mile 0.0 to 8.0		X	X	X	X	X			
Little Flat Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At L. Flat Creek (Mile 1.3); Mile 0.0 to Origin			X	X	X	X			
Big Flat Creek	Mile 8.0 to Origin			X	X	X	X			
Lyon Creek	Mile 0.0 to 0.3		X	X	X	X	X			
Lyon Creek	Mile 0.3 to 1.9		X	X	X	X	X			
Unnamed Branch	At Lyon Creek (Mile 1.9); Mile 0.0 to Origin			X	X	X	X			
Lyon Creek	Mile 1.9 to Origin			X	X	X	X			
Unnamed Branch	At Lyon Creek (Mile 2.7); Mile 0.0 to Origin			X	X	X	X			
Richland Creek	At Holston River (Mile 27.1); Mile 0.0 to Origin			X	X	X	X			
Beaver Creek	At Holston River (Mile 30.4); Mile 0.0 to Origin			X	X	X	X			
Lost Creek at New Market	Sink at Mile 1.9 to Origin			X	X	X	X			
Buffalo Creek	Below Buffalo Springs			X	X	X	X		X	
Mossy Creek	At Holston River (Mile 52.4); Mile 0.0 to 3.9	X	X	X	X	X	X			
Mossy Creek	Mile 3.9 to Origin		X	X	X	X	X		X	
Unnamed Branch	At Holston River (Mile 55.0); Mile 0.0 to Origin			X	X	X	X			
German Creek	At Holston River (Mile 70.2); Mile 0.0 to 8.1	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
German Creek	Mile 8.1 to Origin			X	X	X	X			
Turkey Creek	At Holston River (Mile 75.2); Mile 0.0 to 1.2	X	X	X	X	X	X			
Turkey Creek	Mile 1.2 to Origin			X	X	X	X			
Spring Creek	At Holston River (Mile 76.0); Mile 0.0 to 1.2	X	X	X	X	X	X			
Spring Creek	Mile 1.2 to Origin			X	X	X	X			
Thompson Creek	Mile 0.0 to Origin			X	X	X	X			
Fall Creek	At Holston River (Mile 80.7); Mile 0.0 to 1.0	X	X	X	X	X	X			
Fall Creek	Mile 1.0 to Origin			X	X	X	X			
Poor Valley Creek	At Holston River (Mile 89.2); Mile 0.0 to 6.8	X	X	X	X	X	X			
Mooresburg Branch	Mile 0.0 to 1.6	X	X	X	X	X	X			
Mooresburg Branch	Mile 1.6 to Origin			X	X	X	X			
Poor Valley Creek	Mile 6.8 to Origin			X	X	X	X			
Beech Creek	At Holston River (Mile 108.8); Mile 0.0 to Origin			X	X	X	X			
Big Creek (Stanley Prong)	Holston River (Mile 109.1); Mile 0.0 to Origin	X	X	X	X	X	X		X	
Forgey Creek	At Holston River (Mile 116.9); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Forgey Creek (Mile 1.1); Mile 0.0 to 1.0			X	X		X			
Stoney Point Creek	At Holston River (Mile 123.0); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Stoney Point Creek (Mile 0.2); Mile 0.0 to Origin			X	X	X	X			
Bradley Creek	At Holston River (Mile 128.8); Mile 0.0 to Origin	X		X	X	X	X			
Holston River	Mile 131.5 to Origin (Mile 142.2)			X	X	X	X			
Alexander Creek	At Holston River (Mile 131.9); Mile 0.0 to 3.4	X	X	X	X	X	X		X	
Unnamed Branch	At Alexander Creek (Mile 3.4); Mile 0.0 to 0.3			X	X	X	X			
Alexander Creek	Mile 3.4 to Origin			X	X	X	X		X	
Smith Creek	At Holston River (Mile 135.5); Mile 0.0 to Origin			X	X	X	X			
Arnott Branch	At Holston River (Mile 137.9); Mile 0.0 to Origin			X	X	X	X			
North Fork Holston River	Mile 0.0 to 5.2 (Tenn-Virginia Line)			X	X		X			
South Fork Holston River	Mile 0.0 to 2.3		X	X	X					
Reedy Creek	Mile 0.0 to 7.1		X	X	X	X	X			
Reedy Creek	Mile 7.1 to Tenn-Virginia Line	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
South Fork Holston River	Mile 2.3 to 5.7		X	X	X					
Horse Creek	Mile 0.0 to 1.3		X	X	X	X	X			
Horse Creek	Mile 1.3 to Origin			X	X	X	X			
Little Horse Creek	At Horse Creek (Mile 3.6); Mile 0.0 to Origin			X	X	X	X			
Dolan Branch	At Little Horse Creek (Mile 2.8); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At S.F. Holston River (Mile 4.0); Mile 0.0 to Origin		X	X	X	X	X			
South Fork Holston River	Mile 5.7 to 19.6	X	X	X	X	X	X		X	
Kendrick Creek	Mile 0.0 to 1.0			X	X	X	X		X	
Kendrick Creek	Mile 1.0 to Origin			X	X	X	X			
Fall Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At S. F. Holston River (Mile 13.6); Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	At S. F. Holston River (Mile 14.1); Mile 0.0 to Origin			X	X	X	X			
Ford Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Ford Creek (Mile 1.3); Mile 0.0 to Origin		X	X	X	X	X			
Cedar Creek	At S. F. Holston (Mile 18.0); Mile 0.0 to 2.3			X	X	X	X			
Unnamed Branch	At Cedar Creek (Mile 2.3); Mile 0.0 to Origin			X	X	X	X			
Cedar Creek	Mile 2.3 to Origin			X	X	X	X			
Watauga River	At S. F. Holston (Mile 19.6); Mile 0.0 to 15.0	X	X	X	X	X	X			
Boone's Creek	Mile 0.0 to Origin			X	X	X	X			
Knob Creek	Mile 0.0 to Origin			X	X	X	X			
Watauga River	Mile 15.0 to 16.4		X	X	X	X	X			
Brush Creek	Mile 0.0 to Origin			X	X	X	X			
Lick Creek	Mile 0.0 to Origin			X	X	X	X			
Watauga River	Mile 16.4 to 18.0	X	X	X	X	X	X		X	
Watauga River	Mile 18.0 to 25.8		X	X	X	X	X		X	
Buffalo Creek	At Watauga River (Mile 22.1); Mile 0.0 to Origin			X	X	X	X			X
Toll Branch	Mile 0.0 to 0.1			X	X	X	X			X
Toll Branch	Mile 0.1 to Origin			X	X	X	X			X
Unnamed Branch	Mile 0.2 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Dry Creek	At Buffalo Creek (Mile 3.3); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Buffalo Creek (Mile 3.0); Mile 0.0 to 0.2			X	X	X	X			
Campbell Creek	At Watauga River (Mile 25.7); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Campbell Creek (Mile 1.6): Mile 0.0 to Origin			X	X	X	X			
Campbell Branch	Mile 1.6 to Origin			X	X	X	X			
Watauga River	Mile 25.8 to 55.1 (N.C.-Tenn. Line)	X	X	X	X	X	X			X
Stony Creek	Mile 0.0 to Origin			X	X	X	X			X
Little Stony Creek	Mile 0.0 to Origin			X	X	X	X			X
Pierce Branch	Mile 0.0 to Origin			X	X	X	X		X	
Bartree Branch	Mile 0.0 to Origin			X	X	X	X		X	
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
North Fork Stony Creek	Mile 0.0 to Origin			X	X	X	X			X
Upper Hinkle Branch	Mile 0.0 to Origin			X	X	X	X			
Doe River	Mile 0.0 to 21.0	X	X	X	X	X	X		X	
Laurel Fork Creek	At Doe River (Mile 7.0); Mile 0.0 to Origin			X	X	X	X			X
Little Laurel Fork	Mile 0.0 to Origin			X	X	X	X			X
Wagner Branch	Mile 0.0 to Origin			X	X	X	X			X
Simerly Creek	Mile 0.0 to Origin			X	X	X	X			X
Clarke Creek	Mile 0.0 to Origin			X	X	X	X			X
Tiger Creek	Mile 0.0 to Origin			X	X	X	X			X
Roaring Creek	Mile 0.0 to Origin			X	X	X	X			X
Georges Creek	Mile 0.0 to Origin			X	X	X	X			X
Buck Creek	At Doe River (Mile 20.9); Mile 0.0 to Origin			X	X	X	X			X
Shell Creek	Mile 0.0 to Origin			X	X	X	X			X
Hampton Creek	Mile 0.0 to Origin			X	X	X	X		X	
L. Prong Hampton Creek	Mile 0.0 to Origin			X	X	X	X			X
Sugar Hollow Creek	Mile 0.0 to Origin			X	X	X	X		X	
Hampton Creek	Mile 0.0 to Origin			X	X	X	X		X	
L. Prong Hampton Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Shell Creek	Mile 0.0 to Origin			X	X	X	X			X
Cove Creek	Mile 0.0 to Origin			X	X	X	X			X
Laurel Fork Creek	At Doe River (Mile 7.0); Mile 0.0 to Origin			X	X	X	X			X
Little Laurel Fork	Mile 0.0 to Origin			X	X	X	X			X
Wagner Branch	Mile 0.0 to Origin			X	X	X	X			X
Buck Creek	At Doe River (Mile 20.9); Mile 0.0 to Origin			X	X	X	X			X
Doe River	Mile 21.0 to Origin	X	X	X	X	X	X			X
Little Stony Creek	Mile 0.0 to Origin			X	X	X	X			X
Elk River	At Watauga (Mile 46.8); Mile 0.0 to 14.5 (Stateline)			X	X	X	X		X	
Black Branch	Mile 0.0 to Origin			X	X	X	X			X
Row Branch	Mile 0.0 to Origin			X	X	X	X			X
Heaton Branch	Mile 0.0 to Origin			X	X	X	X			X
Little Laurel Branch	Mile 0.0 to Origin			X	X	X	X			X
Cobb Branch	Mile 0.0 to Origin			X	X	X	X		X	
Cress Branch	Mile 0.0 to Origin			X	X	X	X			X
Roan Creek	At Watauga River (Mile 45.5); Mile 0.0 to 16.7	X	X	X	X	X	X			X
Doe Creek	At Roan Creek (Mile 10.9); Mile 0.0 to Origin			X	X	X	X			X
Spruce Branch	At Doe Creek (Mile 10.9); Mile 0.0 to Origin			X	X	X	X			
Timothy Branch	Mile 0.0 to Origin			X	X	X	X		X	
Campbell's Creek	Mile 0.0 to Origin			X	X	X	X			X
Roan Creek	Mile 16.7 to 17.7			X	X	X	X		X	
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Stout Branch	Mile 0.0 to Origin			X	X	X	X			X
Vaught Creek	Mile 0.0 to Origin	X		X	X	X	X			X
Town Creek	At Roan Creek (Mile 17.7); Mile 0.0 to 0.2			X	X	X	X			
Town Creek	Mile 0.2 to Origin			X	X	X	X			
Furnace Creek	At Town Creek (Mile 3.0); Mile 0.0 to Origin			X	X	X	X			X
Goose Creek	At Town Creek (Mile 3.0); Mile 1.5 to Origin			X	X	X	X			X
Patrick Creek	At Goose Creek (Mile 2.6); Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Roan Creek	Mile 17.7 to Origin	X		X	X	X	X			X
Corn Creek	Mile 0.0 to Origin			X	X	X	X			X
Forge Creek	Mile 0.0 to Origin			X	X	X	X			X
Brush Fork Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Dry Run Creek	Mile 0.0 to Origin			X	X	X	X			X
Buffalo Creek	Mile 0.0 to Origin			X	X	X	X		X	
Gap Creek	Mile 0.0 to Origin			X	X	X	X		X	
South Fork Holston River	Mile 19.6 to 35.5 (above Bluff City)	X	X	X	X	X	X			
Muddy Creek	At S. F. Holston (Mile 25.5); Mile 0.0 to 2.6			X	X	X	X			
Booher Creek	At Muddy Creek (Mile 2.6); Mile 0.0 to Origin			X	X	X	X			
Muddy Creek	Mile 2.6 to Origin			X	X	X	X			
Unnamed Branch	At Muddy Creek (Mile 4.9); Mile 0.0 to Origin			X	X	X	X			
Beaver Creek	At S. F. Holston (Mile 29.6); Mile 0.0 to 9.1		X	X	X	X	X			
Back (Beck) Creek	At Beaver Creek (Mile 6.1); Mile 0.0 to Origin			X	X	X	X			
Univac Branch	At Back Creek (Mile 0.5); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Beaver Creek (Mile 7.3); Mile 0.0 to Origin			X	X	X	X			
Cedar Creek	At Beaver Creek (Mile 7.9); Mile 0.0 to Origin			X	X	X	X			
Beeler Road Branch	At Cedar Creek (Mile 3.2); Mile 0.0 to Origin			X	X	X	X			
Raytheon Branch	At Beeler Road Branch (Mile 1.2); Mile 0.0 to 0.2			X	X		X			
Beaver Creek	Mile 9.1 to 15.3 (Tenn-Virginia Line)		X	X	X	X	X			
Steele Creek	At Beaver Creek (Mile 11.0); Mile 0.0 to Origin			X	X	X	X			
Indian Creek	At S. F. Holston (Mile 35.0); Mile 0.0 to Origin			X	X	X	X			
Booher Creek	At Indian Creek (Mile 3.7); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Booher Creek (Mile 0.6); Mile 0.0 to Origin			X	X	X	X			
South Fork Holston River	Mile 35.5 to South Holston Dam	X	X	X	X	X	X		X	
Unnamed Branch	At S. F. Holston (Mile 39.1); Mile 0.0 to Origin			X	X	X	X			
South Fork Holston River	South Holston Dam to mile 62.8 (Virginia Line)	X	X	X	X	X	X			
Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Kendrick Creek	Mile 0.0 to Origin			X	X	X	X		X	

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Fishdam Creek	Mile 0.0 to Origin			X	X	X	X			X
Sulphur Springs Branch	Mile 0.0 to Origin			X	X	X	X			X
Sharps Creek	Mile 0.0 to Origin			X	X	X	X		X	
Little Jacobs Creek	Mile 0.0 to Origin	X		X	X	X	X			X
Jacobs Creek	At S. F. Holston (Mile 59.8); Mile 0.0 to 3.4	X	X	X	X	X	X			X
Jacobs Creek	Mile 3.4 to 3.6		X	X	X	X	X			X
Jacobs Creek	Mile 3.6 to Origin			X	X	X	X			X
Harpers Creek	Mile 0.0 to Origin			X	X	X	X			X
Rockhouse Run Creek	Mile 0.0 to Origin			X	X	X	X			X
Laurel Creek	Stateline to Origin			X	X	X	X			X
Beaverdam Creek	Stateline to Origin			X	X	X	X			X
London Bridge Br	Stateline to Origin			X	X	X	X		X	
Reservoir Branch	Mile 0.0 to Origin			X	X	X	X		X	
Stillhouse Branch	Mile 0.0 to Origin			X	X	X	X			X
Chalk Branch	Mile 0.0 to Origin			X	X	X	X			X
Chestnut Branch	Mile 0.0 to Origin			X	X	X	X			X
Haunted Hollow Br.	Mile 0.0 to Origin			X	X	X	X			X
Fagall Branch	Mile 0.0 to Origin			X	X	X	X			X
Birch Branch	Mile 0.0 to Origin			X	X	X	X			X
Parks Branch	Mile 0.0 to Origin			X	X	X	X			X
David Blevin Branch	Mile 0.0 to Origin			X	X	X	X		X	
Johnson Branch	Mile 0.0 to Origin			X	X	X	X			X
Jim Wright Branch	Mile 0.0 to Origin			X	X	X	X			X
Ledford Branch	Mile 0.0 to Origin			X	X	X	X		X	
W. Fk Beaverdam	Mile 0.0 to Origin			X	X	X	X			X
M. Fk Beaverdam	Mile 0.0 to Origin			X	X	X	X			X
E. Fk Beaverdam	Mile 0.0 to Origin			X	X	X	X			X
Lyons Branch	Mile 0.0 to Origin			X	X	X	X			X
Gentry Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Dry Branch	Mile 0.0 to Origin			X	X	X	X			X
Grindstone Branch	Mile 0.0 to Origin			X	X	X	X			X
Flatwood Branch	Mile 0.0 to Origin			X	X	X	X			X
Corum Branch	Mile 0.0 to Origin			X	X	X	X			X
West Fork Laurel Creek	Mile 0.0 to Origin			X	X	X	X			X
All other surface tributaries named and unnamed in the Holston River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.12 LOWER CUMBERLAND RIVER BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Cumberland River	Mile 74.6 (Ky-Tenn Line) to 118.3 (Cummings Cr.)	X	X	X	X	X	X	X		
Saline Creek	Mile 0.0 to Hwy 120		X	X	X	X	X			
Saline Creek	Hwy 120 to Fort Campbell boundary		X	X	X	X	X		X	
Saline Creek	Fort Campbell Boundary to Origin		X	X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Long Creek	Highway 49 to Origin			X	X	X	X		X	
Elk Creek	Mile 0.0 to Origin			X	X	X	X			
Wells Creek	Mile 0.0 to Origin			X	X	X	X			
Yellow Creek	Mile 3.4 to Ruskin Cave			X	X	X	X		X	
Cumberland River	Mile 118.3 to 125.3 (Red River)	X	X	X	X	X	X	X		
Cumberland River	Mile 125.3 to 175.7 (Richland Creek)	X	X	X	X	X	X	X		
Red River	Mile 0.0 to 2.0		X	X	X	X	X	X		
Red River	Mile 2.0 to 15.0	X	X	X	X	X	X	X		
Red River	Mile 15.0 to 51.2 (Ky-Tenn Line)	X	X	X	X	X	X			
South Fork Red River	Mile 20.4 (Ky-Tenn Line) to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Big West Fork	Mile 0.0 to 14.6 (Ky-Tenn Line)		X	X	X		X	X		
Little West Fork	Mile 0.0 to 10.4		X	X	X	X	X			
Sulphur Fork	Mile 0.0 to 26.6	X	X	X	X	X	X			
Sulphur Fork	Mile 26.6 to 28.6		X	X	X	X	X			
Sulphur Fork	Mile 28.6 to Origin	X	X	X	X	X	X			
Carr Creek	Mile 0.0 to Origin			X	X	X	X			
Red River	Mile 81.0 (Ky-Tenn Line) to Origin	X	X	X	X	X	X			
Summers Branch	Mile 0.0 to Origin			X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			
Sulphur Springs Cr	Mile 0.0 to Origin			X	X	X	X			
Harpeth River	Mile 0.0 to 10.3	X	X	X	X	X	X			
Jones Creek	Mile 0.0 to Origin		X	X	X	X	X			
Town Branch	Mile 0.0 to Origin		X	X	X	X	X			
Harpeth River	Mile 10.3 to 52.8	X	X	X	X	X	X			
Trace Creek	Mile 0.0 to Origin		X	X	X	X	X			
Turnbull Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Sullivans Branch	Mile 0.0 to Origin		X	X	X	X	X			
Beaver Dam Creek	Mile to 0.0 to Origin		X	X	X	X	X			
Gin Branch	Mile 0.0 to Origin		X	X	X	X	X			
Brush Creek	Mile 0.0 to Origin		X	X	X	X	X			
Harpeth River	Mile 52.8 to 55.8		X	X	X	X	X			
Harpeth River	Mile 55.8 to 57.8		X	X	X	X	X			
Harpeth River	Mile 57.8 to 61.9 (Little Harpeth)	X	X	X	X	X	X			
Little Harpeth River	Mile 0.0 to Origin		X	X	X	X	X			
Harpeth River	Mile 61.9 to 68.3 (Cartwright Creek)		X	X	X	X	X			
Cartwright Creek	Mile 0.0 to Origin			X	X	X	X			
Harpeth River	Mile 68.3 to 79.0	X	X	X	X	X	X			
West Harpeth River	Mile 0.0 to Origin	X	X	X	X	X	X			
Harpeth River	Mile 79.0 to 85.2		X	X	X	X	X			
Spencer Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Harpeth River	Mile 85.2 to Origin	X	X	X	X	X	X			
Sycamore Creek	Mile 0.0 to 10.0	X	X	X	X	X	X			
Sycamore Creek	Mile 10.0 to Origin	X		X	X	X	X			
Marrowbone Creek	Mile 0.0 to 3.0	X	X	X	X	X	X			
Marrowbone Creek	Mile 3.0 to Origin	X		X	X	X	X			
Cumberland River	Mile 175.7 to 189.5	X	X	X	X	X	X	X		
Richland Creek	Mile 0.0 to Origin			X	X	X	X			
Whites Creek	Mile 0.0 to Origin		X	X	X	X	X			
Ewing Creek	Mile 0.0 to Origin		X	X	X	X	X			
Cumberland River	Mile 189.5 to 216.2 (Old Hickory Dam)	X	X	X	X	X	X	X		
Mill Creek	Mile 0.0 to 11.5		X	X	X	X	X			
Mill Creek	Mile 11.5 to 23.0			X	X	X	X			
Mill Creek	Mile 23.0 to Origin			X	X	X	X			
Stones River	Mile 0.0 to 6.8	X	X	X	X	X	X			
Stoners Creek	Mile 0.0 to Origin			X	X	X	X			
McCrory Creek	Mile 0.0 to Origin			X	X	X	X			
Stones River (Percy Priest Res.)	Mile 6.8 to 38.7 (Confluence-East & West Fork)	X	X	X	X	X	X			
Suggs Creek	Mile 0.0 to Origin			X	X	X	X			
Smith Springs Creek	Mile 0.0 to Origin			X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			
Stewart Creek	Mile 0.0 to Origin			X	X	X	X			
Harts Branch	Mile 0.0 to Origin			X	X	X	X			
Fall Creek & Tributaries	Mile 0.0 to Origin			X	X	X	X			
East Fork Stones River	Mile 0.0 to 44.5 (Near Woodbury)	X	X	X	X	X	X			
Bradley Creek	Mile 0.0 to Origin			X	X	X	X			
Cripple Creek	Mile 0.0 to Origin			X	X	X	X			
East Fork Stones River	Mile 44.5 to 45.2		X	X	X	X	X			
East Fork Stones River	Mile 45.2 to Origin	X	X	X	X	X	X			
West Fork Stones River	Mile 0.0 to 10.0	X	X	X	X	X	X			
Overall Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
West Fork Stones River	Mile 10.0 to 15.2		X	X	X	X	X			
West Fork Stones River	Mile 15.2 to Origin	X	X	X	X	X	X			
Lytle Creek	Mile 0.0 to Origin			X	X	X	X			
Middle Fork Stones	Mile 0.0 to Origin	X	X	X	X	X	X			
Christmas Creek	Mile 0.0 to Origin			X	X	X	X			
Cumberland River	Mile 216.2 to 309.2 (Caney Fork River)	X	X	X	X	X	X	X		
Drakes Creek	Mile 0.0 to 4.9	X	X	X	X	X	X	X		
Drakes Creek	Mile 4.9 to Origin			X	X	X	X			
Smiths Creek	Mile 0.0 to Origin			X	X	X	X			
Cedar Creek	Mile 0.0 to 2.0	X	X	X	X	X	X	X		
Cedar Creek	Mile 2.0 to Origin			X	X	X	X			
Spencer Creek	Mile 0.0 to 2.8	X	X	X	X	X	X	X		
Spencer Creek	Mile 2.8 to Origin			X	X	X	X			
Bartons Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	Mile 0.0 to Origin			X	X	X	X			
Big Goose Creek	Mile 0.0 to Origin			X	X	X	X			
Little Goose Creek	Mile 0.0 to Origin			X	X	X	X			
Round Lick Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Lower Cumberland River Basin (and Green River Basin), with the exception of wet weather conveyances, which have not been specifically noted shall be classified.				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.13 UPPER CUMBERLAND RIVER BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Cumberland River	Mile 309.2 to 385.5 (Ky-Tenn Line)	X	X	X	X	X	X	X		
Caney Fork River	Mile 0.0 to 25.4	X	X	X	X	X	X	X	X	
Mulherrin Creek	Mile 0.0 to Origin			X	X	X	X			
Hickman Creek	Mile 0.0 to Origin			X	X	X	X			
Smith Fork Creek	Mile 0.0 to Mile 3.0			X	X	X	X		X	
Smith Fork Creek	Mile 3.0 to Origin			X	X	X	X			
Dry Creek	Mile 0.0 to Origin			X	X	X	X		X	
Jones Fork	Mile 0.0 to Origin			X	X	X	X		X	
Caney Fork River	Mile 25.4 to Origin	X	X	X	X	X	X			
Mine Lick Creek	Mile 0.0 to 5.0	X		X	X	X	X			
Mine Lick Creek	Mile 5.0 to Origin			X	X	X	X			
Falling Water River	Mile 0.0 to 39.0	X		X	X	X	X			
Falling Water River	Mile 39.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Pigeon Roost Creek	Mile 0.0 to Origin			X	X	X	X			
Fall Creek	Mile 0.0 to Origin			X	X	X	X			
Pine Creek	Mile 2.4 to Origin			X	X	X	X		X	
Turner Branch	Mile 0.0 to 0.5			X	X	X	X		X	
Sink Creek	Mile 4.6 to Origin			X	X	X	X		X	
Collins River	Mile 0.0 to 43.0	X	X	X	X	X	X			
Mountain Creek	Mile 0.0 to 6.0			X	X	X	X		X	
Charles Creek	Mile 0.0 to 9.0			X	X	X	X		X	
Barren Fork River	Mile 0.0 to 4.5			X	X	X	X			
Barren Fork River	Mile 4.5 to Origin	X	X	X	X	X	X		X	
Hickory Creek	Mile 19.0 to 24.0			X	X	X	X		X	
W.F. Hickory C	Mile 0.0 to Origin			X	X	X	X			
Keel Branch	Mile 0.0 to Origin			X	X	X	X			
Hills Creek	Mile 0.0 to Origin			X	X	X	X		X	
Collins River	Mile 43.0 to 49.0	X		X	X	X	X		X	

