The Texas Commission on Environmental Quality (TCEQ, commission, or agency) adopts amendments to §§307.2 - 307.4, 307.6 - 307.10.

Sections §§307.3, 307.4, 307.6, 307.8 and 307.10 are adopted *with changes* to the proposed text as published in the September 13, 2013, issue of the *Texas Register* (38 TexReg 5998). Sections §§307.2 and 307.7, and 307.9 are adopted *without changes* to the proposed text and will not be republished.

Background and Summary of the Factual Basis for the Adopted Rules

The rules are amended to satisfy Texas Water Code (TWC), §26.023, which requires the commission to set water quality standards by rule for water in the state and allows the commission to amend the standards. The Federal Water Pollution Control Act, §303 (commonly referred to as the Clean Water Act, 1972, 33 United States Code, §1313(c)), also requires all states to adopt water quality standards for surface water and to review and revise those standards at least every three years. A water quality standard consists of the designated beneficial use or uses of a water body or a segment of a water body and the water quality criteria that are necessary to protect the use or uses of that particular water body. Water quality standards are the basis for establishing discharge limits in wastewater and stormwater discharge permits, setting instream water quality goals for total maximum daily loads (TMDLs), and providing water quality targets to assess water quality monitoring data.

The states are required under the Clean Water Act to review their water quality standards at least once every three years and revise them, if appropriate. States review standards because new scientific and technical data may be available that have a bearing on the review. Further, environmental changes over time may also warrant the need for a review. Where water quality data do not meet established uses, the standards must be periodically reviewed to see if uses can be attained. Additionally, water quality standards may have been previously established for the protection and propagation of aquatic life and for recreation in and on the water without sufficient data to determine whether the uses were attainable. Finally, changes in the TWC, in the Clean Water Act, or in the United States Environmental Protection Agency's (EPA) regulations may necessitate reviewing and revising standards to ensure compliance with current statutes and regulations.

Following adoption of revised water quality standards by the commission, the Governor or designee must submit the officially adopted standards to the EPA Region 6 Administrator for review. The Regional Administrator reviews the state's standards to determine compliance with the Clean Water Act and implementing regulations. Standards are not applicable to regulatory actions under the Clean Water Act until approved by the EPA.

The Texas statewide surface water quality standards were last amended in June 2010. The EPA approved the majority of the state's revised standards by 2013.

Reviews and revisions of the water quality standards address many provisions that apply statewide, such as criteria for toxic pollutants. Other revisions address the water quality uses or criteria that are applicable to individual water bodies. An extensive review of water quality standards for individual water bodies is often initiated when the existing standards appear to be inappropriate for water bodies that are listed as impaired under the Clean Water Act, §303(d), or that are potentially affected by permitted wastewater discharges or other permitting actions.

States may modify designated uses when it can be demonstrated, through a Use Attainability Analysis (UAA), that attaining the current designated uses or criteria are not appropriate. Most changes in designated uses are based on a demonstration that natural characteristics of a water body cannot attain the currently designated uses or criteria. Natural characteristics include temperature, pH, dissolved oxygen, diversity of aquatic organisms, amount of stream flow, physical conditions such as depth, or natural background pollutant levels. Conversely, a UAA might demonstrate that the currently designated uses and criteria are appropriate, or even that they should be more stringent.

UAAs can require several years of additional sampling studies, or they may focus on a

long-term evaluation of existing historical data. For UAAs on water bodies that are potentially impacted by pollutant loadings above natural background, sampling and evaluation is often conducted on similar but relatively unimpacted water bodies in order to determine reference conditions that can be applied to the water body of concern.

The focus of UAAs depends on the uses and criteria that need to be re-evaluated. The applicable category of aquatic life use is determined by repeatedly sampling fish or invertebrates in relatively unimpacted areas and by applying quantitative indices such as indices of biotic integrity to the sampling data of the biological communities. UAAs to assign aquatic recreational uses include assessing physical and hydrological conditions, observing existing recreation, and collecting information on current and historical recreational activities. Dissolved oxygen criteria are evaluated by monitoring dissolved oxygen over numerous (usually ten) 24-hour periods in relatively unimpacted areas. Site-specific criteria for toxic pollutants are evaluated by placing selected small aquatic organisms in water samples from the site and exposing them to different doses of the toxic pollutant of concern. Criteria for pH, dissolved minerals, and temperature are often evaluated by analyzing extensive long-term recent and historical data for the water body of concern and similar water bodies in the same area.

The commission is adopting editorial revisions as well as substantive changes. Editorial revisions are adopted to improve clarity, to make grammatical corrections, and to

renumber or reletter subdivisions as appropriate.

Numerous revisions of toxic criteria are adopted to incorporate new data on toxicity effects. Also, adopted revisions provide clarity on how water quality standards would be assessed using instream monitoring data. Numerous revisions are adopted for the uses and criteria of individual water bodies in order to incorporate new data and the results of recent UAAs.

Section by Section Discussion

To conform to commission and *Texas Register* formatting requirements, non-substantive revisions were adopted throughout the sections to correct citations, acronym usage, and other minor issues.

§307.2, Description of Standards

Adopted changes to §307.2 are strictly editorial and are included to improve clarity.

§307.3, Definitions and Abbreviations

Adopted changes to §307.3 include a new definition in §307.3(a) for "Primary contact recreation 2," and the term "Primary contact recreation" is adopted to be changed to "Primary contact recreation 1." Also, the term "handfishing" is adopted as an addition to the definition for "Primary contact recreation 1." New definitions are adopted for "Biotic ligand model" and "Industrial cooling water area."

In response to comments, the definition for "Industrial cooling water area" was modified and adopted to include reference to §307.8(b).

§307.4, General Criteria

Adopted changes to §307.4 include adding industrial cooling water areas as surface waters that must be maintained so as to not interfere with reasonable use of such waters. Adopted revisions also specify that numerical temperature criteria are not applicable in designated industrial cooling water areas.

The horizontal boundaries of the industrial cooling water area would be specified in the applicable wastewater permit. Maximum temperature differentials for freshwater streams, freshwater lakes and impoundments, tidal river reaches, and bay and gulf waters, as well as maximum temperature criteria specified in Appendix A of §307.10, would not be applicable within industrial cooling water areas.

Adopted revisions to §307.4(j) include a description regarding the applicability of primary contact recreation 2 (PCR 2) as a new category of recreational use. This adopted provision clarifies that PCR 2 is only applicable when designated for an individual water body in Appendix A or G of §307.10. Also in §307.4(j), the term primary contact recreation (PCR) is adopted as being changed to primary contact

recreation 1 (PCR 1).

In response to comments, the following sentence was added to §307.4(j)(2)(B): "No water body is presumed to have a use of secondary contact recreation 2. This use is applicable when designated for an individual water body as listed in Appendix A or G in §307.10 of this title."

§307.6, Toxic Materials

Adopted changes to §307.6 include revisions of some numeric criteria.

Section 307.6(c)(1), Table 1, which lists numeric criteria for the protection of aquatic life, includes adopted revisions to footnotes to render the rule more accessible to individuals using assistive technology such as screen reader programs. For added clarity, adopted revisions also include the addition of parentheses around the correction factors at the beginning of the criteria equations for cadmium and lead.

Numerous changes are adopted to the human health criteria in Table 2, §307.6(d)(1). Revisions are adopted to the criteria for the following nine chemicals to include updated cancer potency factors and animal body weights recommended by the EPA: benzo(a)anthracene, bis(2-chloroethyl)ether, carbon tetrachloride, dichloromethane, hexachloroethane, pentachlorophenol, 1,1,2,2-tetrachloroethane, tetrachloroethylene,

and trichloroethylene. Revised criteria for two chemicals, nitrobenzene and thallium, are revised based on updated reference doses recommended by the EPA. Adopted criteria revisions for the following nine chemicals are based on changes in bioconcentration factors (BCFs): cresols, danitol, 1,2-dibromoethane, dicofol, hexachlorophene, methoxychlor, methyl ethyl ketone, pyridine, and 2,4,5-TP. Revised criteria for dieldrin are adopted to correct a calculation error in the previous version of the rule. Human health criteria for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dioxins/furans, mercury, and polychlorinated biphenyls (PCBs), which were previously expressed as fish tissue-based concentrations, are revised to water column-based concentrations. Additional adopted changes include revising the mercury criteria back to the previously EPA-approved criteria found in the 2000 version of the rule. The adopted change to the mercury criteria is due to the EPA disapproval of the revised criteria in the 2010 Texas Surface Water Quality Standards (TSWQS) in an action letter dated June 29, 2011. Revisions to footnotes were included to render the rule more accessible to individuals using assistive technology such as screen reader programs.

In response to comments regarding Table 2, §307.6(d)(1), all human health criteria for hexachlorophene and the fish only criterion for cresols and tetrachloroethylene were corrected in the adopted rule.

Adopted changes to §307.6(d)(2) and (5) clarify that human health concentration

criteria to prevent contamination of drinking water, fish, and other aquatic life to ensure that they are safe for human consumption apply to all water bodies identified as having a public drinking water supply use in Appendix A of §307.10 or as a sole-source surface drinking water supply in Appendix B of §307.10. The reference to tissue-based criteria in §307.6(d)(10) is removed to be consistent with the revisions to the criteria in Table 2, §307.6(d)(1).

§307.7, Site-Specific Uses and Criteria

In §307.7(b)(1), PCR 2 is adopted as an additional category of recreational use for freshwater, with a geometric mean criterion for *E. coli* of 206 per 100 milliliters (mL). Throughout this section, the term PCR is adopted to change to PCR 1. Adopted changes to §307.7 remove language allowing fecal coliform to be used as an alternative indicator of recreational suitability in high saline inland waters.

§307.8, Application of Standards

Adopted changes to §307.8 include adding language to more clearly state that different mixing zone sizes may apply to different types of numeric criteria. Adopted language is also added to §307.8(b)(2)(C) to specify that the 50-foot radius zone of initial dilution applies to the Gulf of Mexico as well as other large, tidal water bodies.

§307.9, Determination of Standards Attainment

Adopted changes to §307.9 include revisions to §307.9(c) to clarify that samples taken for the purposes of standards attainment determinations are collected and preserved in accordance with reliable procedures acceptable to the commission. The adopted changes also clarify that attainment is achieved when the water column is entirely mixed for chloride, sulfate, total dissolved solids, dissolved oxygen, or chlorophyll *a* standards.

Adopted changes to §307.9(e)(1) clarify that the long-term mean of chloride, sulfate, and total dissolved solids data may be used to demonstrate compliance with provisions specified in §307.7(b)(4)(A).

Adopted revisions to §307.9(e)(3) include removal of the high-flow exemption for bacteria samples taken during extreme hydrologic conditions, such as very high flows and flooding immediately after heavy rains. Clarification of the time period and hydrologic conditions during which the high-flow exemption would apply are also removed. Removal of the high-flow exemption and applicable conditions are a result of the EPA's disapproval of these provisions in an action letter dated June 29, 2011. Other adopted revisions to this section specify that attainment of bacteria standards would allow consideration of statistical variability to reduce uncertainty in determinations. Evaluations of bacteria standards would be in accordance with applicable sections of the TCEQ Guidance for Assessing and Reporting Surface Water Quality in Texas.

The adopted change to §307.9(e)(7) is to correct a reference to screening levels for nutrients. During the proposal phase of the 2010 revision of this rule, nutrient screening levels were included for consideration as part of §307.10, Appendix F; however, screening levels were not adopted as part of this appendix in the final rule. The adopted change removes the reference to screening levels that was inadvertently included in the final version of the rule.

Adopted changes to §307.9(f) remove deferment of impairment for water bodies with presumed high aquatic life uses and associated timeframes, notice, and public comment in the Clean Water Act §303(d)/§305(b) Integrated Report (IR). This change is due to the EPA's disapproval of these provisions in an action letter dated August 24, 2012. Other adopted revisions to this section specify that standards attainment of biological integrity would allow consideration of statistical variability to reduce uncertainty in determinations in accordance with applicable sections of the TCEQ Guidance for Assessing and Reporting Surface Water Quality in Texas.

§307.10, Appendices A - G

In §307.10, Appendix A, designations of PCR, are adopted as changed to PCR 1. Adopted changes to §307.10, Appendix A include removal of language allowing use of fecal coliform as an alternative indicator of recreational suitability in high saline inland waters.

The adopted changes to the aquatic life use for Upper Pecos River (2311) from high to limited is based on the results of a UAA. In addition, revised site-specific dissolved oxygen criteria are adopted based on the results of UAAs for Pine Island Bayou (0607) and Lower Atascosa River (2107). Adopted footnotes are added for Hillebrandt Bayou (0704) and Upper Pecos River (2311) for site-specific minimum 24-hour dissolved oxygen criteria.

Adopted changes to the 24-hour minimum dissolved oxygen criteria for Lower Laguna Madre (2491) and Oso Bay (2485) are due to the EPA's disapproval of the 24-hour minimum dissolved oxygen criteria for these segments in the 2010 TSWQS.

Adopted changes in §307.10, Appendix A also include the creation of five new segments, all of which are currently portions of existing segments, based on differing hydrological conditions: Middle Oyster Creek (1258), created from the upper portion of Oyster Creek Above Tidal (1110); Leon River Above Belton Lake (1259), created from the lower portion of the Leon River Below Proctor Lake (1221); Upper Atascosa River (2118), created from the middle portion of Atascosa River (2107); Rio Grande Below Rio Conchos (2315), created from the upper portion of Rio Grande Above Amistad Reservoir (2306); and Upper Laguna Madre (2490), created from the upper portion of Laguna Madre (2491). In addition, two segments are being renamed (2107 - Lower Atascosa

River and 2491 - Lower Laguna Madre) due to the creation of new segments referenced above.

Changes being adopted also include removal of the public water supply use for Upper Oyster Creek Above Tidal (1110) and removal of all footnote language allowing fecal coliform to be used as an alternative bacteria indicator in high saline inland waters.

Revisions to dissolved minerals criteria are adopted for six segments based on new calculations using updated information: Little Wichita River (0211), San Gabriel River (1214), San Gabriel/North Fork San Gabriel River (1248), Lake Corpus Christi (2103), Lower Atascosa River (2107), and Rio Grande Above Amistad Reservoir (2306).

Revisions to the pH range criteria are adopted for Wright Patman Lake (0302), Lake Palestine (0605), and Cedar Creek Reservoir (0818) based on new calculations using updated information.

In response to comments, the adopted introduction paragraph to Appendix A includes changes to address the addition of industrial cooling water impoundments and a correction of a typographical error in the chloride criteria for Grapevine Lake (Segment 0826).

Adopted changes to §307.10, Appendix B include both the addition of new water bodies that qualify as sole-source drinking water supplies and the deletion of water bodies that no longer qualify as sole-source drinking water supplies, in accordance with TWC, §26.0286. Adopted additions to Appendix B are: Lake Kickapoo (0213), Big Creek Lake (0303), Sabine River Above Caney Creek (0503), Sabine River Above Toledo Bend Reservoir (0505), Lake Murvaul (0509), Lower Neches Valley Authority Canal (0602), Neches River Below B.A. Steinhagen Lake (0602), Trinity River Tidal (0801), Trinity River Above Lake Livingston (0804), Lake Grapevine (0826), Lake Houston (1002), Brazos River Below Navasota River (1202), Navasota River Below Lake Limestone (1209), Lake Mexia (1210), Lake Graham/Lake Eddleman (1231), White River Lake (1240), Lake Georgetown (1249), Brady Creek Reservoir (1416), Concho River (1421), Lake Texana (1604), Guadalupe River Below San Antonio River (1802), Guadalupe River Below San Marcos (1803), Lake Dunlap (1804), Lake Placid (1804), Lake Wood (1804), Guadalupe River Above Canyon Lake (1806), Guadalupe River Below Canyon Dam (1812), Upper Blanco River (1813), Medina River Below Medina Diversion Lake (1903), and Boerne Lake (1908). Adopted deletions from Appendix B are: Caney Creek Reservoir (0302), Cooper Lake (0307), Big Cypress Creek Below Lake O' the Pines (0402), Trinity River (0803), Lake Waxahachie (0816), Lavon Lake (0821), Lake Weatherford (0832), Lake Amon G. Carter (0834), Lake J.B. Thomas (1413), O.H. Ivie Reservoir (1433), and Terminal Reservoir (1802).

In response to comments, Lavon Lake (0821) and Big Cypress Creek Below Lake O' the Pines (0402) are no longer being deleted from §307.10, Appendix B.

Adopted changes to §307.10, Appendix C include the addition of descriptions for new segments and revisions to descriptions of existing segments affected by the creation of new segments in §307.10, Appendix C. Middle Oyster Creek is added as new Segment 1258 based on hydraulic differences with the remainder of Upper Oyster Creek Above Tidal (1110); Upper Atascosa River is added as new Segment 2118 based on the results of an aquatic life UAA; the Rio Grande Below Rio Conchos is added as new Segment 2315 based on hydraulic differences, due to spring flow, with the remainder of Rio Grande Above Amistad Reservoir (2306); Upper Laguna Madre is added as new Segment 2490 based on comments by the EPA in an action letter dated August 24, 2012; and Leon River Above Belton Lake is added as new Segment 1259 based on stakeholder comments. The upper boundaries of Oyster Creek Above Tidal (1110), Lower Atascosa River (2107), and Rio Grande Above Amistad Reservoir (2306) are changed as a result of creating these new segments. The creation of Leon River Above Belton Lake (1259) necessitates changing the lower boundary of Leon River Below Proctor Lake (1221). The name of Segment 2491 is changed to Lower Laguna Madre to distinguish it from the newly created Upper Laguna Madre (2490).

Segment boundary revisions are adopted for Pine Island Bayou (0607) and Lower

Atascosa River (2107) based on results of aquatic life UAAs that identified differing hydrologic characteristics within the classified segments. Upstream portions with different hydrologic characteristics are removed and placed in §307.10, Appendix D. The boundary of Trinity River Tidal (0801) is updated to reflect the addition of a saltwater barrier. The upper boundary of International Falcon Reservoir (2303) is updated to better describe the normal pool elevation of the lake, and the description of the lower boundary of Rio Grande Below Amistad Reservoir (2304) is updated to match the upper boundary of International Falcon Reservoir (2303).

Revisions are adopted to descriptions of the following segments to clarify or to correct clerical errors in existing descriptions: Old River is added to the description for Houston Ship Channel Tidal (1006), the description of the lower boundary of the Colorado River Tidal (1401) is changed from the Gulf of Mexico to Matagorda Bay because a diversion channel now connects the segment to Matagorda Bay, and Rio Grande Below Amistad Reservoir (2304) boundary is updated based on more accurate measurements.

The correction of the normal pool elevation for Lake Travis (1404) is adopted based on information from the Texas Water Development Board.

In response to comments, the adoption of amended §307.10, Appendix C includes changes to the description for Pine Island Bayou (0607), the upper boundary of Middle

Oyster Creek (1258), and the boundaries of Upper Laguna Madre (2490) and Lower Laguna Madre (2491).

Adopted changes to §307.10, Appendix D include the addition of eight water bodies with designated aquatic life uses and dissolved oxygen criteria. The additions are mainly due to the results of receiving water assessments (RWA); however, some are the result of more extensive investigations via a UAA. All water bodies are tributaries within the listed segment numbers. Water bodies added because of UAAs are as follows: Pine Island Bayou (0607); Willow Creek (0607); Skull Creek (1402); and Atascosa River (2118). UAAs also led to the revision of two existing Appendix D entries: Boggy Creek (0607); and Cypress Creek (0608). Water bodies added because of an RWA are as follows: Town Creek (0831); Flag Lake Drainage Canal (1111); Wilbarger Creek (1428); and unnamed tributary of Wilbarger Creek (1428).

Other adopted changes include: segment number update for West Prong Atascosa River (2118) due to changes in segment boundaries; description change to South Mayde Creek (1014) due to EPA comments; correction of county name in the first entry for Dry Creek (1428); removal of county names in descriptions to prevent duplication of information; the addition of county names to some descriptions to clarify the full extent of streams; and footnotes added to define seasonal dissolved oxygen criteria for a number of water bodies.

The seasonal dissolved oxygen as described in the footnote for the Lavaca River (1602), is adopted as changed from an average of 2.0 milligrams per Liter (mg/L) and a minimum of 1.0 mg/L to an average of 3.0 mg/L and a minimum of 2.0 mg/L due to EPA disapproval of the criteria in the 2010 TSWQS.

In response to comments, the adoption of amended §307.10, Appendix D includes changes to the aquatic life use of Pine Island Bayou (0607) and the upper boundary of Dry Creek (1009). Also in response to comments, the county name assigned to Walnut Creek (0409) was corrected.

Adopted changes to §307.10, Appendix E include the addition of two new site-specific copper water-effect ratios (WER) in the watersheds of Segments 0506 and 0823, the addition of one new site-specific zinc WER in the watershed of Segment 0601, the addition of one new site-specific nickel WER in the watershed of Segment 1005, and the addition of two new site-specific aluminum WERs in the watersheds of Segments 0611 and 1005. Changes are adopted to existing site-specific criteria for lead in the watershed of Segment 0404 in order to adjust the criteria by the correction factor applied to all statewide criteria calculations for lead found in Table 1 of §307.6(c)(1). Adopted footnotes are added to the "Parameter" column for 25 existing entries to clearly state whether the site-specific parameter applies to the entire water body or to only a portion

of the water body.

In response to comments, the adoption of §307.10, Appendix E includes a copper WER result for the City of Port Lavaca (2453).

Adopted revisions to §307.10, Appendix F include removing the following segments and their associated numeric nutrient criteria for the following 36 reservoirs: Palo Duro Reservoir (0100), Lake Arrowhead (0212), Lake Tanglewood (0229), Wright Patman Lake (0302), Lake Tawakoni (0507), Murvaul Lake (0509), Lake Fork Reservoir (0512), Lake Palestine (0605), Lake Livingston (0803), Lake Worth (0807), Eagle Mountain Reservoir (0809), Bardwell Reservoir (0815), Cedar Creek Reservoir (0818), Lewisville Lake (0823), Grapevine Lake (0826), White Rock Lake (0827), Benbrook Lake (0830), Richland-Chambers Reservoir (0836), Lake Conroe (1012), Whitney Lake (1203), Lake Granbury (1205), Millers Creek Reservoir (1208), Somerville Lake (1212), Proctor Lake (1222), Waco Lake (1225), Lake Sweetwater (1237), Granger Lake (1247), Lake Limestone (1252), Aquilla Reservoir (1254), Lake Colorado City (1412), Brady Creek Reservoir (1416), Twin Buttes Reservoir (1423), O.C. Fisher Lake (1425), Lake Corpus Christi (2013), Red Bluff Reservoir (2312), and Cox Lake (2454). All adopted removals of numeric nutrient criteria are due to the EPA disapproval of the revised criteria in the 2010 TSWQS in an action letter dated July 2, 2013.

Adopted revisions to §307.10, Appendix G include changing the presumed PCR use with corresponding criteria of 126 colonies per 100 mL to a secondary contact recreation 1 (SCR 1)use with corresponding criteria of 630 colonies per 100 mL for three unclassified water bodies in the Trinity River Basin and five unclassified water bodies in the Brazos River Basin. Adopted changes are based on the results from Recreational Use Attainability Analysis (RUAA).

Other adopted changes to §307.10, Appendix G include changing the presumed PCR use with corresponding criteria of 126 colonies per 100 mL to a secondary contact recreation 2 (SCR 2) use with corresponding criteria of 1,030 colonies per 100 mL for three unclassified water bodies in the Brazos River Basin. Adopted changes are based on the results from RUAA.