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Big Creek	Mile 0.0 to 6.0	X		X	X	X	X			
Big Creek	Mile 6.0 to Origin			X	X	X	X			
Collins River	Mile 49.0 to Origin			X	X	X	X			
Caney Fork River	Mile 92.2 to Origin	X	X	X	X	X	X			
Rocky River	Mile 0.0 to 9.0	X	X	X	X	X	X			
Rocky River	Mile 9.0 to 13.0	X	X	X	X	X	X		X	
Rocky River	Mile 13.0 to Origin	X	X	X	X	X	X			
Calfkiller River	Mile 0.0 to 14.1	X	X	X	X	X	X			
Calfkiller River	Mile 14.1 to 30.8	X	X	X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Calfkiller River	Mile 30.8 to Origin	X	X	X	X	X	X		X	
Cane Creek	Mile 1.0 to 8.0	X	X	X	X	X	X		X	
Falls Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 8.0 to Origin	X	X	X	X	X	X			
Bee Creek	Mile 0.0 to 7.3			X	X	X	X			
Bee Creek	Mile 7.3 to Origin	X		X	X	X	X			
Wilkerson Creek	Mile 0.0 to Origin			X	X	X	X			
Frey Branch	Mile 0.0 to Origin			X	X	X	X			
Roaring River	Mile 0.0 to 29.9			X	X	X	X			
Roaring River	Mile 29.9 to Origin	X		X	X	X	X			
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Carr Creek	Mile 0.0 to 4.2			X	X	X	X			
Carr Creek	Mile 4.2 to Origin	X		X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Goose Creek	Mile 0.0 to 12.0			X	X	X	X		X	
Flynns Creek	Mile 0.0 to 5.0			X	X	X	X		X	
Obey River	Mile 0.0 to 7.3	X	X	X	X	X	X		X	
Neely Creek	Mile 0.0 to Origin (3.3 miles)			X	X	X	X		X	
Wolf River	Mile 0.0 to Ky State Line		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Wolf River	Ky State Line to Origin			X	X	X	X		X	
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Obey River	Mile 7.3 to confluence of East and West Forks	X	X	X	X	X	X			
West Fork Obey River	Mile 0.0 to Origin			X	X	X	X			
East Fork Obey River	Mile 0.0 to Origin	X		X	X	X	X			
Buffalo Cove Creek	Mile 0.0 to Origin			X	X	X	X			
Rock Castle Creek	Mile 0.0 to Origin			X	X	X	X			
Big South Fork Cumberland River	Mile 55.5 (Ky-Tenn Line) to Origin (Mile 77.0)	X	X	X	X	X	X			
No Business Creek	Upper 4.0 miles			X	X	X	X		X	
Parch Corn Creek	Upper 1.5 miles			X	X	X	X		X	
Station Camp Creek	Upper 4.8 miles			X	X	X	X		X	
Laurel Fork Creek	Upper 4.9 miles			X	X	X	X		X	
North White Oak Creek	Upper 3.9 miles			X	X	X	X		X	
Williams Creek	Upper 7.6 miles			X	X	X	X		X	
Pine Creek	Mile 0.0 to 10.5			X	X	X	X			
Pine Creek	Mile 10.5 to Origin	X		X	X	X	X			
New River	Mile 0.0 to 15.0			X	X	X	X			
New River	Mile 15.0 to Origin	X		X	X	X	X			
Clear Fork River	Mile 0.0 to Origin			X	X	X	X			
Elk Fork Creek	Mile 1.8 (KY Line) to Origin	X		X	X	X	X			
All other surface waters named and unnamed, within the Upper Cumberland River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

0400-40-04-.14 BARREN RIVER BASIN.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
West Fork Drakes Creek	Mile 33.0 (stateline) to Origin			X	X	X	X			
Caney Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Dry Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Middle Fork Drakes Creek	Mile 22.2 (stateline) to Origin	X		X	X	X	X			
Sulphur Fork Creek	Mile 9.0 (stateline) to Origin			X	X	X	X			
Dutch Creek	Mile 0.0 to Origin			X	X	X	X			
Trammel Creek	Mile 30.7 (stateline) to Origin			X	X	X	X			
Little Trammel Creek	Mile 4.7 (stateline) to Origin			X	X	X	X			
Long Creek	Mile 14.6 (stateline) to Origin			X	X	X	X			
West Fork Long Creek	Mile 0.0 to Origin			X	X	X	X			
Puncheon Creek	Mile 4.3 (stateline) to Origin			X	X	X	X			
Unnamed Tributary (Adams Spring)	Mile 0.0 to Origin	X		X	X	X	X			
Little Puncheon Creek	Mile 0.0 to Origin			X	X	X	X			
Spring Creek	Mile 0.0 to Origin	X		X	X	X	X			
Salt Lick Creek	Mile 4.7 (stateline) to mile 6.8			X	X	X	X			
Salt Lick Creek	Mile 6.8 to mile 9.9			X	X	X	X		X	
Salt Lick Creek	Mile 9.9 to Origin			X	X	X	X			
Long Fork	Mile 4.5 (stateline) Origin			X	X	X	X			
White Oak Creek	Mile 4.1 (stateline) to Origin			X	X	X	X			
Long Hungry Creek	Mile 0.0 to Origin			X	X	X	X			
Line Creek	Mile 14.2 (stateline) to Origin			X	X	X	X			
Trace Creek	Mile 0.0 to Origin			X	X	X	X			
Little Trace Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed, within the Barren River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

* If a roll-call vote was necessary, the vote by the Agency on these rulemaking hearing rules was as follows:

Board Member	Aye	No	Abstain	Absent	Signature (if required)
Dr. Gary G. Bible (Oil and Gas Industry)					
Elaine Boyd (Commissioner's Designee, Department of Environment and Conservation)					
James W. Cameron III (Small Generator of Water Pollution representing Automotive Interests)					
Jill E. Davis (Municipalities)					
Mayor Kevin Davis (Counties)					
Derek Gernt (Oil or Gas Property Owner)					
C. Monty Halcomb (Environmental Interests)					
Charlie R. Johnson (Public-at-large)					
Judy Manners (Commissioner's Designee, Department of Health)					
John McClurkan (Commissioner's Designee, Department of Agriculture)					
Frank McGinley (Agricultural Interests)					
D. Anthony Robinson (Manufacturing Industry)					

I certify that this is an accurate and complete copy of rulemaking hearing rules, lawfully promulgated and adopted by the Board of Water Quality, Oil and Gas on 10/16/2018, and is in compliance with the provisions of T.C.A. § 4-5-222.

I further certify the following:

Notice of Rulemaking Hearing filed with the Department of State on: *05/03/18*

Rulemaking Hearing(s) Conducted on: (add more dates). *06/27/18*

Date: October 16, 2018

Signature: _____

Name of Officer: _____

Title of Officer: _____

Subscribed and sworn to before me on: _____

Notary Public Signature: _____

My commission expires on: _____

Agency/Board/Commission: Board of Water Quality, Oil and Gas

Rule Chapter Number(s): 0400-40-03 0400-40-04

All rulemaking hearing rules provided for herein have been examined by the Attorney General and Reporter of the State of Tennessee and are approved as to legality pursuant to the provisions of the Administrative Procedures Act, Tennessee Code Annotated, Title 4, Chapter 5.

_____
Herbert H. Slatery III
Attorney General and Reporter

_____
Date

Department of State Use Only

Filed with the Department of State on: _____

Effective on: _____

_____
Tre Hargett
Secretary of State

Public Hearing Comments

One copy of a document that satisfies T.C.A. § 4-5-222 must accompany the filing.

Tennessee Department of Environment and Conservation

2018 Triennial Review of Water Quality Standards

Summary of Public Comments and Departmental Responses

(Note: This document contains responses to comments submitted in both 2016 and 2018. Similar comments have been combined and may have been summarized for response.)

General Comments Not Related to a Specific Rule Change

Comment 1. ***Tennessee should not make any criteria less stringent.***

Response. TDEC's goal is to revise criteria as appropriate to make them either (1) more appropriately protective based on the most current science, (2) more consistent with changing laws, or (3) more clear based on staff experiences with implementation.

Our goal is never to simply make criteria more or less stringent.

Comment 2. ***Tennessee should not make any criteria more stringent.***

Response. Please see the previous response.

Comment 3. ***TDEC's application of criteria for water quality assessments should be appealable to the Tennessee Board of Water Quality, Oil, and Gas.***

Response. The Board promulgates criteria and provides guidance on how they should be interpreted and applied in water quality assessments. The Act specifically gives the responsibility for water quality assessment to the Commissioner. Revision of the Act would be required to make the change envisioned by the commenter. Although assessment decisions cannot be appealed, permit provisions or any enforcement actions based on assessment results can be appealed.

Appealable or not, TDEC is always happy to explain and defend assessment decisions. In certain circumstances, EPA can be asked to provide its expertise to help mediate disputes over assessments.

Comment 4. ***More stringent criteria are an unfunded mandate to municipal dischargers.***

Response. Discharges to surface water can only occur with a valid permit which, according to the Water Quality Control Act, contains:

The most stringent effluent limitations and schedules of compliance, either promulgated by the board, required to implement any applicable water quality standards, necessary to comply with an areawide waste treatment plan, or necessary to comply with other state or federal laws or regulations;

The Division always encourages alternatives to discharge.

Comment 5. ***TDEC should provide a written justification for every change that has been proposed.***

Response. In general, TDEC proposes revisions after considering (1) EPA revisions to national criteria, (2) clarifications to make criteria more understandable, (3) legal decisions, and (4) changes needed to address implementation issues. We are also responding to comments about specific provisions.

Comment 6. ***A commenter is concerned about habitat loss in a Nashville area stream.***

Response. TDEC shares that commenter's concern about habitat loss in urban streams, but this comment is not related to water quality standards.

Comment 7. ***Several comments were received concerning statements made in the preamble of the rulemaking hearing notice. Commenters question the statements that the current rules are unworkable and are more stringent than federal law and requested clarification and examples***.

Response. The preamble of the rulemaking hearing is not part of the rules, and has no bearing on how the rules are to be applied. The referenced comments addressed specific situations regarding aquatic resource alteration permits (ARAPs) undergoing antidegradation review, and explained some of the reasons for changing the procedures as described in the two paragraphs that follow. The primary reason for stating that the procedure was not workable concerned antidegradation review for ARAPs in waters with unavailable parameters for habitat. Unlike for waters with available parameters and Exceptional Tennessee Waters (where the applicant could demonstrate a lack of practicable alternatives and demonstrate economic or social necessity), an applicant could not obtain a permit for a habitat alteration causing more than a minimal impact in a habitat-impaired waterbody unless in-system mitigation was provided. This resulted in greater protection being applied to lower quality waters, which is precisely the opposite of what federal antidegradation law requires.

These requirements for habitat-impaired waters were particularly difficult for TDOT because it has less flexibility in avoiding specific impact sites and, due to implementation of federal procurement policies, less ability to secure in-system mitigation sites.

Comment 8. ***Criteria should be based on quantifiable measurements rather than the vague changes proposed by TDEC.***

Response. We certainly understand the commenter's preference for quantifiable measurements like numeric criteria, but for many parameters, the Board has considered it preferable to promulgate narrative criteria to maintain flexibility in interpreting and applying these standard in waterbodies statewide, which reflect a tremendous range of ambient conditions.

Comment 9. ***TDEC should conduct an economic impact study prior to making criteria more stringent.***

Response. The Board of Water Quality, Oil and Gas has the statutory responsibility to set water quality standards at levels appropriate to protect specific uses, so criteria are designed to protect human health, aquatic life, and other uses based on the toxicity, cancer potency, or other harmful impacts of these substances. EPA considers these same factors when researching and setting national criteria.

Economics can be considered at other points in the implementation of control strategies, such as in establishing compliance schedules. As previously stated, there are alternatives to discharging to surface waters.

Comment 10. ***Once TDEC is ready to publish a set of criteria revisions based on comments received, the changes should be put out for public review a second time.***

Response. The revisions in this rulemaking process will not be subject to another comment period. These are within the scope of the noticed rulemaking and are being made in response to comments.

Comment 11. ***Tennessee should not adopt any criteria that are lower than current detection levels.***

Response. This comment has been made many times in the history of water quality standards and our response has consistently been:

1. Detection levels change due to improved technology and analytical techniques get better over time. It is in the program's interest to promote ambitious detection levels and to not pin ourselves to existing ones. The use of inappropriately high detection levels can mask pollution issues.

2. Permittees get the benefit of dilution when permit limits are derived. But even if permit limits should be below appropriate method detection levels, the permittee need only demonstrate that levels are undetected to be in compliance.

The commenter should also be mindful that for carcinogens, which have some of the lowest criteria, Tennessee's numbers are promulgated an order of magnitude higher than EPA's, due to the different risk level we use.

Comment 12. ***Tennessee should delay moving forward with these criteria so as not to get ahead of the TNH2O process.***

Response. These rules will not be delayed pending the TNH2O project. That process is very important to the department but it is not a regulatory planning process. The review of water quality standards has statutory time constraints.

Comment 13. ***A commenter requested a concise statement of the principal reasons for the Board's action in adopting the rules pursuant to T.C.A. § 4-5-205(b).***

Response: A concise statement is provided as Attachment 1.

Comment 14. ***These proposed regulations do not address how the State intends to fulfill its obligations to "abate existing pollution of the waters of Tennessee, [and] to reclaim polluted waters" so that all Tennesseans' right to "unpolluted waters" may be realized. In particular, Tennessee is significantly behind in its duties to address nutrient pollution. TDEC has not developed numeric nutrient criteria.***

Response. While it is true that the Board has not promulgated numeric nutrient criteria, the Department has been proactive in developing cost-effective measures to reduce nutrient discharges.

Moreover, the comment overlooks the fact that to a great extent, the pollution that existed at the time the Tennessee Water Quality Control Act of 1977 was passed has already been abated: water quality across the state has improved as a result of implementing a robust water quality permitting program statewide in partnership with the regulated community. Many of the water quality challenges that remain involve nonpoint source activities that are not subject to regulation by the Department, but are the subject of voluntary watershed-based approaches.

Comment 15. ***The state has developed just five nutrient related TMDLs and has not implemented the resulting wasteload allocations in NPDES permits. Accordingly, if the public trust created by TNWQCA is to be fulfilled, Commenters believe that Tennessee needs a robust system for the conduct of TMDLs, including for which water bodies "third party TMDLs" should be employed. TDEC should also provide for the composition and authority of stakeholder and technical advisory committees for those water bodies for which the third party TMDL mechanism is employed.***

Response. We appreciate the comment. However, these rules do not address the process for development of TMDLs.

Comment 16. We believe TDEC could provide more certainty to the regulated community and the public by making and publicizing a compendium of what has been

determined to be maximum extent practicable for MS4 permits, and how to make sure that regulated parties understand what those responsibilities entail. We would be willing to work with TDEC and regulated parties to put together such a program.

Response. This comment does not concern the current rulemaking. However, please note that in 2018, the Tennessee General Assembly required the Board to issue rules concerning maximum extent practicable for post construction stormwater, which will happen before new MS4 permits are modified or renewed. This rulemaking is expected to involve rule chapters concerning permits rather than water quality standards.

Comment 17. ***TDEC will cost the regulated community time and money to try to interpret these vague rule changes. This will divert resources from other activities.***

Response. We appreciate this comment. One of the primary goals of the public review process is to address concerns. This document provides answers to questions about interpretation of these revisions, which we hope will assist all citizens in their understanding. Even following this process, TDEC staff are always available to assist.

Comment 18. ***The commenter wishes to speak to the Tennessee Board of Water Quality, Oil and Gas to express their concerns directly at the rulemaking hearing in October.***

Response. The commenter should be aware that as the comment period has passed, the Board is under no legal obligation to hear additional comments. The Board, at its discretion, may allow members of the public to address them at this meeting, and typically does so.

Comment 19. ***A commenter complained about Davidson County construction sites not stopping runoff.***

Response. This comment does not address the current rulemaking. The commenter may contact the Metro Stormwater Program, which oversees stormwater management at construction sites in Davidson County.

Comments Related to a Specific Rule Change

0400-40-03-.01 The Tennessee Board of Water Quality, Oil, and Gas

Comment 20. TDEC has proposed to replace the word "pollution" with "pollutants." This makes the meaning narrower that the intent of the federal Clean Water Act.

Response. That was not our intent and we will go back to the original wording.

0400-40-03-.02 General Considerations

Comment 21. ***Tennessee should make no revisions to the current wet weather conveyance rules.***

Response. TDEC has not proposed any revisions to this provision, except to capitalize certain terms in Rule 0400-40-03-.05(9)(a)9-11.

Comment 22. ***TDEC should clarify that the Best Available Technologies (BAT) requirement in subparagraph 4 refers to industries rather than POTWs.***

Response. The commenter is correct that BAT requirements apply only to non-POTWs. We will amend the rule to refer to the applicable level of technology, which for POTWs is secondary treatment rather than BAT.

Comment 23. ***Tennessee should add an EPA guidance document to the list of guidance documents identified in Rule 0400-40-03-.02(9). The specific document is the 2001 "Streamlined Water–effects Ratio Procedure for Dischargers of Copper" (EPA-822-R-01-001).***

Response. We agree and will add this reference.

Comment 24. ***Tennessee should identify the Biotic Ligand Model (BLM) for copper as an additional site-specific criteria development method in Rule 0400-40-03-.02(9).***

Response. EPA has advised that this is acceptable. We will add this provision to Rule 0400-40-03-.02(9)(b). The commenter should note that this method would be bound by the provisions of this subparagraph, including that any criterion recalculated by this method would need to be promulgated as a revision to the rule and subsequently approved by EPA before being used for Clean Water Act purposes.

Comment 25. ***Tennessee has proposed to add the phrase "for metals" to Rule 0400-40-03-.02(9) in regard to site-specific criteria development. It is correct that the Water-effects Ratio (WER) is limited to metals, but the Resident Species and Recalculation methods can be used for any fish and aquatic life toxicant, not just metals.***

Response. We agree and will move this phrase to Rule 0400-40-03-.02(9)(a) to make this clarification. We will add the phrase "for other toxics" to the first sentence in subparagraph (b).

Comment 26. ***The proposed new recreational criterion for ammonia is more stringent because of its toxicity to larval mussels. The rule should allow site-specific or alternate criteria to be calculated in waterbodies where mussels are absent.***

Response. With the exception of Alabama, no state has more mussel species with special status than Tennessee. However, this criterion doesn't just protect rare and endangered mussels. The 2013 ammonia criteria recommendations take into account the latest freshwater toxicity information for ammonia, including toxicity studies for sensitive unionid mussels and gill-breathing snails. https://www.epa.gov/sites/production/files/2015-08/documents/fact_sheet_aquatic-life-ambient-water-quality-criteria-for-ammonia-freshwater-2013.pdf and https://www.epa.gov/sites/production/files/2015-08/documents/aquatic-life-ambient-water-quality-criteria-for-ammonia-freshwater-2013.pdf

Freshwater snails are ubiquitous in Tennessee waters. According to EPA guidance, the presence of freshwater mussels can be defined in terms of the existence of live mussels, mussel tracks, recently dead mussels' shells, unweathered shells, suitable habitat, and/or historical presence data. https://www.epa.gov/sites/production/files/2015-08/documents/tsd_for_conducting_and_reviewing_freshwater_mussel_occurrence_surveys_for_the_development_of_site-specific_wqc_for_ammonia.pdf

As a toxicant that is not a metal, theoretically, the Resident Species or Recalculation methods could be employed to develop a site-specific criterion for ammonia. However, as it is unlikely that there are any Tennessee waters without either mussel or freshwater snail species, it would be the very rarest of streams that might qualify and the burden of proof would be on the applicant to demonstrate a site-specific study was appropriate.

Comment 27. ***TDEC should move the reference to the EPA guidance document EPA-823-B96-007 currently in subparagraph (9) to subparagraph (8) where it more appropriately belongs.***

Response. We agree and will move the reference to EPA's The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion to subparagraph (8) about metals translation.

0400-40-03-.03(1) Domestic Water Supply

Comment 28. ***In 0400-40-03-.03(1)(j), TDEC proposes new numeric criteria. TDEC should clarify that these criteria only apply to waters at the point of a water supply intake.***

Response. Rule 0400-40-03-.03(1) states, "The criteria for the use of Domestic Water Supply are the following:" All waters classified by the Board for this use must meet these criteria, not just those waters at the immediate point of intake.

Comment 29. ***In 0400-40-03-.03(1)(k), TDEC proposes a new criterion designed to make the interference of nutrients with water treatment processes to be the loss of use support under the Domestic Water Supply classification. This is inappropriate as it is normal for these treatment facilities to have to deal with changing water quality conditions.***

Response. TDEC does not concede that protection of domestic water supplies from the impacts of nutrients is inappropriate or that this is a new provision. From the very first set of water quality standards in Tennessee, it has been considered imperative to prevent alterations of water quality from creating problems, or adding expenses, for water treatment facilities. We cannot recommend the approach advocated by the commenter as it will invite EPA disapproval of this provision and might lead to federal promulgation of numeric water quality criteria.

However, impact of pollutants to treatment facilities is already prohibited under the previously promulgated subparagraph l in the red-lined version:

> *Other Pollutants - The waters shall not contain other pollutants in quantities that may be detrimental to public health <u>or impair the usefulness of the water as a source of domestic water supply.</u>* (Underlining added by TDEC for emphasis)

To avoid duplication or confusion that this is a new provision, we will delete the proposed addition.

Comment 30. ***The new, narrative nutrient criterion for domestic water supply protection is vague and could shut down certain wastewater treatment plants upstream of lakes used as a water source.***

Response. The commenter is directed to the previous response about revising the proposal. In reference to concerns about the vagueness of the wording, the commenter is reminded there are two types of criteria. Numeric criteria are specific numbers to not be exceeded. Narrative criteria are verbal descriptions of the water quality necessary to protect the use. The commenter is correct that Tennessee's current narrative criterion is worded in a way that it can be implemented with some flexibility.

TDEC shares the commenter's interest in finding objective ways to interpret this criterion in wadeable streams. We certainly understand that some commenters might prefer numeric criteria, but until we have them, we are committed to finding the best way to interpret existing criteria and appreciate the commenter's guidance.

Regarding the intent of any criterion, it is always to protect the public's reasonable uses of a waterbody and never to "shut down" a discharger. Dischargers must treat their effluent to a degree that both protects the uses of the receiving stream plus downstream waters, and adheres to the Antidegradation Statement.

Comment 31. ***Nutrients are never the primary casual factor in interfering with water treatment.***

Response. We understand the nature of this comment, but do not agree that it merits disregarding the role of nutrients. Whether interfering directly, such as the role of nitrates in "blue baby syndrome," or indirectly due to algae blooms causing high pH, taste and odor issues, or disinfection byproducts, nutrients are the cause, not the symptom. These other conditions are response variables.

Comment 32. ***Percy Priest Reservoir in Middle Tennessee is a naturally eutrophic lake used for water supply and most of the nutrients impacting that use come from unregulated sources. Controls should not be targeted to dischargers that comprise a small amount of the total loading.***

Response. Although this is a permitting issue rather than a water quality standards question, the commenter is correct that water quality standards identify the level of a pollutant that interferes with the uses of a waterbody and doesn't differentiate whether or not the sources are currently regulated. Changing which sources are regulated in the Water Quality Control Act would require legislative action and is not a water quality standards issue.

However, the impairment and resulting unavailable conditions of a waterbody - whether caused by unregulated sources or even natural sources - doesn't argue for an increase in permitted discharges. The Antidegradation Statement does not allow TDEC to authorize additional degradation in a waterbody at or exceeding a criterion, regardless of source.