Final Regulatory Impact Analysis

The commission reviewed the rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225 and determined that the rule changes are not subject to Texas Government Code, §2001.0225, because they do not meet the criteria for a "major environmental rule" as defined in the statute.

A "major environmental rule" is defined in Texas Government Code, §2001.0225(a) as applying to rules adopted by a state agency that: 1) exceed a standard set by federal law,

unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law.

The adopted amendments were developed in order to be consistent with the water quality standard rules in the Clean Water Act and the TWC. The amendments do not exceed a standard set by federal law, exceed an express requirement of state law, nor exceed a requirement of the National Pollutant Discharge Elimination System delegation memorandum of agreement between the TCEQ and the EPA. The amendments were not developed solely under the general powers of the agency, but were specifically developed to meet water quality standards established under federal and state law. In addition, the standards are under authority of the TWC, which authorizes the commission to set water quality standards by rule. The TWC directs the TCEQ to consider the existence and effects of nonpoint source pollution, toxic materials, and nutrient loading in developing water quality standards. Therefore, the rulemaking is not subject to the regulatory analysis provisions in Texas Government Code, §2001.0225(b).

Takings Impact Assessment

The commission prepared a takings impact assessment for these rules pursuant to Texas Government Code, §2007.043. The following is a summary of that assessment. The TSWQS establishes instream water quality standards for Texas streams, rivers, lakes, estuaries, and other water bodies such as wetlands. The commission is required to establish water quality standards in TWC, §26.023. Clean Water Act, §303 requires states to publicly review and revise their surface water quality standards every three years. The revisions will satisfy the federal requirement for a triennial review.

These adopted revised criteria are protective of human health and provide a public benefit. The specific purpose of the rule changes are to satisfy state and federal statutory requirements in TWC, §26.023 and Clean Water Act, §303(d), respectively. The adopted revisions more accurately assess water quality in the state and revise requirements to protect human health and water quality. The adopted rules would substantially advance this stated purpose by adopting revised water quality criteria and requirements that are supported by site-specific studies, federal and state research, and statewide monitoring and sampling data. Promulgation and enforcement of these rules will not burden private real property that is the subject of the rules because the amendments revising the state's surface water quality standards do not limit or restrict a person's rights in private real property.

Consistency with the Coastal Management Program

The commission reviewed the adopted rulemaking and found that the rulemaking is subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act, Texas Natural Resources Code, §§33.201 *et seq*., and therefore must be consistent with all applicable CMP goals and policies. The commission conducted a consistency determination for the adopted rules in accordance with Coastal Coordination Act Implementation Rules, 31 TAC §505.22 and found the adopted rulemaking is consistent with the applicable CMP goals and policies.

CMP goals applicable to the adopted rules include protecting, preserving, restoring and enhancing the diversity, quality, quantity and functions, and values of coastal natural resources by establishing standards and criteria for instream water quality for Texas streams, rivers, lakes, estuaries, and other water bodies such as wetlands. These adopted water quality standards and criteria will provide parameters for permitted discharges that will protect, preserve, restore and enhance the quality, functions and values of coastal natural resources.

CMP policies applicable to the adopted rules include 30 TAC §501.21. The adopted rulemaking will require wastewater discharge permit applicants to provide information and monitoring data to the commission so that the commission may make an informed decision in authorizing a discharge permit and ensuring that the authorized activities in

a wastewater discharge permit comply with all applicable requirements, thus making the rulemaking consistent with the administrative policies of the CMP.

The adopted rulemaking considers information gathered through the biennial assessments of water quality in the commission's Water Quality Inventory to prioritize those coastal waters for studies and analysis in reviewing and revising the state's surface water quality standards. The standards are established to protect designated uses of coastal waters, including protection of uses for recreational purposes and propagation and protection of terrestrial and aquatic life. The adopted rulemaking is consistent with the CMP's policies for discharges of municipal and industrial wastewater to coastal waters and how they relate to specific activities and coastal natural resource areas.

Promulgation and enforcement of these rules will not violate or exceed any standards identified in the applicable CMP goals and policies because the adopted rules are consistent with these CMP goals and policies and because these rules do not create or have a direct or significant adverse effect on any coastal natural resource areas.

The commission invited public comment regarding the consistency with the CMP during the public comment period. No comments were received regarding the CMP.

Public Comment

A public hearing was held in Austin, Texas on October 17, 2013 to receive public comment on the proposed revisions to Chapter 307. Commission staff members were available before and after the hearing to address specific questions from those who attended the hearing. The comment period for the proposed revisions ended on October 24, 2013.

The commission received timely comments from: American Chemical Council (ACC), Association of Electric Companies of Texas (AECT), Bayou Preservation Association (BPA), Big Thicket Association (BTA), Brazos River Authority (BRA), Cibolo Nature Center (CNC), City of Corpus Christi (Corpus Christi), Honorable Dickie Clary - Precinct 4 Hamilton County Commissioner (Commissioner Clary), Coryell County Commissioners Court (Coryell County), City Public Service Board (CPS Energy), Dow Chemical Company (Dow), ExxonMobil Refining & Supply (ExxonMobil), Galveston Bay Foundation (GBF), City of Hamilton (Hamilton), Hamilton County Commissioner's Court (Hamilton County), Houston Parks Board (HPB), Katten Muchin Rosenman LLP (Katten), Kelly Hart & Hallman LLP (Kelly Hart), National Wildlife Federation (NWF), San Antonio River Authority (SARA), Lone Star Chapter of the Sierra Club (Sierra Club), Texas Association of Dairymen (TAD), Texas Campaign for the Environment (TCE), Texas Chemical Counsel (TCC), Texas Commission on Environmental Quality Public Interest Counsel (OPIC), Texas Conservation Alliance (TCA), Texas Department of

Agriculture (TDA), Texas Farm Bureau (TFB), Texas Parks & Wildlife Department (TPWD), Texas Poultry Federation (TPF), Texas State Representative District 59 J. D. Sheffield (State Rep. Sheffield), Texas State Soil & Water Conservation Board (TSSWCB), Texas Water Resources Institute (TWRI), Lial Tischler and Associates (T/K), EPA, United States Tubular Products (USSTP), and over 2,000 individuals.

Response to Comments

General Comments related to the TSWQS Changes

Comment: BRA, ExxonMobil, Katten, TCC, and T/K offer overall support of the revised rules and appreciation of TCEQ's open public participation process during the development of the proposed water quality standards rule.

Response: The commission acknowledges this comment and appreciates the support.

Comment: The Sierra Club notes that it has been represented for several years in the Surface Water Quality Standards Advisory Work Group (SWQSAWG) established by TCEQ a number of years ago to provide feedback to the agency staff on the review of the TSWQS. Thus, Sierra Club has followed development of proposed revisions to the TSWQS closely. However, the Sierra Club comments that two of the significant

proposals for these TSWQS revision (the addition of the new PCR 2 recreational category and temperature revisions including the designation of industrial cooling water areas) were not brought before the SWQSAWG for discussion. Therefore, the TCEQ should not consider adoption of those revisions before the issues have had a thorough vetting in the SWQSAWG. Moreover, one of the proposed revisions, setting a new PCR 2 category and subsequent bacteria pollution level of 206 colonies E. Coli per 100 mL, contradicts public opposition to the changing of bacteria pollution levels for PCR streams expressed in comments on the 2010 proposed TSWQS revisions. OPIC, TPWD, and NWF are also concerned that the PCR 2 standard is being proposed without being considered by the SWQSAWG along with new language in §§307.3(a)(32), 307.4(f) and (4), and 307.8(b)(10) regarding "industrial cooling water areas."

Response: Potential changes to major topics occurring during this revision cycle were discussed during advisory work group meetings. However, subsequent to the meetings, temperature revisions were included to address recent concerns regarding thermal provisions in wastewater permits. After public discussion at the August 21, 2013, commissioners' agenda, the commissioners approved the publication of, and hearing on, proposed amendments to Chapter 307, as recommended by the Executive Director. At the same time, the commissioners authorized staff to make the

necessary changes to the preamble and rule to ensure that a public discussion occurred as to the appropriateness of establishing a PCR 2 category for bacteria at 206 colonies per 100 mL. Therefore, the PCR 2 category was included in the rule proposal for public comment.

The commission significantly values stakeholder involvement in the water quality standards process, and staff sent members of the SWQSAWG advance notice of the potential changes prior to the start and end of the public comment period and before the public hearing held on October 17, 2013. Although not proposed as part of the 2010 revision to the TSWQS, the commission discussed the PCR 2 category with stakeholders in meetings of the SWQSAWG and information from these prior discussions was reviewed to develop the current PCR 2 proposal. The commission will continue to coordinate with stakeholders during future revisions to address temperature and recreational standards. The commission adopts these revisions as proposed.

Comment: HPB comments that on page 1 of the preamble, the TCEQ misstates the purpose of standards by stating: "Additionally, water quality standards may have been previously established for the protection and propagation of aquatic life and for recreation in and on the water without sufficient data to determine whether the uses

were attainable." HPB comments that while the TCEQ may have established these criteria in the past, the TCEQ omits mention of the requirement that a particular use cannot be removed for any technical reason if the use is an existing use as defined at 40 Code of Federal Regulations (CFR) §131.3. HPB also disagrees with the statement within the proposed preamble that states may modify designated uses when it can be demonstrated, through a UAA, that attaining the current designated uses and/or criteria is not appropriate. HPB believes that states may only modify a designated use if it is not an existing use and if one of several technical demonstrations is made. HPB believes that the TCEQ's interpretation is contrary to federal regulations at 40 CFR §131.3(g) - (h). Therefore, HPB asks if the TCEQ believes that a use can be revised even if it is an existing use.

Response: States are not prohibited from removing designated uses that are existing uses. 40 CFR §131.10(h) outlines the conditions when states can remove designated uses that are existing uses. The section provides that: "a state may not remove designated uses if: (1) they are existing uses, ... unless a use requiring more stringent criteria is added; or (2) such uses will be attained by implementing effluent limits required under sections 301(b) and 306 of the Act and by implementing cost-effective and reasonable best management practices for nonpoint source control."

The statement within the proposed preamble referenced in HPB's comment is consistent with EPA rules at 40 CFR §131.10(j) requiring a state to conduct a UAA when it "designates or has designated uses that do not include the uses specified in section 101(a)(2) of the Act," or "wishes to remove a designated use that is specified in section 101(a)(2) of the Act or to adopt subcategories of uses specified in section 101(a)(2) of the Act which require less stringent criteria."

The commission adopts the language as proposed.

Comment: OPIC and HPB question how PCR 2 will affect wastewater permits.

Response: 30 TAC §309.9(h)(2), states that the monthly average bacteria effluent limitation in a Texas Pollutant Discharge Elimination System (TPDES) permit must be the applicable geometric mean for the most stringent contact recreation category as specified in Chapter 307 of the TSWQS. The most stringent contact recreation category in the TSWQS is PCR 1. Therefore, all TPDES permits for domestic waste water must adhere to the geometric mean of 126 colonies associated with PCR 1. The commission adopts the language as proposed.

§307.3 - Definitions and Abbreviations

Comment: T/K supports adding the definition of the :"Biotic Ligand Model," a method for developing site-specific aquatic life criteria, to §307.3(a)(11).

Response: The commission acknowledges this comment.

Comment: Exxon, TCC, Katten, and T/K support adding the definition of an "industrial cooling water area" in §307.3(a)(32). The EPA finds the definition acceptable, but suggests adding a reference to the mixing zone provision in §308.8(b) to the definition.

NWF objects to the definition, commenting that it appears to be broad enough to apply to any permitted wastewater discharge. Sierra Club and OPIC are opposed to this definition being added at this time because the need for this concept has not been adequately explained, and no justification has been given regarding the urgency of adding this definition now without a more thorough vetting through stakeholders. Additionally, the definition does not establish the possible sizes or limitations of these areas.

Response: The commission acknowledges the comments in support of

industrial cooling water areas. The commission agrees with the EPA's suggested revision to the definition and added the phrase: "... and §307.8(b) of this title (relating to Mixing Zones)" at the end of the proposed definition and adopts the definition as modified.

The commission responds that, if approved by the EPA, the horizontal boundaries for industrial cooling water areas would initially be described and defined in each permit's fact sheet. Like mixing zones, the industrial cooling area size and shape may vary in individual permits to account for site-specific conditions like stream flow, water body morphometry, effluent flow, zone of passage concerns, discharge structures, and ecological sensitivity at discharge site. The commission and the EPA are working towards a mutually-agreed upon plan to develop implementation procedures for temperature, which will include a process to define the horizontal boundaries of industrial cooling water areas. The commission will develop procedures with stakeholder input and will ultimately adopt them in the commission's Procedures to Implement the Texas Surface Water Quality Standards (RG-194), which also includes the processes for establishing sizes of mixing zones.

Comment: BPA and TPWD support the inclusion of "handfishing" in §307.3(a)(49).

Response: The commission acknowledges this comment.

Comment: T/K supports adding a definition for TMDL found at §307.3(a)(75), which is based on the federal regulation at 40 CFR §130.2(i). The EPA recommends adding the following sentence to the definition: "A TMDL is calculated as the sum of individual waste load allocations for point sources and load allocations for nonpoint sources and natural background."

Response: The commission acknowledges this comment in support of the definition for TMDL; however, this definition was added during the 2000 revision of the standards. During this revision, the definition was moved in order to appear in correct alphabetical order. The preamble for this proposed revision incorrectly stated that the definition was new, and this error was corrected in this preamble.

The commission declines to add the language suggested by EPA because it does not think it necessary to include details of how a TMDL is calculated in the Chapter 307 definition. However, the commission agrees with EPA that the proposed additional language is generally how a TMDL is calculated.

§307.4 - General Criteria

Comment: BPA comments that it seeks to assist the TCEQ and other stakeholders in achieving compliance with the aesthetic water quality standards of §307.4(b) and asks if the TCEQ has records quantifying the amounts of floating debris in each stream segment. Also, BPA asks how the TCEQ documents compliance with aesthetic water quality standards.

Response: The commission does not collect information on the amount of floating debris as part of routine surface water quality monitoring. In general, the narrative criteria are assessed by the commission as part of the IR, in accordance with Clean Water Act, §303(d)/§305(b). Although the commission's procedures to develop the IR, found in the Guidance for Assessing and Reporting Surface Water Quality in Texas, do not specifically address narrative criteria for aesthetics, the commission may consider this topic in a future revision of the assessment guidance.

The commission's water quality management programs are intended to protect, prevent degradation of, and improve aesthetic water quality. As part of the commission's routine investigations of wastewater treatment plants, investigators evaluate the presence of sludge, foam, or any sewage

debris in accordance with aesthetic provisions in §307.4(b). If any sewage related evidence is found by the investigator, it is brought to the attention of the facility and may result in a notice of violation or enforcement referral. The commission's Stormwater and Municipal Separate Storm Sewer System programs include permit requirements to regulate non-point source pollution in urban areas, which can impact aesthetic water quality. When excessive debris (such as illegal dumping) is found by commission personnel conducting investigations or environmental sampling, the commission coordinates with the local authorities who have enforcement jurisdiction to clean-up the water body. The commission also coordinates and provides funding from Clean Water Act, §319 Nonpoint Source grants for clean-up programs as part of educational outreach activities in watershed based plans.

The commission adopts the language as proposed.

Comment: Exxon, CPS Energy, TCC, AECT, USSTP, T/K, and Katten support the proposed revisions to §307.4(f) that would exempt industrial cooling water areas from numerical temperature criteria. The EPA finds the proposed language acceptable and looks forward to additional discussion with the TCEQ on the development of implementation procedures for establishing size limitations for industrial cooling water areas.

Response: The commission acknowledges these comments in support of thermal provisions in §307.4(f). The commission has maintained an open dialogue with the EPA to address temperature issues, including implementation in wastewater permitting. The commission and the EPA are working towards a mutually-agreed upon path forward, which will include stakeholder input to develop implementation procedures and additional review of temperature criteria. The commission adopts the language as proposed.

Comment: AECT and CPS Energy are concerned that the rules might be implemented such that cooling reservoirs at electric generating plants might be characterized as industrial cooling impoundments and subject them to more stringent numerical temperature criteria than currently apply to those types of facilities. CPS Energy comments that it is important to remember that most of these man-made cooling impoundments are artificial ecological environments with managed fisheries, have low potential to affect main stream waterways, and are not comparable to natural lakes or natural water bodies.

Response: Many reservoirs in Texas were constructed for the purpose of cooling industrial effluent, and these reservoirs continue to support healthy

fisheries and aquatic communities. Furthermore, these impoundments serve water conservation and water quality objectives, and currently no water bodies are impaired for temperature on the EPA-approved 2012 Texas §303(d) List.

As part of the permitting process, the commission takes into consideration the potential designation of a water body as an industrial cooling impoundment in accordance with the definition in §307.3. The commission revised Chapter 307 to allow industrial cooling water areas to be applied in water bodies that receive thermal effluent but do not meet the definition of industrial cooling impoundments. If newly-adopted temperature provisions are approved by the EPA, the proposed temperature standards would initially be implemented on a case-by-case basis in each permit to take into account the site-specific requirements of each discharge situation. By considering these scenarios in this way, the commission and the EPA have been able to reach agreements on some permits for electric generation facilities with thermal discharges. The commission adopts the language as proposed.

Comment: USSTP and CPS Energy think the rules lack sufficient explanation regarding the method permit writers are to follow when establishing horizontal

boundaries of industrial cooling water areas and recommends including a criteria for establishing those boundaries. T/K comments that this provision recognizes that areas of surface water bodies that are used for cooling of thermal effluents can have temperatures that exceed the criteria without any adverse impacts on designated uses of the surface water segment.

Response: If the adopted revisions are approved by the EPA, the horizontal boundaries for industrial cooling water areas would initially be described and defined in each permit's fact sheet. Like mixing zones, the industrial cooling water area size and shape may vary in individual permits to account for site-specific conditions like stream flow, water body morphometry, effluent flow, zone of passage concerns, discharge structures, and ecological sensitivity at discharge site. The commission and the EPA are working towards a mutually-agreed upon plan to develop implementation procedures for temperature, which will include a process to define the horizontal boundaries of industrial cooling water areas. The commission will develop procedures with stakeholder input and will ultimately adopt them in the commission's Procedures to Implement the Texas Surface Water Quality Standards (RG-194), which also includes the processes for establishing sizes of mixing zones. The commission adopts the language as proposed.

Comment: Sierra Club notes that the proposal states that numerical criteria for temperature would not be applicable in designated industrial cooling water areas, the horizontal boundaries of which would be defined in the applicable wastewater permit. However, there has been no information provided regarding how these boundaries would be determined in wastewater permits. Sierra Club notes there is no urgent reason that the TCEQ staff has put forward to explain why this proposal was made or needs to be incorporated into the standards now. OPIC notes that the proposed rules state that the boundaries will be defined in the applicable wastewater permit, but, without proposing amendments to the implementation procedures, it cannot be determined whether the proposed rules will be protective of water quality. TPWD comments that temperature directly affects nutrient cycling and that these provisions will directly impact the fisheries resources that TPWD manages.

Response: The commission's Procedures to Implement the Texas Surface Water Quality Standards (RG-194) are not being revised along with the water quality standards during this revision cycle because portions of the guidance have yet to be approved by the EPA. If the adopted temperature standards are approved by EPA, the temperature standards would initially be implemented on a case-by-case basis and explained in each permit's fact sheet. The commission has maintained an open dialogue with the EPA to

address temperature issues, including implementation in wastewater permitting. The commission and the EPA are working towards a mutually-agreed upon path forward, which will include stakeholder input to develop implementation procedures and additional review of temperature criteria. The commission adopts this language as proposed.

Comment: TSSWCB, Hamilton County, Hamilton, T/K, TAD, TFB, Kelly Hart, TCC, ExxonMobil, Coryell County, TDA, TWRI, State Rep. Sheffield, Commissioner Clary, and nine individuals support the addition of a PCR 2 use category in §307.4(j) and §307.7(b)(1), with a criterion for bacteria of 206 colonies per 100 mL. They note that the PCR 2 criteria for bacteria of 206 colonies is recognized by the EPA and the regulatory community as being protective of human health in water bodies where contact recreation activities are known to occur. The commenters find that the PCR 2 category is appropriate because some water bodies are infrequently used for recreation reducing the risk of ingestion or have limited access. Additionally, many water bodies lack sufficient water to support recreational activities.

Response: The commission acknowledges this comment.

Comment: TPWD, TCE, BPA, Sierra Club, HPB, CNC, GBF, TCA, SARA, NWF, OPIC, and over 2,000 individuals object to creating a PCR 2 category that would establish a

higher bacteria standard of 206 colonies for controlling pollution in some water bodies, creating greater risk for people when using water bodies categorized under the PCR 2 standard. They note that regardless of the frequency of water recreation activities, all Texans should be afforded the protection of the strictest PCR standards when accessing Texas waterways. Additionally, the current recreational use of a water body does not always predict future recreational use. The objecting commenters urge that the designation and application of PCR 2 (proposed §§307.3(a)(50), 307.4(j), and 307.7(b)(1)) be removed from the proposed standards.

Response: The commission is expanding the current category for PCR use into two categories (PCR 1 and PCR 2) to better characterize the different levels of water recreation activities that can occur in Texas. In the late 1980s and 1990s, a contact recreation use was broadly presumed for all surface waters in Texas, with the exception of eight unique water bodies such as ship channels. As a result of these presumptions, there may be numerous water bodies with inappropriate recreational uses. This additional use will provide the commission the ability to better assign appropriate recreational use on water bodies.

In accordance with 40 CFR §131.10(c), EPA regulations allow states to: "... adopt sub-categories of a use and set the appropriate criteria to reflect

varying needs of such sub-categories of uses..." The revised standards create sub-categories of recreational uses and assigned appropriate criteria to the uses to more adequately reflect the nature of Texas water and current scientific evidence. Existing uses in all categories will be maintained for the affected water bodies. The commission adopts the PCR 2 category as proposed.

Comment: TPWD requests adding language that specifically designates water bodies in parks as having the highest level of protection of either PCR or PCR 1 because TPWD believes all water bodies in parks, whether federal, state, or local, are likely to have frequent use, including wading by children. TPWD requests that if PCR 2 is adopted, that the following language be added to §307.4(j) to address state parks: "All water bodies within state parks are designated as Primary Contact Recreation 1." TPWD further recommends that the protection be extended to all types of parks.

Response: Designating all water bodies in parks as having a PCR use is not appropriate and could result in inappropriate water quality standards for numerous water bodies throughout the state. The commission will evaluate water bodies on a site-specific basis to establish the appropriate recreation use and note that the presence of all parks is a factor considered in the evaluation of a RUAA. The commission adopts §307.4(j) as proposed.

Comment: OPIC comments that in 30 TAC §307.4(j)(3)(B) and (C) a water body can be assigned the presumed use of PCR 1 or SCR 1 for the purpose of a regulatory action without requiring the water body be listed in Appendix G of §307.10. OPIC comments that PCR 1 is presumed for all unclassified water bodies, but the TCEQ may assign less stringent uses after a "reasonable level of inquiry" is conducted to determine if a different presumed use is appropriate. This reasonable level of inquiry includes "review of available relevant information or completed site surveys." OPIC questions whether "reasonable level of inquiry," "available relevant information," and "completed site surveys" as described in the rule have any relevant meaning in relation to PCR 2 when there are no corresponding proposed updates to the implementation procedures.