The commenter is directed towards the Draft Tennessee Nutrient Reduction Framework for more information regarding the strategy for implementing nutrient limits in discharge permits. https://www.tn.gov/content/dam/tn/environment/water/tmdl-program/wr-ws_tennessee-draft-nutrient-reduction-framework_030315.pdf.

0400-40-03-.03(3) Fish and Aquatic Life

Comment 33. ***Tennessee should change its statewide dissolved oxygen (DO) criterion [0400-40-03-.03(3)(a)], so that the minimum level would be 4 mg/L rather than 5 mg/L, and the 5 mg/L would be applied as an average level. This is the DO criterion in other Region 4 states.***

Response. EPA's current criteria for DO can be found in the Quality Criteria for Water 1986 (EPA 440/5-86-001). In that document, EPA recommends a minimum of 5.0 mg/L for DO where early life stages of warm water species are found. TDEC believes that all waters contain early life stages and therefore, the 5.0 mg/L minimum is the appropriate criterion for the State. However, we have also been open to the possibility that in some limited areas, dissolved oxygen levels may be naturally lower, or appropriately higher, such as the Blue Ridge ecoregion.

Following the Ecoregion Project study that began in 1995, TDEC approached EPA with the idea of lowering the DO criterion for wadeable streams in two specific subecoregions: 73a

(Mississippi Delta) and 71i (Inner Nashville Basin). EPA approved the former, but not the latter. Regarding subecoregion 71i, EPA said that TDEC had not provided an adequate scientific basis that the lower dissolved oxygen levels documented in the highly impacted Inner Nashville Basin were due to natural conditions rather than pollution. We agreed with EPA that the lack of unaltered streams in this relatively small subecoregion made it difficult to differentiate between natural conditions and anthropogenic impacts. The new criterion for the Mississippi Delta was incorporated into rule [0400-40-03-.03(3)(a)(3)] and approved by EPA.

Regarding the DO criteria of other states, TDEC believes that the other Region 4 states likely adopted their criteria prior to the 1986 revisions, and that similar provisions would not be approved by EPA today.

Comment 34. ***Under the dissolved oxygen criteria [0400-40-03-.03(3)(a)(4)], substantial and frequent diel fluctuations in oxygen levels are said to be "undesirable" if caused by anthropogenic sources. This is improper as, absent a violation of the appropriate minimum DO criterion, TDEC cannot show harm to the stream simply because oxygen levels fluctuate.***

Response. Rapid and dramatic dissolved oxygen fluctuations are a strong indicator of organic enrichment. But the commenter is correct that, if viewed in isolation, these fluctuations are not proof of harm. That is why the word "undesirable" was used in the rule rather than "prohibited." We cannot think of a scenario in which these rapid fluctuations would be desirable.

TDEC will continue to use this existing, EPA approved provision the same way we always have, as part of a weight of evidence approach to determine if streams are impacted by nutrients.

Comment 35. ***How will the substantial and frequent diel fluctuations in oxygen levels provision be interpreted?***

Response. When dissolved oxygen levels are found to be unnaturally elevated, beyond what would be expected at corresponding water temperatures or levels documented in appropriate reference streams, that stream will be targeted for continuous monitoring. As often happens in wadeable streams, elevated oxygen levels caused by photosynthesis during the daytime can be accompanied by very low levels at night. Excursions below the oxygen criterion would be the condition of pollution.

If diel variations are substantial, but without violation of the criterion, staff would look for other evidence of harm - such as excessive algae, or alterations of biological populations - consistent with our weight of evidence approach for nutrients.

Comment 36. ***Comparing diel oxygen fluctuations in test streams to reference conditions is inappropriate as there is no correlation with harm.***

Response. Reference streams are least impacted waters within a geographically similar region in order to document an attainable condition. TDEC does not concede this comparison is inappropriate and in fact, Tennessee's existing biointegrity, habitat, and nutrient numeric interpretations of the narrative criteria are based on reference conditions. The commenter is reminded that basing clean water goals on the reference condition was encouraged by EPA and the Tennessee criteria based on it have been approved for many years. We do not see any compelling reason that other comparisons shouldn't be made, especially when cited in the rules. This would be used as a part of our weight of evidence approach.

Comment 37. ***Regarding diel oxygen fluctuations, TDEC should define "substantially different."***

Response. Where words are not defined in Rules, the common understanding of the meaning is used, which is what we consider appropriate in this instance. Certainly, there are statistical methods for establishing similarity.

Comment 38. ***TDEC is proposing replacing the word "diurnal" with "diel." Why not just say "daily."***

Response. Daily can be interpreted to mean every day. Diel means a 24 hour period of night and day.

Comment 39. ***Regarding Rule 0400-40-03-.03(3)(a)2. and 4., it seems inconsistent to use "identified" in this sentence and "designated" in item (a)2. Whichever word is used, it should be made clear that the identification/designation is that done by rule chapter 0400-40-04. My suggestion is to make the reference in (a)2. and then use the same word in (a)4.***

Response. We agree that these terms should agree and note that the term "identify" also appears in Rule 0400-40-03-.03(3)(a)1. We will change the term in subparagraph 2 from "designated" to "identified."

Comment 40. ***TDEC should not adopt EPA's revised chronic criteria for selenium.***

Response. We do not agree. EPA's new approach incorporates the latest science and comes after a review and reconsideration process that took several years. Additionally, the new criteria take into consideration the differences in selenium toxicity between streams and lakes. We will adopt the criteria as proposed.

Comment 41. ***TDEC proposes in its chronic criteria for selenium to treat reservoirs just the same as lakes. They are different and the criterion should recognize these differences.***

Response. TDEC recommended values from EPA's 2016 Freshwater Aquatic Life Criteria for Selenium. In Section 3.2.4 starting on page 82, EPA grouped waterbodies as either lotic (flowing) or lentic (still) and recommended water column values for each.

As noted by the commenter, Tennessee has both lakes and reservoirs. As EPA did not differentiate between lakes and reservoirs in their guidance (both are considered lentic), we are unable to do so either. It should be noted that other types of waterbodies in Tennessee would also be considered lentic, such as ponds or wetlands.

Comment 42. ***In December 2010, TDEC released a report entitled "Mercury Air Deposition and Selenium Levels in Tennessee Fish and Surface Water" wherein 33 waterbodies across the state were monitored for mercury concentrations and selenium levels. This study concluded, in part, that no waterbodies were impaired by selenium within the state.***

Response. The commenter should be aware that the study in question was based on the targeting of sampling to areas where air deposition models suggested these pollutants might be concentrated. As the sampling was not probabilistic in design, the study results cannot be extrapolated to the rest of the state. However, we agree that TDEC has not assessed any streams in Tennessee as impaired by selenium.

Comment 43. ***Although the state found essentially no problems with selenium in their 2010 study, the rules propose to significantly lower and restructure the chronic criteria. The commenter sees these sweeping changes as unnecessary and urges the Department to exercise its option to develop site-specific criteria, as allowed by EPA. Site-specific criteria would allow for flexibility in application and recognition of the substantial variety in aquatic systems.***

Response. The ability to conduct site-specific studies for appropriate metals is already found in the rule and the current proposal would not change that. Any site-specific study would be bound by the provisions of Rule 0400-40-03-.02(9).

It would not be a reasonable expectation that the Department would perform such resource intensive site-specific studies across the state.

Comment 44. ***The toxicity studies used by EPA to develop the national criteria for selenium contained fish species not found in the coalfields of Tennessee.***

Response. We understand this comment, but point out that one of the most sensitive fish species in EPA's tests was the bluegill sunfish, which is ubiquitous in Tennessee waters, including the coalfields. The division's 2010 study also found rockbass to be significant accumulators of selenium.

Comment 45. ***The commenter disagrees with the process used by EPA to back-calculate a water concentration number for selenium from the fish tissue criteria previously established.***

Response. The proposed rule allows fish tissue to be used to confirm or refute impairment. But as stated in other responses, we need a water concentration number to calculate permit limits and assess water quality.

Comment 46. ***TDEC should make it clear that the numeric acute and chronic criteria for selenium are applicable for all purposes under the Act.***

Response. TDEC must have a way to assess streams for selenium, even if fish are not present, which is why we need and included water concentration criteria. We revised the selenium footnote as suggested by the commenter and believe that the selenium footnote is clear that exceedances of the numeric water criteria are violations and that the role of fish tissue data would be as an optional method to confirm use impairment. The numeric criteria in the table would be applicable to setting permit limits or any other use under the Act.

Comment 47. ***Tennessee should actually list the current EPA fish tissue based selenium national criteria in the selenium footnote.***

Response. We prefer to reference their guidance rather than adopt the actual numbers, but will specify the precise document being referenced. We already have the water concentration selenium criteria in rule, which are applicable.

Comment 48. ***Tennessee should adopt EPA's new fish tissue based selenium criterion in the place of a water column based concentrations.***

Response. Tennessee's current selenium criteria for aquatic life protection are based on water concentration (5 ug/L chronic and 20 ug/L acute) and have almost never been violated in Tennessee streams or lakes. (The acute criterion has never been exceeded.)

The commenter is correct that EPA has recommended a revised approach based on both water and fish tissue concentration. The water concentration criteria are dependent on whether the waterbody is a lake or a stream and were derived from the tissue concentration targets using an approach developed by EPA and USGS. EPA's new acute criterion is based on a formula that requires analysis of parameters not usually monitored in Tennessee streams.

It would add significant analytical expense to change to a fish tissue only based selenium criterion at a time that monitoring resources are already stressed. Crews would have to be sent to a stream to collect and transport fish, plus the extra samples would have to be analyzed. Multiplying this level of effort and expense at all the monitoring sites in the state would make this approach unworkable.

For that reason, plus that fact that the existing chronic criteria are so seldom exceeded, TDEC does not want to abandon a criterion primarily based on water concentrations, especially since the EPA recommended water concentrations are derived from the fish tissue targets. We recommend adopting EPA's recommended chronic criteria of 1.3 for lakes and 3.1 for streams. We added a footnote that provides that criteria exceedances may be confirmed by fish tissue results, but that this confirmation is not required to assess streams.

TDEC recommends that the current acute criterion of 20 be retained rather than the formula proposed by EPA. The existing acute criterion has never been documented to have been exceeded in Tennessee waters. We see no reason to complicate our existing assessment strategy. EPA has already signaled agreement with this approach. On page 100 of the document *Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater 2016,* EPA says:

> *It is unnecessary to have an additional acute water column criterion element because the intermittent exposure criterion element will be more stringent than an acute criterion element. Further, as noted in this document, there have been few if any acute exposure, water column-only selenium aquatic toxicity events documented in the literature.*

Comment 49. ***The reference to EPA's national criteria guidance for fish tissue concentrations of selenium appears to be an impermissible delegation. This could be addressed by referring to the guidance as of a specific date.***

Response. We will add a reference to EPA's Final Criterion: *Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater (June 30, 2016)*.

Comment 50. ***The footnote for selenium should note that the optional confirmation of impairment with fish tissue results is for "listing purposes."***

Response. We agree but prefer the phrase "water quality assessment" to "listing." We will revise the paragraph to read as follows:

> The numeric water criteria for selenium are applicable for all purposes, but for water quality assessment, fish tissue values may be used to confirm or refute impacts to aquatic life in accordance with and using the values from EPA's Final Criterion: Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater (June 30, 2016). However, a lack of fish tissue data or the absence of fish from a waterbody will not prevent it from being assessed as impaired if the numeric water concentration criteria are exceeded. Fish tissue concentration alone may be used to establish use impairment.

Comment 51. ***Tennessee should adopt the Biotic Ligand Model (BLM) to replace the current copper criterion. This is the approach recommended by EPA.***

Response. The commenter is correct that EPA has recommended adoption of the BLM in place of the historic hardness-based criterion. The BLM greatly expands the number of parameters potentially altering the toxicity of copper that factor into the determination of the criterion.

According to EPA's 2007 copper criteria document:

> The BLM requires ten input parameters to calculate a freshwater copper criterion (a saltwater BLM is not yet available): temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity. The BLM is used to derive the criteria rather than as a post-derivation adjustment as was the case with the hardness-based criteria. This allows the BLM-based criteria to be customized to the particular water under consideration.

As we stated in the last triennial review in response to comments, the department has the following concerns regarding the potential adoption of the BLM:

- Resources. In order to run the model, additional ambient data are needed. Many of these parameters, such as calcium and magnesium, are not commonly monitored. Additionally, samples would have to be filtered, probably in the field, in order to determine dissolved organic carbon levels. Filtering of samples, particularly where particulate material or algae levels are high is a very time-consuming activity.

- Impact on water quality assessment. Obviously, criteria are not just used to set permit limits. They are also used to assess ambient water quality in Tennessee streams. Currently, we only need hardness and suspended solids levels to determine whether or not copper concentrations violate criteria. If we adopted the BLM, we would need a suite of additional parameters to apply the criterion to ambient data. This would have impacts on both resources (lab costs) and efficiency (assessment staff time).

For all these reasons, the existing criteria for copper will be retained.

Comment 52. ***TDEC has stated that EPA published "national criteria" for nutrients. They are not criteria as Congress never voted on them. These numbers are just suggestions.***

Response. We agree that these numbers are science-based guidance, but note that Congress also called them criteria in Section 304(a) of the Clean Water Act.

> SEC. 304. (a)(1) The Administrator, after consultation with appropriate Federal and State agencies and other interested persons, shall develop and publish, within one year after the date of enactment of this title (and from time to time thereafter revise) criteria for water quality accurately reflecting the latest scientific knowledge…(underlining added by TDEC)

EPA's national criteria for nutrient can be found at this link: https://www.epa.gov/nutrient-policy-data/ecoregional-criteria.

Comment 53. ***TDEC's criteria for nutrients have been frustrating to municipalities because it has created a "moving target."***

Response. It is true that TDEC initially proposed numeric nutrient criteria, which may be preferable to some. But the approach we settled on, and have been applying for many years, was regional total phosphorus and NO2+NO3 concentration goals based on reference conditions, supplemented by biological and habitat studies, plus other stream observations. This approach was subsequently promulgated by the Board and approved by EPA.

We should also note that an evolution of water quality standards was envisioned and encouraged by Congress when they established that criteria and classifications should be reviewed no less often than every three years to incorporate new science, implementation experiences, and new technologies. We agree with this approach.

Comment 54. ***TDEC has misapplied the criteria for nutrients on a specific stream of interest to the commenter.***

Response. This is a water quality assessment comment rather than a water quality standards comment. There is a different process for addressing assessment concerns.

Comment 55. ***TDEC should not propose a nutrient water quality criterion for any parameter for which there is already a different numeric criterion in the rule.***

Response. The nutrient criterion is narrative and would not override an existing numeric criterion for a different, but related parameter, provided that they were for protection of the same use. For example, the narrative nutrient criterion does not override numeric criteria for dissolved oxygen.

Comment 56. ***The commenter believes that TDEC does not consider algae in assessment decisions, choosing instead to utilize only chemical and benthic data.***

Response. The commenter is not correct. TDEC uses a weight of evidence approach that includes many kinds of data and observations, including algae.

Comment 57. ***TDEC should identify how it assesses streams for algae or aquatic plant impacts.***

Response. This is a water quality assessment question rather than a standards comment. The commenter is referred to the SOP documents on TDEC's publications page: https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html.

Comment 58. ***TDEC cites comparisons of nutrient concentrations to reference conditions as a method to evaluate streams. What if a stream or lake has no appropriate reference condition due to size or other characteristics?***

Response. The commenter makes a good point: some waterbodies (such as mainstem rivers) have no easily identifiable reference stream or condition. TDEC's weight of evidence approach to assessment of nutrients depends on appropriate comparisons. Certainly, EPA's national numeric nutrient criteria could be used as guidance where Tennessee's ecoregional reference stream goals did not appropriately apply.

Comment 59. ***TDEC's draft Nutrient Reduction Framework states that excessive algae is the problem from nutrients. The criteria should match this approach rather than identify other issues associated with nutrients.***

Response. The draft Nutrient Reduction Framework is a guidance document that identifies a process for determining the best approach for developing control strategies for nutrients. Tennessee's clean water goals are established in Rule 0400-40-03-.03 for the various classified uses.

Comment 60. ***The proposed criterion for nutrients in Rule 0400-40-03-.03(3)(k) contains numerous subjective and undefined terms.***

Response. There are two kinds of criteria. Narrative criteria - like the language for nutrients cited by the commenter - are verbal descriptions of the level of quality needed to support the use. It is simply the nature of narrative criteria that they are designed to be less specific and provide flexibility in interpretation. The more specific alternative would be the other option, numeric criteria, which are specific not-to-be-exceeded concentrations of individual parameters.

TDEC has tried to make interpretation of narrative criterion as objective as possible. We have accomplished this by use of the reference condition for evaluation of the parameters of nutrients, habitat, and biointegrity. Additionally, we have developed or are in the process of developing methods for periphyton and diatom surveys.

Comment 61. ***According to a USGS study cited by the commenter, habitat loss correlates more strongly to biological impairment than do nutrient levels. TDEC's emphasis on nutrients ignores the real source of water quality impacts.***

Response. TDEC appreciates this observation, and agrees that severe habitat alteration has an impact on biological quality of streams and our assessments reflect that. For example, channelized streams can be so inhospitable to life that even algae have no place to grow. However, even if a nutrient impact is not apparent in the immediate stream due to poor habitat, harm may be conveyed downstream.

It is common for impacted streams to be impaired by more than one pollutant, and even by more than one type of habitat alteration. We are required by statute to identify all the pollutants impacting classified uses, not just the worst ones.

The commenter should be aware that in the Division's landmark 2001 study of the regional reference condition in Tennessee, the 90th percentile of the nutrient data was shown to correlate very well to stream impairment. This approach was suggested and approved by EPA.

We are familiar with the USGS publication in question, Circular 1437: *Understanding the Influence of Nutrients on Stream Ecosystems in Agricultural Landscapes*. The watersheds in this study were targeted on the basis of very high levels of agricultural activities and none were in Tennessee. Both in Tennessee and other states, streams in intensively utilized agricultural areas are significantly physically altered, so we have no doubt habitat was a limiting factor in biointegrity.

Our review identified additional important USGS conclusions from the study such as where the authors note that:

- Excessive nutrients in the U.S. cause over 2.2 billion dollars in damage to recreational uses and domestic water supply treatment costs.

- Algal and invertebrate communities were altered in the study streams by increasing nutrient concentrations, but at times correlations were masked by the lowering of water column nutrient concentrations due to uptake by excessive algae. In some streams, nutrient levels were so excessive that it was no longer the limiting factor to algae growth.

- In some of the streams, color and sediment levels prevented light transmission and impacted algae levels, thus additionally masking correlations.

There was nothing in the USGS study to suggest that nutrient levels shouldn't be monitored and appropriately controlled. In fact, USGS recommended that a combination of biological surveys of fish, algae, and macroinvertebrates be used to assess streams for nutrients and identified reference condition as an appropriate method of evaluation. This is the approach advocated by the Department and established in rule.

EPA would not approve an approach that minimized our ability to recognize the role of nutrients in causing the condition of impairment in Tennessee streams.

Comment 62. ***TDEC should reconsider the proposed revisions to the existing nutrient criterion as they establish new and improper ways to assess streams for nutrient impairment.***

Response. The existing narrative criterion for nutrients establishes that waterbodies should not be organically enriched to the point that aquatic life or other uses are impacted, or that the concentrations negatively impact downstream waters. As stated previously, TDEC follows a

weight of evidence approach in assessing streams for nutrient impairment, an approach suggested and approved by EPA.

TDEC has stated that its interpretation of this provision is that impacts to uses should be measured in many different ways including, but not limited to: nutrient concentrations, alteration of instream biota, excessive algae or rooted/floating plants, low dissolved oxygen levels, fish kills, atypically wide diel oxygen swings, and eutrophication of lakes.

Our goal in proposing these revisions was to add clarifying language that summarizes the breadth of our approach in one place. We do not agree that the proposed language signals new approaches. We will elaborate on this further in subsequent specific responses.

Because of the public concern and confusion about the new language and the fact that all of these provisions are already mandated in other parts of the rule, we will withdraw this suggestion. The language will stay as it was previously.

Comment 63. ***The proposed rule references "harmful algal blooms." TDEC should say what it means by harmful. TDEC should define "detrimental" "strong stratification" and "excessive eutrophication." TDEC should identify what level of eutrophication is harmful in the various kinds of lakes. What does TCEC mean by "over time."***

Response. Please see the previous response and the proposed revision of the rule.

A harmful condition is one that interferes with the reasonable uses of a waterbody.

Comment 64. ***TDEC should make it clear that a combination of the listed potential effects of nutrients is not required in order for a stream to be considered impaired by nutrients.***

Response. Please see the previous response and the proposed revision of the rule.

Comment 65. ***TDEC should not assess streams as impacted by nutrients on the basis of strong lake stratification or substantial diel dissolved oxygen swings.***

Response. Please see the previous response and the proposed revision of the rule.

Prohibitions against substantial diel oxygen swings or strong lake stratification are already established in other criteria, specifically Rules 0400-40-03-.03(3)(a)(4), 0400-40-03-.03(3)(k) and 0400-40-03-.03(4)(h).

Comment 66. ***The word "range" might be a better word than "swings" to describe diel oxygen fluctuations.***

Response. Please see the previous response and the proposed revision of the rule.

Perhaps, but the word “swings” already appears in rule and has been previously approved by EPA. Since there is little evidence this word choice is causing confusion, we will not recommend changing it.

Comment 67. ***Why do the proposed nutrient criteria revisions refer to supersaturation of oxygen?***

Response. Please see the previous response and the proposed revision of the rule.

As stated in previous responses, supersaturation of oxygen is evidence of elevated algae concentrations.

Comment 68. ***TDEC should not assess streams as impacted by nutrients on the basis of a nutrient tolerance index for macroinvertebrates.***

Response. Please see the previous response and the proposed revision of the rule.

TDEC will delete this proposed language in the nutrient criterion because of public confusion that it is a new provision. The use of biointegrity measures such as the existing Tennessee Macrobenthic Index (TMI) - which has contained a nutrient tolerance index (NUTOL) for over ten years - is promulgated in a different criterion [Rule 0400-40-03-.03(3)(m)].

Comment 69. ***TDEC should explain the NUTOL index in the Rule.***

Response. The TDEC SOP for biological surveys referenced in the rule explains the NUTOL index, and is the more appropriate location for explanatory language. This SOP has been reviewed and approved by EPA and can be found at https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html.

Comment 70. ***Would TDEC use a nutrient tolerance index alone to assess a stream as impacted by nutrients?***

Response. Please see the previous response and the proposed revision of the rule.

Typically not, but the commenter should be aware that a weight of evidence approach does not preclude making a decision based on only one factor if that evidence is compelling.

Comment 71. ***TDEC developed its nutrient tolerance index as a manipulation to justify earlier assessment decisions. It has never been reviewed by the public.***

Response. Please see the previous response and the proposed revision of the rule.

TDEC's nutrient tolerant index (NUTOL) was based on an index already in use in Kentucky. We incorporated it after we found that our original Tennessee Macroinvertebrate Index was not sensitive to nutrient impacts. This modification was made over ten years ago and has given us a biological tool to appropriately assess streams for nutrient impacts. This approach was suggested, encouraged, funded, and approved by EPA and removing it would risk federal disapproval. That is an approach we cannot recommend.

Comment 72. ***TDEC changed its Tennessee Macroinvertebrate Index (TMI) metrics so that genera previously considered EPT clean water indicators were no longer counted towards this metric. This is a manipulation by TDEC to make streams score worse than they should.***

Response. The commenter is correct that several TMI metrics have changed over time. This was due to taxonomic changes and new research. In the example cited by the commenter, the caddisfly genera *Cheumatopsyche* was found present in huge numbers below significant nutrient sources. As net makers that catch algae, this very nutrient tolerant animal artificially bloated TMI scores, especially the "percentage EPT" and "percent clingers" indices, effectively masking nutrient impacts. TDEC made the change to no longer consider *Cheumatopsyche* a clean water indicator over ten years ago.

Like any other water quality standard, biointegrity criteria are designed to evolve over time as our understanding increases. Our macroinvertebrate SOPs have been approved by EPA and EPA participated in the development and review of our water quality assessment methodologies. We will continue to make adjustments in the future as informed by science and our research.

Comment 73. ***TDEC should not assess streams as impacted by nutrients on the basis of downstream impacts from an upstream source.***

Response. Please see the previous response and the proposed revision of the rule.

The need for water quality to protect downstream uses is well-established in the Tennessee Water Quality Control Act, our existing rules, the federal Clean Water Act, and various court decisions. Further, the language in question is already promulgated in Rule 0400-40-03-.03(3)(k) and was approved by EPA.

The likely result of removal of this provision would be EPA disapproval and federal promulgation of nutrient criteria for Tennessee, an approach TDEC cannot recommend.

Comment 74. ***TDEC should not assess streams as impacted by nutrients unless excessive algae is documented. The existing criterion should be revised to reflect this and previous assessments of nutrient impairment based on this provision should be reevaluated.***

Response. Please see the previous response and the proposed revision of the rule.