Response: The Procedures to Implement the Texas Surface Water Quality Standards (RG-194) are not being revised along with the water quality standards during this revision cycle since portions of the guidance have yet to be approved by the EPA. If PCR 2 is approved, guidance will be added to the Procedures to Implement the Texas Surface Water Quality Standards (RG-194) during the next revision requiring a RUAA and a rule change for assigning PCR 2 to a water body. The commission adopts the language as proposed.

Comment: OPIC questions if PCR 2 is a presumed use.

Response: A designation of PCR 2 requires a RUAA and is not a presumed use. PCR 1 is distinguished from PCR 2 by frequency of use and other factors affecting recreation in the water body. A RUAA study is needed to determine this information. The commission adopts the language as proposed.

Comment: GBF, NWF, OPIC, and TPWD comment that it is unclear how to differentiate between PCR 1 and PCR 2.

Response: The PCR 2 category is distinguished from PCR 1 by how frequently contact recreation activities occur and other factors affecting recreation in the water body. Frequency is determined from information gathered in the interview process of the RUAA. The RUAA interview process documents what type, when, and how often recreation is occurring. This information, along with other data in the RUAA report (such as remoteness of location, lack of access via parks or road crossings, and steepness of stream banks), would be used to make the determination between PCR 1 and PCR 2. The commission adopts the language as

proposed.

Comment: GBF comments that historical and future uses are not taken into account.

Response: RUAAs take historical information into account in two ways: (1) comprehensive RUAAs require a thorough historical review of recreational uses; and (2) when interviews are conducted individuals are asked about both current and past recreational uses. According to the Clean Water Act, use changes made through UAAs are reviewed during future triennial revisions. If new information is available, it will be reviewed to determine if the recreational use is still appropriate.

§307.6 - Toxic Materials

Comment: T/K, ExxonMobil, and TCC support all the proposed changes in the aquatic life-based criteria for toxics found in §307.6, Table 1 and the revisions to the human health-based toxics criteria in §307.6, Table 2 that are based on revisions to cancer potency factors, reference doses, and BCFs. T/K also supports the correction of the calculation error for the dieldrin criterion.

Response: The commission acknowledges this comment.

Comment: HPB comments that the preamble to the proposed rules state: "For the proposed statewide human health toxic criteria, none are new, 12 are more stringent than the current standards, and 26 are less stringent." HPB and several individuals oppose less stringent human health toxic criteria. Limits that are highly protective of human health have great value in supporting the effort to clean Texas's waterways and should be maintained.

Response: The commission notes that the revisions are based on new information and studies on the potential toxic effects of chemicals of concern to human health. Triennial revisions of the rules are performed in part to include new scientific data on the effects of chemicals and pollutants. Revisions to toxic criteria are made in accordance with EPA guidance and federal regulations. The commission adopts human health criteria as proposed.

Comment: TPWD requests the rationale for changing the dioxin/furan and PCB criteria from tissue-based to water column criteria in §307.6, Table 2. T/K, ExxonMobil, and TCC comment that they understand the reason why the TCEQ is revising the fish tissue-based human health criteria for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dioxins/furans, mercury, and PCBs to water column concentrations and supports the

revised concentrations. However, T/K, ExxonMobil, and TCC believe that the change does not address the underlying conflict between the standards for bioaccumulative chemicals and the method that the TCEQ uses to identify impaired waters under the Clean Water Act, §303(d) for such chemicals. Because the TCEQ uses the Texas Department of State Health Services (TDSHS) consumption advisories to list surface water bodies as impaired under Clean Water Act, §303(d), and the TDSHS bases these advisories on fish tissue concentrations that use different assumptions than those described in this rule, there is a fundamental conflict in developing a TMDL that satisfies the different standards of the two agencies. T/K, ExxonMobil, and TCC suggest that this conflict be resolved in the next triennial revision.

T/K continues to believe that fish and shellfish tissue standards for bioaccumulative chemicals have a stronger scientific basis than water column concentrations for these chemicals. The translation from tissue concentrations to water column concentrations introduces substantial site-specific uncertainty into the resulting numeric water quality criteria, resulting in criteria that can be either over- or under-protective. The EPA comments that the proposed criteria are technically acceptable, and the EPA recommends retaining the current criteria for these substances measured in fish tissue. The EPA states that fish tissue is a preferred and more cost-effective indicator of levels of PCBs, dioxins/furans, and DDT compounds in surface waters.

Response: The commission acknowledges these comments in support of fish tissue-based criteria. In the 2010 TSWQS revisions, the TCEQ adopted human health criteria for fish tissue for mercury, PCBs, dioxins/furans, and DDT and its metabolites. With the exception of mercury, the EPA has approved these revised criteria. While EPA has no nationally recommended fish tissue criteria for all of these analytes except for mercury, some stakeholders expressed an interest in developing fish tissue-based human health criteria for several highly bioaccumulative substances.

The TDSHS is charged under state statute with the authority to determine if a water body contains fish or any other organism that may be unsafe for human consumption. As in the past, the commission intended for listings of impaired water bodies on the state Clean Water Act, §303(d) list to still be based on fish consumption advisories or bans that are issued by TDSHS. TDSHS collects and evaluates fish tissue data applying specialized expertise, procedures, and assumptions. The new fish tissue criteria in the TSWQS were primarily intended to improve the application of site-specific bioaccumulation factors and targets for water-column concentrations in water quality management programs.

However, EPA's national framework for assessing attainment of tissue-

based criteria now appears to be incompatible with the current state procedures for identifying impairments. In commenting on guidance for the 2012 assessment, the EPA has indicated that TCEQ should utilize the 2010 adopted fish tissue-based criteria to define impairment rather than basing impairments on TDSHS advisories. In addition, EPA requested that TCEQ acquire TDSHS fish tissue data when assessing standards attainment.

In order to avoid confusing the public concerning the risk of fish consumption, and to preclude incompatible procedures between other state and federal agencies, the commission has adopted the proposal to change all fish tissue-based criteria back to water-column based concentrations. The commission does not have authority over the assumptions or methodologies used by the TDSHS when determining the risk associated with consuming aquatic life from surface waters of the state. The commission will continue to meet quarterly with the TDSHS and other state agencies on fish tissue contamination issues.

The commission adopts the language as proposed.

Comment: The EPA comments that the proposed revisions for the mercury criteria represent the criteria currently effective under the Clean Water Act. However, the EPA

continues to recommend the adoption of the Clean Water Act, §304(a) nationally recommended water quality criterion of 0.3 milligram per kilogram (mg/kg) (measured in fish tissue). This value has undergone extensive peer review by the United States National Academy of Sciences, National Research Council. In 2010, the EPA also published companion implementation guidance to address issues associated with the new water quality criterion and to facilitate implementation of the criterion in the TMDL and permitting programs.

BRA supports the revision of the mercury standard in §307.6(d)(1) to the criteria approved in the 2000 revisions to the TSWQS. BRA notes that since the EPA disapproved the TCEQ's revised mercury criteria proposed in the 2010 TSWQS, reverting to the last EPA-approved standard from 2000 seems to be the best option for continued protection. HPB opposes re-instating the 1995 mercury standard and urges stronger action to eliminate mercury from Texas waterways.

Response: The commission acknowledges these comments both in support and opposition of the mercury criteria for the protection of human health. In a letter dated June 29, 2011, the EPA disapproved the new criterion of 0.7 mg/kg for mercury in edible fish tissue that was adopted during the 2010 TSWQS revisions. The commission respectfully disagrees with the EPA's disapproval action of the adopted criterion of 0.7 mg/kg mercury in edible

fish tissue in the 2010 revisions of the standards. In light of the inherent uncertainty concerning appropriate reference doses and other variables involved in the calculation of human health criteria, the difference in the adopted criterion of 0.7 mg/kg and the EPA's national guidance criterion of 0.3 mg/kg is relatively small. For these reasons, the commission believes that the criterion adopted during the 2010 revision of the TSWQS is as scientifically defensible as EPA's nationally recommended criterion.

The disapproval action results in reverting to the previous human-health criteria for mercury, which are a concentration in freshwater of 0.0122 micrograms per liter (µg/L) and concentration in saltwater of 0.0250 µg/L. The majority of states in the United States still have the EPA-approved water quality criteria for mercury that are expressed solely as a concentration in water, and the commission's water concentration criteria are very comparable to most of those states. The commission adopts the criteria as proposed.

Comment: ACC comments that the proposed amendments to the standards include calculated human health criteria in water for dioxins in water and fish and fish only using water column-based concentrations. The calculations assumed a BCF of 5,000 to translate tissue-based criterion to a water column criterion. However, reviews of

BCFs found that the values are subject to sources of uncertainty that can result in incorrect estimation of actual bioconcentration. Subsequently, uncertainties in BCFs also imply that species-specific information on lipid content and other biota-related parameters are important for the reliable estimation of accumulation and subsequent risk of chemicals in fish.

ACC comments that the human health criteria for dioxin assumes an incremental cancer risk level of 1 in 100,000 and applies a linear extrapolation. However, there has been much scientific discussion on the mode of action for dioxin, and it has been noted that the available data favors the use of non-linear methods for extrapolation below the point of departure of mathematically modeled human or animal data for dioxin. Thus, ACC comments that the use of a non-linear extrapolation for the derivation of the TCEQ human health criteria for dioxin effectively considers the available mode of action information and is a scientifically justified approach. Dow recommends TCEQ consider the EPAs 2012 analysis of dioxin toxicity, rather than the linear cancer slope factor used in TCEQs current dioxin proposal. Also, Dow recommends applying greater levels of uncertainty to the reference dose and BCF approaches in the rule proposal. TCEQ should continue to apply appropriate variances and incorporate site-specific factors to develop site-specific adjustments.

Response: TCEQ's proposal follows EPA's current national guidance

regarding water quality standard development for dioxin. BCFs for a particular chemical can vary widely depending on site-specific factors from water body to water body. The commission recognizes that using a "one size fits all" approach may result in an overestimation (or underestimation) of bioaccumulation when applied to a given site. However, facilities may, with the agreement of the commission, develop site-specific BCFs. The commission will further evaluate the suggested approaches and assumptions for future consideration in criteria development. The human health criteria for dioxin are adopted as proposed.

Comment: T/K comments that the fish only criterion for cresols in Table 2 of §307.6 is shown as 9.301 µg/L. T/K believes the correct value is 9,301 µg/L based on the data analysis provided during the stakeholders meetings and the fact that the criteria based on exposure through both the water and fish tissue pathways should always be equal to or greater than criterion for the fish only pathway, which for cresols is 1,041 µg/L.

Response: The commission agrees that there is a typographical error for this constituent in §307.6, Table 2. The typographical error was corrected and adopted to reflect a fish only criterion of 9,301 µg/L.

Comment: The EPA comments that they believe there was a calculation error for

hexachlorophene, which was based on the revised BCF of 278 in both of the proposed human health criteria. Although the differences are minor, the correct values are 2.04 ug/L (water and fish criterion) and 2.90 ug/L (fish only criterion).

Response: The correction to the BCF was made in the calculation, and the revised human health criteria of 2.04 µg/L (water and fish) and 2.90 µg/L (fish only) are adopted.

Comment: The EPA comments that they appreciate incorporation of the updated reference dose and cancer potency factor published by the EPA in 2012 in the proposed rules. For tetrachloroethylene, the criterion for non-carcinogenic effects (based on exposure factors for children) is more protective than the proposed criterion of 622 ug/L for carcinogenic effects. The EPA recommends adoption of the lower value of 525 ug/L, for consumption of fish.

Response: The commission agrees and adopts the fish only criterion of 525 µg/L for consumption of fish.