The commenter would like for the rule to be revised further to only allow one way to assess streams for nutrients, the localized presence of excessive algae. The responsibility to assess streams as impacting downstream waters would be removed, plus any other indicators of excessive nutrients. EPA would be unlikely to approve this approach, as it would result in pollution of Waters of the U.S.

Additionally, in suggesting that the criteria be removed so that previous assessments can be changed, the commenter is not remembering that delistings must also be approved by EPA. We consider that approval unlikely.

Comment 75. ***The second paragraph under the fish and aquatic life criterion for nutrients [Chapter 0400-40-.03(k)] should be deleted as this cited document is an inappropriate method for interpretation of the criterion. It has not been peer reviewed.***

Response. The second paragraph in question is a reference to the TDEC document "Development of Regionally-based Interpretations of Tennessee's Narrative Nutrient Criterion." The Rule states that the document may be used to help interpret the criterion, but that other "scientifically defensible methods" may also be used to assess streams.

As stated in previous responses, nutrient concentrations are only one part of the weight of evidence approach used by the agency to assess nutrient impacts. The document in question was developed almost twenty years ago and was promulgated 15 years ago, an approach approved by EPA. The agency must have ecoregionally based methods to help interpret narrative criteria, like nutrients.

It is not correct that the document in question was not peer reviewed. In 2001, EPA arranged for the draft document to be reviewed by national nutrient experts. The reference to the document was approved by the Board following a public review period. It is important to note that the approach described above was adopted instead of EPA's published national criteria for nutrients.

The commenter has not suggested doing this evaluation of nutrient concentrations a different way, rather that we not do it at all.

If we delete these regional translators, EPA would likely require that we adopt their national numeric criteria and would promulgate them for us if we declined. TDEC cannot recommend this approach.

Comment 76. ***TDEC should allow site-specific criteria studies for nutrients. EPA encourages this.***

Response. The commenter is referred to Rule 0400-40-03-.02(9). This section specifically identifies the types of site-specific criteria development procedures. All are specific to fish and aquatic life protection criteria. In subparagraph (a), Water Effect Ratio (WER) studies are

discussed. The WER approach is specifically for metals. The two methods in subparagraph (b) are limited to toxics. Specific to nutrients, the only toxic form is ammonia.

If the commenter meant the term "site-specific" more generally, in a sense, all interpretations of narrative criteria are site specific and we along with EPA agree that the best place to start is subecoregional characteristics. That was that reason that we began the Ecoregion Project in 1995 in which we identified the reference condition in subecoregions across the state and then tested various criteria levels based on percentiles of the data. In our studies, we found that the 90th percentile of the reference data was the best predictor of nutrient impairment in wadeable streams. The 75th percentile of the reference condition data was also tested and found to be overly sensitive in most streams and suggested harm where none could be documented.

Sometimes TDEC is asked if site-specific means that criteria for one parameter can be set aside in favor of a different criterion. As stated previously, we have some flexibility in how narrative criteria are interpreted, but that flexibility does not include setting them aside.

Comment 77. ***TDEC should explain why it uses the 75th percentile of nutrient reference data rather than the 90th percentile. EPA might not approve it.***

Response. Please see the previous response. EPA approved this selection 15 years ago.

Comment 78. ***The rule lists the parameters associated with nutrients, but then says that the parameters are not limited to that list. That is a problem for the regulated community. Any parameter that might act as a nutrient should be named.***

Response. The parameters of concern for nutrients normally consist of the various forms of phosphorus and nitrogen. The phrase that troubles the commenter is standard regulatory language to allow for the possibility that an unnamed parameter might cause an issue in a stream. The language will be retained.

Comment 79. ***The rule lists calcium, magnesium, and potassium as nutrients. What is the source of this belief?***

Response. EPA guidance. https://www.epa.gov/caddis-vol2/caddis-volume-2-sources-stressors-responses-nutrients

> *Nutrients are elements that are essential for plant growth. They include nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), sulfur (S) and silicon (Si). N, P and K are considered primary nutrients. N and P are the major limiting nutrients in most aquatic environments.*

Comment 80. ***The commenter does not agree with how TDEC has interpreted the 80% watershed guidance for comparing test streams to reference streams. Commenter does not agree with how the reference watershed was selected for comparison.***

Response. Narrative criteria are written to provide flexibility in interpretation. How the department applied this provision in a specific assessment decision is not a water quality standards issue. There is a different process for contesting assessment decisions.

0400-40-03-.03(4) Recreation

Comment 81. ***Tennessee should not adopt EPA's pathogen criterion for marine waters.***

Response. We have no plans to do so. Tennessee has no marine waters.

Comment 82. ***Tennessee should not change the current risk level (10^{-5}) for carcinogens.***

Response. We have not proposed changing this risk level which has been in place for many years. However, in response to numerous comments, we are postponing adoption of EPA's recommended human health criteria pending further review in conjunction with other Region 4 states. This process could result in reconsideration of the current risk level.

Comment 83. ***Tennessee should have numeric human health criteria for radionuclides.***

Response. The commenter is correct that Tennessee does not currently have numeric criteria for radionuclides, but this should not be taken to mean that Tennesseans are less protected as a result. Under the Tennessee Water Quality Control Act, radiological quality is one of the properties of water that is protected. However, TDEC is not the agency that authorizes radiological discharges to streams in Tennessee. By federal law, that is the responsibility of the Atomic Energy Commission.

TDEC does assess streams and where alteration of radiological properties has led to loss of classified uses, we have identified those waters as impaired under the criterion that states that:

> *The waters shall not contain substances or a combination of substances including disease - causing agents which, by way of either direct exposure or indirect exposure through food chains, may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), physical deformations, or restrict or impair growth in fish or aquatic life or their offspring.* Rule 0400-40-03-.03(g)

If EPA published national human health criteria for radionuclides (or recommended adoption of another agency's guidance), we would consider following their lead. In the absence of this guidance, we follow the best scientific advice we can find to apply the above "free-from" narrative criterion.

Comment 84. ***Tennessee should not adopt the new human health criteria published by EPA. These new recommendations are based on ultra-conservative assumptions that will have a detrimental impact on industry in Tennessee.***

Response. When it comes to adopting or not adopting EPA's national criteria recommendations, Tennessee has the same options other states have. We can (1) adopt the number as recommended, (2) propose different protection levels based on our own research, or (3) propose leaving criteria as they are, again with proper scientific justification. Whichever option we chose must ultimately be approved by EPA.

After considering all the information at our disposal, TDEC has decided to postpone recommendation of these revisions in favor of the existing criteria. The basis for this position is not that we fundamentally disagree with EPA's recommendations or methodologies. However, we have learned that several other Region 4 states are postponing, or considering postponing, adoption of these recommended criteria to more thoroughly evaluate them. In addition, Florida adopted criteria based on a variation of EPA's recommendation and were sued by two cities, a Tribe, and an industry group. Prior to proceeding, TDEC considers it prudent to see if these issues are clarified by the courts. We will withdraw our previous recommendation.

Comment 85. ***Tennessee has incorrectly interpreted several new national criteria and should modify these prior to promulgation.***

Response. Please see the previous response about the withdrawal of these proposed revisions for future consideration.

Comment 86. ***EPA used both explicit and implicit assumptions in the development of human health criteria. Rather than merely accepting EPA's default values, Tennessee should make an independent, science-based evaluation as was done in Washington and Florida. EPA uses "compounded conservatism" in its assumptions and calculations. The Department should reconsider this and propose a different set of assumptions, like Washington and Florida did.***

Response. Please see the previous response. For additional perspective, following is EPA's response to this comment when it was made during the public review period for the national criteria:

> *EPA based the revised AWQC recommendations on sound science and policies that have been thoroughly vetted publicly. The exposure and toxicity inputs used to derive the AWQC follow the approach described in the 2000 Methodology (USEPA 2000a). AWQC for the protection of human health are designed to minimize the risk of adverse effects occurring to humans from chronic (lifetime) exposure to substances through the ingestion of drinking water and consumption of fish obtained from surface water. Following the 2000 Methodology, EPA used a combination of median values, mean values, and percentile estimates for the parameter value defaults to calculate its updated AWQC. EPA's assumptions afford an overall level of protection targeted at the high end of the general population (i.e., the target population or the criteria-basis*

population) (USEPA 2000a). This approach is reasonably conservative and appropriate to meet the goals of the CWA and the 304(a) criteria program (USEPA 2000a). EPA made the following standard assumptions for the updated AWQC (USEPA 2000a). The default body weight (80 kg) is an arithmetic mean. National BAFs were computed using mean lipid values and median (i.e., 50th percentile) values for dissolved organic carbon and particulate organic carbon. The default drinking water intake rate and fish consumption rate are 90th percentile estimates. The use of these values result in 304(a) AWQC that are protective of a majority of the population; this is EPA's goal (USEPA 2000a).

Comment 87. ***EPA used a "deterministic approach" to derive human health criteria. The Department should consider using a probabilistic approach instead.***

Response. Please see the previous response. Following is EPA's response to this comment when it was made during the public review period for the national criteria:

EPA has not implemented probabilistic risk assessment approaches in this update to the AWQC. The use of probabilistic techniques was not reflected in the 2000 Methodology (USEPA 2000a), which served as the guide for the current revisions (for the reasons described above in EPA response to comment 1.2.3). EPA intends to consider probabilistic techniques in future updates of the 2000 Methodology.

Comment 88. ***EPA used a "relative source contribution" of 80% to 20% to derive human health criteria. Tennessee should consider going back to a value of 1.0.***

Response: Please see the previous response.

The idea behind relative source contributions is that the water and/or organisms in a waterbody might not be the only sources of a pollutant to an individual. Other sources might be ocean fish consumption (not included in the fish consumption rate), non-fish food consumption (meats, poultry, fruits, vegetables, and grains), dermal exposure, and respiratory exposure.

The goal of these criteria is human health protection. We do not find it difficult to accept that an individual might ingest a pollutant from sources other than water or local aquatic life and consider it reasonable to factor that into calculations.

Following is EPA's response to this comment when it was made during the public review period for the national criteria:

In cases where there is a lack of environmental or exposure data, or both, the Exposure Decision Tree approach results in a recommended RSC of 20 percent. This 20 percent value for the RSC may be replaced where sufficient data are available to develop a scientifically defensible alternative value. When appropriate, if scientific data demonstrating that sources and routes of exposure other than water and fish from

inland and nearshore waters are not anticipated for the pollutant in question, the RSC may be raised to 80 percent based on the available data (USEPA 2000a).

Comment 89. ***EPA switched from using bioconcentration factors (BCFs) in favor of bioaccumulation factors. Tennessee should reconsider this step.***

Response. Please see the previous response. Following is EPA's response to this question during the public review period for the national criteria:

> *Several attributes of the bioaccumulation process are important to understand when deriving national BAFs for use in developing national recommended section 304(a) AWQC. First, the term bioaccumulation refers to the uptake and retention of a chemical by an aquatic organism from all surrounding media, such as water, food, and sediment. The term bioconcentration refers to the uptake and retention of a chemical by an aquatic organism from water only. For some chemicals (particularly those that are highly persistent and hydrophobic), the magnitude of bioaccumulation by aquatic organisms can be substantially greater than the magnitude of bioconcentration. Thus, an assessment of bioconcentration alone might underestimate the extent of accumulation in aquatic biota for those chemicals. Accordingly, the EPA guidelines presented in the 2000 Methodology emphasize using, when possible, measured or estimated BAFs, which account for chemical accumulation in aquatic organisms from all potential exposure routes (USEPA 2000a).*

Comment 90. ***Tennessee should reconsider EPA's default assumption about daily water consumption.***

Response: Please see the previous response. Following is EPA's response to this question during the public review period for the national criteria. (Please note that EPA changed this value as a result of the comments received.):

> *In light of the comments received, EPA revised the drinking water intake rate used in the final 2015 updated AWQC. EPA revised the default drinking water intake rate from the proposed 3 L/d to 2.4 L/d, rounded from 2.414 L/d, based on NHANES data from 2003 to 2006 as reported in EPA's Exposure Factors Handbook (USEPA 2011, Table 3-23). This rate represents the per capita estimate of combined direct and indirect community water1 ingestion at the 90th percentile for adults ages 21 and older. EPA selected the per capita rate for the updated drinking water intake rate because it represents the average daily dose estimates; that is, it includes people who reported that they drank water during the survey period and those who reported that they did not, which is appropriate for a national-scale assessment such as CWA section 304(a) AWQC development (USEPA 2011, section 3.2.1).*

Comment 91. ***In making these calculations and setting these protection levels, EPA assumes that drinking water sources would be at these concentration levels consistently for 70 years.***

Response. Please see the previous response. Criteria are set at levels known to be safe to most of the people, most of the time. TDEC appreciates EPA's guidance regarding how these public policy decisions should be made. We recognize that the public may have differing views on where protection levels are set.

Comment 92. ***In Rule 0400-40-03-.03(4)(l), EPA guidance is mentioned as a source for information on risk calculation. This guidance should be identified.***

Response. The guidance is EPA's 2000 four volume ***Guidance for Developing Fish Advisories.*** These documents are available on EPA's website. https://www.epa.gov/fish-tech/epa-guidance-developing-fish-advisories#national The commenter should additionally note that a volume of this guidance is already cited in the risk calculation portion of the rule.

Comment 93. ***In Rule 0400-40-03-.03(4)(l), TDEC is proposing to delete previous assumptions in the formula in favor of a reference to EPA guidance. These provisions should be retained.***

Response. We do not agree and the commenter did not elaborate on why the existing approach was preferable. As these formulas are designed to identify where fishing advisories should be considered to protect human health, we would prefer to be able to maintain flexibility to incorporate new science.

0400-40-03-.04 Definitions

Comment 94. ***Definitions should not be used to make substantive rules for Antidegradation.***

Response. Definitions do not make substantive rules. The Antidegradation Statement itself imposes the applicable substantive requirements in part through the application of defined terms. The definitions section of these standards is necessary to ensure that the terminology used within the Antidegradation Statement has clear, transparent, and common meanings. Any person seeking to apply statutes or rules to specific situations should familiarize himself or herself with applicable legal definitions.

Comment 95. ***Several comments were received asking that the Board eliminate the definition [0400-40-03-.04(4)] and application of de minimis degradation.***

Response. We decline to make this change. The *de minimis* provision allows very small amounts of degradation to be authorized without an economic and social necessity determination in some, but not all situations. For habitat alterations, an impact can only get to *de minimis* status through avoidance, minimization, or in-system mitigation.

The regulation prohibits new or increased domestic wastewater dischargers from being considered *de minimis*. For other types of discharges and water withdrawals, alterations can only be considered *de minimis* if they consume less than 5 percent of the assimilative capacity or 7Q10 flow, respectively. In waters with unavailable parameters, even a *de minimis* amount of degradation by that same parameter is prohibited, if due to a new or increased discharge or withdrawal.

New or increased discharges, or water withdrawals, are prohibited in Outstanding National Resource Waters (ONRWs) unless the effect is unmeasurable. A *de minimis* amount of degradation due to these activities would be measurable and therefore prohibited. In ONRWs, no habitat alterations can be authorized unless the impact is minimal or mitigation is provided in the same ONRW.

Additionally, there is a cumulative cap on the amount of degradation that can be allowed under the *de minimis* provision for discharges and withdrawals.

This approach to regulating very small amounts of degradation has been endorsed by EPA and previously approved. Additionally, the concept has been upheld in court cases.

Finally, the *de minimis* provision is a powerful tool in convincing applicants to minimize the amount of degradation they request. If they had to go through the economic and social necessity determination process for any amount of degradation, there would be no incentive for them to request and strive for a smaller amount.

Comment 96. ***If TDEC determines that an alteration is de minimis 0400-40-03-.04(4) in effect, citizens have little ability to comment or appeal.***

Response. We disagree with this comment. Under these rules, citizens may comment on a proposed alteration when the draft ARAP is public noticed. The only change is to provide public notice of a draft ARAP rather than of a complete ARAP application. Under both the previous and the current rules, there is a single public notice and comment period. In addition, the Water Quality Control Act allows certain third parties to file a permit appeal. As previously explained, the Department's determination that a proposed activity will result in only *de minimis* degradation as defined by the Board's rules is reviewable through a permit appeal.

Comment 97. ***Application of the de minimis exception [0400-40-.04(4)(a)(1)] allows new or increased discharges to skip the Tier 2 analysis, and proceed straight to the permitting process with the de facto presumption that a permit will be issued. Although there are cases applying free-floating principles of administrative law to authorize a limited de minimis exception to antidegradation review, there is nothing in the text or structure of the Clean Water Act or EPA's implementing regulations to support this approach.***

Response. As the commenter notes, several cases have expressly upheld the application of de minimis degradation. Specifically, 5% individual and 10% cumulative caps have been upheld, as provided in the current rules.

Comment 98. ***The existing language does not go far enough in protecting our waters from bioaccumulative pollutants because it does not address the 10% cumulative cap in subpart (3) of the rule and fails to address sensitive aquatic species. Also, Commenters are concerned that this language was previously added through a parenthetical note, rather than as a stand-alone provision. Accordingly, Commenters request the Board delete the note to Rule 0400-40-03-.04(4)(a)1., and add the following language as Rule 0400-40-03-.04(4)(a)4.:***

> ***4. Consistent with T.C.A. § 69-3-108, special consideration will be given to the discharge of bioaccumulative parameters to confirm the effect is de minimis, if even the single discharge is less than five percent (5%) of the available assimilative capacity and, if more than one activity described in part 1 or 2 of this subparagraph has been authorized in a segment, the total of the authorized and proposed discharges is less than ten percent (10%) of the available assimilative capacity. In addition, special consideration will be given to the discharge or withdrawal of water upstream from federally- designated critical habitat or other waters with documented non- experimental populations of state or federally-listed threatened or endangered aquatic or semi-aquatic plants, or aquatic animals to confirm the effect is de minimis, even if the conditions of parts 1, 2, and/or 3 of this subparagraph have been documented.***

Response. This change will not be made. Whether a provision in a rule is written within parentheses or not, it has the same legal effect. Water quality criteria for fish and aquatic life are designed to be protective of sensitive species. Maintaining discharges to the 5%, or a total of 10%, of available assimilative capacity is particularly appropriate in water bodies with sensitive species and is far more protective than allowing discharges up to 100% of assimilative capacity based on economic or social justification. Moreover, the commenter is reminded that under this rule, bioaccumulative parameters are not necessarily considered *de minimis* even if less than 5%.

Comment 99. ***The definition of de minimis [0400-40-03-.04(4)] references "available" assimilative capacity. This should be defined.***

Response. **"**Available parameters" is defined in the antidegradation policy. The available assimilative capacity is the amount of a pollutant that could be added to a particular stream segment after consideration of the most stringent applicable criterion, background concentrations of that parameter, and the applicable stream flow, plus a margin of safety.

Comment 100. ***The definition of de minimis [0400-40-03-.04(4)(a)(2)] should cite an amount of water withdrawal rather than a percentage of a low flow.***

Response. Such as rule would be unworkable, or worse, cause the condition of impairment. The amount of withdrawal that might not be noticed in one stream might devastate a smaller stream. We will not recommend this revision.

Comment 101. ***Regarding Rule 0400-40-.04(4)(a)(3), do not add "available" before assimilative capacity to ensure there is an effective mechanism to maintain the 10% cumulative cap.***

Response. This change has been made.

Comment 102. ***The commenter objects to the use of 5% of the 7Q10 flow as being the threshold for a water withdrawal to be considered de minimis in effect. The amount should be greater. TDEC should provide scientific studies that justify this existing provision.***

Response. As the commenter acknowledges, this provision was previously publicly reviewed; promulgated by the Board of Water Quality, Oil and Gas; approved by EPA; and in place in the rules for many years. Given that EPA and court cases have supported the idea of 10% as being the upper max for cumulative *de minimis* degradation in a waterbody, 5% seemed like a reasonable amount to us to allow a single withdrawer. Withdrawals above that amount can still be authorized, they just aren't *de minimis*.

Comment 103. ***A water withdrawal should not have to have an antidegradation review unless a Section 401 certification is required. A withdrawal that uses less than 5% of the daily average flow should be de minimis.***

Response. The trigger for antidegradation review is whether a new or increased activity on which the Department acts causes more than de minimis degradation of waters. Whether a Section 401 certification is required in addition to an ARAP is irrelevant to this analysis. The withdrawal threshold suggested by the commenter would not be *de minimis* in effect in many streams because it is not protective at low flow conditions and we will not recommend it.

Comment 104. ***According to the revised rule [0400-40-03-.04(4)(b)], habitat alterations are by definition de minimis if in system mitigation performed. As we interpret this, "impact minimization" no longer required. If this is the case, how does TDEC account for multiple/cumulative impacts on a water body/in a watershed over time? If mitigation is only in response to permanent impacts, how are multiple/cumulative temporary impacts accounted for if at all?***

Response. The definition of *de minimis* degradation for habitat alterations will not be changed from the previous rule. The intent of the proposed change had been to clarify, rather than to significantly change, the existing standard. One reason for the proposed change had been confusion about what "impact minimization" means in this definition. Some applicants believed it meant to reduce the impacts to what they considered to be small for their project, for example by reducing a wetland impact from 10 acres to 6 acres. The intent of the rule is that the impact be objectively small enough that individually and cumulatively the impacts will not

result in noticeable loss of resource values. These small impacts are represented by the thresholds for general ARAPs, and also include impacts that are below the threshold at which compensatory mitigation is required.

Comment 105. ***TDEC should define "appreciable" and "permanent" so the commenter can determine whether the definition [0400-40-03-.04(4)(b)] has significantly changed.***

Response. The definition of *de minimis* degradation for habitat alterations will revert to the previous definition.

Comment 106. ***The existing requirements for alternatives analyses and social and economic justification for Exceptional Tennessee Waters appear short-circuited by a reliance on newly proposed definitions of "de minimis" and "in-system mitigation."***

Response. The rule for ETWs is not being changed, nor is the definition of *de minimis* degradation for habitat alterations. The previous rules did not define "in-system," and thus no "existing requirements" are being changed.

Comment 107. ***Per Antidegradation Regarding Aquatic Resource Alteration or Habitat Alterations ("ARAPs") - The proposal contains several new provisions regarding ARAPs and antidegradation . This includes a proposed change to the definition of "De Minimis degradation" in Rule 0400-40-03-.04(4)(b) and proposed new definitions of "In-system mitigation," "Resource values," and "Significant degradation" in Rule 0400-40-03-.04(12) , (27), and (20), respectively . Rule 0400-40-03-.06(l)(b)l (iii) (pertaining to application requirements) and Rule 0400-40-03-.06(2)(c) (pertaining to waters with unavailable parameters) are proposed to be amended to incorporate the new "significant degradation" standard.***

The commenter supports the Department's efforts to make the ARAP process more workable. In particular, the commenter supports the concept of providing more flexibility by not limiting mitigation for waterbodies with unavailable parameters to "in-system" mitigation.

Response. We appreciate the comment. The rule amendments better conform to federal law, and reflect a balancing of the legislative directives in T.C.A. 69-3-102(b) to protect and restore waters while allowing maximum use of Tennessee's water resources consistent with the maintenance of unpolluted waters.

Comment 108. ***Per Rule 0400-40-03-.04(4)(b): There may be times when mitigation may not be able to be accomplished through in-system mitigation. As such, we recommend retaining "impact minimization and/or" so that impact minimization may be utilized where in-system mitigation cannot be accomplished.***

Response. The definition will not be changed from the current one, which includes "impact minimization."

Comment 109. ***The rules should not be changed to render a habitat alteration de minimis through compensatory mitigation.***

Response. The definition will not be changed from the current one, which already provides that a habitat alteration causes only *de minimis* degradation when in-system compensatory mitigation is provided.

Comment 110. ***Regarding Rule 0400-40-.04(4)(b), in the definition of de minimis degradation for habitat alterations, please define "appreciable" and "permanent" to ensure this provision remains narrow in reach and tightly bound.***

Response. The definition of *de minimis* degradation for habitat alterations will not be changed to include these terms.

Comment 111. ***De minimis [0400-40-.04(4)(b)] is simply unavailable to short circuit the application of the Antidegradation rules by jumping to the conclusion that any degradation or net water resources loss will be mitigated or that the mitigation will occur "in-system."***

Response. The rules and division permitting procedures do not assume that net resource loss will be mitigated or that the mitigation will occur in-system. For proposed impacts that have more than a minimal impact and require compensatory mitigation, that mitigation is incorporated as an express permit condition in an ARAP, a Section 404 permit, or both. In such a project, if a permit applicant claims *de minimis* degradation, then the requirement that compensatory mitigation be provided in-system is also incorporated as an express permit condition.