§307.7 - Site-Specific Uses and Criteria

Comment: EPA and OPIC state that the proposed criterion of 206 colonies for PCR 2

exceeds the recommendations included in EPA's 2012 Recreational Water Quality Criteria (RWQC) document. EPA notes that states may choose another illness rate if it would protect the designated uses of PCR, which EPA would evaluate as part of the state's submission of the revised water quality standards for approval. OPIC also questions how the criterion for PCR 2 will maintain and promote public health.

Response: In the 1986 RWQC, the EPA established 1% as the key risk of illness threshold for assigning an adequate level of protection to support PCR. The EPA 1986 RWQC stated that a level of 206 colonies per 100 mL is protective of PCR and represented a 1% risk of illness. The EPA's 2012 RWQC maintained the protectiveness of the 126 colonies per 100 mL *E. coli* criterion. To demonstrate this protectiveness, EPA relied upon a regression equation developed in the 1986 RWQC that extrapolated *E. coli* results from more recent Enterococci sampling because EPA's 2012 epidemiological studies only included Enterococcus. In the 2012 RWQC, EPA did not state that 206 colonies was no longer protective of PCR nor did they provide an alternative acceptable risk of illness to the 1% threshold. Therefore, since the regression equation used to confirm the protectiveness of the 126 colonies of *E. coli* criterion during the 2012 RWQC is the same equation used in 1986 to determine 206 colonies was protective of PCR and because EPA did not provide additional information suggesting an illness

rate of 1% is no longer protective, the commission has no reason to believe that 206 colonies is no longer protective of PCR or represents an illness rate greater than 1%. The commission adopts the language as proposed.

Comment: EPA notes that non-human fecal sources may pose risks comparable to those risks from human sources.

Response: The commission acknowledges this comment.

Comment: Commissioner Clary comments that additional site-specific information, such as wildlife sources that are unavoidably high and limited aquatic recreation potential, should be used when determining the difference between PCR 1 and PCR 2.

Response: The commission acknowledges this comment and will continue to consider site-specific factors when determining the appropriate recreational use category.

§307.8 - Application of Standards

Comment: Katten strongly supports the revision of §307.8(b)(10) to clearly state that the TCEQ may specify different mixing zone sizes in wastewater permits for companies

with temperature numeric criteria.

Response: The commission acknowledges this comment.

§307.9 - Determination of Standards Attainment

Comment: T/K, Exxon, and TCC support the proposed revisions to §307.9 which include clarification regarding sampling and analysis for determination of standards attainment at §307.9(c); clarification that chloride, sulfate, and total dissolved solids criteria are based on an annual average at §307.9(e)(1); use of statistical variability analysis in assessing compliance with bacteria criteria at §307.9(e)(3); and use of statistical variability analysis in assessing biological integrity of a surface water at §307.9(f).

Response: The commission acknowledges this comment.

Comment: The EPA and TPWD appreciate and support the proposed language in §307.9(c)(2) to address the applicability of measurements taken at depth in deeper water systems when such systems are not stratified. However, the EPA also suggests including additional language, such as that shown in the following, to address monitoring in stratified waters: "For those instances where the water column is not entirely mixed according to determinations described in the TCEQ Guidance for

Assessing and Reporting Surface Water Quality in Texas as amended, alternative methods may be used in which case the water quality standards apply to any sample taken in the water column for parameters indicated in this section."

Response: Parameters indicated in §307.9(c)(2) are expected to attain standards when the water column is mixed; however, stratification may limit the attainability of these parameters due to natural conditions, particularly in the dense bottom layers of deep reservoirs. Samples taken near the surface, as indicated in this section and in the commission's Guidance for Assessment and Reporting Surface Water Quality in Texas, are more appropriate than the suggested language for determinations of standards attainment when the water column is stratified. This language is adopted as proposed.

Comment: The EPA suggests modifying the first sentence in §307.9(c)(2) to read: "Bacterial and temperature determinations must be conducted on grab samples or in situ measurements...."

Response: The intent of §307.9(c)(2) is to describe the expected attainability of samples in the water-column. Monitoring methods used in implementation are described by reference to the commission's Texas

Surface Water Quality Monitoring Procedures. These procedures are updated on a frequent basis and more appropriately prescribe the monitoring procedures to be followed to determine attainment with the TSWQS. Therefore, the commission respectfully declines to adopt the EPA's suggested language and adopts the language as proposed.

Comment: HPB comments that there is also a change in the compliance section in §307.9(e)(1) that changes the idea that compliance "must" be based on a long-term mean to "may" be based on a long-term mean. HPB is concerned that this change may undermine the TCEQ's enforcement efforts and the ability of individual citizens to determine whether water quality standards are being met. HPB suggests that supplying a list of compliance alternatives would fit this need better than changing the language from "must" to "may." HPB asks how the TCEQ will ensure compliance under this provision when there is no clear path for the regulated community to demonstrate its compliance. TPWD does not understand the rationale to allow that determinations be made based on the long-term mean and for clarification of situations when the long-term mean would not be used for standards determination.

Response: The proposed change to §307.9(e)(1) clarify the long-term mean of chloride, sulfate, and total dissolved solids data may be used to demonstrate compliance with provisions specified in §307.7(b)(4)(A). This

clarification is necessary because criteria in §307.7(b)(4)(A) are established as averages over an annual period. This provision was changed from "must" to "may" to account for differences in availability of samples for attainment determinations. These changes allow the commission to determine if dissolved minerals criteria are being attained, in accordance with minimum data requirements established in the commission's Guidance for Assessing and Reporting Surface Water Quality in Texas as amended. The commission anticipates determinations to be made using a minimum of ten samples, taken over at least a two-year period in accordance with these procedures.

The provision more adequately describes the current procedures used during the IR and do not affect procedures to permit dissolved mineral limits as described in the commission's Procedures to Implement the Texas Surface Water Quality Standards (RG-194). These procedures consider site-specific dissolved minerals criteria established in accordance with §307.7(b)(4)(A), the antidegradation policy in §307.5 and secondary maximum contaminant levels for drinking water in accordance with §§290.101 - 290.119 to establish effluent limits for the regulatory community, rather than §307.9(e)(1). These procedures factor in a margin of safety to determine effluent limits, and are protective of general water

quality as well as public water supply uses. Once established, limits of dissolved minerals are expressed in wastewater permits as weekly average, daily average, and/or daily maximums, which are stringent approximations of the annual average. Monitoring to demonstrate compliance is prescribed as part of the permit, and is typically required on a weekly or sometimes more frequent basis. None of these compliance and enforcement requirements are affected by changes in §307.9(e)(1). The commission adopts the language as proposed.

Comment: HPB and the EPA support removal of the high-flow exemption in §307.9(e)(3) for bacteria samples taken during extreme hydrologic conditions, such as very high flows and flooding immediately after heavy rains. The TPF opposes removal of this exemption and requests the commission re-propose this provision.

Response: The commission acknowledges the comments supporting the removal of the high-flow exemption for bacteria samples. The provision was removed due to EPA disapproval after the last triennial revision of the TSWQS in 2010.

Since standards must be federally approved prior to implementation in Clean Water Act activities, the commission typically removes disapproved

provisions as part of an upcoming triennial revision. In the case of the disapproved exemption of bacteria samples collected during high flow conditions, much of their implementation would be in the IR assessment. Leaving these disapproved provisions in the standards could create confusion during development of the IR.

In light of the EPA's disapproval, the commission developed an alternative assessment methodology and accompanying standards provision to verify impairments from bacteria. As part of the 2012 IR, the commission used a two-tiered approach to increase confidence when identifying new impairments from bacteria. By increasing the minimum number of samples to 20 and using an 80% confidence level, the commission is ensuring that a new bacteria listing is based on exceedance of a criterion rather than random variation. New standards provisions that specifically allow for statistical variability to be considered during determination of attainment with bacteria standards were adopted in §307.9(e)(3) during this triennial review. The commission adopts the language as proposed.

Comment: The EPA notes that it may consider proposed language in §307.9(e)(3), which allows standards attainment determinations for bacteria to account for statistical variability, to be an assessment provision rather than a water quality

standard. TPWD asks that prior to adopting or implementing this provision, the TCEQ should develop written guidance describing how the provision would be implemented and bring this material before the Assessment Guidance Advisory Work Group for consideration.

Response: The commission responds that these revisions should be considered a water quality standard since they specifically address attainment of numeric criteria to protect contact recreational uses.

The commission also responds that guidance for the assessment of bacteria incorporating statistical variability of bacteria data (*E. coli* and Enterococcus) was developed and implemented during preparation of the 2012 IR and presented during the June 2011 meeting of the SWQSAWG. Draft procedures were developed by the commission prior to the development of the 2012 IR. Stakeholder input was taken into consideration to develop the procedures described in section 2-1 of the May 2012 Guidance for Assessment and Reporting Surface Water Quality in Texas, which is available for review on the commission's Web site. The commission adopts the language as proposed.

Comment: TPF does not support the proposed change to §307.9(f) that would remove deferment of impairment for water bodies with presumed high aquatic life uses and

associated timeframes, notice, and public comment in the Texas IR. TPWD supports the language in this section, which allows standards attainment determinations for biological integrity to account for statistical variability.

Response: The commission acknowledges these comments in support of and opposition to the change in §307.9(f) regarding standards attainment determinations of biological integrity.

The commission responds that because standards must be federally approved prior to implementation in Clean Water Act activities, the commission typically removes disapproved provisions as part of an upcoming triennial revision. In the case of the disapproved provision allowing deferment of impairment status for water bodies with presumed aquatic life uses, much of this implementation would be in the IR. Leaving this disapproved provision in the standards could create confusion when developing the IR.

In light of EPA's disapproval, the commission included an additional standards provision in §307.9(f) to verify impairments of biological integrity. This provision specifically allows for statistical variability to be considered during determination of attainment with biological integrity

standards, which will increase confidence when identifying new impairments when developing the IR. The commission adopts the language as proposed.

§307.10 - Appendices A - G

Appendix A, Site-specific Uses and Criteria for Classified Segments

General Comments

Comment: The EPA comments that they will provide a separate review of UAAs or other documentation on the following segments: 0607, 0704, 2107, 2118, 2311, 2485, and 2490. The EPA will also review any additional documentation on Segment 0305.

Response: The commission acknowledges this comment and will await the results of EPA's review.

Comment: The EPA asks whether it would be appropriate to add a reference to the provisions for industrial cooling water, areas to the seventh paragraph of the introduction of §307.10, Appendix A, relating to temperature. The EPA notes that a phrase such as "... except as noted in §307.4(h) and §307.8(b)" could be added to end of this sentence.

Response: The suggested phrase was added to the introduction of §307.10, Appendix A in the suggested location, and the language is adopted as modified.

Dissolved Oxygen

Comment: For Pine Island Bayou (0607), TPWD does not object to the revised dissolved oxygen criteria and concurs with a high aquatic use designation for the classified segment. BTA agrees with the assessment of Pine Island Bayou.

Response: The commission acknowledges this comment.

Comment: The EPA recommends that aquatic life uses be adopted for Segments 1006 and 1007 of the Houston Ship Channel. The EPA notes that data has been collected to demonstrate that an aquatic life use is justified. In accordance with this recommendation, the EPA states that the dissolved oxygen standards should be re-evaluated. Increasing the dissolved oxygen standards from 1.0 mg/L to 2.0 mg/L for Segment 1007 and from 2.0 mg/L to 3.0 mg/L for Segment 1006 are recommended to protect the actual aquatic life use. The adoption of uses and revised standards would allow a transition to a dissolved oxygen standard of 4.0 mg/L and high quality aquatic life use for Segment 1005, and the present transition from a standard of 2.0

mg/L to 4.0 mg/L may result in impairment around the segment boundary.

Response: The commission is proposing no change to the §307.10, Appendix A entry for Segments 1006 or 1007. At this time, no other evaluation of these segments in the form of a UAA has been performed. The comment requesting the re-evaluation of both segments is noted and may be considered by the Water Quality Standards Group of the Water Quality Planning Division and the Standards Implementation Team of the Water Quality Division for the next triennial revision.