Comment 112. ***These proposed regulations also ignore the important requirement that any allowed degradation from discharge of pollutants, even if individually "de minimis", must be subject to a cumulative cap. (Kentucky Waterways Alliance v. Johnson, 540 F.3d at 486-487). This logically applies to degradation caused by loss of habitat as proposed in an ARAP application. The proposed regulation has no such cap or any approach to determining a cap. The proposal to discount "baseline" conditions allows cumulative degradation directly contrary to a cumulative limit as mandated by Ohio Valley Environmental Coalition v. Horinko, 279 F. Supp.2d 732 (S.D. W.Va. 2003) and Kentucky Waterways Alliance v. Johnson at 491-493.***

Response. We are not aware of cases interpreting the application of "*de minimis* degradation" to the context of ARAPs or Section 401 certifications for Section 404 permits that authorize comparable impacts. The *Kentucky Waterways* and *Horinko* cases concern NPDES permits for

discharges of pollutants. The concept of available assimilative capacity for the discharge of pollutants is well-established in the implementation of the NPDES program, and numeric percentages are fairly easy to establish and implement, including those applicable to a cumulative cap.

ARAPs and Section 404 permits utilize compensatory mitigation instead of the concept of available assimilative capacity. Compensatory mitigation is required to ensure no overall net loss of resource values so there is no overall degradation.

The use of existing conditions is entirely consistent with antidegradation requirements, which are designed to maintain existing water quality. Moreover, the use of this term is a clarification of existing rules, which already require mitigation for impacts caused by the proposed activity, rather than a change.

Moreover, the definition of *de minimis* degradation includes the concept of cumulative impacts, which are to be considered in making the determination.

Comment 113. ***Regarding Rule 0400-40-03-.04(4)(b), the use of such subjective terms as "appreciable" and "permanent" could place the determination of these important issues in the hands of consultants to project proponents and then TDEC's potentially unreviewable discretion. Further, the "permanent" loss requirement obviates all consideration of temporary impacts, including without limitation their duration and severity. Commenters note that it can be many years before it can be determined whether a particular mitigation project or bank will provide the ecological lift contemplated.***

Response. The previous definition will be retained.

Comment 114. ***Regarding Rule 0400-40-03-.04(4)(b), by definition, habitat alterations are "de minimis" if in-system mitigation is performed. This is a major change in policy but is accomplished, not by thorough public discussion of the issues involved, but by a grammatical manipulation. Pursuant to this major change in policy, avoidance or minimization of impacts is no longer required as was the case previously.***

Response. The previous definition will be retained. However, the comment incorrectly interprets the previous rule, which already allowed in-system mitigation as one way to qualify for *de minimis* degradation. Although avoidance and minimization are also ways to achieve *de minimis* degradation, in-system compensatory mitigation is, and has been, the other way.

Comment 115. ***Regarding Rule 0400-40-03-.04(4)(b) - It is EPA's understanding that although the phrase "the Division finds" is being deleted that the Department will continue to make this decision. If this is not the case, please specify the decision maker.***

Response. The previous definition will be retained. The Department was, and will remain, the decision maker concerning whether a proposed habitat alteration project will result in *de minimis* degradation. That decision may be challenged through a permit appeal.

Comment 116. ***The proposed regulations [0400-40-.04(4)(b)] do not explain the difference between offsetting the "appreciable permanent loss of resource values" which is supposed to result from the ARAP mitigation rules and the deficiency in water resources which is cured or compensated for by "in- system" mitigation.***

Response. Requiring compensatory mitigation to occur "in-system" to qualify as *de minimis* degradation generally limits such mitigation to the same watershed to require localized compensation for localized impacts. This is an additional requirement above and beyond ARAP mitigation rules (which encourage, but do not require, mitigation close to the impact site) and the federal Section 404 rules.

Comment 117. ***Please confirm that for TDEC to consider the effects of a water withdrawal or discharge as "de minimis degradation," the total of the authorized and proposed impacts cumulatively may use no more than 10% of the total assimilative capacity of the affected waters [0400-40-03-.04(4)(b)].***

Response. The comment is correct. This was the intent of the proposed change in the language in this provision. However, the term "available" will not be added to this provision given that it is subject to different interpretations.

Comment 118. ***Regarding Rule 0400-40-.04(4)(b), please confirm that it remains up to the Division to determine whether aquatic habitat impacts are de minimis.***

Response. The definition approved through the prior rulemaking will not be changed. Although the applicant and third parties may comment on this issue, the Division makes the determination of whether a proposed aquatic alteration causes only *de minimis* degradation. This determination may be challenged through a permit appeal.

Comment 119. ***Does the definition of "domestic wastewater discharge" intend to exclude POTWs [0400-40-03-.04(5)]? Please explain the reference to industrial waste.***

Response. Yes, the Board intends to exclude POTWs from this definition. The goal is to disincentivize new decentralized waste treatment systems for domestic wastewater and to encourage alternatives including the utilization of existing POTWs. The reference to industrial wastes recognizes that many POTWs in Tennessee have pretreatment programs that include industrial wastewater.

Comment 120. ***Per Rule 0400-40-03-.04(12) In-system mitigation – Commenters object to this new definition on several grounds, including the following:***

First, TDEC improperly dispenses with any requirement to avoid or minimize environmental damage from proposed activities, as noted.

Second, the change improperly proposes to allow mitigation to occur anywhere within the same eight- digit HUC code. An eight-digit HUC code can, in some cases, encompass many counties, which is far too wide a net to repair or mitigate the damage caused to a particular stream. Even this too broad a net is nearly meaningless because substitute mitigation can be approved in another area "proximate" to the alteration. This definition's use of the term "proximate" could also be used to make TDEC's decision unreviewable. This could lead to results where mitigation could occur several counties away, depriving local residents of the use and enjoyment of their resource. Mitigation should be required in an area no broader than the applicable twelve (12)-digit HUC code, and preferably within an area that is hydrologically connected to the damaged area. Please clarify how these potentially untoward results can be avoided.

Third, Commenters request clarification of how the proposed regulations comply with the Clean Water Act and implementing regulations, which have previously been interpreted by the State to require antidegradation analysis be done on a location-by-location basis. See Tennessee Attorney General Opinion No. 09-76, May 12, 2009.

Response. First, the commenters misstate the existing requirement. Impact minimization was one option to achieve *de minimis* degradation, but that could also have been achieved through in-system mitigation, so there was no requirement in rule to avoid or minimize when sufficient in-system mitigation was provided. Moreover, provision for *de minimis* degradation of habitat is not new, and the existing definition of *de minimis* degradation will be retained.

Second, the Department's determination of *de minimis* degradation is reviewable through a permit appeal to the extent that the petitioner alleges a violation of the Water Quality Control Act or the Board's rules. The term "proximate" is intended to allow for the use of mitigation banks and other forms of mitigation closer to the original impact and (particularly for wetlands) within the same subecoregion area, if appropriate, rather than farther away but within the HUC-8.

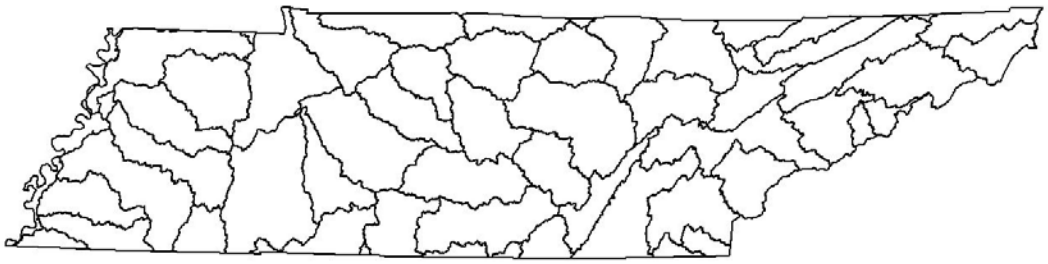
Third, the application of the concept of "*de minimis* degradation" has been affirmed by the courts and was approved by EPA and the Tennessee Attorney General in the previous version of these rules. The referenced Attorney General opinion does not address the question of what conditions would be required to constitute *de minimis* degradation. The rules still require a site-specific review by the division, subject to public notice and comment requirements, even for *de minimis* degradation. In particular, such review is required to determine the need for, and the sufficiency of, compensatory mitigation. The requirement that compensatory mitigation sufficient to offset the loss of resource values must be provided "in-system" to constitute *de minimis* degradation is based on the state's interpretation of applicable caselaw.

Comment 121. ***A primary concern with the proposed definition of "in-system" to include any location within a Hydrologic Unit Code 8 (HUC 8) watershed is that this is far too broad a scale to ensure resource values are not lost, particularly for habitat alterations [0400-40-03-.04(12)].***

Response. The definition of "in-system" applies only to habitat alterations. Previously, there was no definition in the rules for this term, and it was applied flexibly. By clearly defining the term to be limited to the HUC-8 and other proximate areas, the rules will promote mitigation that occurs within the same watershed. Using the HUC-8 watershed rather than a sub-watershed approach was selected so as not to penalize third-party mitigation, such as mitigation banks and those in-lieu fee programs that are limited to a sufficiently small service area. Moreover, using the HUC-8 watershed is consistent with the Division's approach to watershed planning, which is done at the HUC-8 scale.

Comment 122. ***TDEC previously defined "in-system" to be within the same HUC-12. The expansion of "in-system" to include virtually anywhere in the state makes the term meaningless [0400-40-03-.04(12)].***

Response. The term "in-system" has not previously been defined. In practice, TDEC has generally, but far from always, used the same HUC-12. The new definition of "in-system is based on HUC-8 watersheds, which are common drainage systems, and other areas proximate to the alteration. It excludes mitigation that occurs within a different major drainage basin. In addition, the ARAP rules require mitigation for impacts to Tennessee streams and wetlands to be in Tennessee, so the portions of HUC-8s that extend into bordering states cannot be utilized. The HUC-8s in Tennessee do not include "virtually anywhere in the state," and are illustrated in this map:



Comment 123. ***Per Rule 0400-40-03-.04(12): Definition of In-system mitigation - We recognize that the wording, "or in another area proximate to the alteration," allows for the use of mitigation banks and in lieu fee programs where those banks and programs often have several HUC 8 watersheds as a service area. It is our understanding that "in-system mitigation" is not intended to discourage the use of banks and in-lieu fee programs in favor of permittee responsible mitigation.***

Response. The commenter is correct, but that was only part of the intent. The new definition of in-system is intended to allow for use of mitigation banks, which typically use a HUC 8 as a service area, and those in-lieu fee programs that have a small service area. Some mitigation banks have a service area that includes part of an adjacent HUC 8 within the same major drainage basin and subecoregion. These could qualify as in-system. Some in-lieu fee programs may have small service areas that do not precisely overlap with HUC 8 boundaries. In this case, the division would need to evaluate whether mitigation sites within that service area would be sufficiently proximate to a proposed impact to qualify as in-system. However, in-lieu fee programs that have service areas larger than two adjacent HUC 8s are unlikely to qualify as in-system.

The wording "or in another area proximate…" was also intended to allow mitigation outside of the HUC 8 if the proposed compensatory mitigation site is closer to the site of impact and within the same subecoregion, but just outside the HUC 8. In that case, the division would evaluate whether the service area is scientifically-defensible as being "in-system." It is likely that mitigation within the same EPA Level IV ecoregion would satisfy this condition. To be clear, "another area proximate" means the mitigation site must be close to the impact site.

Comment 124. ***Commenters request that the Board eliminate all references to measurable degradation [(0400-40-03-.04(15)] from Tennessee's Antidegradation Statement .***

Response. The term "measurable degradation" reflects the reality that changes in water quality that cannot be measured cannot effectively be monitored or regulated. The language will be retained.

Comment 125. ***Commenters request that Rule 0400-40-03-.04(15) be changed to:***

1. ***Measurable degradation, as used in the context of discharges or withdrawals – <u>Increased loadings or concentrations of pollutants or loss of habitat</u> [in parameters of waters] that are of sufficient magnitude to be detectable <u>at the point of discharge or withdrawal</u> by the best available instrumentation or laboratory analyses.***

   (Note: Because analytical techniques change, the Department may consider either the most sensitive detection method needed to comply with state standards or any biological, chemical, physical, or analytical method, conducted in accordance with U.S. EPA approved methods as identified in 40 C.F.R. part 136. Consistent with T.C.A. § 69-3-108, for scenarios involving cumulative, non-measurable activities or parameters that are managed by a narrative criterion, the Department will use mathematical models and ecological indices to ensure no degradation will result from the authorization of such activities, [consistent with the state's mixing zone policy].)

Response. The proposed changes will not be made. Rule 0400-40-03-.05(2) expressly authorizes mixing zones, and it would be inconsistent to disallow mixing zones here. However as a practical matter, when a parameter is unavailable, there is no available mixing zone because there is no available assimilative capacity. Increased loadings can be permissible where accompanied by increased flow that increases assimilative capacity. In other words, even in impaired waters, a facility can discharge the pollutant that is unavailable in a concentration below the applicable water quality criterion because that does not cause or contribute to pollution. The term "measurable degradation" is not used in the context of habitat alterations.

Comment 126. ***The definition [0400-40-03-.04(16)] of "Minimum Level" should include the entire Appendix A of 40 CFR Part 136 as amended rather than just referring to it.***

Response. Our definition of Minimum Level is based on EPA's Sufficiently Sensitive Methods Final Rule. It is common practice in state rules to refer to other regulations, especially federal. It would not be practical or desirable to include all these additional texts. However, we will add a date to this rule.

Comment 127. ***A new discharge of a substance does not necessarily use up assimilative capacity [0400-40-03-.04(19)]. For example, the discharge may be at a lower concentration than the receiving stream. In that situation, the discharge might actually add assimilative capacity to the waterbody.***

Response. If a discharger adds sufficient flow, that may add assimilative capacity. However many pollutants, including but not limited to bioaccumulative parameters, are more appropriately regulated through loading.

Comment 128. ***The definition [0400-40-03-.04(19)] of "New or increased discharge" needs to include the word "either" so that it is clear that either one of the two provisions could apply.***

Response. We agree. This change will be made.

Comment 129. ***The definition [0400-40-03-.04(19)] of "New or increased discharge" needs to be deleted as it isn't required by state or federal law.***

Response. We agree that nothing requires us to have a definition, but TDEC must establish the scope of the antidegradation policy and identify which alterations do or do not fall under its provisions. For the sake of clarity, this definition is needed and will be retained to define the trigger for antidegradation review, particularly for increased discharges. This question has previously arisen in litigation, and we believe that regulatory clarity is important in this respect.

Comment 130. ***The definition [0400-40-03-.04(19)] of "New or increased discharge" needs to be interpreted as being based on the permitted discharge level rather than the existing discharge level. Otherwise, the rule would incentivize discharging at permitted levels.***

Response. This provision will be retained as proposed. The two different provisions apply to two different scenarios: one in which a permit establishes a specific effluent limitation for a particular pollutant (in which case, that limit is the baseline) and another in which there is no permit limit, but the discharge of the pollutant is nonetheless authorized by the NPDES permit. The recommended revision would be silent as to what to do in the second scenario.

Comment 131. ***Rule 0400-40-03-.04 (19) effectively grandfathers in existing pollution levels in violation of the statutory mission of T.C.A. § 69-3-102.***

Response. The comment is incorrect that this definition "grandfathers" existing pollution. The Water Quality Control Act and the Board's permitting rules prohibit the issuance of permits for activities that cause pollution, and that is true whether or not antidegradation review is required.

Antidegradation review is a device for maintaining existing water quality, providing an additional measure of analysis beyond the prohibition on pollution. Thus, antidegradation review only applies to new, increased, or expanded activities, not to permit renewals for ongoing activities (with a partial exception for ETWs). This has always been the case, and is consistent with federal requirements.

Moreover, any discharge – whether new, increased, or existing - that has the reasonable potential to cause or contribute to pollution would be subject to water quality-based effluent limitations to prevent or abate pollution as a function of the NPDES permitting process separate and apart from whether antidegradation review is required.

Finally, the change merely defines a term that was previously used in the Antidegradation Statement without having been defined. The definition is based on how the Division has consistently applied and interpreted this term, and promulgating it through rulemaking is intended to provide greater clarity.

Comment 132. ***We object to each of the definitions [0400-40-03-.04(19)] and uses of "new or increased water withdrawals," "new or expanded habitat alterations," and "new or increased temperature alterations," because this definition appears to facilitate the further pollution of Tennessee's streams.***

Response. See previous response. The Water Quality Control Act and the Board's permitting rules prohibit the issuance of permits that authorize pollution, regardless of whether antidegradation review is required.

Comment 133. ***The definition [0400-40-03-.04(19)] of "new or increased discharge" appears to be part of TDEC's pre-existing policy choices that facilitate additional pollution. As explained in Pickard v. Tennessee Dep't of Env't and Conservation, No. M2011–02600–COA–R3–CV, 2012 WL 3834777 (Tenn.Ct.App. Sept. 4, 2012), 24, TDEC has chosen to interpret and apply antidegradation requirements on a parameter-by-parameter approach, rather than a water body-by-water body approach. This approach allows for increased discharges of pollutants in that even though a water body can be impaired for one pollutant, and thus additional loadings of that pollutant are improper, it can receive loadings of other pollutants. This approach difficult to reconcile with the statutory mission under T.C.A. § 69-3-102 and commenters object to attempts to enshrine it in TDEC's rules.***

Response. As stated previously, regardless of whether antidegradation review is required, TDEC cannot issue permits that authorize activities that cause pollution. Moreover, EPA has recognized the parameter-by-parameter approach as being more protective than the waterbody-by-waterbody approach because antidegradation review is tiered based on the water quality status of the stream. Under federal law, impaired waters (Tier 1) receive less antidegradation protection than high quality waters (Tiers 2, or 3). So, applying the waterbody-by-waterbody approach, a water body that otherwise has available parameters would only receive Tier 1 protection if even one parameter is unavailable. Finally, there is no water quality justification for limiting one pollutant simply because there is too much of an unrelated pollutant in a water body. This is why NPDES permitting nationwide is based on a parameter-by-parameter approach.

Comment 134. ***Commenters further request clarification on how this new definition of new or increased discharges [0400-40-03-.04(19)] can be reconciled with many years of interpretation of these same rules. For example, in the Final YEAR 2016 303(d) LIST, TDEC states as follows:***

If a stream is impaired, regardless of whether or not it appears on the 303(d) List, the Division cannot authorize additional loadings of the same pollutant(s).

Response. The two statements are not related to each other. The definition of "new or increased discharge" merely determines when antidegradation review is required and has no effect on the requirement to issue permits with effluent limitations that are sufficiently stringent to protect water quality. Those requirements are established by TCA 69-3-108(g) and by the Board's permitting rules, and apply regardless of whether antidegradation review is required. Moreover, when a discharge adds flow, it adds assimilative capacity, so a marginal increase in loading may be permissible for non-bioaccumulative pollutants even in impaired waters.

Comment 135. ***Commenters question how the definition of (and thus permission for) "new or increased discharges" [0400-40-.04(19)] can be reconciled with the obligation to prevent "backsliding" contained in Rule 0400-40-05-.08(j) and 40 CFR § 122.44(l). Please clarify.***

Response. The definition of “new or increased discharge” has no bearing on the antibacksliding provision of the cited NPDES permit rules. Again, the term as used in these rules only applies to determining when antidegradation review is required.

Comment 136. ***Commenters request clarification of the scope of the term “numeric effluent limitations” as used in the definition of “new or increased discharge” [0400-40-.04(19)]. A numeric limitation could be either expressed in concentrations (which language appears in several TDEC regulations) per unit of measure, or in poundage limitations. It is unclear which is intended. An increase in volume with respect to a limit expressed in concentration per unit of measure could result in a significant increase in loading, but not be an increase in the concentration limit. Similar loading increase could result through the application of Rule 0400-40-05-.08(m) which requires limitations be expressed as averages in certain circumstances.***

Response. The term “numeric effluent limitation” is intended to apply to any limitation applied as a number rather than in narrative form. If a facility proposes an increase in effluent flow rate, the division will translate the permitted discharge into a current loading allowance. For publicly owned treatment works, this is based on design flow as required by federal rules.

Comment 137. ***The proposed definition must consider any impact on water bodies from any increased volume of water in a discharge. Increased volumes can have scouring and other effects and carry contaminants that are not yet controlled, whether in a permit or otherwise. Please explain how this change can be reconciled with the definition of pollution in T.C.A. § 69-3-103 (28), which includes changes in the physical properties of waters.***

Response. We share the commenter’s concern about physical alteration of streams in Tennessee and our habitat surveys indicate that bank erosion can be a significant factor in increasing sediment bedload. However, the NPDES permitting program regulates the discharge of pollutants, not the release of water.

Comment 138. ***Per Rule 0400-40-03-.04(27) Resource values -- This definition is used only in determining when mitigation is sufficient. See the references thereto in the definitions of De Minimis degradation and in-system mitigation. This is insufficient. TDEC should recognize and consider throughout these regulations the concept of ecosystem services and consider the values provided by such services.***

Response. The water quality standards recognize the value of habitat through Rule 0400-40-03-.03(3)(n). Other ecosystem services are inherent in many additional narrative and numeric criteria.

Comment 139. ***Per Rule 0400-40-03-.04(27) Definition of Resource Values -- Under paragraph (27), the Department proposes a definition for "Resource values" as the benefits provided by the water resource that help maintain classified uses, with a***

number of examples of such benefits provided. This definition is very broad and raises question in light of the accompanying definition of "significant degradation" under paragraph (29). Where a permanent loss of resource values would otherwise occur, "significant degradation" is deemed not to occur if mitigation ensures "no overall net loss of resource values." In light of the various attributes of "resource values" we would like to confirm that this is based upon an overall evaluation of "resource values." For example, if some small loss associated with one of the factors (e.g., loss in the ability to assist in flood prevention) were to occur after mitigation, such loss could be addressed by an increase in another factor (e.g., provide drinking water for wildlife and livestock) such that no "significant degradation" would be deemed to occur. We request confirmation of this reading.

Response. These definitions apply only in the context of habitat alterations. Because antidegradation rules allow for offsite compensatory mitigation in this context, it is possible that a mitigation proposal would result in no overall net loss of resource values by providing functional lift in a variety of resource categories. Thus, it is possible that any resource value scoring system that we implement might score the final mitigation product as higher than the existing condition, but actually represent a slight decrease in one resource value which is offset by a improvements in another resource value.

Comment 140. ***In 0400-40-03-.04(29), change the definition of "significant degradation" to "an appreciable permanent loss of resource values resulting from a habitat alteration in a waterbody with unavailable parameters for habitat, ~~unless offset by~~ requiring mitigation sufficient to ensure no overall net loss of resource values to the State."***

Response. The suggested change will not be made. The intent of the proposed rule amendment for habitat alterations in waters with unavailable parameters for habitat is to better conform Tennessee's Antidegradation Statement to the plain language of EPA's antidegradation rule and long-standing EPA guidance on the subject. EPA has consistently stated that 40 C.F.R. § 131.12(a)(1), which applies to Tier 1 waters (in this case, waters with unavailable parameters for habitat) is satisfied in the case of wetland fills if the authorized impacts do not result in "significant degradation" under 40 C.F.R. § 230.1(c) of the 404(b) rules. Under these rules, no significant degradation occurs when compensatory mitigation is provided such that there is no net loss of water resources, which is the same standard Tennessee applies through its ARAP permitting program.

EPA's position was stated in Appendix D of the Second Edition of the Water Quality Standards Handbook in 1990, and was restated in the 2012 Water Quality Standards Handbook, Chapter 4: Antidegradation. This interpretation reflects the fact that 40 C.F.R. § 131.12(a)(1) "provides the absolute floor of water quality" and "applies a minimum level of protection." 2012 Handbook, Ch. 4, at 1. By contrast, 40 C.F.R. § 131.12(a)(2) and (3) provide higher levels of protection for higher quality waters. Under the prior version of Tennessee's Antidegradation Statement, the highest level of protection was given to the lowest quality waters, inverting the prioritization established by EPA.

Comment 141. ***The preamble states, "If a waterbody is impaired for habitat ("unavailable parameters"), then an application can only be approved if it causes "no significant degradation," which simply means it has to comply with ARAP rules for mitigation [0400-40-03-.04(29)]. This contradicts the Clean Water Act and EPA requirements for Antidegradation review.***

Response. The commenter is correct that compliance with the ARAP rules for waters with unavailable parameters satisfies antidegradation review. The comment is not correct regarding federal requirements. Please see previous response.

Comment 142. ***Regarding Rule 0400-40-03-.04(29), through the linguistic device of inserting the word "unless" before "mitigation sufficient to ensure no overall not loss of resources values is provided" TDEC is making a significant and unwarranted change to environmental policy and practice: TDEC is substituting mitigation of uncertain scope, performance, and responsibility for previous requirements that environmental damage be avoided or minimized. This is effectively abdicating, if not renouncing, the obligations under T.C.A. § 69-3-102***.

Response. As explained previously, this change is warranted to better conform the Antidegradation Statement to EPA's antidegradation rule and guidance. Moreover, mitigation is not of uncertain scope or performance: it is an express permit requirement in either an ARAP/Section 401 certification or a Section 404 permit, or both. EPA's antidegradation rule and guidance were issued pursuant to the Clean Water Act, which has language comparable to that found in T.C.A. § 69-3-102, so we have no reason to believe that applying EPA's long-standing interpretation of its own antidegradation rule is contrary to the overarching policy of Tennessee's Water Quality Control Act.

Comment 143. ***Regarding Rule 0400-40-03-.04(29), by using subjective terms such as "appreciable," and "permanent," "sufficient," and "overall," too much power and authority is placed in the hands of paid consultants for project proponents as well as making any such determinations subject to potentially unreviewable discretion. Please clarify how these potentially untoward results can be avoided.***

Response. The terms used in this rule are borrowed from the existing ARAP mitigation rules, which have been in use for many years. Projects that require mitigation always require individual permits, and thus are individually reviewed by Division staff and subject to permit appeals.

Comment 144. ***Regarding Rule 0400-40-03-.04(29), TDEC does not specify the types and amounts of, or establish any system to ensure that, "sufficient" mitigation is performed. Commenters request clarification on the relative preferences for mitigation banking, in lieu fee programs, and permittee mitigation, and how the certainty needed for well-managed growth will be facilitated.***

Response. The referenced rule is a definition, and as such is not the appropriate place to define substantive requirements for mitigation. The ARAP rules address mitigation for those permits, and federal Section 404(b) rules establish mitigation requirements for projects requiring those permits.

The Division does not have a relative preference for mitigation banking, in-lieu fee programs, or permittee-responsible mitigation. Moreover, the division does have a system to ensure that sufficient mitigation is provided to offset appreciable permanent loss of resource values, and implements this system through its individual ARAP program. The ARAP rules specify minimum ratios for compensatory mitigation for wetlands and establish performance criteria for stream mitigation. The division is separately updating its stream mitigation guidelines, which will be subject to public notice and comment.

Comment 145. ***Per Section 0400-40-03-.04(29) Significant degradation - Please define the terms appreciable and permanent. What are the parameters for habitat?***

Response. The term "appreciable permanent loss of resource values" has long been the trigger in the ARAP program for when habitat alterations require compensatory mitigation. The current general ARAPs define a number of activities that have minimal impacts. The ARAP program is Tennessee's parallel to the Corps' Section 404 program. ARAPs, like Section 404 permits, must result in no significant degradation. Parameters are those constituents of water quality that can be measured, so the parameters of habitat are those aspects of habitat that can be measured to assess habitat quality. For example, these include but are not limited to: bank stability, riparian vegetative width, riffle frequency (for riffle streams), embeddedness, and percent canopy cover.

0400-40-03-.05 Interpretation of Criteria

Comment 146. ***With the new human health criteria, the Board should consider adopting a variance process and implementation guidelines.***

Response. Please see previous responses with respect to the new human health criteria.

Variances authorize the violation of water quality criteria for some restricted period of time, usually because a discharger needs time to implement additional treatment, or because the cost of meeting the criterion would cause "widespread and substantial" economic harm to the community (not just the discharger).

The commenter is correct that Tennessee water quality standards do not contain such a provision. Such a provision was considered back in the late 1980s and was ultimately rejected. The appropriate goals of this provision can be achieved in other ways, such as compliance schedules or, as applicable, mixing zones.

Comment 147. ***TDEC proposes to add a prohibition against "offensive colors, odors, or other conditions" in the mixing zone policy [Rule 0400-40-03-.05(2)]. This means that the mixing zone is regulated more stringently than the rest of the stream and the language differs from the existing color criterion which refers to "objectionable" color. The reference to color should be deleted.***

Response. TDEC has only proposed adding the words "colors, odors, or other" to the sentence. The words "offensive" and "conditions" were already there. We do not think it is true that this provision establishes more stringent conditions since the rule always prohibited offensive conditions. The rule will be changed to use the term "objectionable" here to be consistent with the criterion.

Comment 148. ***The revisions to the mixing zone policy references bioaccumulative substances but does not identify them.***

Response. Bioaccumulative substances are identified with the letter "(b)" in the numeric criteria for protection of recreational uses, Rule 0400-40-03-.03(4)(l). Please check the footnotes of this table for additional information.

Comment 149. ***The revisions to the mixing zone policy references would prohibit bioaccumulative substances if certain risk assessment criteria are already exceeded. This is inappropriate as the discharge may not be the reason for the original bioaccumulation and other parts of the regulations prohibit loss of use. A TMDL should be done instead.***

Response. The commenter is correct that the antidegradation policy does not allow the agency to authorize additional measurable degradation to already impaired waters. However, antidegradation review is not a substitute for this modest strengthening of the mixing zone policy. Continuation of ongoing discharges at the same level is not subject to a new antidegradation review. Moreover, the Antidegradation Statement does not speak to mixing zone policy, or address how to apply the mixing zone policy particularly when the problem is accumulation in fish tissue rather than ambient water quality. The provision in question is intended to prevent areas directly around a discharge from getting increasingly worse over time, regardless of the original source of the bioaccumulative substance. If a discharge of a bioaccumulative substance is ongoing in this circumstance, a permit renewal could reduce the allowed loading to a level equivalent to complying with water quality criteria end-of-pipe but also provide for a compliance schedule to allow sufficient time to comply.

Comment 150. ***We appreciate the inclusion of compliance schedules in Rule 0400-40-03-.05(3). We request the following revisions:***

Permits for the discharge of pollutants ~~may~~ shall establish a schedule of compliance when necessary to allow a reasonable opportunity to comply with these water quality standards. The technical and economic feasibility of waste treatment, recovery, or adjustment of the method of discharge shall be considered in establishing a schedule

<u>of compliance.</u> Any such schedule of compliance shall require compliance with an enforceable final effluent limitation as soon as possible and include a final compliance date. If compliance will take longer than one year, the schedule of compliance shall establish enforceable interim requirements, establish dates for compliance with these requirements that are no longer than one year apart, and require reporting of interim compliance actions within fourteen days of the applicable deadline. <u>If the time necessary for completion of any requirement is more than one year and the requirement is not readily divisible into stages for completion, the permit shall require, at a minimum, specified dates for annual submission of progress reports on the status of interim requirements.</u>

Response. The division needs to retain the discretion to establish compliance schedules to comply with water quality standards. There are situations, such as proposed new discharges, pre-existing standards, or serious conditions of pollution where compliance schedules may not be appropriate.

The rules are amended to include, "When the division establishes a compliance schedule, it shall consider the technical and economic feasibility of waste treatment, recovery, or adjustment of the method of discharge."

The rules will also be amended to include the final sentence as proposed by the commenter.

Comment 151. ***The language about compliance schedules should acknowledge that compliance schedules can last longer than the five year permit term. Also the language should acknowledge that MS4 programs are under a "Maximum Extent Practicable" goal rather than the stated "as soon as possible" goal.***

Response. We agree that compliance schedules may, in unusual circumstances, last longer than a five-year permit term. However, any compliance schedule contained in an NPDES permit must include an enforceable final effluent limitation and a date for its achievement.

These are rules for water quality criteria, not NPDES permitting rules. Criteria do not differentiate between NPDES permitting standards, so the requested reference to MS4 programs will not be added to these rules.

Comment 152. ***TDEC should not delete the provision in Rule 0400-40-03-.05(4) that addresses how criteria for nutrients, biological integrity and habitat relate to flow basis in doing stream assessments.***

Response. The sentence in question is unrelated to the rest of the paragraph, which explains how criteria and ambient stream flows are blended to derive permit conditions and calculate limits for specific parameters. The additional discussion about flows and stream assessment is unnecessary and might be taken to mean that there is a relationship between flow and the application of other criteria. Criteria apply to streams regardless of flow. TDEC can use assessment discretion when criteria violations occur during excessively high or low flows.

Comment 153. ***The commenter objects to the new description of the "condition of impairment" in Rule 0400-40-03-.05(5). This provision should be deleted.***

Response. This description was needed to contrast water quality impairment with the "condition of pollution" defined in the Water Quality Control Act. According to the Act, any water quality criteria violation is the condition of pollution. The proposed description of the condition of impairment makes it clear that TDEC will not automatically assess a stream as impaired simply on the basis of a single excursion from applicable water quality criteria, but will rather consider the "magnitude, frequency and duration" of such excursions. The commenter has not suggested alternative language, but has instead asked that it be deleted. The language will be retained.

Comment 154. ***The commenter objects to the deletion of the phrase "The criteria and standards provide that" in Rule 0400-40-03-.05(6). This deletion makes this provision a mandate regarding treatment levels rather than a goal. Further, this provision does not belong in rules section .05, Interpretation of Criteria.***

Response. We do not agree with this interpretation. This provision is a restatement of the treatment requirements found in the Water Quality Control Act. The deletion of the phrase in question was done, not to change this meaning, but simply to avoid stating the obvious. The proposed language will be retained.

Comment 155. ***The commenter objects to the new language in Rule 0400-40-03-.05(7) concerning intake water. This provision should be deleted.***

Response. This proposed addition to the rules will not be made.

Comment 156. ***The commenter does not understand why natural sources of pathogens [Rule 0400-40-03-.05(7)] should be treated differently than natural sources of other parameters.***

Response. This provision is in reference to how water quality assessment is done. When TDEC assesses water quality, criteria violations caused by natural sources are not called impairment and these waters would not be added to Tennessee's 303(d) List of Impaired Waters. However, the pathogen criterion does not differentiate between natural or anthropogenic sources and either can make people equally sick. Additionally, it is much more difficult to say with confidence what are "natural" sources. For example, livestock and pets are not naturally sources.

Comment 157. ***TDEC identified that even natural sources of pathogens could be assessed as contributing to the condition of impairment [Rule 0400-40-03-.05(7)], but then cited beavers as being natural sources that would not be the condition of impairment. Are there beavers that don't add pathogens to the water?***

Response. We understand how this might cause confusion. When using beaver as an example of impacts that would not be the condition of impairment, we were referring to their tendency to alter habitat significantly. We would not assess one of these streams as impacted by "flow alteration" just because beaver had dammed it.

Comment 158. ***There are other natural sources beyond the ones TDEC identified.***

Response. We agree but were not attempting to inventory all the natural sources, just provide a few examples.

Comment 159. ***The "sufficiently sensitive" method will cause confusion, especially at contract labs.***

Response. We are aware of the confusion that exists due the terms and acronyms used to refer to the various detection limits and quantitation levels. We feel that the specificity of the rule change will help eliminate some of the confusion by using "minimum level" (ML) as the standard term when referring to quantitation level.

The rule change does not address synonymous terms used by individual laboratories, commercial or private. However we would encourage permittees to request that their labs use MDL (method detection limit) and ML (minimum level), when respectively referring to detection limits and quantitation levels, in order to be consistent not only with our rule but also with Clean Water Act rules in general.

Comment 160. ***The new sufficiently sensitive rules require permittees to research methods and are a regulatory burden subject to misinterpretation. TDEC should identify the analytical method they want permittees to use rather than leave it up to them.***

Response. See the above response. In some cases we do specify acceptable analytical methods, for example, low-level mercury analysis. However, it would be onerous and perhaps cost-prohibitive for the Division to specify a "sufficiently sensitive" method in all cases. Many facilities will be able to demonstrate compliance using a less sensitive (but still "sufficiently sensitive") and less costly analytical method.

To specify use of more costly methods would penalize those facilities without sufficient justification for doing so. In addition, it would open up avenues for complaints from additional entities who publish analytical methods. For example, if we required use of EPA methods, that action could generate complaints from other sources of analytical measures like Standard Methods, ASTM, and others.

Comment 161. ***In 0400-40-03-.05(9), TDEC again wants to use the word "pollutants" rather than pollution. The word pollutants is more narrow than the Act envisions. This should be allowed to remain the word "pollution."***

Response. We will withdraw the revision.

0400-40-03-.06 Antidegradation Statement

General Antidegradation Comments

Comment 162. ***Tennessee should not allow degradation in any circumstance.***

Response. TDEC cannot authorize an activity that would cause pollution. This prohibition is built into the Water Quality Control Act, the Board's permit rules, and for new or expanded activities, the Antidegradation Statement.

Degradation is a lowering of water quality that does not necessarily rise to the level of pollution. Both federal and state regulations allow the level of existing water quality to be incrementally lowered in Tier 2 waters (available parameters/ETWs) if practicable alternatives are absent and the public interest is served by the lowering. That the lowering of water quality is in the public's interest is established by the determination of social or economic necessity. For Outstanding National Resource Waters, no measurable or discernable degradation can be permitted with respect to discharges and withdrawals, and no more than *de minimis* degradation for habitat alterations.

Comment 163. ***The Aquatic Resource Alteration Permit (ARAP) process was developed by the state of Tennessee. TDEC should not be bound by EPA or U.S. Corps of Engineers interpretations, rules or policies, including those for antidegradation.***

Response. We understand the sense of this comment and agree with the commenter's account of how the ARAP program originated. We have also publicly noted that EPA's Antidegradation guidance was originally developed for dischargers and is an awkward fit for habitat alterations. In that regard, we have modified the process in numerous important ways, such as how *de minimis* degradation is applied to habitat alterations and how to incorporate the concept of mitigation into the policy. Where it has made sense, we have modified our approach and will continue to do so. However, habitat alterations and water withdrawals do have the potential to result in degradation, so EPA's antidegradation rule apply to such activities.

With respect to Section 404(b) rules, our goal is to minimize direct conflicts between state rules and the Corps' rules. If a permit application requires both an ARAP and a Section 404 permit, direct conflicts between the rules could create unnecessary regulatory hurdles.

Comment 164. ***In Rule 0400-40-03.06(1)(a), consider adding "to reclaim polluted waters" as a purpose of the Antidegradation Statement. To do otherwise ignores the mandate of the Water Quality Control Act.***

Response. We agree that restoration of impacted waters is an important goal of TDEC, but do not agree that the antidegradation policy is a tool designed for that purpose. The intent of the antidegradation rules is to provide guidance to the agency in regard to allowing or not allowing the lowering of water quality based on the conditions found in individual waterbodies and the nature of the proposed activity. Antidegradation policy is designed to maintain water quality. Other programs like permitting, TMDLs, enforcement, watershed management, and cost share projects are tools to restore impacted streams.

Comment 165. ***In Rule 0400-40-03-.06(1)(a), consider adding "It is the purpose of Tennessee's standards to fully protect . . . . . Sources or activities exempted from permit requirements under the Water Quality Control Act should utilize all cost-effective and reasonable best management practices in order to prevent degradation of waters" to show this statement is tied to Antidegradation.***

Response. The words "to prevent degradation of waters" have been added.

Comment 166. ***In Rule 0400-40-03.06(1)(a), consider changing as follows, "To apply this antidegradation statement ~~in the permitting context~~ to activities, including but not limited to, permits for new or increased discharges, new or increased water withdrawals, or new or expanded habitat alterations," to include 401 certifications and other actions.***

Response. Instead of making this change, the language regarding public participation and intergovernmental coordination will be restored to Rule 0400-40-03.06(1)(a)***.***

Comment 167. ***Please consider adding public participation and intergovernmental coordination requirements be added to the general antidegradation statement at 0400-40-03-.06 (1)(a).***

Response. The language regarding public participation and intergovernmental coordination that was in the prior version of the rule will be restored, clarified by the inclusion of "as established herein." Please note that the division utilizes ARAPs as Section 401 certifications.

Comment 168. ***Regarding Rule 0400-40-03.06(1)(a), please state the reasons for the deletion of the sentence reading: "Additionally, the Tennessee Water Quality Standards shall not be construed as permitting the degradation (see definition) of high quality surface waters." Such deletion could be viewed as an improper renunciation of TDEC's mission under T.C.A. § 69-3-102 and in contravention of other provisions of law.***

Response. This sentence is a remnant of an early version of the Antidegradation Statement, and had a different meaning before the rule was amended to include detailed procedures and standards for allowing degradation of high quality waters. There is no substantive change to the rules proposed as a result of deleting this sentence. It is important to recognize that degradation is not the same thing as pollution. In no case may the Department issue permits for activities that cause pollution. T.C.A. § 69-3-108(g).

Comment 169. ***The commenter would like for TDEC to confirm that according to Rule 0400-40-03.06(1)(b), if an existing water withdrawer requests the renewal of a permit at existing withdrawal rates, the renewal would not need a antidegradation review.***

Response. The commenter's understanding is correct.

Comment 170. ***The commenter interprets the revisions to Rule 0400-40-03.06(1)(b)1. to mean that the rule does not require an applicant to explain "if it will cause measurable degradation as long as de minimis degradation is not caused."***

Response. The commenter's interpretation is only accurate for applications for habitat alterations, for which the term "measurable degradation" is not used. If a new or increased discharge or water withdrawal would cause measurable degradation according to the definition [Rule 0400-40-03-.04(15)], that should be reported in the application, regardless of whether the discharge or withdrawal would only cause *de minimis* degradation. Rule 0400-40-03-.06(2) prohibits new or increased discharges or withdrawals in waters with unavailable parameters that would cause measurable degradation of the unavailable parameter.

Comment 171. ***In Rule 0400-40-03.06(1)(b)2(i), change "lesson" to "lessen."***

Response. This change has been made.

Comment 172. ***In Rule 0400-40-03.06(1)(b)2.(i), add the word "reasonably" so that the beginning of the sentence reads, "Reasonably analyze a range of potentially practicable alternatives..."***

Response. While it is always TDEC's goal to be reasonable, we prefer the sentence as currently worded. Reasonableness is hard to define and is based on perspective. TDEC requires information adequate to make a determination.

Comment 173. ***In Rule 0400-40-03.06(1)(b)2(ii), consider added "in which the waters are located" at the end.***

Response. This change has been made.

Comment 174. ***Regarding Rule 0400-40-03-.06(1)(b)2(iii), existing uses may not always have WQS criteria. Consider deleting the reference to water quality criteria and calling "uses existing in the receiving water" existing uses of the receiving water instead. It would read . . . "Demonstrate that the proposed degradation will not violate the existing uses in the receiving waters." There will be no confusion then over whether the state is referring to designated uses or existing uses.***

Response. The rule will be changed to "Demonstrate that the proposed degradation will maintain water quality sufficient to protect existing uses in the receiving water." This is consistent with the language of 40 C.F.R. § 131.12 because it retains the reference to water quality.

Comment 175. ***Regarding Rule 0400-40-03.06(1)(b)3, consider adding the phrase to the new first sentence so that it now reads " An alternative to degradation is practicable if it is technologically possible, able to be put into practice, and economically viable <u>for the applicant entity (not considering related entities) in the context of project purposes and budgeting</u>" (Underlining added to show requested new wording.)***

Response. The language regarding practicable alternatives is derived directly from EPA's rules and will be retained in the final rule as proposed. Practicability is an application-specific inquiry, and will depend on a variety of factors relevant to the specific covered activity and applicant.

Comment 176. ***The definition of "practicable alternatives" in Rule 0400-40-03.06(1)(b)3., is different than the one in the ARAP rules.***

Response. The definition in the ARAP rules derives from the Section 404(b) rules, and is used in that chapter to be consistent with the Corps' permitting. The definition here derives from EPA's water quality standards rules, which apply to withdrawals as well as discharges and habitat alterations. Even so, we do not consider the definitions to be significantly different.

Comment 177. ***Regarding Rule 0400-40-03.06(1)(b)3(i), consider adding "prevent or" before "reduce."***

Response. This change will be made.

Comment 178. ***The "Antidegradation Guidance for the Department of Environment and Conservation" needs to be publicly available, and the state needs to provide an opportunity for public involvement whenever this document is revised in the future (40 CFR 131.12(b)).***

Response. The division understands that the procedures for implementing the Antidegradation Statement are subject to an opportunity for public involvement and that the procedures need to be available to the public. The referenced document has previously undergone such public involvement, and was in the process of being revised for another round of public involvement when the proposed rule was placed on notice. However, given that the planned additional comment period has not yet taken place, the reference to this guidance document is being removed from the rule. Any future implementation procedures will comply with 40 C.F.R. § 131.12(b).

Comment 179. ***Several comments were received objecting to the rule's reference to the "Antidegradation Guidance for the Department of Environment and Conservation," which have been public noticed but not finalized.***

Response. Rule 0400-40-03-.06(1)(b)4. deletes this reference and substitutes:

To demonstrate that greater than de minimis degradation is necessary to accommodate important social or economic development in the area in which the waters are located, the applicant shall provide a written justification to include, as applicable, a description of a project, the number of jobs anticipated to be created (including salaries/benefits, duration, and type), tax revenue to be generated, impact of the proposed degradation to development potential in the area, other social/cultural impacts, and any other justification. Applicants shall submit alternative or additional information regarding economic or social necessity as directed by the Department. The justification should demonstrate an overall benefit to the local community, not just a benefit to the applicant.

Comment 180. ***In 0400-40-03-.06(b)3.(ii) examples of reasonable alternatives to water withdrawals are given. For pricing structures to encourage conservation, the regulation should note that this example is limited to community public water supply systems.***

Response. All of the examples provided in this subparagraph have limited applicability and are cited simply to provide ideas. We prefer the language to continue to provide general examples of alternatives. Obviously, not every one applies in each situation.

Comment 181. ***In 0400-40-03-.06(b)3.(iii) examples of reasonable alternatives are given. For physical alterations, these examples should include putting a site somewhere else.***

Response. The example provided by the commenter is a degradation avoidance strategy. The rule states that examples of potential alternatives "are not limited to the following actions." We do not believe it necessary or even possible to list every possible strategy.

Comment 182. ***The reference to the Antidegradation guidance document creates new, unchallengeable powers in the Division.***

Response. In response to numerous comments on this provision, it has been removed.

Comment 183. ***The Board's rules should not refer to guidance documents that have not yet been adopted*.**

Response. The references to new guidance documents have been deleted.

Comment 184. ***The Antidegradation Policy establishes the idea of existing stream condition as being the starting point for measuring degradation. This approach automatically handicaps urban streams where substantial alterations have already occurred.***

Response. We understand the sense of this comment and note that historically degraded conditions occur not only in urban settings, but also areas that have been mined or substantially altered by agricultural activities. However, the purpose of antidegradation review is to maintain existing uses and existing water quality. Thus, antidegradation review is designed to keep even impacted streams from getting worse, but it does not substitute for voluntary restoration efforts and does not give the department regulatory authority not otherwise provided in the Act.

Comment 185. ***We support the clarification in Rule 0400-40-03-.06(1)(c) that draft permits, not complete applications, are to be put on public notice. We believe that noticing the draft permit allows public participation on a more complete and representative project description, which reflects negotiations and compromises already agreed to between the permittee and the Department. This will also streamline the permitting process and maximize Departmental resources.***

Response. We appreciate the comment and agree that this process will be more transparent and efficient.

Comment 186. ***A commenter notes that the public participation requirements in Rule 0400-40-03-.06(1)(c) are inconsistent with those in the ARAP rules. In the ARAP rules, no public notice is required for permit renewals or modifications with no changes. These differences should be reconciled. The same inconsistency occurs in Rule 0400-40-03-.06(1)(d).***

Response. We do not see a conflict. Rule 0400-40-03-.06(1)(c) only requires public notice for new or increased water withdrawals or new or expanded habitat alterations, so if an ARAP is renewed or modified without changes, then no public notice is required under either set of rules. Rule 0400-40-03-.06(1)(d) only applies if the public notice in Rule 0400-40-03-.06(1)(c) was required and completed, so it also applies only to new or increased water withdrawals or new or expanded habitat alterations.

Comment 187. ***The proposal to define alternatives to degradation as those that are "technologically possible, able to be put into practice, and economically viable" is a common sense acknowledgement of the differences between theory and practice. We support this change.***

Response. We appreciate the comment. This definition is based on EPA water quality rules.

Comment 188. ***Regarding Rule 0400-40-03-.06(1)(b)2.(ii): The Department proposes to change the first word from "discuss" to "demonstrate" in relation to the social or economic justifications. This is a significant change that will significantly burden permittees, potentially open up legal challenges, and create a more stringent requirement than federal law*****.**

Response. Both federal law and Tennessee's Antidegradation Statement (both the prior version and the revised version) require a demonstration of social or economic necessity, not merely a discussion, for high quality waters. See Rule 0400-40-03-.06(3) and (4)(d). It is up to the applicant to make this demonstration. The referenced provision concerns the requirements for a complete application, and the change here is merely to clarify the pre-existing requirement.

Comment 189. ***We are concerned that the database proposed for use with the new antidegradation review document will not appropriately capture the on-the-ground realities of current economic conditions. Please provide additional information about this database.***

Response. The reference to the antidegradation document is being removed from the rule. If the division proceeds with that guidance document, there will be an additional opportunity for public notice and comment.

Comment 190. ***Please add "public" before "notice" in Rule 0400-40-03-.06(1)(c) for consistency.***

Response. The requested change has been made.