Comment: Corpus Christi disagrees with the proposed dissolved oxygen minimum criterion of 3.5 mg/L for Oso Bay (2485). The criterion directly contradicts the 2010 UAA recommendation of 2.0 mg/L minimum with no technical justification for the higher amount. Corpus Christi notes that this calls into question a statement in the executive summary that states that none of the proposed dissolved oxygen revisions are expected to require more stringent treatment by domestic wastewater treatment facilities. Based on the Oso Bay revision, Corpus Christi does not think that statement is correct. Corpus Christi comments that adoption of the proposed dissolved oxygen standard will result in undue hardship to the city because it would make plant upgrades already in place obsolete without a clear demonstration that the more restrictive criterion is needed to protect existing uses.

Response: During the 2010 TSWQS revision, the commission adopted a minimum dissolved oxygen criterion of 2.0 mg/L for Laguna Madre (2491) and Oso Bay (2485). The adopted minimum dissolved oxygen criterion was developed from a UAA study which utilized the entire Laguna Madre as a reference to Oso Bay. The 2.0 mg/L minimum dissolved oxygen criterion was disapproved by the EPA in an action letter dated August 24, 2012. In this action letter, the EPA suggested the division of Laguna Madre into multiple segments. In the same letter, the EPA also suggested a revision of the dissolved oxygen minimum criterion from 4.0 mg/L to 3.6 mg/L. The commission is adopting segment boundary revisions as the Lower Laguna Madre (2490) and the Upper Laguna Madre (2491). The commission also adopts as proposed a modified minimum dissolved oxygen criterion of 3.5 mg/L for the Upper Laguna Madre and Oso Bay (2485). A dissolved oxygen criterion of 3.5 mg/L was adopted as opposed to the EPA suggested 3.6 mg/L because the commission sets dissolved oxygen criteria in half mg/L increments.

The commission also notes that because of the disapproval of the adopted 2010 minimum dissolved oxygen criterion for Oso Bay, the criterion currently in effect for Clean Water Act purposes is the dissolved oxygen

minimum criterion of 4.0 mg/L. Therefore, the changes adopted in this revision are less stringent than those currently approved for use in Clean Water Act actions.

Comment: Corpus Christi comments that the dissolved oxygen criteria for Lower Laguna Madre do not appear to include a 24-hour dissolved oxygen minimum.

Response: Section 307.7(b)(3)(A)(i) cites the associated dissolved oxygen mean and minimum criteria associated with each aquatic life use subcategory. These criteria are applicable to classified water bodies found in Appendix A of §307.10 unless otherwise footnoted. As no footnote is given for the Lower Laguna Madre (2491), the minimum dissolved oxygen criterion associated with an exceptional aquatic life use (4.0 mg/L) applies. The commission adopts the language as proposed.

Total Dissolved Solids, Chlorides, Sulfate

Comment: The EPA comments that there is a typographical error in the chloride criterion for Grapevine Lake (0826). The EPA states that assuming no revision is proposed, the chloride criterion for this water body should be 80 mg/L

Response: The typographical error is corrected, and the language is adopted as modified with a chloride criterion in Grapevine Lake (0826) of 80 mg/L.

Recreation

Comment: BPA comments that in §307.10, Appendix A, as a consequence of improved water quality resulting from implementation of Chapter 307 and other efforts, more recreation is being conducted on Houston area waterways than may have been documented in prior UAAs (as per 40 CFR §131.1). Therefore, BPA supports the PCR designations of Cypress Creek, Greens Bayou Above Tidal, and Buffalo Bayou in §307.10, Appendix A continue to be an appropriate designation, and efforts should continue to attain the water quality standards listed.

Response: The commission acknowledges this comment.

Comment: One individual supports the Leon River Segment 1221 retaining its PCR use and associated criterion.

Response: The commission acknowledges this comment.

Comment: TAD and eight individuals recommend that TCEQ consider applying a PCR 2 designation to the newly proposed Leon River Below Proctor Lake (1221) and Leon River Above Belton Lake (1259) based on water quality data collected during the RUAA. The commenters note that accessibility and frequency of use in both of these segments does not support a PCR 1 designation.

Response: The commission relied upon information collected during the RUAA for each water body to develop the adopted site-specific contact recreation uses. Information collected during the RUAA indicated that the deepest portions of the Leon River Below Lake Proctor (1221) had an average depth of 27 inches as well as five rope swings found along the segment. Information from the interviews found 34 instances of PCR occurring on the segment. The deepest portions of the Leon River Above Belton Lake (1259) had an average depth of 31 inches and three public parks located on the segment. Interviews found 17 instances of PCR with three observations of swimming in Fauntleroy Park by the investigators conducting the study. Due to these findings, a change from the presumed PCR 1 use category is not appropriate for this water body.

Appendix B, Sole-source Surface Drinking Water Supplies

Comment: The EPA questions the removal of Big Cypress Creek below Lake O' the

Pines (0402) and Lavon Lake (0821) because information from TCEQ's Drinking Water Watch database and other sources indicate they are being used as public drinking water sources.

Response: The commission agrees that Big Cypress Below Lake O' the Pines (0402) and Lavon Lake (0821) should not have been removed from the sole source list. Therefore, in response to the comment, the commission modified §307.10, Appendix B to include these segments as sole-source drinking water sources. The commission adopts the language as modified.

Appendix C, Segment Descriptions

Comment: The EPA comments that the changes in §307.10, Appendix C, are generally acceptable; however, it may be helpful to revise the description of the upper end of Segment 0607 to read: "... the confluence with Willow Creek in Hardin/Jefferson County," since Pine Island Bayou is the boundary between these two counties and Willow Creek flows south through Jefferson County.

Response: The commission agrees with the comment and revised the description of Segment 0607 as requested in the adopted §307.10, Appendix C.

Comment: Hamilton County, Hamilton, Coryell County, Commissioner Clary, TSSWCB, TAD, and eight individuals support the change in §307.10, Appendix C splitting Segment 1221 of the Leon River into two smaller stream segments identified as the Leon River Below Proctor Lake (1221) and the Leon River Above Belton Lake (1259).

Response: The commission acknowledges this comment.

Comment: BRA notes that in §307.10, Appendix C, new Middle Oyster Creek (1258) is defined as being "from the confluence with the Brazos River to the Brazos River Authority diversion dam 1.8 kilometer (km) (1.1 mile (mi)) upstream of SH 6 in Fort Bend County." BRA comments that it does not own any dams in Fort Bend County, so this description appears inaccurate.

Response: The commission concurs that the upper boundary description is incorrect and changed it to read: "... to the Flat Bank diversion channel in Fort Bend County." The commission adopts the language as modified.

Comment: TPWD recommends revising the proposed segment boundaries of Upper Laguna Madre (2490) and Lower Laguna Madre (2491) to follow common practice and to more accurately depict geomorphic and ecological differences between the

ecosystems. Doing so will allow evaluation of each segment independently and allow the TCEQ greater flexibility in developing and implementing practices and policies to manage and protect state resources. TPWD notes that the area known as the Land Cut or Land Bridge provides a geomorphic basis for distinction between the upper and lower Laguna Madre.

Response: The commission agrees that the boundaries for both Upper Laguna Madre (2491) and Lower Laguna Madre (2490) should follow common conventions as used by the public, state, and federal government agencies. The boundaries were adjusted to reflect that the Saltillo Flats separate the two segments, and the commission adopts the language as modified.

Appendix D, Site-specific Uses and Criteria for Unclassified Water Bodies

Comment: The EPA comments that they will provide separate reviews of UAAs for the following water bodies: Boggy Creek (0607), Pine Island Bayou (0607), Willow Creek (0607), Cypress Creek (0608), Town Creek (0831), Flag Lake Drainage Canal (1111), Skull Creek (1402), and Atascosa River (2118). The EPA also comments that several of the new entries in §307.10, Appendix D are upgrades of the presumed aquatic life uses or confirmation of the presumed aquatic life use. Therefore, the EPA will not require additional documentation for those water bodies.

Response: The commission acknowledges this comment and will await the results of EPA's review.

Comment: The EPA comments that an older UAA for Spring Branch in Chambers County, completed in 1999, was inadvertently omitted from §307.10, Appendix D (within Segment 0801, but in Liberty County). The EPA notes that the 1999 UAA recommended an intermediate aquatic life use for Spring Branch from the confluence with Lee Gully upstream to approximately 3.09 km north of the confluence with Albritton Gully. The EPA states that the TCEQ may want to add this water body to the next triennial revision.

Response: The commission acknowledges that the results of this UAA were inadvertently omitted during both this and the 2010 revision of the TSWQS. The commission notes this comment and will include this UAA during the next triennial rule revisions.

Comment: The EPA comments that Walnut Creek (currently identified within Segment 0809 and Parker and Upshur Counties) should be revised to reflect the Walnut Creek located within Segment 0409 (Upshur County). The EPA notes that a receiving water assessment, which confirmed the presumed high aquatic life use, was previously

completed for this water body.

Response: The commission agrees that Walnut Creek, as described in §307.10, Appendix D of this rule, exists in Segment 0409 in Upshur County and not Segment 0809. The commission adopts the language as modified.

Comment: TPWD and BTA disagree with the designation of a limited aquatic life use for the unclassified segment of Pine Island Bayou (from the confluence with Willow Creek upstream to FM 787) in §307.10, Appendix D. Based on TPWD observations while participating in the UAA sampling events, the existing biology and habitat were good even though low dissolved oxygen levels were measured. Based on the available data, this section of Pine Island Bayou clearly supports at least an intermediate aquatic life use.

Response: A UAA study was conducted on Pine Island Bayou (0607) from 2005 - 2010. After reviewing the data collected during this effort, the commission concurs that an intermediate aquatic life use is appropriate for the portion of Pine Island Bayou listed in §307.10, Appendix D. The commission adopts the aquatic life use as modified.

Comment: The EPA comments that the TCEQ may also wish to review the previously

completed UAA for Dry Creek (within the watershed of Segment 1009 in Harris County) to verify the boundaries. The upper boundary for the portion assigned a limited aquatic life use is identified as "Harris County Flood Control District ditch K-145-05-00, 0.29 km upstream of Spring Cypress Road." However, in Figure 1 of the UAA, the ditch labeled K145-05-00 is several kms upstream of Spring Cypress Road. A ditch labeled as K145-01-00 is just upstream of Spring Cypress Road.

Response: The commission agrees that the Harris County Flood Control District ditch number used as the upper boundary for Dry Creek should be K145-01-00. The commission adopts the boundary as modified.

Comment: BPA comments that the listing for Segment 1101 in §307.10, Appendix D needs to be included in the global change of "effluent dominate" to "effluent-dominated."

Response: The commission agrees with the comment and made the suggested edit. The commission adopts the language as modified.

Comment: The EPA comments that the site-specific criteria proposed in footnote 15 for the Lavaca River (within the watershed of Segment 1602) is acceptable based on the UAA submitted for the 2010 revision of the TSWQS.

Response: The commission acknowledges this comment.

Appendix E, Site-specific Toxic Criteria

Comment: The *EPA comments that the last sentence in the introductory paragraph of §307.10, Appendix E, the reference to footnote 3 of Appendix A should be revised to specify Appendix E.*

Response: The commission agrees with the comment and made the suggested edit. The commission adopts the language as modified.

Comment: The EPA has also completed a technical review of a WER study for copper developed by the City of Port Lavaca and recently received final reports for a copper WER study from the Calabrian Corporation and a zinc WER study from for an Akzo Nobel Chemicals plant. If the public comment periods are completed through the TPDES permitting process prior to the adoption of the final TSWQS, it would be appropriate to include those criteria in §307.10, Appendix E.

Response: The commission agrees with the comment and adds the copper WER results for the City of Port Lavaca. The language is adopted as

modified.