Comment 191. ***Rule 0400-40-03-.06 does not appear to require the applicant to explain if it will cause measurable degradation as long as de minimis degradation is not caused. Please confirm this interpretation.***

Response. The answer depends on the circumstances. If an applicant is proposing a new or increased discharge to, or a new or expanded withdrawal from, waters with unavailable parameters, it will need to demonstrate that its discharge will not cause measurable degradation of the parameter that is unavailable.

Comment 192. ***In Rule 0400-40-03-.06(1)(d), please do not delete, "Not all activities cause an addition of pollutants, diminish flows, or impact habitat."***

Response. The language from the prior version of the rule will be retained.

Comment 193. ***The draft permit idea for ARAPs coming out of this is in fact a device for cutting off anti-degradation reviews, because once you find you've got de minimis and you don't have to have antidegradation, you just stop the internal process for that as part of the permit. Once you have draft permit, the TN Supreme Court has said that the only route of appeal is to challenge the permit. The permit is issued, it goes into effect and the activity goes on notwithstanding any appeal. Since even the fastest appeals of permits that may raise antidegradation would take at least 6 months, many projects will have done damage to the waters that are at issue and that will be irretrievable. So, the remedy of antidegradation as something that could really go to the board and be decided adversely to the permit applicant and degradation disallowed has really disappeared as a practical matter under these regulations.***

Response. The purpose of a providing a draft permit is to ensure a greater level of transparency for both members of the public and the permit applicant. Moreover, the Antidegradation Statement - both before and after these amendments - combines the public notice and comment period for ARAPs for the purposes of antidegradation and permit review. This is not a change to the rules.

Comment 194. ***Regarding Rule 0400-40-03-.06(1)(d)3: a 303(d) designated stream is not currently supposed to be permitted for impacts that would make its current impairments worse. With the new definitions for "in-system" and "de minimis," the stream could now be damaged with the mitigation occurring in some other watershed, yet the impact would be designated as "de minimis" and the new rule would prohibit the TDEC reviewer from applying principles of Antidegradation to prevent further degradation of this 303(d) stream.***

Response. The current rule allows new or expanded habitat alterations in waters with unavailable parameters for habitat so long as the project results in only *de minimis* degradation, which includes either minimal impact activities or greater impacts that are offset by in-system compensatory mitigation. The proposed rule would allow such impacts so long as they do not result in significant degradation, which includes impacts for which compensatory mitigation is not provided in-system.

Comment 195. ***Regarding Rule 0400-40-03-.06(1)(d)3., what is to prevent additional projects in the future to continue to degrade the same water resource until there is no ecological function left, not to mention human uses. A discussion of cumulative***

impacts here would necessarily lead to an absolute limit to the amount of allowable degradation regardless of whatever mitigation has occurred outside the HUC12.

Response. This comment concerns habitat alterations, including those authorized by ARAPs. The Department cannot issue permits for activities that cause pollution either by themselves or in combination with others. See T.C.A. § 69-3-108(g). Cumulative impacts are evaluated within this rubric.

Comment 196. ***TDEC does not have, or at least does not use, any independent analysis or sources of information or expertise in deciding to accept or reject an applicant's assertion that its preferred course of action is the only "practicable" way to conduct the proposed activity. (Revised Rule 0400-40-03-.06(1)(b)2.)***

Response. The commenter is incorrect to assert that the Division does not have or use independent analysis or sources of expertise concerning practicable alternatives. The Division regularly challenges alternatives analyses submitted by permit applicants and requires additional documentation. The Division has expert engineers who can review design plans. Division staff routinely seek out independent information to verify an applicant's assertions regarding alternatives and economic necessity.

In any case, although it is the applicant's responsibility to demonstrate a lack of practicable alternatives and economic or social necessity, it is the Division's responsibility to determine whether these demonstrations have been made. These issues are also subject to the public notice and comment process, which allows input from external experts. The Division's determination of practicable alternatives is subject to a permit appeal filed with the Board.

Comment 197. ***In 0400-40-03-.06(1)(b)3.(iii) examples of reasonable alternatives are given. For physical alterations, these examples should include putting a site somewhere else.***

Response. We agree that avoidance through putting a project at another location is one example of an alternative. In some cases avoidance is not an option; for example, if you own the mineral rights on a property. The example provided by the commenter is clearly a degradation avoidance strategy. The rule states that examples of potential alternatives "are not limited to the following actions." We do not believe it necessary or even possible to list every possible strategy.

Comment 198. ***The addition of language to the Antidegradation Statement related to new or increased water withdrawals should be supplemented to include language setting a minimum quantity of water withdrawals requiring Antidegradation review.***

Response. The Antidegradation Statement applies to all new or expanded water withdrawals that may cause degradation of waters of the state. The rules already provide that water withdrawals causing no more than *de minimis* degradation individually or cumulatively as defined in the rules, do not require additional antidegradation review in waters with available parameters or ETWs. However, if the waters have unavailable parameters, no new or expanded withdrawals that cause additional degradation of the unavailable parameter can be authorized. It would not be possible to define a minimum level of withdrawals that would apply to all waterbodies due to wide variations in ambient conditions, including flow levels.

Comment 199. ***Rule 0400-40-03-.06(1)(d)3. provides, "In the case of habitat alterations, if the department determines that no degradation or only de minimis degradation will occur, no further review under the rule is required regardless of the antidegradation classification of the receiving stream." The Department permit writers will doubtless assist permit applicants to understand how they can "mitigate" their way out of any examination of alternative sites and the need to show social or economic necessity for an activity. Should somehow a permit for a proposed activity be appealed as violating antidegradation requirements the proposed regulations add an escape device to moot the appeal by a permit modification to add mitigation to achieve a "de minimis" impact: "In unusual circumstances, including but not limited to emergency permits, a state, county, or local government applicant may propose a specific mitigation plan after an Individual Permit has been issued, provided that the permit shall specify the amount of mitigation required and an implementation timeline." (Proposed revised ARAP rule 0400-40-07-.04(5)(c)).***

Response. The Water Quality Control Act, T.C.A. § 69-3-141(b) provides, "Permit applicants shall have the right to assistance from the department in understanding regulatory and permit requirements." Accordingly, staff are expected to explain options to permit applicants, including – where applicable - options to achieve *de minimis* degradation through in-system mitigation.

The ARAP rule language quoted concerning unusual circumstances is necessary to deal with atypical situations, often dangerous to the public health. For example, if a road or bridge is washed out or undermined by a flood, it may be too dangerous to wait to do the needed repairs until a permit can be reviewed or placed on public notice (citizens could be stranded in their neighborhoods, and fire departments and ambulances unable to reach parts of their service area). Or, a municipality may need to proceed with a sewer line repair expeditiously to avoid a potential break that would cause significant pollution. The division retains the authority to judge when a situation is sufficiently urgent to justify application of this provision.

Comment 200. ***The procedure proposed now is to issue a draft ARAP together with the first notice of a permit application that is considered administratively complete. This allows TDEC to issue a final permit immediately. If the Division ever issues a determination of economic or social necessity, it will be accompanied by a draft permit. The only administrative appeal available will be of the permit as explained above. The procedure for a prompt appeal to the Board for disposition of Antidegradation***

Statement challenges to proposed activities before a permit is issued and activity can begin has been abandoned.

Response. The procedure under the previous rules was to provide the only ARAP public notice and the Antidegradation public notice together. The only change is that the ARAP public notice rules will now require that a draft permit and rationale be placed on notice, which the Board believes will provide an improvement in the public participation process. Currently our only requirement is to provide public notice that a complete applications has been *received*; there is little detailed information for the public to actually review. Under this change, both the public and the permit applicant can now see the actual proposed permit along with a rationale explaining our decision process, as has always been done for NPDES permits.

Comment 201. ***Regarding Rule 0400-40-03-.06(1)(b), Commenters request clarification of the reasons for and the intended result of the insertion of the phrase "to permits for new or increased discharges, new or increased water withdrawals, or new or expanded habitat alterations." By inserting this phrase, antidegradation requirements henceforth appear to apply only in such cases, which would prohibit TDEC from considering the overall condition of a water body, and further would constitute a renunciation of the mission of T.C.A. § 69-3-102.***

Response. Consistent with federal law, antidegradation review has always applied only to new or expanded activities, with a partial exception for permit renewals for ETWs. This is because antidegradation is about maintenance of water quality, and establishing procedures to allow lowering of water quality in waters with available parameters. See 40 C.F.R. § 131.12(a)(1) ("existing instream water uses...shall be maintained and protected"), (a)(2) (for Tier 2 waters, "...that quality shall be maintained and protected"), (a)(3) (for ONRWs, "that water quality shall be maintained and protected"). EPA made it clear from very early on, in Appendix A of the Water Quality Standards Handbook (Dec. 1983) that antidegradation is about maintaining, rather than restoring, water quality. Id. at p. 1 (citing Section 101(a) of the Clean Water Act clause, "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" as a rationale for requiring antidegradation review) (emphasis in original). Ongoing activities do not result in additional degradation, and therefore maintain, not lower, water quality.

The prior version of the rules for waters with unavailable parameters (subparts (2)(a), (2)(b), and (2)(c) ("additional degradation"), available parameters (subparts (3)(a), (3)(b)), ETWs (4)(c)1. and (4)(c)2.), and ONRWs (subparts (5)(b)1. and (5)(b)2.) included comparable language. Subparts (2)(c), (3)(c), and (4)(c)3., all referred to habitat alterations causing "degradation," which was defined as a lowering of water quality, which only occurs the first time an impact is authorized. Comparable language was inadvertently omitted from part (1) of the prior version of the rule, but that section was always intended to apply only to new or expanded activities.

The rule changes are intended to clarify, not change, the applicability of antidegradation review to new or expanded activities.

Moreover, the commenter should note that antidegradation review is only one requirement that applies to issuance of permits. In particular, the overall prohibition on authorizing activities that cause pollution applies to renewals of permits for ongoing activities notwithstanding that such permits are not subject to additional antidegradation review.

Comment 202. ***Regarding Rule 0400-40-03.06 (1)(b), Commenters request clarification about the final inserted sentence, that only applicants be notified in writing of complete applications. Public notice to interested parties should be required. It is unclear, when comparing this provision to subsection (1)(c) when notice to permit applicants is required versus when public notification is required, or why two (2) separate provisions, one dealing with notice to the applicant and the other to the public, are required.***

Response. Rule 0400-40-03.06(1)(b) provides that only applicants are formally notified that an application has been reviewed, and the division has determined it is complete. This written notification is provided to ensure compliance with the Permit Applicant's Bill of Rights. This notification is typically posted on Waterlog, which is available to the public, but because no specific permit action is proposed at that time, there is no reason for formal public notice. Rule 0400-40-03.06(1)(c) addresses public notice of the proposed permit action. It requires that the division provide a separate written notification to the applicant and additionally provide notice to the public as specified therein.

Comment 203. ***Per Rule 0400-40-03.06 (1)(b)2.(i) - By deletion of the requirement to "analyze all reasonable alternatives" TDEC appears to obviate any requirement that a project proponent propose a "no project" alternative or one that avoids or minimizes degradation. Please clarify whether that or some other result was intended.***

Response. This rule does not eliminate any existing requirements. A discussion of potentially practicable alternatives is provided in Rule 0400-40-03-.06(1)(b), and includes various ways to avoid degradation.

Comment 204. ***Per Rule 0400-40-03-06(1)(b)1. - Antidegradation Statement General – Application - Proposed changes to the rule identify that the applicant must provide its basis for concluding that the proposed activity (a) will not cause measurable degradation, (b) will only cause de minimis degradation, (c) will cause no significant degradation, or (d) will cause more than de minimis degradation. As such, the rule does not appear to require the applicant to explain if it will cause measurable degradation (as long as de minimis degradation is not caused). Please confirm this reading of the proposed rules.***

Response. Rule 0400-40-03-.06(1)(b)1. requires the applicant to provide its basis for determining which level of degradation its activity would cause. The term "measurable degradation" is only used in the context of discharges and withdrawals, as indicated in the parenthetical. Rule 0400-40-03-.06(2)(a) and (b) provide that in waters with unavailable

parameters, no new discharges or withdrawals that cause measurable degradation of the unavailable parameter can be authorized. Therefore, if a proposed activity falls into this category, then the applicant will need to demonstrate that the activity will not cause measurable degradation. This is the only situation in which such a demonstration is required.

Comment 205. ***In Rule 0400-40-03-.06(1)(d), it is proposed to delete the following language from Rule 0400-40-03-.06(1)(d): "Not all activities cause an addition of pollutants, diminish flows, or impact habitat." It is unclear as to why this language is being deleted. To avoid confusion, is it requested that this language be maintained.***

Response. The previous language will be restored.

Comment 206. ***In Rule 0400-40-03-.06(1)(d)(2), it is not clear that water withdrawal permit modification or renewals with no changes would not be subject to antidegradation review.***

Response. A permit modification or renewal requesting no changes would not be a new or expanded water withdrawal, so no antidegradation review is required.

Comment 207. ***Analysis of degradation should include evaluation of the "resource value" (ecosystem services value) of the non-disturbed natural area. This could be done by evaluation of the "resource values" as enumerated in 0400-40-03-.04 (27) (Definitions).***

Response. We agree that this will often be needed for habitat alterations, and our Stream Mitigation Guidelines will address how to apply this. In many cases, it would not require an intensive evaluation to make that determination, and we remind the commenter that most proposed alterations occur on stream segments that have already been heavily altered in the past and are no longer in a 'natural' condition. For example, relocating a stream that is currently underground in a culvert to a more natural surface channel clearly is an improvement over its current status and clearly not degradation.

Comment 208. ***I have heard it asserted that TDOT road location and design criteria and public participation process may be the equivalent of antidegradation or at least of the "practicability" analysis required in newly revised Rule 0400-40-03-.06(1)(b) so that antidegradation need not be considered as part of the ARAP permitting process. That dodge has already been rejected by the Sixth Circuit.***

Response. The rules do not propose that "TDOT road location and design criteria and public participation process may be the equivalent of antidegradation." Moreover, the Kentucky rule referred to by the commenter is not the language overturned by the Sixth Circuit. Rather, it appears to be the language adopted in response to the Sixth Circuit remand.

Comment 209. ***The proposed rule does not appear to require application of known effective, existing alternatives in the case of sewer plants, for example. Plant optimization should be, but is not, required as one of alternatives to be evaluated, most likely because TDEC defines "new or increased discharge" to mean that review of discharge levels for existing sewer plants is no longer required. Please clarify the place of such "best practices" in making these determinations.***

Response. The list of potential alternatives listed here is not exhaustive, as demonstrated by the clause "include, but are not limited to." However, wastewater treatment plant optimization for nutrient removal is one of many types of "treatment alternative to reduce the level of degradation" that should be considered where applicable.

Again, the review of existing discharge levels for sewer plants which maintain existing water quality was never required by the Antidegradation Statement, with the narrow exception of more than *de minimis* degradation of an ETW.

Comment 210. ***The proposed rules are designed to avoid public participation in antidegradation determinations. It appears that the public notice and draft permit may never disclose that an ETW water body has been denied antidegradation protection due to a proffer of the usual and necessary compensatory mitigation.***

Response. It is the intent of the proposed rule, and the practice of the division, to identify the antidegradation category of the affected waterbody as provided by Rule 0400-40-03-.06(1)(c). However, while ETW streams are generally identified on the dataviewer before a permit application is received, wetlands are not generally assessed for ETW status absent a specific proposal. If the proposal is for de minimis degradation, then there is no concrete reason to make an ETW determination, so that information may not be available to the permit writer. However, because the ARAP rules require that compensatory mitigation offset the resource loss and account for unusual or high quality waters, this information may be available, in which case the division is expected to include that in the public notice.

The proposed changes are intended to enhance public participation by adding more information on public notice than is currently required.

Rule 0400-40-03-.06(2) Waters With Unavailable Parameters

Comment 211. ***Delete "or" from Rule 0400-40-03.06(2).***

Response. This change has been made.

Comment 212. ***Tennessee uses "fuzzy language" in the Antidegradation section about unavailable parameters.***

Response. The section in question is the provision that water quality for a specific parameter can't be lowered in a stream that is already impaired for that substance. Much of the extra language is an explanation of how this applies specifically to parameters.

Comment 213. ***Commenters request the following change to Rule 0400-40-03-.06(2):***

(a) ***In waters with unavailable parameters, no discharge will be authorized that increases the instream concentration of the pollutant or pollutants causing the parameter to be unavailable at the point of discharge. ~~Measurable degradation of the parameter that is unavailable shall not be authorized~~.***

Response. The existing language will be retained. The rules allow for the application of mixing zones, but in waters with unavailable parameters, there is effectively no mixing zone because there is no available assimilative capacity for the parameter that is unavailable. The current rule reflects the practical limitation that a change in water quality that cannot be measured cannot be regulated.

Comment 214. ***Regarding Rule 0400-40-03-.06(2) Waters with unavailable parameters, it is uncertain whether insertion of the phrase "or even if caused by natural conditions" is intended to be consistent with the provisions of 0400-40-03-.05 Interpretation of Criteria (7) regarding "naturally formed conditions" or how it comports with the definition of pollution in T.C.A. § 69-3-103 (28) "Pollution," or § 69-3-108 (g). This should be clarified.***

Response. This addition was made to clarify that a waterbody may be characterized as having unavailable parameters for purposes of antidegradation review even if that condition is naturally caused. This situation occurs rarely, but when it does, then the permitting process must account for those conditions consistent with Rule 0400-40-03-.05(7). Pollution as defined in the Act is man-made, a result of an "alteration," but a waterbody can have unavailable parameters for additional degradation even if the condition is not man-made. The Act also prohibits the issuance of permits for an activity that causes pollution either by itself or in combination with others, and the latter can include natural background conditions.

Comment 215. ***Regarding Rule 0400-40-03-.06(2), the commenter believes the inserted phrase "or even if caused by natural conditions" in regard to unavailable conditions is targeted at dischargers in middle Tennessee where streams might have elevated phosphorus levels due to natural geologic formations or low dissolved oxygen levels. Facilities should not be prevented from discharging in these situations.***

Response. The commenter has identified one possible scenario under this provision, but there are others. The antidegradation policy does not allow TDEC to authorize additional degradation of impaired waters, regardless of the source of parameter that is unavailable. This is a basis tenant of the Policy and to say we would do otherwise would ensure federal disapproval. We cannot recommend this approach.

Comment 216. ***Regarding Rule 0400-40-03-.06(2)(b) This section refers to "new or expanded" water withdrawals. To be consistent with the new language in Rule 0400-40-03-.06(1)(b), the phrase should be "new or increased."***

Response. We agree and will make this change.

Comment 217. ***Regarding Rule 0400-40-03-.06 (2)(c): Where one or more of the parameters comprising the habitat criterion are unavailable, ~~activities~~ habitat alterations that cause ~~additional~~ significant degradation ~~of the~~ ~~unavailable parameter or parameters above the level of de minimis~~ shall not be authorized. (p. 35). We request clarification on what constitutes "significant degradation." Also, we recommend not removing the wording "of the unavailable parameter or parameters." If an applicant is proposing work that impacts a parameter for habitat alteration that is not listed, and yet another habitat alteration parameter is listed that the project would not impact, the applicant should not be required to do in-system mitigation when the particular habitat alteration parameter is not being further degraded.***

Response. No significant degradation includes a proposal that either has so little impact that no mitigation is required or when compensatory mitigation sufficient to ensure no overall net loss of resources values is provided. This term is intended to be commensurate with the definition of no significant degradation in the federal Section 404(b) rules.

With the proposed rule amendments, applicants are not required to provide in-system mitigation in waters with unavailable parameters for habitat, so the proposed rule change will not be made.

Comment 218. ***Regarding Rule 0400-40-03-.06(2)Waters with unavailable parameters, the change in the reference here from "additional degradation" to "significant degradation" (coupled with the other changes to this subparagraph), appear to unjustifiably weaken protections and the prospect for restoration of already impaired (303(d) listed) streams.***

Response. This change is intended to hew Tennessee's Antidegradation Statement more closely to the requirements of federal law. The term "significant degradation" is used instead of the term "de minimis degradation."

Rule 0400-40-03-.06(3) Waters With Available Parameters

Comment 219. ***Regarding Rule 0400-40-03.06(3), the commenter recommends adding, "In allowing such degradation or lower water quality, the Department shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources" either here or in Rule 0400-40-03-.06(1)(a).***

Response. We agree that the proposed language is consistent with 40 C.F.R. § 131.12(2), which applies to waters with available parameters and Exceptional Tennessee Waters. Comparable language will be added to the existing sentence regarding BMPs in Rule 0400-40-03-.06(1)(a) as applied to waters with available parameters and Exceptional Tennessee Waters.

Comment 220. ***Regarding Rule 0400-40-03.06(3)(a), (b), and (c) and in (4)(c) 1 and 2, the commenter suggests the following changes to the sentence: "…if the applicant has demonstrated to the Department that there are no practicable alternatives to prevent or lessen degradation associated with the proposed activity and the degradation…"***

Response. We agree that the proposed language better reflects the language and intent of 40 C.F.R. § 131.12(a)(2)(ii). In particular, the language clarifies that degradation can be reduced, even if not entirely eliminated, through this process and that permit applicants are only responsible for the degradation associated with their own activities. The changes have been made.

Comment 221. ***Regarding Rule 0400-40-03.06(3)(a), (b), and (c), and in (4)(c) 1 and 2, the commenter suggests referring to this as "existing uses of the receiving water" rather than "uses existing in the receiving waters" to avoid confusion.***

Response. This language has been included in the antidegradation statement through several amendments, and has not caused any more confusion than the proposed language would. The proposed change might imply some change in requirements that does not exist, and will not be adopted. To be clear, however, the term "uses existing in the receiving waters" means, and has always intended to mean, the same thing as "existing uses of the receiving water" as applied in EPA antidegradation rules.

Comment 222. ***Regarding Rule 0400-40-03.06(3)(a), (b), and (c), EPA requests that you add the following sentence to the end of this section - "If one or more practicable alternatives is identified, the Department shall only find that a lowering is necessary if those alternative(s) are selected for implementation."***

Response. This comment addresses the conditions for approving additional degradation in waters with available parameters consistent with EPA's revised antidegradation rule, 40 C.F.R. § 131.12(a)(2)(ii), which provides, "When the analysis of alternatives identifies one or more practicable alternatives, the State shall only find that a lowering is necessary if one such alternative is selected for implementation." While we believe the language proposed in the rulemaking document is just a different way of saying the same thing, the additional sentence will clarify the conditions under which the division can issue a permit even if there is a less degrading alternative to the activity proposed by the applicant.

The same change will be made with respect to Exceptional Tennessee Waters, because these waters are equally subject to the provisions of 40 C.F.R. § 131.12(a)(2)(ii).

Comment 223. ***In Rule 0400-40-03-.06(3)(a), the term "practicable" replaces "feasible" and includes the concept of "cost-effective." This is problematic because TDEC staff is not equipped to determine the finances of the applicant and whether the project budget would accommodate a particular option. The applicant can therefore claim that only the option they chose is practicable, and TDEC must take their word for it.***

Response. The definition and application of the term "practicable" comes from EPA's water quality rules, 40 C.F.R. §§ 131.12(a)(2)(ii) and 131.3(n). See prior response regarding division review of an applicant's analysis of alternatives.

Comment 224. ***Regarding Rule 0400-40-03-.06(3) Waters with available parameters, Commenters are concerned about the deletion of the term "feasible" in favor of "practicable." Although "practicable" is usually defined to mean "feasible" (capable of being done) and "usable," it is unclear what change in practice or enforcement is intended.***

Response. The definition of the term 'practicable' comes from EPA's water quality rules, 40 C.F.R. §§ 131.12(a)(2)(ii) and 131.3(n). This is now the applicable standard for antidegradation review, and is not anticipated to result in any significant substantive change from past practices.

Comment 225. ***Regarding Rule 0400-40-03-.06(3)(b) This section refers to "new or expanded" water withdrawals. To be consistent with the new language in Rule 0400-40-03-.06(1)(b), the phrase should be "new or increased."***

Response. We agree and will make this change.

Comment 226. ***Rule 0400-40-03-.06(3)(b) should be revised with added phrases (underlined) so that it would read:***

> ***In water with available parameters, new or increased water withdrawals that would cause degradation above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that there are no <u>reasonably</u> practicable alternatives <u>that entail appreciably less</u> degradation...***

Response. The rule defines practicable alternatives in 0400-40-03-.06(1)(b)(3) as being those that are "technologically possible, able to be put into practice, and economically viable." As stated previously, reasonableness is in the eye of the beholder and the addition of this word would add uncertainty to the definition and could set the stage for endless arguments about what is reasonable. Regarding the second suggestion, according to EPA rules, if an

alternative is practicable and less degrading, it must be chosen. We do not believe that EPA would approve this revision as suggested and TDEC will not recommend it.

Comment 227. ***We believe that TDEC should consider adding mitigation methods whereby a proposed new or increased ARAP water withdrawer can have its degradation status reduced to de minimis up front by use of off-setting gains to the resource in other ways, even if a water withdrawal under a properly conditioned permit typically does not result in appreciable permanent loss of resource values. Other than reducing a proposed withdrawal to 5% or less of the stream's 7Q10 low flow (a very strict standard for what is de minimis), or adding new compensating water flows to the stream from some other source, typically no realistic avenue exists for water withdrawers to use up-front mitigation for this purpose as done by ARAP applicants proposing habitat alterations.***

Response: The water quality standards apply different definitions of *de minimis* degradation for water withdrawals and habitat alterations because the former can be easily evaluated numerically. The case law affirms the same numeric limitations for NPDES permits for discharges, so the standard is well-supported as constituting *de minimis* degradation. The addition of water upstream could result in *de minimis* degradation as defined in these rules, but it is otherwise difficult to conceive of potential mitigation measures to offset impacts of water withdrawals.

Comment 228. ***Regarding Rule 0400-40-03-.06(3)(c) - Determination of Economic / Social Necessity. Inasmuch as the proposed regulations add two new requirements, namely that (1) the degradation be above "de minimis" (which has been changed to potentially grandfather existing discharges, and allow for mitigation in the case of habitat alterations), and (2) the determinations are required only in the case of "new or increased" discharges (with the effect of potentially grandfathering in existing pollution levels), the existing regulation is substantially vitiated. Please clarify whether this was the intended result and how regulated entities and the public will be able to have such determinations reviewed.***

Response. The commenter incorrectly states the previous version of this rule: that rule excluded new or increased discharges from repeated antidegradation review and did not require antidegradation review for habitat alterations resulting in *de minimis* degradation, which could be achieved through in-system mitigation. The determinations regarding whether a discharge is "new or increased" and whether an activity causes only *de minimis* degradation as defined and provided-for by these rules are reviewable through permit appeals.

Comment 229. ***Some of the changes, however, are confusing and we request that you confirm our reading of the proposed changes or clarify the final rule. It appears from the proposal a habitat alteration in a waterbody with unavailable parameters for habitat would result in "no significant degradation" where mitigation is sufficient to ensure no overall net loss of resource values. If in-system mitigation occurs, then the habitat alteration would be considered "de minimis ." Please confirm whether this***

understanding is correct. In either case, as long as "significant degradation" would not be occurring, then Rule 0400-40-03-.06(2)(c) would allow the project to be authorized in waters with unavailable parameters. The commenter supports such approach.

Response. The commenter is correct: the distinction between *de minimis* degradation and no significant degradation is that the former requires that any required mitigation be provided "in-system," while the latter does not. Please note that the division retains the authority to decide whether mitigation is sufficient to result in no significant degradation.

Rule 0400-40-03-.06(4) Exceptional Tennessee Waters

Comment 230. ***Regarding Rule 0400-40-03.06(4)(c)1. and 2., the commenter recommends adding, "In allowing such degradation or lower water quality, the Department shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable best management practices for sources exempted from permit requirements under the Water Quality Control Act."***

Response. We agree that the proposed language is consistent with 40 C.F.R. § 131.12(2), which applies to Tier 2 waters. In Tennessee, this also applies to ETWs, which are effectively Tier 2.5 waters. Comparable language will be added to the existing sentence regarding BMPs in Rule 0400-40-03-.06(1)(a) as applied to Tier 2 and Tier 2.5 waters. Because the current final sentence of Rule 0400-40-03-.06(4)(c)1. is redundant, it will deleted.

Comment 231. ***The rules should not use the term "alternatives analysis" to make it clear that the analysis required by the Antidegradation Statement is distinct from that required in other programs, such as the National Environmental Policy Act and CWA section 404 permitting.***

Response. This change will be made to Rules 0400-40-03-.06(4)(c)1. and (5)(b) to be consistent with EPA's antidegradation rule.

Comment 232. ***EPA Antidegradation regulations are clear that for Exceptional Tennessee Waters (ETW) the antidegradation determination as to alternatives including alternative sites and designs for an activity and the finding as to whether or not a proposed activity is "necessary to accommodate important economic or social development in the area in which the waters are located" must precede any consideration of mitigation.***

Response. EPA Antidegradation regulations do not address Exceptional Tennessee Waters. ETWs fall within what is informally referred to as "Tier 2.5," an optional more protective provision than the "Tier 2" provisions required by EPA. The commenter is correct that a determination of alternatives and necessity is typically required for Tier 2 waters. Nowhere does EPA's Antidegradation rule require that these Tier 2 determinations precede any

consideration of mitigation. Moreover, the availability of a *de minimis* exception to such review has been confirmed by both EPA and the courts.

Comment 233. ***There is no regulatory provision for staying either the issuance of a permit (as is now authorized for antidegradation) or of staying or otherwise suspending the use of a permit once issued based upon the pendency of an administrative appeal. This will lead to litigation.***

Response. The commenter is correct that there is no regulatory provision to stay the issuance of a permit or staying a permit after it has been issued, except by going to court. The Tennessee Supreme Court addressed this issue in the *Pickard* case, noting that the Tennessee Water Quality Control Act does not provide the Board with the authority to stay a permit. The Tennessee General Assembly has not changed the underlying statute, so the Board is not empowered to create a permit stay by rule.

Comment 234. ***Should a permit applicant seeking to degrade Exceptional Tennessee Waters have to face an antidegradation determination, the proposed regulation now explicitly states that the initial notice will contain only a "preliminary determination" and a later "final determination," i.e. a revised final permit different from the draft permit. The proposed revision to ARAP rule 0400-40-07-.04(5)(c) would allow TDOT or another government agency that desires to quash any question of antidegradation can find some additional mitigation which it can assert makes a project or activity "de minimis" or less in impact.***

Response. The intent behind the language "preliminary" and "final" determination is simply to acknowledge that the Division will review and address comments received during the public comment period. This may result in a change between a draft and final permit, and that is entirely appropriate and consistent with the purpose and intent of holding a public comment period. The Water Quality Control Act expressly addresses this situation, and authorizes the Division to make material changes between a draft and a final permit, provided that such changes are subject to appeal by third persons even though no comments could have been received. T.C.A. § 69-3-105(i).

If a permit applicant or qualified third party disagrees with the Division's determination of whether a particular activity constitutes *de minimis* degradation *as defined and provided for by the Board's rules*, they may challenge that determination through a permit appeal.

Comment 235. ***Regarding Rule 0400-40-03-.06(4)(c)(2), this section refers to "new or expanded" water withdrawals. To be consistent with the new language in Rule 0400-40-03-.06(1)(b), the phrase should be "new or increased."***

Response. Rule 0400-40-03-.06(4)(c)2. already refers to "new or increased" water withdrawals. This language will be retained.

Comment 236. ***In Rule 0400-40-03-.06(4)(d), in order to be consistent with changes made elsewhere in the Rule, this section should refer to "important economic <u>or</u> social development" rather than economic <u>and</u> social development.***

Response. We agree and will make this revision.

Rule 0400-40-03-.06(5): Antidegradation: ONRWs

Comment 237. ***In Rule 0400-40-03-.06(5)(a)(7), this section refers to the Cumberland Plateau Regional Water Authority. We are not aware of any activities of this entity recently. If this entity no longer exists, this reference should be removed.***

Response. The division has researched this comment. The entity was formed by special act, but we have been unable to confirm its status. The current language will be retained in this rulemaking, and the matter will be revisited in the next triennial review.

Comment 238. ***Rule 0400-40-03-.06(5)(b)(2) does not clearly conform with earlier statements that exempted ONRWs from the new definition of "de minimis." This statement would allow degradation at the same level as other streams. It is not clear whether the term "waterbodies" refers to each of the various tributaries within an ONRW or to the ONRW as a whole. The degradation of these ONRWs is further complicated by the fact that this protection does not apply upstream of the designated ONRW segments, which is particularly relevant to the Big South Fork, Obed, and Reelfoot.***

Response. The definition of *de minimis* degradation has a specific provision for ONRWs, requiring that any mitigation occur both within the ONRW and that it occur in-system. This definition applies as used in Rule 0400-40-03-.06(5).

ONRWs are established and defined by the Board through rule. The rule does not include tributaries of the listed waterbodies. However, the Reelfoot Lake designation includes its associated wetlands.

If a habitat alteration upstream of an ONRW degrades that ONRW, then compensatory mitigation must occur within the ONRW.

Other

Comment 239. ***Since most all waters of the State are also waters of the U.S., I am confused regarding how changes to the rules are not contrary to CWA Section 404(b)(1) guidelines requiring that avoidance must be considered first, minimization second and only then, mitigation.***

Response. These rules do not supersede or substitute for the 404(b) rules. If a proposal affects waters of the United States and is otherwise subject to the Section 404 permit requirement, then the applicant must obtain that permit from the U.S. Army Corps of Engineers in accordance with the 404(b) rules. Tennessee rules do not alter or affect that requirement.

Comment 240. ***The proposed rule changes state that impacts are to be considered de minimis with regard to "degradation" if mitigation is proposed by the applicant to be provided "in system." While this change would seemingly apply to Clean Water Act Section 402, it does not appear to apply to evaluating dredge or fill physical impacts subject to Section 404 of the Clean Water Act. Does allowing the consideration of mitigation in making a de minimis impact determination under the antidegradation rule before considering whether the proposed project meets the requirements of the ARAP Rule with the sequencing requirements Section 404 permit?***

Response. These rules do not alter or affect requirements imposed separately under Section 404 of the Clean Water Act or the 404(b) rules promulgated thereunder.

Comment 241. ***The draft regulation fails to acknowledge the EPA rules governing stream and wetland protection under Clean Water Act Section 404.***

Response. These rules do not alter or affect requirements imposed separately under Section 404 of the Clean Water Act or the 404(b) rules promulgated thereunder.

Comment 242. ***Please clarify how the changes in the proposed regulations can be reconciled with the obligations and procedures in the General Wetland Banking Memorandum of Agreement dated June 12, 1995 (the "1995 MOA"), as well as in the prior agreement it references, the "Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning determination of mitigation under the Clean Water Act, Section 404 (b)(1) Guidelines, 1990."***

Response. The "1995 MOA" was supplanted with the promulgation of the 2008 mitigation rules. Those rules established the Interagency Review Team (IRT) which oversees third party mitigation banking. As to the MOA between the Army and EPA it is not clear that it is still in effect, and even if it is, it only applies to the relationship between those parties which signed it of which TDEC was not a signatory.

Comment 243. ***Under the proposed rule language, potential "new" habitat alterations requested by permit can also come in many forms, from the building of an impoundment to the straightening, fill, or other alteration of a stream channel. In applying the new rule language, could TDEC determine that a new proposed impoundment, causing "habitat alteration," results in "de minimis" degradation so long as some other stream channels somewhere in the HUC 8 watershed are restored or enhanced?***

Response. Regardless of the type of habitat alteration, the division cannot issue a permit if the impact's appreciable and permanent resource value loss cannot be offset through compensatory mitigation. Many impoundments are simply not eligible for permitting because they would cause permanent resource loss that cannot be compensated for through traditional compensatory mitigation. While it is possible that on-site mitigation could be provided to offset the loss of resource values caused by an impoundment, it is difficult to foresee a situation in which off-site mitigation for an impoundment would be permitted, much less count as *de minimis* degradation.

Comment 244. ***Because TDEC proposes to rely so heavily on mitigation throughout the proposed rules (including those for ARAPs), any such reliance must be demonstrated to be effective. Commenters would support a thorough and objective survey of the effectiveness and longevity of mitigation measures already approved throughout the State, taking into account all the factors relevant thereto, including the potential for "remedy failure" and financial assurance therefor. Commenters would be ready to assist TDEC in scoping and implementing such a survey.***

Response. This comment does not address a specific rule, or proposed rule change. The Department appreciates the recommendation of a study of mitigation.

Comment 245. ***Please clarify how citizens may challenge the decisions of interagency review teams (IRTs) with respect to antidegradation decisions in particular, and their relationships to citizens' rights under CWA Section 505.***

Response. This comment is not directed at this rulemaking. Moreover, the interagency review team (IRT) does not make antidegradation determinations. Those determinations are made by the Division and subject to permit appeals, and for determinations of economic or social necessity of more than *de minimis* degradation of an ETW, through a petition for declaratory order.

Rule Chapters 0400-40-03 and 0400-40-04

2018 Amendments – Appendix 1

T.C.A. § 4-5-205(b) Concise Statement of

Principal Reasons for Rulemaking

Rule 0400-40-03-.01 Tennessee Board of Water Quality, Oil and Gas. This rule is unchanged.

Rule 0400-40-03-.02 General Considerations. This rule is amended to clarify that best available technology does not apply to all point source categories as the previous rule incorrectly suggested. The rule adds several models to the methods that can be used for site-specific criteria studies.

Rule 0400-40-03-.03 Criteria for Water Uses.

(1) Domestic Water Supply. This paragraph is amended to clarify the units applicable to E. coli criteria, which had previously been omitted. It is also updated to add new criteria.

(2) Industrial Water Supply. This paragraph is unchanged.

(3) Fish and Aquatic Life. This paragraph adds revised criteria for several pollutants for which EPA has updated its national recommendations. Primary among these are ammonia and selenium. EPA's ammonia criteria were developed to be protective of mussels, which are present throughout Tennessee waters. EPA's selenium criteria allow use of water column values or fish tissue values. Because not all classified waters have fish (especially headwaters), and due to the logistical difficulty and expense of conducting fish tissue studies, that approach is added as an option, but not a requirement, for assessment.

(4) Recreation. The primary revision to this paragraph is update the toxic equivalency factors for dioxins. Determinations concerning EPA's updated recommended human health criteria are deferred for further consideration in light of pending litigation elsewhere and the decision by other states in Region 4 to defer adoption of these criteria.

(5) Irrigation. This paragraph is unchanged.

(6) Livestock Watering and Wildlife. This paragraph is unchanged.

Rule 0400-40-03-.04 Definitions. This rule is amended to define terms that have been used elsewhere in the rules, but had not previously been defined. These additional definitions are intended to improve transparency and avoid ambiguity, and include in-system mitigation, domestic wastewater discharge, and new or increased discharge. The rule also defines new

terms added in this rulemaking to other portions of this chapter, including lentic, lotic, minimum level, resource values, and significant degradation.

Rule 0400-40-03-.05 Interpretation of Criteria. Paragraph (2) is updated to clarify the conditions that are allowed within mixing zones, and to ensure that mixing zones cannot be applied to the discharge of bioaccumulative pollutants where the risk-based factors necessary to issue a fish consumption advisory are exceeded for those pollutants, which are identified with a (b) in the criteria tables.

Paragraph (3) is added in response to EPA requirements that allow compliance schedules for water quality only where state criteria expressly allow them. This provision is intended to allow dischargers adequate time to come into compliance with new standards.

Paragraph (4) is amended to clarify that the different flow levels are used for permitting purposes, not assessment purposes.

Paragraph (5) is amended to identify what is meant by the term, “condition of impairment,” and to clarify that this does not apply to single event exceedances.

Paragraph (7) is amended to clarify that even if pathogens are elevated due to natural conditions, that could constitute impairment and to give several examples of naturally-formed conditions.

Paragraph (8) is updated to refer to EPA’s sufficiently sensitive reporting levels rather than listing the required reporting levels in the rule.

Rule 0400-40-03-.06 Antidegradation Statement.

(1) General. This paragraph is amended to delete an incorrect statement that degradation of high quality waters is not permitted: such degradation (but not pollution) is and has been allowed through application of the procedures of the Antidegradation Statement or where the Antidegradation Statement does not apply. The paragraph also includes revisions applicable to waters with available parameters and Exceptional Tennessee Waters as required by 40 C.F.R. § 131.12(a)(2) for tier 2 waters. The paragraph is also updated to clarify – consistent with EPA rules and Tennessee’s long-standing antidegradation policy – that antidegradation review only applies to new or expanded impacts to waters. The paragraph refines the description of a complete application consistent with EPA antidegradation policy. The rule eliminates reference to outdated EPA forms for economic and social necessity because they were not applicable to many activities, and replaces a requirement for the applicant to provide specific information to the division. The paragraph updates the public notice process for discharge permits so that there is only one notice and comment period, consistent with the pre-existing requirements for ARAPs. The new rule also provides that the division should include its preliminary determination of the level of degradation in the public notice so the public is more informed.

(2) Waters with unavailable parameters. This paragraph is amended to be consistent with EPA's long-standing guidance with respect to habitat alterations, including wetland fills, in Tier 1 waters. Specifically, EPA interprets antidegradation requirements as being satisfied in this situation so long as there is no significant degradation.

(3) Waters with available parameters. This paragraph is amended to reflect updates in EPA's antidegradation rule.

(4) Exceptional Tennessee Waters. This paragraph is amended to reflect updates in EPA's antidegradation rule. It is also amended to clarify that wet weather conveyances cannot constitute ETWs. The procedures are amended to eliminate confusion about how the ETW process correlates with the public notice and comment procedures of paragraph (1)(c) of this rule.

(5) Outstanding National Resource Waters. This paragraph is edited slightly to use terminology consistent with that used other places in the Antidegradation Statement.

Rule Chapter 0400-40-04. This chapter was opened for public review as required by the Clean Water Act and EPA rules. The only change made to this chapter was to identify Buffalo Creek and Toll Branch as a naturally reproducing trout streams in the Watauga River watershed (Rule 0400-40-04-.11).

Regulatory Flexibility Addendum

Pursuant to T.C.A. §§ 4-5-401 through 4-5-404, prior to initiating the rule making process, all agencies shall conduct a review of whether a proposed rule or rule affects small business.

(1) The type or types of small business and an identification and estimate of the number of small businesses subject to the proposed rule that would bear the cost of, or directly benefit from the proposed rule.

TDEC receives applications for individual water quality permits, and coverage under general permits, from thousands of applicants. Many of these permittees are small businesses, including property developers, construction companies, and others. Currently, there are approximately 2,400 aquatic resource alteration permit (ARAP) files that are active or for which complete applications have been received. In addition, there are 1,228 individual discharge permits, including 364 with ammonia limits and 83 with selenium limits. These water quality standards could affect the terms and conditions of these permits. However, overall we expect the impacts to be modest.

(2) The projected reporting, recordkeeping, and other administrative costs required for compliance with the proposed rule, including the type of professional skills necessary for preparation of the report or record.

This rulemaking does not change preexisting reporting, recordkeeping, or other administrative requirements for compliance, with one exception. The rules will eliminate the requirement in Rule 0400-40-03-.06(1)(b)3. of the Antidegradation Statement to utilize outdated, complicated EPA forms to demonstrate a permit applicant's claim of economic or social necessity to degrade water quality. We believe that this will make it easier for applicants for individual permits to comply with antidegradation review requirements.

(3) A statement of the probable effect on impacted small businesses and consumers.

Overall, the impact of this rulemaking on small businesses and consumers is expected to be minimal. Some small businesses may incur additional costs to treat their wastewater to remove additional ammonia or selenium, though this number is expected to be fairly small and the rules provide for a compliance schedule to allow sufficient time to comply with any new permit limits.

Other small businesses, including construction companies or real estate developers, might benefit from streamlined antidegradation review for ARAPs. In particular, under the previous rules, ARAPs for habitat alterations in waters with habitat impairment could only be issued if they involved very minimal impacts or if any require mitigation was provided in-system. Under the rule revisions, mitigation would not be required to be provided in-system. This change is consistent with long-standing EPA guidance that impaired waters receive the lowest level of protection under antidegradation review, and that habitat alterations satisfy antidegradation requirements so long as there is no significant degradation.

(4) A description of any less burdensome, less intrusive or less costly alternative methods of achieving the purpose and objectives of the proposed rule that may exist, and to what extent the alternative means might be less burdensome to small business.

These rules are designed to comply with requirements of the federal Clean Water Act and EPA rules in a reasonable and cost-effective manner consistent with protecting water quality. The most significant concern that was expressed from the business community during the comment period was its opposition to adopting EPA's national recommended water quality criteria for public health without additional evaluation. In response to those comments, TDEC has postponed adoption of those standards pending further review.

(5) A comparison of the proposed rule with any federal or state counterparts.

These rules are based on the requirements of the federal Clean Water Act and EPA, which require states to promulgate water quality standards to include classified uses, water quality criteria, and an

antidegradation statement. One reason TDEC has elected to postpone adoption of the new recommended human health criteria is that other neighboring states are doing the same.

(6) Analysis of the effect of the possible exemption of small businesses from all or any part of the requirements contained in the proposed rule.

Exemptions for small businesses are not authorized by the federal Clean Water Act or the Tennessee Water Quality Control Act of 1977. Anyone conducting regulated activities is subject to the applicable permitting requirements.

Impact on Local Governments

Pursuant to T.C.A. §§ 4-5-220 and 4-5-228 “any rule proposed to be promulgated shall state in a simple declarative sentence, without additional comments on the merits of the policy of the rules or regulation, whether the rule or regulation may have a projected impact on local governments.” (See Public Chapter Number 1070 (http://publications.tnsosfiles.com/acts/106/pub/pc1070.pdf) of the 2010 Session of the General Assembly)

These rules will impact those local governments that require permits to discharge pollutants, withdraw water, or alter aquatic habitat because the rules establish water quality criteria that potentially affect those permits. In particular, local governments that operate publicly-owned treatment works may be subject to ammonia limits, which may become more stringent.

Additional Information Required by Joint Government Operations Committee

All agencies, upon filing a rule, must also submit the following pursuant to T.C.A. § 4-5-226(i)(1).

(A) A brief summary of the rule and a description of all relevant changes in previous regulations effectuated by such rule;

This rulemaking updates Rule Chapters 0400-40-03 (General Water Quality Criteria) and 0400-40-04 (Use Classifications for Surface Waters).

(B) A citation to and brief description of any federal law or regulation or any state law or regulation mandating promulgation of such rule or establishing guidelines relevant thereto;

Section 303(c) of the Clean Water Act, 33 U.S.C. § 1313(c), and EPA regulations, 40 C.F.R. § 131.20, require states to conduct a review of water quality standards, including public hearings on the subject, at least once every three years.

T.C.A. § 69-3-105(a) – (e) establish the duty of the Board of Water Quality, Oil and Gas to promulgate water quality standards and to review these standards periodically.

(C) Identification of persons, organizations, corporations or governmental entities most directly affected by this rule, and whether those persons, organizations, corporations or governmental entities urge adoption or rejection of this rule;

Water quality standards affect permits for pollutant discharges, water withdrawals, and habitat alterations statewide, in addition to watershed planning. Accordingly, there are a wide range of people potentially affected by this rulemaking, including permittees and members of the public who use Tennessee waters.

The regulated community has generally expressed support for this rulemaking, but asked us to defer a decision to adopt EPA's 2015 human health criteria until there could be further study, which we have done in the final rule.

Some nongovernmental organizations have expressed opposition to amendments to the Antidegradation Statement because they would like it to be more stringent and to focus on restoring polluted waters. Some have incorrectly asserted these changes would allow pollution. The response to comments explains, with citations to legal authority, that state and federal antidegradation policy has always had the purpose of maintaining, not restoring, water quality. Moreover, pursuant to T.C.A. § 69-3-108(g), the Department does not issue permits for activities that cause pollution.

(D) Identification of any opinions of the attorney general and reporter or any judicial ruling that directly relates to the rule or the necessity to promulgate the rule;

There are no attorney general opinions or judicial rulings that directly relate to the rule or the necessity to promulgate the rule.

(E) An estimate of the probable increase or decrease in state and local government revenues and expenditures, if any, resulting from the promulgation of this rule, and assumptions and reasoning upon which the estimate is based. An agency shall not state that the fiscal impact is minimal if the fiscal impact is more than two percent (2%) of the agency's annual budget or five hundred thousand dollars ($500,000), whichever is less;

This rulemaking is not expected to affect state or local revenues. With respect to expenditures, there may be a small increase in costs for treatment to remove ammonia at four state-owned facilities and fourteen local government facilities. All of these facilities already have strict ammonia limits and the treatment equipment required to remove ammonia, so the expected impact would be a modest increase in operating expenses.

(F) Identification of the appropriate agency representative or representatives, possessing substantial knowledge and understanding of the rule;

Jennifer Dodd, Director, Division of Water Resources
Stephanie Durman, Assistant General Counsel, Office of General Counsel

(G) Identification of the appropriate agency representative or representatives who will explain the rule at a scheduled meeting of the committees;

Mallorie Kerby
Assistant General Counsel
Office of General Counsel

(H) Office address, telephone number, and email address of the agency representative or representatives who will explain the rule at a scheduled meeting of the committees; and

Office of General Counsel
Tennessee Department of Environment and Conservation
William R. Snodgrass Tennessee Tower
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(I) Any additional information relevant to the rule proposed for continuation that the committee requests.

The Board of Water Quality, Oil and Gas is not aware of any requests.