Comment: ExxonMobil and T/K support the proposed addition of the approved site-specific standard for zinc for Neches River Tidal (0601) in §307.10, Appendix E. T/K also supports the proposed nickel and aluminum adjustment factors in Phillips Ditch (1005).

Response: The commission acknowledges this comment.

Comment: BPA comments that the proposal contains the following statement: "... six proposed changes in site-specific metals criteria in §307.10(5), Appendix E are expected to avoid the imposition of inappropriately stringent criteria for a minimum of four industrial discharge permits." BPA notes that this is the entire justification for the proposed rule change in §307.10, Appendix E. Two new additions to §307.10, Appendix E are proposed in Harris County in Segment 1005 for nickel and aluminum and add reference to specific TPDES permits. Since this rule posting contains insufficient specific justification for the rule change, this proposal should be removed from the proposal project until specific justification is published.

Response: The change to site-specific metals criteria were done in accordance with TCEQ and EPA procedures. WER studies were conducted

by pemittees as site-specific adjustment factors to the statewide metals criteria listed in Table 1 of §307.6. Study results were sent to the EPA as the studies were completed, and the EPA reviewed and approved the results for these permits. WER results were included with the public notice of each permit, and all WER results adopted in this revision have already received EPA approval in accordance with §307.6(c)(9) and (10). The commission adopts the WER results as proposed.

Appendix F, Site-specific Nutrient Criteria for Selected Reservoirs

Comment: BRA comments that they have some reservations regarding the removal of chlorophyll a criteria for some reservoirs in §307.10, Appendix F while maintaining the chlorophyll a criteria for other reservoirs. BRA notes that they fully appreciate that the removals are based on the EPA's rejection of the proposed criteria for specific lakes. However, BRA is concerned about the practical implications of keeping some reservoir standards and rejecting others. BRA comments that after reading the EPA's justification for the disapproval of certain criteria it appears that a more detailed standard will be necessary to satisfy the EPA on future criteria developed for these reservoirs. BRA is concerned that this will lead to two very different sets of standards and two very different assessment methodologies. Two sets of standards and assessment methodologies will be cumbersome to manage for both the TCEQ and the

TCEQ's Clean Rivers Program partners and will be difficult to explain to the general public, especially in the event of reservoir impairment. BRA would much prefer to see one set of reservoir specific standards and one assessment methodology that will be applied to all of reservoirs in §307.10, Appendix F, even if it is more detailed than the current chlorophyll a standard.

Response: The commission acknowledges the comment in support of the addition of nutrient criteria in the 2010 revision of the rule and the removal of the reservoir specific chlorophyll *a* criteria rejected by the EPA. The commission agrees with the need to maintain one set of standards and a single assessment methodology for all reservoirs in the state. The commission will consider this comment with stakeholders in future SWQSAWG and assessment work group meetings.

Comment: HPB supports numeric nutrient criteria and questions removing numeric nutrient criteria from any reservoir. HPB questions why, rather than revising proposed nutrient criteria for reservoirs, the TCEQ is removing the numerical criteria rather than fixing the criteria.

Response: The commission typically removes previously disapproved provisions as part of a triennial revision because standards must be

federally approved prior to implementation in Clean Water Act activities, such as waste water permitting and the IR assessment. In the case of the site-specific reservoir criteria disapproved by the EPA, much of their implementation would affect the IR and waste water permitting, and leaving these disapproved provisions in the standards could create confusion in the program areas that perform these Clean Water Act activities for the agency. The commission will reconsider the criteria that were disapproved by the EPA in future triennial revisions. The commission adopts the removal of EPA disapproved criteria as proposed.

Appendix G, Site-specific Recreational Uses and Criteria for Unclassified Water Bodies

Comment: Hamilton County, Hamilton, Coryell County, TAD, TSSWCB, Commissioner Clary, and eight individuals support changing the presumed use of South Leon River (1221) to SCR 1 and changing the presumed use of Resley Creek (1221), Indian Creek (1221) and Walnut Creek (1221) to SCR 2. One person commented in support of changing the designated use of the Leon River (1221) to a SCR 1 because the Leon River is limited in use making the SCR 1 designation more appropriate.

Response: The commission acknowledges this comment.

Comment: The Sierra Club, HPB, TCE, TCA, CNC, and over 2,000 individuals oppose

the proposed downgrades from PCR to SCR 1 or SCR 2 for the 11 unclassified streams identified in §307.10, Appendix G. While there may be streams that truly warrant a lesser recreational use category or even noncontact recreation for legitimate reasons, the rationale for downgrading these 11 streams is based on incomplete information and is inconsistent with previous commission decisions.

Response: The commission recommended use changes on eleven water bodies in §307.10, Appendix G, eight for SCR 1 and three for SCR 2. These recommended use changes were based on completed RUAA studies, which were performed according to established procedures developed by the commission and approved by EPA. The RUAA provided the information to determine the most appropriate recreational use for each water body. The commission considered feedback from the public on both the RUAA study report and the draft recommendations for each water body before the recreational use changes were proposed in this TSWQS revision. The commission notes that designating site-specific recreational uses for certain water bodies is appropriate due to contact recreation being broadly presumed for all Texas surface waters, with the exception of eight water bodies, such as ship channels. The commission adopts §307.10, Appendix G as proposed.

Comment: Sierra Club comments that TCEQ's recommendations based on RUAAs are based on questionable interpretations of the results of the RUAAs and that the basic premise of using "public access" as a basis for determining whether a body of water should be designated as fitting into a certain recreational use category (be it this proposed category or some other) and potentially subject to weak bacteria pollution standards as a result is faulty. For example, one important fact is that some of the recommended downgrades are based on assertions that the RUAAs found "naturally low water levels" in the streams that allegedly reduced their potential use as PCR streams. However, all of the RUAAs that form the basis for the proposed downgrades were conducted during summer months when water levels in streams in Texas are likely to be at their lowest except after rainfall events. Moreover, several of the RUAAs were conducted in the summer of 2009 when those areas of the state may have been undergoing at least moderate drought conditions or following on the heels of previous months of drought conditions that could have also lowered water levels.

Response: RUAAs are conducted from May - September using EPA-approved procedures in order to have the best chance to observe recreation in a stream. Although water levels are lower in the summer, conducting the studies at this time of the year gives the commission the best chance to find recreation occurring on the stream. A drought index is required in the report so the commission is better able to determine how far study

conditions deviate from normal. Public access and use of the water body by the general public and private landowners is taken into consideration when making a determination on a use change. Interviews play an important role in RUAA studies for determining current and past use of the stream. While observing recreation on the stream would be the ideal way for determining if recreation occurs on the stream, the commission uses information in the interview forms, as well as information from other water agencies familiar with the water body, to determine the recreational use of the stream. The commission adopts the language as proposed.

Comment: Sierra Club and NWF comment that the recommended downgrades for the South Leon River (1221) and Resley Creek (1221) in the Brazos Basin are not accurately based on the findings of the RUAAs and, therefore, are not justified. TPWD comments that their review of the reports and accompanying documents provided indicated that both water bodes should remain as PCR. NWF comments that findings in the RUAAs for those streams indicated that PCR did occur. The EPA comments that they have concerns about the proposed revisions in §307.10, Appendix G for Resley Creek, Indian Creek, and the South Leon River (all within Segment 1221). The EPA notes that there is information found in the UAA and RUAAs that did not support re-classifying these water bodies from presumed PCR use.

Response: The commission relied upon information collected during the RUAA for each water body to develop the adopted site-specific contact recreation uses. Information collected during the RUAA indicated that the deepest portions of Resley Creek (1221) had an average depth of eight inches, and eight of ten individuals interviewed did not know of any PCR occurring on the stream. Data collected on the South Leon River (1221) indicated the deepest portions had an average depth of 14 inches; individuals interviewed did not identify PCR as a personal use, and public access to the South Leon River was very limited. Information collected during the RUAA for Indian Creek (1221) indicated that the deepest portions of the stream had an average depth of 11 inches, no pools greater than one meter deep, and no one interviewed had used the stream for PCR nor had anyone seen or heard of individuals using the stream for PCR. The commission adopts the language as proposed.

Comment: BPA comments that two unnamed tributaries of Whiteoak Bayou and Brickhouse Gully/Bayou in Segment 1017 in Harris County are water bodies that flow through urban and predominantly residential neighborhoods with significant incidence of contact by children wading. These water bodies currently carry the designations with E. coli limits of 630 colonies per 100 mL. Additionally, such designations negatively impact the downstream segments of Whiteoak Bayou

(Segment 1017 with E. coli limit of 125 colonies per 100 mL) and its designation in §307.10, Appendix A as PCR. Downstream waterways of Buffalo Bayou (Segments 1013 and 1014) could also be negatively impacted as they are used for recreation. BPA urges that these three water bodies in Segment 1017 be removed from Appendix G and revert to designation as PCR.

Response: Brickhouse Gully/Bayou and two unnamed tributaries of Whiteoak Bayou were adopted for a change to a SCR 1 recreational use in the 2010 TSWQS. The uses for these water bodies were approved by EPA in an action letter dated June 29, 2011. The commission is not adopting any changes to these streams.

Comment: TAD and eight individuals ask that TCEQ reconsider the designated use of Pecan Creek (1221) based on the water quality data collected during the RUAA. They note that this water body could easily qualify for PCR 2 or secondary contact recreation designation due to limited frequency of use. Also, the portion of Pecan Creek that is publically accessible is only a few inches deep.

Response: The commission relied upon information collected during the RUAA for each water body to adopt site-specific contact recreation uses. One out of two property owners interviewed stated that PCR activity

occurred four to five times a year and year-round on the stream. Physical characteristics of the stream indicated the deepest portions had an average depth of 8.66 inches and the presence of pools greater than one meter deep. Pecan Creek is easily accessible to the public. The stream flows through three parks, Pecan Creek Park being the largest, with a sports complex, playgrounds and a hiking trail along the creek. Due to these findings, a change from the presumed PCR 1 use category is not appropriate for this water body.

Comment: BRA supports the proposed re-classification of eight streams in the Brazos River Basin from PCR to SCR 1 and SCR 2, respectively. BRA comments that the re-classification better reflects the physical and flow characteristics of the streams and adopts reasonably attainable recreational uses of these streams.

Response: The commission acknowledges this comment.

Comment: NWF opposes the proposed SCR 1 use for East Yegua Creek (1212). Based on their understanding, the RUAA indicated that evidence of historical swimming was found. This supports PCR as an existing use that must be protected.

Response: The contact recreation information in the comment was

confirmed in the RUAA report. However, the RUAA found that nine of ten people interviewed had never used the stream for PCR nor had they ever witnessed or heard of PCR occurring on the stream. Physical characteristics of the stream indicated the deepest portions had an average depth of 15 inches, and the stream is only publically accessible at five road crossings. The stream also flows through a wildlife management area that, according to staff, is only used for SCR. The commission adopts the language as proposed.

Comment: EPA comments that it would be beneficial to include unclassified water bodies in §307.10, Appendix G where the PCR use will be retained based on a RUAA. From the informal public participation periods previously conducted by the TCEQ, these water bodies include Martin Branch (within Segment 0810), Pecan Creek (within Segment 1221) and Plum Creek (within Segment 1221).

Response: Water bodies where the presumed use has been confirmed have not been added to §307.10, Appendix G because a standards change has not occurred and the use criterion remains the same. The commission sees no reason to add water bodies to an appendix when it will have no site-specific or regulatory impact. The commission adopts §307.10, Appendix G as proposed.

Comment: EPA supports the changes to Big Sandy Creek (0810), Garrett Creek (0810), Salt Creek (0810), Navasota River Above Lake Mexia (1210), East Yegua Creek (1212), Walnut Creek (1221), Bullhead Bayou (1245), and Unnamed Tributary Bullhead Bayou (1245) in §307.10, Appendix G.

Response: The commission acknowledges this comment.